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Australian Bureau of Statistics

Information Paper

Information Paper: Implementation of new international statistical standards in ABS National and International Accounts

Australia

September 2009

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CHAPTERS

PREFACE

The international statistical standards for compilation of the National and International Accounts have been revised recently. The revised statistical standards are in the System of National Accounts 2008 and the Balance of Payments and International Investment Position Manual sixth edition. In parallel with these standards a revised industrial classification has been introduced. ABS and Statistics New Zealand have collaborated on producing a regionally relevant version of this Australian and New Zealand Industrial Classification 2006 edition (ANZSIC06). In addition to the changes resulting from new standards and classification, additional improvements to source data and methods have been made.

This information paper describes the key changes and impact on selected key aggregates from the Australian System of National Accounts and the Balance of Payments and International Investment Position. The estimates of impacts presented in this paper are indicative only and are subject to refinement and revision. A range of new or revised methods used in compilation of the National and International Accounts are discussed in detail.

The Australian Bureau of Statistics (ABS) will implement the standards in ABS national and international statistics in the Australian System of National Accounts to be published on 8 December 2009, the September reference quarter 2009 quarterly Australian National Accounts to be published on 16 December 2009 and the September reference quarter 2009 quarterly Balance of Payments and International Investment Position to be published on 8 December 2009. The revisions to national and international accounts will be implemented across the complete time series.

Some tables have been truncated due to space in the paper. Data are available by request in most instances back to 1994-95 for the purpose of this information paper.

Brian Pink
Australian Statistician

CHAPTER 1 INTRODUCTION

INTRODUCTION

The ABS produces Australia's System of National Accounts (ASNA), Balance of Payments (BoP) and International Investment Position (IIP). These statistics are compiled in accordance with international standards and related classifications. The international standards and related classifications have been revised, resulting in changes to these statistics. This paper focuses on the impact of implementing the revised international standards and related classifications with:

- Chapter 2 describing the main changes to the international standards and related classifications, the System of National Accounts 2008 (SNA08), the Balance of Payments and International Investment Position Manual sixth edition (BPM6), the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06) and the Standard Economic Sector Classifications of Australia 2008 (SESCA08);
- Chapters 3 and 4 describing and quantifying the major changes that will be implemented in the ASNA, and the BoP and IIP;
- Chapter 5 describing the changes in the standards ABS is still to implement or will not be implementing;
- Chapters 6 through 13 presenting concepts, sources and methods for a selection of the more significant changes.

The estimates presented in this publication provide a preliminary indication of the magnitude of changes to selected series. These estimates are subject to revision.

A full set of estimates compiled according to the revised standards and classifications will be published in the annual 2008-09 ASNA publication, and with the September quarter 2009 releases occurring progressively through to the end of December 2009.

The following sources of related information, available from the ABS website, provide further details or outline the revised outputs that will be presented.

5310.0.55.001 Information Paper: Introduction of revised international statistical standards in ABS economic statistics in 2009, 2007

1295.0.55.001 Information Paper: Update on ANZSIC 2006 Implementation, 2008

1218.0 Standard Economic Sector Classifications of Australia (SESCA), 2008

5368.0.55.012 Revisions to international standards in monthly international trade in goods and services statistics from August 2009, 2009

5368.0.55.014 Impact of revised international standards on monthly International Trade in Goods and Services, August 2009, 2009

5302.0.55.002 Revisions to international standards in quarterly Balance of Payments and International Investment Position statistics from September 2009, 2009

5204.0.55.002 Information Paper: Product changes to Australian System of National Accounts following revisions to international standards, 2009

5206.0.55.002 Information Paper: Product changes to National Income, Expenditure and Product following revisions to international standards, 2009

5220.0.55.004 Information Paper: Product changes to State Accounts following revisions to international standards, 2009

5232.0.55.003 Information Paper: Product changes to Financial Accounts following revisions to international standards, 2009

CHAPTER 2 CHANGES TO INTERNATIONAL STANDARDS

INTRODUCTION

The international framework for economic statistics is centred around two key documents: the System of National Accounts 1993 (SNA93) and the Balance of Payments Manual fifth edition (BPM5), both of which were released in 1993. Since the release of these key standards, a number of new economic phenomena have arisen or assumed greater importance as economies continue to develop in their complexity. In response to this, relevant international organisations and a range of national statistical agencies, including the ABS, have reviewed a range of conceptual and measurement issues that were either not clarified completely at the time of the release of SNA93 and BPM5, or have emerged as important measurement issues since that time. These issues are described in the Information Paper: Introduction of revised international standards in ABS economic statistics in 2009 (cat. no. 5310.0.55.001).

The international standards for national and international accounts were updated concurrently and the standards are compatible. The new standards are presented in the System of National Accounts 2008 (SNA08) and the Balance of Payments and International Investment Position Manual sixth edition (BPM6). The International Monetary Fund's Government Finance Statistics Manual 2001 will be revised in the future. The ABS expects to update Australia's Government Finance Statistics to the revised international standards following this revision. The exception is the treatment of military expenditure, where the SNA08 treatment will be adopted in Government Finance Statistics. See chapter 7 for more details. In addition to implementing the revised international standards, the ABS will implement revised classifications, particularly for industry and institutional sectors.

The revised standards are not radical departures from their former editions. They represent an incremental change in the development of national and international accounting to reflect changing economic behaviour and new policy concerns, as well as an improved understanding of the accounts, their international comparability and harmonisation with other international statistical standards. There have been incremental changes to concepts, classifications and definitions. Some of these represent changes in terminology and presentation, while others impact on the measurement of major summary aggregates such as Gross Domestic Product (GDP) and saving. The revised industry classification will result in a significant change to the presentation of statistics by industry.

This chapter provides a description of changes to concepts, classifications and definitions within the Australian System of National Accounts (ASNA) and the Balance of Payments (BoP) and International Investment Position (IIP) statistics. A discussion of issues that the ABS will either not implement or will continue to research can be found in Chapter 5.

SYSTEM OF NATIONAL ACCOUNTS 2008

The revised international standards will change the measurement of a number of components of the ASNA, but there will be no major changes to the structure of the accounts. The main changes are listed below, with a detailed discussion of each in following chapters:

- Introduction of research and development as capital formation (chapter 6 - research and development);
- Capitalisation of expenditure on defence weapons platforms (chapter 7 - military expenditure);

SYSTEM OF NATIONAL ACCOUNTS 2008 *continued*

- The inclusion of reinvested earnings of investment funds (chapter 9 - reinvested earnings of investment funds).

In addition, the ABS will implement two key changes that were in SNA93 but not implemented by the ABS:

- Inclusion of orchard growth in the capital and production accounts (chapter 8 - orchard growth);
- Moving financial auxiliaries to the financial sector (explained later in this chapter).

In addition to the changes described in detail in subsequent chapters, other selected changes are summarised below.

COST OF OWNERSHIP TRANSFERS

SNA93 recommended capitalising ownership transfer costs and depreciating them over the life of the associated asset. The ABS did not implement this methodology due to concerns that it would overstate balance sheet capital since assets such as buildings often change ownership numerous times during their lives. Instead the ABS adopted a treatment of writing off ownership transfer costs through consumption of fixed capital in the same period in which they arise. This means that the transfer costs are shown as gross fixed capital formation but do not accumulate in the balance sheet.

The standard methodology was altered in SNA08 so that the cost of ownership transfer is written off over the period during which the acquirer expects to hold the asset. If the expectation is met, the costs of ownership transfers will be entirely depreciated when the asset is resold, thus resolving the issue raised of overestimating operating surplus. The ABS will implement the SNA08 treatment.

The new treatment will not have an impact on the current level of gross fixed capital formation, but adopting the longer asset life will increase the size of the capital stock estimates in the balance sheet.

MINERAL EXPLORATION EXPENDITURE

SNA08 affirms the treatment of mineral exploration as an asset and provides further guidance on the appropriate measurement methodology. The current ABS treatment is in line with the recommendations except to separately identify mineral exploration expenditure on the balance sheet.

SNA08 recommends that mineral exploration assets be separately identified in the balance sheet as a produced asset. Mineral exploration assets will be added to intellectual property products in the balance sheet.

This will change the aggregate values in the balance sheet by recording mineral exploration as an intellectual property product asset, however it will have no effect on GDP.

FINANCIAL AUXILIARIES

In the production and income accounts of SNA08, financial auxiliaries are corporations engaged primarily in activities closely related to financial intermediation but which do not themselves perform an intermediation role. They consist of corporations such as securities brokers, loan brokers, flotation corporations (that manage the issue of securities), insurance brokers, and fund managers. Although SNA93 said that financial auxiliaries be classified to the financial corporations sector, no financial auxiliaries were reclassified from the non-financial corporations sector to the financial corporations

FINANCIAL AUXILIARIES *continued*

sector for practical reasons in the ASNA. With the implementation of SNA08, the ABS will implement the recommended treatment and include financial auxiliaries in the financial corporations sector for all ABS statistics.

This will not result in any change to GDP, only a change in where the activity for these units will be recorded.

SOFTWARE ORIGINALS AND COPIES

SNA93 introduced the treatment of computer software as capital formation, but left open the treatment of originals and copies as distinct products. A number of clarifications will be provided with SNA08. The most important of these confirms that 'licences to use' will be treated as capital formation if they are to be used for more than one year, regardless of payment arrangements.

The ABS does not have information on the duration of 'licences to use' and assumes that most software is purchased with the intention to be used beyond one year. The software will therefore be treated as capital formation.

DATABASES

SNA93 recommended that databases be capitalised. The following clarifications have been provided in SNA08:

- In the absence of a more satisfactory alternative, for the valuation of a database created on own account, the value should be estimated on a sum of costs basis. The value of the software component of the database, the database management system, will be recorded elsewhere as a software asset. All costs to update a database should be recorded as capital formation rather than maintenance. However, the costs of creating the information content will not be capitalised.
- Databases for sale should be valued at their market price which includes the value of the information content. If the value of a software component is available separately, it should be recorded as the sale of software.

The present ABS treatment is consistent with the new standard. However it is not clear that ABS is capturing the entire scope of database production, particularly the updating of databases. More work will be undertaken in order to ensure ABS is capturing this activity.

EMPLOYEE PENSION SCHEMES

SNA93 did not reflect the liabilities that employers, in particular government agencies, incur by promising pensions to households. SNA08 recommends the inclusion of defined benefit schemes in the core accounts. SNA08 recommends the creation of a supplementary table including social security schemes (of which there are none in Australia).

The ASNA reflects the new recommended treatment by including unfunded pension schemes as a liability of employers. Pension schemes have generated substantial interest in the past few years and some new information may need to be collected through changes to the Australian Prudential Regulatory Authority collection vehicles and other associated methods changes, such as changes in actuarial assumptions applied by pension funds, to implement the SNA08 recommendations fully.

EMPLOYEE STOCK OPTIONS

SNA08 includes the value of employee stock options as a form of compensation of employees in kind. This will modify the coverage of wages and salaries in kind since at present they are restricted to goods and services and the value of interest foregone when an employer provides low interest loans to staff. The value of employee stock options granted is added to compensation of employees, and the amount is offset by a deduction in gross operating surplus of businesses and will result in no change to the level of GDP.

The financial accounts will include employee stock options in the financial derivatives category.

GOODWILL AND OTHER NON-PRODUCED INTANGIBLES

The SNA93 asset category 'purchased goodwill' will be changed to 'purchased goodwill and marketing assets' under SNA08. Entries will continue to be recorded only when the value of those assets are evidenced by a sale. For all enterprises, whether incorporated or quasi-corporate, the value of purchased goodwill and marketing assets will be valued as the takeover value of the enterprise less the value of other assets and liabilities identified for the enterprise.

This represents a change for incorporated enterprises and makes their treatment consistent with quasi-corporates and unincorporated enterprises. The asset is classified as a non-produced asset.

The value of purchased goodwill will not be included as an asset in the ASNA balance sheets. Work is proposed to be undertaken to assess the possibility of estimating this item using the revised definition. Any changes to the balance sheet due to the recognition of the appearance of goodwill would flow through as increases in both total assets and net worth.

UNALLOCATED GOLD ACCOUNTS

SNA08 proposes unallocated gold accounts (that is, gold held in reserves) be recorded as financial assets (equivalent to assets denominated in a foreign currency) rather than constituting ownership of physical gold. Transactions will be recorded in the financial account. SNA08 also proposes that the treatment of unallocated gold accounts will be extended to other unallocated metal accounts.

The ABS presents unallocated gold accounts as financial assets denominated in foreign currencies, which is consistent with the new standards.

ACTIVATION OF GUARANTEES

No guidance on the treatment of debt guarantees was provided in SNA93 or BPM5, but this will be provided in BPM6 and SNA08. Under BPM6 and SNA08, there will be three types of guarantee:

(i) guarantees as financial derivatives should be treated as financial derivatives;
(ii) standardised guarantees are guarantees that are not provided by means of a financial derivative, but where the probability of default can be well established; and
(iii) one-off guarantees are guarantees where the loan or the security are so particular that it is not possible for the degree of risk associated with the loan to be calculated with any degree of accuracy.

ACTIVATION OF GUARANTEES *continued*

The ABS considered all guarantees to be contingent liabilities of the guarantor and therefore outside the asset boundary. They were only included in the financial accounts if they were invoked. The liability which was the subject of the guarantee was then extinguished and a new liability created. With the implementation of the new standards, the ABS will adopt a new treatment. For guarantees as financial derivatives and standardised guarantees, the ABS will record the creation of a guarantee as a transaction creating a liability and the activation of the guarantee as a transaction extinguishing the liability. One-off guarantees will be treated as contingent. The impact is expected to be minor as the activation of a guarantee is a rare occurrence in the Australian economy.

BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION MANUAL SIXTH EDITION

The revised international standards will change the measurement of a number of components of the Balance of Payments and International Investment Position. The main changes will be:

- Inclusion of reinvested earnings of investment funds in the international accounts (chapter 9 - reinvested earnings of investment funds);
- Inclusion of pension funds in the international accounts (chapter 10 - pension funds in the international accounts);
- Inclusion of technical reserves for insurance and improved methods for the estimation of insurance services in the international accounts (chapter 11 - insurance in the international accounts);
- Improved methodology for financial intermediation services indirectly measured (chapter 12 - improved measurement of FISIM in the international accounts);
- Change of migrant transfers in the capital account to an other volume change in the IIP, and consequential updating of the methodology to calculate the foreign assets and liabilities from permanent residency changes (chapter 13 - accounting for wealth of migrants).

Below is a description of other selected issues that ABS will be implementing as a result of BPM6.

ECONOMIC TERRITORY

The BPM6 definition of economic territory will be the area under the effective control of the Australian government. This no longer requires that persons, goods, and capital circulate freely within the territory. As a result of this change, the economic territory will include the land area, airspace, territorial waters, including jurisdiction over fishing rights and rights to fuels and minerals of these territories. Australian economic territory will include territorial enclaves in the rest of the world. These are clearly demarcated areas of land, located in other countries and which are owned or rented by the Australian government for diplomatic, military, scientific or other purposes. Specifically, the economic territory of Australia will consist of:

- Geographic Australia which includes Cocos (Keeling) Islands and Christmas Island
- Norfolk Island
- Australian Antarctic Territory
- Heard Island and McDonald Islands
- Territory of Ashmore Reef and Cartier Island
- Coral Sea Islands
- Australia's territorial enclaves overseas.

ECONOMIC TERRITORY *continued*

The Joint Petroleum Development Area is considered joint territory between Australia and Timor-Leste.

Due to administrative complexities and measurement difficulties, Norfolk Island transactions will not always be captured in all relevant ABS economic statistics. Most of the transactions involving Norfolk Island are not material to Australia's overall economic performance and not capturing these transactions should not distort the economic statistics. However, any significant transactions will be identified and included in the relevant statistics.

BALANCE OF PAYMENTS GOODS AND SERVICES ACCOUNT

BPM6 introduces a number of changes to the treatment and classification of goods and services in the Balance of Payments (BoP). The main changes are described below.

Merchanting

Merchanting (describing trade of goods offshore by residents) will no longer be recorded as services. Merchanting will record three transactions in the goods account. It will measure the flow of goods acquired under merchanting and record these as negative exports. It will measure the flow of goods sold under merchanting (exports). The net position will be calculated as the difference between these two, this is equivalent to sales (exports) minus purchases (negative exports). There will be some changes in the balance on goods and services from this change.

Repairs on goods

Repairs on goods will no longer be recorded as goods. They will be included in services and named maintenance and repair services n.i.e.. Since the same value will be removed from goods and added to services, this will not cause any change to the balance on goods and services.

Goods for processing

Goods for processing will no longer be recorded as exports and imports of goods. Processing activities will be recorded as manufacturing services on physical inputs owned by others. The existing series have been reviewed. The revised gross values will be removed from goods and the revised net values added to services. This will not cause any change to the balance on goods and services.

Goods procured in ports by carriers

Both the credits and debits series will be re-classified to general merchandise. This will involve allocating the value of the current goods procured in ports by carriers series to appropriate goods credits (i.e. non-rural goods) and debits (i.e. intermediate and other merchandise goods) items. This reclassification within goods will not change either total goods credits or total goods debits.

The remainder of the changes to the goods and services account are mainly reclassifications within services shown in the BoP:

- postal and courier services will be moved from communications and re-classified to transport services.
- telecommunications services, and computer and information services will be merged to form a new category named telecommunication, computer and information services.
- royalties and licence fees will be renamed charges for the use of intellectual property n.i.e.

Goods procured in ports by carriers continued

- library and archive services currently reported under personal, cultural and recreational services will be re-classified to other computer and information services.

DIRECTIONAL PRINCIPLE

Under BPM5, the ABS used the 'directional principle' for the presentation of Australian direct investment abroad and foreign direct investment in Australia in tables 25 through 29 of the publication 5302.0, and the associated primary income accounts in tables 20 and 21. The directional principle recognises that many direct investment relationships involve 'reverse investment'; that is, a direct investor has an investment in its direct investment enterprise and the direct investment enterprise has an investment in its direct investor. The directional principle will involve subtracting the reverse investment and will present the direct investor's investment in its direct investment enterprise on a net basis.

By contrast, tables 2 through 4 of the publication 5302.0 presented foreign direct assets and liabilities on a gross basis with no netting of reverse investment. As a result, reconciliation of tables 2 through 4 with tables 25 through 29 required a 'direct investment adjustment' to take account of this reverse investment.

Under BPM6, all accounts are presented on a gross assets and liabilities basis. This will mean that tables 2 through 4 and tables 25 through 29 will reconcile without the need for a direct investment adjustment. This treatment will ensure that the international accounts are consistent with the external account of SNA08 which will require presentation on a gross assets and liabilities basis.

Under BPM6, the terms Australian investment abroad (AIA) and foreign investment in Australia (FIA) in tables 25 through 29 will be replaced by the terms foreign assets and foreign liabilities respectively. As a result of these changes, however, the new foreign assets and liabilities series will not be the same as the existing AIA and FIA series.

FINANCIAL CORPORATIONS CLASSIFICATIONS IN BALANCE OF PAYMENTS AND NATIONAL ACCOUNTS

Modifications were made to the financial corporations classifications so that the BPM6 classifications will be more aligned with SNA08 classifications and be reflected in SESCA08. The SNA08, BPM6 and current and proposed ABS sector classifications are listed below in tables 1, 2 and 3. While SESCA08 and the sector classification from international standards are comparable, more detailed institutional sector classifications will differ due to the Australian economic environment and terminology.

1 SECTOR CLASSIFICATION FOR INTERNATIONAL ACCOUNTS

Current BPM5 classification used in the BoP and IIP	*BPM6 classification*	*Classification to be used*
Central bank	Central bank	Central bank
General government	General government	Depository corporations
Depository corporations	Depository corporations	General government
Other sectors	Other sectors	Other sectors
	Other financial corporations	Other financial corporations
	Money market funds	Non-financial corporations, households, NPISH (non-profit institutions serving households)
	Other investment funds	
	Insurance companies	
	Pension funds	
	Other	
	Other non-financial corporations	
	Corporations	
	Households	
	NPISH (non-profit institutions serving housholds)	

2 FINANCIAL SECTOR CLASSIFICATION FOR NATIONAL ACCOUNTS

Current SNA93 classification used in the ASNA	*SNA08 classification*	*Classification to be used*
Central bank	Central bank	Reserve Bank
Banks	Deposit-taking corporations except the Central Bank	Depository corporations
Other depository corporations	Money market funds (MMF)	Banks
Life insurance corporations	Non-MMF investment funds	Other depository corporations
Pension funds	Other financial intermediaries except insurance corporations and pension funds	Pension fund and insurance corporations
Other insurance corporations	Financial auxiliaries	Pension funds
Central borrowing authorities	Captive financial institutions and money lenders	Life insurance corporations
Financial Intermediaries n.e.c.	Insurance companies	Non-life insurance corporations
	Pension funds	Financial investment funds
		Money market funds (MMF)
		Non-MMF financial investment funds
		Central Borrowing Authorities
		Securitisers
		Other financial corporations

FINANCIAL CORPORATIONS CLASSIFICATIONS IN BALANCE OF PAYMENTS AND NATIONAL ACCOUNTS *continued*

The revised subsectoring has resulted in new categories requiring detailed data. The ABS may not be able to provide data at such a detailed level for confidentiality reasons. The ABS intends to continue publishing a separate central borrowing authorities category and separately identify securitisers.

The key change introduced with the SNA08 and BPM6 classifications will be the separate identification of money market funds and other investment funds. Institutions to be included as investment funds will be those institutions which exhibit the following characteristics:

FINANCIAL CORPORATIONS CLASSIFICATIONS IN BALANCE OF PAYMENTS AND NATIONAL ACCOUNTS *continued*

- pooling of investors' monies to purchase assets;
- assets are owned by a separate legal entity, such as a trust or company, which issues shares/units to investors on a proportional ownership basis;
- the fund/company must be open to the public, either via a prospectus or a distribution channel (e.g. a platform); and
- the investors are able to dispose of their units and/or shares within a reasonable period of time, on a well developed secondary market, such as a stock exchange or through readily accessible redemption facilities offered in association with the fund.

Funds displaying the above characteristics will be classified to the relevant subsector, being either money-market funds, non-money market investment funds, or non-financial investment funds (table 3). Several institutions that pool investor funds will not be classified as investment funds because they are either not open to the public (e.g. property syndicates) or do not have a sufficiently active secondary market for their units and/or shares (eg. agricultural, film and timeshare trusts and venture capital development funds).

Only those investment funds investing predominantly in financial assets will be treated as financial corporations. Those investing in non-financial assets, such as property, will be treated as non-financial corporations. This distinction will be based on whether the institution's primary income is obtained from rentals, or dividends and interest. A detailed classification is given below in table 3. This classification of non-financial investment funds creates a minor departure from the international standards.

3 ABS INVESTMENT FUNDS CLASSIFICATION

	ABS TREATMENT	ABS TREATMENT
SNA08 sector	*Listed investment funds*	*Unlisted investment funds*
Non-financial corporations	Listed property trusts	Unlisted property trusts
	Other listed non-financial trusts	Property common funds
		Other unlisted non-financial trusts
Financial corporations		
Money market funds (MMF)	n.a.	Cash management trusts
		Cash common funds
Non-MMF financial investment funds	Listed equity trusts	Unlisted equity trusts (domestic and international)
	Listed mortgage trusts	Unlisted mortgage trusts
	Listed infrastructure trusts	Unlisted other financial trusts
	Listed other financial trusts	Non-cash common funds
	Listed investment companies (LICs)	Wholesale trusts

INTERNATIONAL RESERVES

The ABS currently aligns with BPM5 on the treatment of reserve assets. Australia's official reserve assets include monetary gold, special drawing rights (SDRs), reserve position in the International Monetary Fund, and foreign exchange held by the RBA.

INTERNATIONAL RESERVES *continued*

BPM6 recommends that each country's SDR allocations be classified as debt under other investment. Reserve-related liabilities will be introduced as a memorandum item. Reserve related liabilities includes short term debt: use of fund credit, debt securities, currency and deposits, and loans (repo loans and other).

The ABS will adopt the BPM6 treatment of recording SDR allocations as a liability and will adopt the standard BPM6 presentation of reserve assets. The reserve related liabilities will be shown as a memorandum item.

STANDARD ECONOMIC SECTOR CLASSIFICATIONS OF AUSTRALIA 2008, AND AUSTRALIAN AND NEW ZEALAND STANDARD INDUSTRIAL CLASSIFICATION 2006

The ABS will incorporate changes to key Australian classifications. The changes to SNA08 have introduced some new elements to the Standard Economic Sector Classifications of Australia 2008 (SESCA08) as mentioned above for financial corporations.

A joint project between the ABS and Statistics New Zealand developed a new standard classification of industrial activity, the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06). This will replace the existing classification, ANZSIC93, with a more contemporary classification system. This new classification was developed in response to changes in the structure and composition of the economy, changing information demands and the need to enhance compatibility with the fourth revision of the International Standard Industrial Classification of all economic activities, which was released on the 28 August 2008. Implementing this revised classification will result in a significant change to the presentation of industry data in the ASNA. In particular:

- changes to the ANZSIC06 division structure with 19 divisions compared to 17 in ANZSIC93. This includes changes to the internal structure of some divisions as well as creating new ones;
- adaptation to the emergence of new economic activities including internet publishing and broadcasting, computer retailing and communication equipment manufacturing;
- introduction of a new industry division, information media and telecommunications. This new division groups units mainly engaged in creating and storing information products in media that allow for their dissemination. This is an industry that has grown rapidly in both Australia and New Zealand since ANZSIC93 was developed;
- splitting of property and business services division to its component parts of:
  - rental, hiring and real estate services;
  - professional, scientific and technical services;
  - administrative and support services.

Information on the differences between ANZSIC93 and ANZSIC06 can be found in Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 - Class Change Tables, 2006 (cat. no. 1292.0.55.003).

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the annual Australian System of National Accounts to be published on 8 December 2009 and in the quarterly Australian National Accounts to be published on 16 December 2009.

INTRODUCTION

From the 2008-09 issue of the Australian System of National Accounts (ASNA), data will be presented in accordance with the following revised standards:

- System of National Accounts 2008 (SNA08);
- Balance of Payments and International Investment Position sixth edition (BPM6);
- Australian and New Zealand Standard Industry Classification 2006 (ANZSIC06); and,
- Standard of Economic Sector Classifications of Australia 2008 (SESCA08) basis.

The changes being implemented with these new standards will impact on the value of some key aggregates. In addition, data quality improvements will result in a shift in the level of some series. To maintain the integrity of time series, level shifts will be back cast.

KEY AGGREGATES IN CURRENT PRICES

It is expected that implementing these changes and the incorporation of revisions in the Australian System of National Accounts (table 1) will increase the level of Gross Domestic Product (GDP) by about $50,000 million (4.4%) and will increase industry output, as measured by Gross Value Added (GVA), by about $52,000 million (5.0%) in 2007-08.

1 CHANGES TO KEY AGGREGATES, current prices

Key Aggregates	*1998-99* $m	*1999-2000* $m	*2000-01* $m	*2001-02* $m	*2002-03* $m	*2003-04* $m	*2004-05* $m	*2005-06* $m	*2006-07* $m	*2007-08* $m
GDP (SNA93)	607 759	645 058	689 262	735 714	781 675	841 351	897 642	967 454	1 045 674	1 132 172
GDP (SNA08)	622 695	663 867	708 889	759 204	804 361	864 955	925 864	1 000 787	1 091 327	1 181 750
GVA (SNA93)	558 399	592 632	628 123	671 804	711 050	766 151	821 859	887 959	962 501	1 039 829
GVA (SNA08)	573 351	611 573	647 900	695 345	733 855	790 091	850 525	921 810	1 007 187	1 091 716

For full descriptions of GDP and GVA see Australian National Accounts: Concepts, Sources and Methods (cat. no. 5216.0).

The main contributors will be the capitalisation of research and development (R&D), and revised estimates of finance and insurance services output which are discussed later in this chapter.

KEY AGGREGATES IN CURRENT PRICES *continued*

FIGURE 1 - GDP, current prices

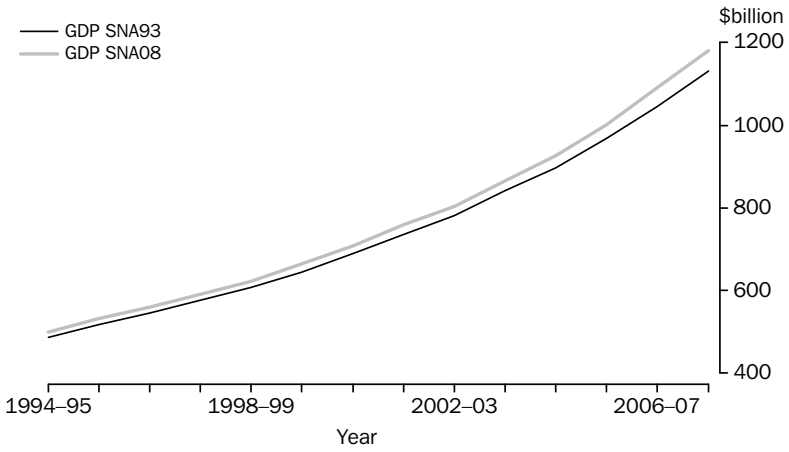
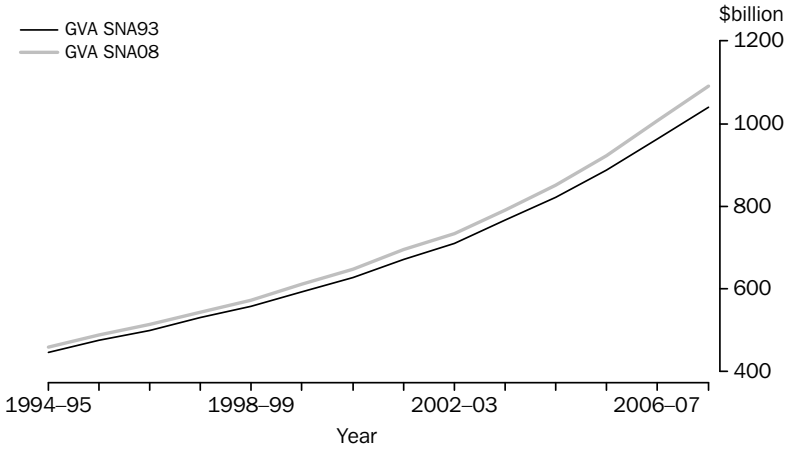


FIGURE 2 - GVA, current prices



INCOME AT CURRENT PRICES

Table 2 shows the revisions result from a variety of factors, including:

- General government consumption of fixed capital ($4,460 million in 2005-06) from the capitalisation of R&D and defence weapons platforms (DWP). These inclusions will have general government owning two additional assets that lead to consequent increases in consumption of fixed capital;
- capitalisation of private and public trading enterprise R&D and orchard growth ($10,456 million in 2005-06) will lead to additional gross operating surplus (GOS) as additional output is produced with no change to intermediate consumption. General government output is measured at cost and therefore increased COFC results in an increase in measured output and GVA; and
- compensation of employees (CoE) has been revised as level estimates from the Annual Integrated Collection (AIC) have been incorporated for reference year 2006/07. The resulting level shift has been backcast through the ASNA time series. This level shift has impacts across most industries.

2 REVISIONS TO INCOME, current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
Income	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
GDP (SNA93)	607 759	645 058	689 262	735 714	781 675	841 351	897 642	967 454	1 045 674	1 132 172
Revisions										
Compensation of Employees	12 413	13 299	14 265	15 038	16 464	18 014	19 965	22 642	32 725	36 389
Gross Operating Surplus (incl. GMI)	2 477	5 578	5 467	8 464	6 421	5 978	8 848	11 479	11 810	12 271
Net Taxes on Production	45	–68	–99	–19	–205	–385	–588	–786	1 118	420
GDP (SNA08)	622 695	663 867	708 889	759 204	804 361	864 955	925 864	1 000 787	1 091 327	1 181 750

EXPENDITURE AT CURRENT PRICES

Table 3 shows these revisions for 2005-06:

- Government final consumption expenditure (GFCE) will fall as R&D and DWP are capitalised (-$6,117 million) and will increase due to the additional consumption of fixed capital (COFC) ($4,460 million) with -$234 million for other revisions; and,
- three sectors will increase gross fixed capital formation (GFCF) to account for the capitalisation of R&D ($9,669 million in private, $251 million in public trading enterprises (PTE) and $2,921 million in general government), DWP ($3,196 million in general government) and orchard growth ($536 million in private). The remaining revisions will increase GFCF by $2,018 million.

Other revisions will include:

- following the use of improved source data and methods, there were significant revisions to estimates for insurance service charge (ISC) and FISIM consumed by Households. The ISC revisions amounted to about $12,500 million in 2006-07 and about $15,000 million in 2007-08; the FISIM revisions amounted to about $8,200 million and about $7,300 million in 2007-08;
- there will be product detail changes to household final consumption expenditure. Examples include revisions to air passenger transport services based on changes to other government transport data and take away food which will use an improved estimate of price change; and
- changes to the treatment of exports and imports will lead to a $834 million reduction in net exports.

3 REVISIONS TO EXPENDITURE AT CURRENT PRICES

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
Expenditure	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
GDP (SNA93)	607 759	645 058	689 262	735 714	781 675	841 351	897 642	967 454	1 045 674	1 132 172
Revisions										
GFCE	–1 270	–547	–984	–437	–890	–1 112	–1 608	–1 498	–246	1 242
GFCF - Private	5 221	5 403	6 133	7 309	8 514	9 446	10 334	11 441	13 806	14 425
GFCF - Public Trading Enterprises	176	66	168	358	251	158	213	508	225	318
GFCF - General Government	4 407	4 540	5 123	4 997	5 231	4 848	5 970	6 643	5 611	8 459
GFCF Total	9 804	10 009	11 424	12 664	13 996	14 452	16 517	18 592	19 642	23 202
Other revisions	6 402	9 347	9 187	11 263	9 580	10 264	13 313	16 239	26 257	25 134
GDP (SNA08)	622 695	663 867	708 889	759 204	804 361	864 955	925 864	1 000 787	1 091 327	1 181 750

COMPONENTS OF REVISIONS TO GVA AT CURRENT PRICES

Table 4 shows the components of expected revisions to GVA. For example in 2007-08, the key components of change will be from these revisions (table 4):

- capitalisation of R&D which will increase the level of GVA by about 1.6%;
- introduction of DWP or systems as capital in the accounts and associated COFC of these assets which will increase the level of GVA by about 0.2%; and,
- introduction of orchard growth which will increase the level of GVA by about 0.1%.

4 REVISIONS TO GVA, key components—current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
GVA (SNA93)	558 399	592 632	628 123	671 804	711 050	766 151	821 859	887 959	962 501	1 039 829
Revisions										
Orchard growth	561	623	592	563	551	509	532	536	681	638
R&D GFCF	6 188	6 324	7 237	8 576	9 393	10 335	11 267	12 841	14 456	16 404
DWP COFC	1 407	1 512	1 795	1 977	1 876	1 605	1 610	1 726	1 784	1 649
other revisions	8 118	11 567	11 596	13 778	12 462	13 239	17 123	20 770	32 096	41 249
GVA (SNA08)	574 673	612 658	649 343	696 698	735 332	791 839	852 391	923 832	1 011 518	1 099 769

COMPONENTS OF REVISIONS TO GVA AT CURRENT PRICES *continued*

A number of other revisions in industry components were implemented including revised estimates for the finance and insurance industry from the use of improved data sources and methodology. These amounted to about $40,000 million in 2006-07 and $52,000 million in 2007-08 but were offset by decreases in a number of other industries;

REVISIONS TO VOLUME MOVEMENTS

At the time of preparation of this paper it was not possible to compile revised GVA growth rates in chain volume terms that reflect the changes in standards and other revisions. However, given the substantial revisions to GVA levels in current prices and changed patterns of growth in current prices, an indicator of the likely change in growth rates in volume terms has been compiled. This indicator is the growth of GVA in previous year's prices.

This proxy measure from revisions to standards will show an increase of about 0.2 percentage points of the growth rate of GVA in 2005-06. Table 5 and figure 3 shows volume movements in other years show minimal movements.

5 IMPACTS ON GVA GROWTH RATES, volume measures

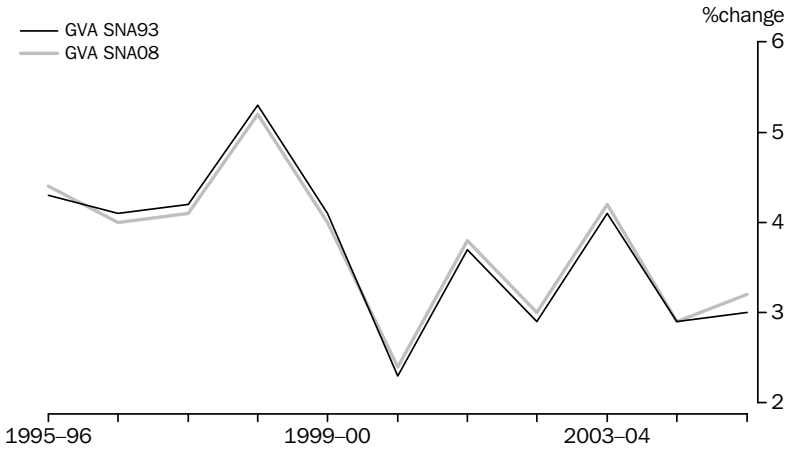
GROSS VALUE ADDED	*1998-99*	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	%	%	%	%	%	%	%	%	%	%
GVA SNA93 (percentage change from previous year)	5.3	4.1	2.3	3.7	2.9	4.1	2.9	3.0	n.y.a	n.y.a
GVA SNA08 (percentage change from previous year)	5.2	4.0	2.4	3.8	3.0	4.2	2.9	3.2	n.y.a	n.y.a
Revision	–0.1	–0.1	0.1	0.1	0.1	0.1	—	0.2	n.y.a	n.y.a

— nil or rounded to zero (including null cells)

Source: n.y.a - not yet available

REVISIONS TO VOLUME MOVEMENTS *continued*

FIGURE 3 - GVA GROWTH RATES, SNA93 and SNA08 basis—volume measures



Revisions to volume movements in GDP will result from the following revisions (table 6):

- removal of general government DWP and R&D will be moved from GFCE to GFCF;
- addition of DWP, R&D and orchard growth to GFCF;
- addition of general government COFC for DWP and R&D to GFCE;
- addition of orchard growth to GFCF; and
- output estimates of finance and insurance (ANZSIC06 Division K), education and training (ANZSIC06 Division P) and health care and social assistance (ANZSIC06 Division Q) will replace existing estimates for 2006-07 and 2007-08.

6 COMPONENTS OF AND REVISIONS TO GDP (EXPENDITURE), volume measures

SNA08 & Revision groupings	*1998-99*	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	% points	% points	% points	% points	% points	% points	% points	% points	% points	% points
SNA93(a)										
HFCE	5.0	4.4	3.6	3.0	3.4	5.5	4.4	2.6	4.0	3.7
GFCE	4.5	3.3	2.1	2.7	3.2	3.9	3.8	2.5	3.0	3.4
GFCF - Private	1.7	10.2	–11.1	9.8	16.3	8.4	5.8	8.8	4.9	10.5
GFCF - PTE	45.1	–22.3	–4.7	14.0	6.5	11.5	12.9	18.7	1.0	6.3
GFCF - General Government	4.9	17.4	1.4	6.3	3.1	5.2	6.1	3.2	13.5	6.4
Exports	2.2	8.6	7.6	–1.0	–0.5	2.2	3.0	2.2	3.8	4.1
Imports	5.0	12.4	–1.0	1.5	13.0	13.0	12.2	7.2	9.2	12.9
GDP	5.2	4.0	1.9	3.8	3.2	4.0	2.8	3.0	3.3	3.6
SNA08(b)										
HFCE	5.0	4.4	3.6	3.1	3.4	5.6	4.4	2.8	4.2	4.0
GFCE	4.3	3.3	1.7	3.1	3.0	4.2	3.2	2.5	3.7	3.2
GFCF - Private	1.6	9.8	–10.5	10.1	16.0	8.5	5.8	8.8	5.3	10.7
GFCF - PTE	45.4	–22.8	–3.7	15.0	5.8	10.6	12.7	19.0	0.8	6.3
GFCF - General Government	6.2	13.8	4.2	3.5	4.1	3.3	9.4	3.0	8.9	8.9
Exports	2.0	9.5	7.5	–0.7	–0.5	1.2	2.9	2.3	4.0	3.9
Imports	4.9	12.1	–1.2	1.4	13.3	12.6	12.3	7.3	9.2	14.1
GDP	5.2	4.0	2.0	3.8	3.2	4.1	2.8	3.1	3.8	3.7
Revision(c)										
HFCE	—	—	—	0.1	—	0.1	—	0.2	0.2	0.3
GFCE	–0.2	—	–0.4	0.4	–0.2	0.3	–0.6	—	0.7	–0.2
GFCF - Private	–0.1	–0.4	0.6	0.3	–0.3	0.1	—	—	0.4	0.2
GFCF - PTE	0.3	–0.5	1.0	1.0	–0.7	–0.9	–0.2	0.3	–0.2	—
GFCF - General Government	1.3	–3.6	2.8	–2.8	1.0	–1.9	3.3	–0.2	–4.6	2.5
Exports	–0.2	0.9	–0.1	0.3	—	–1.0	–0.1	0.1	0.2	–0.2
Imports	–0.1	–0.3	–0.2	–0.1	0.3	–0.4	0.1	0.1	—	1.2
GDP	—	—	0.1	—	—	0.1	—	0.1	0.5	0.1

— nil or rounded to zero (including null cells)
(a) Growth rates previously published
(b) Expected revised growth rates
(c) Revisions to published growth rates

IMPACT ON GDP PER CAPITA

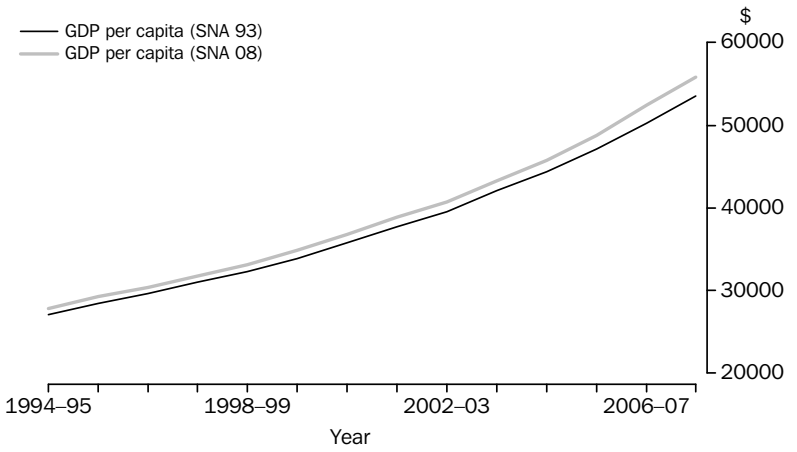
The changes from international standards and other revisions will increase the level of GDP per capita by about $2,300 (4.4%)in 2007-08 (table 7). There will be minimal changes to the growth of GDP per capita over time.

7 IMPACT ON GDP PER CAPITA, current prices

GDP per capita	*1998-99*	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$	$	$	$	$	$	$	$	$	$
SNA 93	32 308	33 887	35 769	37 677	39 574	42 097	44 380	47 152	50 220	53 523
SNA 08	33 102	34 875	36 788	38 880	40 723	43 278	45 775	48 777	52 413	55 867
	%	%	%	%	%	%	%	%	%	%
Growth 93	4.1	4.9	5.6	5.3	5.0	6.4	5.4	6.2	6.5	6.6
Growth 08	4.1	5.4	5.5	5.7	4.7	6.3	5.8	6.6	7.5	6.6

IMPACT ON GDP PER CAPITA *continued*

FIGURE 4 - GDP PER CAPITA, current prices



IMPACTS ON INDUSTRY ESTIMATES

The next two tables show that there will be changes to the structure of ANZSIC GVA estimates from the changes in ANZSIC06. These numbers are indicative of the changes, contain revisions due to SNA08 and SESCA08 and are not presented as a concordance between the two industry classifications. For more information on the changes from ANZSIC06 see chapter 2.

8 ANZSIC93 INDUSTRY GROSS VALUE ADDED, current prices ($m)—2005-06

	ANZSIC93 Industry Value Added	*2005-06*
(A)	Agriculture, Forestry, Fishing	27 457
(B)	Mining	64 928
(C)	Manufacturing	99 172
(D)	Electricity, Gas and Water Supply	22 082
(E)	Construction	62 474
(F)	Wholesale Trade	45 073
(G)	Retail Trade	54 728
(H)	Accomodation, Cafes and Restaurants	20 092
(I)	Transport and Storage	43 632
(J)	Cokmmunication Services	23 453
(K)	Finance and Insurance	69 182
(L)	Property and Business Services	112 705
(M)	Government Administration and Defence	37 822
(N)	Education	41 138
(O)	Health and Community Services	56 868
(P)	Cultural and Recreation Services	14 091
(Q)	Personal and Other Services	17 713
( )	Ownership of Dwellings	75 349

IMPACTS ON INDUSTRY ESTIMATES *continued*

9 ANZSIC06 INDUSTRY GROSS VALUE ADDED, current prices ($m)—2005-06

	ANZSIC06 Industry Value Added	*2005-06*
(A)	Agriculture, Forestry and Fishing	27 241
(B)	Mining	66 384
(C)	Manufacturing	99 822
(D)	Electricity, Gas, Water and Waste Services	22 769
(E)	Construction	66 836
(F)	Wholesale Trade	44 945
(G)	Retail Trade	43 522
(H)	Accomodation and Food Services	23 781
(I)	Transport, Postal and Warehousing	48 073
(J)	Information, Media and Telecommunications	32 328
(K)	Financial and Insurance Services	91 857
(L)	Rental, Hiring and Real Estate Services	28 830
(M)	Professional, Scientific and Technical Services	55 708
(N)	Administrative and Support Services	25 041
(O)	Public Administration and Safety	51 938
(P)	Education and Training	42 896
(Q)	Health Care and Social Services	55 572
(R)	Arts and Recreation Services	8 641
(S)	Other Services	19 095
( )	Ownership of Dwellings	66 531

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the quarterly balance of payments to be published on 8 December 2009.

BALANCE OF PAYMENTS

From the August 2009 issue of International Trade in Goods and Services (5368.0) and the September quarter 2009 issue of Balance of Payments and International Investment Position (5302.0), data will be compiled on the basis of the Balance of Payments and International Investment Position Manual sixth edition (BPM6). In addition, the results of a number of data quality investigations will be implemented. These changes will be backcast through the historical series to create a time series which is as continuous as possible.

New series to be introduced with BPM6 include pension funds service charge, reinvested earnings on investment fund shares and other volume changes due to migrants' change in residency. A range of series will be revised including transport freight services, all insurance service charges, financial services, financial intermediation services indirectly measured (FISIM) and personal transfers.

THE BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION

Table 1 summarises the impact on key aggregates for 2007-08 of implementing BPM6. The reasons for the most significant changes are described in the following sections.

THE BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION
continued

1 SUMMARY OF CHANGES TO BALANCE OF PAYMENTS AND INTERNATIONAL INVESTMENT POSITION, current prices(a)

BPM6 Label	*BPM5 basis ($m)*	*BPM6 basis ($m)*	*Difference*	*% change*
CURRENT ACCOUNT	–72 504	–72 987	–483	–1
Goods and Services	–23 561	–24 579	–1 018	–4
Net Goods	–22 346	–21 894	452	—
Goods credits	182 818	182 952	134	—
Goods debits	–205 164	–204 846	318	—
Net Services	–1 215	–2 685	–1 470	—
Services credits	51 035	50 645	–390	–1
Services debits	–52 250	–53 330	–1 080	–2
Net Primary income	–48 601	–48 254	347	—
Primary income credits	42 022	43 035	1 013	2
Primary income debits	–90 623	–91 289	–666	–1
Net Secondary income	–342	–154	188	—
Secondary income credits	5 264	6 058	794	15
Secondary income debits	–5 606	–6 212	–606	–11
CAPITAL ACCOUNT	2 167	–232	–2 399	n.a.
FINANCIAL ACCOUNT	68 148	72 206	4 058	6
Financial account assets	92 260	85 003	–7 257	–8
Financial account liabilities	160 408	157 209	–3 199	–2
INTERNATIONAL INVESTMENT POSITION				
Total foreign assets	1 048 612	1 069 706	21 094	2
Total foreign liabilities	1 724 482	1 729 944	5 462	—

— nil or rounded to zero (including null cells)
(a) Balance of Payments signage presented in this table according to BPM6 presentation

THE CURRENT ACCOUNT

The Current Account presentation under BPM6 will be similar to the presentation currently published, except that income and current transfers will be replaced by primary income and secondary income, respectively.

The introduction of BPM6 will increase the current account deficit, in current prices, for 2007-08 by about $0.5 billion net with:

- the deficit on goods decreasing about $0.5 billion;
- the deficit on services increasing about $1.5 billion;
- the deficit on primary income decreasing about $0.4 million; and
- the deficit on secondary income decreasing about $0.2 billion

The gross impacts will be larger than the above net impacts although some of the changes, such as some components moving between goods and services, will have a minimal net impact.

The impacts on the current account balances are summarised below for 1994-95 to 2007-08 in table 2 and figure 1.

Table 2 - Changes to Current Account Deficit, current prices

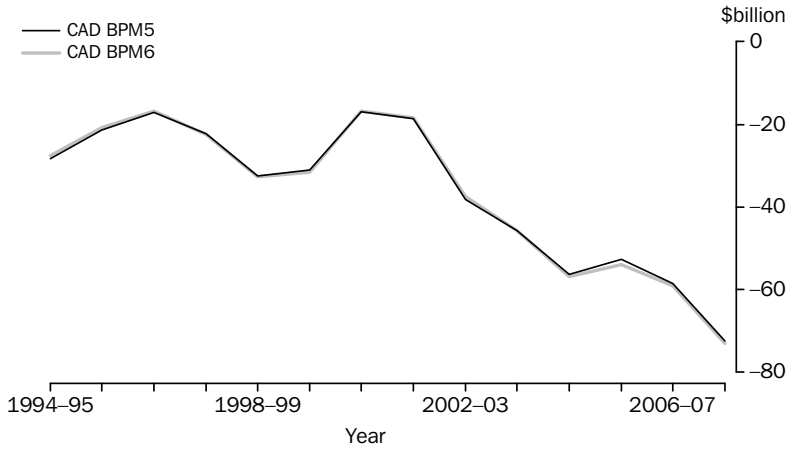
2 CHANGES TO CURRENT ACCOUNT DEFICIT, current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
CAD (BPM5)	–32 603	–30 985	–16 867	–18 553	–38 186	–45 590	–56 325	–52 627	–58 529	–72 504
Net change to Goods	96	252	188	379	351	157	129	–185	462	452
Net change to Services	–1 039	–882	–514	–795	–725	–700	–794	–649	–936	–1 470
Net changes to Primary income	–332	–96	43	102	520	139	–84	–119	294	347
Net changes to Secondary income	1 198	141	460	489	603	352	259	–404	–302	188
CAD (BPM6)	–32 680	–31 570	–16 690	–18 378	–37 437	–45 642	–56 815	–53 984	–59 011	–72 987

THE CURRENT ACCOUNT

continued

FIGURE 1 - CURRENT ACCOUNT DEFICIT, BPM5 and BPM6 basis—current prices



THE GOODS ACCOUNT

Revisions to goods credits (exports) as a result of BPM6 and the data quality investigations mainly impact the non–rural goods category. The overall impact is not significant, although the size of the impact varies from year to year. Between 1994–95 and 2007–08 the size of the revisions ranges between –$390 million and +$163 million.

The revisions will result from:

- goods subject to merchanting will be recorded under goods credits (merchanting had been recorded as a service) and incorporating a different definition of net merchanting.
- repairs on goods no longer will be recorded as goods (included in services and named maintenance and repair services n.i.e.).
- goods for processing no longer will be recorded as goods (the processing component is included in services and named manufacturing services on physical inputs owned by others).
- goods procured in ports by carriers will be reviewed and reclassified from the other goods category to the non–rural goods category under general merchandise.
- relatively small revisions as a result of data quality investigations.

3 NET CHANGES TO GOODS CREDITS (EXPORTS), current prices

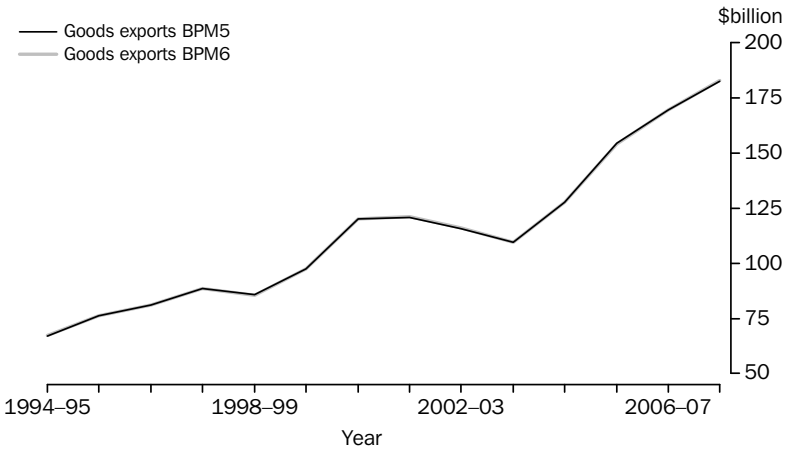
	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Goods exports (BPM5)	85 783	97 625	120 231	120 940	115 803	109 473	127 867	154 425	169 514	182 818
Net change to Rural goods	—	30	—	30	22	–20	—	—	15	14
Net change to Non-rural goods	465	711	991	824	855	785	1 180	1 375	1 667	1 837
Net change to Other goods	–612	–681	–1 021	–727	–785	–820	–1 235	–1 765	–1 672	–1 717
Goods exports (BPM6)	85 636	97 685	120 201	121 067	115 895	109 418	127 812	154 035	169 524	182 952

— nil or rounded to zero (including null cells)

THE GOODS ACCOUNT

continued

FIGURE 2 - NET GOODS CREDITS (EXPORTS), BPM5 and BPM6 basis—current prices



All goods debits (imports) series will be revised with the introduction of BPM6 and the data quality investigations. The overall impact will not be significant, although the size of the impact will vary from year to year. Between 1994–95 and 2007–08 the size of the revisions ranges between –$55 million and –$452 million.

The revisions will result from:

- repairs on goods no longer will be recorded as goods (included in services and named maintenance and repair services n.i.e.).
- goods for processing no longer will be recorded as goods (the processing component is included in services and named manufacturing services on physical inputs owned by others).
- goods procured in ports by carriers will be reviewed and reclassified from the other goods category to the intermediate and other merchandise goods category under general merchandise.

THE GOODS ACCOUNT
continued

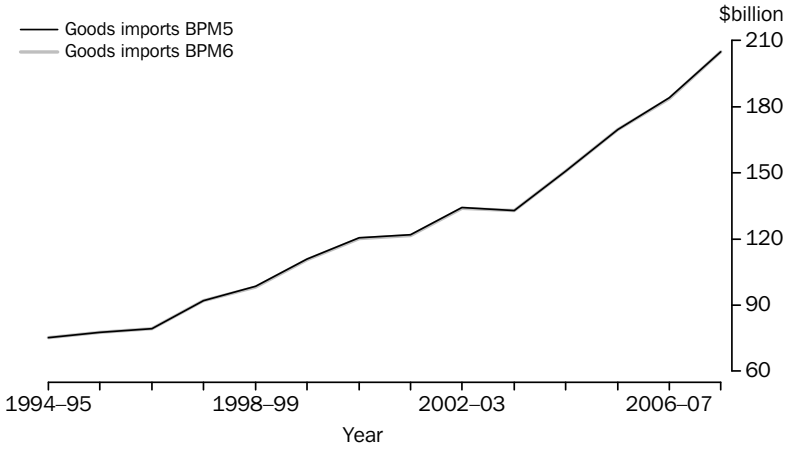
- goods will be valued on a Customs Value basis from 1989 onwards rather than on a Free on Board basis. Previously the Customs Value basis had only been used from 2006 onwards.

4 NET CHANGES TO GOODS DEBITS (IMPORTS), current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Goods imports (BPM5)	98 430	110 810	120 524	121 943	134 273	133 018	150 873	169 716	184 024	205 164
Net change to Consumption goods	207	42	49	52	59	48	64	58	—	—
Net change to Capital goods	–111	–154	–68	–7	–102	–39	38	80	9	–52
Net change to Intermediate and other merchandise goods	103	371	1 128	871	1 035	904	1 194	1 523	1 651	1 890
Net change to Other goods	–442	–451	–1 327	–1 168	–1 251	–1 125	–1 480	–1 866	–2 112	–2 156
Goods imports (BPM6)	98 187	110 618	120 306	121 691	134 014	132 806	150 689	169 511	183 572	204 846

— nil or rounded to zero (including null cells)

FIGURE 3 - NET GOODS DEBITS (IMPORTS), BPM5 and BPM6 basis—current prices



THE SERVICES ACCOUNT

Introducing revised standards and results of the data quality investigations will have a greater impact on services than on goods in both absolute and percentage terms. The size of the impact varies from year to year. BPM6 introduces a new series, pension funds service charge, and a number of series will be revised including transport freight services, insurance service charge and financial services including financial intermediation services indirectly measured (FISIM).

The revisions will result from:

- the exclusion of merchanting services (credits only).
- the inclusion of maintenance and repair services n.i.e..
- the inclusion of manufacturing services on physical inputs owned by others.

THE SERVICES ACCOUNT
continued

- introduction of new or revised models for estimating:
  - pension funds service charge,
  - insurance service charge,
  - transport freight services (debits),
  - financial services including FISIM.

In addition, more detailed services classifications will be introduced to align with the Manual on Statistics of International Trade in Services and the Extended Balance of Payments Services classification.

Between 1994–95 and 2007–08, the impact on services credits will range between –$435 million and +$162 million (table 5). The major changes will be due to the removal of merchanting services and the introduction of new models for: insurance service charge; pension funds service charge; and financial services including FISIM.

Between 1994–95 and 2007–08, the impact on services debits will range between +$265 million and +$1,080 million (table 6). The major changes will be due to the introduction of: new models for transport freight services; insurance service charge; pension funds service charge; and financial services including FISIM; and the inclusion of maintenance and repair services n.i.e..

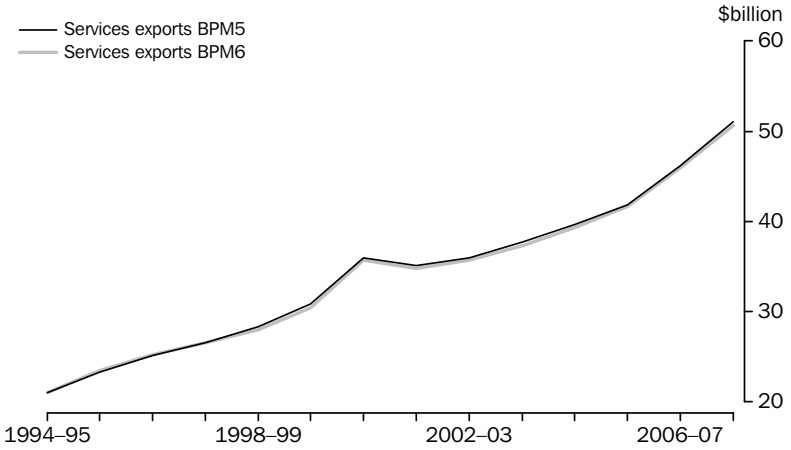
In most years services debits will increase more than services credits.

5 NET CHANGES TO SERVICES CREDITS (EXPORTS), current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Services exports (BPM5)	28 312	30 810	35 932	35 162	35 987	37 746	39 695	41 849	46 181	51 035
Net change to Manufacturing services	40	20	20	9	22	20	63	107	121	77
Net change to Maintenance and repairs	63	54	60	54	60	75	67	74	90	103
Net change to Transport	–92	15	22	14	–10	–65	–61	–22	–71	–118
Net change to Insurance and pension services	95	104	–39	–203	–215	–266	–293	–374	–391	–376
Net change to Financial services	–194	–253	–81	–6	42	–47	–47	160	127	37
Net change to Other changes	–186	–296	–206	–242	–165	–152	–135	–153	–101	–113
Services exports (BPM6)	28 038	30 454	35 708	34 788	35 721	37 311	39 289	41 641	45 956	50 645

THE SERVICES ACCOUNT
continued

FIGURE 4 - SERVICES CREDITS (EXPORTS), BPM5 and BPM6 basis—current prices

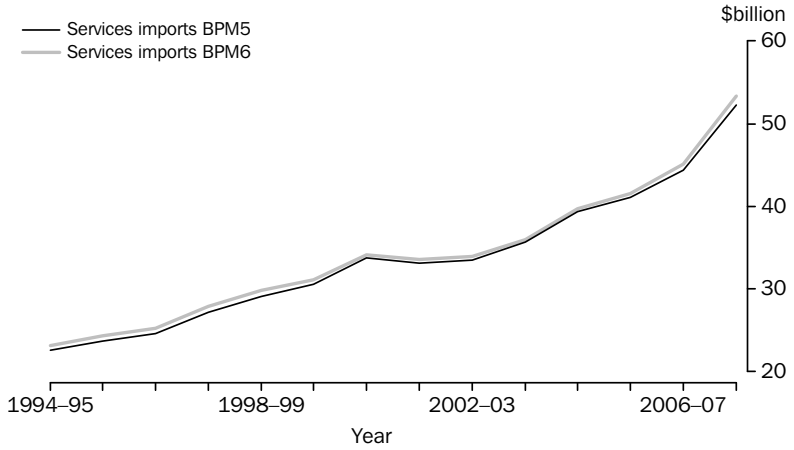


6 NET CHANGES TO SERVICES DEBITS (IMPORTS), current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Services imports (BPM5)	29 089	30 579	33 801	33 135	33 463	35 696	39 315	41 078	44 428	52 250
Net change to Manufacturing services	24	29	22	11	14	15	9	5	3	7
Net change to Maintenance and repairs	112	95	168	242	251	219	171	115	131	97
Net change to Transport	656	605	239	284	328	360	306	330	372	417
Net change to Insurance and pension services	134	53	–9	–82	–183	–375	–287	–197	–121	71
Net change to Financial Services	–78	–144	–41	101	173	223	322	362	443	593
Net change to Other changes	–83	–112	–89	–135	–124	–177	–133	–174	–117	–105
Services imports (BPM6)	29 854	31 105	34 091	33 556	33 922	35 961	39 703	41 519	45 139	53 330

THE SERVICES ACCOUNT
continued

FIGURE 5 - SERVICES DEBITS (IMPORTS), BPM5 and BPM6 basis—current prices



INCOME ACCOUNT

Income and current transfers will be replaced by primary income and secondary income, respectively.

PRIMARY INCOME

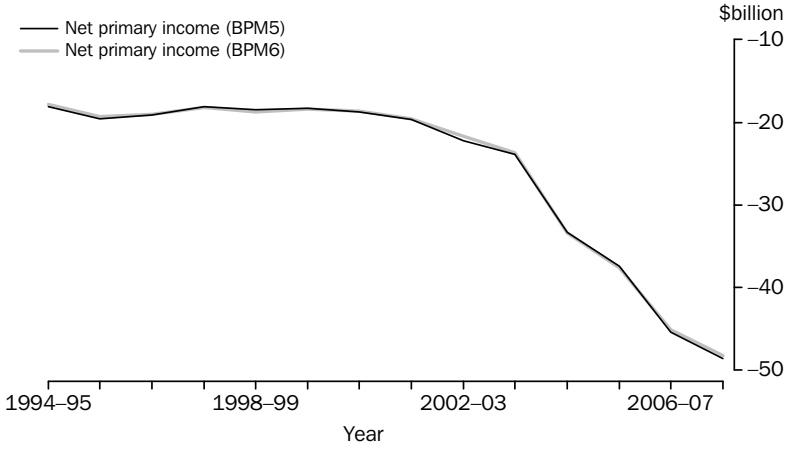
The changes to primary income will derive primarily from the inclusion of reinvested earnings on investment funds, detailed in chapter 9, together with new or revised models for insurance, pension funds and FISIM as detailed in chapters 10 to 12. Table 7 shows that net primary income will increase by about $350 million (-0.7%) in 2007-08.

7 PRIMARY INCOME, current prices

Primary income	*1998-99* $m	*1999-2000* $m	*2000-01* $m	*2001-02* $m	*2002-03* $m	*2003-04* $m	*2004-05* $m	*2005-06* $m	*2006-07* $m	*2007-08* $m
Net primary income (BPM5)	–18 430	–18 249	–18 737	–19 667	–22 195	–23 840	–33 330	–37 458	–45 433	–48 601
Net changes to Reinvested Earnings	–436	–198	–141	15	411	–10	–150	–232	146	205
Net changes to FISIM	19	23	113	42	21	53	–31	–85	–95	–76
Net changes to pension income	78	65	55	28	69	80	96	175	204	177
Net changes to insurance income	–11	–8	–9	–8	–12	–20	–37	–25	–22	–4
Net changes to CoE	18	22	25	25	31	36	38	48	61	45
Net primary income (BPM6)	–18 762	–18 345	–18 694	–19 565	–21 675	–23 701	–33 414	–37 577	–45 139	–48 254

PRIMARY INCOME *continued*

FIGURE 6 - NET CHANGES TO PRIMARY INCOME, current prices



SECONDARY INCOME

The term secondary income will be introduced with BPM6 with further dissection by type of transfers to be recorded as supplementary items. Changes to secondary income will be the result of:

- the workers' remittances item will be replaced with personal transfers, which is broader in scope, and workers' remittances becoming a supplementary item. Workers' remittances debits will be the only component of personal transfers currently measured and a new methodology will be introduced. An Information Paper : Estimation of Workers' Remittances based on Balance of Payments Manual & International Investment Position, Sixth Edition (cat.no. 5302.0.55.003) describing the new methodology was released on 14 August 2009;
- the other transfers item will be named other current transfers. This item has two components:
  - non-life insurance transfers component which will be named non-life insurance premiums and claims and include the results of a revised methodology (see chapter 11)
  - other revisions which will be introduced to the other component of other transfers including changes to social contributions and social benefits from the introduction of pensions into the international accounts (see chapter 10).

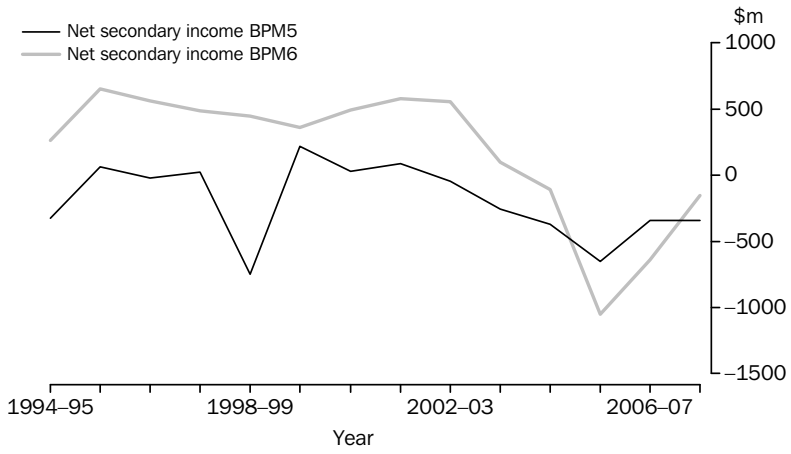
Net secondary income under BPM5 standards was -$342 million, under BPM6 this will increase to -$154 million (table 8).

8 CHANGES TO SECONDARY INCOME, current prices

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Net secondary income (BPM5)	–749	218	32	90	–45	–255	–369	–649	–339	–342
Net change to Net secondary income	1 198	141	460	489	603	352	259	–404	–302	188
Net secondary income (BPM6)	449	359	492	579	558	97	–110	–1 053	–641	–154
Secondary income credits(BPM5)	4 498	4 625	4 453	4 381	4 297	4 191	4 268	4 602	5 155	5 264
Net change to Secondary income credits	1 598	1 437	1 240	795	910	701	685	619	671	794
Secondary income credits(BPM6)	6 096	6 062	5 693	5 176	5 207	4 892	4 953	5 221	5 826	6 058
Secondary income debits (BPM5)	5 247	4 407	4 421	4 291	4 342	4 446	4 637	5 251	5 494	5 606
Net change to Secondary income debits	400	1 296	780	306	307	349	426	1 023	973	606
Secondary income debits (BPM6)	5 647	5 703	5 201	4 597	4 649	4 795	5 063	6 274	6 467	6 212

SECONDARY INCOME
continued

FIGURE 7 - NET SECONDARY INCOME, BPM5 and BPM6 basis—current prices



Financial Account

Table 9 summarises changes to the financial account as a result of:

- a new model for insurance technical reserves. Changes in insurance technical reserves due to changes in the prepayments of insurance premiums and changes in claims incurred but not yet paid will be captured as transactions in the financial account.;
- pension fund assets attributable to non-residents are explicitly modelled and changes due to contributions and the payment of benefits will be included in the financial account;

Financial Account continued

- reinvested earnings on investment funds will be explicitly modelled and included in transactions in the Financial account as an offset to the corresponding income in the primary income account; and
- a new model for the treatment of changes due to migration. When migrants become resident of a new country they are assumed to leave assets in their former country of residence. This establishes an international investment position. Assets that are progressively transferred to the new country of residence will be captured as transactions in the financial account. This will replace the migrants transfers item in the capital account.

Further details of these changes are provided in chapters 10,11 and 13. In addition, the financial account will be revised due to BPM6 presentation being on a gross basis (directional principle) and re-balancing of the accounts.

9 TRANSACTIONS IN THE FINANCIAL ACCOUNT

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
Transactions	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Total Foreign Assets (BPM5)	19 139	24 478	50 943	50 038	29 374	43 936	–39 664	100 625	136 404	92 260
Reinvested earnings	98	299	372	610	840	673	580	580	1 005	980
Insurance Assets	–17	8	65	48	82	83	–96	44	–79	–137
Pensions Assets	640	628	351	300	451	602	725	1 263	1 131	528
Changes to assets due to migration	–1 943	–2 320	–2 859	–2 990	–3 184	–4 293	–5 297	–6 341	–7 852	–8 628
Total Foreign Assets (BPM6)	17 917	23 093	48 872	48 006	27 563	41 001	–43 752	96 171	130 609	85 003
Total Foreign Liabilities (BPM5)	49 252	55 535	67 223	69 188	66 845	88 624	16 131	152 590	193 470	160 408
Reinvested earnings	534	497	513	595	429	683	730	812	860	775
Insurance Liabilities	50	–54	75	197	60	–77	–155	–490	–350	1
Pensions Liabilities	238	244	–29	–119	9	149	199	623	475	–296
Changes to liabilities due to migration	–772	–948	–1 172	–1 312	–1 461	–2 196	–2 506	–2 687	–3 250	–3 679
Total Foreign Liabilities (BPM6)	49 302	55 274	66 610	68 549	65 882	87 183	14 399	150 848	191 205	157 209
Financial Account (BPM5)	30 113	31 057	16 280	19 150	37 471	44 688	55 795	51 965	57 066	68 148
Financial Account (BPM6)	31 385	32 181	17 738	20 543	38 319	46 182	58 151	54 677	60 596	72 206

Both pension assets and changes in assets due to migration are highly correlated to migration estimates. Australia usually has higher numbers of permanent immigrants than residents departing permanently. This is particularly the case in 1997-98 and between 2004-05 and 2007-08 reflected in the increase in transactions for pension assets held and changes in assets due to migration over this period.

Financial Account continued

FIGURE 8 - FINANCIAL ACCOUNT, BPM5 and BPM6 basis

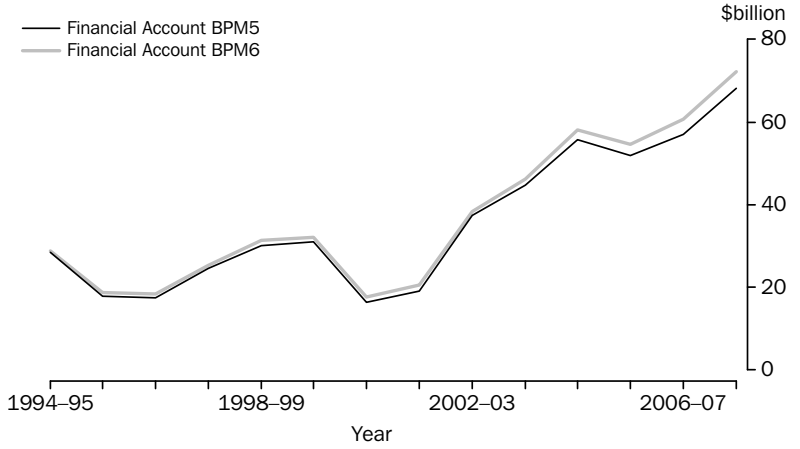


FIGURE 9 - TRANSACTIONS IN THE FINANCIAL ACCOUNT, Total Foreign Assets—BPM5 and BPM6 basis

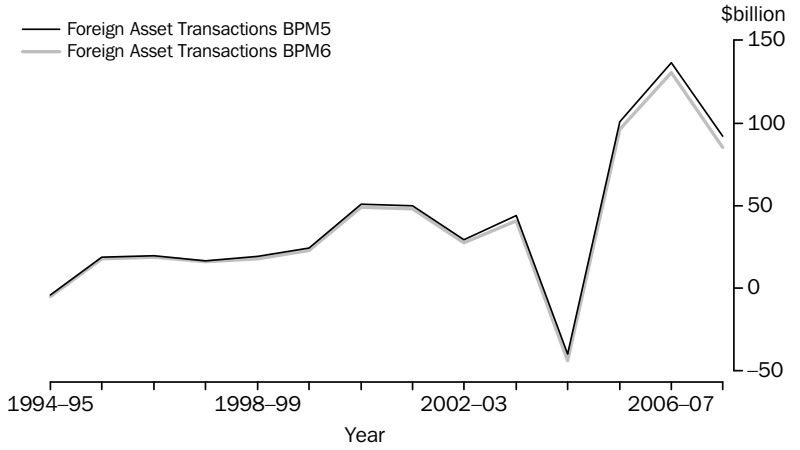
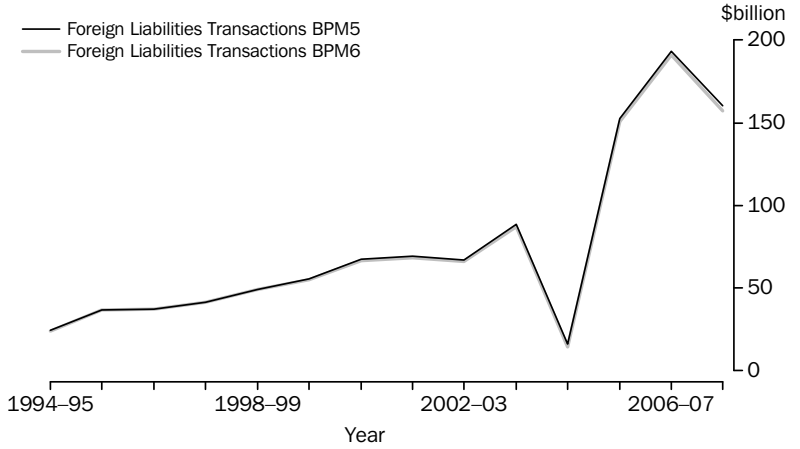


FIGURE 10 - TRANSACTIONS IN THE FINANCIAL ACCOUNT, Total Foreign Liabilities—BPM5 and BPM6 basis



INTERNATIONAL INVESTMENT POSITION

The changes as a result of BPM6 will decrease Australia's net international investment liability by about $13.8 billion (2%) at 30 June 2008. The changes were driven by the following:

- insurance technical reserves will now be explicitly modelled and included in the international investment position;
- pension fund assets attributable to non-residents will be explicitly modelled and included in the international investment position; and
- a new model for the treatment of changes due to migration. When migrants become resident of a new country they are assumed to leave assets in their former country of residence which will establishe an international investment position.

Further details are provided in chapters 10,11 and 13.

10 INTERNATIONAL INVESTMENT POSITION

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
Assets	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Total Foreign Assets (BPM5)	325 163	426 176	488 144	518 514	529 797	638 398	643 626	830 906	1 016 566	1 048 612
Insurance Assets	587	566	595	665	714	900	1 049	1 135	1 240	1 403
Pension Assets	3 482	3 548	3 701	4 089	5 105	6 829	9 146	12 664	14 491	12 276
Changes to assets due to migration	828	995	1 243	1 165	1 346	1 964	2 222	2 747	3 403	3 483
Total Foreign Assets (BPM6)	330 060	431 285	493 683	524 433	536 962	648 091	656 043	847 452	1 035 700	1 065 774
Total Foreign Liabilities (BPM5)	646 818	754 946	853 701	883 695	945 701	1 091 724	1 150 064	1 372 779	1 644 695	1 724 482
Insurance Liabilities	1 534	1 480	1 555	1 752	1 812	1 735	1 580	1 090	740	741
Pension Liabilities	357	440	470	489	514	611	696	852	1 119	1 076
Changes to liabilities due to migration	329	413	506	537	616	1 053	969	1 145	1 403	1 517
Total Foreign Liabilities (BPM6)	649 038	757 279	856 232	886 473	948 643	1 095 123	1 153 309	1 375 866	1 647 957	1 727 816
Net International Investment Position (BPM5)	321 655	328 770	365 557	365 181	415 904	453 326	506 438	541 873	628 129	675 870
Net International Investment Position (BPM6)	318 978	325 994	362 549	362 040	411 681	447 032	497 266	528 414	612 257	662 041

INTERNATIONAL INVESTMENT POSITION
continued

As is the case with the financial account, pension assets and changes in assets due to migration are highly correlated to migration estimates. Australia usually has higher numbers of permanent immigrants than residents departing permanently. This is particularly the case between 2004-05 and 2007-08 reflecting the increase in pension assets held and changes in assets due to migration over this period.

FIGURE 11 - NET INTERNATIONAL INVESTMENT POSITION, BPM5 and BPM6 basis

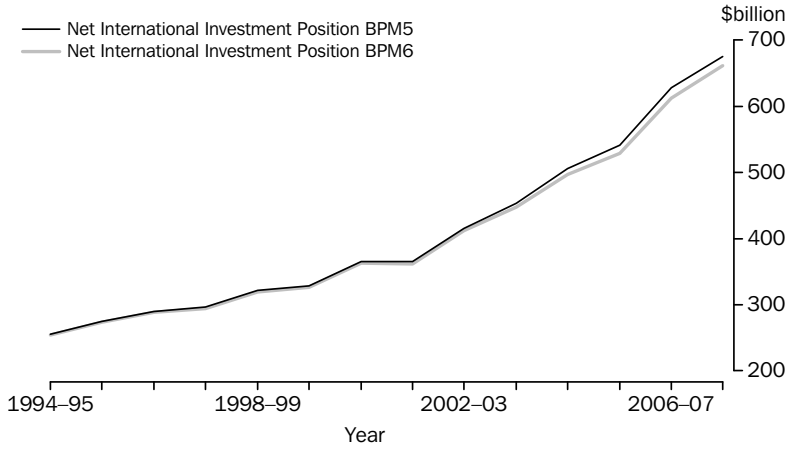


FIGURE 12 - TOTAL FOREIGN ASSETS, BPM5 and BPM6 basis

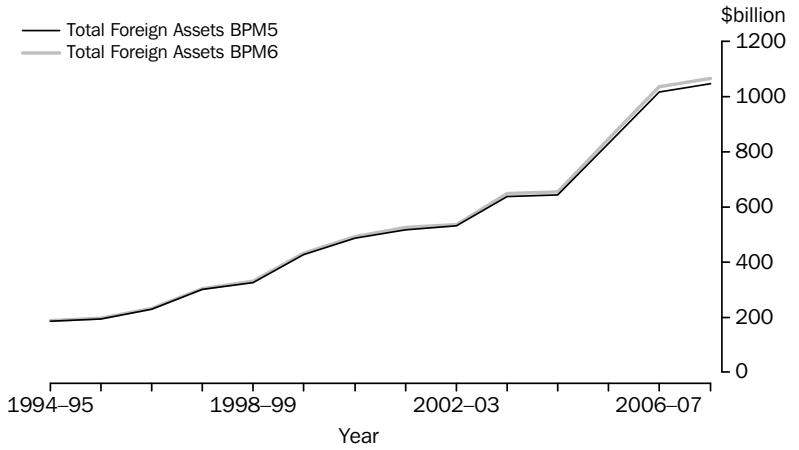
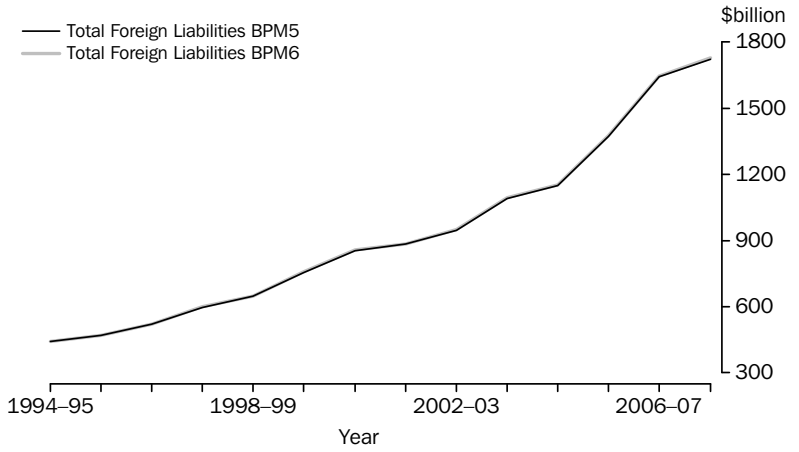


FIGURE 13 - TOTAL FOREIGN LIABILITIES, BPM5 and BPM6 basis



CHAPTER 5 ONGOING RESEARCH AND DIVERGENCE ISSUES

INTRODUCTION

The ABS will implement as far as possible the statistical standards provided by the System of National Accounts 2008 (SNA08) and the Balance of Payments and International Investment Position Manual sixth edition (BPM6), but there are a small number of areas where this will not be possible, due to unavailability of data or lack of relevance to the Australian economy. In addition, the ABS has decided to diverge from the standards in a small number of instances because of disagreement with the standards.

ONGOING RESEARCH

The ABS is continuing to investigate the implementation of SNA08 and BPM6 in the areas listed below.

Purchased goodwill and marketing assets

As mentioned in chapter 2, the treatment of goodwill assets in SNA08 was reviewed as part of the revision process but the System of National Accounts 1993 (SNA93) treatment was mostly retained by SNA08. For reasons of reliability of measurement, the ABS will continue to only measure goodwill where it is evidenced by the sale of a business (hence 'purchased' goodwill) and it is still to be regarded as a 'non-produced asset'. The ABS will investigate the possibility of estimating the value of goodwill and other non-produced assets as is consistent with SNA08.

Employee stock options

Under BPM6, employee stock options (ESO is identified separately in the international accounts as an optional item under the derivatives position. In Australia, the ABS has found that collecting ESO data for the international accounts is very difficult. A further complication is that in many cases, the companies granting stock options are subsidiaries that grant stock options of parent companies abroad. ESO data is currently collected for Australian System of National Accounts (ASNA) purposes, however ESO information in relation to the international accounts will not be collected at this stage. The ABS will investigate the possibility of collecting ESO data for the international accounts.

DIVERGENCES FROM INTERNATIONAL STANDARDS

The small number of instances where the ABS will diverge from SNA08 and BPM6 are listed below. These instances will not have a significant impact on Gross Domestic Product or the Current Account.

Repurchase agreements

A repurchase agreement (repo) involves the sale of securities or other assets with a commitment to repurchase equivalent assets at a specified date. The buyer to on-sell these securities. SNA93 and Balance of Payments fifth edition (BPM5) treat repos as collateralised loans, or as other deposits if repos involve liabilities classified under national measures of broad money. After considering whether the SNA93 treatment should be revised to treat repos as security trades rather than loans, the international community decided that SNA08 would continue the SNA93 treatment (collateralised loan) and the issue would be placed on the international long-term research agenda.

The collateralised loan treatment is not supported by the ABS. The ABS maintains that the best statistical representation of a repo is that of a sale of securities, with the obligation to sell/buy-back similar securities recorded as a forward contract, that is a form of financial derivative. This treatment has the advantage of unduplicated recording of securities assets whereas the collateralised loan approach (SNA08) requires recording of negative security assets to maintain equality between total securities' asset holdings and total securities' liabilities on issue. The ABS treatment will impact on compositional

Repurchase agreements continued

aspects (e.g. securities versus loans, classification of asset holders) but will have no impact on analytical aggregates (net assets, net lending/borrowing).

Recording of interest on debt securities

SNA93 and BPM5 did not deal explicitly with the situation of changing interest rates and the measurement of income flows on tradeable securities. There are two schools of thought on this topic. The debtor approach records the interest accruing at the contractual rate agreed at the time of issue of the security. The creditor approach records the interest accruing at the current market interest rate. Proponents of the debtor approach argue that it records the legal liability of the debtor to the creditor. Proponents of the creditor approach argue that it is consistent with the market valuation principle. SNA08 and BPM6 recommend the debtor approach be applied for recording interest accruing on debt securities. This approach leads to complications as interest rates change after the date of issue of variable interest rate instruments.

The ABS applies the creditor approach as the best reflection of the market reality in terms of valuing the underlying instrument and the interest that accrues over the life of the instrument. The ABS will maintain consistency throughout the accounts by applying the creditor approach for debt securities.

Reclassifications for exchanges in international positions

BPM6 states that domestic transactions resulting in a change in external asset positions should be recorded as a 'reclassification' in the international investment position. For example, when a resident exchanges a financial asset offshore. This differs from the ABS interpretation of SNA08. Similarly, transactions between two non-residents in a position issued by a resident would also be recorded as a reclassification.

The ABS considers that by issuing a tradeable instrument, the issuer is implicitly a counterparty to any secondary trading in the instrument and that a transaction should be recorded between the vendor and the issuer extinguishing the position, and a second transaction between the purchaser and the issuer creating the position. The ABS will therefore not treat the exchange as a reclassification. There will be no impacts on key aggregates arising from the different treatment.

Holding companies

Holding companies (a unit which holds the assets of subsidiary corporations but does not undertake any management activities) would receive the proposed sectoral classification of captive financial institutions and money lenders under both SNA08 and BPM6.

This recommendation would be a departure from the current ABS practice for holding companies where, in financial accounts and international investment, they receive a sector classification that reflects the major economic activities of the controlled entities. Following the recommendation would result in the creation of additional enterprises in situations where currently there are no financial intermediary enterprises in the group. Given this, the ABS will maintain its current practice regarding the treatment of holding companies.

Definition of basic prices

SNA08 reaffirms the SNA93 treatment of basic prices. Analysts who use input-output tables however, have expressed a strong preference for the SNA68 definition of basic prices. SNA93 altered the definition of basic prices with regard to the treatment of transport. Under SNA93, transport which is not separately invoiced is included in the basic price, while that which is separately invoiced is not included in the basic price of the product being transported. This was a change from the SNA68 definition of basic price which excluded the transport component whether separately invoiced or not.

The ABS considers that the SNA68 definition provides more useful statistics for detailed analysis of the economy and intends to apply this definition. This has been implemented in the input-output tables and is being considered for implementation in supply use benchmarks and producer price indexes. This will result only in changes to estimates of output and intermediate consumption by industry for series at basic prices, with no impact on gross value added or GDP or series at purchasers' prices.

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the annual Australian System of National Accounts to be published on 8 December 2009 and in the quarterly Australian National Accounts to be published on 16 December 2009.

INTRODUCTION

A major change in the System of National Accounts 2008 (SNA08) is the recognition of expenditure on Research and Development (R&D) as capital formation. The ABS will implement this change in the Australian System of National Accounts (ASNA). This chapter explains the conceptual and practical issues involved and the effects the new treatment will have on GDP, capital formation and other national accounts aggregates.

The System of National Accounts 1993 (SNA93) acknowledged that expenditure on R&D is in the nature of capital expenditure. However it recommended that it be treated as intermediate consumption because "...expenditures on R&D do not lead to the creation of assets that can readily be identified, quantified and valued for balance sheet purposes" (SNA93, para 1.51). Since that time work has been done, in the ABS and elsewhere, to measure R&D assets. The results of ABS work indicate that it is feasible to use data on R&D expenditure in conjunction with information on the life of patented R&D discoveries to produce meaningful estimates of the stock of R&D assets. An ABS paper *Capitalising Research and Development in the National Accounts* (ABS, 2004), included experimental estimates and concluded that "there are no insurmountable methodological problems to the capitalisation of R&D in Australia". However, there are conceptual and practical issues as to how production, trade in R&D services, capital formation and the ownership of the resulting assets are defined and measured. The first section of this chapter examines those issues and the second section presents estimates of the stock of R&D assets, and examines the effects of the changed treatment of R&D on national accounts aggregates.

SNA08 recommends that the value of R&D should be determined in terms of the future economic benefits it is expected to provide. The definition includes the provision of public services in the case of R&D assets acquired by government. In principle, R&D expenditure that does not provide an economic benefit to its owner does not constitute a fixed asset and is treated as intermediate consumption or compensation of employees.

CONCEPTUAL ISSUES

The nature of the R&D asset

ABS R&D surveys collect data on business expenditure on research and development (BERD), higher education expenditure on research and development (HERD), government expenditure on research and development (GERD), and private non-profit expenditure on research and development (PNPERD) in respect of four types of R&D activity: pure basic research, strategic basic research, applied research and experimental development. These four surveys will be referred to collectively as the R&D survey for the remainder of this paper. Pure basic research is defined as experimental and theoretical work undertaken to acquire knowledge without looking for long term benefits other than the advancement of knowledge. Strategic basic research is research undertaken into broad areas in the expectation of making useful discoveries, applied research is work undertaken to acquire new knowledge with a specific application in

The nature of the R&D asset continued

view, while experimental development is work undertaken, using existing knowledge, for the purpose of creating new or improved products or processes.

SNA08 defines assets as follows: "Assets as defined in the system are entities that must be owned by some unit, or units, and from which economic benefits are derived by their owners by holding or using them over a period of time" (SNA08, para 1.46). R&D activity resulting in patented entities will meet those criteria. However, patents are not taken out in respect of all R&D and, in cases where they are not, it is less clear whether the activity will result in the production of assets. The act of protecting an R&D product, by whatever means, indicates that the owner expects it to continue to be of value into the future and wants to retain control of the product. Apart from legal protection, R&D can be protected by less formal means, for example the complexity of a product or frequent rapid product changes. The data on R&D collected by ABS in the Survey of Research and Experimental Development respondents are not asked to identify the various types of protection afforded to R&D activity.

The shaded area in Table 1 shows the scope of R&D to be capitalised in the Australian national accounts. Pure basic R&D will be excluded, except in the case of R&D expenditure by businesses, while exports of R&D will not result in capital expenditure in Australia.

1 RELATIONSHIP BETWEEN THE SURVEY DATA AND SNA SECTORS

	Corporations	*Private non-profit institutions*	*General Government*	*Exports*	*Imports*
Pure basic research		n.a.	n.a.	n.a.	n.a.
Strategic basic research				n.a.	
Applied research				n.a.	
Experimental development				n.a.	

International opinion is divided as to which types of research result in the creation of assets as defined in the SNA. The ABS has taken the view that pure basic research undertaken by government (including higher education) and private non-profit organisations is generally freely available and should therefore not be treated as capital formation. However, the ABS assumes that pure basic research carried out by private corporations would not be undertaken if it did not result in a continuing benefit to corporations.

Within the classes of assets that are identified in SNA08, R&D falls in the category of intellectual property products, along with mineral exploration and computer software. Unlike mineral exploration, R&D typically has multiple uses and spillover benefits flow to other economic units and to society generally. In this respect R&D expenditure, and knowledge information generally, exhibits public goods characteristics (Moris, 2008). The value of R&D expenditure is often embodied in other products in a similar way to other business services.

The nature of the R&D asset continued

Most R&D is produced on own account as secondary output by a wide range of industries. In the case of own account production the suppliers are also the users (in R&D survey terminology, the performers are also the funders) and the market value is not observable. In these circumstances, SNA08 says that "...it may by convention, be valued at the sum of costs, including the cost of unsuccessful R&D" (SNA08, para 10.103).

Scope

Data on research and experimental development published by the ABS from the R&D surveys are defined in accordance with the OECD standard set out in the *Frascati Manual 2002: Proposed standard practice for surveys of research and experimental development*. R&D is defined as comprising "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of his stock of knowledge to devise new applications" (Frascati, 2002). The scope of R&D in the Frascati Manual is broader than the treatment in SNA08, in that it includes capital expenditure on plant and machinery and construction works intended for use in the production of R&D services. For example the Large Hadron collider. The Frascati definition of research and [experimental] development, has been adopted in SNA08. However, the SNA definition excludes expenditure on machinery and equipment and construction works used for R&D purposes as those items are classified as expenditure on tangible assets under the relevant product groups. The estimates exclude elements of R&D expenditure reported by government and higher educational bodies, but believed to be carried out by units operating outside the general government sector. Further investigations will be carried out by the ABS to reconcile reporting of R&D expenditures in the government finance statistics and R&D surveys for general government and higher education institutions.

In estimating the amount of R&D expenditure to be capitalised, there is a potential problem of overlaps between R&D and other recognised intellectual property products, in particular computer software and databases, which are recognised as assets in the national accounts. SNA08 does not explicitly discuss the boundary issue between R&D and computer software and databases. However, it states that "Gross fixed capital formation in computer software includes both the initial development and subsequent extensions of software and acquisition of copies that are classified as assets." (10.110) which suggests that an element of R&D should be included in the software estimates. This approach is taken by Galinda-Rueda in *Developing an R&D Satellite Account for the UK* (2007). Galinda-Rueda gives precedence to computer software, on the grounds "...lack of auxilliary information, the complexity of the interdependencies and the wish to avoid revising the software estimates". In ABS estimates, R&D expenditure by the computer systems design and related services industry group is identifiable, and will be classified as R&D, while software R&D reported by other industries will be treated as capital expenditure on computer software.

Ownership

Paraphrasing Galinda-Rueda (2007), in the national accounts, the owner of an asset is presumed to be its beneficiary, both because of an ability to use the asset in production and because of an ability to transfer the asset to another party. However, with knowledge, the link between owner and beneficiary is less clear-cut than with tangible assets. The question of who benefits from R&D presents two conceptual problems;

Ownership continued

spillovers and joint ownership. It also presents the practical issue of deciding whether to assign R&D ownership to the performer or the funder.

The ABS R&D surveys collect data based on recommendations set out in the OECD Frascati Manual. Unlike most types of capital expenditure, for which data are collected from purchasers or users, the surveys of R&D expenditure collect data from performers, which also supply information on sources of funds. For practical purposes the ABS assumes that funders of R&D are the users and owners of the resulting R&D assets.

In the Australian context more than 90 percent of business R&D assets are produced on own account. In the case of own account production the question of ownership does not arise, as the performer is also the funder, and is clearly the owner of the asset. Where a performer purchases R&D services from an outside supplier, it will be assumed that those services are an intermediate input into own-account production of an R&D asset. Because the survey data are collected from R&D performers, who are instructed to report only expenditure on R&D performed by their own organisation, intermediate transactions are not directly observable in the survey data. The magnitude of intermediate transactions can, however, be inferred from the data on external sources of funding. It follows that R&D expenditure funded from overseas represents exports of services to an overseas purchaser. This includes the case of multinational corporations, where R&D performed in one country benefits affiliated units in other countries and those units are invoiced for R&D services. In the event that an R&D performer sells the resulting asset, the transaction will be treated as the sale of a second-hand asset.

Spillovers

From the production of intellectual property, benefits may accrue to units other than the owners of the products. The knowledge gained in the process may stimulate the production of other intellectual property products by other units. SNA08 gives examples of such spillovers as a breakthrough in the development of a new class of drug leading other enterprises to develop competing drugs of the same type, and the success or failure of mineral exploration in a particular zone informing other units with exploration rights in a neighbouring zone. These are treated in the same way as other externalities in the system. Unless there is an observable monetary transaction between parties, nothing is recorded in the accounts.

The suppliers of R&D products may also be beneficiaries of the R&D and continue to have a stake in the intellectual property. The production will make a direct contribution to GDP of the country in which they are produced, but no fixed capital formation takes place in the country of production if the owners are resident in another country. The producers of the products may retain the knowledge of the processes and may use that knowledge again. However that can be regarded as a spillover benefit in the form of development of human capital (which is not treated as fixed capital formation in the SNA). The performance of R&D requires a highly skilled/educated workforce. The maintenance and retention of that skillbase may require a substantial ongoing investment in human capital.

MEASUREMENT CHALLENGES

Valuation, prices and volumes

In principle, R&D output is valued at market prices. However, survey data indicate that over ninety per cent of research and development activity is undertaken on own account, and representative market price data for R&D products are not available. In cases where it is not possible to reliably estimate market prices, the SNA08 recommends that

Valuation, prices and volumes continued

"...output should be valued by the total production costs incurred, including consumption of fixed capital, plus any taxes (less subsidies) on production other than taxes or subsidies on products, plus a net return on the fixed capital and natural resources used in production" (SNA08, para 6.91).

R&D is produced as a secondary activity by a broad range of industries. The data collected from R&D performers in the Survey of Research and Experimental Development Businesses, are reported on a cost basis, with costs broken down into labour costs, other current expenditure, land, buildings and other structures, and other capital expenditure. R&D will therefore be valued at cost, and input deflators will be used to calculate volume measures.

The volume of capital expenditure on R&D will be calculated by deflating the cost based expenditure values for labour and other current expenditure with input deflators. The current price estimates are deflated using deflators for labour inputs, derived from unit labour costs and other current expenditure will be deflated using a fixed weight index covering a range of items used as inputs into R&D products.

The measurement of the stock of R&D assets requires data on the flow of R&D expenditure, in volume terms, estimates of the life span of the various types of R&D assets and an estimate of the retirement distribution pattern of those assets as they become obsolete and leave the capital stock.

Trade in research and development services

The R&D survey does not explicitly collect data on international trade in R&D services. However, survey data are classified by funder, and the ABS assumes that expenditure funded from overseas sources constitutes exports of services. Because the R&D survey collects data from performers of R&D, not users, they do not explicitly cover imports of R&D products. Although expenditure on imports by R&D performers are captured by the R&D survey as part of the cost of performing R&D, they do not capture expenditure on R&D by non-performers of R&D, which fall outside the scope of the R&D survey. However, both exports and imports of research and development products are collected in the Survey of International Trade in Services (SITS). The SITS data in respect of exports are of similar magnitude to the data on overseas funded R&D services from the R&D surveys, suggesting that coverage is comparable.

International evidence suggests that a significant proportion of trade in R&D products is between resident and non-resident affiliated corporations, and around one third of importers of R&D are also exporters of R&D. The SITS covers both exports and imports of R&D services, and those data have been used for estimates of trade in the national accounts in preference to data from the R&D survey, which cover only externally funded R&D services.

The results from the trade survey of international trade in services are consistent with the results from surveys conducted in the Netherlands. The issue of trade in R&D services is discussed in "R&D Satellite Accounts in the Netherlands" (OECD, 2007) where a large proportion of private R&D activity is concentrated in a small number of foreign affiliated corporations. The Netherlands has found it difficult to determine the amounts of intragroup R&D capital service flows to and from the rest of the world, and this has complicated the estimation of domestic R&D investment.

Trade in research and development services continued

In the Netherlands, it is assumed that R&D funded by overseas entities represents exports. However, the Netherlands R&D survey (and the ABS R&D survey) does not explicitly ask for R&D sales and purchases, or for imports and exports of R&D services. The Dutch consider that the focus on R&D performers may lead to an under-reporting of imports. In addition they consider that R&D may be transferred between multinational companies without countervailing money flows, so that even if sales information was explicitly requested it is questionable whether all exchanges of R&D services between affiliated enterprises would be reported. It is therefore unclear the extent to which knowledge capital accumulates in the domestic economy.

For practical purposes, it is assumed that imports of R&D products are by R&D performers, and that they will be used as intermediate inputs into own account R&D. It is assumed that R&D funded by non-residents represents exports of R&D services.

IMPLEMENTATION

Sourcing and adjusting data

The principal sources of R&D data are the surveys of research and experimental development conducted by the ABS. There are four surveys: the annual survey of business expenditure on research and development (which accounts for over 60 per cent of total R&D expenditure), and biannual surveys of private non-profit, government and higher education expenditure on research and development. Data on imports and exports of R&D services are collected in the ABS Quarterly Survey of International Trade in Services.

2 RELATIONSHIP BETWEEN THE SURVEY DATA AND SNA SECTORS

Frascati Manual	*Source*	*SNA sector*
Business enterprise sector	Research and experimental development businesses (ABS cat. no. 8104.0)	Non-financial corporations Financial corporations.
Private non-profit sector	Research and experimental development, government and private non-profit organisations (ABS cat. no. 8109.0)	NPISH Households
Government sector	Research and experimental development, government and private non-profit organisations (ABS cat. no. 8109.0)	General government
Higher education sector	Research and experimental development, higher education organisations (ABS cat. no. 8111.0).	General government
Non-resident sector	Survey of International Trade in Services.	Rest of world.

Converting survey data from a Frascati to a national accounts conceptual basis.

The Frascati based ABS R&D survey data are published by sector, type of expenditure, location (state), socioeconomic objective and research field. For national accounts purposes the principal requirements will be for data classified by industry, sector and state, and special extractions from the R&D data sets will be required to provide data on that basis to the desired level of industry detail. Data on the source of funds, particularly in respect of businesses, will be required in order to identify the own account component of expenditure.

The Frascati treatment of R&D is broader than the treatment in SNA08. The Frascati Manual uses a purpose definition, which includes capital expenditure on plant and machinery and construction works intended for use in R&D, whereas SNA08 includes those items as expenditure on tangible assets under the relevant product groups. SNA08 includes R&D on computer software along with other expenditure on software as a

Converting survey data from a Frascati to a national accounts conceptual basis. continued

separate class of intangible assets. For consistency with the coverage of the core accounts, those elements which are already included elsewhere will be excluded from the R&D estimates to avoid double counting.

Frascati based data will be converted to an SNA08 basis using bridging tables, which are set out in three blocks, namely output, exports and imports, and gross fixed capital formation. The following adjustments will be made to the Frascati Manual measure of gross expenditure on research and development:

OUTPUT

Output data reported in the R&D surveys will be converted to a national accounts basis by adjusting expenditure reported by performers. The following adjustments and assumptions are made:

Changes in inventories of materials to be used as input for R&D.

The Frascati Manual recommends adjusting reported expenditure on R&D to allow for changes in stocks of materials used as inputs its production. However, changes in inventories for service industries will not be significant in the context of the ASNA, and as most R&D is performed as a secondary activity by a range of industries, changes in materials used for R&D purposes are subsumed in the changes in inventories of the performing industries. Changes in inventories will not be estimated for R&D products, and it is assumed that changes in respect of inventories attributable to R&D products are zero.

Acquisition of R&D to be used for R&D.

In principle R&D services used in the production of R&D products will be treated as intermediate consumption, however the source data relate only to expenditure of performers and the cost structure of individual projects are not identifiable. The survey respondents report only expenditure on R&D undertaken in respect of their own activities. This minimises the possibility of double counting of expenditure and it is not possible to separate any intermediate inputs of R&D from other current expenditure. It is assumed that imports of R&D services and identifiable domestic purchases of R&D services are part of the cost of own-account research and development.

Consumption of fixed capital

Depreciation of fixed assets owned by R&D producers and used in R&D production will be estimated in a perpetual inventory model (PIM) in conjunction with capital services, which constitute part of the cost of performing research and development. Data on capital expenditure will be fed into the model, which is specified with the estimated economic lives and retirement distributions of the various classes of assets, and consumption of fixed capital will be generated as an output of the model.

Operating surplus will be contained in R&D output.

The R&D survey statistics relate to expenditure and will be broken down into labour costs, other current expenditure and capital expenditure. On that basis the value of own-account R&D output, for national accounts purposes, will be calculated as the cost of labour, other current expenditure and the implicit cost of the capital services used in the production of the R&D. In the case of market units, gross operating surplus will

Converting survey data from a Frascati to a national accounts conceptual basis. continued

Operating surplus will be contained in R&D output. continued

increase by the value of own account R&D output. In the case of non-market units, the total value of output will not change with the capitalisation of R&D, but gross operating surplus will increase by the value of COFC in respect of the R&D asset.

Other taxes on production less subsidies

There are no specific taxes or subsidies on R&D products over the period from 1968-69 to 2006-07. However, a 150 per cent tax concession for R&D expenditure was introduced in 1984-85, and that concession was followed by a strong increase in R&D activity. The tax concession was cut to 125 per cent in 1995-96 and a fall in expenditure followed. Tax incentives act in a similar way to subsidies, although they are not treated as such by the SNA.

GROSS FIXED CAPITAL FORMATION (GFCF) BY R&D PERFORMERS

Capital expenditure on machinery and equipment, buildings and other fixed assets by R&D performers will be excluded from estimates of R&D capital formation to avoid double counting. In 2006-07 total capital expenditure on R&D, as defined in SNA08, will be about $14.5 billion, or around 5.1 per cent of total gross fixed capital formation. R&D expenditure on computer software will be included with other software expenditure (apart from R&D performed by the computer systems design industry) and will be excluded from the R&D estimates. Land is classified as a non-produced, non-financial asset in the national accounts and purchases of land are not treated as capital expenditure. Land will be included with buildings and other structures in R&D statistics and the total value of that item will be excluded from the national accounts capital expenditure estimates.

Software expenditure

R&D on computer software is already included in the national accounts as software, another category of intellectual property products. The boundary between R&D and software is not be discussed in SNA08, however as the SNA definition of software includes development, it will include an element of R&D expenditure. The ABS maintains that, in general, software R&D is a direct investment in the software product, and should be treated as a software asset. However an exception is made in the case of R&D expenditure undertaken by the computer systems design industry, which has a more direct interest in maintaining R&D capability as a separate class of assets.

EXPORTS AND IMPORTS

Exports

Exports of research and development services are recorded in the balance of payments statistics. The information is collected by sample survey, in principle it includes both sales and parent/subsidiary transactions. It is not possible to separately identify related company transactions. In 2007-08 exports of research and development services was $1,068 million.

Converting survey data from a Frascati to a national accounts conceptual basis.
continued

Imports

Imports of research and development services are recorded in the balance of payments statistics. The information is collected by sample survey and it is not possible to identify related company transactions. In 2007-08 recorded imports of research and development services was $626 million. It is not be possible to determine whether R&D imports are to be used in the production of R&D products or for other purposes.

OVERLAP WITH ANNUAL INTEGRATED COLLECTIONS

The Annual Integrated Collections (AIC) include units whose primary production is research and development services. Any sales of R&D services are included with "Income from services" and expenditure on R&D services is included in "Other operating expenses". The data are not separately identifiable in the AIC, however the R&D survey includes data of expenditure by funder. If it is assumed that R&D funded by units other than performers represents income to the performers and an expense to the funders, and the transactions are therefore captured in the AIC.

The supply and use tables will indicate that sales of such products, including R&D, mostly come from the professional, scientific and technical services industry, with little secondary output from other industries. However, R&D surveys suggests that research and development are performed by a wide range of industries. This supports the view those industries engage in R&D on their own account, and that such activity would not be captured as output or sales in AIC collections. Own account production of R&D products will be valued at cost, the costs will be intermediate consumption, compensation of employees engaged in R&D activities and the imputed cost of capital services. When R&D is capitalised, the cost of own account production of R&D products is added to the value of output of industries undertaking R&D for market units, and makes a corresponding contribution to GDP. The value of intermediate consumption derived from the AIC will not change as a result of capitalising own-account production of R&D products.

The AIC collections include any purchases of R&D services with "other operating expenses", which are generally treated as intermediate consumption. In principle all current expenditure (other than labour costs) reported in R&D surveys should be included in that item, although it is not separately identified. The value of intermediate consumption derived from the AIC should not change as a result of capitalising own-account production of R&D products.

GROSS FIXED CAPITAL FORMATION AT CURRENT PRICES

The supply of R&D products is comprised of domestic production and imports of R&D services. Domestic production, in turn, is made up of own-account capital formation and products produced for sale. Products produced for sale will be deemed to be that part of R&D expenditure funded by other businesses or from overseas. All own account output, including sales of services, will be valued at cost as reported in R&D surveys. Sales of services constitute less than 10 per cent of R&D performed, and any operating surplus in respect of that component is not identifiable in survey data. The cost of production will be estimated as compensation of employees engaged in R&D plus the value of other current expenditure and the estimated cost of capital services (including consumption of fixed capital) used in the production process. On the expenditure side of the accounts,

Converting survey data from a Frascati to a national accounts conceptual basis. continued

GROSS FIXED CAPITAL FORMATION AT CURRENT PRICES *continued*

the products will be used for capital formation and intermediate consumption by private businesses, private non-profit institutions and government and exports of services.

In the case of Government units, output will be reclassified to identify R&D. The value of that output, in terms of intermediate consumption, compensation of employees and consumption of fixed capital will not change. However, the capitalisation of R&D expenditure will create an asset, and consumption of fixed capital in respect of that asset will increase the value of government output, resulting in an increase in GDP equal to the value of COFC.

BACK SERIES

Data on R&D expenditure by businesses are available annually from 1983-84 to 2006-07. Prior to that date some data are available, on an irregular basis back to 1968-69. For the period from 1968-69 to 1983-84 estimates of expenditure will be made by interpolation. In order to provide data for capital stock estimates data series will be extended back to 1948-49 on the assumption that R&D was a constant proportion of GDP prior to 1968-69.

OTHER IMPLEMENTATION ISSUES

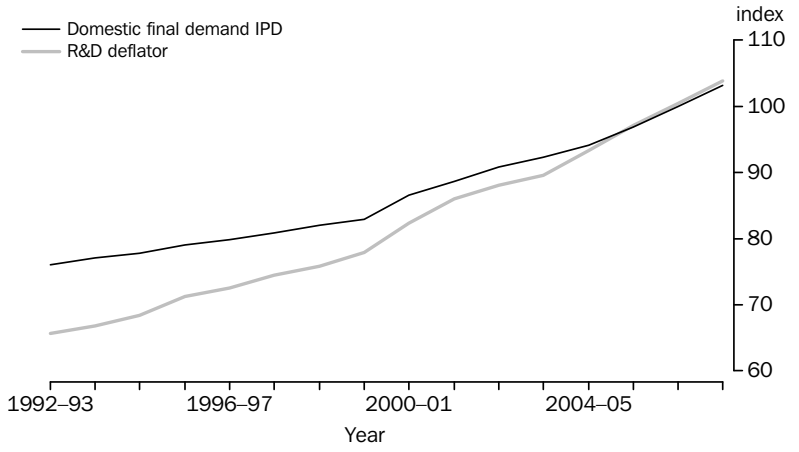
Preliminary and quarterly estimates

All source data will be from annual surveys which means that quarterly estimates will be made by interpolating and projecting annual estimates. Labour inputs comprise approximately 50 per cent of R&D costs, and the volume estimates will be projected based on the number of persons employed in the professional, scientific and technical services industry sub-division. Those estimates will be inflated with the labour price index for that industry division to yield current price estimates.

Prices and volumes

Price deflators and volume measures will be compiled for business, private non-profit, government and higher education using information from the respective R&D surveys. Wages and salaries and numbers of employees will be used to estimate deflators for the labour cost components and a fixed weight price index will be used to deflate other current expenditure inputs. A range of product groups used in the production of R&D products will be used in the deflator for other current expenditure. The chart below shows that over the period from 1993 to 2008 the cost of all R&D production has increased at a significantly faster rate than the domestic final demand deflator.

FIGURE 1 - COMPARISON OF R&D DEFLATOR AND DOMESTIC FINAL DEMAND—1992–93 to 2007–08



Consumption of fixed capital/asset lives

The value of R&D capital depreciates over time as new innovations emerge. As this occurs, earlier R&D becomes less effective in the production process and contributes less to profitability. Because of the intangible nature of the asset, the decline in value is difficult to measure and most studies use a range of assumptions based on econometric studies or the observed retirement rates for patents. The Australian Industry Commission report on *Research and Development*, 1995, cites work by Mansfield (1973) and Pakes and Shankerman (1978, 1984) which suggests that industrial knowledge depreciates faster than physical capital with little left after 10 years. More recent studies (Caballero and Jaffe, 1993) have suggested that the rate of technological change, and consequently the rate of obsolescence, has increased in recent years. However, data on patent expiry rates suggest considerably longer asset lives.

Data compiled by Intellectual Property Australia show that the mean life-spans of standard patents filed in Australia between 1980 and 2001 were between 10 and 13 years. The data are categorised by 'technology group', whereas R&D expenditure data are categorised by industry (to sub-division level). There is no simple correspondence between the technology group classification and the industry classification, however, there are relatively small differences between the mean patent lives for different technology groups. Given the difficulties in producing estimates for individual industries, and the fact that the estimates (based on the patent data) do not differ greatly, a single asset life distribution will be used for all R&D in the ASNA. A mean asset life of 11.0 years has been derived from a weighted average of the patent lives of the different technology groups.

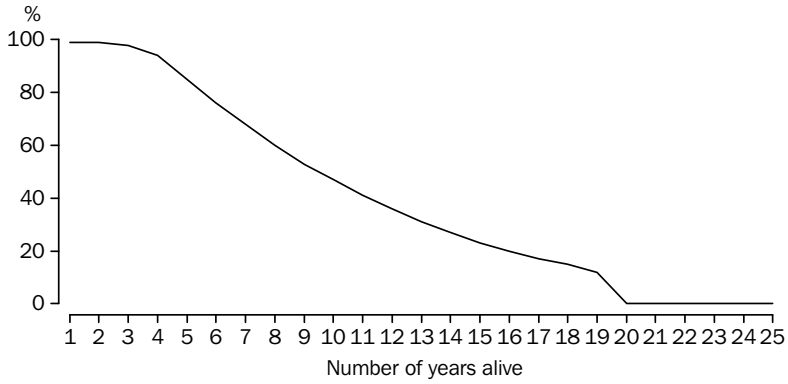
Patent lives do not necessarily represent the lives of all R&D products and, in principle, an adjustment should be made to account for the fact that not all R&D is patented. Although it seems reasonable to expect that non-patented R&D would on average have shorter lives and depreciate faster than patented R&D, empirical estimates based on econometric studies vary greatly (with some of the evidence suggesting a longer life than that estimated from patents). The ABS paper *Capitalising Research and Development in the National Accounts* (2004) made experimental estimates of the value of R&D assets using average asset lives of 5, 10 and 20 years. In the United States in 2007, the Bureau of Economic Analysis (BEA) tested four scenarios, with the first scenario based on an 15 percent annual depreciation rate. The other scenarios were based on more rapid rates of technological change, and consequently more rapid rates of obsolescence. The assumption of shorter economic lives gives greater weight to more recent innovations in the capital stock estimates. In Developing an R&D Satellite Account for the UK: a preliminary analysis, Fernando Galindo-Rueda applies a depreciation rate of 20 percent, which is consistent with a 10 year service life. However, it is not feasible to make a reliable estimate of the life of non-patented R&D in Australia and the actual evidence from patent expiry rates has been adopted.

A mean asset life of 11.0 years is broadly consistent with international results. A recent draft *OECD Handbook* (OECD, 2008) states that the different approaches to estimating R&D asset lives "generally indicate that service lives lie between 10 and 20 years". However, most countries have not committed to an estimate and/or method to be used in their National Accounts (the US figures have been used in the BEA's R&D Satellite Account). None of the OECD countries use an asset life significantly shorter than 10 years. For many countries only a depreciation rate is specified, but under a standard

Consumption of fixed capital/asset lives continued

double declining balance assumption (that is double that of a straight line depreciation) they imply similar (or sometimes longer) lives. Given the lack of evidence to the contrary, the ABS has assumed a mean asset life of 11.0 years based on patent data.

FIGURE 2 - LIFETIMES OF GRANTED STANDARD PATENTS, average for all technology groups



Notes: % of granted patents still in force each year after filing.
Based on all granted patents filed from 1980 to 2001.

Incorporating R&D in the capital stock and balance sheets.

The flow of capital expenditure, the asset life and rate of depreciation of R&D assets provide the information required to estimate the stock of R&D assets. As with asset lives, the pattern of depreciation of R&D assets is difficult to measure, and will be the subject of continuing discussion. If in fact R&D assets decline in value at a more rapid rate than other types of assets, a geometric age efficiency function may be appropriate, however in the absence of authoritative information, a hyperbolic age-efficiency function has been adopted for consistency with other types of assets in the ASNA capital stock system.

The value of the stock of R&D assets will be recorded in the balance sheets as an intellectual property product, a category of produced fixed assets. The value of assets in the stock will change as a result of changes in price and the consumption of fixed capital over the life of the assets.

IMPACT ON THE NATIONAL ACCOUNTS

The impact of capitalising R&D in general government units will be equal to the value of the additional consumption of fixed capital as discussed earlier. In the case of other units, additional own account R&D output (valued by summing the costs of production) will be recorded and will appear as additional output, GFCF and GOS. Consequently the impact on GDP from capitalising R&D in non general government units will be equal to the value of the own account R&D produced.

3 THE EFFECT OF CAPITALISING R&D ON GDP AND GROSS FIXED CAPITAL FORMATION, CURRENT PRICES, 1994-95 TO 2007-08

	1998-99	*1999-00*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
GFCF SNA93	146 858	160 089	151 474	168 832	194 081	213 760	231 739	260 762	284 707	320 052
Private R&D	4 059	4 156	4 834	5 955	6 742	7 646	8 422	9 669	11 329	12 984
Public Corproations R&D	162	60	157	277	219	146	154	251	210	229
General Government R&D	1 967	2 108	2 246	2 344	2 432	2 543	2 691	2 921	2 917	3 191
	%	%	%	%	%	%	%	%	%	%
Percentage increase to GFCF level	4	4	5	5	5	5	5	5	5	5

IMPACT ON THE NATIONAL ACCOUNTS *continued*

The initial impact of capitalising R&D will increase capital expenditure, which will reflect an increase in gross operating surplus in the production account for market units. The increased operating surplus flows through to the income accounts, where it in turn is balanced by an equivalent increase in saving. In the capital accounts the increased saving finances the increase in gross fixed capital formation of R&D assets. There is therefore no impact on net lending.

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Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the annual Australian System of National Accounts to be published on 8 December 2009 and in the quarterly Australian National Accounts to be published on 16 December 2009.

INTRODUCTION

Defence Weapons Platforms (DWPs) are the structural systems from which destructive weapons such as missiles, bombs and torpedoes are launched or fired. They include submarines, warships, fighter planes and tanks. With the exception of military expenditure on assets that also have civilian use, defence expenditure is treated as Government Final Consumption Expenditure (GFCE) in the System of National Accounts 1993 (SNA93). The System of National Accounts 2008 (SNA08) recommends treatment of expenditure on DWPs as Gross Fixed Capital Formation (GFCF) thus recognising ongoing services provided by DWPs beyond the period in which they were purchased.

CONCEPTUAL TREATMENT

The SNA08 treatment will bring DWPs into line with other assets. Thus capitalisation of expenditure on DWPs requires:

- estimates of GFCF, are expenditure to acquire new DWPs, including imports and domestic production (including own account production);
- estimates of the services provided by the assets over time, are Consumption of Fixed Capital (COFC);
- estimates of the value of DWPs for the balance sheet, are produced assets in the form of plant and equipment.

It should be noted that the recommendation to capitalise DWPs will not change the treatment of other defence expenditures under SNA08. Current expenditures, such as compensation of employees, will continue to be recorded as GFCE; capital expenditures on items that have civilian use will continue to be capitalised; expenditures on consumable military items, such as boots, bombs and bullets, will continue to be recorded as increases in inventories on acquisition and decreases in inventories on use or disposal.

SNA08 recommends that the contribution of capitalised DWPs be identified separately in the balance sheet, GFCF and COFC, because of the size of their contribution and the reliance on imputation methods for COFC and balance sheets in the absence of direct observations.

MEASUREMENT CHALLENGES AND IMPLEMENTATION

The main challenges in implementing the SNA08 treatment of DWPs will include measuring DWPs in GFCF, supply-use balancing and the details needed for their introduction into the capital stock system (such as asset lives), valuation (including depletion), deflation and capital services derived from DWPs.

Gross fixed capital formation

Information about expenditures on DWPs is provided to ABS by the Australian Government as part of Government Finance Statistics (GFS). The values reported will be classified as GFCF under SNA08, rather than GFCE. This will decrease non-market output of the defence industry (which is the measured by summing costs) as DWPs are removed from intermediate consumption.

The main supply of DWPs will be through imports, especially for large items such as fighter aircraft and combat ships.

Capital stock , asset lives and valuation

Estimates of the value of DWPs will be included in the national balance sheet. These estimates have proved to be challenging: observable market values are not available; similarly replacement cost values are not observable due to rapidly changing technology and caveats on weapons trading in secondary markets. Therefore ABS is relying on asset life assumptions to model balance sheet values.

The ABS has undertaken research on asset lives and retirement functions for each equipment type (Aircraft, Ships, Ground)and decided on using previous work undertaken by the United States Bureau of Economic Analysis.

Table 1 shows an average asset life for defence weapons platforms will be 21 years.

1 AVERAGE ASSET LIVES, DWPs

	2005-06 weights	*US asset lives (years)*
Aircraft	55 %	20
Ships	7 %	28
Ground	38 %	20
Total	100 %	21

Simulations for asset lives of 5 years, 10 years and 20 years were undertaken and compared with the depreciation estimates published by the Department of Defence. Both sets of comparisons support the plausibility of an asset life around 20 years. However, the balance sheet estimates produced by the PIM will require further investigation. Although the values will be added to the national balance sheet, the values will not be separately identified until these investigations have been completed.

CONSUMPTION OF FIXED CAPITAL FOR DEFENCE ASSETS

Consumption of fixed capital will be calculated by using a hyperbolic age-efficiency function for the defence asset using the asset lives from table 1. For more information on the ABS method for the derivation of CoFC see the Australian National Accounts: Concepts, Sources and Methods (cat. no. 5216.0). The COFC estimates produced by the PIM will require further investigation. Although the values will be added to the national balance sheet, the values will not be separately identified until these investigations have been completed.

The balance sheet values of DWP stock and COFC generated in the PIM will differ from historic cost cost accounting values recorded by the Department of Defence.

CHOICE OF DEFLATORS

There is limited published information on the composition of DWPs. Representative deflators to derive volume measures of DWP GFCF and COFC were chosen appropriate to the aircraft, ships and ground vehicle asset classes.

KEY AGGREGATES

As part of implementing the revised SNA standards, the new treatment of military expenditure will impact the processing, compilation and dissemination of estimates in the Balance of Payments (cat. no. 5302.0 and cat. no. 5368.0), National Accounts (cat. no. 5204.0 and cat. no. 5206.0) and Government Finance Statistics (cat. no. 5519.0.55.001) and Government Financial Estimates (cat.no. 5501.0.55.001) publications.

Table 2 shows the extent that changes to the treatment of defence expenditure will have in the accounts.

2 CHANGES TO KEY AGGREGATES DUE TO TREATMENT OF MILITARY EXPENDITURE

Aggregate	*Change*
GDP (E)	Increases due to GFCF offset by identical decrease in GFCE. Increase due to CoFC.
Public Administration and Safety output	Increase due to treatment of CoFC, decrease due to removal of DWP
Net Saving	Increase to gross savings, increase to general government savings
National Balance Sheet	Increase due to new series on DWP

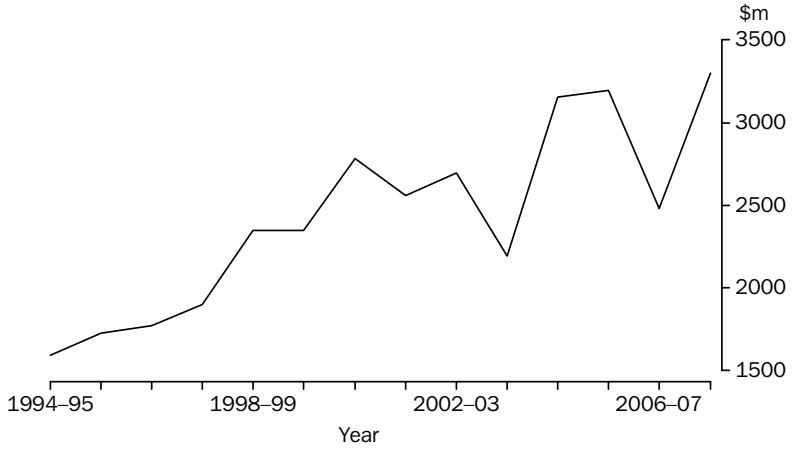
DWPs will be about $3,300 million (about 1%) of GFCE in 2007-08. This will be recorded as GFCF, which means there will be cascading impacts through a number of aggregates. The figure below shows the new GFCF aggregates including DWPs. The estimates for DWP will show volatile characteristics expected of capital expenditure as seen in Figure 1.

3 DWPS IMPACT ON GFCF, current prices—1998-99 to 2007-08

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
Total GFCF, current prices, SNA93	158 287	171 829	164 677	183 550	210 344	230 677	250 970	282 520	307 796	346 452
DWPs, current prices	2 350	2 348	2 783	2 557	2 696	2 194	3 154	3 196	2 480	3 303
Percentage increase to GFCF level	1	1	2	1	1	1	1	1	1	1

KEY AGGREGATES *continued*

FIGURE 1 - DEFENCE WEAPONS PLATFORMS, current prices—1994–95 to 2007–08



OTHER IMPLEMENTATION ISSUES

Alignment with Government Finance Statistics

In GFS, expenditures on DWPs will be reclassified as GFCF, rather than GFCE, in line with the SNA08 treatment and the treatment in Commonwealth Government accounts. This will affect the Commonwealth general government operating statement and cash flow statement in GFS.

Balance sheet values and depreciation are subject to the investigations mentioned above. Expenditure on 'consumable' military equipment such as bullets will continue to be recorded as inventories.

ALIGNMENT WITH BALANCE OF PAYMENTS

Implementation of BPM6 standards for defence expenditure will have minimal impacts. DWPs and single use items for defence are currently classified to other merchandise goods.

Defence related imports of goods will be classified according to the following method:

- large transactions (over $3m) will be examined and classified as DWP or capital goods n.e.s. as appropriate; and,
- small transactions ($3m or less) will be classified as other merchandise goods.

These treatments will reclassify goods within the Balance of Payments goods category and, there will be no impact on the main aggregates.

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INTRODUCTION

The costs of establishing orchards and vines are currently treated as intermediate expense items. The System of National Accounts 2008 (SNA08) recommends that they be recognised as produced assets and capitalised as gross fixed capital formation (GFCF). This will add to Gross Domestic Product (GDP), gross mixed income (GMI) and gross operating surplus (GOS), as well as gross output.

The System of National Accounts 1993 (SNA93) recommended that growth in cultivated assets be included as capital formation. The ABS implemented these recommendations for some assets in 1998 but a lack of data prevented implementation for orchards. The definition of orchard growth extends to all fruit and nut bearing plants such as trees, vines, bushes, shrubs etc. that is, any plant that can produce a marketable quantity of fruit for more than one year where the grower intends to obtain a future benefit from the sale of the fruits borne. Costs to be capitalised as part of the value of fruit and nut bearing plants will be the establishment costs involved in planting the new nursery plant and then maintenance costs associated with making the plant grow.

CONCEPTUAL TREATMENT

The approach used to add orchards to non-financial assets in the Australian System of National Accounts (ASNA) will be to estimate GFCF flows and derive depreciation, revaluation, productive and wealth capital stocks and capital services in a perpetual inventory model (PIM). In the case of orchards, the change in value of stocks through time will represent more than GFCF, it also includes depreciation, revaluations and other changes such as unexpected grubbing (digging out rootstock); and the change in stocks will be decomposed into these elements. Given the model based approach required it will be necessary to calculate a net present value (NPV) for orchard assets.

Fruit bearing trees are produced on own account by orchards. Young saplings are purchased, planted and grown over three to five years, at which time they bear an economic amount of fruit. At this time the asset, so future expenditure is maintenance and not GFCF, and changes in the formation of the asset will be: complete asset value result from depreciation; and revaluation due to price inflation. In the absence of a market for mature orchard trees separate from other associated assets, there will be no shadow prices that can be used to help value the GFCF or the value of the stocks. In this situation, SNA08 recommends a cost based approach including a return to the capital (including land) invested in the production process (in this case planting and growing the trees to maturity). An average asset life of 30 years for fruit trees and 40 years for vines will be chosen, based on discussion with growers.

IMPLEMENTATION

Data for the numbers of trees and hectares of vines are available annually from the ABS Agricultural Survey for the years 1984 to 2008. As mentioned previously, GFCF only occurs as the plants grow to maturity. Annual data for the hectares of new grape vines planted are available from 1990, but for orchard trees volume data are only available for the stock of trees (number and hectares planted) for trees under six years old and trees over six years old. Trees under six years old will be considered immature and their growth will be considered capital formation.

A current price value of investment using an 'at cost' approach will be derived by applying average cost data to the age distribution of immature trees.

There are various sources of indicative information:

- establishment costs data are available on an annual pattern of costs from planting to maturity. The pattern is used to estimate the age distribution of trees and vines. Costs are incurred in the first year, with trailing costs related to maintenance and a return to capital (including land) in remaining years to tree maturity. Some establishment cost figures for particular fruits were assumed to be representative of all fruits of that type.
- cost estimates for all fruit and vine types do not necessarily exist for current price estimates, where possible these were adjusted upwards to take into account the GFCF of all other fruits that were not included in estimates. This was done by taking a proportion of immature plants for our selected fruits on total immature plants for all fruits and averaging the proportion over time. Then the average contribution of 'all other' fruits could be determined and added to the major fruit categories.

Trellises and irrigation will be assumed to have little value without the tree and vine, hence they are integral to the biological asset and are not sold off as a separate asset.

INCOME SPLITS

Output is equal to the current price values and will represent a new product produced by orchardists. In past treatment it was assumed that fruit orchardists produced only fruit as output, they now also produce fruit bearing trees/plants as output. The value of the fruit bearing plants will be added to output supply. Because all orchard growth output is own account output, intermediate usage and operating surplus components will not be observable. Intermediate usage will be assumed to be 40% of output (to cover costs associate with developing trees and plants), GOS to be 18% and GMI 42%

ASSET LIVES

There will be three components of capital estimates. These have different asset lives due to the types of plants.

The three series and respective asset lives will be :

1 ASSET LIVES FOR ORCHARDS

Asset type	*Asset life*
Total Orchard Fruit and Nut Trees	30 years
Total Plantation Fruit Bearing Plants	7 years
Total Grapevines	40 years

QUARTERLY ESTIMATES OF ORCHARD GROWTH

The timing of planting grapevines depends on the location of the grower. Maintenance activities such as spraying occurs during spring. Banana planting and maintenance activity will occur during any time of the year.

The cost structure of the grapevine growing will be proportioned on a quarterly basis based on expected distribution of activity. Planting expenditure will be allocated into the quarters associated with winter. Construction expenditure for trellising and irrigation before planting and vine maintenance costs such as spraying and fertilising will be allocated during the quarters associated with spring.

Plantation fruit planting, which is mainly banana growing, will be converted to a quarterly series by dividing by four.

FRUIT TREES AND PLANTS VOLUMES

In order to obtain quarterly GFCF figures a volume measure will be multiplied by a price measure. Using a cost approach, new plantings of orchard and other fruit plantations per quarter will represent the volume of new investments in fruit plants. New plantings data are inferred from a range of sources.

To adjust for the contribution of grafted vines, the price component will be adjusted to include the impact of grafted vines. The weight of this contribution was derived as an average proportion of grafted vines on total new plantings and graftings over the years 2004 to 2007 (pure graftings data were available only for these years). This adjustment will only be for grapevines due to lack of data for other orchards.

COST DATA

Currently there is general cost information regarding the establishment and maintenance of various orchard trees and grapes, and will be obtained from a range of sources.

The following costs are capitalised as part of investment orchard growth.

All establishment costs such as:

- ground preparation costs
- nursery plant purchases
- planting and grafting costs
- cost of constructing a trellis
- cost of constructing an irrigation system

All maintenance costs such as:

- all fixed costs (eg. adminstrative costs, rates, general maintenance etc...)
- fertiliser
- weed controls
- pest and disease controls
- fuels and oils
- electricity
- casual labour
- permanent labour (farmer's own labour)
- return on machinery and equipment assets (@10.4%)
- return on land assets (@10.4%)

The costs that will be capitalised as part of orchard growth relate to the formation of the tree and plant assets itself and will exclude production of fruit costs such as shipping and picking.

COST DATA *continued*

A return on capital estimate will be added to the value of trees and plants to reflect a return on investment in farm machinery and equipment and land. This return on capital component will increase the value of the tree and plant asset as it approaches and reaches maturity.

ESTIMATION OF CURRENT PERIODS

Forward estimation will be a three year moving average of the trees under six years series. The orchards deflator will be extended every year by using a five year trend.

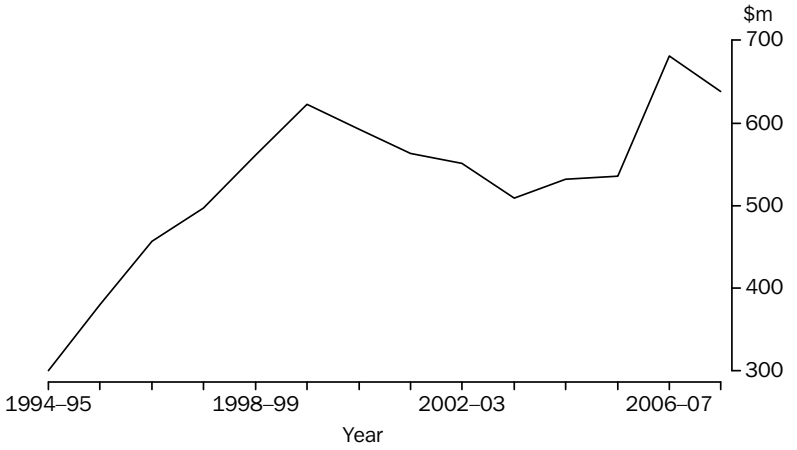
RESULTS

The results will show a steady increase until June 2000. The decrease after 2000 coincides with drought conditions and changes in the commodity values over that time period. Orchard growth will have a very low impact on total GFCF by type of asset as illustrated in table 2.

2 ORCHARD GROWTH IMPACT ON GFCF, chain volume measures—2000 to 2008

	1999-2000	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	($m)	($m)	($m)	($m)	($m)	($m)	($m)	($m)	($m)
Orchard Growth, current prices	623	592	563	551	509	532	536	681	638
Total GFCF, current prices	160 089	151 474	168 832	194 081	213 760	231 739	260 762	284 707	320 052
Orchard Growth total contribution to GFCF, %	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2

FIGURE 1 - ORCHARD GROWTH, current prices—1994–95 to 2007–08



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INTRODUCTION

Under Balance of Payments Manual fifth edition (BPM5) and System of National Accounts 1993 (SNA93) retained earnings from foreign direct investment are deemed to be distributed and reinvested in the corporation on the grounds that direct investors have control of the corporation and can therefore influence distribution decisions. Under the Balance of Payments and International Investment Position sixth edition (BPM6) and the System of National Accounts 2008 (SNA08), the scope of collection of reinvested earnings data will be widened to include undistributed earnings of investment funds with respect to both foreign and domestic investors on the grounds that investors are able to withdraw and reinvest the equity from the investment funds equity. Reinvested Earnings of investment funds are earnings that are not distributed to unitholders and are kept by the fund instead. The new standards recommend that retained earnings should be treated as if distributed and reinvested. These add to the fund's equity, and its liabilities to the unitholders. Reinvested Earnings are negative if the fund is paying distributions in excess of its distributable income. This is considered a withdrawal of equity.

CONCEPTS

Investment funds will be identified based on a set of characteristics that institutions in the financial sector exhibit. For more information on investment funds, including a description of characteristics and classification of investment funds, see chapter 2. The changes made in BPM6 and SNA08 relate to investment income attributed to investment fund shareholders which will be reflected in two separate items. The first of these is the dividends distributed to investment fund shareholders. The second is retained earnings attributed to investment fund shareholders.

The dividend component will be recorded in exactly the same manner as dividends for corporations. The retained earnings component will be recorded using the same principles as those described for foreign direct investment enterprises. That is to say, it will be distributed to the shareholders and will be reinvested into the fund by the shareholders in a transaction recorded in the financial account. A consequence of the new treatment of the retained earnings of investment funds is that the saving of investment funds will be zero.

Earnings and therefore investment income attributable to owners of investment funds will be defined to exclude holding gains and losses arising from investment by the funds. Holding gains and losses will be recorded in the other changes in financial assets and liabilities account, not transaction accounts.

MEASUREMENT ISSUES

Domestic

There will be instances of large negative reinvested earnings occurring in periods when distributions include proceeds from holding gains, as the calculation of investment fund earnings and derived reinvested earnings will not include proceeds from holding gains. As earnings accrue continuously, it is important to record the imputed distribution of retained earnings continuously; the size of the imputed reinvested earnings is influenced by the actual distribution pattern. Actual distributions occur infrequently, once or twice per year. For these reasons quarterly estimates of retained earnings and reinvestments will be included in National Accounts, Balance of Payments and transactions in international investment.

1 REINVESTED EARNINGS FOR DOMESTIC INVESTMENT FUNDS—1998-99 to 2007-08

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Non-money Market Investment Funds	–1 131	–1 298	–2 525	479	–277	–560	–2 489	–310	–3 863	–13 725
- financial	22 718	–1 380	–2 880	290	–42	–1 933	–3 320	–5 727	–7 557	–1 439
- non-financial	–23 849	82	355	188	–235	1 373	831	5 417	3 694	–12 286
Money market Investment funds	805	1 366	1 176	718	758	1 144	1 270	1 512	2 119	2 647

In accordance with SNA08, investment funds will be separated into money market investment funds and non-money market investment funds. In the table above, non-money market investment funds will be further broken down into financial and non-financial categories. These classifications are described in chapter 2 of this information paper.

International

There will be no impact on direct investment as a result of the revised treatment of earnings of investment funds in BPM6 and SNA08. Any reinvested earnings of direct investment by investment funds will continue to be treated as direct investment under the new standards.

There will be a number of issues for portfolio investment. For foreign liability flows the calculation of reinvested earnings is fairly straightforward because this is a subset of the domestic investment fund estimates. For foreign asset flows however, there are some issues with identifying the investment funds' portion of funds under management reported by funds managers in the foreign investment survey. Forms testing found that providers were unable to differentiate income sourced from dividends and returns from capital gains, nor were they able to report earnings on their investments in addition to the dividends already reported. It is hoped that providers will at least be able to supply levels of investment in investment funds in order to derive a split between investment funds and other portfolio equity. From this split it will be possible to apportion dividend income data and then derive investment earnings and reinvested earnings from these figures.

International continued

As most of the foreign assets portfolio equity is sourced from resident fund managers and pension funds, it will be assumed at this point that all of the portfolio equity held or managed by these institutions will be in the form of units in foreign investment funds.

METHODOLOGY

The methodology used to calculate reinvested earnings of investment funds will be:

Reinvested Earnings = Earnings (net of capital gains/losses) - Distributions

Foreign assets: To derive investment earnings, it will be assumed at this point that the bulk of this is in equity funds. The major indicator dividend yields reported on major contributing countries' stock indexes will be applied to existing levels reported in portfolio equity securities for the relevant sectors. Reported income taken from dividends will be subtracted from the derived earnings figure to give reinvested earnings.

Foreign liabilties: To derive investment earnings, the indicator yield taken from a major Australian stock index will be applied to existing levels reported in portfolio equity securities for relevant sectors. Reported income taken from dividends will be subtracted from the derived earnings figure to give reinvested earnings.

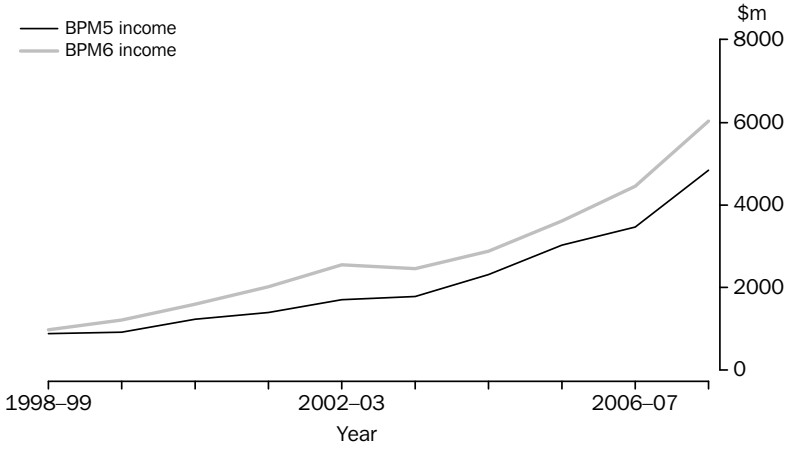
2 REINVESTED EARNINGS FOR FOREIGN ASSETS INVESTMENT FUNDS—1998-99 to 2007-08

Foreign assets	*1998-99* $m	*1999-2000* $m	*2000-01* $m	*2001-02* $m	*2002-03* $m	*2003-04* $m	*2004-05* $m	*2005-06* $m	*2006-07* $m	*2007-08* $m
BPM 5										
income	884	925	1 230	1 401	1 717	1 789	2 312	3 029	3 459	4 848
Dividends	884	925	1 230	1 401	1 717	1 789	2 312	3 029	3 459	4 848
Reinvested earnings	—	—	—	—	—	—	—	—	—	—
BPM 6										
income	982	1 224	1 602	2 011	2 557	2 462	2 892	3 609	4 465	6 035
Dividends	884	925	1 230	1 401	1 717	1 789	2 312	3 029	3 459	5 055
Reinvested earnings	98	299	372	610	840	673	580	580	1 006	980

— nil or rounded to zero (including null cells)

METHODOLOGY *continued*

FIGURE 1 - FOREIGN ASSETS, Income on a BPM5 and BPM6 basis—1997–98 to 2007–08



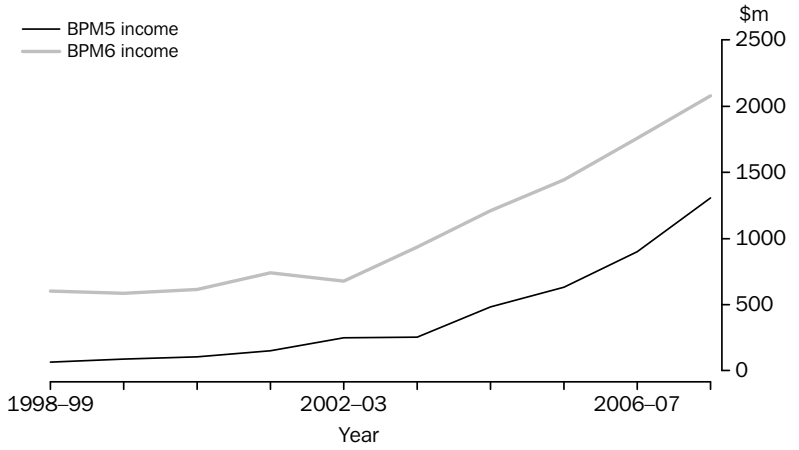
REINVESTED EARNINGS FOR FOREIGN LIABILITIES INVESTMENT FUNDS—1998-99 to 2007-08

3

Foreign liabilties	*1998-99* $m	*1999-2000* $m	*2000-01* $m	*2001-02* $m	*2002-03* $m	*2003-04* $m	*2004-05* $m	*2005-06* $m	*2006-07* $m	*2007-08* $m
BPM 5										
income	67	86	103	148	250	254	481	632	899	1 305
Dividends	67	86	103	148	250	254	481	632	899	1 305
Reinvested earnings	—	—	—	—	—	—	—	—	—	—
BPM 6										
income	601	583	616	743	679	937	1 211	1 444	1 759	2 080
Dividends	67	86	103	148	250	254	481	632	899	1 305
Reinvested earnings	534	497	513	595	429	683	730	812	860	775

— nil or rounded to zero (including null cells)

FIGURE 2 - FOREIGN LIABILITIES, income on a BPM5 and BPM6 basis—1998–99 to 2007–08



Reinvested Earnings are negative if the fund is paying distributions in excess of its distributable income. Included above are some graphs and tables illustrating the possible magnitude of the impact of the BPM6/SNA08 standards changes on the Balance of Payments in a time series from 1998-99 to 2008-09.

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the quarterly balance of payments to be published on 8 December 2009.

INTRODUCTION

This chapter will focus on the BPM6 treatment, data sources and models for pension funds of one economy transacting with households of other economies. New data series will be developed and backcast to June 1959 for pension fund items and will be included in the September quarter 2009 issue of Balance of Payments and International Investment Position, Australia (cat. no. 5302.0).

Pension funds are established for the purpose of providing benefits for the retirement or invalidity of specific groups of employees. Pension funds' transactions include receiving contributions, paying benefits and investing funds.

Pension funds are often referred to as superannuation entities in the Australian context. Since the *Superannuation Guarantee (Administration) Act 1992*, superannuation assets and transactions have grown to be a large component of the financial sector. Pension funds are a large contributor to estimates within the National Accounts, however, under BPM5 pension funds were not included in the international accounts. BPM6 recommends the explicit measurement of resident to non-resident transactions of pension funds.

CONCEPTS

The new series records stocks (foreign assets and liabilities) and flows (contributions, benefit payments, investment income) for superannuation accounts of non-residents with Australian pension funds and superannuation accounts of residents with non-resident pension funds.

Entries in the Balance of Payments and International Investment Position

Pension funds are defined as an institutional subsector. Pension entitlements are defined as a financial instrument. These entitlements may be liabilities of pension funds or unfunded pension schemes. They are classified as other investment in the functional classification.

1 ACCOUNT ENTRIES FOR PENSION FUND

Account	*Transaction*	*Credits (exports)*	*Debits (imports)*
Services	Pension Fund Service Charge	Charged to Non-residents	Received from Residents
Primary Income	Employer Contributions (CoE)	Non-resident employers on behalf of residents	Resident employees on behalf of non-residents
	Investment income	Attributed to Residents	Attributed to Non-residents
Secondary Income	Social Contributions	Paid by Non-residents	Paid by Residents
	Social Benefits	Received by Residents	Paid to Non-residents
		Assets	***Liabilties***
Financial Account	Transactions	Change in Assets (net of revaluations)	Change in Liabilities (Net of revaluations)
International Investment Position	Closing stocks	Foreign Assets of residents	Foreign Liabilities to non-residents

Entries in the Balance of Payments and International Investment Position continued

In the International Investment Position (IIP), the valuation of pension entitlements will be the technical reserves available for pension entitlements. These entries will appear in the external account in the Australian System of National Accounts (cat. no. 5204.0).

Population estimates and member accounts

The in-scope population for pension estimates will be those residents and non-residents that have cross border pension positions or flows. Under this principle, residents have offshore pension fund assets (foreign assets) and non-residents are owed foreign liabilities. The method for deriving pension funds international flows will be based on the proportion of member accounts likely to be overseas.

It is likely that there are a small number of people living overseas that are contributing to Australian pension funds or receiving benefits and a larger number living in Australia receiving benefits from or contributing to overseas pension funds (see table 2). These estimates will be constructed by reconciling overseas population estimates, numbers of non-residents receiving social security payments and consulate staff. Further advice was sought from the pension funds. This remains a measurement challenge for the future as industry has advised that this is a difficult concept to measure but is most likely a small number of their member base.

2 PROPORTIONS FOR PENSION FUND FLOWS

Type	*Population*	*Proporton*
Contributors	Under 65 years	0.1% of contributor account transactions
Beneficiaries	Over 65 years	0.3% of beneficiary account transactions
Total	All working population	0.1% of member account transactions

No attempt was made to estimate the number of member accounts of overseas pension funds held by residents of Australia, rather a ratio was constructed with available data. The main source of information about residents with overseas pension accounts was benefits received.

Services

There may be explicit or implicit service charges for pension schemes. In the Australian context explicit charges are readily available from the Australian Prudential Regulatory Authority (APRA). Service charges will be composed of management and investment fees charged by pension funds. Pension fund service charge credits (exports) will be calculated as a proportion of member account transactions.

Debits (imports) will be calculated from a ratio based on exports.

Primary income

There will be two elements to primary income. Employer contributions will be rerouted through compensation of employees as they are attributed to the employee. Employer contributions are directly available through APRA. International flows will be calculated based on a proportion of relevant member account transactions.

Primary income continued

The second transaction will be investment income attributable to current beneficiaries and contributors. These transactions will be considered to be supplementary contributions of the beneficiaries and contributors. These transactions will be calculated by a proportion of total member accounts transactions.

Secondary income

There will be two transactions that occur for secondary income credits and debits.

Social contributions will be recorded in the international accounts when a resident makes contributions to a pension scheme in another economy for his or her employment in that economy, or when an employer makes actual or imputed contributions on behalf of the employee. Social contributions to pension schemes will be determined as follows:

Employers' contributions;

+ Employers' imputed contributions;

+ Employees' actual contributions;

+ Contribution supplements corresponding to investment income payable by pension schemes on pension entitlements;

– Service charges payable to pension schemes.

Social benefits in the secondary income account will be the amounts payable to the beneficiaries, and include pensions. These will exclude lump sum payments.

Financial account

Financial account transactions will be the changes in technical reserves due to transactions and consist of amounts of the estimated obligations to beneficiaries and holders that were accrued during the period. Pension entitlements will include those under both funded and unfunded schemes, but not potential benefits under social security schemes such as war veterans pension. The increase in pension entitlements shown in the financial account theoretically matches the entry in the use of income accounts for the adjustment for change in pension entitlements plus any change in pension entitlements, as well as any capital transfers that may occur.

International investment position

In the IIP the value of pension entitlements will be due to direct liabilities for domestic pension funds and assets based on the ratios derived from the domestic economy. Obligations of unfunded pension schemes will be also recognized as liabilities and are embedded within the estimates. It should be noted that potential payments by social security schemes will not be recognized as financial assets or liabilities in the IIP. Payments will be treated as current transfers in the secondary income account as they are made.

Foreign liabilities are calculated as a proportion of net equity in reserves for pension funds from the Australian System of National Accounts. Foreign assets will be calculated based on ratios from the domestic economy.

IMPACT ON THE BALANCE OF PAYMENTS

The revisions from the introduction of pension funds into BPM6 will increase the level of the current account deficit by 1.3% (about $940 million) in 2007-08. Australian asset position with the rest of the world will increase by 1.1% (about $12,200 million) and foreign liabilities will increase by less than 0.1% (about $1,000 million). Service charges for pension funds will decrease net services by 48.3% (about $590 million) and net secondary income flows will decrease by 54.7% (about $190 million).

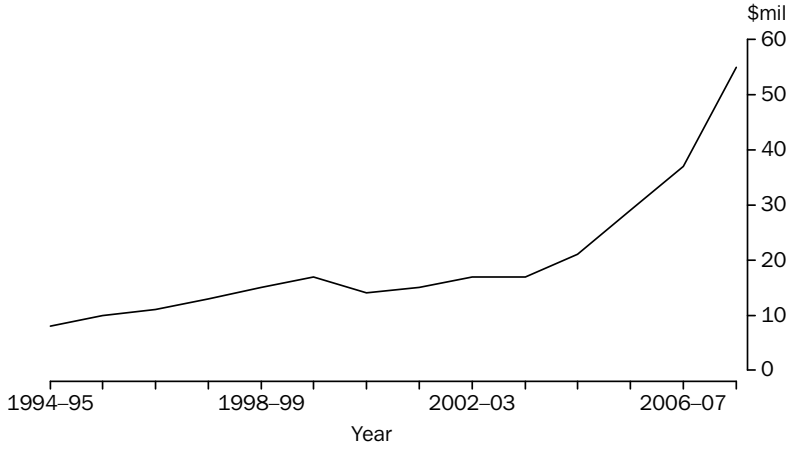
3 AUSTRALIAN FOREIGN LIABILITY AND BENEFITS FLOWS

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Pension funds service charge	15	17	14	15	17	17	21	29	37	55
Investment income	8	8	8	4	8	8	8	12	16	16
Social Benefits paid	53	66	20	21	21	33	37	37	46	49
Social contributions	68	82	52	44	53	61	62	101	162	53
Foreign liabilities	357	440	470	489	514	611	696	852	1 119	1 076

4 AUSTRALIAN FOREIGN ASSET AND BENEFITS FLOWS

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Pension funds service charge	156	148	109	123	165	187	272	445	499	653
Investment income	86	73	63	32	77	88	104	187	220	193
Social Benefits recieved	392	384	360	360	384	396	408	436	444	452
Social contributions	714	720	407	362	514	673	805	1 386	1 319	643
Foreign assets	3 482	3 548	3 701	4 089	5 105	6 829	9 146	12 664	14 491	12 276

FIGURE 1 - TOTAL CREDITS (EXPORTS), of pension funds services



IMPACT ON THE BALANCE OF PAYMENTS *continued*

FIGURE 2 - TOTAL DEBITS (IMPORTS), of pension funds services

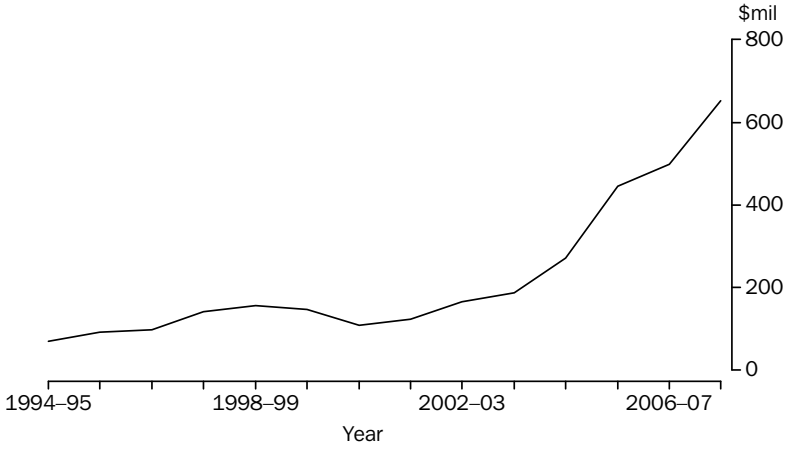
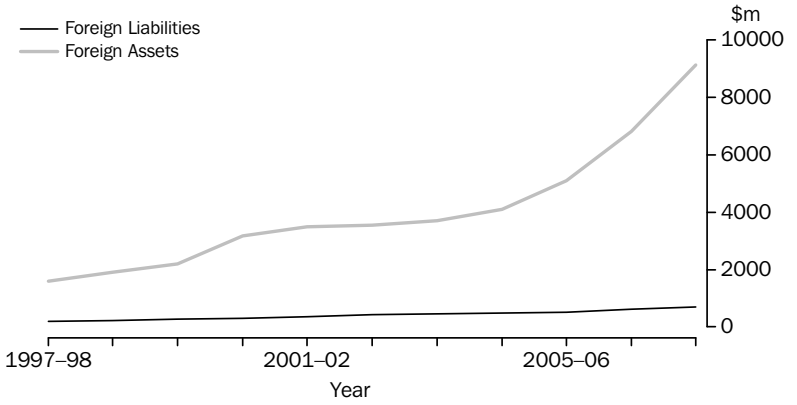


FIGURE 3 - PENSION FUND FOREIGN ASSETS AND LIABILITIES



attributed to beneficiaries

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the quarterly balance of payments to be published on 8 December 2009.

INTRODUCTION

This chapter will focus on Balance of Payments and International Investment Position sixth edition (BPM6) treatments and improved data sources and models for direct insurance, and reinsurance of one economy with entities of other economies. New data series have been developed and backcast to September quarter 1995 for insurance items, except freight insurance which have been backcast to September quarter 1988 and insurance technical reserves to June quarter 1988. These will be included in the September quarter 2009 issue of Balance of Payments (BoP) and International Investment Position (IIP) Australia (cat. no. 5302.0).

Insurance services cover the provision of various types of insurance to non-residents by resident insurance enterprises, and vice versa. Such services cover freight insurance (i.e. insurance on goods that are in the process of being exported or imported); other types of direct insurance (i.e. life—including pension and annuity services, other casualty or accident, health, general liability, fire, marine, aviation, etc. insurance); and reinsurance. Also recorded as insurance services are agent commissions related to insurance transactions.

Under Balance of Payments Manual fifth edition (BPM5), data from the Survey of International Trade in Services (SITS) was used to measure insurance and reinsurance services and related secondary income (current transfers) estimates. Insurance premiums and claims are included in the secondary income account. No identifiable estimates for technical reserves or primary income (premium supplement) was made in relation to insurance services. Freight insurance was only itemised for imports in accordance with BPM5 standards. Freight insurance is itemised for both imports and exports on a BPM6 basis.

Direct insurance and reinsurance

Under BPM6, direct insurance is between an insurance company and other entities. Reinsurance will be insurance where both parties to the policy are providers of insurance services. That is, reinsurance allows insurance risk to be transferred from one insurer to another. Many insurers act as both direct insurers and reinsurers. Reinsurance has a similar treatment to direct insurance.

CONCEPTUAL ISSUES

According to BPM5, international insurance services were estimated or valued by service charges included in total premiums earned rather than by total premiums paid or received during the period. In principle, the measurement of transactions in international insurance services is consistent with that described in the System of National Accounts 1993 (SNA93) for insurance services for resident sectors. However, in practice, both BPM5 and SNA93 excluded resident to non-resident flows associated with premium supplements, that is investment income on technical reserves, due to estimation problems, particularly for insurance imports.

CONCEPTUAL ISSUES *continued*

Under BPM6 treatment, the total value of insurance services is derived as the margin between the amounts accruing to the companies (namely, premiums, and supplements) and the amounts accruing to the policyholders (namely, claims). The principles for measurement of reinsurance and direct insurance services will be the same. Premiums and claims will be shown as separate items in the Balance of Payments standard components on a supplementary basis.

Under BPM6, the freight insurance service charges on goods for resident issuers providing insurance services to non-residents (credit) is the difference between premiums earned and claims payable on goods lost or destroyed in transit. The service charges for non-resident issuers providing services to residents (debit) will be estimated by taking the ratio of estimated service charges to total premiums for exports of insurance services and applying the ratio to total premiums paid to non-resident issuers. The ratio will be based on a medium- to long-term period.

Expected claims

Estimating expected claims will use smoothed past figures of gross claims incurred or smoothed past ratios of gross claims incurred over premiums, applied to current premiums. It will replicate the ex-ante model used by insurers to price their premiums, on the basis of their expectations. When accepting risk and setting premiums, insurers consider both their expectation of loss and insurance costs.

Valuation

The BPM6 treatment of freight insurance is consistent with the Free On Board (FOB) valuation of merchandise exports and imports. Insurance cost up to the customs frontier of the exporting economy will be included in the FOB value of the goods exported. If that insurance is paid for by the importer (e.g. through an enterprise resident in the importer's economy), the exporter will be deemed to purchase the insurance and simultaneously recover the cost from the FOB value recorded in the accounts. Insurance services provided for goods after the goods have crossed the customs frontier of the exporting economy will be recorded as imports of insurance services by the importer when the insurance is provided by an enterprise non-resident in the importing economy. If the insurance is provided by an enterprise resident in the importing economy, no entry will be made in balance of payments accounts. The service elements for freight insurance will be derived in the same way as other insurance.

MEASUREMENT CHALLENGES

The Australian Prudential Regulatory Authority (APRA) has primary responsibility for collecting insurance data in Australia. It releases quarterly and half yearly data on many of the data items required in National and International Accounts. Generally concepts used by APRA are consistent with the SNA08 and BPM6. APRA report offshore data for direct insurance and reinsurance annually only and a proportion derived from this is applied to the quarterly data series. 'Offshore' refers to where the items of income and expense are on risk, assets are invested, and liabilities are located outside Australia. Lloyds Australia data will be used in estimates for insurance and reinsurance imports, but is also only reported annually.

Australian government policy introduced in 2008 requires that any offshore insurance company wishing to carry out business in Australia must be approved by APRA by satisfying certain criteria e.g. setting up an office in Australia. The amount of business carried out by these direct offshore foreign insurers (DOFIs) is unknown, but they will

MEASUREMENT CHALLENGES *continued*

soon be reporting to APRA like any other foreign owned branch. There are some insurance companies that will be able to carry business that are exempt from APRA regulations, again satisfying certain criteria. The main example for exemption is that the insurer is insuring something that no other insurer will take on. i.e. high risk insurance. Companies are required to go through an insurance broker to insure with these DOFIs.

At present APRA does not collect information regarding insurance from brokers. They are currently in negotiations with the Insurance Council of Australia to collect this information, which should be available at the end of 2009.

APRA quarterly data can be volatile especially for reinsurance, and the ABS model will aim to derive a relatively smooth series for insurance and reinsurance services imports and exports while maintaining consistency in relevant ratios e.g. insurance service charge to gross premiums.

Freight insurance will be compiled from merchandise trade data. The trade estimates that will be used are cost, insurance and freight (CIF) and free on board (FOB) data. The freight and insurance charge is embedded in the difference between CIF and FOB - the formula used separates the insurance charge from the freight charge. Investigation has shown that insurance is 6% of total freight and insurance costs for petroleum products and 4% for other trade goods. An underlying assumption will be that there is only freight insurance service charge, premiums and claims for a non-resident to resident transaction. That is, if an Australian company provides an import service on goods, then freight insurance is in scope. If an non-resident company provides an import service into Australia then this is a non-resident to non-resident transaction and not measured. Similarly the conditions apply for exports. Freight insurance for these out of scope transactions will be deducted in principle from the calculations below.

IMPLEMENTATION

Direct Insurance and Reinsurance (excluding freight)

The same methodology will be used for direct insurance and reinsurance. Quarterly APRA data will be used from table 4 (insurance) and table 7 (reinsurance) of the quarterly publication. The annual offshore proportions compiled from Table 4 in the annual publication will be applied to the various quarterly data items to calculate the quarterly offshore data for these items, formulas will be as follows:

*Gross premiums earned = expected claims * average domestic loss ratio (gross claims incurred / gross premiums received)*

*Expected claims = Gross premiums * 5 year average of incurred claims / gross premiums*

Insurance service charge = Gross premiums earned – expected claims + premium supplement

Technical Reserve stocks = Outstanding claims + premium liabilities

*Premium supplement = investment income * (technical reserves / assets)*

*Auxiliary Services = (domestic underwriting expenses / domestic insurance charge) * offshore insurance service charge*

where:

Direct Insurance and Reinsurance (excluding freight) continued

- technical reserves or provisions will include the amounts identified by insurance companies to account for prepayment of premiums and claims incurred but not yet paid, also called reserves. These are always reported as liabilities of insurance companies and assets of policyholders and other beneficiaries.
- premium supplement will be the investment income earned on the assets invested to meet insurance companies' provision liabilities is attributable to insurance policy holders.
- auxiliary services will include agents' commissions, insurance brokering and agency services, insurance and pension consultancy services, actuarial services, salvage administration services and regulatory and monitoring services on indemnities and recovery services.

Note

For imports:

Premiums = offshore 'outward reinsurance'

Claims = offshore 'reinsurance revenue'

Technical reserves = the average ratio of technical reserves / gross premiums from exports * import premiums

Premiums supplements = the average ratio of premium supplement / gross premiums from exports * import premiums

FREIGHT INSURANCE

Petroleum imports

The following formulas will be used to derive freight insurance premiums, claims, and insurance service charge for petroleum imports:

Petroleum freight insurance premiums = [Customs Insurance Freight (CIF) (petroleum) - FOB (petroleum) - Domestic petroleum freight] x 6%

Petroleum freight insurance claims = petroleum freight insurance premiums x loss ratio (usually 69% based on domestic insurance loss ratio)

Petroleum freight insurance service charge (SITS) = Petroleum freight insurance premiums - Petroleum freight insurance claims

Other imports

The following formulas will be used to derive freight insurance premiums, claims, and insurance service charge for other imports:

Other Freight insurance premiums = [CIF (non-petroleum) - FOB (non-petroleum) - Domestic non-petroleum freight] x 4%

Other Freight insurance claims = Other freight insurance premiums x loss ratio (usually 69% based on domestic insurance loss ratio)

Other Freight insurance service charge (SITS) = Other freight insurance premiums - Other freight insurance claims

Exports

As there is no readily available information for total freight and insurance for exports from trade figures the calculation of insurance will be based on equivalent ratios from imports and applied to export FOB merchandise trade data. There are freight data for exporting businesses used from the SITS which can be used to compare with modelled data.

The ratios used in the calculation of freight insurance services are:

Export freight insurance premiums = import freight insurance premiums / imports FOB x exports FOB

A standard loss ratio of 69% will be used to calculate claims based on domestic insurance loss ratios and service charge is calculated by:

Export freight service charge = export freight insurance premiums - export freight insurance claims.

As there is no information available on investment income from freight insurance technical reserves, this will not be included in the calculation of a service charge.

IMPACT ON THE BALANCE OF PAYMENTS

Insurance services exports will be revised down by a total of about $430 million for the 2007-08 year (table 1 and figure 1). Direct insurance will contribute to an increase of about $50 million, freight exports will be revised up by about $90 million and auxiliary services exports down $40 million. However it was the decline of the export reinsurance industry that will contribute to a decrease of about $530 million.

Insurance services imports will be revised down by a total of about $608 million for the 2007-08 year (table 1 and figure 2). Direct insurance will contribute to a decrease of about $190 million. Freight imports will be revised up by about $106 million and auxiliary services imports down by about $148 million. However, it was the decline of the import reinsurance industry that will contribute to a revision decrease of about $374 million. Therefore there will be a net revision increase in trade in services of about $178 million in 2007-08 where imports will be revised down more than exports.

Technical reserve stock estimates will be derived for June quarter 1988 to June quarter 2009. In the five years to June quarter 2008, liabilities will decrease from $1,812 million to about $741 million, while assets will increase from $714 million to about $1,404 million (table 2). The decline in the technical reserves for liabilities will be representative of the running down of stocks and more generally, the decline of reinsurance exports in Australia.

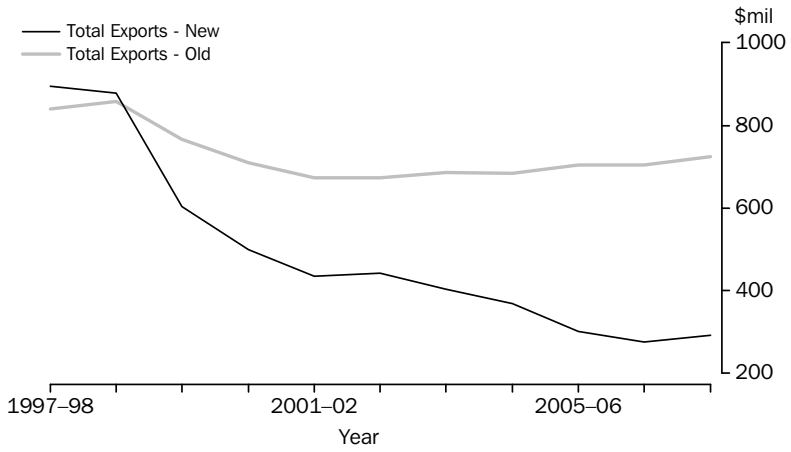
1 INSURANCE SERVICE CHARGES—1998-99 to 2007-08

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
BPM5	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Insurance service charge - Exports	859	766	709	673	673	686	684	704	704	724
Insurance service charge - Imports	922	902	878	856	856	874	872	900	900	932
BPM6	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Insurance service charge - Exports	878	604	500	435	443	403	370	301	276	293
Insurance service charge - Imports	822	722	478	382	335	312	313	258	280	324

2 INSURANCE TECHNICAL RESERVE STOCKS—1998-99 to 2007-08

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Foreign liabilities	1 534	1 480	1 555	1 740	1 812	1 735	1 580	1 090	740	741
Foreign assets	587	566	595	665	714	900	1 049	1 135	1 240	1 404
Net IIP	947	914	960	1 075	1 141	835	531	–45	–500	–638

FIGURE 1 - TOTAL EXPORTS, of insurance services



IMPACT ON THE BALANCE OF PAYMENTS *continued*

FIGURE 2 - TOTAL IMPORTS, of insurance services

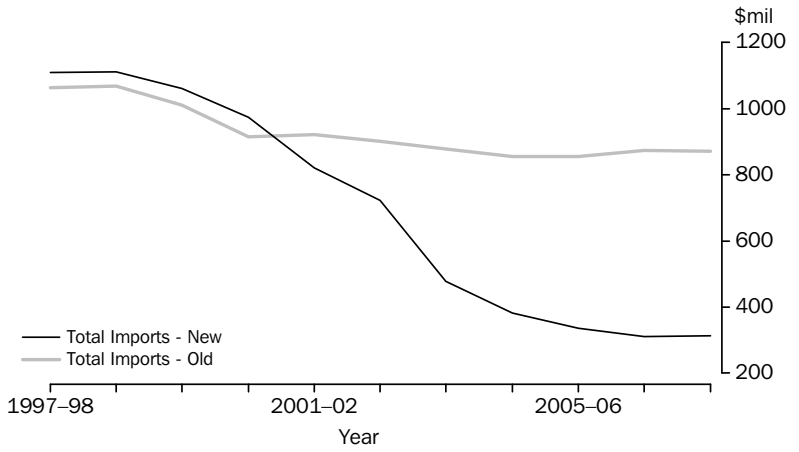
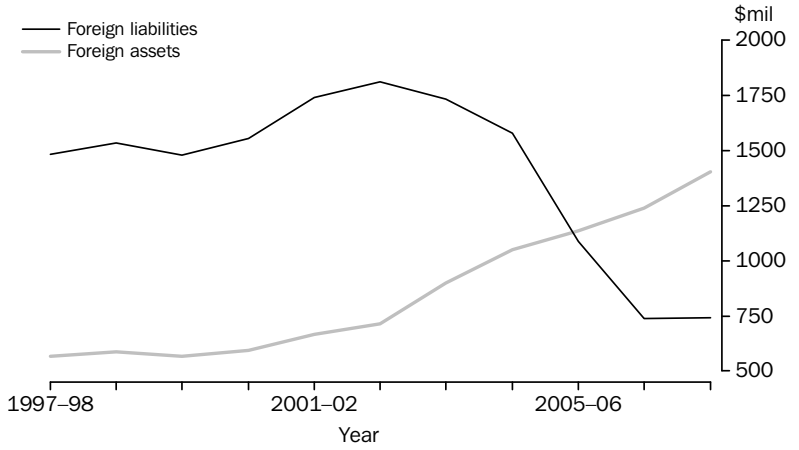


FIGURE 3 - INSURANCE TECHNICAL RESERVE STOCK ASSETS AND LIABILITIES



CHAPTER 12 IMPROVED MEASURES OF FINANCIAL INTERMEDIATION SERVICES INDIRECTLY MEASURED (FISIM) IN THE INTERNATIONAL ACCOUNTS

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the quarterly balance of payments to be published on 8 December 2009.

INTRODUCTION

Banks and other financial intermediaries earn income not only through explicit fees and charges but also on margins between interest paid to depositors and charged to borrowers. This margin is know as Financial Intermediation Services Indirectly Measured (FISIM). FISIM is a service flow which is the difference between the reference rate and the actual interest rate charged on loans and offered on deposits by banks and other financial institutions. The reference rate represents the service-free rate.

CONCEPTUAL CHANGES

The Balance of Payments fifth edition referred to FISIM as an indistinguishable part of investment income which diverged from the treatment in the System of National Accounts 1993 (SNA93). FISIM is covered in greater detail and recognised as a service in the Balance of Payments and International Investment Manual sixth edition (BPM6), and is defined as the interest margin derived by offering rates of interest to their depositors that are lower than the rates that they charge to their borrowers.

FISIM payable by both depositors and borrowers will be calculated by using the concept of a 'reference' rate of interest. The reference rate should contain no service element and reflect the risk and maturity structure of deposits and loans. The rate prevailing for interbank borrowing and lending may be a suitable choice as a reference rate. A single rate should be used for transactions in the domestic currency, whereas different rates should be applied for loans and deposits in other currencies. The reference rate will change over time with market conditions.

Updated BPM6 standards recommends that FISIM calculations be derived from stock levels of loans and deposits. The recommended BPM6 formula is:

*[(Loan rate - reference rate)*Stock of loan] + [(reference rate - deposit rate)*Stock of deposit]*

The recommended methodology will be to determine the rates implied by interest payable/receivable reported on the relevant instruments (loans and deposits) and from this, subtracting/adding a reference rate in order to calculate the FISIM service charge. The net interest figure remaining will then be published as investment income in the relevant instrument. The service charge will then be included as a financial services credit or debit in services.

IMPLEMENTATION AND METHODOLOGY

The ABS will base the calculation of FISIM in the international accounts on reported income flows rather than reported asset and liability levels to ensure that calculated FISIM is consistent with reported income.

The methodology for calculating FISIM by income flows is:

*[(Loan rate - reference rate) * interest flow on loan/loan rate] + [(reference rate - deposit rate) * interest flow on deposit/deposit rate]*

Exports of FISIM

Exports of FISIM are generated through two transactions:

- interest income earned by resident financial intermediaries (providing service) on loans to non-resident non-financial entities;
- interest income payable by resident financial intermediaries (specifically depository corporations) on deposits (providing service) from non-resident non-depository corporations.

Imports of FISIM

Imports of FISIM are generated through two transactions:

- interest income receivable by resident non-depository corporations on deposits held with non-resident financial intermediaries (specifically depository corporations) (providing service).
- interest payable by resident non-financial entities on loans from non-resident financial intermediaries (providing service).

IMPACT ON INVESTMENT INCOME AND TRADE IN SERVICES

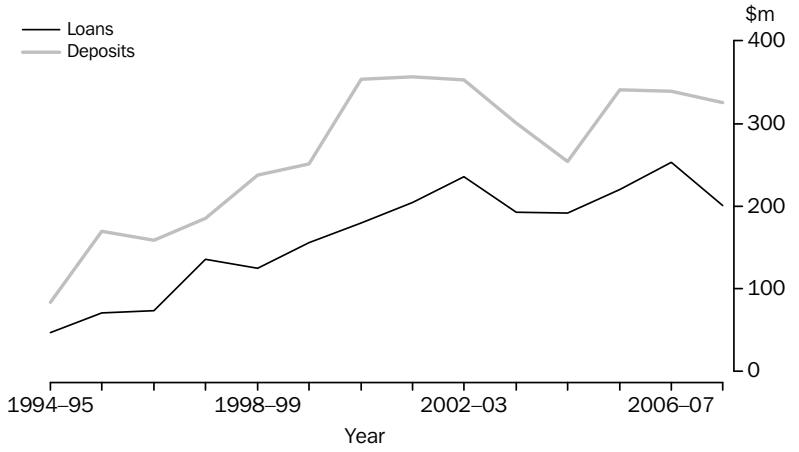
As interest flows paid and received by financial institutions will contain both FISIM and pure interest, other interest income in the primary income account will have to be adjusted downwards for loans and upwards for deposits.

Below are the adjusted FISIM credits and debits as a proportion of current financial services' credits and debits as published in Balance of Payments and International Investment Position, (cat. no. 5302.0) for illustrative purposes only.

1 FISIM CREDITS, (exports)

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Loans	125	156	180	205	236	193	192	220	253	201
Deposits	237	251	354	356	353	301	254	341	339	325

FIGURE 1 - FISIM EXPORTS (CREDITS)

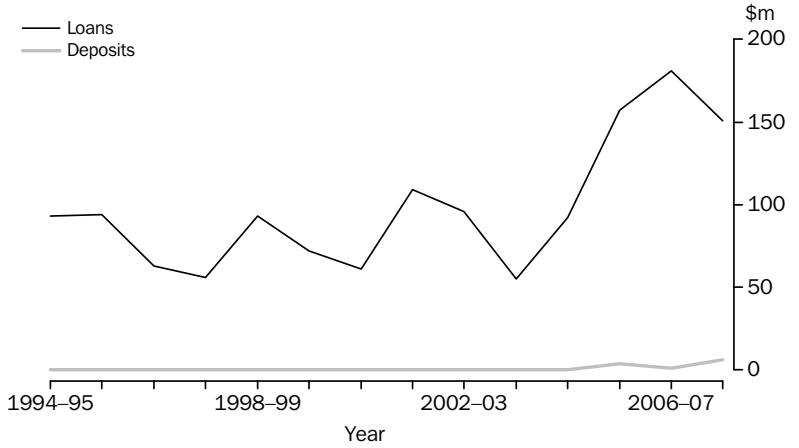


2 FISIM DEBITS, (imports)

	1998-99	*1999-2000*	*2000-01*	*2001-02*	*2002-03*	*2003-04*	*2004-05*	*2005-06*	*2006-07*	*2007-08*
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Loans	93	72	61	109	96	55	92	157	181	151
Deposits	0	0	0	0	0	0	0	4	1	6

IMPACT ON INVESTMENT INCOME AND TRADE IN SERVICES *continued*

FIGURE 2 - FISIM IMPORTS (DEBITS)



FURTHER ISSUES IN FISIM MEASUREMENT

FISIM is an issue which is attracting a great deal of international attention as a result of volatility during the Global Financial Crisis. Since SNA08 and BPM6 have been published, there is still no international consensus as to how FISIM should be measured. With Australia being one of the first countries to adopt SNA08 and BPM6, there is much interest in the results presented. FISIM and its measurement is not expected to be fully resolved internationally for some time to come.

CHAPTER 13 OTHER VOLUME CHANGES DUE TO CHANGES IN RESIDENCY

Warning: The estimates in this publication are indicative. They are presented to give an indication of the magnitude of the impacts of proposed change to Australia's macro-economic accounts. All estimates are subject to refinement and revision in the compilation of the quarterly balance of payments to be published on 8 December 2009.

INTRODUCTION

Migration is the movement of a household unit from one economy to another for an intended period of more than one year. Migrants are covered in the calculation of Net Overseas Migration for population estimates, however the movement of their personal effects, assets and liabilities need to be accounted for. Under Balance of Payments Manual fifth edition (BPM5), this wealth was treated as a capital transfer and limited to personal effects and assets carried across the border. The Balance of Payments and International Investment Position Manual sixth edition (BPM6) revises the treatment of the transfer of assets and liabilities of persons and other entities changing their economy of residence.

CONCEPTS

Migrants are defined as individuals (excluding students, medical patients or diplomatic, military or similar personnel stationed abroad) who move to a new country with the intention to stay there for more than one year. Under BPM5 the transfer of assets by persons changing residency status was classified as 'migrant transfers' and were treated as transactions in the capital account. In principle, migrants' transfers include all the net worth of the migrant in his or her former persona as a non-resident (immigrant) or resident (emigrant). The net worth of an individual includes their household and personal effects, movable capital equipment, funds transferred by the migrant at the time of change of residency, and the ownership of real estate and investments, less any liabilities. 'Migrant transfers' are included in the Balance of Payments (BoP) and International Investment Position (IIP), Australia (cat. no. 5302.0) as a capital transfer.

BPM6 recommends that financial assets and liabilities of persons changing residency be added to or removed from the IIP through a reclassification (Other volume change in the reconciliation account). Assets and liabilities belonging to persons changing residency status are not imputed as a transfer because there has been no transaction between two entities, but rather a change in the residency status of a single entity. The treatment of change in residence applies to all the financial assets and liabilities, not just those that are shifted to the new economy of residence. When persons change their residence to a different economy, their financial assets that represent claims on residents of other economies, including their previous economy of residence, will be reclassified through other changes in volume of assets of the new economy of residence. Similarly, any assets that represent claims on residents of their new economy of residence will be reclassified through other changes in volume to resident-to-resident positions. Liabilities will be reclassified in the same way. Migrant transfers will no longer appear as a category in capital transfers.

A new methodology will be developed to estimate the addition or removal of these assets and liabilities between Australia and other economies. This new data series will be included under foreign assets and foreign liabilities reconciliations, tables 26 and 27 of the Balance of Payments and International Investment Position, Australia (cat. no.

CONCEPTS *continued*

5302.0). The new classification and estimation methodology will also be applied in the Australian System of National Accounts (ASNA).

MEASUREMENT ISSUES

An estimate of the number of households arriving and departing permanently will be required to avoid allocating household assets to every man, woman and child that changed residency. For arrivals, the proportion of primary applicants to total arrivals will be used to determine the number of households arriving. This information was obtained from the Department of Immigration and Citizenship (DIAC) . Household formation rates by age group from the ABS publication Household Wealth and Wealth Distribution (cat. no. 6554.0), will be applied to departures to determine the number of households departing.

Household assets in the National Accounts are classified into financial and non-financial assets with property (dwellings and land) included as non financial assets. The national accounts household balance sheet shows property representing about 60% of household assets. BPM6 requires the creation of a notional resident unit as an owner of the land and buildings. This notional resident unit then is defined as a quasi-corporation. This treatment is designed so that land and other non-relocatable assets such as natural resources are always assets of the economy in whose territory they are located. Otherwise, the land would appear in another economy's national balance sheet. Therefore property assets (dwellings and land) will be included as part of equity in non-resident unincorporated corporations. SNA08 treatment will be the same.

Based on asset transfer information obtained from the third Longitudinal Survey of Immigrants to Australia, about 60% of settler arrivals transfer assets during their first year of stay. It will be assumed that all permanent migrants transfer or otherwise dispose of foreign held assets within two years of migration. The initial 'other change' and resulting position will be amortised through transactions over a two year period.

It will be assumed that the same pattern of transfer and disposal applies to resident permanent departures as there is no information about the transfer of assets by residents.

DATA SOURCES

Permanent arrivals and departures data was obtained from official demographic estimates. Each September, the ABS releases the annual publication Migration, Australia (cat. no. 3412.0), which revises migration counts and gives consideration to migrants that change their stay intentions (category jumpers). The section can also provide country of origin and destination information.

Information from the *Longitudinal Survey of Immigrants to Australia* conducted by DIAC, available at www.immi.gov.au, was used to obtain transfer of assets information. This is a survey of approximately 10,000 primary applicants who arrived in Australia between December 2004 and March 2005 from the family and skill stream, and comprises two survey waves. Wave 1 was conducted in August 2005 (approximately 6 months after arrival or grant of visa). Migrants were then surveyed again 12 months later (wave 2). Wave 2 information is used as applicants remaining in Australia for 12 months or more are considered residents for BoP purposes.

DATA SOURCES *continued*

The ABS Household Income and Expenditure Survey is a sample survey conducted in 2003-04 and 2005-06 of around 10,000 households out of around 8 million households in total. The same household formation rates and asset and liability values by age groups were used in other volume changes due to residency changes, published in the Household Wealth and Wealth Distribution (cat. no. 6554.0).

National Accounts compiles household assets and liabilities information by asset type. This information is available from ABS publication Australian System of National Accounts (cat. no. 5204.0).

Implementation and Methodology

OTHER VOLUME CHANGES

The following methodology estimates the value of financial plus property assets and liabilities of persons changing residency permanently. Students, defence personnel, diplomats and refugees will be removed from the migration data as these persons are deemed not to change residency status under BPM6. Assets are classified into direct equity (60%), portfolio equity (30%) and currency & deposits (10%). All liabilities will be classified as loans.

To avoid double counting, assets and liabilities accounted for elsewhere will be adjusted. For example, liabilities held in pension funds for non residents will be deducted from total liabilities due to their inclusion as technical reserves in other parts of the international investment position. Similarly assets held by residents in non-resident pension funds will be deducted from total assets held by residents.

The main countries of origin for arrivals are the United Kingdom, New Zealand, China and India, and the main destination countries for departures are the United Kingdom, New Zealand, the United States of America and Hong Kong.

TRANSACTIONS

Based on asset transfer information obtained from the third Longitudinal Survey of Immigrants to Australia, about 60% of settler arrivals transfer assets during their first year of stay. It will be assumed that all permanent migrants transfer or otherwise dispose of foreign held assets within two years of migration. The initial 'other change' and resulting position will be amortised through transactions.

Immigrants (Non-resident movements)

OTHER VOLUME CHANGES

*Assets of Immigrants = (In scope primary applicant arrivals of professional/manager type visa class * mean of immigrant assets) + (primary applicant family type visa class * mean of immigrant assets)*

*Liabilities of Immigrants = (In scope primary applicant arrivals of professional/manager type visa class * their mean assets) + (primary applicant family type visa class * their mean liabilities)*

These asset and liability figures are then allocated to the asset types and countries of origin.

TRANSACTIONS

Following the assumption that assets are transferred to Australia over two years after their arrival, transactions are:

Immigrants (Non-resident movements) continued

Transactions continued

Transactions due to immigrant asset transfers = - 60% of current year other volume changes - 40% of previous years other volume changes

Transactions due to immigrant liability transfers = - 60% of current year other volume changes - 40% of previous years other volume changes

Emigrants (Resident movements)

OTHER VOLUME CHANGES

Numbers of persons departing will be converted to households, using household formation rates by age group.

*Assets of Emigrants = Household departing by age group * asset values for age group by households*

For liabilities of emigrants, numbers of persons departing are converted to households, using household formation rates by age group.

*Liabilities of Emigrants = Household departing by age group * mean liability values for age group by emigranthouseholds*

These asset and liability figures are then allocated to the asset types and countries of destination.

TRANSACTIONS

Transactions due to emigrant asset transfers = - 60% of current year other volume changes - 40% of previous years other volume changes

Transactions due to emigrant liability transfers = - 60% of current year other volume changes - 40% of previous years other volume changes

RESULTS

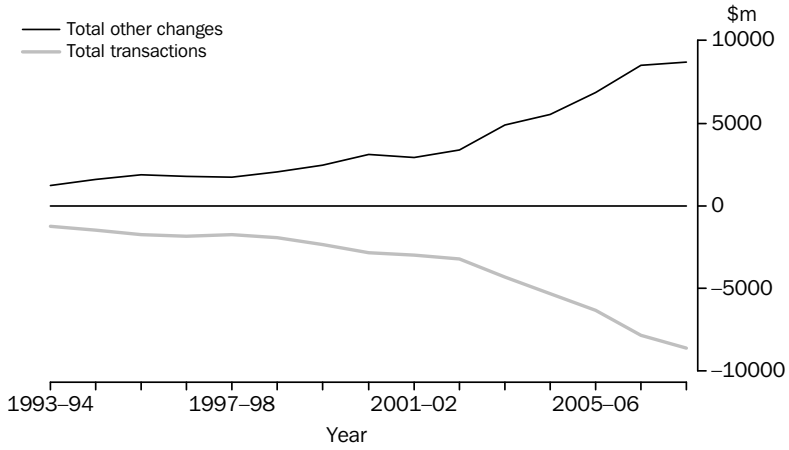
Other volume changes in 2007-08 will increase foreign assets by about $8.7 billion and transactions from previous migration will be about -$8.6 billion. The large increases in other volume changes and transactions in from 2003-04 onwards coincides with an increase in population due to net overseas migration, especially permanent settlers.

1 FOREIGN ASSETS, OTHER VOLUME CHANGES, AND TRANSACTIONS FROM PERMANENT RESIDENCY CHANGES

Foreign assets	*1998-99* $m	*1999-2000* $m	*2000-01* $m	*2001-02* $m	*2002-03* $m	*2003-04* $m	*2004-05* $m	*2005-06* $m	*2006-07* $m	*2007-08* $m
Total other changes	2 069	2 487	3 107	2 912	3 366	4 911	5 554	6 866	8 509	8 707
Total transactions	–1 943	–2 320	–2 859	–2 990	–3 184	–4 293	–5 297	–6 341	–7 852	–8 628

RESULTS *continued*

FIGURE 1 - FOREIGN ASSETS, other volume changes and transactions from permanent residency changes



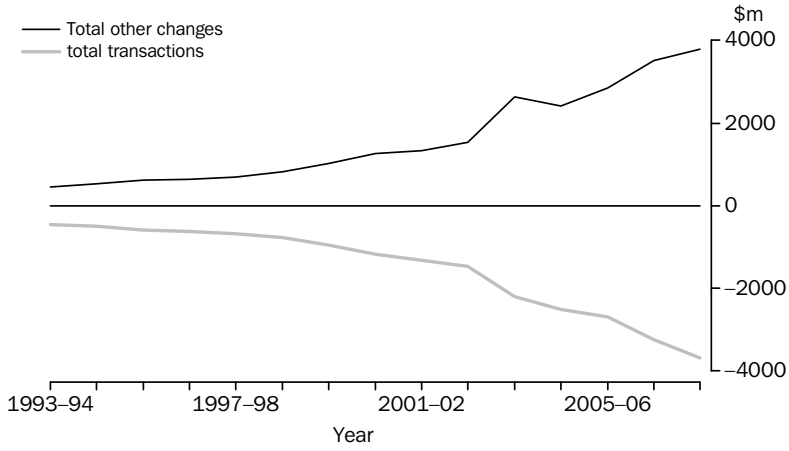
Other volume changes in 2007-08 will increase foreign liabilities by about $3.8 billion and transactions from previous migration will be about -$3.7 billion. The increase in liabilities coincides with increasing rates of permanent departures and liabilities that are carried from increasing permanent settlers to Australia.

2 FOREIGN ASSETS, OTHER VOLUME CHANGES, AND TRANSACTIONS FROM PERMANENT RESIDENCY CHANGES

Foreign liabilities	*1998-99* $m	*1999-2000* $m	*2000-01* $m	*2001-02* $m	*2002-03* $m	*2003-04* $m	*2004-05* $m	*2005-06* $m	*2006-07* $m	*2007-08* $m
Total other changes	822	1 031	1 265	1 342	1 540	2 633	2 422	2 863	3 508	3 793
Total transactions	–772	–948	–1 172	–1 312	–1 461	–2 196	–2 506	–2 687	–3 250	–3 679

RESULTS *continued*

FIGURE 2 - FOREIGN LIABILITIES, other volume changes and transactions from permanent residency changes



ABBREVIATIONS

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
AIA	Australian investment abroad
AIC	Annual Integrated Collection
ANZSIC06	*Australian and New Zealand Standard Industrial Classification, 2006 Edition*
ANZSIC93	*Australian and New Zealand Standard Industrial Classification, 1993 Edition*
APRA	Australian Prudential Regulation Authority
ASGC	Australian Standard Geographical Classification
ASNA	Australian System of National Accounts
ASX	Australian Stock Exchange
ATO	Australian Taxation Office
BEA	US Bureau of Economic Analysis
BERD	business expenditure on R&D
BoPBEC	Balance of Payments Broad Economic Classifications
BOP	Balance of Payments
BPM5	*Balance of Payments Manual, Fifth Edition, 1993*(International Monetary Fund)
BPM6	Balance of Payments and International Investment Position Manual
CIF	Customs and Insurance Freight
CoE	compensation of employees
COFC	consumption of fixed capital
CPI	consumer price index
DIAC	Australian Government Department of Immigration and Citizenship
DOF	Australian Government Department of Finance
DOFI	direct offshore foreign insurer
DWP	defence weapons platforms
ECS	Engineering Construction Survey
ESO	employee stock options
f.o.b.	free on board
FIA	foreign investment in Australia
FISIM	financial intermediation services indirectly measured
GDP	gross domestic product
GERD	gross expenditure on R&D
GFCE	government final consumption expenditure
GFCF	gross fixed capital formation
GFS	Government Finance Statistics
GMI	gross mixed income
GOS	gross operating surplus
GVA	gross value added
HERD	higher education expenditure on R&D
HIES	Household Income and Expenditure Survey
IIP	International Investment Position
ISIC	International Standard Industrial Classification
JPDA	Joint Petroleum Development Area
NAICS	North American Industry Classification System

NPISH	non-profit institutions serving households
NPV	net present value
NZ	New Zealand
OECD	Organisation for Economic Co-operation and Development
PIM	Perpetual Inventory Model
PNPERD	private non-profit expenditure on R&D
PPP	purchasing power parity
PTE	private trading enterprises
QBIS	Quarterly Business Indicators Survey
R&D	research and development
RBA	Reserve Bank of Australia
Repo	repurchase agreements
SDRs	special drawing rights
SESCA08	Standard Economic Sector Classifications of Australia 2008
SFI	Survey of Financial Information
SITC	Standard International Trade Classification
SITS	Survey of International Trade in Services
SNA08	System of National Accounts 2008 version
SNA93	System of National Accounts 1993
Statistics NZ	Statistics New Zealand
UK	United Kingdom
USA	United States of America

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