AUSTRALIAN CENTRE FOR FINANCIAL STUDIES

Level 46
525 Collins Street
Melbourne Vic 3000
Australia

The Secretary
Financial System Inquiry
GPO Box 89
Sydney NSW 2001
August 25, 2014

Re: Financial System Inquiry: Funding Australia's Future Stage 2

Dear Sir/Madam,

Please find attached a submission from the Australian Centre for Financial Studies (ACFS) responding to the second round call for submissions for the Financial System Inquiry. The attachments are a series of reports that make up Stage 2 of ACFS' Funding Australia's Future project.

The series of reports makes observations and recommendations that address issues raised in the FSI Interim Report and on the broader topic of the financial system's role in meeting the needs of end users of the financial system efficiently and fairly. The series is comprised of four reports which each take the perspective of different users of the Australian financial system.

Financing the Australian Business Sector authored by Dr Sam Wylie of the Melbourne Business School takes the perspective of Australian businesses as an end user and looks at issues including Australian bank capital requirements, infrastructure financing, the role of securitisation and the corporate bond market.

Australian Household Sector Finances authored by Prof Michael Drew and Dr Adam Walk of Griffith University takes the perspective of Australian households as end users and looks at the changing financial needs of households both across time and their individual life-cycles.

International Linkages: Financial Markets and Technology authored by Prof Deborah Ralston and Martin Jenkinson of the Australian Centre for Financial Studies looks at the role of Australia's financial system in an international context and the role it plays in facilitating the inflows and outflows of capital. Issues covered in this paper include the role of the Australian equity and corporate bond markets in an increasingly internationally integrated world and potential barriers to greater exports of Australian financial services.

Regulating the Australian Financial System authored by Alex Erskine, Managing Director of Erskinomics and former head of research at ASIC analyses the philosophy of regulation post-Wallis and whether Australia's regulatory architecture is well structured to provide for an efficient, stable and competitive financial system moving forward. The report also provides observations on issues including short-termism in financial markets, the international co-ordination of regulation and provides an analysis on competitiveness of various aspects of financial services.

The Australian Centre for Financial Studies is a not-for-profit consortium of
Monash University, RMIT University and the Financial Services Institute of Australasia (Finsia).
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The reports were informed throughout the authoring process by a broad and knowledgeable group of stakeholders.[1] However, each report represents the independent views of the report authors and not necessarily those of either the Funding Australia's Future Steering Committee or ACFS.

We would be happy to discuss the issues raised in the submission in more detail with the Secretariat if required.

Yours sincerely,

Professor Deborah Ralston
Executive Director,
Australian Centre for Financial Studies

[1] A list of the organisations that were represented in the Funding Australia's Future Stakeholder committee is provided in Appendix 1.

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Appendix 1: Funding Australia's Future Stage 2 Steering Committee: Organisations Represented

- Australian Bankers' Association
- Australian Centre for Financial Studies
- Australian Financial Markets Association
- Australian Securitisation Forum
- Australian Securities Exchange
- Challenger
- Financial Services Institute of Australasia
- Insurance Council of Australia
- Industry Super Australia
- KPMG
- National Australia Bank
- Reserve Bank of Australia
- SMSF Professionals' Association of Australia
- The Association of Superannuation Funds of Australia
- The Treasury
- Vanguard Investments Australia

AUSTRALIAN CENTRE FOR FINANCIAL STUDIES

FUNDING AUSTRALIA'S FUTURE

FUNDING AUSTRALIA'S FUTURE

FINANCING THE AUSTRALIAN BUSINESS SECTOR

DR SAM WYLIE

JULY 2014

fundingaustraliasfuture.com

Funding Australia's Future

The Australian Centre for Financial Studies (ACFS) instigated the project Funding Australia's Future in late 2012 to undertake a stocktake of the Australian financial system, and analyse its role in facilitating economic growth within the wider economy.

In an economy which has enjoyed 21 years of consecutive economic growth and shown a resilience through the Global Financial Crisis (GFC) which is the envy of many nations, the financial sector has played a strong and pivotal role. The past decade, however, has been one of significant change. The growth of the superannuation sector, the impact of the GFC and the subsequent wave of global re-regulation have had a profound effect on patterns of financing, financial sector structure, and attitudes towards financial sector regulation. Identifying the extent to which these changes are transitory or likely to be more permanent is crucial to understanding how financing patterns and the financial sector will develop over the next decade or so.

Stage Two of Funding Australia's Future drills down into the key issues identified in Stage 1 of the project culminating in a set of recommendations aimed at placing Australia's financial system in a position to best meet the challenges presented by a rapidly changing and increasingly globalised economy.

In undertaking this analysis, ACFS has worked with a group of financial sector stakeholders, including the Australian Bankers Association (ABA), the Australian Finance Conference (AFC), the Australian Financial Markets Association (AFMA), the Association of Superannuation Funds of Australia (ASFA), the Australian Securitisation Forum (ASF), the Australian Securities Exchange (ASX), Challenger Limited, the Customer Owned Banking Association (COBA), the Financial Services Council (FSC), the Financial Services Institute of Australasia (Finsia), the Insurance Council of Australia (ICA), KPMG, National Australia Bank (NAB), the SMSF Professionals' Association of Australia (SPAA) and Vanguard Investments, as well as Treasury and the Reserve Bank of Australia (RBA).

This paper is one of four in Stage Two, which include:

1. Financing Australian Business:
   Associate Professor Sam Wylie, Melbourne Business School and the University of Melbourne
2. Australian Household Sector Finances:
   Professor Michael E. Drew, Griffith University and Drew, Walk and Co
   Dr Adam N. Walk, Griffith University and Drew, Walk and Co
3. International Linkages: Financial Markets and Technology:
   Professor Deborah Ralston, Australian Centre for Financial Studies and Monash University
   Mr Martin Jenkinson, Australian Centre for Financial Studies
4. Regulating the Australian Financial System
   Mr Alex Erskine, Erskinomics Consulting

All Funding Australia's Future papers can be accessed through the Funding Australia's Future Website: www.fundingaustraliasfuture.com

Notes on the Authors

Dr Sam Wylie: Dr Sam Wylie is a Principal Fellow of the Melbourne Business School and Associate Professor of the University of Melbourne. Dr Wylie's research and consulting is focused on banking, wealth management and the GFC.

Dr Wylie has worked with Australian superannuation funds, Merrill Lynch, Franklin Templeton, AMP, Moss Ledge Capital, Resource Capital Fund, Johnson Fry, Greenway Capital, and others. His commentary appears regularly in the Australian Financial Review and on national radio and television.

Dr Wylie was an Assistant Professor at the Tuck School of Business at Dartmouth College from 1997-2004 (rated the world's best business school by the WSJ in 2011 and 2012). He obtained his PhD from the London Business School. He also has a Master of Economics degree from the Australian National University and a Bachelor of Engineering degree from the University of Western Australia. From 1986-1992 Dr Wylie was an Intelligence Officer with the Australian Security Intelligence Organisation.

Acknowledgement: The assistance of the following organizations and individuals is gratefully acknowledged: The Commonwealth Department of Treasury; The Reserve Bank of Australia; The Association of Superannuation Funds of Australia; The Australian Securitization Forum; The Australian Securities Exchange; CP2; The Australian Bankers Association; SMSF Professionals Association of Australia; Industry Super Australia; Dr Pete Manasantivongs of the Melbourne Business School; Martin Jenkinson of the Australian Centre for Financial Studies.

Contents

Executive Summary

This paper is one of four papers that comprise Stage 2 of the Funding Australia's Future (FAF) project. The Australian Centre for Financial Studies (ACFS) launched the FAF project in December 2012 to better understand the role of the financial system in facilitating long term economic growth in the Australian economy.

The three papers of Stage 1 reviewed the infrastructure of Australia's financial system and assessed the issues that are likely to affect the supply of and demand for finance in Australia in the medium to long term. Stage 2 asks how well Australia's financial sector serves the economy (especially households and business), and how effectively it links the sources and users of finance for the benefit of Australian society.

This paper analyses the supply of finance to the Australian business sector. It attempts to identify problems in the provision of finance to Australian business in terms of constricted volume of finance or high cost of finance. The paper then analyses the causes of these problems. The finding of the paper can be summarized in 6 points.

1. **Competing channels**

The public and policy discussion of the channels for financial capital in Australia should be more comprehensive – considering all the competing channels at once -- and less particular to one channel.

The stock market, bank corporate lending, the corporate bond market and securitisation are all channels that compete to carry financial capital from savers to Australian businesses. Regulation, legislation and policy making in general has a major influence on the amount of capital that flows through the respective channels.

Unfortunately, the public and policy discussion of these channels often treats them separately rather than holistically. A more comprehensive approach would consider the major capital channels of business funding as a whole; with the competing channels as its parts.

Requests for rebalancing of the amount of capital that flows through the competing channels by tax remedies have little merit. In particular, proposals for the reduction of taxation on interest income to 'level the playing field' for debt channels relative to the equity channel should be rejected.

2. Support for banks in the GFC

Government support for commercial banks since September 2008 has fortified the Australian banking system during an ongoing global financial crisis, but it has not been fully matched by greater obligations on Australian banks. The Federal Government's favoured treatment of banks over other capital channels may damage the future financing of Australian business by inhibiting the natural development of non-bank channels; especially the corporate bond channel and the securitisation channel.

Central governments have to give more support to their banking system than they give to the other capital channels because banks are inherently unstable but nonetheless crucial to the proper functioning of the economy.

At the same time central governments want a set of capital channels that efficiently allocate capital across firms and investment risk across savers. But, that requires government policy that is neutral across capital channels. Central governments can support the banking channel and maintain channel neutrality by balancing the support for banks with matching obligations on those banks.

The job of balancing support and obligations is made easier for policy makers by the well established deal that exists in all developed countries between central governments and their commercial banking sectors. Banks get liquidity support at all times and funding support in a crisis. The central government gets capital adequacy and heavy monitoring of risk taking by banks.

Unfortunately, the Australian Federal Government's policy support of banks in the GFC contains elements that are not part of this implicit deal. Support for Australia's banks has been large and support of the four major banks has been especially large.

Too much support for one channel ultimately will be detrimental to the financing of Australian business. Excessive support for the banking channel will eventually distort the allocation of capital and risk and also inhibit the growth of other channels that have a very important role to play – the bond channel and securitisation.

3. Quantitative easing

Australian business, in aggregate, is less exposed than its global counterparts to the disruptions that are likely to result from the unwinding of quantitative easing (QE) by central banks around the world. However, scenarios in which capital flows to Australian businesses are significantly disrupted during the unwinding of QE are plausible and should be the starting point for planning by regulators and policy makers that is based on stress testing.

Disruption of the supply of capital, and liquidity, is a danger faced by the business sector at all times. However, severe disruption of capital markets will be more likely than normal during the slow unwinding of quantitative easing (QE).

The Australian business sector suffered refinancing difficulties in 2008/9 when the bond market closed and banks tightened their lending conditions. A return to those conditions during the unwinding of QE is a live danger. A second danger is that a fall in asset prices – especially real estate prices -- reduces the security that borrowers can provide to lenders. Real estate is the collateral used in most bank lending to Australian small businesses. If the withdrawal of QE is accompanied by a precipitous fall in property prices in Australia, then Australian banks will be forced to either reduce the provision of credit to small businesses or raise loan margins or both.

Policy makers should plan for how credit to small businesses will be maintained in the event of large falls in real estate prices that are caused by the unwinding of QE.

4. Structural liquidity problems in infrastructure investment

There is a fundamental structural problem in the financing of infrastructure in Australia. Very long term infrastructure assets are being financed by relatively short term capital, which builds in the potential for refinancing problems. Policy makers should aim to move financing of infrastructure to longer term debt financing and listed equity.

A balance sheet that finances long term, illiquid assets with short term capital has built in liquidity risk. If the funding is withdrawn then the illiquid assets, by definition, cannot be sold at their fundamental value (discounted cash flows). If a whole industry sector is made up of balance sheets like that, then there is the potential for a destructive fire sale of assets in which the withdrawal of funding causes forced sales across the sector and a collapse of asset prices.

Australia's infrastructure sector owns assets with very low asset liquidity that have cash flows stretching out 40 years or more. The stability of the sector's cash flows allow it to have high leverage. But most of the debt is 1-5 year bank debt. Moreover, a considerable part of the equity financing of infrastructure is through channels that are open ended: Investors who provide equity funding for infrastructure through defined contribution superannuation funds can withdraw their equity at short notice.

The infrastructure sector in Australia therefore has a structural liquidity problem. It has been suggested that the RBA might extend a liquidity guarantee to infrastructure funds to eliminate this problem. A better policy would be insistence that Australian superannuation funds only hold equity in listed infrastructure funds.

Listing of currently unlisted infrastructure funds would have an added benefit in relation to self managed super funds (SMSFs). If there were more listed infrastructure investment options then there would be more investment in infrastructure by SMSFs. That would help connect the largest new source of capital (SMSFs) to the fastest growing demand for capital.

5. The public equity channel and dividend imputation

Australia's public equity market functions well in efficiently allocating capital to Australian firms and risk to savers. The dividend imputation system is central to that role and should be preserved in its current form.

The public equity channel in Australia functions well in terms of allocating capital to Australian firms and risk to investors. It has the properties of a well functioning equity market. The equity channel is large at 105% of GDP and it is open to global capital with about 45% of the ASX being owned by foreign residents.

Most importantly listed Australian firms can raise a large amount of new equity. New share issuance by ASX listed firms raised capital equal to 2.85% of GDP per year from 2007-2013. The same figure in the US at 1.45% is little more than half the Australian figure.

Australian firms need to raise a lot of new equity because dividend imputation induces them to pay large dividends with franking credits attached. Firms then have to make the case to the market for why equity capital should be returned to their firm for new investment rather than being invested in another firm. Because of dividend imputation Australian firms have to subject their investment plans to more objective scrutiny by outside investors than firms in many other countries. This arrangement is very healthy in terms of efficient allocation of capital and risk.

Dividend imputation is not perfect but the problems it causes are small compared to its benefits. It does not need a substantial policy overall.

6. Size of the Australian domestic corporate bond channel

The small size of the corporate bond channel relative to the equity channel or bank corporate lending channel is often cited as a structural weakness of the Australian financial system. However, apart from the need to avoid additional support of the bank channel, there is no need for policy action to promote the Australian corporate bond market.

In July 2014, Australian businesses have issued approximately $50 billion of bonds into the Australian domestic corporate bond market and $175 billion in the global bond markets. Growth in domestic issuance of corporate bonds has stalled; the total volume of domestic issues is no higher than it was in December 2006. In contrast, the volume of issuance into global bond markets by Australian businesses has nearly doubled in those 7.5 years.

Australian businesses are opting to issue bonds into global markets rather than domestic markets. There are structural reasons for this. However, there does not appear to be any first order distortion of the Australian bond market. Australia has a bond market that matches its position as a small, open economy with large commodity and service sectors, a dominant domestic banking sector and a substantial and persistent current account deficit. No major policy initiative is needed to support the domestic corporate bond market. But is important the policy makers avoid providing additional support for the banking channel at the expense of the bond channel.

1. Introduction

This paper is one of four papers that comprise Stage 2 of the Funding Australia's Future (FAF) project. The Australian Centre for Financial Studies (ACFS) launched the FAF project in December 2012 to better understand the role of the financial system in facilitating long term economic growth in the Australian economy.

The three papers of Stage 1 reviewed the infrastructure of Australia's financial system and assessed the issues that are likely to affect the supply of and demand for finance in Australia in the medium to long term. Stage 2 asks how well Australia's financial sector serves the economy (especially households and business), and how effectively it links the sources and uses of finance for the benefit of Australian society.

This paper analyses the supply of finance to the Australian business sector. It attempts to identify problems in the provision of finance to Australian business in terms of constricted volume of finance or high cost of finance. The paper then analyses the cause of these problems.

The ultimate concern of the study is with the engagement of Australian business in the real side of the economy. Australian businesses conceive productive projects and then compete for the resources to enact those projects. Part of that competition is for financial capital. It is the role of the financial system to allocate the capital formed by saving to the most productive projects. Further, to distribute the risk of those projects to where it can be born at lowest cost.

Capital is carried from savers to Australian businesses through capital channels. The largest capital channels are the equity market, bank corporate lending, the bond market, leasing and securitisation. These channels compete to carry the capital to businesses using their particular financing instruments: shares, bank loans, corporate bonds, lease contracts and asset backed bonds.

This study seeks to identify problems in these channels or their financing instruments that are preventing Australian businesses from undertaking productive projects in the economy. The study does not focus on sectors of the economy and the individual problems of those sectors – the mining sector or agribusiness or biotech or construction -- but instead the competing capital channels and their instruments.

Australian businesses

The funding of the Australian business sector within the Australian economy is the subject of this study. The Australian business sector is defined in this paper as all firms that operate in the Australian economy and are either listed on the Australian Securities Exchange (ASX) or are privately owned firms that are majority Australian owned. Commercial banks are excluded from this definition to avoid an overlap of business with the channels that carry capital to Australian business.

The funding of foreign owned firms that operate in the Australian economy, but raise most of their capital from foreign capital sources, is not the concern of this study. So, the narrow definition of 'Australian business' used here excludes firms with majority foreign ownership that operate in Australia but are not listed on the ASX.

Discussion of issues

The issues that are identified and discussed are in four categories. First, the need for a more comprehensive view of capital channels in the public and policy discussion of business financing problems in Australia. The capital channels are usually analysed and discussed separately from their competing channels. This problem seems to be most acute in terms of the support that has been offered to commercial banks by the Federal Government since the beginning of the GFC. That support is seldomly discussed in terms of the overall effect on Australia's capital channels.

Second, the need to understand how future disruption in the GFC will affect Australian business financing, and in particular disruption caused by the unwinding of quantitative easing. Two areas are of particular concern. One is the fragility of relatively short term bank financing of long term infrastructure assets. The other is the use of real estate as collateral in small business lending.

Third that, there is a structural liquidity problem in the financing of infrastructure in Australia. Policy makers should encourage unlisted infrastructure funds to move to longer term debt funding and listed equity.

Finally, that the equity and bond markets are functioning well and do not need substantial policy change to dividend imputation or the taxation of interest income.

The paper proceeds as follows. The background section sets out the concepts that are needed in the study: a framework of competing channels; the special role of commercial banks; the deal between banks and the Federal Government; and the Modigliani-Miller concept of the irrelevance of capital structure.

2. Background

This section develops concepts that are used in the remainder of the paper.

2.1 Financial capital as an input to production

Financial capital is an input to economic production, just as labour, physical capital, and intellectual property are inputs. Financial capital shares the following properties with those other inputs to production.

- the non-financial corporate sector has diversified funding sources primarily through the issuance of fixed interest securities offshore;
- When the cost of capital goes up good investment projects become unviable.
- Different types of financial capital are substitutes for one another (the Modigliani-Miller principal).
- Financing of the assets used by firms can be done inside the firm (on-balance sheet with bank loans, corporate bonds or equity) or outside the boundary of the firm (off-balance sheet through leasing, franchising, project finance or securitisation).
- Channels for financial capital can become inefficient, uncompetitive and over-regulated.

2.2 Competing channels for capital

Capital is created by saving (within households, firms and governments) and is demanded by firms, households and governments for investment and consumption.

Capital flows from savers to businesses through a set of competing channels:

- Intermediated channels: Banks, other authorised depository institutions (ADIs) and finance companies.
- Capital market channels: The stock market, private equity markets, the bond market.
- Structures: Securitisation trusts.[1]

Corporate financing channels compete to carry capital from where it is created by saving to where it is used in corporate investment. The amount of capital that flows through the aggregate of all the channels depends on both the economy wide supply and demand for capital but also the aggregate characteristics of the capital channels, such as total taxation and protection of property rights.

2.3 Intermediation

The relative amount of capital flowing through individual channels depends on the relative costs of the channels. When more capital flows through markets and less through intermediaries, then

[1] Wealth management firms and insurance firms fit the definition of being financial intermediaries – both their assets and liabilities are financial instruments – but they are not channels for capital in the conception of channels used here. Instead, they are 'aggregators' of capital.

disintermediation is said to have occurred. The reverse is *reintermediation,* which most recently occurred in the months after September 2008.

Why do intermediated channels even exist? Why don't the parties that supply capital (savers) and the parties that demand capital (firms and others) simply meet in the capital markets and exchange cash for capital market instruments, such as shares and bonds? That is, if businesses want capital then why don't they just sell claims on their future cash flows directly to investors through markets? They do, of course. But, how is value created by households putting money into banks which then make loans to firms?

Intermediaries, such as commercial banks, exist because even though market exchange has big advantages it can also have big problems, such as:

- Mismatches in the scale, maturity and liquidity of how savers want to supply capital and how firms want to acquire capital;
- Large information asymmetry problems; especially the problem that insiders of firms know more about the workings and prospects of the firm than outside suppliers of capital know;
- Difficulty in writing complete contracts;
- Difficulty in defining and enforcing property rights;
- Higher taxation; etc.

2.4 The balance between market channels and intermediated channels

To the extent that intermediaries can solve some of those market problems (transaction costs) then intermediaries are creating value. When the cost of transacting through capital markets goes up then there is less exchange of capital through markets (share market, bond market) and more through intermediaries (banks, finance companies, securitisation trusts). The volume of capital that flows through the competing channels depends on their relative costs, as stated previously. Those relative costs change through time and are especially driven by changes in technology and regulation.

There is a great variation across different economies around the world in the level of intermediation in the financial system. The most important determinant of this cross-country variation in depth of intermediation is the variation in the protection of property rights.

In general, more financial transactions taking place through markets and less through intermediaries is a result of better protection of property rights. In economies where property right protection is extremely weak (in failed states) financial transactions only take place within kinship groups. Where property rights are stronger, but still not highly developed, transactions take place through intermediaries, such as banks, that are strong enough to protect their own property rights. Each party that is supplying or demanding capital contracts with the bank. Where property rights protection is very strong, individuals can transact with other individuals and be confident that the contract can be enforced, and most transactions then take place through markets rather than intermediaries.

Securitisation is a form of intermediation, but it is 'light intermediation'. In contrast, commercial banking is a form of 'heavy intermediation'. Banking is highly transformative. The liabilities of banks (mostly deposits) are short term, risk free and liquid, whereas their assets (mostly loans) are almost the opposite; being long term, risky and illiquid. Banks are highly transformative of cash flows, transforming maturity, riskiness and liquidity.

Securitisation is not so transformative as banking, but it is still intermediation because it interposes a balance sheet (the securitisation trust) between the suppliers and demanders of capital. Securitisation should be thought of as being half way between bank lending and bond markets.

2.5 The special role of commercial banks

Commercial banks have a special role within the financial system. A role that is more important than that of other financial intermediaries such as investment banks, insurance firms and wealth management firms. Commercial banks are special for the following five reasons. The first two reasons are the most important.

1. **Banks play a pivotal role in normal monetary policy by converting liquidity into credit.** (Quantitative easing is a radical departure from the normal course of monetary policy that is discussed in a later section.)

   In advanced economies the central bank (the RBA in Australia) does not transact directly with the households and firms of the real economy. Instead, the central bank transacts with commercial banks and those banks transact with households and firms. That is, the banking system lies between the central bank and the real economy.

   The central bank can stimulate aggregate demand in the real economy by cutting short term interest rates, but it cannot directly create the credit needed to support higher levels of consumption and investment. The central bank can only inject liquidity into the banking system and then rely on the banking system, and shadow banking system, to convert that liquidity into credit. Banks collect liquidity in the form of deposits (and money market instruments) and convert it into credit in the form of loans.

   The pivotal role of the banking system in receiving central bank liquidity and multiplying it into a much larger amount of credit for the real economy gives the banking system an importance in the proper functioning of the economy that is greater than any other part of the financial system.

   But, performing their crucial role of converting liquidity into credit makes banks critically unstable. Banks have short term, liquid liabilities (mostly deposits) and long term, illiquid assets (mostly loans). Banks always face the danger of loss of confidence in the bank's solvency and a 'run' on their deposits. This fragility of banks is not a design flaw in the banking system; it is the simple consequence of banks having the role of converting liquidity into credit.

2. **Banks act as conduits for central bank liquidity in a crisis.**

   In a financial crisis asset liquidity evaporates as market participants withdraw in the face of

uncertainty and funding liquidity is hoarded.[2] Central banks always react to a liquidity crisis by promising to supply more than adequate funding liquidity to the economy. This promise prevents fears of a crisis becoming self-fulfilling as liquidity dries up.

When the Central Bank releases emergency payments liquidity into the economy through its discount window, that liquidity flows directly into the commercial banks (nowhere else). It is then channeled to households and firms as they draw down on the lines of credit supplied by banks or withdraw deposits.

3. **Banks provide a location where funds can be stored risklessly.**

   Households and small and medium size firms cannot easily access treasury securities. Therefore, banks' deposits are the risk free asset for households and small and medium size enterprises (SMEs). Bank deposits are made risk free by the guarantee of deposits by the Federal Government (deposit insurance).

4. **Banks dominate the payments system.**

   Banks collect and disburse cash for most households and firms. Banks run the cheque clearing system and most of the credit card and other electronic payments systems. Banks facilitate most payments between corporations.

5. **The specialness of bank loans.**

   When publically listed firms raise new capital, equity analysts make inferences from the type of capital that is raised. When firms announce a capital raising through the issuance of new shares the share price typically *falls* by 1-2%.[3] When corporate bonds are issued the share price is typically unchanged. However, when a firm announces the renewal of a large existing bank loan the share price typically *rises* by 0.5-1%.

   Equity analysts recognise that the renewing bank has information that equity analysts do not. Most of that renewing bank's extra information comes from the provision of payments and cash management (transactions) services by the bank to the firm. So, the renewal of a large existing loan signals the bank's confidence in the firm, where that confidence is based partially on information that other parties cannot see.

2.6 The fundamental deal between commercial banks and central government

Central governments give commercial banks protection against the critical risk that banks cannot manage for themselves – the liquidity risk of a run on the bank.

1. **Deposit insurance**

   Depositors do not withdraw their deposits from banks in a financial crisis (either systemic or bank specific) because they know that deposit insurance makes their deposits risk free. In fact money flows into large commercial banks in a financial crisis.

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[2] An asset has *asset liquidity* if it can quickly be bought or sold at close to its fundamental value. An instrument has *funding liquidity* if it can be used to immediately discharge a liabilitiy. Asset liquidity and funding liquidity are related but separate. For instance, BHP shares have very high asset liquidity, but cannot be used to pay a taxi driver.

[3] Becketti and Morris (1992)

2. **Access to the central bank discount window in a liquidity crisis**

   Commercial banks can take high quality long term assets to the discount window to obtain the liquidity they need to weather any liquidity crisis.

In return for solving the critical instability of banks that results from them having one foot in the money markets and one foot in the credit markets, the central governments demands two things in return.

1. **Capital adequacy**

   Banks must hold an amount of capital that matches the amount of credit risk, interest rate risk, and operational risk that is born by the bank. The Basel III agreement sets out the rules for how much capital must be held.

2. **Monitoring**

   Banks are heavily monitored by their regulators to ensure that they are not taking on too much credit risk, liquidity risk, interest rate risk, market price risk or operational risk.

To summarise, the fundamental deal between banks and the Central Government: banks get what they need to solve their critical instability – deposit insurance and access to the discount window; the Central Government gets what it needs to ensure that banks will be able to fulfil their role in monetary policy and financial crisis management – capital adequacy and heavy monitoring of banks. Banks want liquidity protection and central governments want financial system stability.

2.7 Modigliani-Miller framework

The study of the financing problems in the Australian business sector, which this paper outlines, is organised around funding instruments rather than the types of organisations that need funding. The study progresses from bank loans, to equities, to corporate bonds, to securitisation, etc. rather than progressing from listed industrial companies, to listed property trusts, to listed financials, to privately owned enterprises, to subsidiaries of foreign firms, etc. This distinction between instruments and organisations is not absolute but it is a deliberate approach.

This study looks at the right hand side (RHS) of the aggregate balance sheet of the Australian business sector. It considers the instruments that are being used to finance the productive capacity of the nation. Understanding problems with those instruments and the channels in which they move capital is the object of the study.

The intuition of Modigliani-Miller

The Modigliani-Miller (MM) intuition about the funding of firms begins with the observation that the cash flows of firms are generated on the left hand side (LHS) of the balance sheet. The assets and operations of firms generate the operating cash flows of the firm. On the RHS of the balance sheet we see how those operating cash flows are divided up and sold. Everything on the right hand side of balance sheets of firms is a claim on the operating cash flows of the firm (except for trade credit, which is the delayed payment of operating costs).

The MM intuition is that how the cash flows of a firm are divided up and sold does not affect the value of those cash flows, unless that division solves a real economic problem. In the MM framework the cash flows of businesses 'are what they are'. The form in which they are sold – mostly in debt contracts, or mostly in equity contracts, or some combination of the two such as convertible bonds -- is irrelevant.

In the MM framework the value of the business is not determined by how it is financed but rather by how strategy about the use of the resources of the business is conceived and executed. This is the notion of the irrelevance of capital structure – with the proviso that capital structure is relevant if it solves a real economic problem. Of course, the biggest economic problem that financing choices can affect in most firms is the amount of corporate tax paid by the firm.

Another important intuition in the MM framework is that division of the operating cash flows of a firm does not by itself eliminate any of the risk of those cash flows. If more of the cash flows are sold as debt, which is less risky because of its senior claim, then the remaining equity of the firm must be more risky. Slicing and dicing the cash flows may help to allocate the risk to parties who can bear it at lowest cost, but it does not eliminate any of the risk.

The irrelevance of instruments and channels

If MM is accepted as a valid framework for considering questions about financing of businesses, then an immediate and central question arises[4]. '*What does it matter how businesses are financed so long as capital, risk and liquidity are allocated throughout the economy in an efficient way?'*

This is a question that advocates of any particular instrument or channel have to address. For example, in the discussion of the size of the corporate bond market, the question is '*what does it matter that the RHS of the balance sheet of the Australian business sector has a lot more equity than corporate bonds?'* Why would it be better if there were less equity financing and more corporate bond financing, or less bank lending and more corporate bond financing? If corporate bonds are substituted for equity in the aggregate balance sheet of the business sector, then equity will be riskier. Why is that a better outcome?

In the MM framework, which is adopted in this paper, the starting point is that it does not matter how firms are financed unless a real economic problem can be solved by the choice of capital structure. It is incumbent on the advocates of particular instruments and channels for funding Australian businesses to show what economic problems would be solved by policy support for that policy instrument or channel.

Bank capital adequacy requirements in the MM framework

Capital adequacy constraints on banks can be understood in an MM framework. The MM notion of the irrelevance of capital structure when applied to banks says that the amount of capital that a bank holds is a matter of indifference to the shareholders of the bank. Shareholders want the management of the bank to choose the capital structure of the bank to maximize the value of the

4 Franco Modigliani and Merton Miler were awarded the Nobel Prize for Economics in 1991 for their insights into the capital structure of firms. The MM intuition is at the centre of corporate finance theory.

shareholders' claims on the firm (the share price) and that does not depend on how the bank is financed.

The statement that equity is an 'expensive' form of capital is wrong in the MM framework. If a bank issues shares to pay off debt, then the expected future cash flows from the bank's shares (dividends) will fall, but the required return of investors in the bank's shares will also fall. These two effects will be perfectly off-setting and the price of the bank's shares will not change as a result of the increased capital adequacy of the bank.

Of course, the conditions for irrelevancy of capital structure do not hold in banking. One departure from the MM conditions is corporate tax. Dividend imputation is not perfectly effective, even in the case of Australia's banks which pay out most of their earnings as dividends (so few franking credits are trapped in the bank) and are owned mostly by Australian residents (so few franking credits go unutilised by shareholders). Because the effective corporate tax is not zero for Australian banks, increasing debt and reducing equity shields some bank cash flows from corporate tax, which transfers value from the Government to bank shareholders.

But tax is not the main issue. The main departure from MM capital irrelevancy conditions is Government guarantees of bank liabilities. If a bank issues shares to repay debt then it reduces the value of the guarantees that the Federal Government is providing to debt holders. That reduction in the value of guarantees transfers value from bank shareholders to the Government.[5]

Consider an insurance analogy to illustrate this idea. Imagine an employee receives free insurance from an employer against damage or theft of a vehicle, but the employee must pay the first $5,000 of damages. If the employee's insurance 'excess' was increased from $5,000 to $10,000 then the employee is clearly worse off. The value of the free insurance has fallen.

In the banking context, the free insurance is the explicit insurance of deposits of all banks and the implicit insurance of the bonds of too-big-to-fail banks. The 'excess' is the shareholder's equity in the bank. If a bank issues shares to pay-off debt, then the value of the Government's guarantee's of the bank's liabilities falls. The increase in equity reduces the size of the Government's contingent liability and in this zero sum game the Government's gain is the bank shareholders' loss.

The resistance from bank management to an increase in the amount of equity banks must hold is completely rational. The management of banks, like any corporation, are the agents of their shareholders and an increase in bank capital reduces the value of Government guarantees and hence it transfers value from bank shareholders to the Government.

2.8 Payments liquidity, risk and long term financing

The financing of firms involves the provision of funding, the provision of liquidity and the absorption of risk. There is never a perfectly clean separation of funding, liquidity provision and risk absorption. As we move from senior claims on a firm (secured loans and bonds), then to mezzanine claims, then to equity, the balance between funding and risk absorption moves towards risk absorption. Likewise, as we move from long term claims of term loans and notes, to shorter term facilities, to

[5] See Admati, DeMarzo, Hellwig and Pfleiderer (2010)

commercial paper, then the balance moves from funding and risk absorption to the provision of payments liquidity.

When it is said that businesses in Australia face problems financing their operations we need to consider whether the main problem is with funding, liquidity provision or risk absorption.

3. Capital channels

3.1 Competing channels

The public and policy discussion of the channels for financial capital in Australia should be more comprehensive – considering all the competing channels at once -- and less particular to one channel.

The stock market, bank corporate lending, the corporate bond market and securitisation are all channels that compete to carry financial capital from savers to Australian businesses. Regulation, legislation and policy making in general has a major influence on the amount of capital that flows through the respective channels.

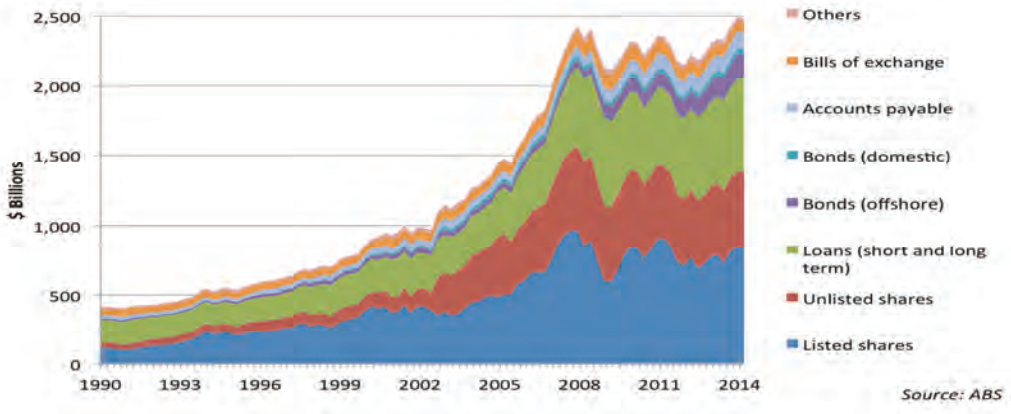
Unfortunately, the public and policy discussion of these channels often treats them separately rather than holistically. A more comprehensive approach would consider the major capital channels of business funding as a whole; with the competing channels as its parts.

Requests for rebalancing of the amount of capital that flows through the competing channels by tax remedies have little merit. In particular, proposals for the reduction of taxation on interest income to 'level the playing field' for debt channels relative to the equity channel should be rejected.

3.2 Funding sources and capital channels

Business capital channels connect the right hand side (RHS) of the balance sheet (liabilities and equity) of the Australian business sector to the LHS of the balance sheet of savers. Figure 1 below shows the aggregate liabilities and equity of Australian businesses over the period 1988-2014.

Figure 1 RHS of the balance sheet of Australian non-financial corporations: 1990-2014



Source: ABS, 2014

Figure 1 exhibits the relative scale of the channels carrying capital to Australian business; not in flows but in the market value of the stock of capital. The equity channel is by far the largest capital channel, followed by the bank debt channel and then the corporate bond channel, which is smaller than the equity and bank channels.

3.3 The role of capital channels

Different channels have different roles

The reason that there are several large channels competing with one another to carry capital to Australian businesses, rather than a single dominant channel, is that the different channels perform very different roles in funding Australian businesses.

The equity channel differs markedly from the other channels in terms of risk and corporate control. All of the capital channels carry capital to firms for funding, as their name suggests. But they also carry risk out of firms and back to the providers of capital. Most of the risk carried back to investors flows through the equity channel to shareholders, because shareholders have the riskiest claim on the cash flows of businesses. Another defining feature of the equity channel is that it contains the market for corporate control. Australian corporate law puts the governance of solvent corporations entirely in the hands of shareholders.

The banking channel is differentiated from other channels by its pivotal role in monetary policy. The bank channel performs the crucial function of transforming liquidity in the form of deposits into capital in the form of loans. The corporate bond channel in general provides longer term debt financing than the bank channel. The securitisation channel separates (tranches) debt claims on firms into low risk claims and higher risk claims.

The different capital channels have different roles in the funding of Australian business. In the absence of market distortions the relative size of capital channels is reflective of the functions they are performing.

3.4 Effective capital channels

This paper is concerned with the question of how *effective* these channels will be in carrying capital to Australian businesses in the next 10-15 years. Effective capital channels are characterised by efficiency and stability. The properties of efficient and stable capital channels are considered in the next two sections.

Efficiency of capital channels

There are three principal properties that effective capital channels have in relation to economic efficiency.

Allocative efficiency: Capital channels allocate capital and risk. Economic efficiency requires that financial capital is allocated to the businesses in the economy that can use it most productively. It is the job of capital channels to identify the businesses that have the most productive projects and to carry financial capital to them. Capital channels must also allocate risk to the investors who can bear that risk at the lowest cost.

If there is a complete set of capital channels, then in the absence of market distortions, price signals will achieve an efficient allocation of capital to businesses and allocation of risk to the providers of capital.

Low transaction costs: The carrying of capital from savers to the productive projects of businesses is not an end in itself. It is a costly transaction that leads to production in businesses. Economic efficiency requires that capital channels perform their role at the lowest cost.

But, capital channels are costly to operate. Accumulating capital from savers is costly. The combined resources of bank branch networks, superannuation fund administration and the underwriting and distribution networks of the equity and bond markets are used in accumulating savings to pass to businesses.

Analysis of investment opportunities is costly. Equity analysis and credit analysis is resource intensive – but that is what is required to price capital and allocate it across businesses.

The dynamic management of the risks of intermediation is costly. Intermediation can create a lot of risk -- credit risk, liquidity risk, interest rate risk – which is managed and born at considerable cost by the owners of intermediaries.

Competition within capital channels is crucially important for low transaction costs. If competition between banks is too low then interest rates will be too high. Likewise, if there is too little competition in the primary distribution of equity or bonds, or in the secondary trading of those securities, then equity and debt capital will be too expensive. In each of these cases the overall cost of capital of Australian businesses will be too high.

Matching needs: Often there is not a natural match between the form in which capital is demanded by business and the form in which it is supplied by savers. The level of efficiency of capital channels depends on how well they resolve this mismatch.

Capital markets respond to changing needs of savers by designing and issuing securities that are tailored to savers' needs. But even more important in matching business needs to savers' needs is the transformation of claims that takes place within intermediaries, especially banks; but also to a lesser extent in securitisation trusts.

The mismatch between business funding needs and household saving needs changes through time. Innovation in security design and intermediation is the key to maintaining the match.

Stability of capital channels

The business sector always faces the danger of disruption of the supply of funding from capital channels because capital channels are inherently unstable. Banks can be forced to curtail lending when they suffer either insolvency problems (from write-down of their assets) or liquidity problems (from a run on the bank). The bond channel may close for periods of time with savers simply refusing to put capital into the channel in a financial crisis. The stock market does not cause rollover problems but it can close to new issuance of shares for lengthy periods and the high volatility of stock prices can also create problems in the funding of businesses.

There are two principal properties that effective capital channels have in relation to stability.

Withstanding shocks: Effective capital channels are robust to shocks from the real economy. They continue to operate properly when the economy turns down sharply. Also, effective channels are robust to contagion from shocks to other channels and channels in other countries.

Diversity of channels: The whole set of capital channels is more effective and stable if there is diversity across the channels that allow at least one channel to continue functioning properly when other channels are distressed. For instance, if the bond market closes to new issues of bonds or rollover of existing issues, but the bank channel and equity channel remain robust, then the disruption to business funding will be much smaller.

That scenario actually played out in Australia in 2009. The global bond channel closed but Australian firms were able to refinance maturing bonds with bank debt and the issuance of equity. Moreover, the banks were able to shore up their own capital by issuing $20 billion of new shares in that year.

Diversity across channels is important, but diversity within channels can also be important. In a financial crisis the first steps in managing failing banks is to merge them into healthy banks.

3.5 Effective capital channel policy

Government intervention in capital channels has three main purposes. First, to help stabilize the inherently unstable channels. Second, to tax the income and capital gains that are earned by savers. Third to protect the property rights of savers who pass capital into the channels. Policy makers always face the challenge of achieving these policy goals without creating distortions and costs in the operation of the channels that damages their efficiency.

Taxation of channels

Capital flows to firms through capital channels and the income on the capital deployed by businesses either flows back to savers or is retained and reinvested in the firm. Ideally the income earned on an investor's capital is taxed at the marginal tax rate of the investor.

The tax system should be neutral to the form in which capital is provided (equity, debt, or a hybrid of the two) and the form in which income is received (dividends, retained earnings, interest, etc.). That is, the amount of income tax paid should depend only on the operating income of the firm and not on the way in which the firm is financed. The amount of tax paid on the income of financial capital should not depend on which channel the capital flowed through to get to the business. Income taxation should be capital channel neutral.

Corporate taxation in Australia is guided by this principal. Dividend imputation gives shareholders credit for corporate tax already paid in the calculation of their Australian income tax. There are, of course, a number of ways in which the principal of channel neutrality is not observed. For instance, corporate tax is not repaid to investors when a business suffers negative profits before tax. Nonetheless, corporate tax policy in Australia aims to be comprehensive of the capital channels and to be neutral in treatment of the channels.

Tax relief for bank deposits and corporate bonds

Proponents of individual capital channels often urge policy makers to reduce the taxation on the income in their channel. It has been suggested that the tax on bank deposits should be reduced so that more capital will flow through the bank channel. It has also been suggested that the bond channel should receive favourable taxation treatment to increase the volume of capital in that channel.

These proposals are without merit. They only seem to have merit when channels are considered in isolation. Proposals for the preferential income tax treatment of interest payments are asking the Federal Government to abandon the principal of neutrality in taxation of channels, which would be a backward step.

Stability policy

Government policy in relation to the stability of capital channels is very much focused on the stability of the banking channel. There is good reason for this as noted in the background section of this paper. Banks have special roles in the financial system; in particular their pivotal roles in the normal conduct of monetary policy and also the distribution of funding liquidity to businesses and households in a financial crisis. The Central Bank is absolutely reliant on banks in the execution of normal monetary policy and crisis management. Moreover, the good health of the banking system has a greater effect on consumer and business confidence than the state of the other capital channels.

It is therefore natural that the Federal Government is much more concerned with maintaining the proper functioning of the banking channel than any other channel. However, policy makers still need to maintain a comprehensive view of the capital channels. Too much support for the banking channel, especially support that does not have matching obligations on the part of the banks, will distort the balance between the capital channels.

In Australia the Federal Government has taken extraordinary measures to support the Australian banking channel since the collapse of Lehman Brothers in September 2008. The next section of the paper lists the support that banks have received and argues that the support has been only partially matched by obligations placed on banks. It is argued that unlike tax policy, channels are not being treated in a comprehensive and neutral manner in respect to stability policy.

4. Support for Australian banks in the GFC

Government support for commercial banks since September 2008 has fortified the Australian banking system during an ongoing global financial crisis, but it has not been fully matched by greater obligations on Australian banks. The Federal Government's favoured treatment of banks over other capital channels may damage the future financing of Australian business by inhibiting the natural development of non-bank channels; especially the corporate bond channel and the securitisation channel.

Central governments have to give more support to their banking system than they give to the other capital channels because banks are inherently unstable but nonetheless crucial to the proper functioning of the economy.

At the same time central governments want a set of capital channels that efficiently allocate capital across firms and investment risk across savers. But, that requires government policy that is neutral across capital channels. Central governments can support the banking channel and maintain channel neutrality by balancing the support for banks with matching obligations on those banks.

The job of balancing support and obligations is made easier for policy makers by the well established deal that exists in all developed countries between central governments and their commercial banking sectors. Banks get liquidity support at all times and funding support in a crisis. The central government gets capital adequacy and heavy monitoring of risk taking by banks.

Unfortunately, the Australian Federal Government's policy support of banks in the GFC contains elements that are not part of this implicit deal. Support for Australia's banks has been large and support of the four major banks has been especially large.

Too much support for one channel ultimately will be detrimental to the financing of Australian business. Excessive support for the banking channel will eventually distort the allocation of capital and risk and also inhibit the growth of other channels that have a very important role to play – the bond channel and securitisation.

4.1 Federal Government support for the banking system in the GFC

The Federal Government has acted in the GFC to protect Australia's banking system from real danger. After the collapse of Lehman Brothers on 15 September 2008, the Government implemented a coherent set of policies to shore up the banking system in the crisis. Unfortunately, after 2010, in the absence of a worsening crisis banks have received more government support which is unrelated to stabilising the banking system.

Seven Government decisions that have been beneficial for banks are discussed below. It becomes apparent in considering this list just how substantial the Federal Government's support for the major banks has been since the beginning of the GFC in July 2007.

1. Deposit insurance

On 12 October 2008 the Federal Government introduced a Federal guarantee of bank deposits. This was an essential preemptory move by the Government to ensure that the global financial panic that followed the Lehman Brothers collapse did not cause a run on deposits in Australia. The limit of insurance per depositor per bank was initially set at $1 million but subsequently reduced to its current level of $250,000.

Refusal to guarantee cash management trusts

The Government protected banks from a run of withdrawals in October 2008, but it did not protect other financial institutions. Cash management trusts (CMTs) compete with banks to store short term savings of households and firms. In the US CMTs (known in the US as money market mutual

funds) were guaranteed for the first time by the US Federal Government after the collapse of Lehman Brothers. That guarantee stemmed the flow of cash out of those funds. However, in Australia CMTs did not receive a Government guarantee and their aggregate funds under management fell from $52.9 billion in June 2008 to $22.4 billion in March 2014.[6]

Australia's $20 billion mortgage trust sector was forced to freeze redemptions in the last quarter of 2008 after funds started flowing out of these trusts and into the safe haven of guaranteed bank deposits.

When CMTs and mortgage trusts complained, in November 2008, that banks were receiving special treatment from the Federal Government they were invited by the Prime Minister to become banks.[7] The Government was making the point that with the benefits of being a bank (deposit insurance and Government support in a crisis) go the obligations (stringent capital adequacy requirements and heavy regulation). Trusts could not have the benefits without the obligations.

The Government's response to the complaints of the trusts was perfectly valid. Banks receive large benefits but they have large matching obligations.

2. Wholesale funding guarantee (ended March 2010)

The Federal Government announced a guarantee of bank bonds on the same day as the deposit guarantee, 12 October 2008. Australian registered banks were offered a financial guarantee of their bonds for a fee that varied from 70 basis points (bps) per annum for AA rated banks (the four majors) to 150 bps for BBB rated banks (most of the smaller banks).

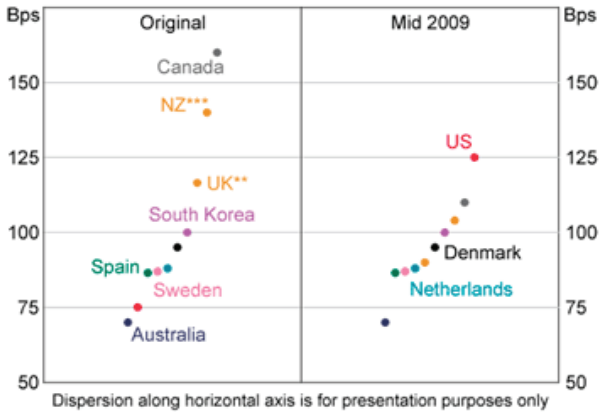
The wholesale funding guarantee was offered to Australia's major banks at very favourable terms. Figure 2 is reproduced from the RBA Bulletin (Schwartz, March 2010). It shows that the 70 bps guarantee fee for Australia's 4 major banks was lower than fees charged in any other developed country. Moreover, Schwartz shows that the Australian Government offered longer term guarantees (5 years) and kept the guarantee scheme going longer (until March 2010) than almost any other country.

It might be argued that because Australian banks rely more heavily on wholesale funding than their global peers, and because of the link between bank overseas borrowing and Australia's current account, generous terms were justified. Nonetheless, the wholesale funding guarantee is another clear example of how much Australia's 4 major banks have received from the Federal Government in the GFC.

6 ABS (2014)

7 Canberra Times, 29 October (2008)

Figure 2 Long term Debt Guarantee Fees for AA-rated issuers



Source: Schwartz (2010)

3. Short selling ban on financial firms (ended May 2009)

The ban on short selling of all stocks on the Australian Securities Exchange that was imposed on 22 September 2008 helped to stabilise the share price of banks and also helped banks to raise new capital.

The ban was lifted for most stocks by the Australian Securities Investment Commission (ASIC) on 18 November 2008. Financial stocks remained protected from short selling until 31 May 2009. Australian financials received this protection for a much longer period than financial firms in other countries. Short selling of financial firms ended in August 2008 for US firms (with catastrophic results) and in January 2009 in the UK.

In general, a ban on short selling damages the proper functioning of the stock market because short selling is a mechanism for incorporating views of market participants into stock prices. However, temporarily banning short selling of financial stocks during a financial crisis is sound policy. Banks are at greater risk of destabilisation by short selling attacks than industrial firms are. Large banks must seek reaffirmation from the financial markets every night when they go to those markets for short term funding. A plunging share price, as a result of heavy short selling, can lead to banks being shut out of money markets, which in turn leads to further share price falls.

Australian banks raised nearly $20 billion in new equity in 2009, at large discounts of up to 20 percent to the existing share price. The short selling ban was helpful in this process. It helped to prevent the share price being driven down before the share issue, which would have necessitated even larger discounts.

The extended ban on short selling of financial firms is another part of the package of the support for banks during the GFC. It was sound policy that had the incidental effect of creating value for bank shareholders.

4. Approved mergers of large regionals into majors (St. George & BankWest)

The GFC has seen substantial consolidation of the banking industry in Australia. The share of total resident assets of Australian banks held by Australia's four major banks rose from 63 percent in May

2008 to 80 percent in May 2014. The increased market share of the majors in part reflects their expansion into market share previously held by securitisation organisers and the foreign banks that have retreated from Australia.

The increased dominance of the four major banks also results from the takeover of mid-sized banks. The 5th largest bank, St George, and the 7th largest bank, BankWest, have been merged into the majors during the GFC; St George into Westpac and BankWest into CBA.

During a banking crisis it is natural, and desirable, for distressed banks to be merged into healthy banks. BankWest was put up for sale by its distressed foreign parent HBOS. St George was experiencing funding difficulties because it had relied on securitisation of assets for funding, and the securitisation channel collapsed.

The consolidation of banking has had the inevitable effect of decreasing competition between banks and increasing bank profitability.

5. Australian Business Investment Partnership Bill (blocked in the Senate)

Every banking crisis in Australia's history began with losses on commercial property loans. In early 2009 the Federal Government was conscious of the exposure of Australia's banks to commercial property and was concerned that foreign banks might withdraw from commercial property lending syndicates and cause a fire sale of Australian commercial property.

The Government's response to that danger was to table the Australian Business Investment Partnership (ABIP) Bill in the Federal Parliament, which proposed the creation of a $30 billion fund to shore up bank lending to the commercial property sector. ABIP was to be a fund that would make loans that replaced the loans of departing foreign banks in commercial property lending syndicates.

The ABIP legislation was voted down in the Senate because the Opposition parties were unconvinced of the urgency of commercial property lending support, and they also believed that the legislation was too favourable to the major banks.

Nonetheless, the ABIP Bill and the planning behind ABIP was ready to go in 2009 if foreign lenders did start to withdraw from the market en masse. The contingency planning of ABIP helped to calm fears about banks' exposure to commercial property in 2009. In that respect ABIP represents contingent support for the major banks, even though the ABIP plan has not been actioned.

6. Permission to issue covered bonds

In November 2011 the Federal Government amended the Banking Act to allow Australian banks to set aside assets as dedicated collateral for bonds issued by banks. The buyers of these 'covered' bonds have the first claim on those dedicated assets in the event of insolvency of the bank. Prior to the November 2011 amendment of the Banking Act, the Act was generally interpreted as prohibiting the issue of any claim on bank assets that was senior to the claim of depositors.

The first issue of covered bonds by Australian banks took place in November 2011 at yields that were approximately 50 bps less than equivalent unsecured bonds of the issuing banks. About one quarter of all bonds issued by Australian banks since then have been covered bonds. Banks are

permitted to pledge no more than 8 percent of their Australian based assets to the buyers of covered bonds.

The issuance of covered bonds lowered the cost of funding for Australia's major banks at the expense of Australian taxpayers. Deposit insurance gives the Federal Government a contingent claim on the assets of banks. In the event of a bank becoming insolvent the Federal Government will claim all of the assets of the bank and use them to meet the claims of all insured depositors. Any shortfall of assets over insured deposits is to be met by the Government. The exception to this procedure are the assets pledged to holders of covered bonds. The Federal Government does not have first claim on those assets.

Claims on the assets of a bank are a zero sum game. By allowing the issuance of covered bonds, the Federal Government allowed its claim on a pool of assets of the bank to be subordinated to the claim of the holders of covered bonds. The subordination increased the cost to the Australian Government of providing deposit insurance.

7. Committed liquidity facility with the RBA

The Committed Liquidity Facility (CLF) is a line of credit that will be provided to banks by the RBA from 1 January 2015. Banks can draw down on the facility by exchanging assets held on their balance sheets (including securitised mortgages) for payments into their accounts at the RBA. The RBA announced the program on 16 November 2011. The cost of the facility is 15 bps per year on the amount of lending committed by the facility.

The purpose of the CLF is to help banks meet the liquidity requirements that APRA has imposed on Australian banks in accordance with the Basel III rules. From 1 January 2015 banks are required to hold enough high quality liquid assets (HQLAs) to meet the expected cash outflows from the bank over the next 30 days. This rule is referred to as the minimum Liquidity Coverage Ratio (LCR).

APRA's definition of a 'high quality liquid asset' is more restrictive than required by the Basel III agreement. Only vault cash, bank reserves at the RBA and government and semi-government bonds qualify as HQLAs. Since vault cash and bank reserves are relatively small, most of the HQLAs would have to be bonds. However, the volume of AUD government and semi-government bonds is insufficient for the bank LCR requirements, so APRA has agreed that a line of credit from the RBA's CLF facility can fill the same role as HQLAs in the LCR calculation.

The provision of the CLF does not itself constitute support for Australia's banks, since the CLF is only intended to help banks to meet a new policy obligation that is being imposed on them (the LCR). Instead it is the pricing of the CLF that represents support for the banks. Many observers were expecting a considerably higher figure.

The RBA's choice of a price for the CLF was necessarily subjective because there is no precise, objective technique for pricing a liquidity facility. Unfortunately, the understanding of funding liquidity is not sufficiently advanced to allow accurate pricing. Not only are there no powerful models for pricing liquidity, but the absence of objective pricing of liquidity can be seen in the absence of liquidity derivatives. There are derivative instruments and markets for transferring most financial risks – interest rate risk, forex risk, equity price risk, bond price risk, credit risk, commodity

risk, etc. – but none for pricing liquidity risk.[8] The absence of funding liquidity derivatives does not reflect an absence of a latent demand for trading of liquidity risk, rather it reflects the inability of market participants to adequately define and properly price liquidity risk.

Even though access to payments liquidity cannot be priced in a close range it is clear that 15 bps is a low price because it is lower than the price paid for the provision of payments liquidity anywhere else. There is no situation in which liquidity is provided at less than 15 bps, or even close to that figure.

In choosing the CLF price the RBA faced a practical upper limit of 25 bps because that is the difference between the cash rate and the interest rate paid by the RBA on the reserves held by banks at the RBA. If the CLF price was higher than 25 bps then the normal functioning of monetary policy would be disrupted, as banks purchased RBA reserves at the cash rate and held them in their RBA accounts, rather than paying for a commitment under the CLF.

The RBA chose the 15 bps price for the CLF for a sound practical reason. But it still delivered to the Australia's banks guaranteed liquidity at a rock bottom price. Since provision of liquidity and capital are bundled in much of bank lending, it gives considerable support to the banking channel.

4.2 Increased obligations on banks

The increased obligations on banks since the beginning of the GFC are of two principal types: first, changes in the amount of equity capital banks must hold, and second, the new liquidity requirements.

Increased capital adequacy requirements

Australia is a signatory to the Basel Capital Accord and as such has agreed to implement the rules of the Basel Committee on Banking Supervision (BCBS). After the events of 2008/9 in the GFC, the new Basel III rules for capital adequacy and minimum liquidity requirements of the commercial banks were created.

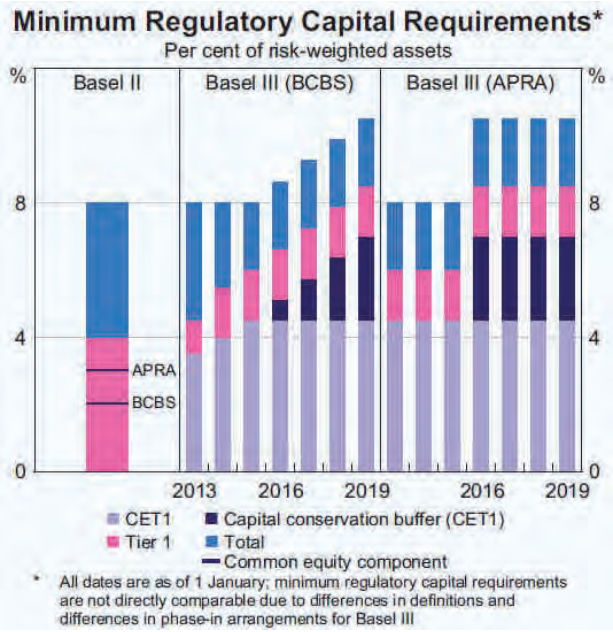
The Basel III rules have significantly higher minimum capital requirements than the Basel II rules. These are minimum requirements and member countries of the Basel Accord are free to impose greater capital or liquidity requirements, and many have done so. APRA has implemented capital adequacy rules for Australian banks that go beyond the Basel III BCBS requirements in four principal ways, as follows:

1. Domestically significant financial institutions (Australia's four major banks) are required to hold 1% more common equity capital.
2. The Basel III rules on not counting the ownership stake in subsidiaries and other financial entities have been made considerably more stringent by APRA.
3. APRA's guidelines for calculating the amount of Tier 1 capital held by banks has lead to lower capital figures for Australian banks than BCBS rules.

[8] Only overnight index swaps (OIS) have the price of funding liqudity as the underlying state variable (30 day BBSW - 30 day OIS rate). But even here liquidity and credit risk are mixed up, so the OIS rate is not a pure liquidity price.

4. APRA is implementing the capital adequacy rules more quickly than required by BCBS, as shown in Figure 3 below which is reproduced directly from the RBA's Financial Stability Review of September 2013.

Figure 3 APRA timetable for implementation of minimum capital adequacy requirements



Source: RBA Financial Stability Review (2013)

Increased liquidity requirements

The Basel III rules specify two new sets of liquidity requirements – one on each side of bank balance sheets.

1. The Liquidity Coverage Ratio (LCR) governs the minimum liquidity of the assets of banks. As discussed above, it requires banks to hold high quality liquid assets equal to the expected net outflows of cash over the next 30 days. The LCR start date is 1 January 2015.[9]
2. The Net Stable Funding Ratio (NSFR) governs the stability of the funding of banks. The rules have not been finalised and will not be implemented until 2018.

[9] LCR requirements will only be applied to the largest ADIs. The others can continue with existing liquid asset rules.

4.3 Comparing support and obligation for banks since October 2008

Ideally the support provided to banks should be matched by obligations imposed on banks. The major points in comparing the increase in support for banks since October 2008 to the increase in obligations are as follows:

1. The policy package of support for Australian banks in 2008/9 considerably raised the explicit and implicit guarantee of Australian banks by the Australian Government.

   Deposit insurance, the Wholesale Funding Guarantee and the ban on short selling was a comprehensive package of support for the funding of Australian banks. The funding guarantee and short selling ban were subsequently withdrawn, but the package establishes an expectation that the Australian Federal Government will act in a comprehensive way to shore up the funding of Australian banks in any future crisis.

   The Australian Business Investment Partnership (ABIP) was a demonstration of Australian policy makers' willingness to provide the asset liquidity needed to prevent an asset fire sale in a class of assets that Australian banks have large exposure to.

   Those explicit and implicit guarantees significantly reduce the cost of capital of Australian banks; especially Australia's major banks whose AA credit ratings rest on those implicit guarantees.

2. The obligations placed on Australian banks since October 2008 are modest and do not match the benefits of the implicit guarantees mentioned above.

   Australian banks are required to hold extra capital under the Basel III rules. But as discussed in the background section the main cost to banks of holding extra capital is that when bank shareholders can experience larger losses before guarantees are activated, the guarantees are less valuable. So, the cost of extra capital requirements should be thought of as a partial reduction in the value of the extra explicit and implicit guarantees that have been granted to banks.

   The LCR requirements might be onerous for banks, except banks have been granted a very low cost way of meeting the LCR requirements with the creation of the RBA's Committed Liquidity Facility priced at 15 bps.

3. When the Federal Government granted banks the right to issue covered bonds, it appears to have received nothing in return. This policy decision was unrelated to the stability package mentioned above. Almost all covered bonds are issued by Australia's largest banks. So, the covered bonds decision was simply extra Government support for the four major Australian banks that had no reciprocal obligation. Policy that favours the major banks in that way is not only distortionary across capital channels but within the banking channel as well.

Support for the banking channel since September 2008 has gone beyond what is needed to maintain system stability, without sufficient matching obligations. It is important that policy makers do not degrade the neutrality of policy toward capital channels by granting extra support for the banking channel absent a renewed banking crisis.

5. Quantitative Easing

Australian business, in aggregate, is less exposed than its global counterparts to the disruptions that are likely to result from the unwinding of quantitative easing (QE) by central banks around the world. However, scenarios in which capital flows to Australian businesses are significantly disrupted during the unwinding of QE are plausible and should be the starting point for planning by regulators and policy makers that is based on stress testing.

Disruption of the supply of capital, and liquidity, is a danger faced by the business sector at all times. However, severe disruption of capital markets will be more likely than normal during the slow unwinding of quantitative easing (QE).

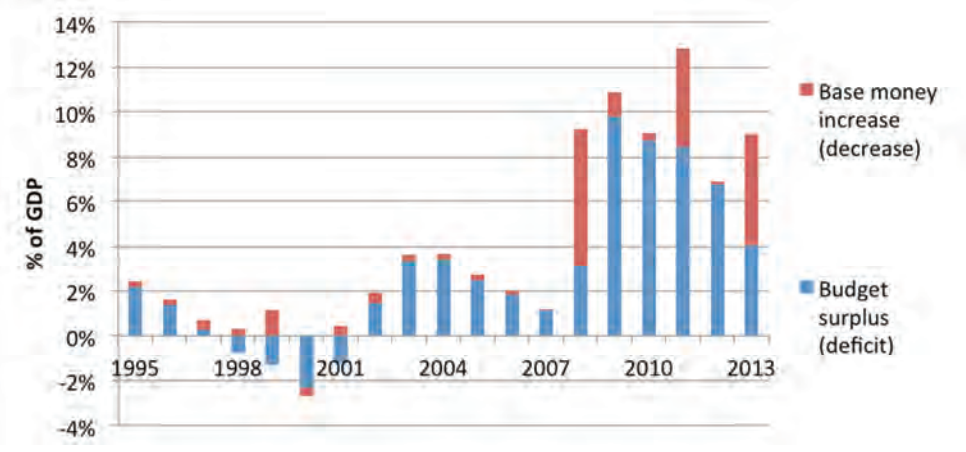
The Australian business sector suffered refinancing difficulties in 2008/9 when the bond market closed and banks tightened their lending conditions. A return to those conditions during the unwinding of QE is a live danger. A second danger is that a fall in asset prices – especially real estate prices -- reduces the security that borrowers can provide to lenders. Real estate is the collateral used in most bank lending to Australian small businesses. If the withdrawal of QE is accompanied by a precipitous fall in property prices in Australia, then Australian banks will be forced to either reduce the provision of credit to small businesses or raise loan margins or both.

Policy makers should plan for how credit to small businesses will be maintained in the event of large falls in real estate prices that are caused by the unwinding of QE.

5.1 Quantitative easing to fight deflation

Deflationary forces that were evolving in the global economy before the GFC were greatly magnified by the collapse of Lehman Brothers. There was a real threat after September 2008 of a downward deflationary spiral developing in the major global economies. That threat was met with extraordinary fiscal and monetary stimulus.

Figure 4 Fiscal and monetary stimulus to the US economy (as % of nominal GDP)



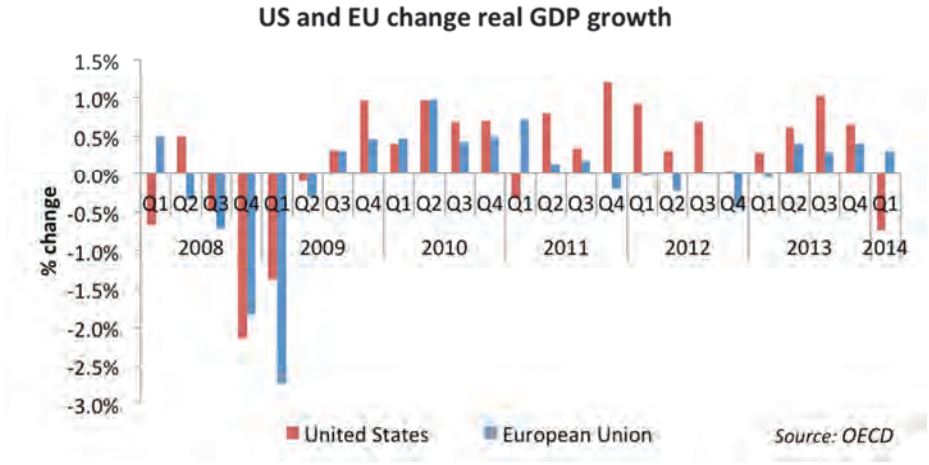
Source: Federal Reserve (2014)

Figure 4 above shows the stimulus to the US economy from deficit spending and expansion of base money since 1990. Combined fiscal and monetary stimulus since 2008 is more than 55 percent of

GDP. That level of sustained stimulus to the economy is unprecedented in US history outside of wartime.

Despite the magnitude of this stimulus the US economy has grown at well below its long term trend rate in every year since 2008 and average US inflation has been below the US Federal Reserve's target figure of 2 percent since Q1 2009. This slow growth and low inflation in the face of massive fiscal stimulus and expansion of the monetary base shows the magnitude of deflationary forces acting on the US economy.

Figure 5 US and EU quarterly real GDP growth since January 2008



Source: OECD (2014)

5.2 Quantitative easing and asset prices

How does QE inflate the price of long term assets, such as stocks, bonds and real estate? In answering this question, the ability of economics to explain the connection between monetary volumes and asset prices should not be exaggerated. Nonetheless, a principal mechanism is as follows.

Money and asset prices

Start by giving money a broad definition. Broad money is the sum of bank deposits plus the shares of money market mutual funds (MMMFs) plus physical cash circulation. Households, firms and institutional investors balance their holdings of (broad) money against holdings of capital assets (stocks, bonds, real estate, etc.). Investors have a preference for the low risk and high liquidity of money and will only hold capital assets if the expected returns on those assets give sufficiently high compensation for their extra risk and lower liquidity.

Each individual household, firm or institutional investor makes their own decisions about their relative holdings of money versus capital assets. But all the money (M3) in the economy has to be held by someone. If the volume of money grows at approximately the same rate as nominal GDP then the balance between money holdings and the capital asset holdings of investors is maintained. But if the volume of money grows rapidly compared to GDP then upward pressure on capital asset prices is induced. This is because investors will only hold the extra money if the alternative of

holding capital assets has become less attractive. That is, investors will only hold the extra money in equilibrium if the expected return on assets has fallen because asset prices have risen.

Rapid growth in credit is often accompanied by rapid growth in asset prices. What is the connection?: rapid growth in the volume of money. Credit (loans and bonds), on the LHS of the balance sheet of the banking system (and the shadow banking system) is matched by money (deposits, MMMF shares, repo lending) on the RHS. Credit growth and money growth must occur together in the real and shadow banking systems. Then the money growth causes asset price growth because investors will only hold extra money if expected returns on capital assets have fallen (and prices have risen). Therefore rapid credit expansion and rapid asset price growth often occur together.

QE, money and asset prices

QE acts on asset prices in the same way as rapid credit growth. QE inflates asset prices because it increases the volume of broad money in the economy at a rate much faster than the growth in GDP. QE is the process of the central bank expanding its own balance sheet by purchasing bonds with new base money (bank reserves at the central bank and cash in circulation). In the QE process the increase in base money creates new broad money. An example will illustrate.

Imagine that the US Federal Reserve (the Fed) purchases $1 million of bonds from a dealer with a cheque against itself. The dealer then deposits the cheque with its bank and the bank deposits the cheque in its account at the Fed. In this example each of the following quantities increases by $1 million: The assets of the Fed (the purchased bonds); the liabilities of the Fed (the bank's reserves at the Fed – base money); the assets of the bank (the bank's reserves at the Fed); and the liabilities of the bank (the new deposits – broad money).

The Fed's purchase of bonds causes the Fed's liabilities (base money) and the banking system's deposits (broad money) to rise by the amount of the purchase (unlike normal monetary policy where a $1 increase in base money causes about an $8 increase in deposits in the US banking system). Some of the new $1 million of new deposits will flow out of the banking system into money market mutual funds (MMMFs), which increases broad money, and some will become increased cash in circulation, which does not increase broad money.

QE expands broad money which must then be held

The Fed's holdings of bonds have risen by $3.3 trillion in the GFC through its three rounds of QE. The concomitant increase in US dollar liquidity (broad money) is difficult to determine because some of the new money has been transferred to banking systems outside the US and then multiplied in those systems through expansion of US dollar credit. It suffices to say that the increase in US dollar broad money is a small multiple of the $3.3 trillion of Fed bond purchases.

The creation of those extra trillions of USD liquidity (broad money) puts upward pressure on asset prices – and not just in the US. Investors will only hold that extra money for two reasons: because they want the security of US Government insurance of US bank deposits, or because the alternative of holding capital assets has become less attractive as asset prices rise with the expansion of broad money.

This influence of QE on asset prices explains two quizzical facts:

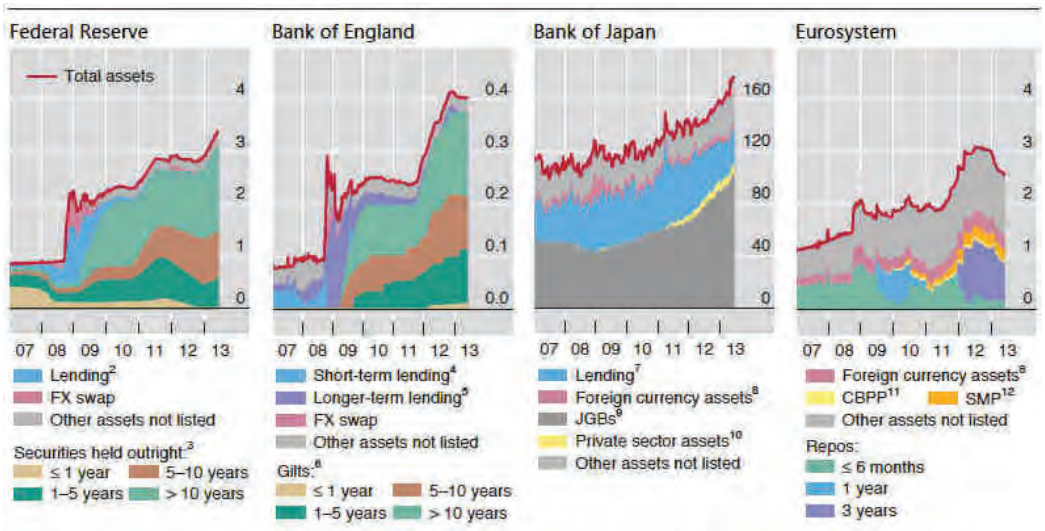
1. Why global stock and bond prices are at record levels even though the US economy has grown over the last 4 years at well below trend growth and the Eurozone economy is still smaller in real terms than it was in 2008.
2. Why the major asset classes are at record levels at the same time. Ordinarily the low upside correlation of stocks and bonds mitigates against the stock market indexes and bond market indexes simultaneously being at record levels. But not when they are both being driven up by QE.

The expansion of central bank balance sheets has put considerable upward pressure on asset prices. Central banks are fighting deflation with QE, so they want it to create consumer and producer price inflation, but QE also creates asset price inflation. The unwinding of QE will have the opposite effect on asset prices of the expansion of the monetary base – sustained downward pressure.

5.3 Unwinding quantitative easing

A global end to QE is some way off – Japan continues its radical experiment in monetary expansion and the European Central Bank is expected to begin a program of QE if inflation continues to fall in the Eurozone. But QE is at least being tapered, if not yet unwound, in the US. The US Federal Reserve's monthly purchases of bonds is expected to be cut to zero before the end of 2014 (from $85 billion per month throughout 2013).

Figure 6 Term structure of central bank debt: balance sheet size and composition



Source: BIS Annual Report (2013)

Once the US Federal Reserve stops buying bonds QE will begin to unwind itself naturally. The bonds that were purchased by the Fed will mature. The repayment of principal upon the maturity of bonds will be the reverse process of the purchase of bonds by the Fed. Base money will flow back into the Fed. The balance sheet of the Fed and the US banking system will shrink and the broad money holdings of households, firms and institutional investors will fall commensurately.

With positive short term interest rates on money holdings and less money to be held, investors will demand risk and liquidity premia on long term assets, putting downward pressure on asset prices. Unwinding will not be quick. If the Fed takes no proactive measures to speed up the process, then the unwinding of US dollar QE will take place over a long period because over half of the bonds purchased by the Fed have a time to maturity of more than 10 years, as shown in Figure 6 above.

A bullish scenario is that the unwinding of QE reduces asset returns over a 10-15 year period as QE unwinds, but does not induce a collapse in asset prices, because investors adopt permanently lower expected risk and liquidity premia. A bearish scenario is that at some stage in the tapering or unwinding process, the market acknowledges that long term expected returns must rise as liquidity is withdrawn, and at that point asset prices jump downwards, creating a panic in capital markets.

The speed of unwinding cannot be known. It is quite possible that QE will ultimately ignite significant consumer price inflation, in which case the Fed may be forced to withdraw liquidity more quickly. Or, alternatively, deflationary fears may return as QE is unwound necessitating a halt to unwinding and a fourth round of QE. The uncertainty about the long term direction of monetary policy is itself a possible cause of market disruption.

5.4 Capital market disruption and Australian business sector financing

The panic in global capital markets in 2008/9 created some disruption of financing of Australian business, but did not result in a funding crisis for the Australian business sector.

A crucial factor in the resilience of Australia's capital channels, especially the banking channel, was that even though the ASX capitalisation fell by over 50 percent between November 2007 and June 2009, and commercial property prices fell by over 20 percent in 2008/10, the value of residential property did not fall. Property prices were held up by growth in labour income and the low unemployment of the mining boom, low supply of new housing, easy credit and high population growth.

However, during the unwinding of QE there is a danger of large falls in the stock market, commercial property AND residential property prices. How would financing of the Australian business sector hold up in those circumstances?

1. Bank profits would be squeezed by large loan losses and increased cost of funds, but banks would be able to widen their net interest margins in the short term as they did in 2008/9. That would increase the cost of funding for Australian businesses.
2. Even if bank capital was not reduced by net income falling below dividend payments, the increased riskiness of mortgages would decrease bank capital ratios. Banks may be able to raise new equity, but their business lending capacity would be reduced.
3. The corporate bond market is 56% larger in July 2014 ($220 billion) than it was in September 2008 ($140 billion) so a weakened banking sector could not be expected to refinance maturing bonds, if the bond market closed, as well it did in 2008/9.
4. Australian banks would have less capacity to replace departing foreign banks in lending syndicates.

5. Residential property would lose its value as collateral. So, bank lending to SMEs would require a lot more bank capital at a time when bank capital would be highly constrained.

Policy planning for asset price falls induced by QE unwinding

The period of unwinding of QE is not business as usual in terms of contingency planning for keeping capital channels open for funding of business. The expansion of QE has inflated global asset prices. The withdrawal of QE will have the opposite effect and the effect may come suddenly.

If a QE induced collapse of asset prices causes house prices to fall substantially, along with equity values and commercial property values, then the ensuing disruption of business financing will not be a repeat of 2008/9. Severely weakened banks will not be able to replace the capital flows of a closed bond market. Lending to small business will be expensive and in short supply. Australian banks will not be able to easily replace lending by departing foreign banks.

Policy makers should plan for how the Government can provide the capital and guarantees that would be required in these circumstances to keep capital flowing to businesses that cannot role over corporate bonds, and small businesses that lose bank funding.

6. Funding Infrastructure

There is a fundamental structural problem in the financing of infrastructure in Australia. Very long term infrastructure assets are being financed by relatively short term capital, which builds in the potential for refinancing problems. Policy makers should aim to move financing of infrastructure to longer term debt financing and listed equity.

A balance sheet that finances long term, illiquid assets with short term capital has built in liquidity risk. If the funding is withdrawn then the illiquid assets, by definition, cannot be sold at their fundamental value (discounted cash flows). If a whole industry sector is made up of balance sheets like that, then there is the potential for a destructive fire sale of assets in which the withdrawal of funding causes forced sales across the sector and a collapse of asset prices.

The commercial banking system is deliberately operated with that built in liquidity risk. Every bank has assets (mostly loans) that are long term and illiquid compared to their liabilities (mostly deposits). The Government addresses this problem directly with the most powerful liquidity policy instruments at its disposal – deposit insurance and access to the RBA's discount window. Banks receive that protection against liquidity shocks as part of their special deal with the Government. Any other sector of the economy that funds long term, illiquid assets with short term capital is a liquidity crisis waiting to happen. The listed property fund sector was in that condition immediately before the GFC began and shareholders in that sector suffered very large losses in 2008/9.

So it is in Australia's infrastructure sector. The sector owns assets with very low asset liquidity that have cash flows stretching out 40 years or more.[10] The stability of the sector's cash flows allow it to have high leverage. But most of the debt is 1-5 year bank debt. Moreover, a considerable part of

[10] An asset has *asset liquidity* if it can quickly be bought or sold at close to its fundamental value. An instrument has *funding liquidity* if it can be used to immediately discharge a liabilitiy. Asset liquidity and funding liquidity are related but separate. For instance, BHPB shares have very high asset liquidity, but cannot be used to pay a taxi driver.

the equity financing of infrastructure is through channels that are open ended: Investors who provide equity funding for infrastructure through defined contribution superannuation funds can withdraw their equity at short notice.

The infrastructure sector in Australia therefore has a structural liquidity problem. It has been suggested that the RBA might extend a liquidity guarantee to infrastructure funds to eliminate this problem. A better policy would be insistence that Australian superannuation funds only hold equity in listed infrastructure funds. Public listing of infrastructure funds would have the additional benefit of making it easier for SMSFs to achieve low cost investment in infrastructure projects.

Trading off funding costs against liquidity risk

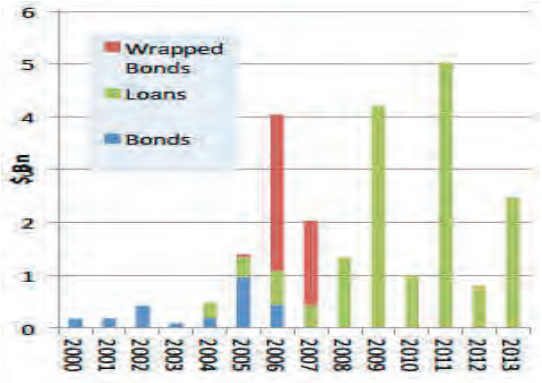
The refinancing risk in Australian infrastructure is not the result of a structural deficiency in the Australian financial system. Infrastructure could be funded with long term debt instead of short term debt and locked-in equity instead of equity that can be quickly withdrawn. The owners of the infrastructure assets are choosing to structure their financing in a way that lowers the cost of funding at the expense of high liquidity risk.

Debt funding of infrastructure

Short term debt nearly always has lower interest rates than long term debt. Moreover, long term, illiquid assets have higher expected returns than short term, liquid assets. Consequently, there is always a temptation for investors to finance long term, illiquid assets, such as real estate or infrastructure, with short term debt.

Infrastructure funds could use more long term debt; they could replace some of the their bank debt, which mostly has maturities of 1-5 years with corporate bonds that have tenors of 10 years or more. See Figure 7 below.

Figure 7 Debt funding of PPP infrastructure projects



Source: Infrastructure Australia's Review of Debt Capital Market Financing (2014)

Corporate bond markets do pose several problems for infrastructure funds. First, the corporate bond market closed in 2008/9. But the risk of market closure is less of a problem for long term debt because refinancing is infrequent.

Second, the domestic bond market is relatively small and most of the demand is for bonds with tenors of 5 years or less. Moreover, Australian superannuation funds that have equity holdings in

infrastructure funds don't want debt exposure as well. Nonetheless, Australian funds have access to global bond markets, particularly the US private placement market and could issue bonds into those market with longer tenors. They choose not to because longer term debt is expensive.

Third, greenfield infrastructure projects are not as well understood by the bond markets as by the banks, and mostly don't have credit ratings. But institutional investors are becoming more comfortable with greenfield infrastructure exposure and placements can be made without ratings, especially in the private placement market. In any case brownfield sector is the larger part of the infrastructure investment.

Super funds and illiquid assets

Most Australians can move their defined contribution superannuation balance from their existing fund to another fund of their choosing. Moreover, most members of retail and industry superannuation funds can change the allocation of their investments to different asset classes by moving from one investment option to another. These features of superannuation investment mean that retail and industry superannuation funds face potentially large liquidity problems if they invest in illiquid assets.

If retail or industry funds invest in bonds, directly owned real estate, hedge funds, infrastructure or private equity funds, then they face varying degrees of liquidity risk. If their members withdraw or move funds then they will need to realise those funds from the investments or other sources. Of the investments listed above the bond market is least problematic because investment banks make markets in corporate bonds. In a financial bond market makers may widen their spreads considerably but standard bonds remain tradable.

Directly held commercial property is much less liquid than the corporate bond market. Unlike the corporate bond market there are no dealers standing ready to buy and sell commercial property. But there are commercial property brokers, using well established valuation techniques and operating in a global market with the price discovery of relatively frequent comparable sales.

Infrastructure is even less liquid than commercial property. The assets are quite specific compared to commercial property and there are neither dealers, nor brokers, nor standardized valuation techniques, nor the price discovery of comparables sales. Consequently, superannuation funds that have large allocations to unlisted infrastructure funds are exposing themselves to liquidity risk. Those funds can sell their liquid assets such as shares to fund redemptions or transfers but that distorts asset allocations and introduces the problem of treating members differently.

Listed equity funds

If retail and industry superannuation funds invested in infrastructure funds that were listed on the stock market then there would be no liquidity problem. They could simply sell shares in the market if they needed to liquidate their investment. That is the value proposition of the stock market – continuous trading in shares that provides price discovery and asset liquidity.

Superannuation funds prefer unlisted infrastructure funds for several reasons. First, listed infrastructure acts like equity – moving up and down with stock market factors, rather than as a

separate asset class. Second, listed infrastructure vehicles often sell at a discount to their net asset value. Some listed infrastructure has been taken private because it is cheaper for infrastructure investors to buy up all the shares of listed infrastructure than to buy infrastructure elsewhere, such as in a sale of brown field infrastructure by state governments. Third, when governments sell brownfield infrastructure (such as the sales recent sales of ports in Eastern Australia) consortia that wish to buy the infrastructure assets and then list them on the ASX cannot compete on price with Australian superannuation funds and global defined benefit funds that want to hold them in unlisted vehicles.

Solution to the liquidity problem

Infrastructure as an investible asset class is small compared to stocks and real estate. But it is growing quickly. Infrastructure funds have funding structures (relatively short term debt and unlisted equity) and investors (industry superannuation funds and retail funds) that give them a potential liquidity problem. The systemic danger from this structure is that in a severe financial crisis superannuation investors may seek to withdraw or transfer their holding of risky assets – stocks, real estate and infrastructure – en masse and a sector wide sell down of infrastructure assets may be needed. At the same time funds may experience difficulty rolling over debt, especially if a forced sell down triggers debt covenants.

It has been suggested that this systemic liquidity risk could be eliminated by the RBA providing superannuation funds with a liquidity guarantee in the form of a committed lending facility that was collateralised by the illiquid assets of the funds. That would allow funds to hold more infrastructure assets and therefore assist in the funding of Australia's infrastructure agenda.

However, that is not sound policy. The central bank should only be lender of last resort to the banking system in a deal with banks that involves well understood reciprocal obligations. There is no need to distort the RBA's role by granting liquidity guarantees to non-banks. Infrastructure funds can solve their liquidity problems by borrowing long term and listing their equity on the stock market, or alternatively having equity investors that do not suffer redemptions (such as global defined benefit pension plans).

Policy makers should consider how superannuation funds can be encouraged to only invest in listed infrastructure funds. This would have added benefit in relation to self managed super funds (SMSFs). If there were more listed infrastructure investment options then there would be more investment in infrastructure by SMSFs. That would help connect the largest new source of capital (SMSFs) to the fastest growing demand for capital.

7. The Equity Channel

Australia's public equity market functions well in efficiently allocating capital to Australian firms and risk to savers. The dividend imputation system is central to that role and should be preserved in its current form.

7.1 The public equity market

The public equity channel in Australia functions well in terms of allocating capital to Australian firms and risk to investors. The equity channel has the following properties which are characteristic of a well functioning equity market.

- The equity channel in Australia is large. The market capitalisation of the ASX is 105 percent of Australian GDP[11]. A market capitalisation to GDP ratio of more than 1 is descriptive of 'large' equity channels.
- The equity channel is open to global capital, with about forty five percent of the ASX being owned by foreign residents.[12]
- Listed firms can raise a large amount of new equity. New share issuance by ASX listed firms raised capital equal to 2.85% of GDP per year from 2007-2013. The same figure in the US at 1.45% is little more than half the Australian figure.[13]
- The initial public offering market has reopened in 2014 to listing of new firms, after having been essentially closed since the end of 2007.
- The forward price-to-earnings ratio of about 14 is very close to global price-to-earnings ratio. This does not suggest that the cost of equity capital in Australia is higher than global equity channels.

In 2009, when Australian businesses faced a potential funding crisis because of the closure of the global corporate bond markets and tighter lending conditions of banks, the Australian equity channel took up the slack. In the five quarters following the collapse of Lehman Brothers, $135 billion of new equity was raised by listed Australian firms. Nearly $20 billion of that new equity was raised by Australia's banks. The equity channel provided an extraordinary amount of capital to deleverage balance sheets of listed Australian firms and to shore up the capital of Australia's banks.

7.2 Dividend imputation

Dividend imputation was introduced in Australia in 1987 to undo the double taxation of corporate earnings. Dividend imputation does not perfectly fulfil that function. If it did work perfectly then the effective corporate tax rate in Australia would be zero. As soon as the Federal Government received a dollar in corporate tax then that dollar would be used as a credit against income taxes due. Shareholders would then be indifferent to whether the legal corporate tax rate was 30% or 40%; the *effective* corporate tax rate would be zero.

But dividend imputation is not perfectly effective for two main reasons. First, a large proportion of Australian shares are held by non-residents who cannot use the franking credits of dividend imputation. Second, most firms do not pay all of their net profits as dividends, so franking credits become trapped inside the firm.

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[11] ABS, ASX figures (2014)

[12] ASX, RBA figures (2014)

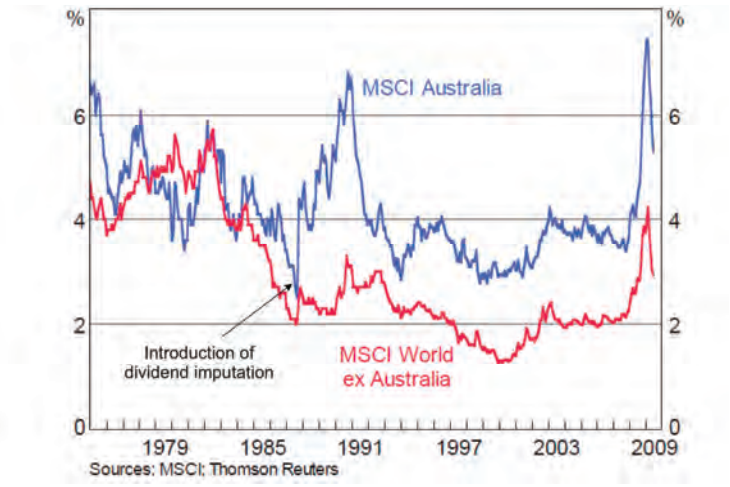
[13] RBA, SIFMA and Federal Reserve Flow of Funds figures (2014)

Dividend imputation also creates a problem for Australian firms because it differentiates the expected after tax returns of resident and non-resident shareholders. The question then arises as to which after tax return should be used as the firm's cost of equity capital? If a project has a return that is higher than the expected return of residents, but lower than the expected return of non-residents, then what should the firm do? These difficult questions introduce uncertainty into the project selection process of Australian firms.

Despite these deficiencies the introduction of dividend imputation has been a great success. It removed the preferential tax treatment of debt channels over the equity channel, at least for Australian residents. Making the tax treatment of capital channels more neutral improves the efficiency with which capital and risk are allocated in the economy, as discussed in an the Capital Channels section of this paper.

Dividend imputation has another large benefit for the Australian economy -- it forces Australian firms to pay larger dividends than firms in other countries. Franking credits are valuable in the hands of shareholders, but the only way to get them to shareholders is to attach them to dividends. Figure 8 below shows that since the introduction of dividend imputation Australian firms have paid higher dividend yields than their global counter-parts.

Figure 8 Effect of dividend imputation on dividend yields



Source: RBA Chart Pack (2014)

Because Australian firms pay higher dividends they have to raise more new capital by share issues and dividend reinvestment programs. That is, Australian firms must rely less on retained earnings for funding their investments than their global counter-parts do. Australian firms are induced by dividend imputation to pay more equity capital out of the firm and then have to make the case to the market for why the capital should be returned to their firm instead being invested in another firm. Because of dividend imputation Australian firms have to subject their investment plans to more objective scrutiny by outside investors This arrangement is very healthy in terms of efficient allocation of capital and risk.

Dividend imputation has deficiencies that are small compared to its benefits. It does not need a substantial policy overall.

8. Corporate bonds and securitisation

The small size of the corporate bond channel relative to the equity channel or bank corporate lending channel is often cited as a structural weakness of the Australian financial system. However, apart from the need to avoid additional support of the bank channel, there is no need for policy action to promote the Australian corporate bond market.

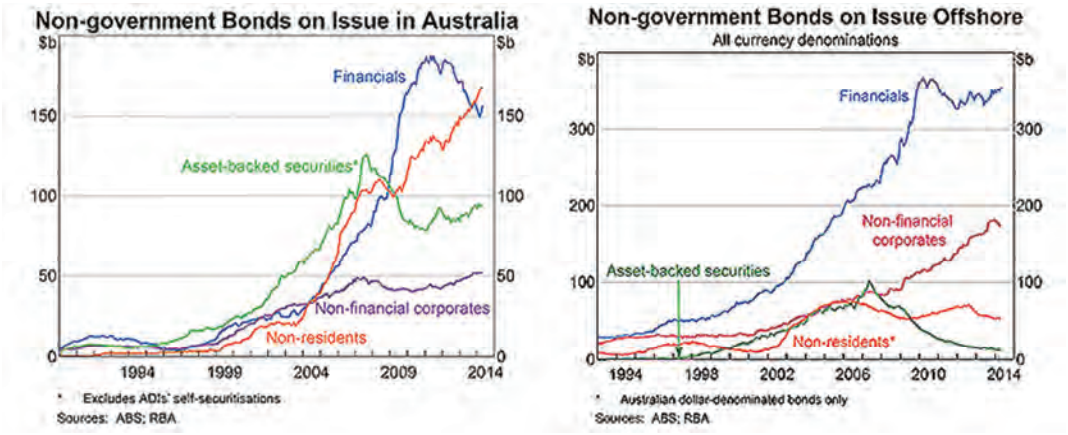
In July 2014, Australian businesses have issued approximately $50 billion of bonds in the Australian domestic corporate bond market and $175 billion in the global bond market. Growth in domestic issuance of corporate bonds has stalled; the total volume of domestic issues is no higher than it was in December 2006. In contrast, the volume of issuance into global bond markets by Australian businesses has nearly doubled in those 7.5 years.

Australian businesses are opting to issue bonds into global markets rather than domestic markets. There are structural reasons for this. However, there does not appear to be any first order distortion of the Australian bond market. Australia appears to have a bond market that matches its position as a small, open economy with large commodity and service sectors, a dominant domestic banking sector and a substantial and persistent current account deficit. No major policy initiative is needed to support the domestic corporate bond market. It is important the policy makers avoid providing additional support for banks at the expense of the bond channel.

8.1 Growth of the corporate bond market

The Australian domestic non-government bond market has grown immensely in the 15 years since 1999. Total non-government issuance – including bonds issued by banks and other domestic financials, securitisation trusts, foreign issuers and domestic businesses -- grew at a cumulative annual rate of 19.1% from $40 billion to $460 billion between January 1999 and January 2014.[14]

Figure 9 Non-government bond issuance



Source: RBA Chart Pack (2014)

The bond market is completely open, so Australian businesses, especially resource producers, issue into markets where there is the maximum demand for their bonds. There is also a large volume of

[14] ABS, RBA figures (2014)

issuance of $A bonds by non-residents in the Kangaroo market.[15] Much of this issuance is a consequence of the large issuance by Australian entities overseas.

But only $50 billion of the $460 billion of domestically issued, non-government bonds have been issued by Australian businesses. The size of the domestic corporate bond market and its lack of growth has been the cause of some concern.

Dominant role of banks

The bond market is partly shaped by the dominant role of Australia's four major banks in the Australian financial system. Most of the capital that flows from global bond markets to the business or households sectors in Australia flows through banks. In the domestic bond market, issuance by financials exceeds the combined issuance of the securitisation trusts plus Australian businesses, as shown in the in Figure 9 above. In the global bond market, issuance by Australian financials is nearly twice as large as Australian securitisation trusts plus Australian business combined.

Capital is flowing from the domestic and global bond markets through the banks to Australian households for mortgage borrowing and to Australian businesses as corporate loans. Much of that capital could instead flow through securitisation organisers to Australian households and flow directly from the bond market to Australian businesses that issue bonds. The highest volume of flow from the debt capital markets is through banks because that is the lowest cost channel. Banks have big advantages in raising debt capital and distributing it domestically, not the least of which is the Federal Government's implicit guarantee of the bonds of Australia's too-big-to-fail banks.

The issuance of bonds by banks would decrease if the loan to deposit ratios of Australian banks were lower. In many countries banks have more deposits than loans to fund with those deposits. Banks then become buyers of corporate bonds rather than sellers.

8.2 Size of the domestic corporate bond market

The bond market is a much smaller source of capital for Australian businesses than bank corporate lending or the private and public equity markets, but its issuance of bonds in the global bond markets is growing rapidly. It is worthwhile considering why the domestic issuance of bonds by Australian business is not larger and has not grown over the last 7 years. There is a range of reasons as follows.

Low relative historical return: Australian superannuation funds have high allocations to equity which squeezes out fixed income. This reflects the investment horizon of their investors. But also the history of much higher returns to equities and property in Australia than bonds. In the 112 years from 1900 to 2012 total pre-tax returns on a broad index of equities was 5.45% per year higher return than a broad index of government bonds.[16]

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[15] Much of the issuance in the Kangaroo bond market is foreign issuers taking advantage of the positive basis on $A for $US foreign currency swaps. That basis increases the cost of Australian entities issuing in $US, or another currency, and swapping back into $A. So, it decreases the cost of funding of issuers of $A bonds in Australia who swap back into foreign currencies.

[16] Dimson, Marsh and Staunton (2014)

Low liquidity: The small number of buyers and sellers of corporate bonds in Australia creates a relatively illiquid market. Industry and retail superannuation funds are required to have a credible plan for how they will manage substantial withdrawals of funds by members, or transfers to other investment options, in a financial crisis.[17] Consequently, most superannuation funds in Australia have an implicit asset liquidity 'budget'. If they want to hold more illiquid corporate bonds then they need to have lower holdings of other illiquid asset classes such as directly held property, infrastructure holdings or private equity.

Short tenor: There is a maturity mismatch between the bonds that Australian corporates wish to issue and the bonds that Australian superannuation funds want to buy. Australian superannuation funds are starting to buy more bonds with tenors beyond 5 years, but that is still well short of the 15 years or more that Australian businesses can get by issuing into the US private placement market.

Low cost of bank debt: Corporate bonds of relatively short tenor compete directly with bank corporate loans. In global markets bank debt is typically more expensive for firms by 30 to 40 bps but bank loans have several compensating advantages. Bank loans are bundled with payment liquidity – revolving loans can be drawn down and pay back with a flexibility that corporate bonds do not have. Moreover, other stakeholders in the firm, such as shareholders value the monitoring of firms that banks provide. Finally, banks loans are easier to renegotiate if the firm breaches its covenants.

In the Australian market banks have these advantages over the corporate bond market, but they don't face such a large difference between bank loan interest rates and bond interest rates. So, banks have over 90 percent of the domestic corporate lending market.

8.3 Policy measures

Australia appears to have the bond market that matches the characteristics of its economy and the structure of its retirement savings sector. Australian business does not appear to be constrained by relatively small size of the domestic bond market. Firms have equally good access to global bond markets, which are vastly deeper and more liquid.

There does not appear to be any need for Government policy to promote the growth of the bond market. Certainly not any change to taxation of bond income. The main issue for policy is that the bank channel should not receive any additional support that would favour it over the bond channel, absent a renewed financial crisis.

[17] APRA Prudential Practice Guides SPG 220 and 530

9. Concluding remarks

Overall the channels that provide funding to Australian businesses are functioning well. The Australian public equity market is a particularly well functioning channel that played a crucial role in keeping capital flowing to business in 2008/9. The equity channel is not in need of substantial policy change, and in particular the very positive role played by dividend imputation should be allowed to continue essentially unchanged.

The banking channel functions well in terms of stability, in part because of the substantial support that the channel has received from the Federal Government. Some of that support was not related to stability and cannot be justified in terms of the reciprocal relationship between the Government and the banking system. Policy makers should be very careful not to continually make more and more policy concessions to Australia's largest banks, because that unreciprocated support will damage the development of other capital channels.

Policy changes that may seem to have merit when capital channels are viewed separately are seen to be sub-optimal when a more comprehensive view of capital channels is taken.

Finally, the biggest single matter for considering the provision of finance to Australian business over the next 10 to 15 years is that the GFC is not over. In particular, monetary policy has not been restored to normal. Until the balance sheets of central banks, and especially the US Federal Reserve, are restored to normal there is significant danger of a panic in the capital markets.

Australia's capital channels held up well in the panic of 2008/9, but that was without a large fall in property prices in Australia. The bank channel is venerable to a large fall in property prices. Policy makers should plan carefully for the possibility that bond markets will close at the same time the property market and other asset markets fall substantially during the long period of unwinding of QE.

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AUSTRALIAN CENTRE FOR FINANCIAL STUDIES

FUNDING AUSTRALIA'S FUTURE

FUNDING AUSTRALIA'S FUTURE

AUSTRALIAN HOUSEHOLD SECTOR FINANCES

PROFESSOR MICHAEL DREW

DR ADAM WALK

JULY 2014

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Funding Australia's Future

The Australian Centre for Financial Studies (ACFS) instigated the project Funding Australia's Future in late 2012 to undertake a stocktake of the Australian financial system, and its role in facilitating economic growth within the wider economy.

In an economy which has enjoyed 21 years of consecutive economic growth and shown resilience through the Global Financial Crisis (GFC) which is the envy of many nations, the financial sector has played a strong and pivotal role. The past decade, however, has been one of significant change. The impact of the GFC and the subsequent wave of global re-regulation have had a profound effect on patterns of financing, financial sector structure, and attitudes towards financial sector regulation. Identifying the extent to which these changes are transitory or likely to be more permanent is crucial to understanding how financing patterns and the financial sector will develop over the next decade or so.

Stage Two of Funding Australia's Future drills down into the key issues identified in Stage 1 of the project culminating in a set of recommendations aimed at placing Australia's financial system in a position to best meet the challenges presented by a rapidly changing and increasingly globalised economy.

In undertaking this analysis, ACFS has worked with a group of financial sector stakeholders, including the Australian Bankers Association (ABA), the Australian Finance Conference (AFC), the Australian Financial Markets Association (AFMA), the Association of Superannuation Funds of Australia (ASFA), the Australian Securitisation Forum (ASF), the Australian Securities Exchange (ASX), Challenger Limited, the Customer Owned Banking Association (COBA), the Financial Services Council (FSC), the Financial Services Institute of Australasia (Finsia), the Insurance Council of Australia (ICA), KPMG, National Australia Bank (NAB), the SMSF Professionals' Association of Australia (SPAA) and Vanguard Investments, as well as Treasury and the Reserve Bank of Australia (RBA).

This paper is one of four in Stage Two, which include:

1. Financing Australian Business:
   Associate Professor Sam Wylie, Melbourne Business School and the University of Melbourne
2. Australian Household Sector Finances:
   Professor Michael E. Drew, Griffith University
   Dr Adam N. Walk, Griffith University
3. International Linkages: Financial Markets and Technology:
   Professor Deborah Ralston, Australian Centre for Financial Studies and Monash University
   Mr Martin Jenkinson, Australian Centre for Financial Studies
4. Regulating the Australian Financial System
   Mr Alex Erskine, Erskinomics Consulting

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Table of Contents

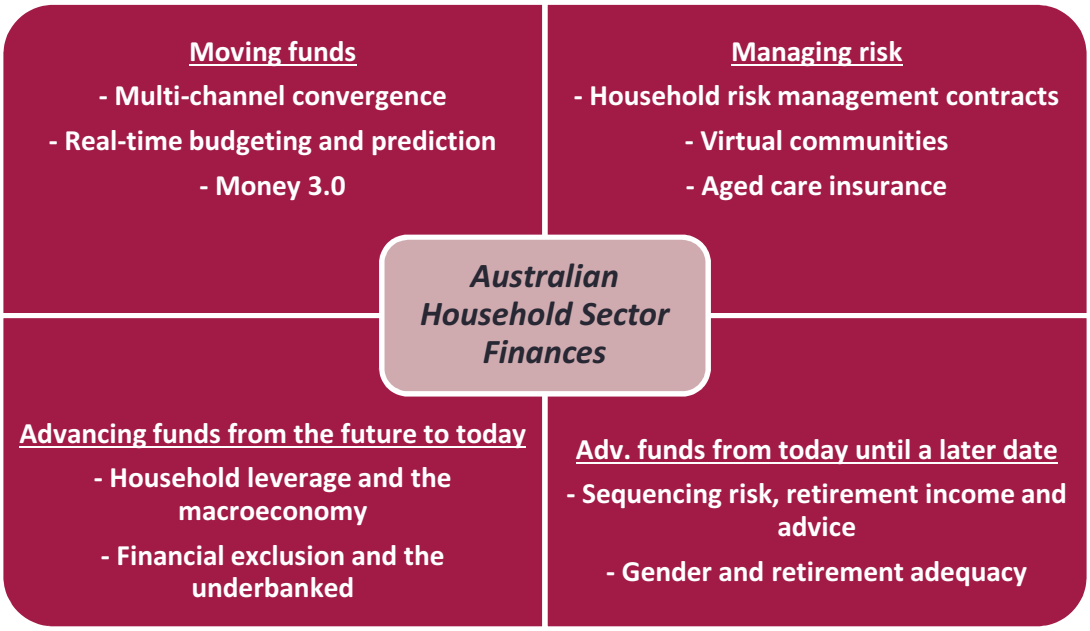
Executive summary

This paper builds on some of the key themes identified in Stage One of *Funding Australia's Future*, particularly as they relate to financial matters for households in Australia. The growth in household balance sheets, relative to GDP, ceased with the advent of the Global Financial Crisis (GFC), when stock market values fell with particularly adverse consequences for those in or near retirement (popularly termed as 'sequencing risk'). Notably, household savings out of current income increased, partly offsetting the effect of the decline in asset values on household wealth. Both household debt and asset holdings as ratios to income appear to have stabilised at levels somewhat below their GFC peaks, with low nominal interest rates facilitating debt servicing. Measured in dollar terms, household financial assets and liabilities have continued to grow albeit at more subdued rates (when compared with rates in the years prior to the GFC).

There is risk for households and individuals in many areas of financial services. Longevity risk is a major issue when retirement savings balances in superannuation funds remain relatively low, especially for women who on average retire with around half the superannuation balances of men. Investment risk and market risk have moved from corporations to individual households as superannuation funds have transformed from defined benefit to defined contribution plan designs. Households also carry relatively high levels of financial risk with respect to their mortgages, due to the predominance of variable rate home loans.

The paper provides an overview of recent household savings and investment and borrowing trends. The paper also considers how the financial sector currently contributes to household balance sheet development over the lifecycle, giving rise to a range of issues for current consideration.

Current issues for the Australian household finance sector



The findings of this study can be reduced to the following set of interrelated issues that impact Australian household finances.

- *Guidance* – A recurrent theme in the study is the issue of household financial decision making. Specifically, the gulf between what households *actually do* and what may be in their *best interests to do*. The complexity of the problem means that households need assistance in making these decisions. The need for guidance is so critical that it must be available in multiple forms. In addition to traditional financial advice, embedded product and/or technology-based guidance may assist households to be nudged toward better decisions.
- *Risk Management* – Households are exposed to a multitude of financial-related risks (market, inflation, longevity, leverage and climate risks to name but a few) that are simultaneously dynamic, complex and can manifest over different time horizons. In addition to improved guidance, households also need a more complete menu of solutions to assist managing these risks, acknowledging that no one single product (or silver bullet) is able to cure all ills.
- *Gaps in products* – In order to make this guidance and risk management as efficacious as possible for households, a complete set of financial 'building blocks' is required. Without the requisite building blocks, some household risks loom large. For instance, longevity risk remains a real consideration for households and will be increasingly so as the population ages.
- *Gaps in coverage* – There is an implicit assumption that all Australians have equal access to, and benefit equally from, the financial system. This is not the case. Large segments of the population have limited (the underbanked) or incomplete (gender inequality in superannuation) engagement with critical channels of the system. Measures specifically targeted at closing these gaps should be a priority.
- *Regulation* – To facilitate the innovation required to meet these challenges, regulation must be flexible, responsive and oriented towards meeting the needs of households. One immediate reform would be to facilitate further innovation in the menu of retirement income products.

We trust these findings will add to the contemporary debate on *Funding Australia's Future*.

1. Introduction

Household finance (the study of how households use financial instruments to attain their objectives) has become an increasingly important topic in the field of financial economics.[1] Campbell (2006) notes that:

> "Household financial problems have many special features that give the field its character. Households must plan over long but finite horizons; they have important non-traded assets, notably their human capital; they hold illiquid assets, notably housing; they face constraints on their ability to borrow; and they are subject to complex taxation."
>
> [Campbell (2006, p.1540)]

Building on the work of Merton and Bodie (1995), Tufano (2009) suggests a more expansive, functional definition for the field household finance.

> *"Consumer (or household) finance is the study of how institutions provide goods and services to satisfy the financial functions of households, how consumers make financial decisions, and how government action affects the provision of financial services."*[2]
>
> [Tufano (2012, p.229)]

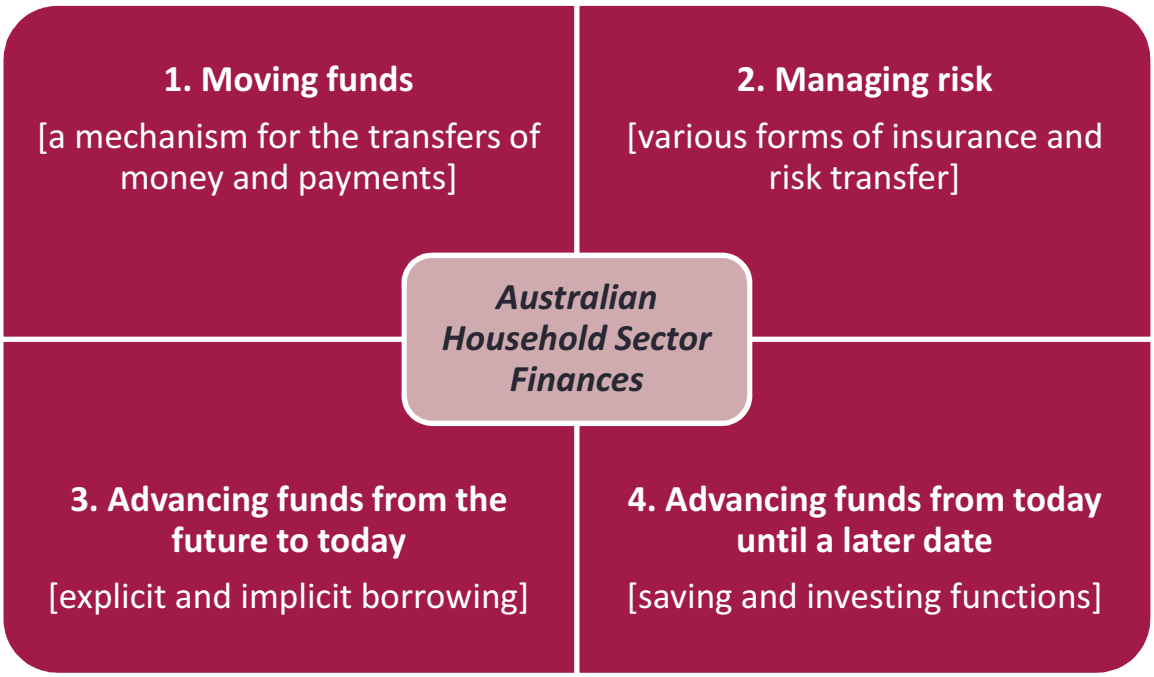
Tufano (2009) identifies four primary and necessary functions of the household finance sector, specifically:

1. Moving funds (a mechanism for the transfers of money and payments for goods and services);
2. Managing risk (various forms of insurance and risk transfer);
3. Advancing funds from the future to today (explicit and implicit borrowing); and
4. Advancing funds from today until a later date (saving and investing functions).[3]

The work of Tufano (2009) is important for this study of *Australian Household Sector Finances*, as it provides the basis for the development of a 'four quadrants' approach for considering the household finance sector (see Figure 1).

[1] This definition is provided by Campbell (2006). For further discussion on definitional and welfare concepts, see Campbell (2006).
[2] The text in brackets was added by the authors.
[3] See Tufano (2009) for a more detailed treatment of these four functions.

Figure 1: The four quadrants approach to the household finance sector



Source: Tufano (2009).

The four quadrants approach to the household finance sector reflects the conceptual underpinnings of Tufano (2009) by focusing on functions from a household-centric perspective.[4] We posit that this approach can also facilitate discussion of a range of contemporary issues impacting on the formation of household balance sheets in Australia. It also allows issues of government policy and the regulatory setting to be considered based on its influence on the functionality of the sector.

With the *bona fides* for a functional approach established, a contemporaneous issue for the field relates to decision making in the context of household finances. The challenge is neatly summarised by Campbell (2006), where researchers are walking a tightrope between what we know about what *households actually do* (positive household finance) with our body of knowledge about what *households should do* (normative household finance).[5] We take the view that households may not express their preferences optimally and seek to provide positive insights into a number of normative questions facing households. This approach reflects our motivation to identify potential gaps in the household finance sector in Australia.

[4] The household-centric perspective is a recurrent theme in the field. By way of example, see Crane, Froot, Mason, Perold, Merton, et al., (1995), Bodie and Merton (1995), Campbell (2006) and Guiso and Sodini (2012).

[5] We thank Professor Kevin Davis (Australian Centre for Financial Studies) for comments during the ACFS Funding Australia's Future Workshop regarding the rational expectations framework and household finance.

The remainder of the paper is as follows. The next section (Section 2) considers the evolution of household finances in Australia over the last quarter century (from 1988 through 2013). This analysis provides baseline data for the study. Section 3 provides a brief survey of the literature on the topic of lifecycle theory (with a particular emphasis on the role of human capital over the life course). Lifecycle theory provides the rationale for the various age-based cohorts that are considered using the four quadrants approach to the household finance sector. We are motivated to adopt this functional approach in the identification of gaps in the financial product and service offering to households at different life stages. Section 4 considers household balance sheets in the Australian context by life stage. This analysis confirms the heterogeneity of household finances by life stage and the (wide) spectrum of functional needs from the household finance sector over time. Section 5 takes considers a range of contemporary issues impacting household balance sheet formation in Australia, to contribute to the broader research agenda on *Funding Australia's Future*. Concluding comments are provided in Section 6.

2. Australian household sector finances

As noted by Campbell (2006), the study of household finance is challenging because household behaviour is difficult to measure accurately, and because households face constraints that are not captured by textbook models (including fixed costs, uninsurable income risk, borrowing constraints, and contracts that are non-neutral with respect to inflation). As discussed in the previous section, a further complicating factor relates to the behavioural aspects of decision making by households. A survey of Australia's daily newspaper mastheads suggests that households are not immune to making mistakes (both by their own hand and the work of others).[6] As such, there are both endogenous and exogenous factors that impact decisions regarding household finances.

Our motivation in this section is to provide baseline data on the major trends in household finances in Australia over the last quarter of a century (that is, 1988 through 2013). Specifically, we consider the following issues:

- What is a household? A statistical perspective;
- Household assets and liabilities;
- Household net worth and ratio analysis; and
- The perils of generalising from household finance trends.

2.1 What is a household?

The Australian Bureau of Statistics (ABS) (1986) defines a household as:

> "The household is defined as comprising persons (or a person) in a house, medium density housing, flat/unit, or caravan in a caravan park living and eating together as a domestic unit."
>
> [(ABS, 1986)[7]]

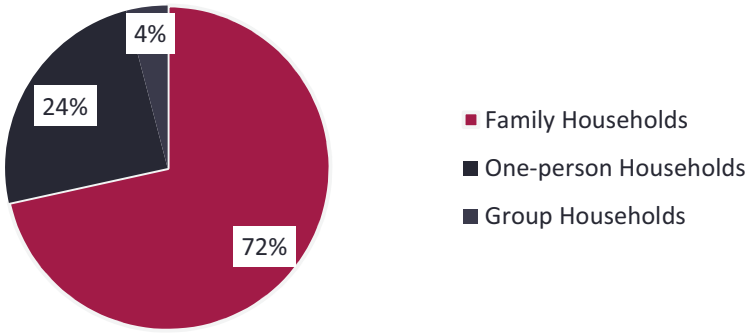
The Australian Institute of Family Studies (AIFS) (2014) report that, according to the 2011 Census, there were around 7.8m households in Australia (based on counts of place of usual residence).[8] As illustrated in Figure 2, the majority of Australian households comprise families, one in four households are occupied by a person living alone and around 4% of households are represented by groups of unrelated persons (AIFS, 2014).

[6] For a discussion on the identification of financial frauds (particularly Ponzi schemes), see Drew and Drew (2010); for the benefits of introducing criminological training within the finance curriculum at universities, see Drew and Drew (2012).

[7] The ABS (1986) goes on to divide households into three types: family households, where the household contains members with a family relationship (with or without non-family members present); group households of two or more unrelated persons; and lone person households.

[8] AIFS (2014) note that the delineation of households into three basic forms: those that comprise families; individuals living alone; and groups of unrelated persons have only been available since the 1986 Census.

Figure 2: Household types (Australia, 2011)



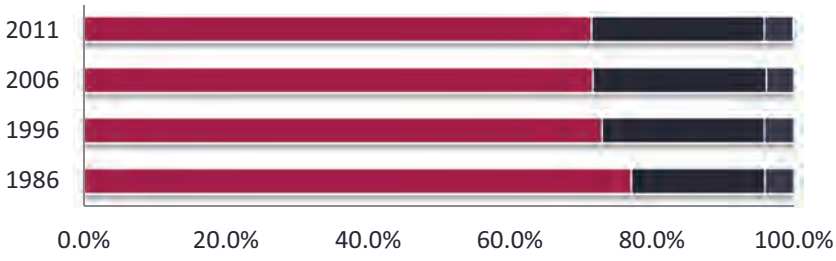
Source: AIFS (2014).

In addition to a 'snapshot' of household classifications, it is instructive to consider trends that have emerged within these three household types over time. Analysis by the AIFS (2014) notes that:

- While family households has remained predominant over the past 25 years, from 1986 and 2011, their prevalence declined during this period (from 77.1% to 71.5%);
- One-person households increased from 19% in 1986 to 24% in 2011; and
- The proportion of households that were occupied by a group of unrelated persons has changed little.

These themes are illustrated in Figure 3.

Figure 3: Trends in household types (Australia, 2011)



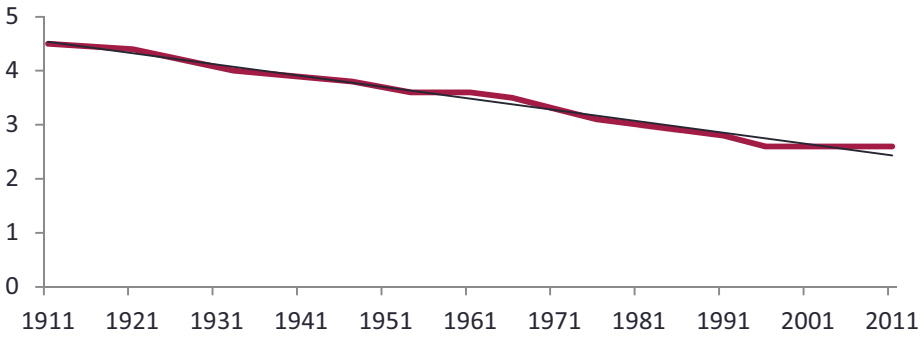
	1986	1996	2006	2011
Family Households	77.1%	73.0%	71.7%	71.5%
One-person Households	18.8%	22.8%	24.4%	24.3%
Group Households	4.1%	4.2%	3.9%	4.1%

Source: AIFS (2014).

An additional trend worthy of note for this study relates to the average household size in Australia. Over the last century, the average household size declined form 4.5 in 1911 to 2.6 in 2011 (see Figure 4),

much of this decline can be attributed to reductions in completed family size and the increase in one person and two person households (AIFS, 2014).

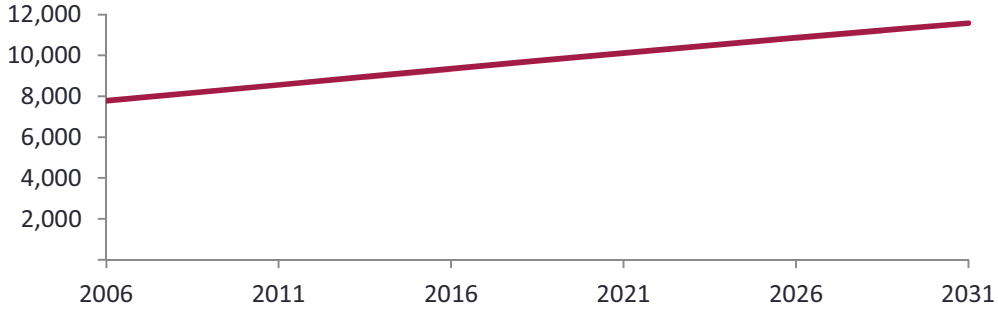
Figure 4: Average household size (Australia, 1911-2011)



Source: Hugo (2001) and AIFS (2014).

With consideration given to historical trends in household formation in Australia, we now turn to the issue of projections of households in Australia over the next 15 years. Analysis by the ABS (2010) forecasts the number of households in Australia will increase from around 7.8 million (Census, 2011) today to between 11.4 million and 11.8 million in 2031. Using a range of different assumptions regarding change propensities of living arrangements to 2031, Figure 5 plots the projected number of households and families based on the assumptions of a low rate of change in propensities (ABS, 2010 and AIFS, 2014).

Figure 5: Projected number of households: Australia, 2006-2031 (Thousands)



Source: ABS (2010).

In this section we have briefly considered the following question, what is a household? We have taken a statistical perspective which, by definition, necessitates formality around classification, aggregation and, ultimately, homogeneity. However, the analysis of just three basic forms of households has highlighted the dynamism occurring across the sub-sets. The changing nature of households has immediate implications for the household finance sector. Traditionally families have fulfilled a range of functions around both human capital (the bedrock for education and social skills which facilitate working life) and financial capital (including forms of self-insurance). The data confirms the view that households in Australia are increasingly heterogeneous and, as such, making broad generalisations about household

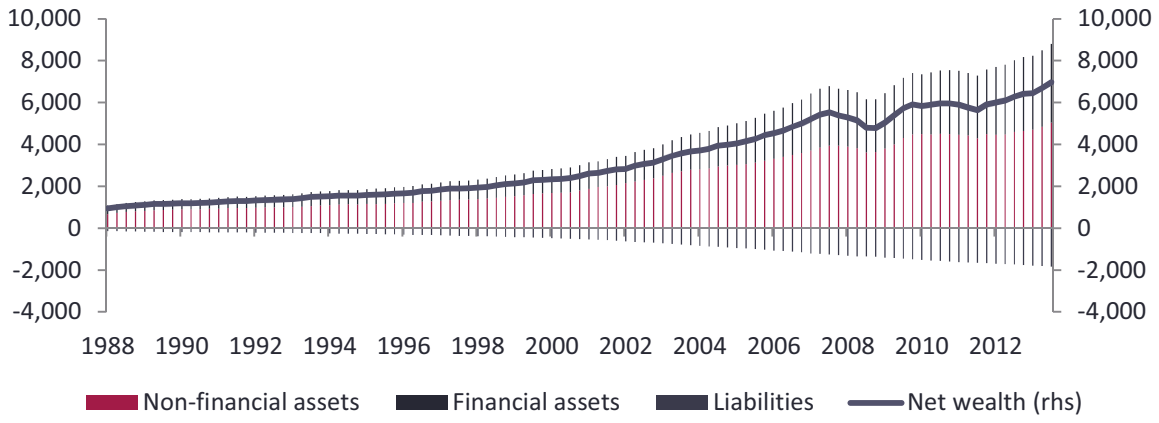
finances an exercise fraught with danger. With the alarm bells ringing in the background, the next section considers data from the Reserve Bank of Australia (RBA) as a starting point to consider how the finances of Australian households have progressed over the past quarter of a century. Again, the caveat here is that the data presented is highly aggregated. However, as a starting point, it does provide a useful baseline from which a more segmented (lifecycle) analysis can be undertaken in future sections of the report.

2.2 Trend analysis

The working definition of household finance adopted by this report (to paraphrase, the study of how institutions provide goods and services to meet the financial needs of households, financial decision making by consumers, and the role of government) suggests that the health (or otherwise) of household finances is critical to the economy as whole. Research in the field of financial economics has traditionally considered issues of corporate finance, however growing concerns regarding population ageing and both social and economic stability have shifted the focus to the household finance (Martin, 2007). This is further supported by Tufano (2009), who reports that U.S. households hold around twice as much in assets and as least as much debt, as U.S. corporations. To the extent that market size is a measure of importance, then it can be argued that household finance deserves as much attention as corporate finance (Guiso and Sodini, 2012).

This section considers trends in Australian household assets and liabilities over the past quarter of a century (from 1988 through 2013). We consider data from the RBA (2014) to provide baseline trends on household assets and liabilities through time. The combination of what households own (assets) and owe (liabilities) provides an estimate of household net worth. In the following section of the report we will consider trends in the net worth of Australian households through a ratio analysis. We commence our analysis with an aggregate perspective on the household sector balance sheet in Australia (see, Figure 6).

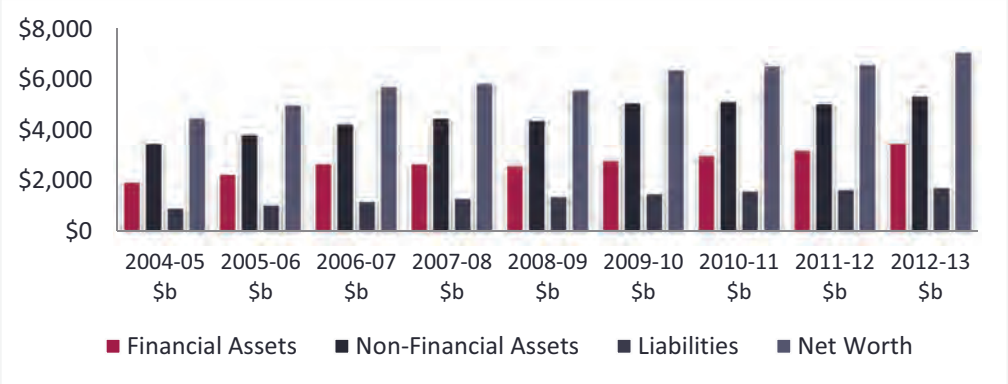
Figure 6 Household sector balance sheet (Australia, 1988-2013, $bn)



Source: RBA (2014).

Over the past quarter of a century, increases in the aggregate value of household financial and non-financial assets have coincided with rises in household debt (see Figure 6), with net household wealth at the end of 2013 standing at around $7 trillion. A further feature is the illustration of the impact of the Global Financial Crisis (GFC), and subsequent balance sheet repair that has occurred since 2008. Data from the National Accounts via the ABS (2014) provides confirmatory evidence of the impact of the GFC.

Figure 7 Household sector balance sheet (Australia, 2004/05-2012/13, $bn)



Source: ABS (2013).

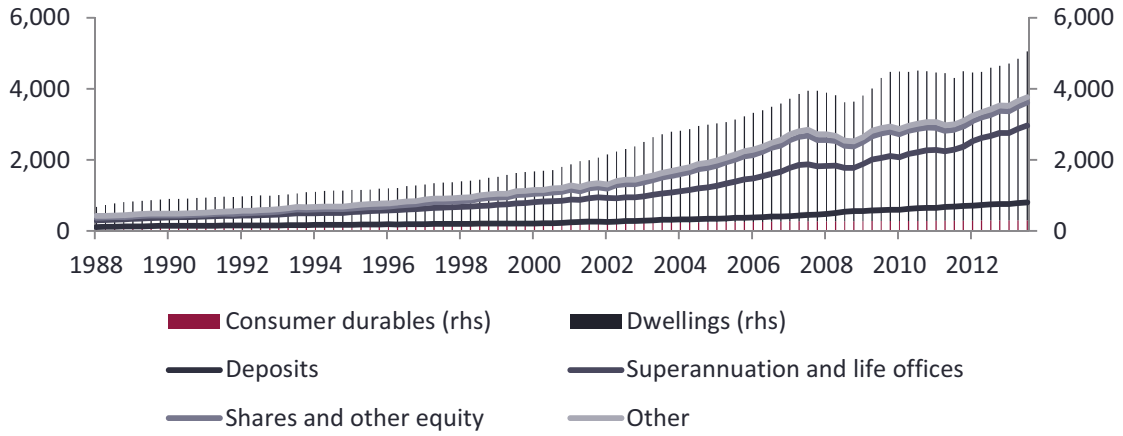
The growth in household balance sheets, relative to GDP, ceased with the advent of the Global Financial Crisis (GFC), when stock market values fell with particularly adverse consequences for those in or near retirement with retirement savings (popularly termed as 'sequencing risk').[9] We will return to cohort impacts in later sections of this report.

Notably, household savings out of current income increased, partly offsetting the effect of the decline in asset values on household wealth.[10] Both household debt and asset holdings as ratios to income appear to have stabilised at levels somewhat below their GFC peaks, with low nominal interest rates facilitating debt servicing. Figure 8 provides trends over the last 25 years at the asset level.

[9] For a detailed study of sequencing risk in Australia, see Basu, Doran and Drew (2013); for a trustee perspective on the debate, see Bianchi, Drew and Walk (2013). The Financial Services Institute of Australia provides an excellent series of resources on the 'Retirement Risk Zone', see: https://www.finsia.com/indepth/industry/retirement-risk-zone.

[10] There are important debates being conducted in concert with the issue of household balance sheets, namely: trends in household savings (see, Thorne and Cropp, 2008 and Finlay and Price, 2014); and the impact of superannuation on saving (see, Connolly and Kohler 2004).

Figure 8 Household sector assets (Australia, 1988-2013, $bn)



Source: RBA (2014).

Figure 8 shows that, as at the end of 2013, dwellings comprise over half the value of household assets (54%); superannuation and life policies account for a further 25%; and consumer durables (such as motor vehicles and household furnishings) at 3%. This provides an interesting contrast with percentage holdings in 1988, where again dwellings account for half of the value of household assets (51%); superannuation and life policies at 17%; and consumer durables at 10%.

These household assets provide a support base for the debt held by households (RBA, 2014). In 2013, total household liabilities, mostly debt, stand at around half (49%) of the value of household financial assets, or around one-fifth (21%) of total assets. That is, for every dollar in debt, households have, on average, about $2.00 in financial assets and around $5.00 in total assets ($4.79). This compares to the situation in 1988, where total household liabilities, stood at around one third (33%) of the value of household financial assets, or around one-eighth (13%) of total assets. That is, for every dollar in debt, households had, on average, about $3.00 in financial assets and around $8 in total assets ($7.83). Once again, it is important to note that this is an *aggregated* household sector perspective. We would expect variations across different age-based and wealth cohorts. We now turn our analysis to considering trends in household net worth through time.

2.3 Ratio analysis

The ABS (2010) defines net worth (often referred to as wealth) as the value of a household's assets less the value of its liabilities. Assets can take many forms, including (ABS, 2010):

- Produced tangible fixed assets that are used repeatedly and for more than one year, such as dwellings and their contents, vehicles, and machinery and equipment used in businesses owned by households;
- Intangible fixed assets such as computer software and artistic originals;
- Business inventories of goods;
- Non-produced assets such as land; and
- Financial assets such as bank deposits, shares, superannuation account balances, and the outstanding value of loans made to other households or businesses.

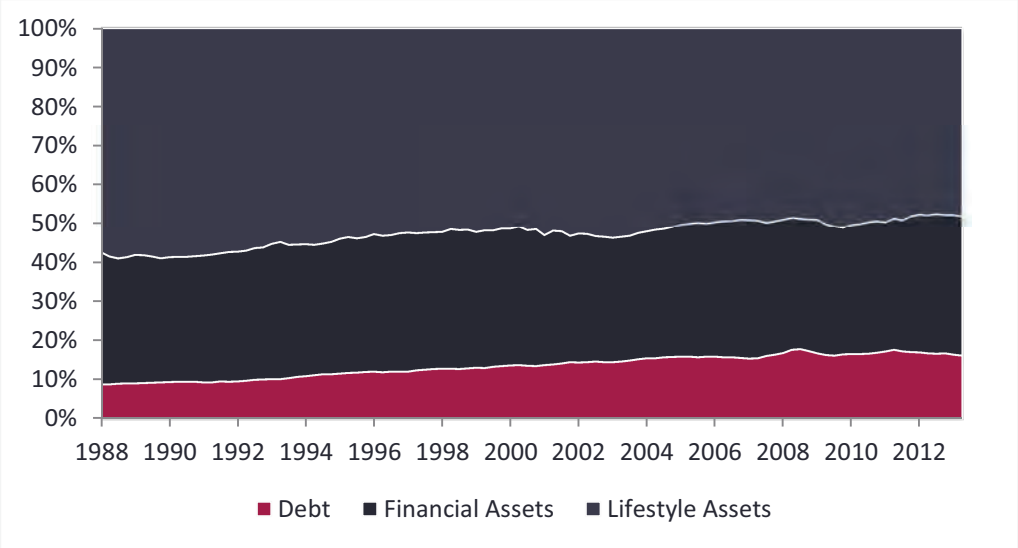
Liabilities are primarily the value of loans outstanding, including (ABS, 2010):

- Mortgages;
- Investment loans;
- Credit card debt;
- Borrowings from other households; and
- Other loans such as personal loans to purchase vehicles, and study loans.

Moving the analysis to a net worth framework allows for consideration of trends in the ratio of (net) financial wealth as a proportion of net worth. It also permits consideration of trends in the ratio of borrowings to investment assets and trends (and broader movements in household indebtedness). For the purposes of analysis in this section, it is important to note that the term *"Lifestyle Assets"* denotes non-financial assets (specifically consumer durables and dwellings as denoted in the previous section), with *"Financial Assets"* including deposits, shares and other equity, superannuation and life policies and other assets (as denoted in Figure 8). The following section adopts the analytical method of personal financial advisory firm, Wealth Foundations (2011 and 2013) in taking a ratio approach to household finances in Australia.[11]

[11] For earlier ratio analysis studies of household finances, see Prather (1990) and Greninger, Hampton, Kitt, and Achacoso (1996).

Figure 9 Household net worth (percentage of net worth, Australia 1988-2013)



Source: RBA (2014), Wealth Foundations (2011 and 2013) and Author calculations.

Table 1 Household net worth for selected years (Australia, Dec 1998-Dec 2013)

Value as a % of Net Worth	1988	1993	1998	2003	2008	2013
Lifestyle Assets	71%	69%	69%	75%	74%	71%
Financial Assets	40%	44%	47%	45%	52%	53%
Total Assets	**111%**	**112%**	**117%**	**120%**	**127%**	**123%**
Debt	-11%	-12%	-17%	-20%	-27%	-23%
Net Worth	100%	100%	100%	100%	100%	100%

Nb: Lifestyle Assets (incl. consumer durables and dwellings); Financial Assets (incl. deposits, shares and other equity, superannuation and life policies and other).
Source: RBA (2014), Wealth Foundations (2011 and 2013) and Author calculations.

Table 1 reveals that on the asset side of Australia's household balance sheet, lifestyle assets grew modestly from 1988 to 2008, (from 71% to 74% of net worth), but in the past five years to 2013 have since reverted to 1988 levels (71%). The reversion may reflect the general trend for households to retire debt post the GFC (Wealth Foundations, 2013).[12] As per the previous discussion in Section 2.2, financial assets have increased significantly over the past 25 years, from 40% in 1988 to around 53% of household net worth at the end of 2013. While noting that gearing levels have fallen from 51% of financial assets to 44% over the period 2008 through 2013, debt remains high in historical terms. This may have important implications from a cohort perspective, as, *a priori*, the expectation is that households

[12] For a historical perspective of the reaction of household finances to recessionary conditions in the U.S., see Mishkin (1977).

approaching retirement would have limited gearing levels (Wealth Foundations, 2013). We will return to this issue in later sections of the report.

Table 2 Household net financial wealth for selected years (Australia, Dec 1998-Dec 2013)

Value as a % of Disp. Income	1988	1993	1998	2003	2008	2013
Lifestyle Assets	317.6	326.7	349.4	479.9	409.4	451.3
Financial Assets	177.3	209.1	242.7	287.4	287.5	336.4
Total Assets	**494.9**	**535.7**	**592.1**	**767.3**	**696.8**	**787.7**
Debt	47.1	59.3	85.3	129.4	146.4	148.8
Net Worth	447.8	476.4	506.9	637.9	550.5	638.9
Net Financial Wealth	**130.3**	**149.7**	**157.5**	**158.1**	**141.1**	**187.6**

Nb: Net Financial Wealth = Net Worth less Lifestyle Assets.
Source: RBA (2014), Wealth Foundations (2011 and 2013) and Author calculations.

Perhaps the striking feature of the data presented in Table 2 is that there has been a more than three-fold increase in debt (as a percentage of household disposable income) from 1988 through to the end of 2013 (Wealth Foundations, 2013). However, as reported in Table 3, households have perhaps implemented a strategy that could be described as 'personal austerity', following a process of household balance sheet de-levering in recent times (the past five years). However, even with this program of debt reduction, the aggregate level of household indebtedness remains elevated from earlier periods in history (see gearing data provided in Table 3).

Table 3 Household ratios for selected years (Australia, Dec 1998-Dec 2013)

Ratios	1988	1993	1998	2003	2008	2013
Net Financial Wealth to Net Worth	29%	31%	31%	25%	26%	29%
Gearing (Debt to Financial Assets)	**27%**	**28%**	**35%**	**45%**	**51%**	**44%**
Disposable Income Cover (Net Financial Wealth to Disposable Income)	1.3x	1.5x	1.6x	1.6x	1.4x	1.9x

Nb: Disposable Income Cover = the number of times Net Financial Wealth covers Disposable Income. This is similar to the ratio of Net Financial Wealth to annual (retirement) expenditure with Disposable Income being a multiple of annual expenditure.
Source: RBA (2014), Wealth Foundations (2011 and 2013) and Author calculations.

The process of household de-levering in recent years has also seen improvements in disposable income cover (currently at the highest levels in 25 years), as well being accretive for the ratio of net financial wealth to net worth, today returning to 1988 levels (of 29%). However, a 'rule-of-thumb' from the financial planning industry suggests that for cohorts approaching retirement, a level of net financial assets to net worth of at least 55% is required to provide a "good" chance of mitigating longevity risk (Wealth Foundations, 2013). Again, we will return to these issues in the lifecycle analysis.

2.4 The perils of aggregation

As we have progressed through Section 2 of this report, it has become increasing apparent that the results presented are highly aggregated and may only apply to an 'average' Australian household. At this juncture, we recall the wisdom of Milton Friedman, the recipient of the 1976 Nobel Prize for Economic Science, when he remarked, *"Never try to walk across a river just because it has an average depth of four feet."*[13] And so it is with generalisations from aggregate household finance trends. In Section 3 we consider a first step in moving away from the aggregate to framing household finances from a lifecycle perspective. As we progress through the report, we will consider household finances at various life stages to provide a cohort perspective. Moreover, future sections also include a number of small vignettes to relate Australian household sector finance issues to more individual circumstances.

[13] See the website, "Quotable Milton Friedman" at http://hoohila.stanford.edu/friedman/quotes.php for more wit and wisdom.

3. Lifecycle theory

A seminal work in the field of lifecycle theory was contributed by Modigliani and Brumberg (1954). A key insight from Modigliani and Brumberg (1954) was the idea that saving and consumption behaviour could be considered in terms of an individual (or, for the purposes of this report, households) distributing resources optimally between savings and consumption over the lifecycle (popularly termed, consumption smoothing). We posit that lifecycle theory is helpful when considering household sector finances because it is:

- General (it can be applied to all individuals/ households);
- Exhaustive (it doesn't omit important variables for households); and
- Flexible (it is adaptable to a wide variety of household circumstances).

Lifecycle or life-stage theory (and consumption smoothing) provides a useful model for looking at household finances of groups (or cohorts) and individuals, including the variation in behaviour over the lifecycle.

Many studies attempt to model individual's lifetime savings and consumption, notable among them is Bodie, Merton and Samuelson (1992). Bodie et al., (1992) investigate the effect of labour supply flexibility on investment and consumption decisions over a household's lifecycle. In their model: human capital is considered as a *choice variable* (such choices involve how many hours to work, whether to take another job, or when to retire); and the individual decides on their consumption level, investment strategy and fraction of their labour income to be spent on leisure to maximise their expected lifetime utility at any point in the lifecycle. In summary, Bodie et al., (1992) find:

- Human capital is crucial to explain investment, labour and consumption behaviour of (rational) households;
- For individuals who are early in their working lives, the main asset is their future earning power. By retirement, financial wealth has grown, but the human capital asset is fully or substantially depleted;[14]
- The degree of labor supply flexibility diminishes over the lifecycle, and greater labour flexibility will induce greater risk taking; and
- Risk-taking behaviour as it relates to investing is positively related with occupation.

Finally, Bodie et al., (1992) suggest that households can increase their labor flexibility by investing in education and training in an effort to make their skills more marketable. As such, human capital

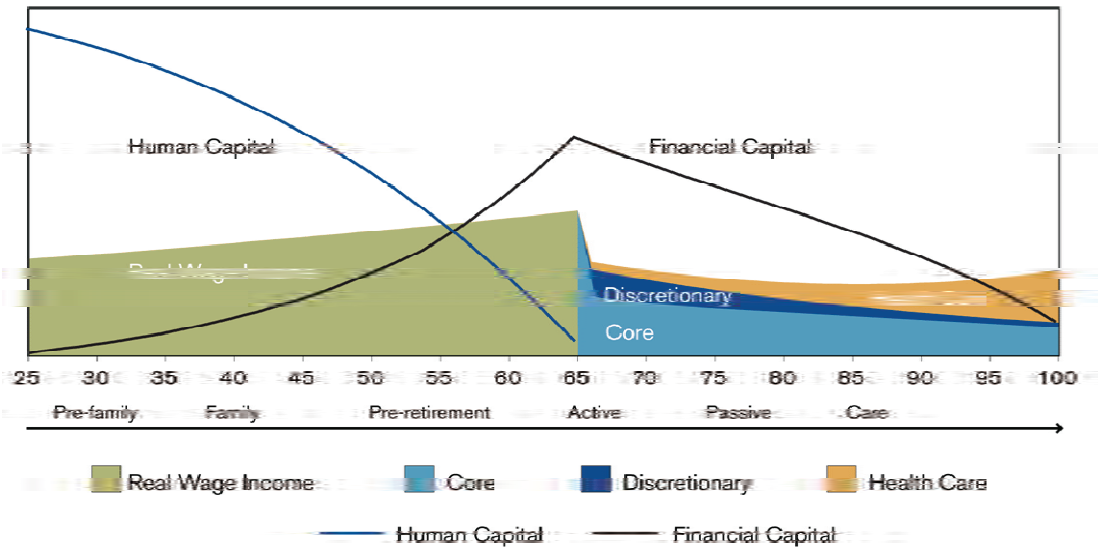
[14] The extent to which human capital is either "fully" or "substantially" deplete at retirement is the subject of current public debate regarding retirement ages. Those making the case for older retirement ages are essentially arguing that human capital need not be fully depleted at the current retirement age.

significantly influences an individual's savings, consumption and investment decision over the lifecycle.[15] A second major study, by Bodie, Treussard and Willen (2007) investigates the role of consumption in lifecycle planning and the use of financial assets as way to smooth consumption through the lifecycle. Specifically, they note:

- The importance of the lifecycle budget constraint (financial wealth is only one part of a household's wealth; total wealth equals financial wealth plus human wealth);
- The role of contingent claims in lifecycle planning (how to transform income and expense streams into financial wealth);
- The valuation of the securities (contingent claims) matters;
- The role of risky assets in the lifecycle model (are considered as a way to move money across different outcomes at a given time); and
- The importance of asset allocation over the lifecycle (the proportion of financial wealth invested in risky assets can vary significantly over the lifecycle).

A recent paper by Corrigan and Matterson (2009) provides an excellent stylised view of lifecycle theory (see Figure 10).

Figure 10 Expected human capital and financial capital over a lifetime



Source: Corrigan and Matterson (2009)

[15] As such, Bodie et al., (1992) consider human capital as essentially the same as a financial asset, except that it is not traded and cannot be liquidated in a short period.

3.1 Human capital

The following discussion considers issues of human capital within the lifecycle framework. Specifically, human capital incorporates the earning potential of the individual over time (which can also be considered as the present value of future earnings). As we progress through the discussion, the importance our functional definition of the household finance sector (and the associated four quadrants approach) becomes further apparent as individuals seek to transform their human capital into financial capital by varying methods through their various life stages.

As discussed previously, this transformative process involves issues ranging from access to the payment system, to topics relating to intermediation and maturity transformation (to name but a few). We commence our discussion through a comparison of return volatility of human capital versus financial capital.

Lifecycle theory contends that the returns from human capital are typically less volatile than that of financial capital (more specifically, the risk of stocks/equities). The theory posits that the value of human capital typically declines as a proportion of an individual's total wealth as one progress through their life course. It follows that that younger individuals have greater flexibility to alter their labor supply, making them more tolerant of financial risk because they can respond to poor investment results by increasing work effort (Bodie et al., 1992; Campbell and Viceira, 2002).

We can then think of household consumption over the lifecycle as being dependent on the present value of lifetime income and not on the evolution of income itself (Bodie et al., 2007; Campbell and Viceira, 2002; Washer and Nippani, 2004; Hogan, 2007). In this framework, human wealth is the sum of the discounted present value of an individuals' future income and their financial wealth, which yields what Bodie et al. (1992), term their *"total wealth"*.

It is important to note that human capital is not a one-dimensional concept. A brief survey of the literature shows that the term human capital can mean different things to different stakeholders. For instance, from a corporate perspective, human capital can be considered the economic value of an individual's skills (World Economic Forum, 2013).

From a household balance sheet perspective, human capital is typically considered the largest proportion of individual's total wealth (Campbell and Viceira, 2002). To policy makers, human capital may be the capacity of the population to drive the economic development (Mincer, 1981). Given its importance, we now move to formally incorporate human capital into household balance sheets.

3.2 Toward a holistic framework

In this section we move to a life stage (or human time line) perspective of household finances. This involves incorporating both assets (human capital and financial capital) and liabilities to deepen our understanding of household net worth. The previous section made the case for the inclusion of human capital on the household balance sheet. This is further supported by Washer and Nippani (2004), who argue that household balance sheets do not convey an accurate financial picture if human capital is omitted. We commence with a hypothetical example of a traditional household balance sheet that excludes human capital.

Table 4 Hypothetical household balance sheet (excl. human capital)

Assets (excl. human capital)		Liabilities and net worth	
Cash/cash equivalents		Current liabilities	
Savings account	2,500	Credit cards	5,000
Term deposits	2,500	Car loan	12,000
Invested assets		Long-term liabilities	
Superannuation	80,000	Mortgage	210,000
Lifestyle assets			
Home	240,000	*Total liabilities*	*227,000*
Contents	40,000		
Car	30,000	*Net worth*	*168,000*
Total assets	*395,000*	*Total liabilities and net worth*	*395,000*

Source: Washer and Nippani (2004).

While beyond the scope of this report, Washer and Nippani (2004) work through a detailed example of the present value of our hypothetical household's risk-adjusted value of human capital (with probabilities attached to: job loss; permanent disability; premature death; wage replacement rates; and life insurance).[16] Using these various assumptions, Washer and Nippani (2004), estimate the present value of our hypothetical individual's next 20 years (with excellent job security) of work on current earnings (net of personal consumption expenditures and taxes) of $50,000 per year is $748, 638.[17] This value is now incorporated into Table 4, arguably providing a more holistic understanding of the household balance sheet.

[16] For details of assigned probabilities, see Washer and Nippani (2004).

[17] By way of example, Washer and Nippani (2004) also estimate the present value of our hypothetical individual's human capital disability and life insurance if not purchased at $710,866.

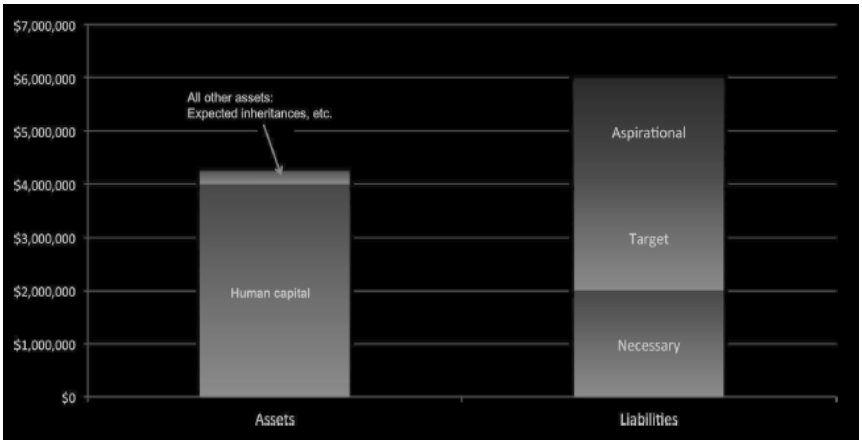
Table 5 Hypothetical household balance sheet (incl. human capital)

Assets (incl. Human Capital)		Liabilities and net worth	
Cash/cash equivalents		Current liabilities	
Savings account	2,500	Credit cards	5,000
Term deposits	2,500	Car loan	12,000
Invested assets		Long-term liabilities	
Superannuation	80,000	Mortgage	210,000
Lifestyle assets			
Home	240,000	*Total liabilities*	*227,000*
Contents	40,000		
Car	30,000	*Net worth*	*916,638*
Contingent assets			
Human capital	**748,638**		
Total assets	*1,143,638*	*Total liabilities and net worth*	*1,143,638*

Source: Washer and Nippani (2004).

The recent work of Rudd and Siegel (2013) builds on the contribution of Washer and Nippani (2004) on this issue through the addition of a *"consumption liability"* (decomposed into necessary, target and aspirational segments).[18] Rudd and Siegel (2013) illustrate three life stage scenarios, specifically: early career; mid-career; and retirement.[19]

Figure 11 Household balance sheet in early career

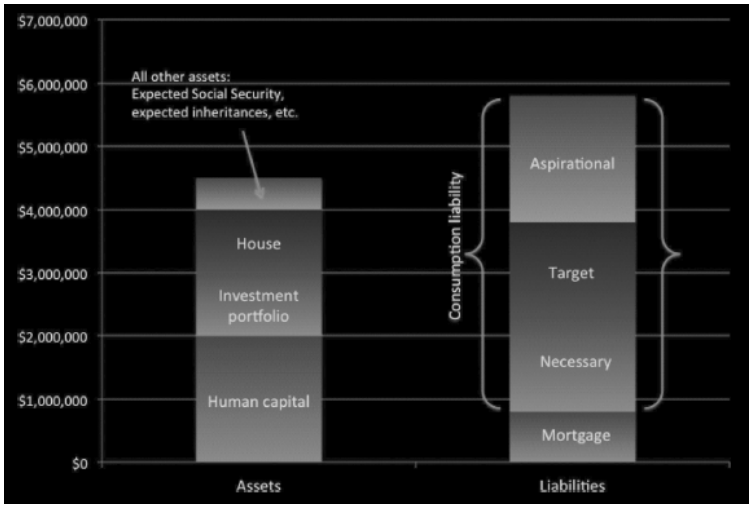


Source: Rudd and Siegel (2013).

[18] For further discussion, see Rudd and Seigel (2013). The importance of Rudd and Seigel's (2013) study is that it evolves the work of Washer and Nippani (2004) by attempting to formally incorporate retirement income needs as a liability on household balance sheets.

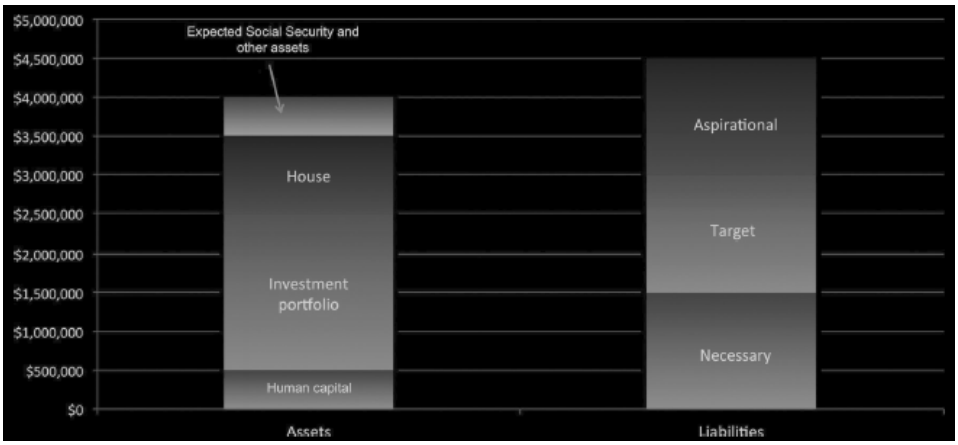
[19] It is important to again note that Rudd and Siegel's depiction of household balance sheets (Figures 11, 12 and 13) is illustrative only. For instance, the value of human capital in Figure 11 is particularly high when considered in light of the Australian data presented. Moreover, the depiction of retirement income liabilities as being equally divided between necessary, target and aspirational is also for debate. Notwithstanding these issues, the framework is of use when considering household balance sheets through the life course.

Figure 12 Household balance sheet in mid-career



Source: Rudd and Siegel (2013).

Figure 13 Household balance sheet in retirement



Source: Rudd and Siegel (2013).

The work of Rudd and Siegel (2013) is both of conceptual and practical importance to this report by illustrating the dynamic nature of household balance sheets over the life course. As we move from the early career life stage (Figure 11) to mid-career (Figure 12) and then retirement (Figure 13) we can see the interplay between the stock of human capital at the commencement of working life through to its (hopeful) replacement over the life course. We now move to consider the Australian experience in the next section.

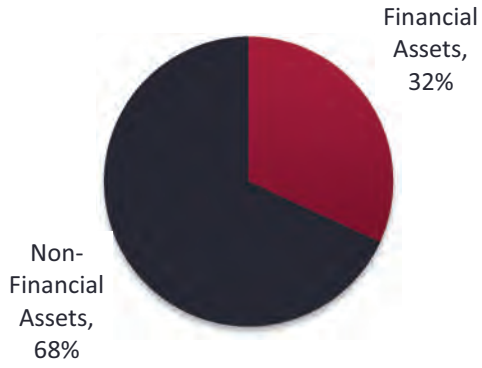
4. Australian household balance sheets

We now turn to our attention to the Australian experience of household sector finance. We explore household balance sheet development in Australia using a top-down approach, providing analysis from the aggregate through to the cohort (or life stage) level. The analysis presented builds a foundation for the four quadrants approach to the household finance sector highlight potential gaps (including issues, themes, challenges and opportunities) for future household balance sheet development in Australia (see Section 6).

4.1 Household assets

The term balance sheet has typically been used in the field of accounting to describe the relationship between assets, liabilities and equity. As discussed previously, financial economists have been developing a strand of literature around the notion of a household balance sheet. We commence our analysis of the household balance sheet in Australian on the asset side.

Figure 14 Household asset composition (Australia, 2011-12)



Source: ABS (2013).

However, as expected, there is a skewed distribution of household assets when considered by quintiles (ABS, 2013). While mean total assets by household stand at around $858,200 (financial assets $272,600 and non-financial assets $585,700), the differences in mean values between the lowest and highest quintiles in areas such as savings (accounts held with financial institutions), superannuation and property (owner occupied dwelling and other property) point to the myriad of product and service requirements for varying cohorts (refer Table 6).

Table 6 Household asset quintiles (mean value, Australia, 2011-12)

	Lowest	Second	Third	Fourth	Highest	All
Financial assets $'000						
Accounts held with financial Institutions	5.1	14.4	20.2	38.3	106.8	37.0
Offset Account	0.1	1.0	3.0	5.2	11.1	4.1
Shares	0.4	1.6	3.3	10.2	75.4	18.2
Public unit Trusts	--	0.4	0.9	2.3	11.7	3.1
Private Trust	0.3	1.1	1.0	4.3	112.6	23.9
Own Incorporated business	0.1	1.0	2.9	7.5	126.5	27.6
Own unincorporated business	0.3	1.7	3.6	7.9	89.6	20.6
Superannuation	12.3	47.5	65.2	130.2	406.6	**132.3**
Total Financial Assets	**18.6**	**69.2**	**101.5**	**207.6**	**966.4**	**272.6**
Non-financial assets $'000						
Owner occupied dwelling	10.5	160.3	348.4	498.4	832.2	**369.9**
Other property	4.5	24.6	48.9	100.8	467.1	129.1
Contents of dwelling	17.9	47.4	63.1	78.5	106.1	62.6
Vehicles	7.5	17.7	19.8	25.4	35.6	21.2
Total Non-financial assets	**40.6**	**251.6**	**480.8**	**705.4**	**1450.6**	**585.7**
Total assets $'000	**59.2**	**320.8**	**582.3**	**913.0**	**2417.0**	**858.2**

Source: ABS (2013).

The ABS (2013) also reports the distribution of household assets by differing definitions of the household (including one family and multiple family households and non-family households), providing insights into the varied asset base of Australian households.[20]

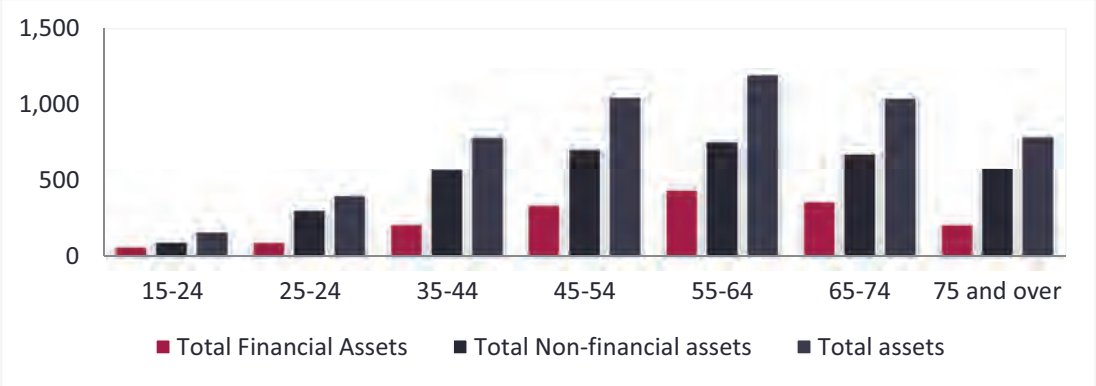
[20] For further discussion, see ABS (2013).

Table 7 Household assets by age profiles (mean value, Australia, 2011-12)

	15-24	25-24	35-44	45-54	55-64	65-74	75 and over	All house-holds
Financial assets $'000								
Accounts held with financial Institutions	13.3	13.5	19.4	33.0	53.4	63.2	66.9	37.0
Offset Account	0.2	3.8	9.7	4.1	2.8	1.4	0.2	4.1
Shares	0.5	3.6	14.9	18.8	21.8	23.7	41.3	18.2
Public unit Trusts	1.2	0.6	2.4	3.1	2.2	5.3	7.9	3.1
Private Trust	2.7	11.8	26.3	33.4	27.8	20.8	23.8	23.9
Own Incorporated business	0.8	11.5	23.0	53.0	47.5	11.1	5.6	27.6
Own unincorporated business	1.0	6.9	22.5	26.7	31.6	27.6	6.2	20.6
Superannuation	14.8	44.5	90.9	163.7	242.4	201.4	56.8	132.3
Total Financial Assets	**68.3**	**97.0**	**212.3**	**339.3**	**439.6**	**363.1**	**212.1**	**272.6**
Non-financial assets $'000								
Owner occupied dwelling	41.2	183.2	357.1	437.6	476.7	439.3	431.1	369.0
Other property	17.4	59.3	127.2	165.2	191.1	150.9	78.1	129.1
Contents of dwelling	20.7	41.3	64.2	74.2	73.6	67.8	60.6	62.6
Vehicles	15.1	19.5	24.4	25.8	23.4	18.9	9.0	21.2
Total Non-financial assets	**96.6**	**306.7**	**575.3**	**708.2**	**757.9**	**677.9**	**580.6**	**585.7**
Total assets $'000	**164.9**	**403.7**	**787.6**	**1047.5**	**1197.4**	**1040.9**	**792.7**	**858.2**

Source: ABS (2013).

Figure 15 Household asset composition by age profile ($'000s, Australia, 2011-12)

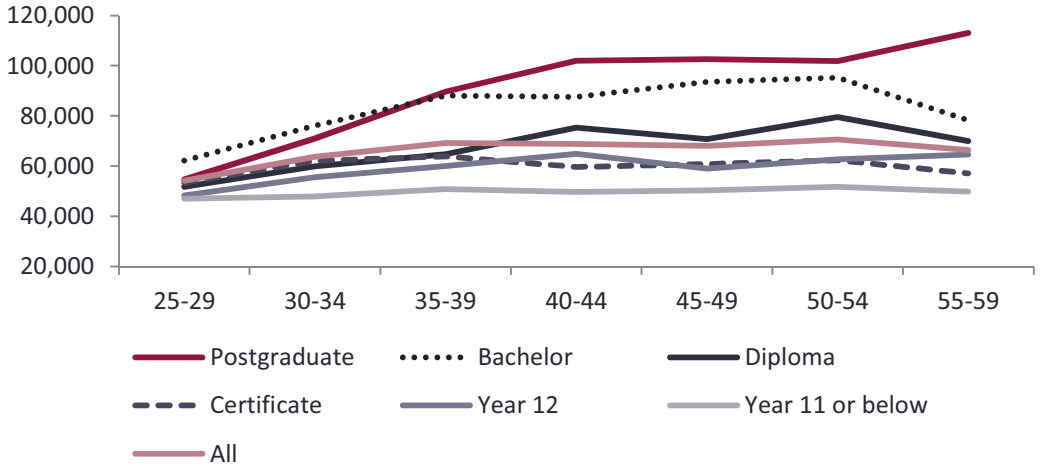


Source: ABS (2013).

The data presented in Table 7 (and illustrated in Figure 15) highlights the asset profile of Australian household by life stage (ABS, 2013). As per the lifecycle hypothesis, we see total financial assets peaking at the pre-retirement cohort of 55-64, with total household assets for this cohort standing at around $1.2m.

The final issue considered in this section on household assets is human capital. Research by Wilkie (2007) suggests that an individual's earning capacity is affected by a range of factors, including: education; health; cognitive abilities; and migrant status. We focus on one of these factors in this section, education, to highlight its centrality to human capital theory (and, ultimately, as a critical contributor to household balance sheets).

Figure 16 Average annual employee income for persons of working age 25–59 years: Australia, 2011-12 ($)



Source: Cassells et al., (2012).

Educational qualifications make a significant contribution to an individual's lifetime earning capacity (Figure 16). Research by Cassells, Duncan, Abello, D'Souza and Nepal (2012) (as part the *AMP.Natsem Income and Wealth Report*) confirms that the average annual income from wages and salaries for the age 25-29 group in Australia, those obtaining Bachelor Degree earn more than *all other education*

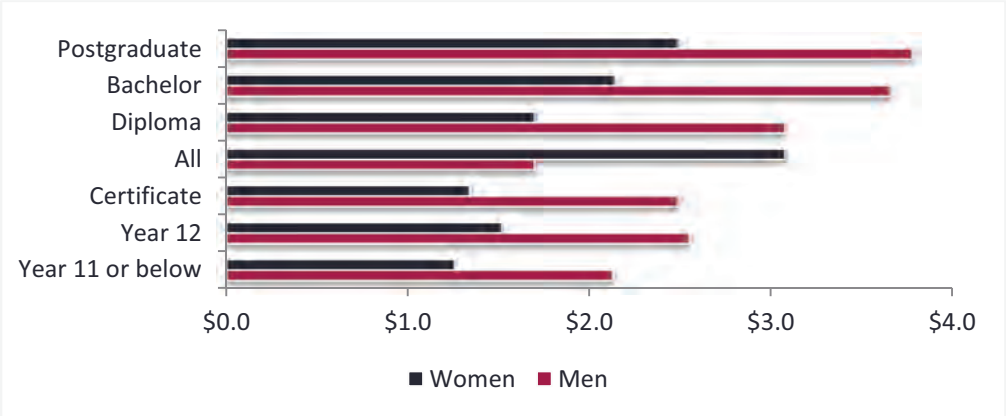
categories.[21] The difference between those with higher education and those with lower education continues to widen across the lifecycle (for instance, those with a Postgraduate Degree pass those with Bachelor Degree at age 35-39). The findings of Cassells et al., (2012) suggest that a person with a Postgraduate Degree will earn more than $3.17 million over their lifetime, which is almost 1.8 times than the lifetime earnings of a person with just Year 11 or less education (Figure 17).

Figure 17 Lifetime employee income of persons at age 25 years, highest educational attainment (Australia, $ million)

Source: Cassells et al., (2012).

While the results presented in Figure 17 are instructive, the work of Cassells et al., (2012) also highlights the differences by educational attainment and gender in Australia (Figure 18). While Cassells et al., (2012) note that employment and earnings patterns of women are often disrupted through childbirth, childcare and other caring responsibilities (and that women are more likely to work part rather than full-time), the differences in lifetime earnings prospects are stark (we return to the topic of gender and retirement outcomes later in the report).

Figure 18 Lifetime employee income of persons at age 25 years, by gender (Australia, $ million)



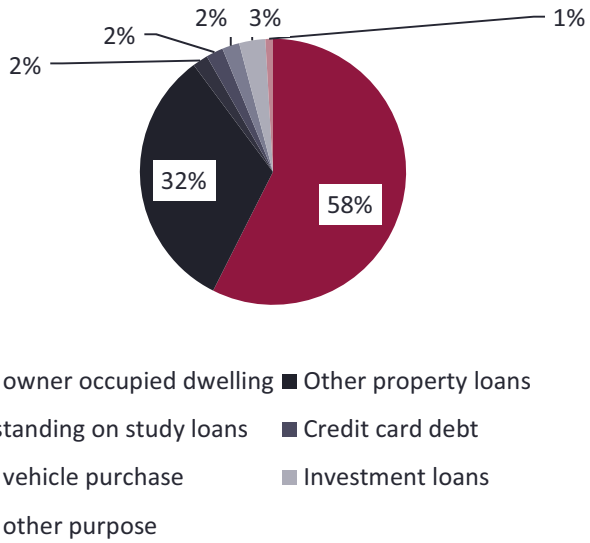
Source: Cassells et al., (2012).

[21] In all likelihood, this is because those that have a postgraduate qualification in the age 25-29 age group are: (1) starting full time work later because they first had to complete their postgraduate education; or (2) they have entered the academy (i.e. their salary is low adjusted for education compared to, say, a bachelor degree qualified professional in industry).

4.2 Household liabilities

As with the discussion of household assets in Australia, we commence with the aggregate composition of household liabilities. As seen in Figure 19, for all households, property loans (that is, the sum of loans for owner occupied dwelling and other property loans) are the largest liabilities faced by households, accounting for around 90% of total liabilities (ABS, 2013).

Figure 19 Household liabilities composition (Australia, 2011-12)



Liability	%
Loans for owner occupied dwelling	58%
Other property loans	32%
Debt outstanding on study loans	2%
Credit card debt	2%
Loans for vehicle purchase	2%
Investment loans	3%
Loans for other purpose	1%

Source: ABS (2013).

Table 8 Household liabilities quintiles (mean value, Australia, 2011-12)

	Lowest	Second	Third	Fourth	Highest	All
Property Loans $'000						
Principal outstanding on loans for owner occupied dwelling	11.2	98.0	105.0	85.9	73.7	74.7
Principal outstanding on other property loans	6.9	20.3	29.0	48.6	105.9	42.1
Other Liabilities $'000						
Debt outstanding on study loans	3.9	2.9	1.6	2.1	1.7	2.4
Amount owing on credit cards	2.0	3.1	2.8	2.4	3.2	2.7
Principal outstanding on loans for vehicle purchases	2.5	3.9	2.7	2.5	2.1	2.7
Principal outstanding on investment loans	0.5	0.4	2.4	3.8	14.0	4.2
Principal outstanding on loans for other purpose	1.1	1.1	0.9	1.2	1.3	1.1
Total Liabilities	**28.0**	**129.6**	**144.4**	**146.6**	**201.9**	**130.1**

Source: ABS (2014).

Table 8 provides the distribution of households' liabilities as at 2011-12 (ABS, 2013). The mean total liabilities held by households in Australia stand at around $130,100. Again, the dominance of property-related loans for Australian households is evidenced. For completeness, Table 9 provides household liabilities by age profile in Australia (ABS, 2013).

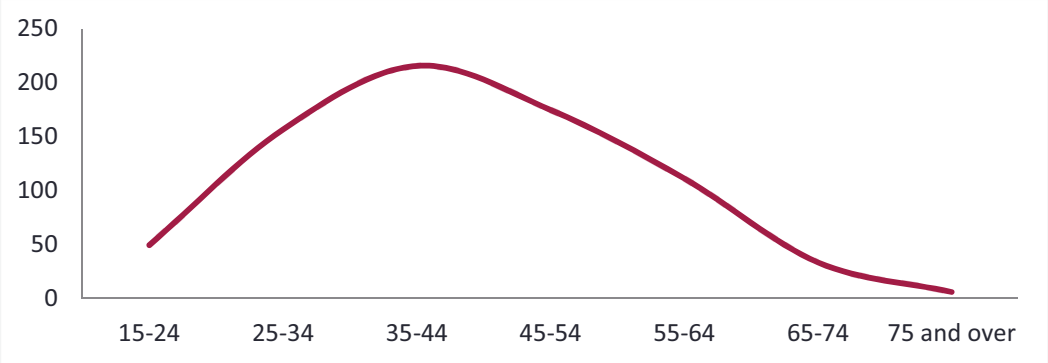
Table 9 Household liabilities by age profiles (mean value, Australia, 2011-12)

	15-24	25-24	35-44	45-54	55-64	65-74	75 and over	All house-holds
Property Loans $'000								
Principal outstanding on loans for owner occupied dwelling	26.3	110.8	139.8	90.3	45.0	10.9	2.1	74.7
Principal outstanding on other property loans	8.3	30.8	59.1	65.7	53.2	16.5	2.2	42.1
Other Liabilities $'000								
Debt outstanding on study loans	8.4	5.0	1.5	2.5	2.2	0.6	0.2	2.4
Amount owing on credit cards	1.0	2.6	3.5	4.1	2.9	1.7	0.2	2.7
Principal outstanding on loans for vehicle purchases	4.2	4.6	3.8	3.3	1.7	0.7	0.3	2.7
Principal outstanding on investment loans	0.3	1.8	6.3	7.5	5.1	2.0	0.1	4.2
Principal outstanding on loans for other purpose	0.9	1.1	1.5	1.2	1.0	0.8	0.7	1.1
Total Liabilities	**49.3**	**156.6**	**215.5**	**174.7**	**111.1**	**33.3**	**5.8**	**130.1**

Source: ABS (2013).

The data presented in Table 9 (and illustrated in Figure 20) provides household liabilities across different age profiles in Australia (ABS, 2013). We can see the liabilities levels peak between the ages of 35 and 44 ($215,500) when household income is directed at child rearing (e.g. education), after which income is redirected to retiring debt. We can also see that households are holding perhaps more debt than expected in the standard lifecycle model as they approach/enter the retirement phase.

Figure 20 Household liabilities by age profile ($'000, Australia, 2011-12)



Age profile	15-24	25-34	35-44	45-54	55-64	65-74	75+
Ratio	78.18%	90.42%	92.30%	89.30%	88.39%	82.28%	74.14%

Source: ABS (2013).

With cohort level data provided on the household assets and liabilities, we now provide a snapshot of net wealth. It is important to note that, due to data limitations, the estimates of net wealth *exclude* human capital. We would contend that readers may use the age-based lifetime earnings estimates from Cassells et al., (2012) as a guide to formulating views on the present value of human capital in forming a more complete picture of household balance sheets through the life course.[22]

[22] We would also contend that this represents a potentially important direction for future research. However, we note that this would be a non-trivial exercise in moving from age-based cohorts to qualification-specified, age-based cohorts (and the many accompanying assumptions outlined by Washer and Nippani, 2004 to estimate the present value).

4.3 Household net worth

As discussed previously, household net worth provides insights into the extent to which the value of household assets exceeds the value of their liabilities. As reported in Table 10, the mean household net worth in Australia for the period 2011-12 was around $728,000 (consisting of $858,000 assets and $130,000 of liabilities) (ABS, 2013).

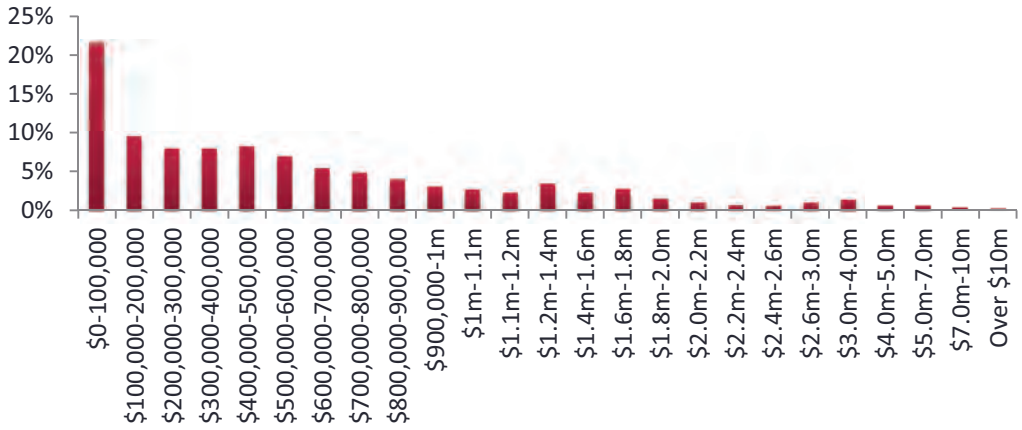
Table 10 Household net worth quintiles (mean value, Australia, 2011-12)

	Lowest	Second	Third	Fourth	Highest	All
Household net wealth	31,250	191,207	437,856	766,465	2,215,032	**728,139**

Source: ABS (2013).

Like many OECD countries, there is a skewed distribution of net wealth in Australia with the bulk of the net worth held by a relatively small number of households. The wealthiest 20% of households in Australia hold around 61% of total household net worth, averaging $2.2 million per household. The poorest 20% of households account for just 1% of total household net worth in Australia, with an average about $31,000 per household (ABS, 2013).

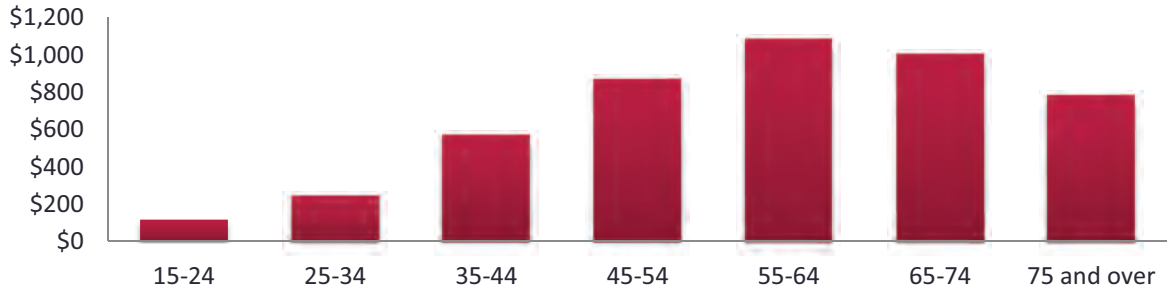
Figure 21 Distribution of household net worth (Australia, 2011-12)



Source: ABS (2013).

Finally, we consider household net worth with by different age profiles. As illustrated in Figure 22, overall household net worth is increasing overtime, reaching its peak between age 55 and 64 (at around $1,086,400), then decreasing into the post-retirement phase.

Figure 22 Household net worth by age profile ($'000, mean value, Australia, 2011-12)



Age profile	15-24	25-34	35-44	45-54	55-64	65-74	75+	All
Net worth ($'000)	115.6	247.2	572.1	872.8	1086.4	1007.6	786.9	**728.1**

Source: ABS (2013).

5. Funding Australia's Future: A household perspective

We commence our analysis by framing issues relating to the household income statement and balance sheet taken from the cohort analysis.

5.1 Issues for the household income statement

Table 11 Issues for the household income statement

Issue	Discussion
	Income
Salary income	- Salary income comprises the largest proportion of total lifetime income - As the individual ages, this proportion of total income falls but remains high - Gender differences are material - Employment is very important from a societal perspective (employed persons are contributors to the tax base; unemployed persons draw from the tax base) - Insurance – via super funds and insurance companies many individuals insure against breaks in employment continuity due to health/ impairment (income protection)
Investment income	- To the extent the individual builds a stock of financial capital over their working life, investment income grows as a proportion of total income - In a family situation, there may be a jump in investment income when salary income is redirected from supporting offspring to building financial capital for retirement/ other financial objectives. We also note the difficulties in making generalisations given trends in household formation
Social security	- The individual may receive some supplemental income depending on income, employment status - Form of social insurance funded by society
	Expenses
Mortgage payments/ Rents	- society-wide the mix depends on relative cost of servicing a mortgage versus rents, house prices, perceptions about home ownership
Personal loans	- motor vehicles, credit cards
Living expenses	- For most, these consume much or all of current income
	Residual
Surplus Units	- Retire debt at an increased pace - Precautionary savings (i.e. a form of self-insurance) – this depends on the individual's view of the risks and other available safety nets (e.g. social security, Medicare) - Additional superannuation savings (up to cap), then - Non-superannuation investment
Deficit Units	- Social security – particularly for low income earners - Revolving credit – e.g. credit cards, home equity may be used to supplement current revenue. This is cyclical e.g. the use of home equity rises as asset prices rise (pre-GFC economy), and falls in tough economic times as households repair balance sheets

5.2 Issues for the household balance sheet

Table 12 Issues for the household balance sheet

Issue	Discussion
Assets	
Principal place of residence	- As both shelter and an investment - Principal asset for most Australians - House prices can affect perceptions and, in turn, consumption, use of revolving credit
Investment real estate	- Popular form of investment worthy of separate consideration - Popularity driven by taxation settings (i.e. negative gearing)
Superannuation	- Second largest asset for most people - Likely to increase in popularity/ importance as SGC rates rise - As Baby Boomers retire, system more likely to have a more balanced view of accumulation and retirement phases (currently mostly accumulation focused because of predominance of DC plans) - Constant tinkering may drive behaviour about voluntary contributions - Debatable whether current contribution caps are the best way to promote retirement savings but still retain equity - Preservation means loss of control - Some gaps in retirement phase offerings (e.g. deep annuity market, deferred annuities)
Human capital	- Valuation of present value of human capital (complexity) - The role of education - The drivers of human capital (and productivity)
Liabilities	
Mortgage	- The largest liability in the eyes of many households - Debatable whether it is larger than retirement
Retirement	- Not often accounted as a liability in the household balance sheet - If it was, the way superannuation is managed would likely change to an LDI focus - In actuality, it is the liability to be funded by a combination of social security, superannuation and other assets - Estimating the consumption liability (necessary, target and aspirational)
Personal loans	- Dependent on interest rates, levels of household gearing
Margin loans	- Popularity dependent on relative asset prices, interest rates
Aged care and health care liabilities	- Liabilities associated with the ageing of Australian households - The rise and rise of dementia-related illness
Other loans/ liabilities	- Student loans - School fees – can be viewed as liabilities; several years (up to 12 years and beyond); significant in scale (depending on school); drives the next generation of human capital

Throughout this study we have embraced the functional definition of Tufano (2009). This approach identifies four primary and necessary functions of the household finance sector (moving funds; managing risk; advancing funds from the future to today; and advancing funds from today until a later date). We return to this four quadrants approach to the household finance sector, with the aim of raising a range of topical issues for product and service providers (and Government policy and regulators) informed by the life stage of Australian households for debate. We make no claims that the following discussion is exhaustive, our motivation is to bring the household lifecycle frame to deliberations on *Funding Australia's Future*.

5.3 Moving funds

Tufano (2009) explains that the financial system must provide a mechanism for the transfers of money and payments for goods and services.[23] In this section we explore three themes for the future of Australian household sector finances under the theme of *"moving funds"*, specifically: multi-channel convergence; real time budgeting and prediction; and Money 3.0.

[Multi-channel convergence]

There is a global conversation in the banking sector on moving to an omnichannel endpoint to interacting with households. Leading institutions are implementing household-centric strategies by focusing on three critical elements: breaking down product silos, understanding their customers, and enhancing the customer's experience (PWC, 2011).

In their own words …

The future of banking: Multi-channel convergence to an omnichannel endpoint

"Banks, similar to many other industries, have grown and innovated within their own internal silos. So an advancement in the branch experience did not necessarily coincide with the same experience improvement at the ATM or through the world wide web. This disconnect has reached a tipping point as the Generation X, Y and millennial groups are making up a larger portion of the target market. This group expects their providers to have a holistic approach and view into their interactions with the institution, or a truly omnichannel approach."

Ranta (2013)

Source: http://www.aciworldwide.com/what-we-know/expert-view/2013/3/5/the-future-of-banking.aspx

A number of commentators, including de Jong (2012) see this multi-channel banking experience being informed by both function and household attitudes and behaviours. This approach also allows for what has been described as *"cross-channel"* journeys for households. In the case of a loan application, households can seamlessly move across channels (smartphone; tablet; desktop computer; call centre;

[23] Tufano (2009) notes that, in the household finance sector, the payments function includes cash, cheques, debit cards (including prepaid), credit cards, postal and private money orders, wire transfers, remittances, barter, online funds transfer tools like PayPal, Automated Clearing House (ACH) transactions, payroll systems, and the infrastructure that supports all of these activities.

and branch) to complete the various stages of the application (check rates; compare loans; select product; apply; get help; sign contract; and view status) (de Jong, 2012).

[Real time budgeting and prediction]

The life stage approach to household finance has highlighted the centrality of budgeting for changing needs through time. With the rise (and rise) of electronic payment systems, real-time household budgeting may assist with improving decision making. The move toward incorporating predictions (and/or scenarios) allows households to take an outcome-oriented frame informed by their life stage.

In their own words …

PCMag Editor's Choice, Best Mobile Finance App – Mint.com

"Mint.com (for U.S. and Canada only) is our favorite financial software application, and its mobile app for iOS and Android offers a comprehensive look all your account balances, updated in real-time, as long as you're connected to the Internet. It automatically categorizes your transactions, alerts you when you're about to go over your budget, and lets you opt-in to push notifications about bills. It is our Editors' Choice for personal finance apps because of its speed and reliability - truly the easiest way to track all your accounts on the fly. Its free Web-based sibling Mint.com adds depth to the app with the ability to move money between accounts and create detailed spending forecasts."

Duffy (2013)

Source: http://www.pcmag.com/article2/0,2817,2400562,00.asp

One of the interesting features of these technologies is that they allow households to reflect on spending priorities in every area of the household budget (and associated goals and financial objectives). As we have seen throughout this report, moving from homogenous approaches to household finances to greater heterogeneity is an important step forward in the debate. These technologies also provide alert functions which can act as prompt for (hopefully improved) decision making.

[Money 3.0]

The payment system has evolved from barter, oxen, and seashells to plastic cards and mobile banking (Evans & Schmalensee 2005, Tufano 2009). PayPal president, David Marcus, has recently described the rapid adoption of payments by households via mobile technologies as *"Money 3.0"* (Rommann, 2014). While we note the important convergence theme occurring institutionally across the payments system (offered by banks, non-banks, government (post offices), data processors, on-line business, to name but a few), the development of NFC (near field communication) technologies is changing the way households interact with the payments system.

In their own words …

Cash Is Trash: The Future of Mobile Payment

"Given that 6 billion people (in the U.S. alone) have access to a mobile phone, the Money 3.0 opportunity is enormous. Studies by Visa show that Americans are twice as likely to carry a phone as cash; those between 18 and 34 are four times more likely. Mobile payments doubled between 2012 and 2013 to $1 billion. eMarketer predicts mobile payments will top $58 billion by 2017, and phones are just the beginning of e-cash. NFC chips could also be placed inside wearable smart technology. A smart watch, ring, or Google Glass would be easier than a phone as you would not have to pull it from a purse or pocket - simply tap, swipe, or blink an eye. Some analysts question NFC's payment dominance, however, as tapping a device may not be significantly more convenient than swiping a card. Other technology, like PayPal's Beacon and Apple's iBeacon, uses proximity-based Bluetooth connections instead. A small vibration alerts customers' phones upon crossing a store's "digital fence" and syncing with apps to provide inventory, floor plans, discounts, and preordered items. Payment would occur online, with the cashier simply confirming your registered picture for purchase security. Eventually, unique biometric information might also suffice for payment. Voice recognition or scans of fingerprints, retinas, or DNA could replace cold, hard cash."

Rommann (2014)

Source: http://www.forbes.com/sites/techonomy/2014/01/23/cash-is-trash-the-future-of-mobile-payment/

5.4 Managing risk

The risk-management function for households is satisfied through a variety of products and services, including insurance (health, life, property and casualty, disability), the purchase of certain financial products (e.g., put options to protect one's portfolio against declines), precautionary savings, social networks, and government safety nets (Tufano, 2009).[24] In this section we explore three themes for the future of Australian household sector finances under the theme of *"managing risk"*, specifically: household risk management contracts; virtual communities; and aged care insurance.

[24] Tufano (2009) makes the important point that the organisations that perform this function range from the family and local community to insurance companies and government disaster relief plans.

[Household risk management contracts]

Shiller (2007) has led international thinking on how future innovation in the field of risk management contracts might emerge informed by the needs of households. Shiller's (2007) work directly links to a number of key theme to emerge from our analysis of Australian household finances by life stage: livelihood and home equity insurance; the impact of economic cycles on households; retirement risks (longevity risk and inflation risk); and energy risks for households.[25] On the topic of innovation in household-informed risk management contracts, Shiller (2007) remarks:

> *"Our experience with these shows that, as regards financial innovation, the process is at times painfully slow, but the details are eventually gotten right, because each experiment suggests another, improved, design. Innovation can be meandering; yet again, progress appears to be relentless."*
>
> [Shiller (2007, p. 25)].

In their own words …

Risk Management for Households - The Democratization of Finance

"The application of advanced principles of risk management to the risks of the household offers many opportunities to improving human welfare. For such application to be effective, the complex and long-term nature of the basic household maximization problem must be understood, and psychological factors that prevent households' effective use of risk management tools to solve this problem must be considered. Examples are given of recent financial innovations that focus on risks that are salient to households - home price risks, longevity risks, and energy risks."

Shiller (2007)

Source: https://www.bis.org/events/brunnen07/shillerpap.pdf

[25] New insights on the issue of Australian households 'downsizing' to release equity in the home to assist in the funding of retirement needs is provided by Adair, Williams and Menyen (2014).

[Virtual communities]

The rapid adoption and fast evolution of social networks will continue to empower both households and businesses to communicate more transparently and to harness the buying power of virtual communities (PWC, 2012). A decade after its launch, Facebook today has around 1.23 billion monthly users, or about one-sixth of the world's population.[26] PWC (2012), for example, have considered the potential impact of "virtual communities" in the insurance context.[27]

In their own words …

Insurance 2020: The balance of power is shifting towards customers

"Social networks: As consumers become even more comfortable with social networks several scenarios are likely to develop:

- People exchange more personal information and start building networks of trusted friends, family and acquaintances, shifting the balance of trust from insurance agents and advisers to online communities.
- Online social networks wielding substantial purchasing power become new group insurance channels, benefiting from information-driven online intermediaries.
- Eventually, online social networks become pooling mechanisms for self-insurance, changing the role of insurers at a primary level from product manufacturers to administration service providers."

PWC (2012)

Source: http://www.pwc.com/en_GX/gx/insurance/pdf/insurance-2020-turning-change-into-opportunity.pdf

[26] Source: http://www.abc.net.au/news/2014-02-04/facebook-turns-10-the-social-network-in-numbers/5237128.

[27] We have also witnessed examples of households forming communities around an object of affinity (such as electricity contracts). Insurance products are also being distributed to households via other non-traditional channels (e.g. supermarkets and professional associations).

[Aged care insurance]

As the Australian population ages, one area of risk transfer that will require further consideration is that of aged care insurance (termed long-term care insurance in the U.S.). The market for this form of insurance provides important insights for the way in which this insurance may work in Australia, particularly as households move through the post-retirement life stage.[28]

In their own words …

When planning for retirement, don't forget long-term care insurance

"Are you insured against old age? It's a fact of life that is far more likely to impact your finances than a car accident or house fire. While paying for auto or homeowners' insurance often seems like a no-brainer, many people question whether buying long-term care insurance is worth it. Unlike traditional health insurance, long-term care insurance is designed to cover long-term services—such as assisting with 'activities of daily living,' including bathing, dressing and eating—for those who can no longer take care of themselves. "Ultimately, what you're protecting is a portfolio, a standard of living or the assets you plan to leave for your children, which can be ravaged by long-term care or the costliness of going into a nursing home," said certified financial planner James J. Burns, founder and president of wealth-management firm JJ Burns & Co. U.S. Government statistics project 70 percent of Americans age 65 and older will eventually need long-term care, either at home or in a nursing home. According to the Department of Health and Human Services, the average yearly cost for home health aide ranges from US$34,000 to US$57,000. A private nursing-home room ranges from US$55,000 to more than US$250,000 a year, depending on the state and the facility."

Epperson (2014)

Source: http://www.today.com/money/when-planning-retirement-dont-forget-long-term-care-insurance-2D79695721

A recent survey on the topic of long-term care insurance of providers in Australia by Browne (2013) found that nearly three quarters (73%) of those surveyed said that private voluntary insurance covering long term care needs could be a worthwhile product in Australia in line with those offered in some countries overseas. However, barriers remain. An earlier study on the topic by National Seniors Australia (2011) identified that some of the barriers to the development of aged care insurance in Australia include:

- A lack of consumer awareness of future care needs;
- The unpredictable nature and extent of future care needs;
- Complexity and high cost of care insurance products;
- A belief that long term care is funded entirely by the state;
- Limited market profitability due to current market size;

[28] "A single, relatively healthy adult in his or her 50s in the U.S. can expect to pay about US$2,000 a year for around $160,000 in benefits - which would eventually lead to about $330,000 in total benefits by the time you're 80, according to the American Association for Long Term Care Insurance. Most people buy long-term care insurance between ages 50 and 60. Generally, the younger you are, the less costly the premiums" Source: http://www.today.com/money/when-planning-retirement-dont-forget-long-term-care-insurance-2D79695721.

- Regulatory constraints or regulatory uncertainty; and
- Uncertainty over future costs of long term care provision.

While acknowledging these barriers, the demographic wave of Australian households entering retirement (as well as increases in life expectancy), it would seem that household demand for these services (and methods of transferring these risks) will increase.

5.5 Advancing funds from the future to today

This function involves borrowing and credit. These activities ranges from shorter-term unsecured borrowing (e.g., credit and charge cards, banking overdraft protection, and payday loans), to longer-term unsecured borrowing (e.g., student loans, person-to-person lending), to secured borrowing (e.g., car loans, mortgages and margin loans) (Tufano, 2009).[29] In this section we explore two themes for the future of Australian household sector finances under the theme of *"advancing funds from the future to today"*, specifically: household leverage and the macroeconomy; and financial exclusion and the underbanked.

[Household leverage and the macroeconomy]

There are now voluminous studies on the role of household leverage and the GFC. We have reported in this study on the process of household deleveraging over the past 5 years in Australia. Our motivation in this section is to formally note the complex interplay between decision making at the household level, interaction with the household finance sector and, ultimately, impacts on the macroeconomy.

In their own words …

Finance and Macroeconomics: The Role of Household Leverage

"The increase in household leverage prior to the most recent recession (in the U.S.) was stunning by any historical comparison. From 2001 to 2007, (U.S.) household debt doubled, from US$7 trillion to US$14 trillion. The household debt-to-income ratio increased by more during these six years than it had in the prior 45 years. In fact, the (U.S.) household debt-to-income ratio in 2007 was higher than at any point since 1929. Our explanation for the increase in (U.S.) household debt begins with the dramatic expansion in mortgage originations to low credit-quality households from 2002 to 2007. Mortgage-related debt is a natural starting point, given that it makes up 70 to 75 percent of (U.S.) household debt and was primarily responsible for the overall increase in household debt. Further, the expansion of new mortgage originations was much larger in zip codes with a large fraction of low credit-quality households."

Mian and Sufi (2011)

Source: http://www.today.com/money/when-planning-retirement-dont-forget-long-term-care-insurance-2D79695721

[29] Tufano (2009) explains that the provision of credit can take place through the formal sector, through the informal sector (e.g., friends and family), and through various hybrid organisations (e.g., person-to-person lending websites). In addition to explicit borrowing, implicit borrowing is built into various derivative products, including options and forwards, as well as prepaid structures (e.g. rent-to-own schemes).

One of the themes identifies in the analysis of Australian household was the general trend for debt to be carried later in life. This has implications for the ability households to absorb financial shocks as they near retirement. As we consider issues regarding *Funding Australia's Future*, it timely for greater collaboration between industry, academe and regulators to better understand the symbiotic relationship between household finances and the macroeconomy.

> "In the aftermath of the Great Recession, a broad consensus has developed that both finance and macroeconomics need to incorporate more of the other discipline in their conceptual frameworks. Our work is motivated by a desire to advance the conversation between financial and macro economists through a better empirical understanding of the evolving relationship between financial markets and the real economy (households)."[30]
>
> [Mian and Sufi (2011, p. 13)]

[Financial exclusion and the underbanked]

Data on the distribution of net worth was presented earlier in this report, with more than one-fifth of Australian households having net worth less than $100,000 (in fact, the lowest net worth quintiles was $31,250) in 2011-12 (ABS, 2013). If we are to *consider Funding Australia's Future* for all, we need to address the fact that many Australian households face financial exclusion and are underbanked.[31] Connelly (2013) defines financial exclusion as:

> "Financial exclusion exists where individuals lack access to appropriate and affordable financial services and products - the key services and products are a transaction account, general insurance and a moderate amount of credit."
>
> [Connelly (2013, p. 6)]

The preeminent work in the field using Australian data has been undertaken by Connelly (2013). Connelly (2013) finds that 18% of the adult population in Australia were either fully excluded or severely excluded from financial services in 2012. This figure comprises 1.1% of adults who were fully excluded (they had no financial services products) and 16.6% of adults who were severely excluded (they only had one financial services product). In real terms, 194,117 adults are fully excluded and 2,929,402 are severely excluded, providing a combined total of 3,123,519.

[30] The text in brackets was added by the authors.

[31] "Underbanked households are those who have bank accounts but who still use alternative ways of getting cash - either because it's quicker to use an alternative or because they think bank accounts come with higher costs. A survey in 2012 by the U.S. Federal Deposit Insurance Corporation (FDIC) survey found that about one in every five households is considered underbanked, representing 20.1%, or 24 million, U.S. households." See: http://www.abcactionnews.com/money/fdic-report-10-million-us-households-dont-have-bank-accounts-up-77-since-2009

The findings by Connelly (2013) on the Australian experience are corroborated by international data. Rommann (2014) suggests that around 8% of American households, and half of the world, do not even have bank accounts.

In their own words …

Measuring Financial Exclusion In Australia (The Centre for Social Impact for National Australia Bank)

"Costs and financial exclusion: The average annual cost of basic financial services is $1739. This is made up of $85 for a basic bank account, $711 for a low cost credit card, and $943 for general insurance (basic motor vehicle and basic home contents combined). For 9.2% of the population this would represent over 15% of their annual income. For another 9.1% of the population this would represent between 10 and 15% of their annual income. These costs severely limit the ability of a large proportion of the Australian population to gain access to mainstream financial services. Demographic profile of financial exclusion: We found that some population segments have dramatically higher rates of exclusion, especially young people aged 18-24, students not in employment, people born in a non-English speaking country, and people earning between $20,000 and $25,000 (the working poor). Demand for credit and insurance is likely to be lower amongst 18-24 year olds and students, however their lack of access to mainstream products makes this group vulnerable to predatory lending products and to the loss of uninsured assets. Other groups have a higher demand for financial services, but face significant barriers in relation to the cost and complexity of products. Insurance cover: There is a significant unmet need for insurance products, and a range of common barriers to obtaining or keeping insurance. We found that cost, complexity of product and complexity of documentation are key issues."

Connelly (2013)

Source: http://www.financialliteracy.gov.au/media/465159/nab_csi_measuring_financial_exclusion_in_australia_2013.pdf

Connelly (2013) suggests a range of measures to assist Australian households in this predicament, including: initiatives relating to basic banking; matched savings; access to credit; and financial literacy programs. A suggestion from the study is that consideration be given to innovative approaches to microfinance products as part of part of a larger solution. Interestingly, Connelly (2013) notes an absence of initiatives designed to improve access to insurance.

5.6 Advancing funds from today until a later date

This function involves saving and investing products and services available to households.[32] While there is a myriad of important questions in this areas (including household liquidity and behavioural aspects of savings and investing decisions), we focus on two priority areas to come from the life stage analysis in Australia, namely: sequencing risk, retirement income and advice; and gender and retirement adequacy.

[32] Tufano (20090 notes that investing or savings functions are embodied in a host of products and services, including bank products (savings accounts and CDs), mutual funds, variable annuities, workplace retirement programs, and Social Security. These products vary based on the intended time horizon, level and type of risk borne by the investor, tax treatment, and other factors.

[Sequencing risk, retirement income and advice]

Recent world trends appear to be placing greater risks upon the household (Shiller, 2007). This is particularly the case in the global shift from defined benefit (DB) retirement plans to defined contribution (DC) plans. While we have previously touched on a range of possible household-informed risk management contracts (to cover risks including retirement risks such as longevity risk and inflation), Australian's retirement savings system (superannuation) is dominated by DC plans, where households bear much of the risk associated with retirement adequacy (Drew, Stoltz, Walk and West, 2014).

In their own words …

Retirement liabilities come to the fore

"Financial advisers and superannuation funds are placing greater attention on the unpredictable liabilities that surface during retirement rather than the rate of return, according to a finance academic. Griffith University professor of finance Michael Drew said in the past 12 months there had been a wide-ranging conversation about sequencing risk, however, the importance of return and risk expectations were still being upheld by some. "The conversation is shifting from that asset pot-of-gold thinking to the liability side of the equation and that's the challenge in retirement because some of those liabilities are relatively well-known and they're regular – electricity bills, rates, utilities – but certainly there are challenges with aged care and health care, which can be far more random and lumpy in nature." Last year, the Financial Services Institute of Australasia (FINSIA) released the "Sequencing risk – A key challenge to creating sustainable retirement income" research paper, which was co-authored by Drew. "The key thing to come out of it is the acknowledgement of the importance of outcome or goals-based investing in thinking about the problem of sequencing risk."

Lumantar (2014)

Source: http://www.financialobserver.com.au/articles/retirement-liabilities-come-to-the-fore

The issue of sequencing risk is particularly acute during the life stages immediately pre- and post-retirement, which is popularly termed the *"Retirement Risk Zone"* (Basu, Doran, Drew, 2012 and Challenger Retirement Income Research, 2012).[33] The Retirement Risk Zone describes the critical phase between saving for retirement and realizing retirement income. It incorporates the last two decades of the retirement saving journey and the first fifteen years of retirement. At this stage of the lifecycle, retirement savings are at their zenith, and most exposed to risks from fluctuating markets (Basu and Drew, 2009b). Therefore, the sustainability (or otherwise) of retirement savings for many Australians are path dependent. Further issues related to this include the role of financial advice through the life course and the incorporation of lifecycle theory in the design of default options in superannuation funds (Basu and Drew, 2010; Basu, Byrne and Drew, 2011).

[33] For further discussion on sequencing risk and range of retirement risks faced by households in Australia, see FINSIA's Retirement Risk Zone campaign, https://www.finsia.com/indepth/industry/retirement-risk-zone.

There are a range of issues that relate to the post-retirement phase in particular. Principal among these is the availability of products and services to assist retirees to convert savings into retirement income (Drew and Walk, 2014). This also includes the provision of holistic, outcome-oriented financial advice informed by the life stage (Bodie et al, 2007). As the Baby Boomers have already begun to retire, it is time to consider the building blocks that might be necessary to solve the post-retirement problem (Cooper, 2014). There are a number of alternatives to the retirement income challenge facing households. Some take the form of account-based pensions and the inter-related issues of asset allocation; systematic withdrawal plans; and safe withdrawal rates (Drew and Walk, 2014). Others are characterised by some form of pooling by participants. Examples of insurance-based solutions include annuities and deferred annuities (a way of accessing mortality credits). Also, there are emerging non-insurance approaches to pooling longevity risk. Chief among these are a form of collective defined contribution plan design, known as defined ambition, which may permit risk-sharing across age cohorts.[34]

To allow this innovation to occur, regulatory settings may need to be adjusted (Clare, 2013).

[Gender and retirement adequacy]

A recurrent theme throughout the report relates to gender and household balance sheet formation. Perhaps the issues are most stark on the matter of retirement adequacy in Australia.[35] Recent analysis by Clare (2014) provides new insights into the distribution of superannuation for Australian households.[36] A summary of the Clare's results are for the period (2011-12, aligning with ABS, 2013 data presented):

- Average super account balances were $82,615 for men and $44,866 for women in 2011-12.
- These averages are well above the balances of $56,400 for men and $23,900 for women in prepared for ASFA in regard to 2003-04 (these figures include zero balance superannuation accounts;
- Balances grew because of continued contributions and positive investment earnings over the last decade, despite the impact of the GFC; and,

[34] For an introduction to this new type of plan design and the defined ambition proposals in the United Kingdom, see: http://www.theguardian.com/money/2013/nov/07/defined-ambition-pension-proposals and http://www.napf.co.uk/PolicyandResearch/DocumentLibrary/~/media/Policy/Documents/0266_Defining_Ambition_Views_from_the_industry_on_achieving_risk_sharing.ashx

[35] Research by Basu and Drew (2009) has provided empirical support for gender-sensitive superannuation plan design, incorporating both aspects of asset allocation and default design to work in concert with contribution rates.

[36] The analysis of Clare (2014) provides an excellent first cut at this data. For future research on issues of gender and retirement adequacy, it would be ideal to consider superannuation balances by wage quintiles and to give an indication of the wage replacement rate of individuals with and without adding the Age Pension. This could then be compared to retirement income benchmarks, such as the ASFA Retirement Standards.

- For those with superannuation, the average balance for males was around $112,000 while for females it is around $68,600 (these figures exclude zero balance superannuation accounts).

In their own words …

Women's Super Summit Report

"Despite more women participating in the paid workforce than ever before, women still retire with just over half the superannuation savings of men. The average Australian currently woman retires with about $112,000 in superannuation savings, compared to $198,000 for men. However these figures don't tell the real story, with some research suggesting the median retirement super balance for Australian females is as low as half the average balance. There are a number of key factors behind the gender gap in retirement savings: Taking a career break to care for children and other family members has a significant impact on the ability of women to save for their retirement. Far more women than men work part time to meet their caring responsibilities, while many of those in full-time work earn significantly less than their male counterparts due to a gender pay gap of about 18 per cent. Women live longer than men and are therefore more a risk that their superannuation won't last the distance.

Key facts

17.4%: Is the gender pay gap - 110 years after women got the vote they still earn less than men

1.5 times: Is how much more a 25 year old man is expected to earn over a working lifetime compared to a 25 year old female

5 years: Is how long the women will outlive her male counterpart

A third less : Women in the 55 to 64 year age group earn on average two thirds of men's income

$207,181: The amount of super that a female on an average salary misses out on even if she works full time, with no interruptions compared to a man who works full-time, earning an average wage

$538,980: The amount of super that a female nurse misses out on if she has 9 years out of the workforce caring for children, returns to work part-time before going full-time and later works part-time again to care for her elderly parents until retirement"

Australian Institute of Superannuation Trustees (AIST) and Women in Super (WIS) (2014)

Source: http://www.security4women.org.au/wp-content/uploads/Womens-Super-Summit.pdf

The issue of gender differences in retirement outcomes is further illuminated by Clare (2014) and is reported in Table 13.[37]

[37] We also note issues of underemployment, non-traditional work profiles and other forms of discrimination (such as age-based discrimination). An interesting study on attitudes to older works has been undertaken recently by the Financial Services Council (FSC) (2014).

Table 13 Superannuation balances by age and gender (mean value, Australia, 2011-12)

Age	Male ($)	Female ($)	Persons ($)
15-19	603	398	503
20-24	5,533	4,403	4,981
25-29	18,899	13,399	16,168
30-34	32,819	22,765	27,772
35-39	53,221	36,142	44,592
40-44	66,503	43,826	55,020
45-49	102,358	60,618	81,231
50-54	136,707	71,661	103,613
55-59	203,909	91,216	146,663
60-64	**197,054**	**104,734**	150,321
65-69	172,767	90,185	130,990
70-74	142,790	65,121	102,781
75-79	55,291	24,027	38,708
80-84	52,006	15,536	31,800
85 and over	35,555	17,544	24,648
Total	**82,615**	**44,866**	**63,518**

Source: Clare (2014).

Table 14 Superannuation balances by gender (mean value, Australia, 2003/04-2011/12)

	2003-04 ($)	2011-12 ($)
Male	56,400	82,615
Female	23,900	44,866

Source: Clare (2014).

Gender and retirement adequacy is a clear and present issue for *Funding Australia's Future*. Perhaps the current situation is best captured by the recent remarks of Sex Discrimination Commissioner, Elizabeth Broderick:

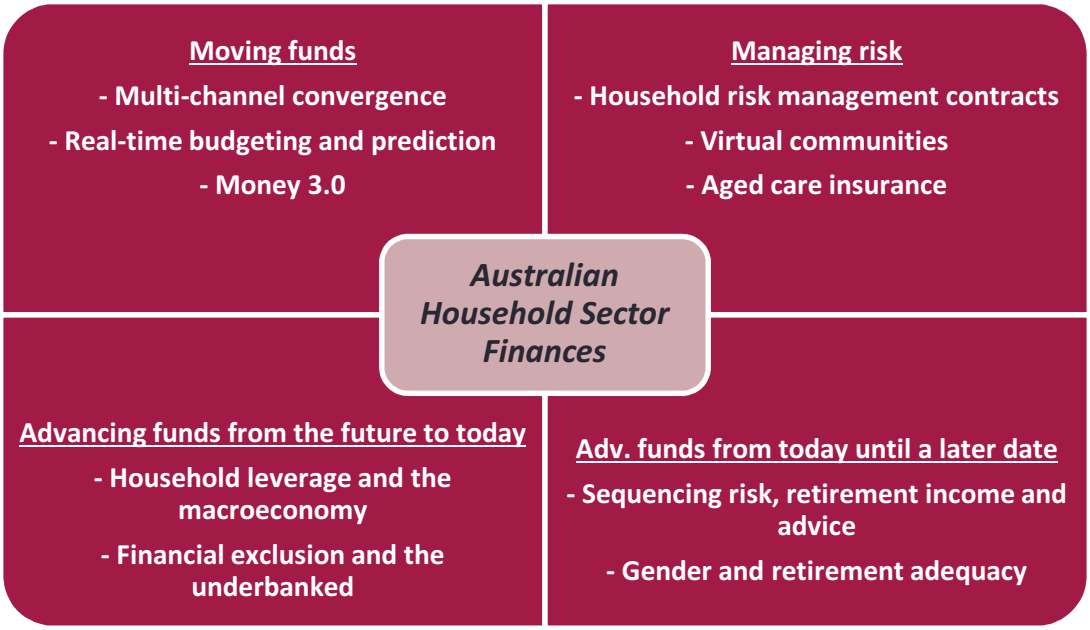
> *"The super system was set up to provide dignity in retirement for all Australians but it is not delivering for many women."*
>
> [(Broderick, quoted in AIST-WIS (2014, p. 9)]

6. Concluding comments

In this report on *Australian Household Sector Finance*, we have made the case for taking a lifecycle approach to understanding formation of household balance sheets through the life course, noting the complexities of incorporating human capital on the asset side (and corresponding retirement income needs as liabilities). The move toward a holistic approach to household balance sheets based on life stages provides important insights into the (sometimes incredibly complex) types of decisions being made by households.

It is our conjecture that the evidence presented from Australian households largely reflects the dynamic trade-off we face between expected human capital and financial capital over a lifetime. As we moved through this analysis, we sought to identify a number of issues that are topical for household balance sheet formation in Australia. Taking a functional approach to the primary and necessary functions of the household finance sector, we have identified a number of issues within the four quadrants of moving funds; managing risk; advancing funds form the future to today; and advancing funds from today until a later date.

Figure 23: The four quadrants approach to the Australian household finance sector



Source: Tufano (2009) and Authors.

The findings of this study can be reduced to the following set of interrelated issues that impact Australian household finances.

- *Guidance* – A recurrent theme in the study has been the issue of household financial decision making. Specifically, the gulf between what households *actually do* and what may be in their *best interests to do*. The complexity of the problem means that households need assistance in making these decisions. The need for guidance is so critical that it must be available in multiple forms. In addition to traditional financial advice, embedded product and/or technology-based guidance may assist households to be nudged toward better decisions.
- *Risk Management* – Households are exposed to a multitude of financial-related risks (market, inflation, longevity, leverage and climate risks to name but a few) that are simultaneously dynamic, complex and can manifest over different time horizons. In addition to improved guidance, households also need a more complete menu of solutions to assist managing these risks, acknowledging that no one single product (or silver bullet) is able to cure all ills.
- *Gaps in products* – In order to make this guidance and risk management as efficacious as possible for households, a complete set of financial 'building blocks' is required. Without the requisite building blocks, some household risks loom large. For instance, longevity risk remains a real consideration for households and will be increasingly so as the population ages.
- *Gaps in coverage* – There is an implicit assumption that all Australians have equal access to, and benefit equally from, the financial system. This is not the case. Large segments of the population have limited (the underbanked) or incomplete (gender inequality in superannuation) engagement with critical channels of the system. Measures specifically targeted at closing these gaps should be a priority.
- *Regulation* – To facilitate the innovation required to meet these challenges, regulation must be flexible, responsive and oriented towards meeting the needs of households. One immediate reform would be to facilitate further innovation in the menu of retirement income products.

We trust these findings will add to the contemporary debate on *Funding Australia's Future*.

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JULY 2014

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Funding Australia's Future

The Australian Centre for Financial Studies (ACFS) instigated the project Funding Australia's Future in late 2012 to undertake a stocktake of the Australian financial system, and analyse its role in facilitating economic growth within the wider economy.

In an economy which has enjoyed 21 years of consecutive economic growth and shown a resilience through the Global Financial Crisis (GFC) which is the envy of many nations, the financial sector has played a strong and pivotal role. The past decade, however, has been one of significant change. The impact of the GFC and the subsequent wave of global re-regulation have had a profound effect on patterns of financing, financial sector structure, and attitudes towards financial sector regulation. Identifying the extent to which these changes are transitory or likely to be more permanent is crucial to understanding how financing patterns and the financial sector will develop over the next decade or so.

Stage Two of Funding Australia's Future drills down into the key issues identified in Stage 1 of the project culminating in a set of recommendations aimed at placing Australia's financial system in a position to best meet the challenges presented by a rapidly changing and increasingly globalised economy.

In undertaking this analysis, ACFS has worked with a group of financial sector stakeholders, including the Australian Bankers Association (ABA), the Australian Finance Conference (AFC), the Australian Financial Markets Association (AFMA), the Association of Superannuation Funds of Australia (ASFA), the Australian Securitisation Forum (ASF), the Australian Securities Exchange (ASX), Challenger Limited, the Customer Owned Banking Association (COBA), the Financial Services Council (FSC), the Financial Services Institute of Australasia (Finsia), the Insurance Council of Australia (ICA), KPMG, National Australia Bank (NAB), the SMSF Professionals' Association of Australia (SPAA) and Vanguard Investments, as well as Treasury and the Reserve Bank of Australia (RBA).

This paper is one of four in Stage Two, which include:

1. Financing Australian Business:
   Professor Sam Wylie, Melbourne Business School and the University of Melbourne
2. Australian Household Sector Finances:
   Professor Michael E. Drew, Griffith University and Drew, Walk and Co
   Dr Adam N. Walk, Griffith University and Drew, Walk and Co
3. International Linkages: Financial Markets and Technology:
   Professor Deborah Ralston, Australian Centre for Financial Studies and Monash University
   Mr Martin Jenkinson, Australian Centre for Financial Studies
4. Regulating the Australian Financial System
   Mr Alex Erskine, Erskinomics Consulting

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Contents

1. Executive Summary

Financial integration, or increased linkages between international financial markets, has greatly enhanced cross-border access to capital and investment opportunities. An efficient cross-border flow of funds provides benefits for households, government and business, as it facilitates opportunities for diversification through a universal investment choice, and potentially, a lower cost of capital.

However, despite the many benefits of financial integration it also brings potential for contagion and global systemic risk. The dangers of over-reliance on offshore funding for any particular sector, was highlighted by a 2006 IMF Report[1], which drew attention to the Australian banking systems' reliance on offshore wholesale funding, noting that it made the Australian financial system vulnerable to catastrophic events in the global financial system. That indeed proved to be the case, and while Australia came through the financial crisis relatively unscathed, the impact on international flows for bank funding and securitization were severe.

While Australia was amongst those countries least impacted by the crisis, the financial system has since been reshaped in that:

- International inflows of wholesale funding to the banking sector have greatly reduced due to increased reliance on retail deposits, and slower credit growth; and
- The non-financial corporate sector has increased overseas debt issuance to diversify funding sources, increasingly through the issuance of fixed interest securities offshore.

Further, growth of funds under management in the superannuation sector, the resources boom, and increased government debt have further increased financial integration in that there has been:

- an increased outflow of Australian capital into international financial assets, due to the growth of the superannuation sector and the need to diversify investments into foreign stocks and fixed interest markets;
- a strong inflow of foreign direct investment into the resources sector through offshore borrowing and the investment of retained earnings by international mining companies; and
- a five-fold increase in issuance of government securities, 70 per cent of which is held by non-residents.

The economy is continuing to adapt to the new and increasingly market-based financial system, and as a consequence the efficiency and international competitiveness of our financial infrastructure has never been more important.

Technological developments that have enabled global Financial Market Infrastructure (FMI) platforms to better provide information, trading, clearing and settlement services have unlocked economies of scale that drive down costs within financial markets, presenting a significant challenge for domestic FMIs operating in much smaller markets. Global FMIs raise issues of systemic risk and the need for harmonised global regulation. They also elevate the discussion about the importance of FMI location. Specifically how important is it to have strong local equity and debt markets when international markets are so accessible?

[1] IMF (2006)

A clear distinction can be made between primary markets where Australian companies raise debt and equity securities, and other trading markets for securities and risk management instruments such as derivatives, swaps and foreign currency. While efficiency and international competitiveness of FMIs are key to reducing the cost of capital, equally important is the need to build a resilient domestic financial infrastructure which maximises the access of domestic companies. The systemic importance of these core capital market which fall outside the banking system is being increasingly recognized in international debate, by leaders such as Mark Carney, governor of the Bank of England and also in the US and Europe.

This report examines the structure conduct and performance of domestic FMIs most directly involved in facilitating international fund flows, that is equity, fixed interest, derivatives (OTC and listed), and foreign exchange markets. We also examine the issues that may impact on the ability of these markets to be internationally competitive. In doing so we acknowledge that households, businesses and governments also transact in international markets through FMIs located offshore, most notably fund managers and retail investors diversifying their investment portfolios and corporates issuing debt securities in markets which offer a wider range of international investors.

Overall, it would appear that international financial linkages between Australia and the rest of the world are increasing. There is strong international investment in both government and corporate debt, and a substantial investment from offshore in our equities market. In return Australian fund managers are allocating a large proportion of investments to international markets. While the efficiency of markets as assessed in cost and time appears to be reasonably good, however continuing reliance on high levels of debt funding from international markets has a negative impact on the resilience of Australian financial markets, and creates a potential exposure to the fluctuating fortunes of international capital flows.

The equities market and issues of location: One major outcome of technological developments in finance has been that the relationship between the location of financial markets and FMIs providers is changing. The issue of location is more important in capital markets engaged in the issuance of primary and secondary securities, that is equity and debt markets where the level of capital raising can impact directly on productivity and economic growth. While capital markets facilitate the flow of funds internationally, they present a potential for systemic risk as an important part of domestic market infrastructure, and so need to be sufficiently resilient to withstand external shocks.

The resilience of the equity market was well demonstrated the period between July 2008 and September 2009, when bank credit was suddenly withdrawn due to the financial crisis. Australian companies raised a record level of equity capital through the ASX, allowing them to repay debt, forestall insolvencies and promote credit growth through banking sector.

As the key trading, clearing and settlement body for Australian equities, the ASX has a challenging dual role as a critical part of national infrastructure, and also as a publicly listed company. In the manner of regional exchanges the ASX benefits from some elements of natural monopoly, yet at the same time is constrained by government regulation in the national interest. With increased globalization of technology platforms for information, trading and clearing, there is strong competition from global FMI providers to compete and offer services through local exchanges. While competition has been introduced to trading through the licensing of the Chi-X, with apparent

benefits for efficiency, ASX remains the sole provider of clearing and settlement services in both equity, and exchange-traded fixed interest and derivative markets. The potential for greater efficiencies and reduced costs through competition in clearing has been examined at some length by the responsible bodies, RBA, ASIC, APRA, and Treasury.

The demonstrated benefits of competition such as the reduction in trading costs through the entrance of Chi-X to trading in Australia, and the 73 per cent reduction in clearing costs achieved in Europe, suggest that competition in clearing warrants consideration in the Australian equities market. This now appears to be more feasible given harmonised international standards for CCPs, Australian standards and measures to oversee systemic risk issues. Given the implementation and harmonisation of internationally agreed controls on systemic risk, the need for exchanges to access greater economies of scale, and the fact that there are no ownership requirements for any of the overseas operators that are licensed in Australia, it would be timely to review this restriction.

The need for a deeper corporate bond market: Another issue directly bearing on location is our current heavy reliance on international debt funding to the corporate sector, and the consequent need to develop a liquid and resilient bond market in Australia. The current shape of the debt market suggests that all is not well, in that only one per cent of issued bonds in the Australian market is held by households; less than one half of a percent of Australian fixed interest securities are listed on the exchange; and 90 per cent of Australian non-financial corporate bonds are held by non-residents.

Recent moves to open up the fixed interest securities market to the retail sector have been operating for the purchase of Certificates of Depository Interest (CDIs) in Australian Government Bonds (AGBs) since May 2013. In the case of corporate bonds the process is yet to be completed. The success of this innovation will depend on completion of the legislative process to pass the *Corporations Amendment (Simple Corporate Bonds and Other Measures) Bill* which is expected to be passed later this year, and interest from both corporates in issuing into the retail market, and most of all, in winning the interest of householders and SMSF trustees in this investment option.

A more challenging issue will lie in encouraging the corporate sector to participate in a listed market. While the passage of the *Simple Corporations and Other Measures Bill* will help in that regard by greatly simplify issuance, there are a number of barriers in this regard. First, in a market where corporates have long relied on bank debt there is a reluctance to obtain the necessary risk rating to participate in such a market. Given that more than 70 per cent of the companies in ASX 200 do not have a risk rating this lack of a risk rating is not confined to small companies. Second, issuance by banks is by far the largest proportion of listed corporate bonds, this may well have a crowding out effect on non-financial corporations. Nevertheless, despite the many issues that have been canvassed on this point, the fact remains that developing a more resilient domestic debt market is an evident need in terms of protecting the economy from the same kind of exposure to international event previously experienced in the bank wholesale funding market.

Technological development in Australian financial markets Technological developments that have enabled FMI platforms for information, trading, clearing and settlement have unlocked economies of scale that drive down costs within financial markets, presenting a significant challenge for domestic

FMIs and regulators. Technology has also introduced some challenges for surveillance through HFT and dark pools, and the international competitiveness of systems designed for an essentially domestic client group.

For trade in financial instruments, global platforms have created liquid and efficient information and trading platforms that have enhanced the efficiency of trading, reduced information asymmetry and led to a convergence between OTC and listed markets. The FX market is the most global market with around 60 per cent of all FX transactions occurring in two financial centres but despite this, performed well during the global financial crisis.

Technology and internationally competitive systems: Another challenge for domestic FMIs is in the international competitiveness of systems designed for a domestic market and the need to integrate with international participants and markets. The ASX is currently examining how the Australian market can reduce the standard equity market settlement cycle from three days (T+3) to two days (T+2). ASX aims for T+2 settlements of equities by first quarter 2006, in line with other exchanges such as in Europe, where T+2 will be implemented by October 2014. Shortening the settlement cycle by one business day is expected to deliver broad-based benefits by reducing counterparty risk for individual investors, participants and the central counterparty, and hence reducing systemic risk for the market as a whole.

Technology and electronic trading: Developments in electronic trading have raised concerns about the potential impact of 'dark liquidity' and HFT on the quality of the market for capital raising and long term investment,. A critical component in maintain confidence in the market is to ensure fairness and confidence in markets through measures to control market manipulation and information leakage.

ASIC, which has had responsibility for market conduct and surveillance on the ASX since 2010, has recently taken measures to counter concerns regarding a loss of liquidity in markets through the use of 'dark pools'. While trading off market can be a legitimate means of preventing knowledge leakage about a trader's strategy, less acceptable is the trend for smaller trades to be routed to dark markets to seek a higher return, at the possible cost of higher spreads and a loss of transparency to the trader. Introduction of a 'price improvement rule', implemented in May 2013, has been found to have a positive impact on the market by improving efficiency and having no adverse effect on fairness. The volume of dark trading in the Australian market has been found to remain at around 25-30 per cent.

Further steps have been taken to control the widespread use of HFT in the Australian equity market. Following various interventions by ASIC in 2012, the orders per trade ratio, a key indicator of the presence of HFT, has fallen to 4:1 from 7:1, compared with an international market average of approximately 10:1. It appears that HFT turnover accounts for around 22 per cent of equity market turnover, compared with at least 50 per cent in the US and 35 per cent in the UK.

Co-ordination of regulatory bodies overseeing financial markets: Regulation of financial markets has become increasingly complex since the GFC. The extent of widespread international regulation has been unprecedented since the reforms that followed World War II and the Depression. The new international regulatory regime, established to harmonise global regulation, under the governance

of the G20, the Financial Stability Board, the International Organisation of Securities Commissions, the Basle Committee on Banking Supervision, and the International Association of Insurance Supervisors engage with governments and regulators in each jurisdiction. Country specific legislation is then introduced through the Parliament and is implemented by Australian regulatory agencies. These initiatives have required an unprecedented need for collaboration and cooperation from regulators across the financial system in Australia, and in some cases, have blurred the role between policy making and regulatory implementation. These activities are often coordinated through the Council for Financial Regulation (CFR), which provides an existing forum for cooperation in financial sector regulation across the Treasury, the RBA, ASIC and APRA, bringing the relevant parts of government together. The very high degree of agency cooperation required on issues such as competition in clearing, have led to close co-operation between these agencies, and with infrastructure providers such as the ASX. Given the complexity of issues being addressed, there is a good case to formalize and better resource CFR as a vital part of our regulatory framework.[2]

Export of financial services: Banks and institutional fund managers have a key role in the facilitation of international flows. Australian banks, for example have facilitated debt issues into domestic markets, and fund managers invest funds in international securities for both domestic and international investors. However, the level of financial exports is much lower than in comparable countries and it would appear that our current regulatory structures pose a number of impediments to further developing the export market for financial services.

Despite the great strength of Australian banks, international deposits are only around $120 billion or 6 per cent of all liabilities. The imposition of interest withholding taxes on the retail deposits of non-residents has potentially resulted in lower utilization of international deposits by Australian banks, not only resulting in a less diversified funding base for the banks, but also potentially increasing the cost of capital. Furthermore, the imposition of withholding taxes on non-resident deposits may impact the ability of international banks to compete in Australia, negatively impacting competition in the Australian banking sector. There is a need therefore to remove withholding tax on non-resident deposits, as recommended by both the Johnson Report (2009) and the Henry Tax review (2010) has merit.

Australian fund managers play an important role in international integration and as conduits for the flow of capital from international investors into domestic and non-domestic investments. The proportion of international capital managed by Australian fund managers has increased slowly, but the level of international funds under the management of Australian firms at 3.4 per cent of total funds, pales in comparison to the 80 per cent held in Singapore and 60 per cent in Hong Kong. Impediments to the growth of this market lie in facilitating access to markets, especially around the Asian region, where differences and duplication in regulatory requirements across countries can create difficulties for financial services firms selling their products across borders. The Asia Region Funds Passport (ARFP), recommended by the Johnson Review, however goes further, by establishing a series of bilateral mutual recognition treaties, thereby providing a multilaterally agreed framework allowing the cross-border marketing of funds amongst member countries. The Asia Region Funds Passport would appear to have much merit in promoting the export of Australian financial services.

[2] Erskine (2014)

2. International Fund Flows and Financial Infrastructure

International capital flows have played an important role in Australia's development since colonisation.[3] For most of Australia's history the collective demand for funds by Australian businesses, government and households has exceeded aggregate domestic savings and international capital has made up the difference. As noted by Maddock and Munckton,[4] international capital has been necessary to augment the high investment rate in Australia relative to other developed countries. While there has been an increase in the national savings rate since the onset of the GFC, there has also been an increased demand for investment, especially to support development of the resources sector.

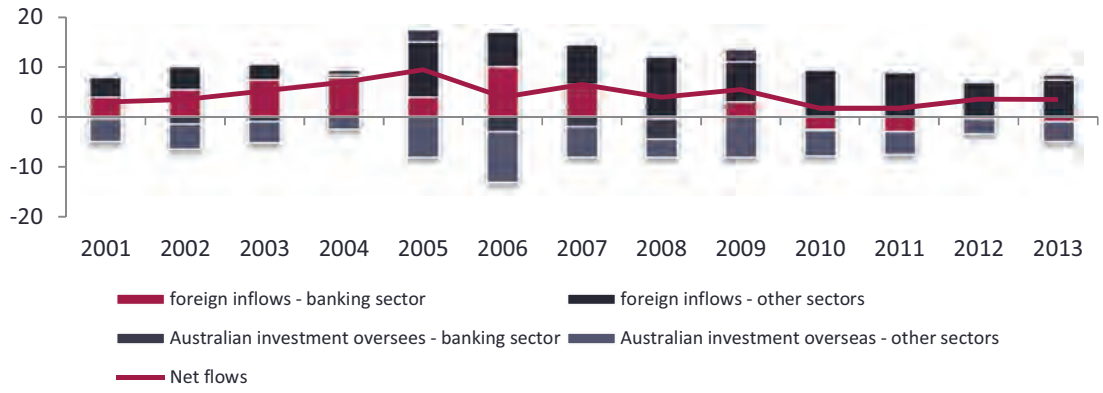
Into the future it is likely that capital outflows from Australia into international debt and equity investments will increase as a result of the burgeoning pool of retirement savings. These international outflows will play a key role in funding retirement and supporting the wealth of Australian investors.

2.1 Overview of Flows

In the decade prior to 2007, the net inflow of capital to the Australian economy averaged around 5 per cent of GDP and peaked at almost 7 per cent of GDP just prior to the onset of the financial crisis. Since then, net capital inflows have declined to under 3 per cent of GDP.[5]

In many ways it would appear that the global financial crisis in 2007 has been something of a watershed for the Australian Financial System. As can be seen from Figure 1, prior to 2007, capital inflows to the banking system were the most significant on-going component of international inflows. However, since the crisis international capital imports by banks have greatly reduced, due to slower credit growth and increased reliance on retail deposits, as induced by regulation.

Figure 1 Gross and net Capital Flows Australia 2001 – 2013 (% of GDP)



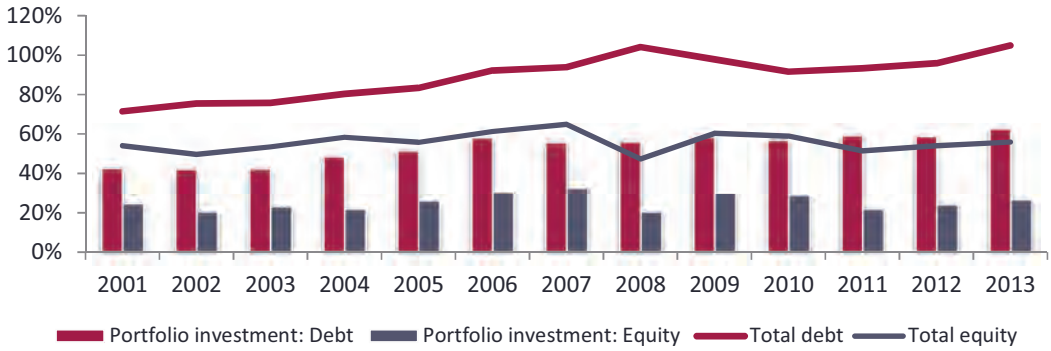
Source RBA, 2014

Since 2007 around 45 per cent of capital inflows consisted of direct investment, with the remainder

[3] Mclean (2012)
[4] Maddock and Munckton (2013)
[5] Debelle (2014)

comprising portfolio investment in debt and equities issued by Australian entities (Figure 2). Approximately 70 per cent of this foreign direct investment has gone to the resources sector since 2011, usually in the form of retained earnings or offshore borrowing[6]. Growth in the level of portfolio investment by foreign investors has largely been driven by holdings of debt, rather than equity securities.

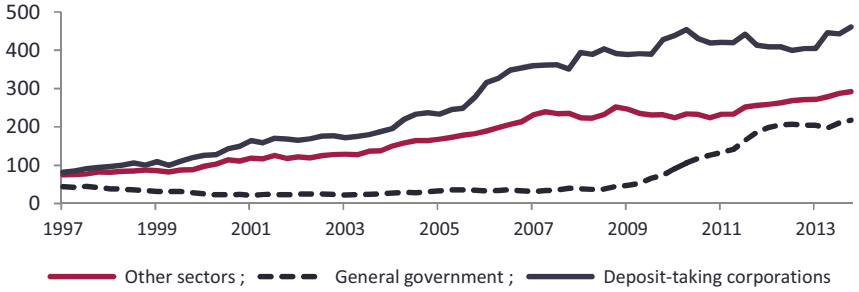
Figure 2 Stock of total foreign investment in Australia (% GDP)



Source: ABS Cat 5352, 2014

Noticeable in Figure 3 is the growth in international portfolio holdings of debt securities of government and non-financial sectors. With an increasing government deficit, post-GFC growth in debt securities has been driven by government issuance. As corporates look to diversify funding sources debt securities of 'other sectors', primarily non-financial corporates, have also increased.

Figure 3 Breakdown of international portfolio investment in Australian debt by counterparty ($ billion)



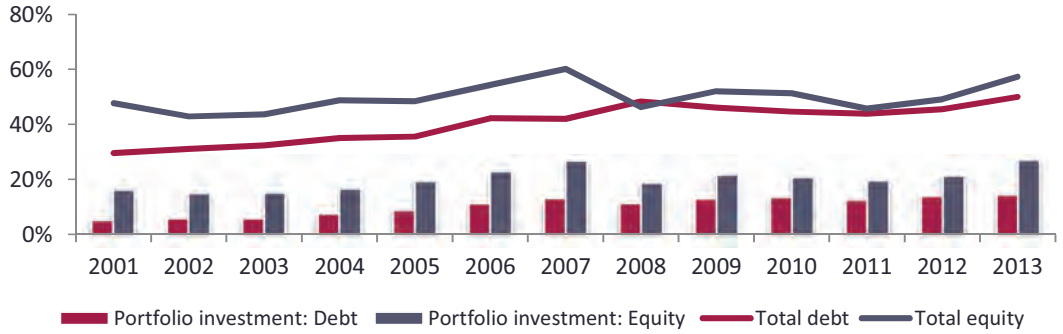
Source: ABS Cat 5302 Table 29, 2014

Turning to outflows, Australian investors' stock holdings of international debt and equity have almost tripled since 2000, to more than $1,600 billion. As shown in Figure 4, investment in international equities by Australians has consistently been greater than our international debt holdings, with portfolio equity investments making up around half (or $420 billion) of total international equity holdings. Growth in holdings of international equities reflects a worldwide phenomenon observed amongst pension funds. Since the liberalisation of global financial markets in

[6] Ibid.

the 1980s and 1990s, pension funds have consistently increased allocations to international securities in the search for the benefits of diversification. [7]

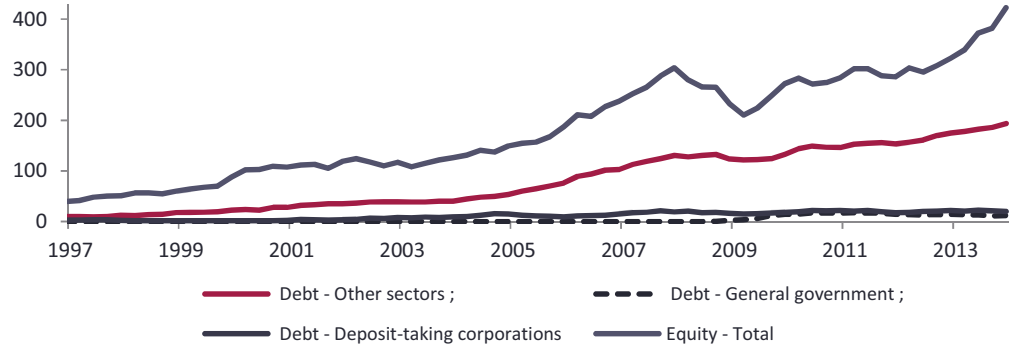
Figure 4 Stock of Total Foreign Investment by Australia (% GDP)



Source: ABS Cat 5352, 2014

As shown in Figure 5, growth in international portfolio securities has been driven by 'other sectors', which includes households, non-deposit taking financial institutions and non-profit institutions.[8] The advent of the Superannuation Guarantee in 1992, which shifted the majority of Australian savings into institutionally managed schemes, and improvements in technology and financial infrastructure have been integral to the growth in international holdings.

Figure 5 Breakdown of Australian portfolio investment in international securities by investor type ($ billion)



Source: ABS Cat 5302 Table 28, 2014

2.2 Financial Integration

International financial integration has grown rapidly since the mid-twentieth century due to internationalisation, securitisation, and liberalisation[9]. In terms of internationalisation, the pace of activity in financial markets has grown faster than real outputs, accompanied by even faster growth in offshore financial market activity. Securitisation of assets through international bond markets, also increased cross-border flows. All of this has been facilitated by technological developments,

[7] Maddock (2014)

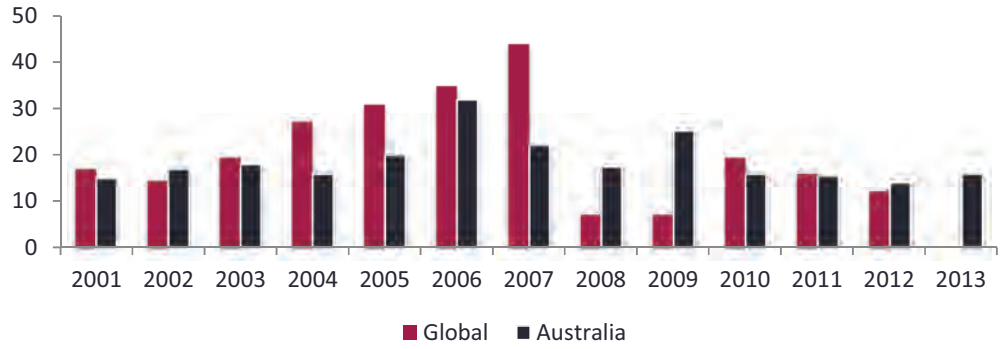
[8] Figure 5 shows total portfolio investment as breakdown figures are not provided after September 2004. At this time equity portfolio holdings of other sectors comprised more than 99.9% of total portfolio equity investment.

[9] Kearney (2004)

financial liberalisation, removal of exchange controls and of direct price and quantity controls on financial institutions.

With the advent of the global financial crisis, however, international capital flows have declined substantially on a world-wide basis. As Figure 6 indicates, the Australian experience post 2007 has defied this trend, with gross international capital flows remaining relatively strong. Even though, as explained above, the sectoral composition of these flows has changed markedly.

Figure 6 Gross Capital Flows 2001- 2013 Global and Australia (% GDP)



Source RBA Debelle 2014

Economic theory suggests that financial integration has a positive impact on economic growth as it increases the pool of potential capital available to domestic firms, leading to increased demand for assets and a lower cost of capital. While empirical studies were originally mixed[10], recent evidence suggests that the link between financial integration and economic growth is strong.[11] Financial integration has also been shown to benefit an economy's productivity by promoting both financial development and improved corporate governance.[12]

Financial integration benefits investors by reducing risk through increased diversification and the potential for higher returns due to increased investment opportunities. As financial integration has increased, the correlation between international equity markets has also increased, thereby paradoxically reducing the benefits of international diversification, particularly during times of stress. Despite the general increase in correlations between international assets, investors can still gain sizeable diversification benefits by investing in international stocks with low correlation to an investor's domestic market.[13] This is particularly pertinent in Australia's case with a stock market dominated by a small number of sectors.

Offsetting the benefits of financial integration is the increased risk of contagion, most aptly demonstrated by the near insolvency of AIG in 2008. Operating in opaque and unregulated OTC markets, AIG issued long-term credit swap derivatives. Neither AIG nor its counterparties offered collateral against the products, despite the inherent risk which exposed both sides to potential margin calls. Due to the wide international reach of participants, this near failure, only narrowly

[10] See Prasad et al (2009)
[11] See for example, Quinn and Toyoda (2008) and Gupta and Yuan (2009)
[12] Bekaert et al (2011)
[13] Vermeulen (2011)

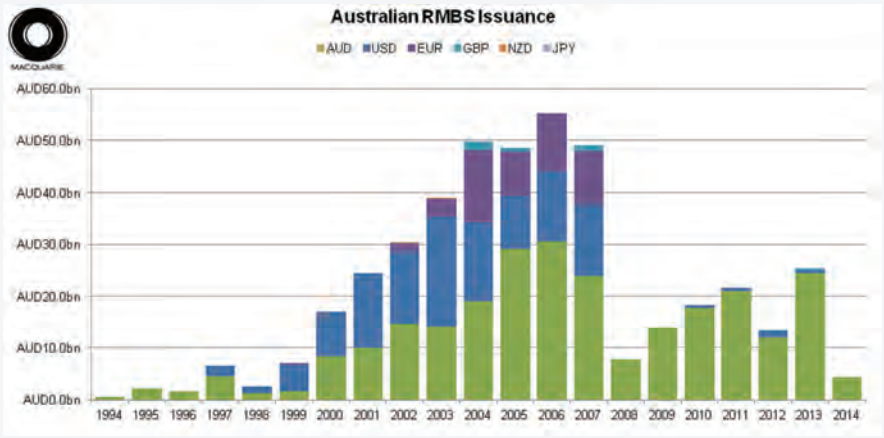
averted by a US bailout of $182.5 billion, demonstrated the downside of financial integration in the potential for contagion. Box 1 below provides a short case study on the benefits and risks of increased financial integration.

Box 1: International flows and Securitisation

In the decade prior to the beginning of Global Financial Crisis in 2007s, issuance of Australian residential mortgage backed securities (RMBS) increased from around $5 billion dollars to almost $50 billion dollars per annum. More than half of all Australian RMBS during this period was issued in foreign currencies and purchased by international investors, primarily American and European. The ease at which international and domestic investors could be accessed by non-traditional lenders issuing these securities played a key role in supporting the domestic securitization industry. The emergence of the RMBS market introduced an additional element of competition to the mortgage market through non-traditional players, with the margin on home loans falling from 4 to 1.5 per cent over the period 1996 to 2000.

The rise of securitisation provides an interesting insight into the role that technology and international integration can play in reducing the cost of capital for Australian borrowers. The events that occurred post-GFC however also show the fickle nature of international capital and the potential impact reliance on international capital flows can have on the functioning of real economies and real industries. In 2008, Australian RMBS issuance decreased to around $8 billion dollars, none of which was purchased by international investors.

Figure 7 Australian RMBS Issuance in Various Currencies



Source: Australian Securitisation Forum, 2014

This sharp reduction in the purchase of RMBS had the potential to wipe-out the securitization industry in Australia and had a clear impact on the interest rate spreads on mortgage finance which remain around twice their pre-GFC levels.[14] In late 2008, the Australian Office of Financial Management (AOFM) began purchasing RMBS to provide support to the industry. In 2009, domestic investors again increased their investment in Australian RMBS and by 2011 domestic investment had returned almost to pre-GFC levels, international investors have not yet returned. At this point AOFM exited the market, a great demonstration of timely and appropriate regulatory intervention.

Consequently, since the GFC there has been much focus given to harmonising global regulation of financial markets. Among the four key areas designated for reform by the G-20 has been the introduction of limits on the scope for contagion arising from interconnections between

[14] Repricing of risk by lenders may have also played a role in this increase.

counterparties in OTC derivatives markets.[15] According to Coffee[16] the need for harmonised international regulation is necessitated by a) the extreme mobility of financial institutions and the potential for higher-risk operations to be placed outside the control of their domestic regulator, b) the need to regulate not only institutions but also their counterparties in order to meaningfully address systemic risk, and c) to guard against the development of under-regulated havens, offering opportunities for regulatory arbitrage.

Consistent application of international regulation offers benefits to financial firms. A more standardized set of financial reports assists credibility in offshore settings, reduces the additional costs involved in complying with additional domestic requirements in offshore locations, and facilitates competition amongst providers and the free flow of international capital.

However, the move away from markets which are bound by geography has raised questions for domestic regulators, and other stakeholders that rely on financial infrastructure as to whether international integration of markets leads to a loss of domestic regulatory control over transactions that are integral to the functioning of the real domestic economy.[17] Finding the balance between international regulatory standards and domestic circumstances is an issue that will be explored in greater detail later in this report.

2.3 Financial Infrastructure and International Fund Flows

Financial markets facilitate the international flow of funds and support financial integration. They also facilitate and provide a direct source of competition to intermediated channels such as banks and the funds management sector. Both financial markets and intermediated channels rely on financial infrastructure to perform this role effectively.

Financial infrastructure determines the means and rules by which financial transactions are governed, conducted and reported, and how information is disseminated. For example, international rules on Central Clearing Counterparties, global information platforms such as Bloomberg, clearing systems such as ASX Clear or LCH Clearnet, and payment systems such as RITS or SWIFT, as well as markets for conducting transactions, including OTC and listed markets, are all major components of financial infrastructure. The quality of financial infrastructure has a major bearing on the efficiency and fairness of international fund flows. Box 2 below describes a hypothetical fixed income transaction and corresponding hedging transaction. The example outlines the financial infrastructure and institutions that are involved at each stage of the process.

Box 2 Tracking an International Financial Transaction

An American mutual fund purchases a wholesale Australian fixed income security. The institutional investor intends to hold the security to maturity and the security has very little credit risk and therefore engages in an OTC currency swap to manage currency risk. The following sections list the steps involved and the financial infrastructure and institutions involved in completing these transactions.

[15] RBA (2014).
[16] Coffee (2013)
[17] Stevens (2012)

Purchasing the fixed income security

1. The international investor uses an electronic platform (for example, Yieldbroker) or an information provider like (for example, Bloomberg) to see quoted prices for the desired security. Being a dealer market, the counterparty is likely to be an Australian bank or a large institutional investor

2. The international investor may contact their broker or use an electronic platform to bid for the desired volume of the security and the price at which they are willing to buy. If a dealer is willing to fill the desired volume at the entered price, a trade is executed.

3. Unlike in an equity transaction, there is no central counterparty to this trade (for example, ASX Clear). Instead bilateral agreements are made between the two parties to manage this risk.

4. Settlement instructions are logged through SWIFT for the international party and through Austraclear for the domestic party to initiate the payment and settlement process. These instructions are received by RITS and CHESS respectively. It should be noted that if this was an equity transaction there would be a three day interval between trade execution and settlement.

5. The exchange settlement account of the Australian counterparty is credited through the RITS payment system and the Austraclear registry is updated to reflect the change in ownership of the security.

Hedging the exchange rate risk

1. The institutional investor contacts a swap dealer, usually a bank or an investment bank to engage in a pay AUD fixed receive USD fixed currency swap transaction to hedge the exchange rate risk inherent in the AUD denominated bond.

2. Netting and mark-to-market arrangements to reduce currency risk are agreed by the investor and the dealer. Again there, is no central counterparty to this transaction so counterparty risk is retained by both participants. The counterparties agree to settle all transactions through CLS bank to reduce settlement risk.

4. At the initiation of this transaction the international investor pays US dollars to the dealer and receives a Australian dollars. Messages for these payment instructions are sent through the SWIFT system received by CLS bank. These amounts are then transferred simultaneously to both counterparties.

5. All subsequent swap payments also go through CLS bank and are simultaneously transferred to both counterparties.

The increased complexity and range of international financial transactions has meant that the financial infrastructure required to allow for efficient and fair exchanges has, by necessity, become more complex. These global transactions also raise issues regarding the stability of the system and the need to harmonise international regulatory settings.

Efficiency refers to the cost associated with financial transactions, the extent to which market prices reflect all available information and the time required to complete the transaction. Costs can be further broken down into the explicit costs associated with completing a transaction which may include transaction fees[18], bid-ask spreads and clearing, settlement and registry costs. Implicit costs comprise the price impact that results from a financial transaction and the extent to which quoted bid-ask spreads vary from those that are realized. The cost of financial intermediation is an important input to the cost of capital for the users of a financial system. An increase in the cost of

[18] In the case of issuers this may include listing or registration fees.

financial transactions reduces asset prices, reduces liquidity, impacts the efficiency of prices and enhances price volatility.

Fairness includes the transparency of market prices and dealings, the accurate reporting and registration of trades and the absence of insider trading and market manipulation. Fairness in financial transactions is important both in regard to price formation which promotes the efficient allocation of capital and to enhance participation in the financial system which is a direct driver of liquidity.

Stability of financial infrastructure can be assessed by examining the performance of parties involved in providing Financial Market Infrastructure (FMI). An issue of particular concern is the need for local regulators to retain sufficient regulatory influence over cross-border FMIs that operate in domestic markets.

The quality of financial infrastructure ultimately has a direct impact on the cost of capital for those issuing financial securities and the returns realized by investors. A 2001 study by Domowitz and Steil estimates that a 10 per cent increase in transaction costs leads to an approximate 1.5 per cent increase in the post-tax cost of equity capital.[19] A lower cost of capital will see more projects funded, greater productivity and more jobs created, and hence growth in GDP and the standard of living.

In summary, well performing financial infrastructure is necessary to ensure that financial markets are able to perform their role effectively to: [20]

- Provide direct financing for government and business;
- Provide investment opportunities (including liquid assets);
- Emit the price signals necessary for effective capital allocation;
- Complement financial institutions;
- Provide competition in the financial system; and
- Support risk management products.

2.4 Technology and the Evolution of Financial Infrastructure

Before moving into an assessment of Australia's financial infrastructure it is worth providing a short history of trends in the evolution and development of financial infrastructure as these have direct implications for what we may expect in the future. A number of trends are of particular interest in this regard:

- The move toward **private ownership** of financial infrastructure that was previously owned either by governments or financial market participants.
- The proliferation of **global financial infrastructure** that can be utilized by Australian corporates, intermediaries and investors.

[19] Domowitz and Steil (2001)
[20] AFMA (2014)

- Increased **fragmentation and competition** amongst financial infrastructure providers in **domestic** financial markets.
- **Cross-border consolidation** amongst global financial infrastructure providers.
- Harmonisation of **international regulation** to oversee financial infrastructure provided by global organisations.[21]

Underlying much of this change has been technology. Through greater economies of scale, the globalization of platforms has allowed for significant increases in the speed of trading and the automation of trades and related services, including information collection and disbursement, clearing, settlement and registration.

For example, technological developments together with deregulation, and globalization have altered the business strategies of stock exchanges around the world. Cooperation and competition between exchanges, through very different mechanisms, have lead to more efficient and more liquid trading systems. A number of recent studies[22] have demonstrated that adopting network strategies across exchanges is associated with higher market capitalization, lower transaction costs, higher growth, and enhanced international integration, thereby creating additional value in the provision of trading services.

Possibly as a consequence of this consolidation, a trend emerging internationally and driven by improvements in technology has been competition amongst providers of clearing infrastructure within jurisdictions. To date this has occurred primarily in Europe. An Oxera Report[23] prepared for the European Commission, concluded that the effects of increased competition and market integration in Europe on the prices of trading and post trading services over the period 2006 to 2009, had resulted in a decline in central counterparty (CCP) clearing costs for equities from €0.37 per transaction to €0.10 per transaction, a reduction of 73 per cent.

Such cost savings can arise through the ability of global platforms to specialise in particular aspects of exchange service provision. Whereas in times past local exchanges might undertake all functions in the financial transaction process such as trading, clearing, and settlement, specialist providers can operate globally, and through economies of scale, provide just one function in the process at minimal cost. This creates a significant challenge for domestic regulators concerned with the integrity and stability of the exchange, in terms of counterparty risk.

Technology also increases the capacity of markets in information collection and distribution, with implications for the *latency*[24] of trades. With the increased speed of transactions and the proliferation of High Frequency Trading (HFT), algorithmic trading based on high portfolio turnover that seeks to profit from liquidity provision and arbitrage opportunities the ability of a firm to access information and react to market events faster than the competition can significantly increase the profitability of trades. An opportunity to execute an arbitrage strategy may only present itself for a

[21] The implications of this trend are assessed in Erskine (2014).
[22] See for exampleHasan and Schmiedel (2004)
[23] Oxera (2007)
[24] Latency is the amount of time a message takes to traverse a system. "Ultra low latency" is often used to describe latencies of under 1 millisecond.

few milliseconds before parity is achieved so clients place a high value on latency. Indeed, a large global investment bank has been reported as stating that every millisecond lost results in $100m per annum in lost opportunity.[25] Consequently there has been a growth in third party information providers and aggregators. While access to better information should contribute to less mispricing across markets and greater awareness of relative prices, a challenge arises in the ability of some participants to pay third parties to receive data ahead of others, and thereby gain a significant market advantage. More aggressive HFT strategies include 'order anticipation' which seeks to determine the identity of informed investors and front run their trades and 'momentum ignition' strategies which seek to influence, and profit from, the direction of the market by triggering latent limit orders. The impact of HFT on market efficiency and fairness has been widely debated with proponents arguing that HFT increases liquidity, improves price discovery and reduces bid-ask spreads. Opponents argue that HFT increases market noise and may reduce pricing efficiency as investors are less likely to incur the costs associated with collecting information if high frequency traders are going to front-run their informed trades.[26] Further, it is argued that HFT may reduce market fairness by increasing opportunities for market manipulation through 'momentum ignition' strategies. A 2014 review by the SEC[27] suggests that while it is difficult to evaluate the overall impact of HFT, passive HFT strategies based around market making increase market efficiency by reducing the bid-ask spread, and aggressive strategies reduce market efficiency by increasing implicit costs for institutional investors.[28]

A related issue, driven by the increased speed and fragmentation of markets caused by technology and potentially enhanced by improved technology, is equity market surveillance. The International Organisation of Securities Commissions (IOSCO) noted in a 2013 report that increased automation, market fragmentation and speed of transactions has increased the potential for inappropriate conduct and raised new challenges for market surveillance.[29]

A number of international studies[30] have demonstrated that surveillance and information sharing efforts improve market integrity. Further, it was found that a material improvement in market surveillance technology reduces the number of insider trading cases by 64%, as opposed to a 23% reduction for a one standard deviation improvement in trading rules.

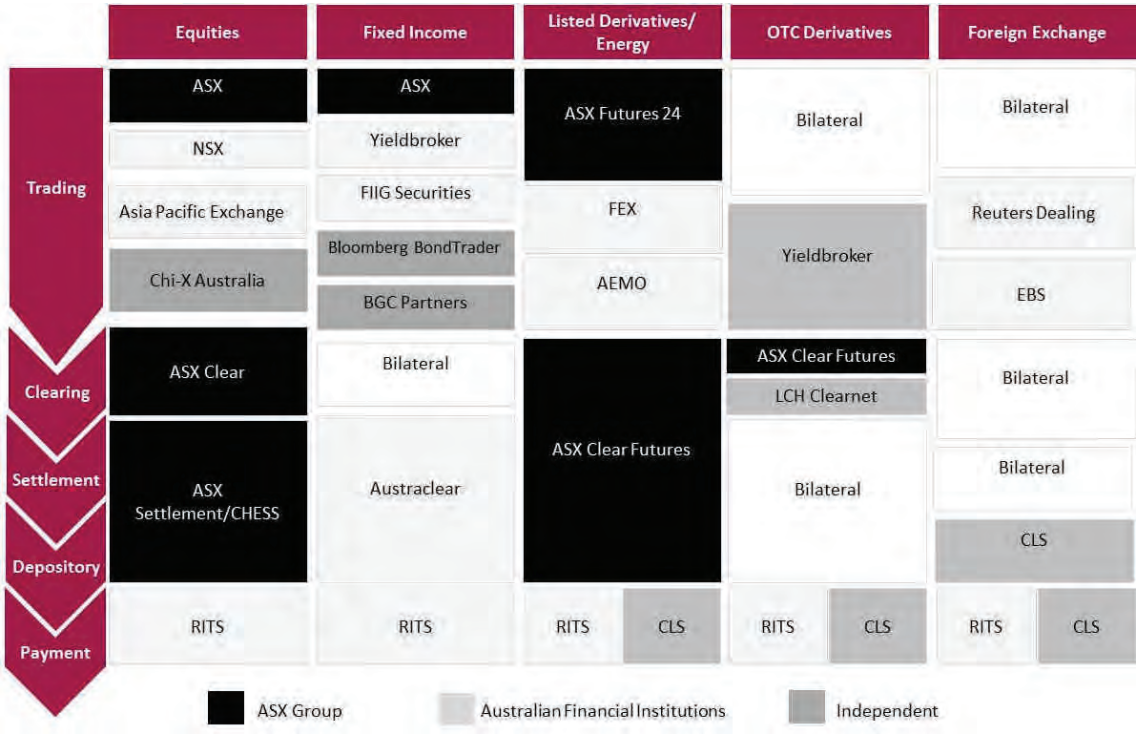
As can be seen from the above, technology has impacted dramatically on the globalization, regulation and surveillance of the various functions conducted through financial markets, and consequently on the cost and availability of capital.

[25] Martin (2007)
[26] Stiglitz (2014)
[27] SEC (2014)
[28] Passive HFT is generally concerned with market making activities and the provision of liquidity while aggressive HFT seeks to anticipate or front-run the trades of other market participants.
[29] IOSCO (2012)
[30] Cumming and Johan (2008), Aitken et al (2013)

3. International Fund Flows: Market Based

Domestic FMIs which facilitate international fund flows most relevant to transactions in Australian securities and transactions by Australian corporates are shown in Figure 8. As noted previously, fragmentation has meant that in some cases a number of competing channels are available to both issuers and investors. Due to practical limitations not all channels can be covered in this report, however, those markets deemed most significant to Australian entities are included in the analysis, with an emphasis on their ability to facilitate the international flow of funds.

Figure 8 Overview of the main Australian financial markets



Source: Adapted from Maple Group (2011)

Reading from left to right in Figure 8 it can be seen that the listed equity market is the most reliant on domestic financial infrastructure, while on the far right of the diagram, the foreign exchange market almost completely utilizes global financial market infrastructure. Technology, information, regulation, participants and instruments shape the design of each of these markets. [31] Consequently in the following discussion the structure and conduct of each market will be considered, bearing in mind each of these design features. Where possible we assess performance, in terms of efficiency fairness and stability, and identify issues that might have a bearing on the future international competitiveness of each market. Accordingly in the following section we will examine five key markets: equities, fixed income, listed derivatives, OTC derivatives, and currency markets. Within each of these markets the functions of trading, clearing, settlement, depository and payments are discussed.

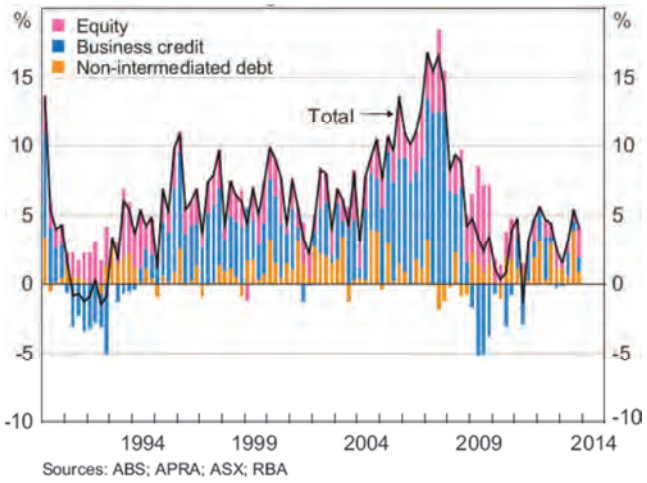
[31] Aitken (2014)

Before embarking on this analysis, it is important to note the different roles and objectives of each market. Equity and fixed income markets facilitate the primary issuance and secondary trading of securities that represent a claim on the underlying cash flows of the issuing entity. These markets therefore, provide direct competition to financing through bank debt or private equity.

A company chooses between these various financing sources based on the cost of capital offered through each venue. The cost of capital is a function of risks pertaining to the business itself, as well as factors directly related to the financing avenue, such as issuance fees by a bank or listing fees through an exchange, or in the case of a security, the liquidity premium demanded by investors. Also impacting on the decision will be the tax regime.

Typically Australian firms have had one of the lowest levels of debt amongst developed nations[32], a large proportion of which has been provided through intermediated bank credit. The presence of dividend imputation, and consequent investor preference for stocks, partially explains this low debt level. A number of studies have shown that in the presence of dividend imputation a lower cost of equity can offset the usual debt financing incentive of tax-deductibility. As Figure 9 demonstrates below, since the financial crisis in 2007, there has been a net negative annual change in bank credit and a marked increase in the reliance of the corporate sector on both non-intermediated debt through fixed interest markets and on equities.

Figure 9 Business external funding (net change as % of GDP)



Source AFMA, 2014

Consequently, this increased reliance on market-based funding through both domestic and international capital, highlights the importance of having domestic financial markets that are efficient and internationally competitive. Without resilient domestic capital markets not only is the economy exposed to the volatility of international markets, but in some cases the decision to seek capital through an international market may see companies developed in Australia choose, or be required, to establish headquarters overseas, with a subsequent loss of potential productivity and employment in the domestic economy.[33]

[32] Maddock & Munckton (2013)

[33] See for example, the proposed listing of Atlassian in the United States.

To offset costs of issuance, deep and liquid secondary markets reduce the liquidity premium required by investors in a security. Liquidity can also be enhanced by improving the factors that determine market efficiency and fairness as listed in section 2.3.

While the issuance of both equity and debt securities provide the funding for companies, derivatives are risk management tools. The role derivatives play in hedging interest rate and foreign exchange risk has played an integral role in the globalization of financial markets and the rapid increase in international financial flows. Unlike, equities and fixed income markets however, transactions in derivatives are not issued by nor do they impose compliance or location requirements on underlying corporations. Furthermore, the number of contracts on a given underlying instrument is determined by supply and demand of market participants rather than the number of securities issued by a corporate. For these reasons any market can conduct trades in a derivative contract on any given underlying instrument. This is a very different situation to the debt and equity markets and means that two markets can compete directly by offering contracts on the same underlying, resulting in market participants being able to choose between markets based on the transaction costs, fairness and transparency, and the prescribed financial market infrastructure of a market. As will be shown, this has resulted in different market characteristics in derivative markets relative to markets for debt and equity.

The foreign exchange (FX) market facilitates international trade by allowing for cross-border trade and the management of the risks associated with the future receipt or payment of a foreign currency. In this report, the FX market encapsulates both the spot and forward market, as well as swaps and options on currencies. The FX market has many similar characteristics to the derivatives market in that trading in a given currency is not constrained to a specific market, instead providing market participant's flexibility in choosing their trading venue, clearing and settlement arrangements.

It is important to also acknowledge that while we are examining locally-based markets, there is an increasing volume of both retail and wholesale trading in foreign markets, either by those holding overseas licenses or through foreign brokers. For retail clients, trading platforms provide access to a range of accessible internationally listed entities. Consequently, in addition to local markets and local FMI providers, there are foreign markets and FMI providers, servicing Australian individuals and entities, whether they are transacting in Australia or offshore.

3.1 Equities

Primary Issuance

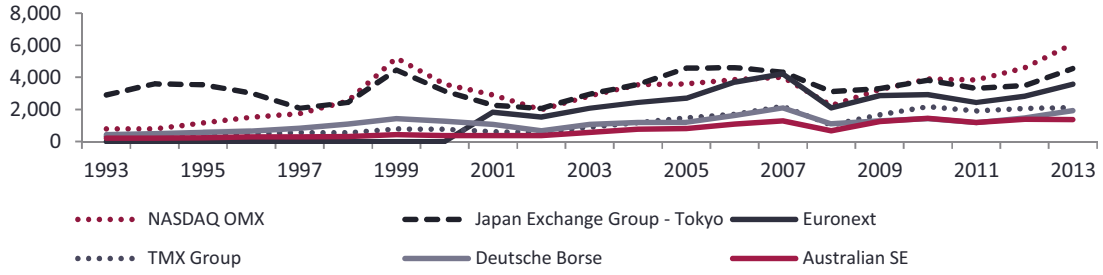
By far the largest Australian venue for the issuance of equity securities is the Australian Securities Exchange. (ASX) The ASX is Australia's oldest and largest equity market. More than 2,000 companies are listed on the ASX with a combined market capitalization of more than $US 1,360 billion (Figure 10) placing it in the world's top 10 exchanges based on this metric. To highlight the importance of the ASX as a source of equity funding for Australian companies, the National Stock Exchange, the second largest stock exchange in Australia based on number of listings has 107 listed companies.

With the onset of the GFC the strength of the ASX as a source of funding was well demonstrated:

> *It is a testament to the strength of Australia's companies and their leadership, and to the strength of the capital markets, that Australian businesses have been able to raise $119.9 billion by equity issues between July 2008 and September 2009 and $77.1 billion since January this year. This record equity capital raising has allowed companies to repay debt and has undoubtedly helped to forestall foreclosures and promote credit growth through the Australian banking sector.*[34]

The total value of securities issued on the ASX is large relative to the size of Australia's economy and has the 11th largest market capitalization of total listings of any equity exchange globally. In 2013, 69 new companies listed on the ASX, of the eleven largest exchanges, only the NYSE (130), NADAQ (116), Hong Kong Exchanges (101) TMX Group (99) had more new listings.

Figure 10 Market Capitalisation of Listings on International Stock Exchanges (US$ billion)[35]



Source: World Federation of Exchanges, 2013

In addition to being the primary venue of issuance for many Australian companies, the ASX has become the preferred venue for a number of international companies and on an international comparative basis, the ASX is relatively attractive to foreign companies.[36]

In all 101 international companies are currently listed on the ASX, including 29 companies from New Zealand. Collectively these stocks have a total market capitalisation of $184 million and comprise almost 12 per cent of listings by market capitalisation (Table 1). The largest four international companies comprise around 50 per cent of the capitalisation of international companies. These

[34] Gibson (2009)
[35] The market capitalisation of total listings on the NYSE is $18,000 billion ($US) making it the largest stock exchange by this metric.
[36] World Federation of Exchanges Data (2013)

include Singapore Telecommunications Limited (A$52,478m), US-based Alcoa Inc. (A$17,010m), PNG's Oil Search Limited (A$13,306m) and US-based News Corp (A$10,513m).

Table 1 International companies listed on the ASX as at April 2014 by country and Market Capitalisation

Country Name	No Firms	Market Cap (millions)	ASX market cap (%)
New Zealand	29	44,549	2.87
Bermuda	13	1,437	0.09
Canada	12	1,958	0.13
Great Britain (UK)	12	6,943	0.45
United States	12	46,430	3.00
Papua New Guinea	6	14,812	0.96
Singapore	6	52,530	3.39
Hong Kong	4	153	0.01
Cayman Islands	2	381	0.02
British Virgin Islands	2	7	0.00
Indonesia	1	1,045	0.07
Netherlands	1	6,107	0.39
South Africa	1	7,874	0.51
Total	**101**	**184,226**	**11.89**

** Note: ASX market cap as at 30 April 2014 is $A 1,550 billion*

Source: AFR Smart Investor, 2014

However, despite the large number of new and international listings on the Australian equities market, it remains a very concentrated market in two respects. Firstly in terms of the size of companies listed, the top 15 companies account for over half the capitalization of the market. And second, the market is heavily dominated by just two sectors, financial and material stocks, which currently account for around 45 and 20 percent respectively of all listings

One factor that determines the desirability of one equity market over another is the initial issuance cost associated with listing on an exchange (the listing fee) and the subsequent annual fees the company must pay to remain exchange-listed. In Australia, only the ASX is licensed to provide listing services for ASX listed stocks. Table 2 provides a comparison of the listing and annual fees charged by various exchanges based on the size of the listing firm.

Table 2 Listing and Annual Fees for Common Stock Issuance: International Comparison in A$ (2014)[37]

	Listing Fee			Annual Fee		
Exchange	**Small**	**Medium**	**Large**	**Small**	**Medium**	**Large**
ASX	60,060	125,160	448,560	21,504	37,884	70,392
NYSE	106,865	133,581	160,298	32,060	90,835	90,835
NASDAQ	133,581	213,730	240,446	37,403	73,203	106,331
LSE	22,650	128,259	387,115	8,988	10,336	43,592
Toronto SE	23,559	137,958	196,732	13,083	20,165	84,103
SGX	85,424	85,424	170,848	29,898	29,898	85,424

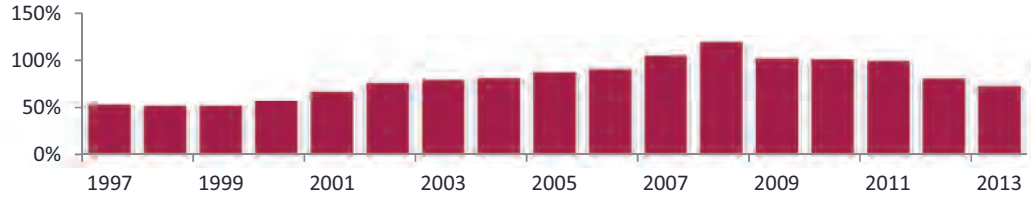
Source: ACFS Estimates, based on the 2014 listing fee documentation of the various exchange

ASX performs reasonably well in relation to the listing fees charged to small and medium firms, but is at the upper end for listing fees for firms with market capitalization over $1 billion. The ASX performs well relative to the other exchanges in relation to annual fees.

Secondary Market Trading

As noted previously, a second key factor when choosing to issue capital through an equity market is the impact secondary market liquidity has on the issuer's cost of capital. Efficient primary markets require vibrant secondary markets to function well. Liquid secondary markets are the result of a deep and diverse pool of participants, efficient trading mechanisms and participant confidence. The most common measure of liquidity is the annual turnover to market capitalisation ratio, which for the ASX peaked in 2007 at around 120 percent, and has failed to regain this level in the period since (Figure 11). In 2013, this ratio was 74 per cent for trading in ASX listed stock which includes trades conducted through both the ASX and Chi-X.

Figure 11 ASX annual turnover/market capitalisation (on-market and off-market)



Source: ASX

The level of liquidity in the market will be subject to prevailing economic conditions, and uncertainty in markets and a general reduction in risk tolerance as is currently being experienced might be expected to impact negatively. However, longer term trends that impact on liquidity may include:

- Retail ownership of the equity market has fallen from around 20 per cent in the mid-2000s to 14 per cent now[38], and whilst the average number of trades had increased slightly the "churn" or turnover of shares traded by this group has declined substantially in the post-GFC period.[39]

[37] Categories are as follows: Small 10 million of local currency, Medium 100 million of local currency, Large 1 billion of local currency. NYSE and NASDAQ determine listing fees by number of shares outstanding rather than market capitalisation. For these exchanges each share is assumed to trade at 1 unit of local currency. Exchange rates are as of the 19th of May 2014.

[38] ABS, Cat 5232

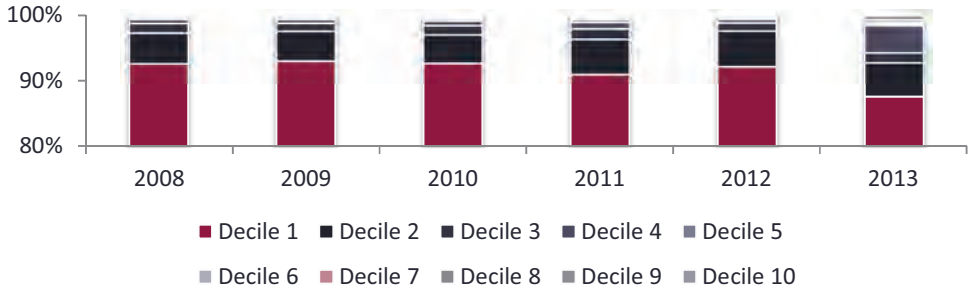
[39] Australian Securities Exchange (2013)

- For fund managers, widespread concerns on the impact of transaction costs and the need for a focus on net after tax returns has impacted the behavior of active fund managers, encouraging a lower average number of transactions and hence turnover; and,
- The effectiveness of regulatory constraints on HFT.

ASX also has a relatively large number of smaller companies with low turnover, 75 per cent of stocks have a market capitalization of less than $100 million, almost one half of which are mining companies. Turnover amongst this group may have declined somewhat in response to declining investment in the mining boom. In examining market turnover by decile, two trends are evident (Figure 12). First, the proportion of stocks traded outside decile 1 has only increased noticeably since 2009, and second, increased turnover in lower deciles occurs strongly in 2013, possibly due to the large number of IPOs.

Given that superannuation funds, a large percentage of institutional investors invest 95 per cent of funds in the top ASX 200 companies, it is not surprising that the large proportion of trading is confined to the first decile of stocks as measured by market capitalisation.[40] While the ASX has a strong record in providing access to capital for smaller firms, especially in an economy with a demonstrated lack of venture capital opportunities,[41] this large proportion of small companies has a cost in terms of depressing liquidity.

Figure 12 Turnover to market capitalization on ASX by decile 2008 to 2013



Source: CRC Capital Markets MQ Database 2014

Despite this reduction in liquidity the ASX performs well in comparison with other similar exchanges. There is a marked difference between the level of turnover in four exchanges, NASDAQ OMX, Japan Exchange Group, Shenzhen SE and Shanghai SE, and the remaining markets listed below. A possible explanation for the high turnover in both the Shenzhen and Shanghai exchanges is the reputed high proportion of very active retail investors in these markets.

[40] Association of Superannuation Funds of Australia (2014)
[41] Australian Centre for Financial Studies (2013)

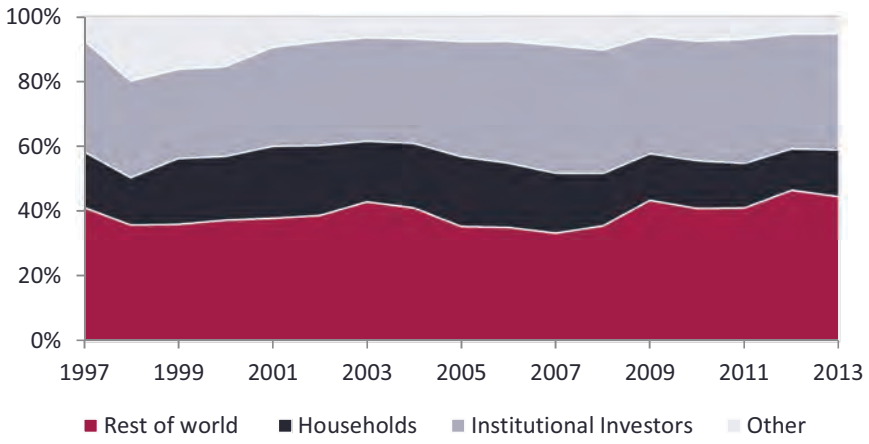
Table 3: International equity market comparison: 2013 (Annual Turnover/Market Capitalisation)

	Market Cap (December 2013)	Total Turnover 2013 (Million)	Annual Turnover/ Market Cap
Shenzhen SE	1,452,154	3,858,509	266%
NASDAQ OMX	6,084,970	9,584,742	158%
Shanghai SE	2,496,990	3,731,129	149%
Japan Exchange Group - Tokyo	4,543,169	6,304,928	139%
NYSE (US)	17,949,884	13,700,450	76%
Australian SE			74%
Deutsche Börse	1,936,106	1,334,545	69%
TMX Group	2,113,822	1,371,478	65%
Euronext	3,583,900	1,661,878	46%
SIX Swiss Exchange	1,540,700	676,958	44%
Hong Kong Exchanges	3,100,777	1,323,373	43%

Source: World Federation of Exchanges 2013 and ASX

As noted previously, one determinant of market liquidity is accessibility to and participation by a diverse range of participants. Three classes of participants make up the majority of trading in ASX listed equities: institutional investors, international investors, and households.

Figure 13 Participants in the Australian listed equity market (Percent of total Market Capitalisation)



Source: ABS Cat 5232, Table 32

The Australian equity market appears to be widely accessible to international investors who hold more than $650bn or around 43 per cent[42] of the total value of all listed Australian equities (Figure 13). Australian institutional investors, with around $500bn or 37 per cent of this market, are the second largest holders of Australian listed equities. Almost all of these institutional investors are superannuation funds, non-superannuation investment funds and life insurer companies. Retail investors have also traditionally been a large participant in this market, however, their holdings of Australian equities has declined slightly post-GFC from around 17 per cent to 14 per cent.

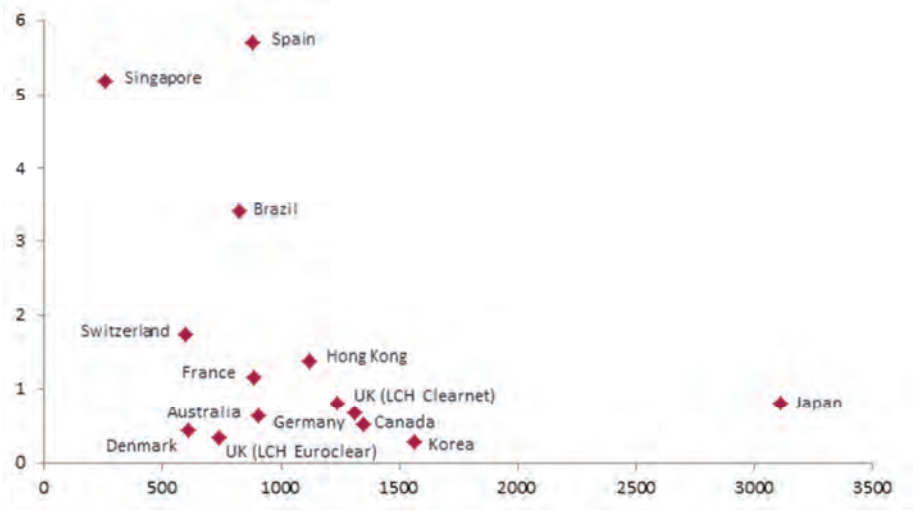
Another determinant of market liquidity is the efficiency and cost associated with trading. The ASX was the sole provider of trading services for ASX listed equities, until in October 2011 Chi-X, an international trading services provider backed by a consortium of global investment banks, was granted a trading licence. Clearing, settlement and registry services for equities traded through Chi-X

[42] Australian National Accounts, 2013

must still use the ASX operated clearing, settlement and registry services. Chi-X achieved a total market share (both on and off market) of around 14.3 per cent, by value in the year to August 2013. Market share by number of trades was 18.5 per cent, suggesting that Chi-X trades are on average slightly smaller than ASX trades.[43]

A 2014 study by Oxera Consulting quantified the total explicit costs incurred by institutional investors trading across international markets.[44] These costs are an aggregate figure, which incorporates the cost of trading, clearing, settlement and, where institutional investors are concerned, custodial fees. The study takes a user profile approach, providing cost estimates segmented by the size of the market user. Figure 14 provides an overview of the Oxera study's findings, based on the average trade for a mid-size institutional investor.[45]

Figure 14 Trading and Post-trading Fees for Mid-size Institutional Investors: June 2014 (in basis points)[46]



Source: Oxera, 2014

The Oxera report suggests that the total fees incurred through trade and post-trade through the ASX rank 6th out of the trading services studied. The clearing, settlement and registry components of this fee are determined through the mandated sole provider of these services, the ASX, while the trading and custodial portions are determined through competition between providers.

The introduction of a second key player in Australian equity markets has introduced an element of competition to the provision of trading services.[47] The desire for speed in transactions and Chi-X's technology that allowed them to provide lower latency transactions, compared to the ASX, was a key technological differentiator when they first entered the Australian market in 2011.[48]

[43] ASIC (2013)
[44] Oxera (2014)
[45] The report defines a mid-size institutional investor as a long-only fund manager with $200 million in equities under management that trades $350 million of equities annually.
[46] Trading costs in the US were the lowest at .18 basis points but were omitted from the figure due to scaling considerations.
[47] In addition to the ASX and Chi-X there are a number of specialist traders including National Stock Exchange, IMB, Asia Pacific Exchange and SIM Venture Security Exchange which fall outside of the scope of this report.
[48] Proportion of Chi-X's market share made up by HFT.

The discussion of trading venue operators provides an interesting insight into the impact of competition on trading fees and bid ask spreads. One line of thought on financial market infrastructure is that due to their large fixed costs and low variable costs, and because liquidity attracts additional liquidity, they are natural monopolies.[49] The competing argument is that competition promotes operational efficiencies between exchanges and drives down total trading costs.[50] A 2013 study by Aitken et al provides an empirical estimate of the impact of the introduction of a competing financial infrastructure provider into the previously monopolistic Australian market. The study found that explicit trading fees in Australian listed equities reduced significantly subsequent to the announcement by Chi-X in June 2010 indicating their intention to provide a competing trading venue for ASX listed equities. The same study also found that the introduction of Chi-X to the market has improved both quoted and effective bid-ask spreads. The consultation draft of ASIC's *Market Supervision Cost Recovery Impact Statement,* also notes that quoted spreads on Australian listed equities have reduced from 23 basis points in 2011 to 19 basis points in 2013.

The other key development in the trading venue space has been the growth of trading in 'unlit' dark pools. The major difference between trading in a traditional 'lit' trading venue (such as the ASX) and an 'unlit' venue is the absence of transparency in the case of the latter, with respect to pre-trade intentions. Being able to trade without revealing one's intentions is of obvious value to informed traders or institutional traders making large block trades, who could otherwise be front-run by other market participants. Estimates suggest that dark trading in the US has increased from 17 per cent of total volume in 2008 to 38 per cent in 2013.[51] With the increased speed of trading enhancing the potential for 'order anticipation' strategies by traders, it is perhaps not surprising that the proportion of trading being conducted in unlit venues has increased. A 2013 report by ASIC found that while the volume of dark trading in the Australian market has remained at around 25-30 per cent, the composition of dark liquidity and market participant-operated dark venues (crossing systems) has changed significantly.[52] At the time of writing there were 20 crossing systems operated by 16 market participants.

Dark pools may enhance price discovery by providing a means by which informed investors can profit from the information they have incurred a cost to acquire. Studies suggest, however, that the movement of trading from lit venues to dark pools increases bid-ask spreads in lit markets, due to the loss of liquidity. A 2013 study by Comerton-Forde and Putnins estimates that having large block trades conducted in unlit venues is not harmful to price discovery in lit venues, however, informational efficiency begins to deteriorate when more than approximately 10% of total volume is conducted in unlit venues.

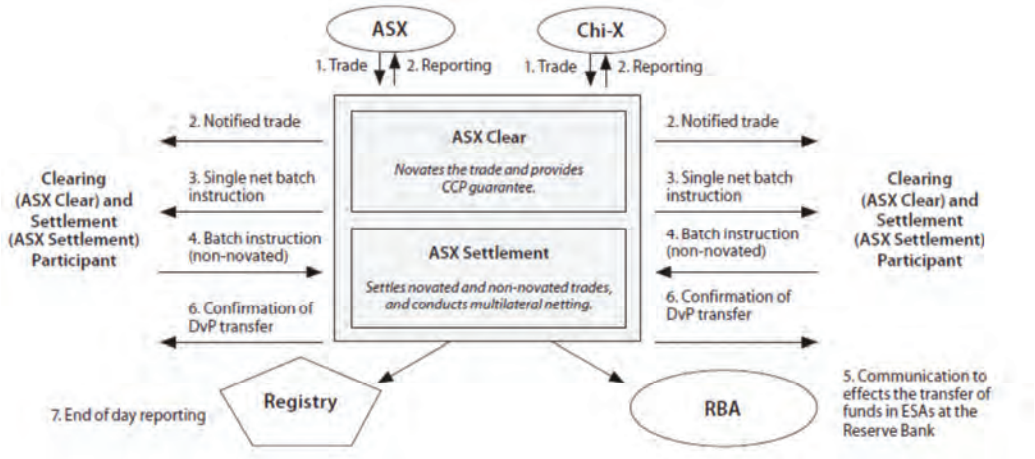
As noted in the Oxera study, one component of total trading costs in listed equities is the cost associated with clearing and settlement. Clearing and settlement of ASX listed securities are undertaken through ASX Clear and ASX Settlement, respectively. As a central clearing counterparty (CCP), ASX Clear clears cash equities and has 37 direct active participants, including both domestic

[49] Pagano (1989)
[50] Economides (1996)
51 Comerton-Forde & Putnins (2013)
[52] ASIC (2013)

and foreign banks and brokers. ASX Settlement settles cash equities and off-market trades and has around 80 direct participants, also domestic and foreign banks and brokers.

The central clearing and settlement of financial transactions reduces counterparty risk and enhances confidence in a market by transferring the risk to the central counterparty. The central clearing counterparty charges a fee for providing this service. The process of clearing and settlement for Australian equities can be seen in a number of steps as indicated in Figure 15.

Figure 15 Clearing and settlement of equities through the ASX



Source: Council of Financial Regulators, 2012, p. 39

First, once a trade is submitted and successfully executed, the trade is notified to CHESS, the Australian registry for all equity and fixed income securities. Second, once validated by CHESS, the trade is novated[53] in real time to ASX Clear, and CHESS informs the buyer and seller that the trade has been accepted and cleared, CHESS then sends a message to the clearing participant, confirming the details of the trade. Third, at T+1 CHESS generates a single instruction to each participant, indicating their net position for each stock. Fourth, between receiving this instruction on T+1, to the settlement that occurs at T+3, modifications can be made to the trade. For example, participants can mutually agree to delete or modify trades, or to add an off-market transaction to the batch to be settled. Fifth, on the day before the settlement (T+2), both parties are notified of their net cash and securities obligations, and participants have until 10.30am on the day of settlement to complete any modifications. Sixth, payment providers are then notified to make the necessary transfers. Should the net cash and securities not be entirely in order, a partial settlement may occur, with the remainder held over to the next settlement day. Finally, payment providers settle obligations through RITS in a single multi-lateral net batch on T+3, and once complete ASX Settlement completes the net securities transfers in CHESS by around noon, thus ensuring Delivery versus Payment (DvP) is complete. Participants are notified that settlement has taken place and CHESS reports net movements to the issuer's register.[54] When a "cross-clearing" is concerned, that is the

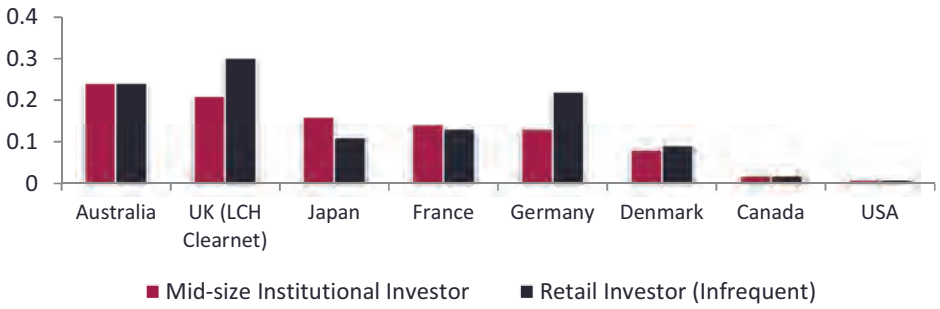
[53] Novation is a process whereby a contract between the two parties engaged in the trade is replaced by two separate contracts, one between the buyer of the security and the CCP and one between the seller of the security and the CCP.

[54] Council of Financial Regulators (2012)

buyer and seller of the trade have a common clearing participant,[55] ASX Clear does not novate the trade, net and schedule for settlement, but rather the trade is negotiated bilaterally between the broker and their clients. In 2013, ASX Settlement conducted an average of $8.5 billion settlements daily, of which around $4.2 billion was in cash equities, leading to a net daily payment through RITS of $0.4 billion.

Clearinghouses typically impose a fee based on transaction size for the provision of clearing services. In Australia, the ASX provides a fixed cost structure for Australian equities of 0.24 basis points for each transaction, which is around 55 per cent of total trading and post-trading fees (as estimated by Oxera above). Figure 16 provides an overview of the cost of clearing internationally in basis points assuming an average trade for a mid-size institutional investor and a retail investor that trades infrequently.[56]

Figure 16 Clearing Costs: International Comparison (basis points)



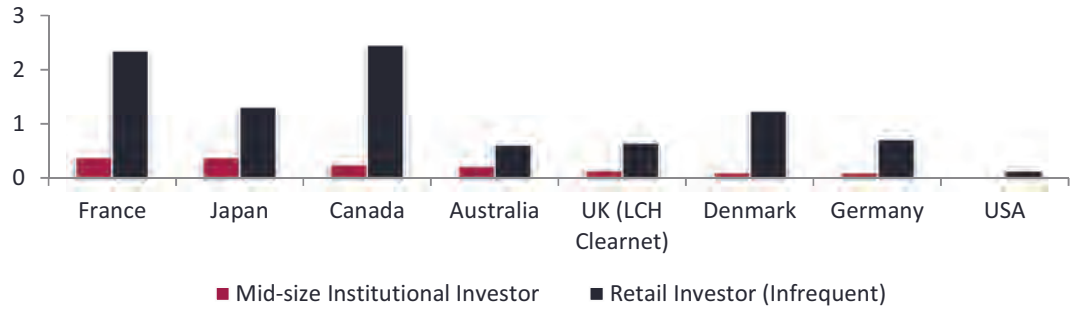
Source: Oxera, 2014

The cost of Australia's equities clearing through ASX Clear at 0.24 basis points is relatively high for both institutional and retail investors. As noted in the Oxera report, scale is critical to FMIs which is expected to be one factor leading to this result. In addition, differences in the funding arrangements for CCPs may be an additional contributor to the relatively high fee.[57]

The Oxera report also provides a comparison of settlement fees across jurisdictions. Figure 17, outlines the findings of the report. The ASX performs relatively well in providing low settlement costs to both institutional and retail investors.

[55] For example, if an identical buy and sell order on the same stock is made to one broker.
[56] An infrequently trading retail investor is assumed to have a portfolio of equities worth $250,000 and trades $45,000 in equities annually.
[57] The ASX for example contributes funds to the CCP default fund whereas internationally this contribution comes from market participants.

Figure 17 Settlement Costs: International Comparison



Source: Oxera, 2014

In addition to market efficiency and transaction costs, a second key determinant of market liquidity is fairness. A fair market that reduces information asymmetry through transparent prices and monitors and punishes insider trading and market manipulation promotes confidence amongst market participants and increases market participation.

Since August 2010, surveillance of ASX securities transactions has been undertaken by ASIC, supplementing ASICs other responsibilities for enforcement of market conduct laws against insider trading and supervision of Australian financial services license holders. ASIC has a dedicated surveillance team for both equities and fixed income markets. ASIC's ability to identify insider trading has been enhanced by the replacement of the SMART system used for surveillance since 2009, with MIA (Market Intelligence Analysis) in October 2013. MIA has the advantage that it can search in real time for market manipulation across the equities, fixed income, derivative and currency markets. As every investor will be given an investor number, ASIC will be able to quickly identify a suspect trade, and can pursue any inquiry or investigation directly with that investor, without the need to track back through brokers. The software can also detect hacking into brokers or investor accounts and identifies whether broker trades are made on a principal or agent basis. Additional features will further enhance the capability of MIA from 2015. Since 2010 ASIC has brought insider trading prosecutions in about 30 cases, and had 20 successful prosecutions, five unsuccessful prosecutions, and with some others still in process at the time of writing.

The extent of insider trading in the ASX can be estimated through an event study analyzing the extent of price movements prior to a price sensitive announcement. Table 3 below utlises the CMC Capital Markets MQ Dashboard, which estimates the extent of insider trading using this proxy. The Dashboard finds that insider trading activity decreased substantially in 2009, at the same time that the SMART surveillance system was introduced and in 2013 found evidence of below average insider trading relative to the other exchanges analysed.

Table 3 Information leakage: Estimated cumulative abnormal profit as proportion of on-market turnover (All figures are percentages)

Market Name	2006	2007	2008	2009	2010	2011	2012	2013
NYSE Euronext Paris	0.0302	0.0083	0.0275	0.0594	0.0091	0.0117	0.0095	0.0025
Toronto SE	0.0154	0.0310	0.0530	0.1016	0.0262	0.0389	0.0275	0.0286
London SE	NA	NA	0.0545	0.0606	0.0143	0.0209	0.0346	0.0156
ASX	0.0525	0.0701	0.1925	0.0311	0.0346	0.0478	0.0437	0.0514
NASDAQ	0.1379	0.0692	0.0433	0.1118	0.0304	0.0525	0.0314	0.0327
Tokyo SE	0.0924	0.1135	0.1875	0.0615	0.0276	0.0496	0.0649	0.2414
Singapore SE	0.1825	0.3068	0.2965	0.1966	0.0331	0.0730	0.0658	0.1375
New York SE	0.1566	0.0901	0.3097	0.0667	0.0324	0.0228	0.0151	0.0191
Average	**0.0954**	**0.0984**	**0.1456**	**0.0862**	**0.0260**	**0.0396**	**0.0366**	**0.0661**

Source: CMC Capital Markets, 2014

The technology used and the resources dedicated to the surveillance of Australia's capital markets are widely regarded to be amongst the best in the world. Australia has the only exchange in the world where real time surveillance is conducted in addition to post-trade surveillance. The cost recovery measures for the implementation of these surveillance measures have however been the point of some contention with the levy for the surveillance currently falling on market operators and participants with some arguing this levy should have a broader base, given the number of beneficiaries from fair markets.[58]

Summary

The Australian equity market plays a critical role in the issuance of primary securities. The market has been a key source of equity financing for business in the post-GFC period. Capital raised in both primary and secondary issues, and the number of IPOs demonstrate its importance to business funding. In 2013, 64 IPOs were listed on the ASX.

International integration of this market is notable in the number of international listings (101) held on the exchange, and in the proportion of international investor holdings of the market (43%). Australian institutional investors hold 37 percent of Australian equities and the behavior of these investors have implications for the characteristics of the Australian stock market. For example, superannuation funds investing 95 per cent of funds in the ASX 200 has implications for liquidity in small cap stocks.

Liquidity on the ASX peaked in 2007 at around 120 percent, and has failed to regain this level since. In 2013, this ratio was 74 per cent which includes trades conducted through both the ASX and Chi-X. While liquidity in the secondary market appears to be lower than might be expected, this is partly explained by low activity in the large number of smaller companies on the exchange.

In terms of performance, all indicators suggest that the domestic equities market is internationally competitive, especially with respect to similar regional exchanges.

[58] See for example, AFMA (2014)

Issuance: Listing and annual fees on the ASX are internationally competitive with other regional exchanges.

Trading: As the latest Oxera report shows trading and post trade fees are amongst the lowest among the 14 exchanges examined. Quoted spreads on the ASX have reduced from 23 to 19 basis points in the period 2011-2013.

Clearing and settlement: Fees for clearing in equities undertaken by ASX Clear are at the high end of the spectrum when compared with other exchanges. Fees for settlement, undertaken by ASX Settlements, are low when compared with international comparators.

Fairness: ASIC undertakes real time surveillance of the ASX. Information leakage is below average on an international comparative basis. Recent interventions have also addressed and contained the level of HFT and the use of dark pools, restricting potential for market manipulation.

Stability: Oversight of stability issues regarding trading on the ASX is the responsibility of the RBA, which works in close co-operation with ASIC, coordinated through the CFR.

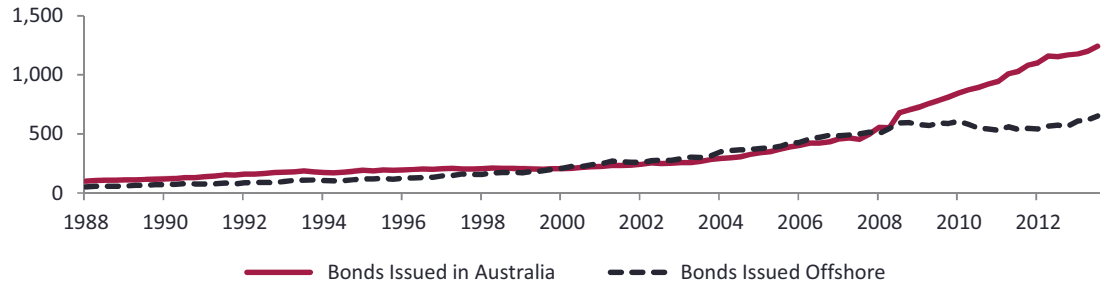
4.1 Fixed Income

Primary Issuance

In Australia, the total bond market at more than $1.2 trillion compares roughly with the total size of the Australian listed equities market at $1,550 billion.[59] As in most countries around the world, the vast majority of fixed income instruments are traded OTC rather than on listed markets, due to the broad range and number of debt securities, the average size of trades, and the relative illiquidity of trading contribute to the preference for an OTC approach.[60]

The OTC market at around $1,241 billion, including government bonds, greatly exceeds the $280 million[61] of listed fixed interest securities (Figure 18). The value of bonds issued in Australia was twice that of bonds issued offshore by Australian entities, which was $650 billion as at 31 December 2013.

Figure 18 Bonds outstanding, December 2013 ($billion)



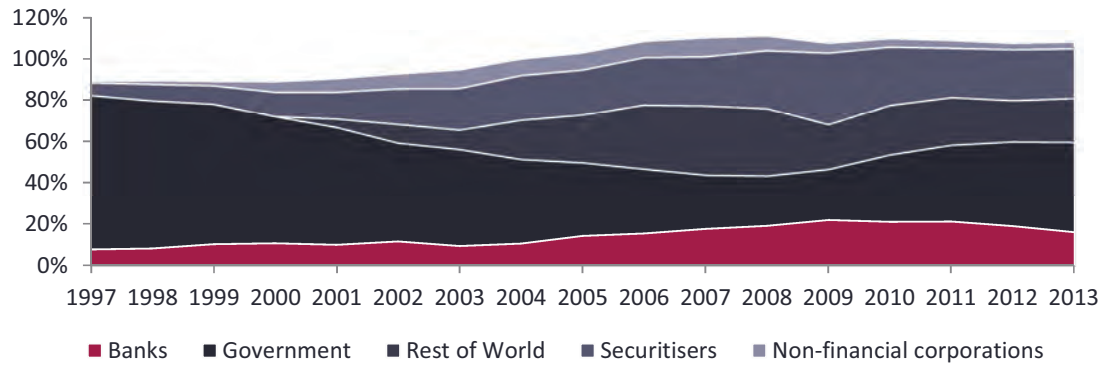
Source: ABS Cat 5232.0, Table 28, 2014

Over recent years there has been a marked change in the entities utlising the bond market in Australia to issue debt, due to both structural and regulatory dynamics. Increased issuance by government and securitizers has been a key driver of growth in domestic issuance, while banks and international institutions have also played a role. Australian corporate usage of the Australian domestic debt market has decreased from around 9 per cent in 2003 to 3 per cent of total issuance in 2013 (Figure 19).

[59] This report uses the ABS National Accounts definition of bonds which includes: government bonds, corporate bonds, securitised assets and hybrid securities.

[60] See for example International Capital Markets Association (2014): **www.icmagroup.org/Regulatory-Policy-and-Market-Practice/Secondary-Markets/Bond-Market-Transparency-Wholesale-Retail/So-why-do-bonds-trade-OTC-/**

Figure 19 Australian domestic Bond Issuance: by issuer - 1997-2013 (% of total)



Source: ABS Cat 5232 Table 28, 2014

It is worth reiterating that only $280 million of the total $1,241 billion, or less than 1 percent of all bonds in Australian are issued into the domestic listed market. As will be discussed in the following sections there are a number of reasons that may explain this, including higher issuance costs relative to equity and lack of liquidity in secondary market trading. The operator of the Australian listed fixed income market is the ASX which currently trades around 101 listed securities including 27 Australian Government Bonds (AGBs), 4 corporate bonds, 24 Floating Rate Notes (FRNs), 13 Convertible Notes, and 33 Hybrid securities.

All wholesale AGBs on issue are quoted on ASX and able to be bought and sold as Government Bond CDIs. These bonds are cleared and settled through CHESS. As at 1 May 2014, over 400,000 bond CDIs were held in CHESS representing outstandings of approximately $50 million.

Currently around 40 unique companies have listed fixed income or hybrid securities on this market (see Table 4). All ASX listed fixed income securities are issued by Australian companies.

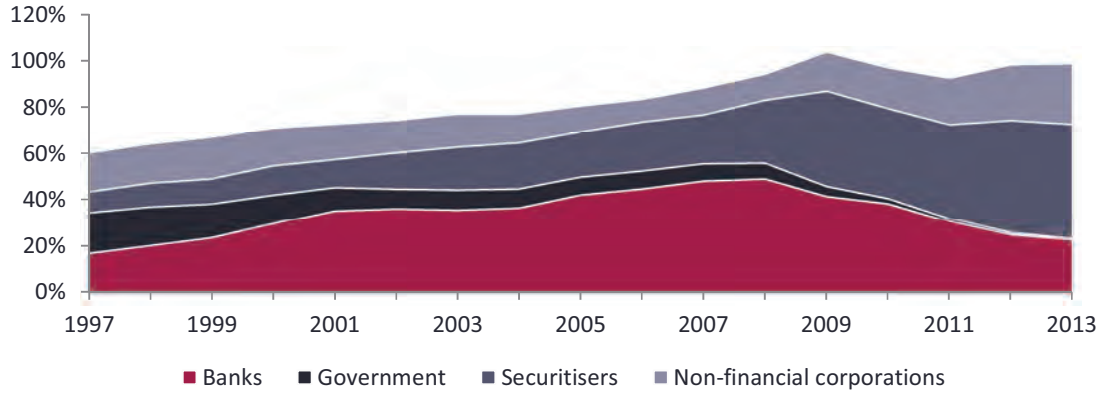
Table 4 Companies listing fixed interest securities in Australia

Heritage Bank Limited	Origin Energy Limited	KBL Mining Limited
Pentagon Capital Limited	Primary Health Care Limited	Lakes Oil NL
Pentagon Capital Limited	Suncorp	MYOB Finance Australia Limited
AGL Energy Limited	Tabcorp Holdings Limited	Nufarm Finance (Nz) Limited
AMP Limited	Tatts Group Limited	Noble Mineral Resources Limited
Australia And New Zealand Banking Group	Westpac Banking Corporation	ALE Property Group
APT Pipelines Limited	Woolworths Limited	Macquarie Bank Limited
Australian Unity Limited	Australian Foundation Investment Coy	National Australia Bank Limited
Bendigo And Adelaide Bank Limited	Advance Energy Limited	National Australia Bank Limited
Commonwealth Bank Of Australia.	A1 Investments & Resources Ltd	Nexus Bonds Limited
Colonial Holding Company Limited	Antares Energy Limited	Healthscope Notes Limited
Caltex Australia Limited	Healthscope Notes Limited	IAG Finance (New Zealand) Limited
Crown Resorts Limited	Bentham IMF Limited	

Source: ASX, as at 23 May 2014

The last decade has also resulted in a major shift in Australia's reliance on international debt markets. First, international debt issuance by Australian banks, which were the major issuers prior to 2007, has declined dramatically as a result of lower credit growth and regulatory imperatives that have driven a greater reliance on retail funding. Second, there has been a marked increase in the issuance of Australian securitised assets into international debt markets. Third, non-financial corporates have sought to diversify their funding base through the issuance of fixed interest securities into international markets. Non-financial corporate issuance into international bond markets now makes up around 26 per cent of all international bond issuance by Australian entities (Figure 20). As explored in the following section, secondary market factors have played a key role in this preference by corporates to issue fixed income securities offshore rather than domestically. These factors include access to a wider range of investors, especially for lower risk-rated and longer tenor issues. The absence of a deep and liquid secondary market also makes it less attractive for large corporates to issue debt domestically. Further, with an accessible and liquid derivatives market, swapping foreign currency exposures back into AUD has become easier, while for many of the larger non-financial corporations who export or have operations offshore, there may also be a natural currency hedge between these debt securities and income flows.[62] This ability for large Australian corporates to raise capital through offshore debt markets increases the pool of available capital to these organisations however these markets may not be accessible to small and medium companies. Further, participation in such a market is not just a matter of size, given that more than 70 per cent of Australia's top 200 companies do not have a credit rating[63] and are therefore unable to issue securities into these markets.

Figure 20 Australian bond issuance overseas: by Issuer: 1997-2013 (Percent of Total)



Source: Cat 5232 Table 28, 2014

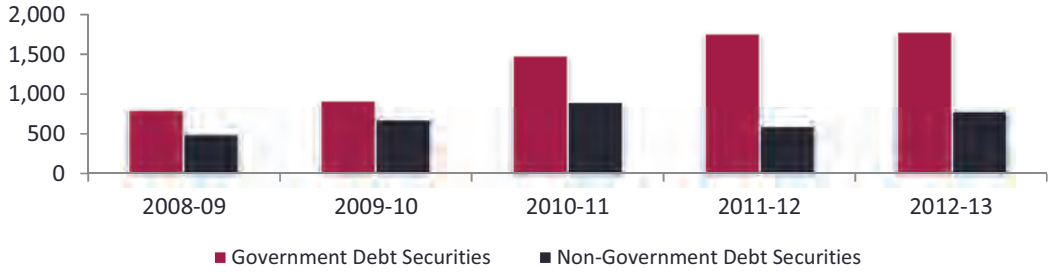
Secondary Market Trading

Liquidity in fixed income securities issued into the Australian market varies significantly based on the security being traded. Australian government securities are highly liquid with turnover of around $1,800 billion in 2012-2013 relative to $500 billion of securities outstanding in the domestic market. From 2007 to 2012 the majority of turnover in Australian corporate bonds was in bank securities,

[62] RBA (2014)
[63] Mulino (2013)

making up more than 50 per cent of all corporate bond turnover however, in 2013 turnover in non-bank corporate debt more than doubled to $250 billion (relative to around $40 billion in corporate debt securities outstanding) suggesting increasing liquidity in this market (Figure 21). While liquidity in the corporate bond market would appear high based on turnover, this liquidity is concentrated in large issues by large corporations.

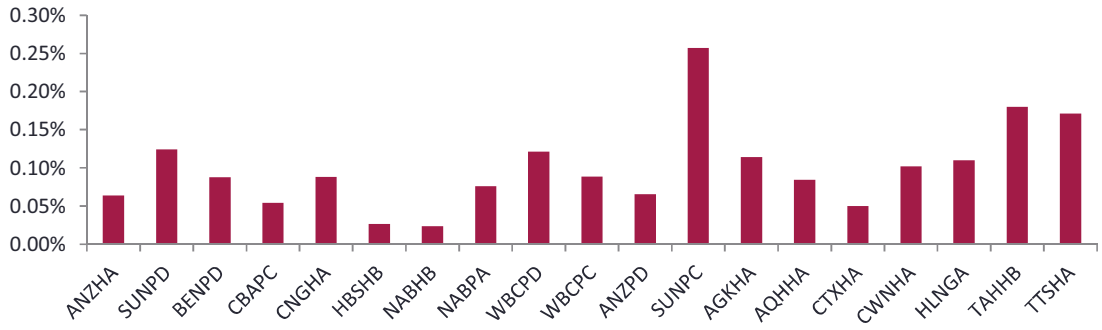
Figure 21 Australian bond market turnover ($billion)



Source: AFMA, 2014

Liquidity in the listed corporate bond market is generally lower than in the listed equity market but in a similar fashion, liquidity varies significantly depending on the individual security. Turnover is higher and bid-ask spreads are typically much tighter in large issues made by large financials, with liquidity typically falling away significantly in issues by non-financial corporates (Figure 22).

Figure 22 Average Daily Volume as a Percentage of Total Market Value: 25 October – 25 November, 2013



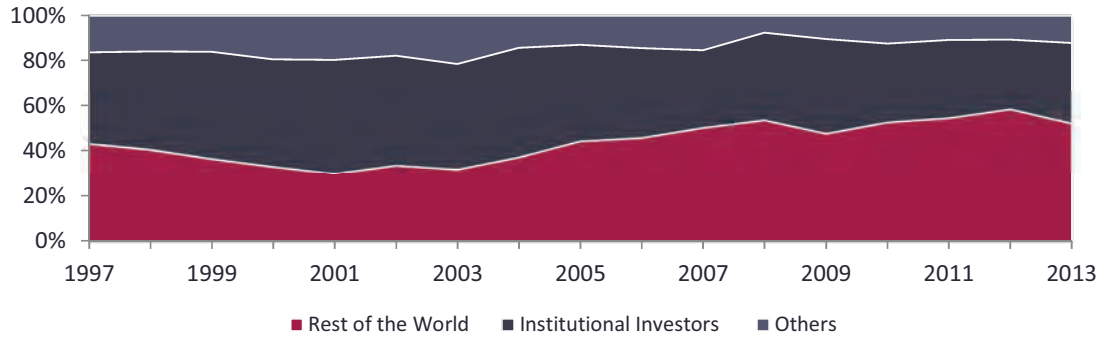
Source: Derived from NAB data

As with the equity market the nature of participation in the Australian bond markets provide some insights into liquidity. Where holdings of Australian Government Bonds[64] and corporate bonds issued by non-financial corporates are concerned, the two major participants in these markets are Australian institutional investors and international investors.

The increase in international holdings of Australian government bonds over the last decade is stark. This is particularly so in regard to Australian Commonwealth government which has increased from 50 per cent in the early 2000s to be just under 70 per cent currently, even as the stock of issuance has risen fivefold. [65]

[64] In this case, government bonds include both national and state level bonds
[65] RBA paper on bonds

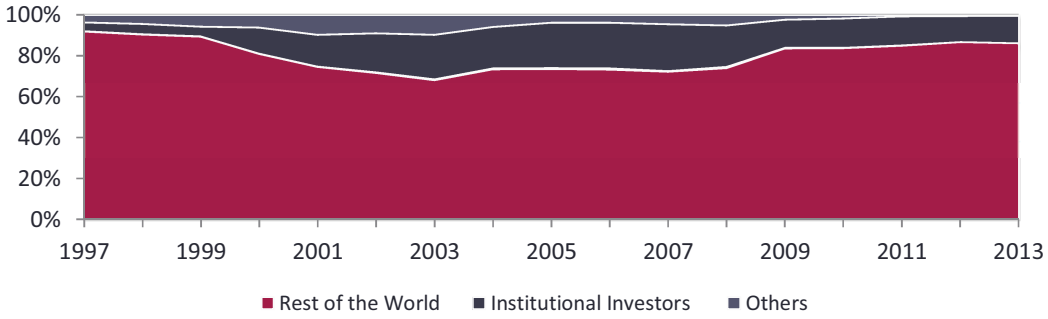
Figure 23 Holders of Australian Government bonds (Percent of total Market Capitalisation)



Source: ABS 5232, Table 28

While Australian institutional investors are a reasonably large participant in the Australian government bond market, ownership of Australian corporate bonds is dominated by international investors. In 2006, the ownership of corporate bonds issued by Australian entities by Australian institutional investors as a proportion of total Australian corporate bonds reached a peak of 22 percent however that has subsequently declined to 13 percent. Holdings of Australian corporate bonds by Australian institutional investors could increase in the near future as superannuation funds increase fixed income holdings in response to the aging of account holders. The demand from international investors for Australian corporate debt has undoubtedly contributed to the preference of Australian corporates to issue into international debt markets.

Figure 24 Holders of Australian Corporate Bonds (Percent of Total)



Source: ABS 5232, Table 28

Participation by households in the fixed interest market at less than 1 per cent, is almost non-existent. This absence has been attributed to the introduction of compulsory superannuation in 1992 which produced a pool of household savings invested via the funds management industry, rather than directly by households, and to the onerous disclosure requirements for issuers seeking retail investors. The latter requirement has meant that issuers have found it more cost effective to raise debt through the wholesale market. The late 1990s also coincided with the introduction of on-line trading in Australia, allowing un-intermediated access to the share market for households.

Trading costs can also be expected to impact liquidity in the Australian fixed income market. Traditionally trading in Australian fixed income market has been conducted primarily through the wholesale, OTC market. As a consequence, bonds have not been accessible for Australian retail

investors, and prices, fees and margins have traditionally been less transparent. An additional often cited reason for the low number of listed corporate bonds has been the disclosure requirements and consequent costs of listing retail bonds relative to wholesale issuance.

ASX is the sole trading venue for Australian listed fixed income securities, that is wholesale Australian Government Securities (AGS) and retail corporate bonds. As noted above the depth of the listed market for corporate fixed income securities is low with the majority of corporate securities issued into the OTC market. Prior to 4 May 2013, AGS were available only to the wholesale market. From that time, however, utilising a bridge that links Austraclear to CHESS, the ASX has allowed retail investors to purchase a depository interest in bonds issued into the wholesale market. The bridge that links Austraclear to CHESS creates a mechanism that enables one product to be traded in two places at a similar price, and preserves existing market structures of wholesale issuance and dealer trading in the OTC markets, whilst providing exchange based CLOB trading for retail investors. Later this year, when the Parliament is expected to have passed the *Corporations Amendment (Simple Corporate Bonds and Other Measures) Bill*, simple corporate bonds issued into the wholesale market will also be offered to retail investors.[66] Furthermore, since 2010 the Australian Government has introduced a number of regulatory changes to increase the ease at which corporate bonds can be issued to retail investors.

While these initiatives have sought to increase participation in the listed fixed income market, the primary domain for the issuance and trading of fixed income securities remains the dealer-driven OTC market. Traditionally this market has been characterised by low transparency in pricing and fees, driven by the need for wholesale investors to contact dealers directly to initiate transactions. The benefit from the dealer structure is that market-markers provide liquidity by standing ready to buy and sell securities on their own book. The move to electronic trading has resulted in a number of innovations that are changing the structure of the OTC market and blurring the lines between participant-driven and dealer-driven markets. Most important in this regard is the development of electronic trading venues, which offer market participants up-to-date bid-offer and transaction prices. These venues are also changing the nature of liquidity provision, allowing non-dealer participants to trade directly with other non-dealer participants, when they can trade at a tighter spread than that offered by dealers. The largest trading venues of this nature are Yieldbroker, a co-operative venture owned by large Australian and international banks and Bloomberg, a third-party owned platform.

Transactions in OTC fixed income securities are undertaken as bilateral agreements between the two counterparties to the trade, and unlike transactions in equity securities there is no CCP. Settlement is conducted through Austraclear, the sole provider of settlement services for trades in Australian listed and unlisted fixed income securities. Unlike equities which have a three day delay between transaction and settlement, fixed income securities are settled in real time. As noted previously, Austraclear, owned by the ASX, is the sole provider of settlement services for Australian OTC fixed interest securities.

[66] Chapman (2013).

Summary

Post-GFC the debt capital markets have played an increasingly important role in meeting the financing requirements of Australia. Government debt issuance has increased five-fold, with 70 per cent being held by non-residents and corporate debt issuance has increased substantially. The bond market is comparable in size to the Australian equities market however the nature of issuance, participants and liquidity are very different.

Liquidity in fixed income securities issued into the Australian market varies significantly based on the instrument being traded. Australian government securities are highly liquid while, despite the emergence of electronic trading platforms, liquidity in Australian corporate bonds remains low relative to the other Australian security markets. Lack of liquidity, low participation by Australian investors, the lack of credit ratings for Australian firms, and factors leading to high relatively high issuance costs have resulted in more than 75 per cent of the total stock of corporate debt securities being issued offshore. This compares with approximately 65 per cent in 2007.[67] The lack of breath and depth in the corporate bond market raises concerns in relation to our reliance on international debt markets particularly for firms who do not have access to international markets.

Issuance: The preference for Australian corporates to issue into domestic bond markets suggests there are a number of factors deterring issuance into the Australian corporate bond market. The listed domestic markets performance on this metric is also poor. At $280 million, listed bonds make up less than 1 per cent of the total bonds issued into Australian markets.

Trading: Despite the growth of electronic trading venues, liquidity in the corporate debt markets remains low. Limited access for retail investors, as evidenced by the total corporate bond holdings of households relative to equities, appears to play a role in this regard however the total holdings of corporate debt by Australian institutional investors is also low.

Clearing and Settlement: Fixed income securities in Australia are not centrally cleared and settlement is conducted in real-time through Austraclear.

Fairness: The growth of electronic trading venues like Yieldbroker have improved pre-trade transparency in the OTC fixed income market. The introduction of MIA in 2013 can be expected to improve fairness in the fixed income market by reducing insider trading and market manipulation.

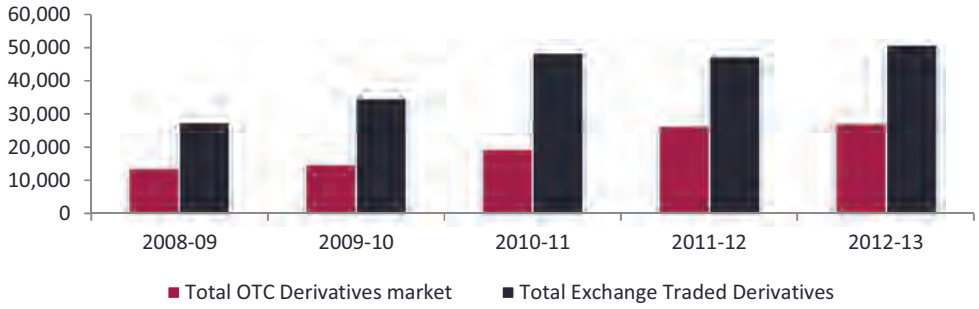
Stability: The large holdings of fixed income instruments by international investors may pose stability issues to the Australian fixed income markets should international developments lead to a large repatriation of capital.

[67] RBA, Statistical Table D4, 2014

4.2 Derivatives

Total trading of non-currency derivatives in both OTC and listed markets in Australia in 2013 reached around $78 trillion in 2012-13. Interest rate futures and options, stock options and index options traded on the ASX accounted for around $50 trillion of this total, while OTC derivatives, primarily interest rate and currency swaps, FRAs, and index swaps made up the remaining $27 trillion. Given the very different conduct of the OTC and listed markets they will be examined separately in the following section.

Figure 25 Total Notional Turnover of Derivatives in Australia: 2013 ($ billion)[68]



Source: AFMA, 2013 Yearbook

Structure and conduct: listed market

ASX 24 is by far the largest Australian based exchange for derivatives trading, open 23 hours a day and listing contracts in interest rate and stock index futures and options.[69] Annual notional turnover in interest rate futures at more than $40 trillion in 2012-13 makes up more than 99 percent of total ASX derivative turnover. The derivative contracts listed on the ASX are tools for managing the risks associated with Australian and New Zealand financial contracts and securities including a number of tools for hedging (or increasing exposure to) Australian and New Zealand interest rates and contracts on five Australian market indices.[70] Australian institutions also engage in listed derivative contracts on international exchanges such as the Chicago Mercantile Exchange (CME) and Eurex to manage exposures to international interest rates and securities.

The ASX ranks fifth in the world for the number of exchange-traded interest rate futures contracts and sixth in the world for exchange traded interest rate options. Amongst other types of traded derivatives Australia is ranked 15th for listed stock index options and 18th for listed stock index options (see Figure 26).

[68] These figures exclude currency derivatives

[69] A second derivative exchange, FEX that specialises in energy derivatives received an Australian market license in April 2013.

[70] The indices which can be traded are the ASX SPI 200, ASX-200 VIX, ASX 200 Resources, ASX-200 Financials and the ASX-200 A-REITS

Figure 26 International Comparison of size of traded derivative markets: 2013 (no. of contracts)

Stock index options	
National Stock Exchange India	930 053 758
Korea Exchange	580 460 364
Chicago Board Options Exchange	372 668 403
EUREX	317 411 074
Bombay SE	250 340 019
TAIFEX	109 671 774
CME Group	91 006 693
Osaka SE	57 269 727
Tel Aviv SE	48 316 446
Moscow Exchange	42 311 733
NYSE.Liffe Europe	41 471 384
OMX Nordic Exchange	21 758 989
Hong Kong Exchanges	17 826 035
Singapore Exchange	10 501 431
ASX Derivatives Trading	**9 224 326**

Stock index futures	
CME Group	572 902 335
EUREX	327 431 218
Moscow Exchange	267 791 716
Osaka SE	264 833 731
China Financial Futures Exchange	193 220 516
National Stock Exchange India	101 749 706
Singapore Exchange	99 526 505
NYSE.Liffe Europe	82 669 154
Hong Kong Exchanges	50 608 221
Korea Exchange	49 970 933
CBOE Future Exchange	40 193 447
TAIFEX	37 873 740
OMX Nordic Exchange	30 898 519
ICE Futures US	29 484 367
Tokyo SE Group	26 081 610
BM&FBOVESPA	20 443 962
Johannesburg SE	16 452 051
ASX SFE Derivatives Trading	**9 994 096**

Interest rate options	
CME Group	285 915 903
NYSE.Liffe Europe	141 955 226
EUREX	66 494 627
BM&FBOVESPA	54 166 184
OMX Nordic Exchange	5 972 158
ASX SFE Derivatives Trading	**4 042 671**
NYSE Euronext (US)	2 594 262

Interest rate futures	
CME Group	1201 664 860
EUREX	440 718 754
NYSE.Liffe Europe	432 733 812
BM&FBOVESPA	432 430 652
ASX SFE Derivatives Trading	**105 715 817**
Korea Exchange	41 284 603
Bourse de Montreal	36 748 553

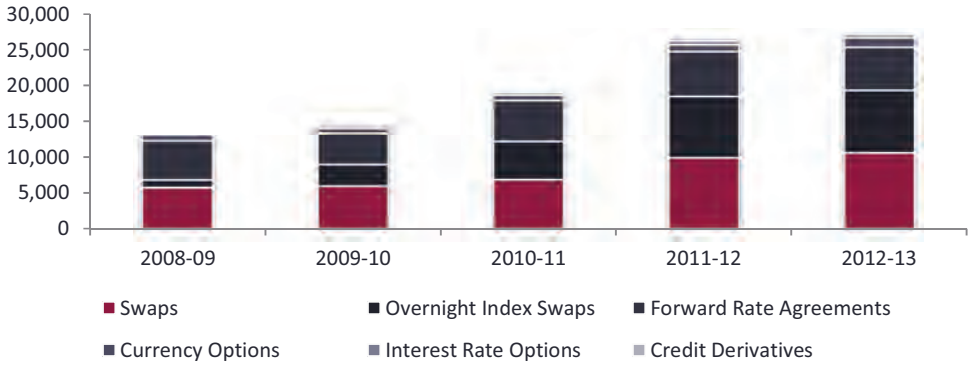
Clearing of Australian listed derivative contracts must be conducted through ASX Clear (futures), which acts as both CCP to all listed derivative contracts and calculates both initial margin and variation margin requirements, which are then settled on a daily basis. The ASX's derivatives clearing house now meets the highest global capital standards and has a AA-credit rating from S&P. Currently there is no competition in clearing in the clearing or settlement of ASX listed derivative contracts, a situation that is standard across derivative exchanges. Furthermore, because similar derivative contracts can be traded across different exchanges, derivative exchanges could be expected to be less open to monopoly pricing.

Structure and conduct: OTC market

OTC derivatives traded in Australia include swaps, currency and interest rate options, forward rate agreements (FRAs), interest rate swaps and credit derivatives. The largest component of these by

turnover is swaps, followed by overnight index swaps and then FRAs. Interest rate options and credit derivatives are much smaller components of the market. (Figure 27)

Figure 27: OTC Notional Turnover Breakdown by instrument (AUD billion)



Source: AFMA, 2013 Yearbook

As with the fixed income market, the OTC derivative market is naturally suited to the issuance and trading of highly customized, heterogeneous securities that have low liquidity and therefore are not suited to a CLOB trading environment. Because of the specific risk management requirements of organisations and the sheer number of contracts issued, the OTC derivative market contains a much greater variety of securities than even the OTC fixed income markets. OTC markets had traditionally provided an additional advantage for hedging institutions, the absence of mark-to-market margining requirements. The absence of these requirements reduces the liquidity requirements for a hedging institution, the trade-off however is increased credit-risk should a counterparty default. The advent of mandatory clearing internationally and the trend toward central clearing of many OTC derivatives has to a large extent removed this difference between OTC and listed markets.

The major proportion of turnover in OTC derivatives is by the banks, accounting for at least 40 per cent of the market with in-house transactions accounting for another third (Table 6).[71]

Table 5 Proportion of turnover of participants in Australian OTC derivatives in 2012-13

Major Banks	Other Banks	In-house Transac-tions	Traditional Fund Managers	Hedge Funds / CTA's	Govern-ment	Offshore Central Banks	Other	Turnover (AUD mn)
20.0%	18.5%	32.3%	8.4%	4.8%	3.5%	1.0%	11.4%	40,994,003

Source: AFMA, 2014

Of all the financial instrument markets, the OTC derivative market is the least advanced in regard to electronic trading. This is partially reflective of the highly customised nature of some OTC derivative contracts, which require in-depth discussion and negotiation between dealers, typically a bank or investment bank, and their counterparty. However, post-GFC there has been a moved toward greater standardization of OTC derivative contracts leading to the emergence of electronic trading venues for swaps and other OTC derivatives known as, Swap Execution Facilities (SEFs), trading venues and providers of pre-trade price transparency in this space. This emergence of SEFs has been

[71] Because it is likely that bank in-house transactions account for a significant proportion of in-house transactions total turnover it could be expected that total participation of banks is significantly higher than 40 per cent

accelerated by international regulation requiring mandatory platform trading for a number of derivatives which traditionally traded in the OTC market.[72]

In Australia, the market leading electronic trading venue for OTC derivatives is Yieldbroker which facilitates trades in interest rate and overnight index swaps, and FRAs. Foreign owned derivative trading platforms are not currently registered to operate within Australia. This is due to differences in the approach to implementation and the timing of OTC derivative trades across jurisdictions. However, international agreements allowing for multi-jurisdictional OTC derivative trading platforms, particularly in the US and the UK, suggest that this may soon change.[73]

Participants in OTC derivative transactions have the option of clearing through a central counterparty or engaging in bilateral arrangements to reduce counterparty risk. Traditionally there was very little central clearing of OTC derivatives however post-GFC there has been an international move toward mandatory clearing of a number of OTC derivative contracts. The BIS estimates that in 2013, 7 per cent of all FRAs and 35 of all swaps were centrally cleared.[74] To date, Australian regulators have refrained from mandating the central clearing of specific OTC derivatives favouring a market-based response to the problem. It should be noted however, that the two most recent CFR market assessment reports recommended mandatory clearing of a number of interest rate derivatives in four major currencies and those that are traded in Australian dollars. A consultation paper has since been issued on the matter. Despite Australia not yet being subject to mandatory central clearing of OTC derivatives, a trend toward the central clearing of OTC derivatives in Australia has already developed.[75]

To meet the increased demand for central clearing of OTC derivatives, the ASX has developed and now operates clearing services for a number of the highest volume OTC swaps.The most significant development in clearing across Australia's financial markets occurred on the 14th of July 2013, when LCH Clearnet was given the right to compete directly with ASX Clear in the clearing of OTC interest rate derivatives. The granting of these rights to LCH Clearnet is significant for two reasons. First, this is the first and currently only example of competition in clearing of Australian financial securities, and second, because LCH Clearnet operates in Australia as an international organisation, not as a local subsidiary. LCH Clearnet is the largest global clearing house for OTC interest rate swaps, clearing more than 50 per cent of the global interest rate swap market. Figure 28 provides an overview of the relative costs of clearing OTC derivative transactions through ASX Clear and LCH Clearnet. ASX clear performs comparatively well, given the scale advantages of LCH Clearnet.

[72] The Commodity Futures Trading Commission (CFTC) in the US began phasing in mandatory platform trading of certain OTC derivatives in February 2014 however Mandatory platform trading is not yet a requirement of OTC derivative trading in Australia.
[73] OTC Derivative Regulators Group (2014)
[74] Gyntelberg & Upper (2013)
[75] In 2013, LCH.Clearnet began offering an alternative clearing service for OTC interest rate swaps.

Figure 28 OTC derivative clearing fees (A$)[76]

Length of Contract	ASX Clear	LCH Clearnet (same fees apply globally)
0 to 1 year	$1.00	$0.90
1 to 3 years	$2.50*	$2.25
3 to 5 years	$4.50	$4.05
7 to 10 years	$7.50	$7.20
10 to 15 years	$10.00*	$8.64*

Source: ACFS estimates based on official documentation of clearinghouses

** Calculated as weighted average*

As noted in section 3.2, an important realisation from the GFC was that the lack of transparency and systemic importance of OTC derivatives transactions posed risks for the functioning of real economies. This is very much the case in Australia, as Australian banks are counterparties to a large proportion of Australian dollar OTC derivative transactions. To improve transparency in OTC derivative markets regulators have instituted clear legislation to trade reporting requirements for OTC derivative transactions that involve an Australian entity. Beginning in October 2013, Australian Swap Dealers were required to report all trades through a recognised trade repository, the same rules applied to financial entities with more than $50 billion in notional principal outstanding from April 2014. At the time of writing, because no trade repositories have received a license to operate in Australia, in the interim, the Government has legislated that eight overseas trade repositories are eligible to conduct the reporting of OTC derivative trades conducted by Australian entities.

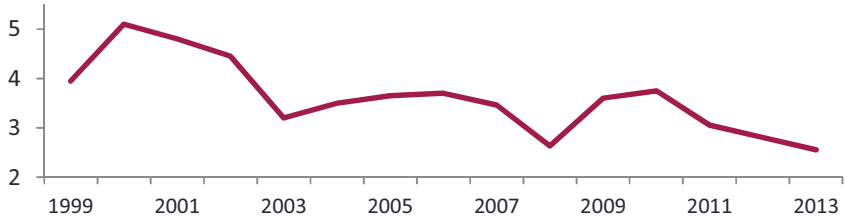
Due to the global nature of the OTC derivative market it is difficult to meaningfully benchmark Australia's performance relative to the rest of the world. There are a number of reasons as to why this is the case including:

- OTC derivative market participants can contract with either local or global dealers, meaning increased competition and increased liquidity;
- Traditionally contracts have not been centrally cleared or settled through third-party infrastructure, reducing reliance on domestic infrastructure; and
- The emergence of electronic trading platforms and SEFs has increased transparency and competition in pricing from global dealers.

It is worth noting however that the bid-offer spreads available on the most common Australian OTC derivative contracts, AUD interest rate swaps, have declined significantly over the last 15 years. One would suspect that technological advances allowing for improved price transparency and increased globalization of the OTC derivative market have been key in reducing these spreads. (Figure 29)

[76] These estimates are of novation fees only and do not include ongoing maintenance fees charged by clearing houses. Furthermore, as with the clearing fee comparison provided by Oxera for equities, these figures do not account for variance in funding provisions across CCPs.

Figure 29 AUD Swaps Bid-Offer Spread



Source: AFMA (2014)

Summary

The derivatives markets play a key role in Australian economy as risk management tools however unlike the equity and derivatives markets, the location of derivative markets are likely to have less impact on the operating choices of non-financial corporates. Furthermore, derivative markets do not trade a finite number of securities and therefore are open to competition from international markets. With this in mind, the domestic market for exchange traded and OTC derivatives is large reaching $78 trillion in notional turnover in 2013. The listed market also performs well, ASX 24 is the fifth largest exchange internationally for exchange traded futures. The large turnover in these instruments through ASX 24 and the ease by which market participants can choose between international exchanges for a given instrument suggests that ASX 24 provides internationally competitive infrastructure and liquidity.

Trading: Technology has allowed for greater access to global pricing in OTC derivative markets, this has resulted in a sharp reduction in the bid-ask spreads on popular derivative instruments over the past 15 years. The large turnover in listed markets and the ease of access to international derivative markets suggest that trading costs in this market are competitive.

Clearing and settlement: ASX has introduced clearing services for OTC derivatives and as from July 2013 LCH Clearnet has been licensed to compete in this regard. Clearing costs for OTC derivatives through ASX compare favourably with those through the global provider LCH Clearnet. Listed derivatives are cleared through ASX Clear and CFR has recommended mandatory clearing of a number of interest rate derivatives in four major currencies and those that are cleared in AUD. There is a trend towards widespread clearing, although this is not as yet mandated.

Fairness: Technological developments like SEFs and the arrival of CCPs have increased transparency and the ease at which market participants can access OTC derivative markets providing a viable domestic alternative to the listed market.

Stability: There is significant counterparty risk attached to derivatives and given that Australian banks are counterparties to more than 40 per cent of all OTC derivative trades. While there is an associated cost, the trend toward central clearing and the requirement for increased trade reporting of derivative transactions will reduce this risk.

4.3 Foreign exchange

Internationally the market for foreign exchange is primarily an intermediated market, has been dominated by a small number of global banks. Increased global concentration has occurred in the FX trade over the period 2007 to 2013, with a smaller proportion of local currency being transacted locally, with the exception of the UK and the US. Over this period, the AUD share of international currency transactions increased by almost 25 per cent, yet the proportion of AUD traded in Australia was only around half of its 2007 level.

Table 6 banks share of the foreign exchange market, local share of global FX turnover of each currency's share of daily turnover

	2007			2013		
Country	Number of Banks covering 75% of market	Share of global turnover (Location)	Share of Average Daily Turnover* (Currency)	Number of Banks covering 75% of market	Share of global turnover (Location)	Share of Average Daily Turnover* (Currency)
United Kingdom	12	34.1%	14.9%	10	40.9%	11.8%
United States	10	16.6%	85.6%	7	18.9%	87.0%
Singapore	11	5.8%	1.2%	11	5.7%	1.4%
Japan	9	6.0%	17.2%	9	5.6%	23.0%
Hong Kong SAR	12	4.4%	2.7%	13	4.1%	1.4%
Switzerland	3	6.1%	6.8%	3	3.2%	5.2%
France*	4	3.0%	37.0%	4	2.8%	33.4%
Australia	8	4.3%	6.6%	7	2.7%	8.6%
Germany*	5	2.5%	37.0%	5	1.7%	33.4%

Source: Bank for International Settlements, 2013

** Because there are two currencies in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%*

** France and Germany share EUR as represented currency*

Structure and conduct

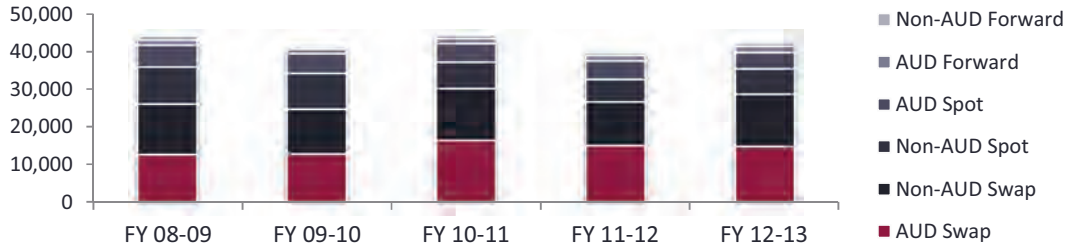
The FX market is essentially comprised of three transactions or contracts, all of which are conducted through OTC markets:

1. Spot transactions: The immediate exchange of one currency for another currency at the prevailing exchange rate.
2. Forward contracts: An agreement to exchange one currency for another currency at a future date at the prevailing forward rate.
3. Cross Currency Swaps: An agreement to immediately exchange a notional amount of one currency for another currency with the agreement to return the principal values exchanged at the completion of the contract and to pay either a fixed or floating interest rate on the notional principal during the life of the contract.

Spot transactions facilitate the exchange of currencies to engage in the purchase of international goods, services or investments while forward contracts and currency swaps assist with the risk management of future receipts or payments in internationally currencies. Both the total value of FX transactions and the relative size of each of these markets has remained stable post-GFC with the

notional value of currency swaps far greater than the value of spot and forward transactions (Figure 30).

Figure 30 Australian FX Markets Annual Turnover (Figures in $billion)

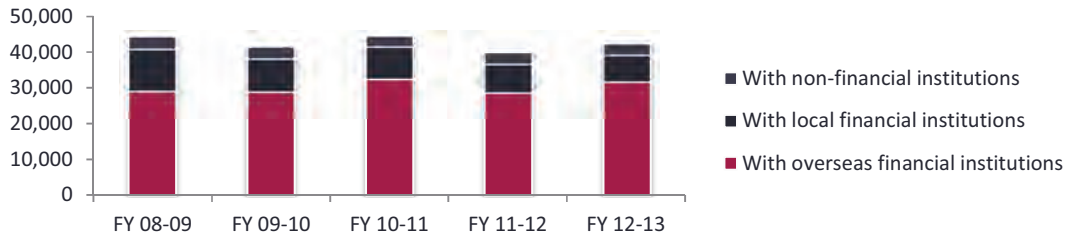


Source: AFMA 2013 Yearbook

In a similar fashion to the OTC fixed income and derivatives markets, the FX market is a quote driven inter-dealer market. This structure is conducive to the large transaction sizes in the FX market and in accommodating the vast array of potential currency pairs and customisation that can take place in any given transaction or contract. The retail foreign exchange market is also quote driven, with customers typically engaging in foreign exchange through a bank or dedicated foreign exchange business. It is worth noting, however that a number of electronic foreign exchange trading venues for retail customers and investors have begun to emerge.

Internationally, the key dealers in the OTC FX market are major global banks.[77] This is also the case in Australia with overseas financial institutions standing counterparty to around 75 per cent of all FX trade (Figure 31). Australian organisations engaging in the FX market have traditionally contacted Australian banks who then engage with the global banks through the OTC interdealer market on their client's behalf. This has been beneficial to both the Australian banks, as global banks are able to facilitate the exchange at lower cost due to great economies of scale[78], and for their clients who lacked direct access to these banks. This is changing somewhat with the advent of electronic trading venues which provide some access to non-bank participants, as explained further below.

Figure 31 Counterparties to Australian FX Trade ($ billion)



Source: AFMA 2013 Yearbook

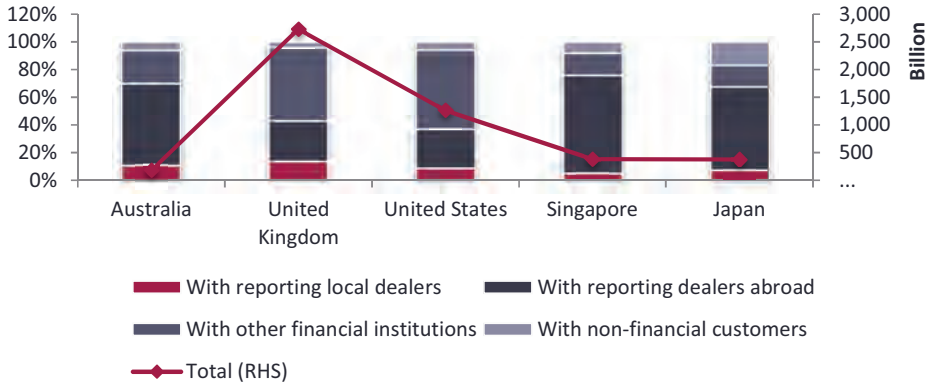
As noted above activity in FX markets has becoming increasingly concentrated in the two largest

[77] In 2013, Deutsche Bank, UBS, Citigroup, and Barclays were estimated to account for almost 50% of all global FX trading.

[78] Economies of scale have allowed for the creation of expensive global platforms to efficiently execute transactions and the ability to net risk exposures internally. By internalising trades, they can benefit from the bid-ask spread without taking much risk, as offsetting customer flows come in almost continuously. As these banks have effectively become deep liquidity pools, their need to manage inventory via traditional inter-dealer venues is much reduced.

financial centres – London and New York. Even regional financial centres like Singapore and Japan rely on these centres for the majority of their FX transactions (Figure 32).

Figure 32 FX Trade by counterparty and total domestic FX activity (US$)



Source: Bank for International Settlements, Triennial Survey 2013

The key reason for this concentration of activity in essentially two locations is due to the headquarters of the major global banks residing in these centres. Furthermore, the activity of these organisations has meant that liquidity in FX is greatest during the times when the UK and US business hours overlap, encouraging international firms involved in the FX market to also establish offices in these centres.

The FX market has traditionally been an opaque inter-dealer market accessible only to international banks. However, since the late 1990s there has been a trend toward increased transparency with a number of third party providers offering electronic platforms which provide transparent price information and trading services to market participants. These trading platforms have become perhaps the most advanced of the non-exchange electronic market platforms, generating a global customer base and providing efficient information and trading services for market participants. According to BIS statistics now more than 50 per cent of Australian FX transactions are now conducted through electronic platforms. [79]

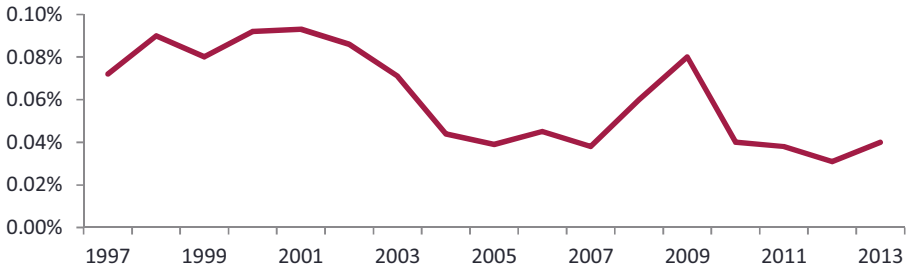
The market leaders for FX trading are Reuters Dealing and EBS. These electronic venues allow wholesale market participants like large institutional investors and hedge funds to deal directly with the large global banks, reducing the number of participants necessary to execute a trade and greatly reducing the cost of foreign exchange transactions (Figure 32.) The BIS 2013 Anatomy of Global FX market report noted this trend and that non-dealer institutions were the major drivers of growth in FX turnover over the three years to 2013, while the interdealer market slowed and the corporate market contracted over the same period.

Electronic venues of this nature also raise the prospect of non-bank providers of liquidity operating in this market as has been occurring in the OTC fixed income market. On this point the BIS notes that, *"the FX market has become less dealer-centric, to the point where there is no longer a distinct inter-dealer-only market."*

[79] Bank for International Settlements (2013)

With increased transparency, as Figure 33 shows, the spreads on FX trades, such as AUD/USD traded have declined substantially over recent years, from just under 8 basis points in 1997 to around 4 basis points in 2013.

Figure 33 AUD/USD FX Spread



Souce: AFMA, 2014

Interestingly, despite the large volumes and international importance of FX, FX transactions are not centrally cleared. Instead, bilateral agreements are made between counterparties to reduce the risk, including bilateral netting arrangements and less commonly, marking to market. The absence of mark-to-market provisions is advantageous to hedgers who would otherwise have to maintain liquidity reserves to meet the variation margin requirements, a requirement that would be necessary should central clearing counterparties participate in the market.

Settlement risk had also been traditionally managed through bilateral agreements between counterparties however in 2002 a group of international banks developed CLS Bank, centralised international settlement infrastructure for foreign exchange transactions made by member banks. CLS allows the simultaneous settlement of foreign exchange transactions removing all settlement risk in the transaction. Currently, more than 50 per cent of all foreign exchange transactions are settled through CLS. The four major Australian banks are members of CLS. It is worth noting that despite the absence of a central clearing counterparty, the FX markets continued to function well when other markets froze as a result of the GFC.

For similar reasons to those presented in the discussion of the performance of OTC derivative markets, it is difficult (and perhaps fruitless) to benchmark Australia's performance relative to the rest of the world in the wholesale FX market. With the advent of global electronic trading platforms FX has become a truly global market with global, and declining, costs for executing trades. The preceding discussion does however raise a number of issues and trends pertinent to all markets which are explored in the next session.

Conversely, while we are beginning to see the emergence of electronic FX platforms that can be accessed by retail participants, this segment of the FX market is currently largely subject to domestic pricing. The World Bank provides comparative statistics on the average cost of remittances for G20 countries. The average cost in Australia remains above the G20 average at around 10% of the transaction value but has decreased significantly in the last 3 years (Figure 34). Part of this higher cost may be attributed to the country corridors with which Australia makes transactions, for example it costs more to remit to a pacific island country than to the US. However, it is likely that economies of scale and the nature of the businesses providing remittance services in Australia also

lead to this higher average cost. To illustrate this point, a 2010 Australian report found that the average cost of remitting through banks was 29 percent higher than the cost of remitting through a specialist money transfer operator.[80]

Figure 34 Average remittance cost comparison: Selected G-20 countries (% of transaction value)

Source: World Bank (2014), Remittance Prices Worldwide

Summary

The foreign exchange market is the most globally integrated of the four markets, with around 60 per cent of all foreign exchange transactions occurring in the US and the UK. Over the period 2007 to 2013, the AUD share of international currency transactions increased by almost 25 per cent, yet the proportion of AUD traded in Australia declined by one half. Scale advantages and the adoption of global platforms has also meant that the key dealers in these markets are major global banks. In Australia overseas financial institutions stand counterparty to around 75 per cent of all FX trades.

Trading: Electronic venues for FX trading, such as Reuters Dealing and EBS, have increased transparency in the FX market and allowed wholesale market participants like large institutional investors and hedge funds to deal directly with the large global banks, greatly reducing the cost of foreign exchange transactions. These platforms, combined with increasing scale, have led to sharp reductions in the transaction costs associated with dealing in the wholesale FX market. Electronic platforms for retail customers have been slower to develop and many retail customers remain subject to domestic prices set by Australian banks and MTOS, while these have reduced in recent times they remain above the G20 average.

Clearing and settlement: Transactions conducted through the FX market are not centrally cleared however more than 50 per cent of all FX transactions are now settled through CLS bank. The four major Australian banks are members of CLS bank. The continued operation of the FX market through the GFC suggests that despite the absence of central clearing, the market is stable.

[80] Australian Government & New Zealand Government, 2010

4 Other Issues in Australian International Linkages

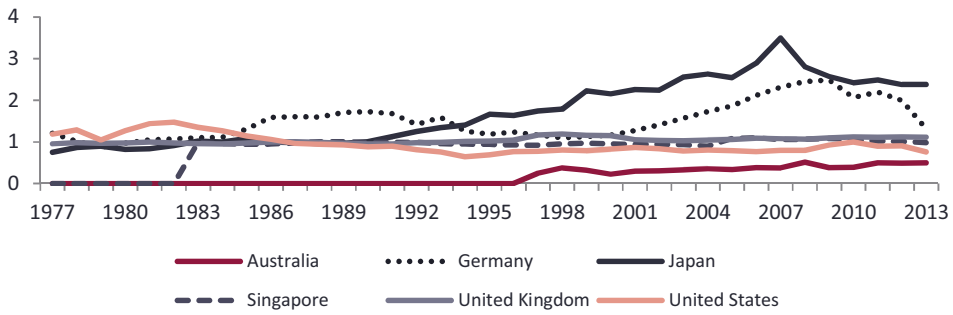
Banks and fund managers play an important role in facilitating international financial flows and as participants in financial markets. This section briefly examines their role and any barriers which impede their ability to do so.

4.1 Australian Banks and International Linkages

As noted throughout the previous section, Australian banks are active in Australian financial markets both as users of risk management and foreign exchange instruments and as liquidity providers in the various markets. With the increasing reliance of Australian corporates on debt markets, Australian banks are also increasingly playing a role as book runners in corporate bond issuance. Currently, Australian banks are the lead book runners for debt issues made into domestic markets while international banks assume this role for more than 80 per cent of debt issues made by Australian corporates into international markets.[81]

Australian banks have primarily focused their business around servicing the lending and deposit needs of domestic customers but as discussed previously have been major users of the wholesale lending market, particularly pre-GFC. This has resulted in a low asset to liability ratio for banks residing in Australia relative to international banks. (Figure 35)

Figure 35 Ratio of Bank International Assets to Liabilities of banks: by location of bank[82]



Source: Bank of International Settlements, 2014

International deposits held by Australian banks are also reasonably low at around $120 billion or 6 per cent of all liabilities. Both the Johnson Report (2009) and the Henry Tax review (2010) noted that the imposition of interest withholding taxes on the retail deposits of non-residents have potentially resulted in lower utilization of international deposits by Australian banks. The consequences of this could include a higher cost of capital for Australian borrowers and less diversified funding for Australian banks. Furthermore, the imposition of withholding taxes on non-resident deposits may impact the ability of international banks to compete in Australia, negatively impacting competition in the Australian banking sector. Reducing the disincentives for non-residents to make deposits with Australian banks may also result in increases in other international banking services, including lending, allowing Australian banks to better diversify their lending portfolios. It is notable that both

[81] AFMA, 2014

[82] The figures presented include all banks with their reporting office located in Australia, the figures are unconsolidated and therefore include transactions with foreign affiliates.

the largest regional financial centres (Hong Kong and Singapore) and global financial centres (the US and the UK) do not levy withholding taxes on non-resident deposits.

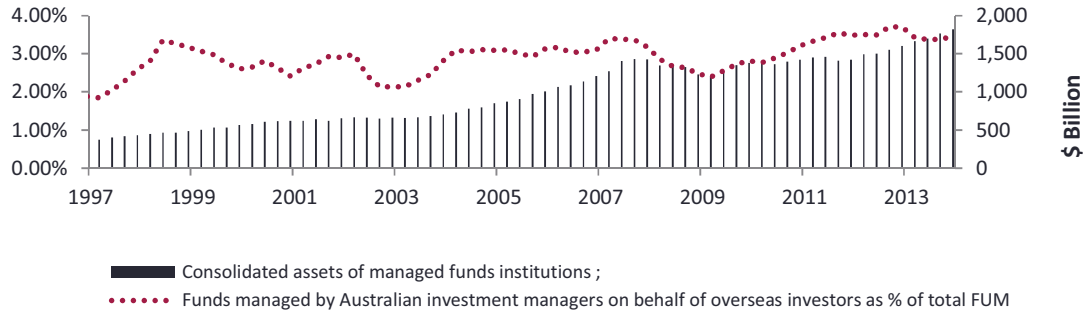
4.2 Australian Fund Managers and International Linkages

The report has also highlighted the growing importance of Australian fund managers in international fund flows. As noted in section 2, with the growing pool of domestic savings held by superannuation funds, the ability of funds to access international markets to seek additional investment and diversification opportunities is becoming increasingly important.

Total asset holdings of APRA regulated superannuation funds have increased from $229 billion in 1995 to more than $1 trillion in June 2013. At the same time, overseas assets as a proportion of total assets held by these funds has increased from 15 per cent to more than 30 per cent.[83] These figures suggests that Australian institutional fund managers have wide access to international investment markets, have investment teams with the skills required to participate in these markets and as explained in the previous section, adequate derivative and foreign exchange markets to manage international exposures. The allocation also suggests that there are no major barriers to Australian institutions investing internationally. Conversely, international investments make up less than 1 per cent of assets held by Self-Managed Superannuation funds. A number of factors may contribute to the low allocation to international assets including low, but improving, access through domestic platforms, inability to access cheap currency risk management tools and a lack of understanding of international investments.[84]

The second important role that Australian fund managers play in international integration is as conduits for the flow of capital from international investors into domestic and non-domestic investments. The proportion of international capital managed by Australian fund managers has grown slowly from around 1.8 per cent in 1997 to 3.4 per cent in December 2013. While total assets under management have increased five-fold over this period, there has been a ten-fold increase in the international capital managed by Australian fund managers (Figure 36).

Figure 36 International funds managed by Australian fund managers



Source: ABS CAT 5655.0 Managed Funds

[83] Figures sourced from APRA superannuation publications.
[84] See Maddock and Munckton (2013)

According to a 2008 report by Rainmaker, 87 per cent of the international capital managed by Australian funds is invested in international investments, suggesting that Australian investment managers are chosen based on performance rather than access to or expertise in domestic investments.[85] A 2013 report on Australian managed investment trusts (MITs), the most common form of investment vehicle in Australia, identified that around two-thirds of all international investment in Australian MITs came from Asia (Table 7). Both of these factors imply that Australian fund managers are in direct competition when attracting capital from international investors with other regional centres like Singapore and Hong Kong.

Table 7 Origin of capital inflows into Australian MITs

Region	1 January 2010	31 December 2012
Asia Pacific	67.6%	66.1%
Europe	12.8%	18.1%
Middle East	5.6%	6.3%
United Kingdom	10.6%	5.9%
United States	3.0%	0.5%
Other Regions	0.3%	3.2%

Source: Financial Services Council and the Trust Company (2013)

While there has been rapid growth in the international capital managed by Australian fund managers, the proportion of international capital managed in Australia pales in comparison to Singapore (80 per cent) and Hong Kong (60 per cent). In addition to language and cultural factors, there are a number of regulatory and taxation issues that potentially inhibit the ability of Australian fund managers to attract capital from international investors. These include:

- differing regulatory requirements for funds across jurisdictions reducing the ease at which Australian investment managers can promote their services internationally. A problem solved in Europe through the creation of the UCITS framework;
- uncertain taxation arrangements for international investors that invest through structures other than an MIT; and
- a higher rate of withholding tax (15 per cent) on international investments made through MITs relative to other forms of investment.

The importance of standardised taxation, terminology and cross jurisdictional regulatory requirements when exporting financial services is highlighted in the following case study.

Box 3: Exporting financial services: Foreign Annuity Sales

In the most recent two financial years, 2013 and 2014, Australian life offices have made annuity sales to non-residents with an average total value exceeding $250 million per annum. These sales are made to residents of more than 30 countries across Asia, Europe, the Americas and the Pacific. Four Asian countries have each accounted for a significant proportion (more than 5%) of these sales in each of the last two years.

[85] Rainmaker (2008)

Country	2012/13 % of non-resident sales by value	2013/14 % of non-resident sales by value
Taiwan	47	45
Japan	28	22
Malaysia	10	7
Singapore	3	6

These products are Australian denominated short term fixed rate annuities with a tenor typically of one or two years. The buyers are seeking an attractive rate and the security of a life office guarantee. These annuities are issued based on information received in Australia and applications are signed in Australia.

Critical to almost all of these sales is the existence of DTAs (Double Tax Agreements) between Australia and the countries where these annuity buyers reside. Australia currently has 46 DTAs which cover annuities. The overwhelming majority of these DTAs use a standard definition of an annuity:

"Pensions (including government pensions) and annuities paid to a resident of a Contracting State shall be taxable only in that State."

"The term "annuity" means a stated sum payable periodically at stated times during life or during a specified or ascertainable period of time under an obligation to make the payments in return for adequate and full consideration in money or money's worth."

This wording is clear, unambiguous and facilitates the sale of annuities from Australia offshore. Deviations from this drafting, such as in Australia's Canadian DTA and the recently renegotiated New Zealand DTA, can create unnecessary ambiguity and deter offshore investment into these products.

There are highly prospective Asian markets where Australia either has a DTA which does not cover annuities (China), or does not have a DTA (Hong Kong and Macau). DTA coverage of annuities for these jurisdictions will be critical to develop these markets when forthcoming trade negotiations provide better access for Australian financial services companies to retail investors in these markets.

As noted throughout this report, over the coming decades the successful management of capital flows into international investments will become an increasingly important aspect of Australia's financial system. Increased capital flows into Australian investment vehicles have the potential to increase the economies of scale realized by Australian fund managers, provide further incentives for Australian investment managers to provide world class investment services and increase the potential pool of capital available to Australian investments. The Johnson Report (2009) laid out a number of solutions to the barriers listed above many of which have not been implemented. In particular the Asia Region Funds Passport (ARFP) which establishes a multilaterally agreed framework to allow the cross-border marketing of funds amongst member countries has much merit.

The potential benefits of increased international flows into Australian investment managers suggest that the implementation of the ARFP would be advantageous to the export of financial services.

5 Conclusions and Recommendations

From the foregoing analysis there would appear to be a number of issues of concern within Australian financial markets which could potentially impair the efficiency of cross border capital flows. These include:

1. The equities market and issues of location
2. A deep and liquid corporate bond market
3. Technological development in Australian financial markets
4. Co-ordination of regulatory bodies overseeing financial markets

1. The equities market and issues of location

One major outcome of technological developments in finance has been that the relationship between the location of financial markets and FMIs providers is changing. The World Bank notes that "recent research on stock market development shows that modern communications technology and increased financial integration have resulted in more cross-border capital flows, a stronger presence of financial firms around the world, and the migration of stock exchange activities to international exchanges"[86].

The issue of location is more important in capital markets engaged in the issuance of primary and secondary securities, that is equity and debt markets where the level of capital raising can impact directly on productivity and economic growth. While capital markets facilitate the flow of funds internationally, they present a potential for systemic risk as an important part of domestic market infrastructure, and so need to be sufficiently resilient to withstand external shocks. Consequently there is a clear need to balance financial integration and the need for international market access, with appropriate measures to ensure financial stability.

As the key trading, clearing and settlement body for Australian equities, the ASX has a challenging dual role as a critical part of national infrastructure, and also as a publicly listed company. In the manner of regional exchanges the ASX benefits from some elements of natural monopoly, yet at the same time is constrained by government regulation "in the national interest". With increased globalization of technology platforms for information, trading and clearing, there is strong competition from global FMI providers to compete and offer services through local exchanges. While competition has been introduced to trading through the licensing of the Chi-X, with apparent benefits for efficiency, ASX remains the sole provider of clearing and settlement services in both equity, and exchange-traded fixed interest and derivative markets.

The potential for greater efficiencies and reduced costs through competition in clearing has been examined at some length by the responsible bodies, RBA, ASIC, APRA, and Treasury. In 2012 the Council of Financial Regulators (CFR) announced that, in relation to the equities market, any decision on licensing of any new CCP should be deferred for 2 years, that the industry should develop a Code of Practice in relation to clearing and settlement, and that a review should assess adherence to this

[86] ASIC (2013)

code of conduct by participants and the ASX. In response to these recommendations the ASX established the Code of Practice and Stakeholder forum.[87]

The two-year moratorium period for applications from new CCP licensees has now expired, and conditions for the licensing of new CCPs within Australian equity markets are outlined in a 2014 CFR report on the *Application of the Regulatory Framework for Cross-Border Central Clearing Counterparties*[88]. Requirements for potential licensees include not only compliance with legal requirements such as the Corporations Law, compatibility with the RBA's Financial Stability standards, and for systemically important CCPs, an Exchange Settlement Account with the RBA, but also strong domestic connections into the market with controls on offshore outsourcing, systems, data and staff.

In its submission to the Financial Sector Inquiry, ASX has proposed that some location restrictions be retained in the Australian market, on the basis of potential systemic risk of opening up the domestic market to international players. While it is conceded that too many players in a market can lead to fragmentation and a sub-optimal outcome, the demonstrated benefits of competition such as the reduction in trading costs through the entrance of Chi-X to trading in Australia, and the 73 per cent reduction in clearing costs achieved in Europe, suggest that competition in clearing warrants consideration in the Australian equities market. This now appears to be more feasible given harmonised international standards for CCPs, Australian standards and measures to oversee systemic risk issues.

Increased competition in existing ASX markets however, has a corollary in the need to review the 15 per cent ownership limit applied to the ASX. At present this limit, which is intended to provide the government with control over systemically important infrastructure, limits the ASX's ability to compete internationally. Given the implementation and harmonisation of internationally agreed controls on systemic risk, the need for exchanges to access greater economies of scale, and the fact that there are no ownership requirements for any of the overseas operators that are licensed in Australia, this restriction should be reviewed.

2. The need for a deeper corporate bond market

Another issue directly bearing on location is our current reliance on international debt funding to the corporate sector, and the consequent need to develop a liquid and resilient bond market in Australia. The dangers of over-reliance on offshore funding for any particular sector, was highlighted by a 2006 IMF Report,[89] which drew attention to the Australian banking systems' reliance on offshore wholesale funding, noting that it made the Australian financial system vulnerable to catastrophic events in the global financial system. That indeed proved to be the case, and while Australia came through the financial crisis relatively unscathed, the impact on international flows into Australian banks, and sharp reduction in international investment in Australian securitized assets were severe.

[87] http://www.asx.com.au/cs/code-practice.htm and http://www.asx.com.au/cs/forum.htm
[88] Council of Financial Regulators (2014)
[89] IMF (2006)

Since the crisis banks have increasingly drawn their capital from the retail deposit market and through the issuance of debt onshore, however, reliance on such funding has increased very strongly in the non-financial corporate sector. The current shape of the market suggests that all is not well, in that:

- only one per cent of issued bonds in the Australian market is held by households;
- less than one percent of Australian fixed interest securities are listed on the exchange; and
- 90 per cent of Australian non-financial corporate bonds are held by non-residents.

Opening up the fixed interest securities market to the retail sector have already been undertaken, in that the retail market has been operating for the purchase of CHESS Depository Interest (CDIs) in Australian Government Bonds (AGBs) since May 2013. Retail access to the fixed interest market has required planning and forethought with respect to the trading infrastructure, the legislation governing the offer of debt securities and the fees and charges for listed debt issuance. In the case of corporate bonds the process is yet to be completed. The success of this innovation will depend on completion of the legislative process to pass the *Corporations Amendment (Simple Corporate Bonds and Other Measures) Bill* later this year, and interest from both corporates in issuing into the retail market, and most of all, in winning the interest of householders and SMSF trustees in this investment option.

The development of the retail corporate bond market is particularly significant for corporates looking to raise long-term funding for infrastructure projects from retail and SMSF investors. It may also play an important role in the development of an annuities market in Australia. Should the addition of retail investors contribute to a listed market which is more liquid and diversified, good quality, long-term, higher yielding bonds would be of great interest to those offering products addressing longevity risk.

A more challenging issue, however, is in encouraging the corporate sector to want to participate in a listed market. While the passage of *the Simple Corporations and Other Measures Bill* will greatly simplify issuance, there are a number of barriers in this regard. First, in a market where corporates have long relied on bank debt there is a reluctance to obtain the necessary risk rating to participate in such a market. Given that more than 70 per cent of the companies in ASX 200 do not have a risk rating this lack of a risk rating is not confined to small companies. Second, issuance of bank debt is by far the largest proportion of listed corporate bonds, this may well have a crowding out effect on non-financial corporations.

Nevertheless, despite the many issues that have been canvassed on this point, the fact remains that developing a more resilient domestic debt market is an evident need in terms of protecting the economy from the same kind of exposure to international events previously experienced in the bank wholesale funding market.

3. Technological development in Australian financial markets

Technological developments that have enabled FMI platforms for information, trading, clearing and settlement have unlocked economies of scale that drive down costs within financial markets, presenting a significant challenge for domestic FMIs and regulators. Technology has also introduced some challenges for surveillance through HFT and dark pools, and the international competitiveness of systems designed for an essentially domestic client group.

For trade in financial instruments, global platforms have created liquid and efficient information and trading platforms that have enhanced the efficiency of trading, reduced information asymmetry and led to a convergence between OTC and listed markets.

Internationally competitive systems: Another challenge for domestic FMIs is in the international competitiveness of systems designed for a domestic market and the need to integrate with international participants and markets. For example, as outlined in section 3, settlements in ASX listed equities are conducted through CHESS batch settlement, or Delivery-versus-Payment Model 3 (DvP3), which combines all securities and funds transactions into a batch and settles on a net basis. Internationally, the move has been toward DvP1, which settles securities and funds transactions on a transaction-by-transaction. DvP1 is considered superior to DvP3 from the point of view of time efficiency, especially where transactions take place across time zones, and also from a stability perspective as it reduces the risk of delay that can be caused by one participant failing to meet their requirements.[90] The DvP 3 model does however have advantages in regards to the netting of exposures and the subsequent cost reductions that result form this. The potential for delays in settlement however have implications for reducing settlement times in listed equities. ASX is currently examining how the Australian market can reduce the standard equity market settlement cycle from three days (T+3) to two days (T+2). ASX aims for T+2 settlements of equities by first quarter 2006, in line with other exchanges such as in Europe, where T+2 will be implemented by October 2014.

Shortening the settlement cycle by one business day is expected to deliver broad-based benefits by reducing counterparty risk for individual investors, participants and the central counterparty, and hence reducing systemic risk for the market as a whole. Potential capital and margin savings for participants are also considerable. For example, ASX has estimated that had the T+2 settlement cycle been in place from June 2012 to December 2013, daily cash market margins for the total market would generally have been 20-30 per cent lower, producing an estimated reduction of $30-$40 million in total margin payments with a consequent saving in funding costs for the industry. On a daily basis, individual clearing participant margin changes vary widely from relatively small increases on some occasions to reductions of over 10 million for some larger clearing participants. In over 90 per cent of cases, participants' daily cash market margins were reduced. Participants, especially those clearing institutional business, could expect a reduction in their liquid capital requirements, in so far as they relate to cash equities, of between 10 to 20 per cent. It is estimated that the total

[90] RBA (2008)

liquid capital requirement for the industry as a whole could potentially be reduced by between $60 million and $120 million[91].

Hence the argument to move to T+2 is well made, however, a major issue is the current DvP3 model. When the time to settlement is compressed by 24 hours, there are issues in transacting through CHESS, which was designed to serve the domestic market. Instructions issued to international investors through CHESS are received almost a day later, whereas when sent through SWIFT they are received almost immediately. Plans are already underway at the ASX for the renewal of CHESS to accommodate the T+2 system and a greater global focus.

Electronic trading: Developments in electronic trading venues have led to convergence between opaque OTC markets and the more transparent liquid listed markets. Electronic trading venues like Yieldbroker, EBS and Reuters dealing have played a key role in reducing transaction costs, increasing the number of participants with direct access and providing transparency in these markets. The increasing role of these platforms and direct access they provide to international markets have implications for the role of traditional Australian financial intermediaries in financial markets.

Increased speed of electronic trading and the increased popularity of alternative trading venues have raised concerns about the potential impact of dark liquidity and HFT on the quality of the market for capital raising and long term investment, in terms of market manipulation and fairness, which can impact adversely on a firm's ability to raise capital, or an investor's confidence in their ability to trade securities.

In 2013 ASIC released Report 331 on *Dark liquidity and high-frequency trading* and proposals for increased regulation of same in Consultation Paper 202. While the Report found evidence of fairly widespread use of algorithmic trading across the equity market, HFT was less prevalent. It appears that HFT turnover accounts for around 22 per cent of equity market turnover compared to more than 50 per cent in the US and 35 per cent in the UK. Furthermore, order-to-trade ratios moderate at 4:1, compared with an international market average of approximately 10:1, but the average holding time was 42 minutes, not seconds.[92]

A number of initiatives have contributed the relatively low prevalence of HFT. A key indicator of the presence of HFT lies in the ratio of orders per trade. In the US market where HFT is highest, the number of orders per trade was found to be greater than 30:1 in 2012. In January 2012, to comply with the government cost recovery policy, ASIC imposed a tax on the number of trades and messages submitted by market participants. Prior to this event the orders per trade ratio in the Australian equity market was 7:1, a year later it had fallen to 4:1.

ASIC has also recently taken measures to counter concerns regarding a loss of liquidity in markets through the use of 'dark pools', that is the trend for smaller trades to be routed to dark markets to seek a higher return, at the possible cost of higher spreads and a loss of transparency to the trader. This price improvement rule, implemented in May 2013, is in line with rules introduced to constrain dark trading by the Canadian Securities Administrators and IIROC, wherein dark orders must give

[91] ASX (2014)
[92] ASIC (2013)

priority to displayed orders on the same venue, and dark trades for 5,000 shares or less must provide at least a one tick price improvement over the current trading price.

Studies undertaken by the CRC Capital Markets suggest that these measures reducing HFT and activity in dark pools have had a positive impact on the market by improving efficiency and having no adverse effect on fairness.[93]

4. Co-ordination of regulatory bodies overseeing financial markets

Regulation of financial markets has become increasingly complex since the GFC. The extent of widespread international regulation has been unprecedented since the reforms that followed World War II and the Depression, establishing the World Bank, the IMF and the GATT (General Agreement on Tariffs and Trade), forerunner to the WTO (World Trade Organisation).

Following the near insolvency of AIG in 2008, and the subsequent series of events that resulted in the global financial crisis, it was clear the damaging impact of financial contagion demanded a coordinated international response. At the G20 Pittsburgh summit in September 2009, there was a commitment from the G20 leaders to establish the Financial Stability Board (FSB), based on its predecessor the Financial Stability Forum, to coordinate the international level the work of national financial authorities and international standard setting bodies and for developing and promoting the implementation of effective regulatory, supervisory and other financial sector policies.

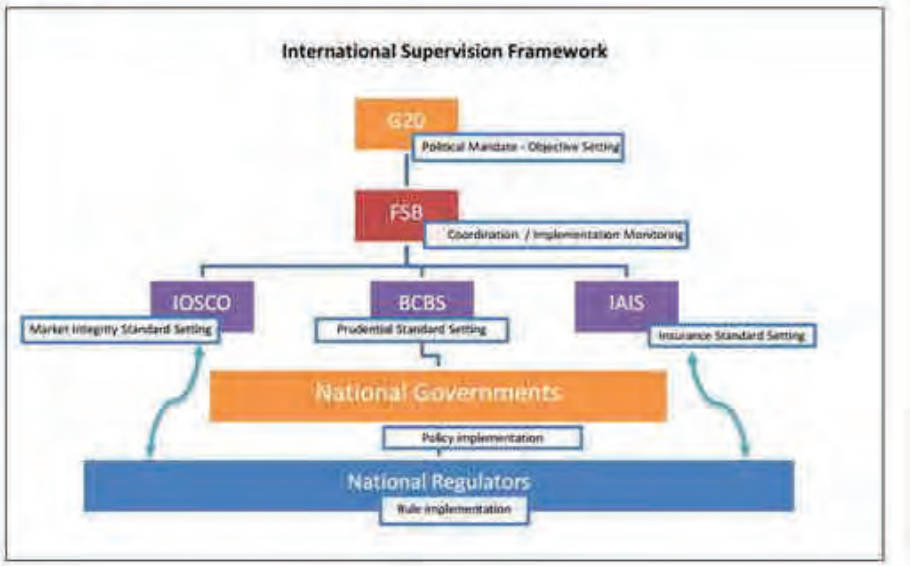
At the heart of this international cooperation is a set of principles from the International Council of Securities Associations (ICSA) to promote better and more appropriate regulation. The Principles broadly state:

- *There should only be regulation where there is a significant market failure which is not addressed by existing regulations and that is unlikely to be resolved by market forces.*
- *Regulation should only proceed where it satisfies a cost benefit analysis that considers the full range of options including no action, the stimulation of competition, self-regulation and joint initiatives including improved guidance.*
- *Regulations should be targeted, proportionate and risk based. They should be framed in terms of principles rather than hard-wired and should stimulate and not restrict competition.*
- *There should be good consultation before implementation, review after implementation, sunset clauses where arrangements are expedited and coordination where there is jurisdictional overlap.*

As a consequence, an international framework has been established to develop and promulgate regulatory reform, headed by the G20 leaders who have the political mandate to set objectives, which are then coordination, implementation and monitoring by the Financial Stability Board, as outlined in Figure 37.

[93] See: CRC Capital Markets "The Impact of Minimum Price improvement Rule on Dark Pools", May 2014 and CRC Capital Markets "Introduction of Messaging Tax in Australia", May 2014.

Figure 37 International regulatory framework



Source: AFMA, 2014

Starting at the political level, objectives are established, passed to Matters are then passed to the three function-based international bodies. National regulators are involved in developing policy through three functional bodies, IOSCO (International Organisation of Securities Commissions), BCSBS (Basel Committee on Banking Supervision), or IAIS (International Association of Insurance Supervisors), with outcomes passing through the Parliament and then move to the regulators for implementation.

Within the Australian financial system, there have been a series of reforms which have emanated through this process that have impacted on the financial markets and institutions that have been discussed in this report including:

- Regulation of OTC derivatives
- Responsibility for surveillance and market conduct of ASX transferred to ASIC;
- CCP legislation agreed on an international basis;
- RBA charged with responsibility for monitoring systemic risk in financial markets;
- Mandated reporting of OTC derivative transactions; and
- The ASX Code of Practice and User Group.

These initiatives have required an unprecedented need for collaboration and cooperation across financial system regulators in Australia, and in some cases, have blurred the role between policy making and regulatory implementation. These activities are often coordinated through the Council for Financial Regulation (CFR), which provides an existing forum for cooperation in financial sector regulation across the Treasury, the RBA, ASIC and APRA, bringing the relevant parts of government together. The very high degree of agency cooperation required on issues such as competition in clearing, have led to close co-operation between these agencies, and with infrastructure providers

such as the ASX. Given the complexity of issues being addressed, there is a good case to formalize and better resource CFR as a vital part of our regulatory framework.[94]

5. Export of financial services

Throughout this discussion the role of banks and institutional fund managers has been evident in their facilitation of international flows. Our current regulatory structures however pose a number of impediments to further developing the export market for financial services.

Banks: Since the GFC the engagement of banks in international markets has changed. Reliance on wholesale international funding has reduced as banks have increased their reliance on retail deposits, and slowed credit growth. The banks have, however, been very active in facilitating debt issue for corporates in offshore markets. Australian banks are the lead book runners for debt issues into domestic markets, while international banks assume this role for more than 80 per cent of debt issues made by Australian corporates into international markets.

The stability of Australian banks in the financial system has been a major strength of the Australian economy, yet International assets and deposits held by Australian banks are reasonably low, with deposits at around $120 billion or 6 per cent of all liabilities. The imposition of interest withholding taxes on the retail deposits of non-residents have potentially resulted in lower utilization of international deposits by Australian banks, not only resulting in a less diversified funding base for the banks, but also potentially increasing the costs of capital. Furthermore, the imposition of withholding taxes on non-resident deposits may impact the ability of international banks to compete in Australia, negatively impacting competition in the Australian banking sector.

The need therefore to remove withholding tax on non-resident deposits, as recommended by both the Johnson Report (2009) and the Henry Tax Review (2010) has merit.

Funds management: Australian fund managers play an important role in international integration and as conduits for the flow of capital from international investors into domestic and non-domestic investments. The proportion of international capital managed by Australian fund managers has increased slowly. While total assets under management have increased five-fold since the Wallis Inquiry was undertaken, there has been a ten-fold increase in the international capital managed by Australian fund managers this is still less than five per cent of all funds under management. Even allowing for the burgeoning size of the funds market in Australia, this level of international funds under the management of Australian firms at 3.4 per cent of total funds, pales in comparison to the 80 per cent held in Singapore and60 per cent in Hong Kong.

Financial services are one of the great strengths of the Australian economy, yet our export market is sadly lacking. It would appear that impediments to the growth of this market lie in facilitating access to markets, especially around the Asian region, where differences and duplication in regulatory requirements across countries can create difficulties for financial services firms selling their products across borders. Mutual recognition between jurisdictions has been the primary vehicle for widening market access for Australian fund managers and generally reducing trade barriers. The Asia Region Funds Passport (AERFP), recommended by the Johnson Review, however goes further, by

[94] Erskine (2014)

establishing a series of bilateral mutual recognition treaties, thereby providing a multilaterally agreed framework allowing the cross-border marketing of funds amongst member countries.

The Asia Region Funds Passport would appear to have much merit in promoting the export of Australian financial services.

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Funding Australia's Future

The Australian Centre for Financial Studies (ACFS) instigated the project Funding Australia's Future in late 2012 to undertake a stocktake of the Australian financial system, and its role in facilitating economic growth within the wider economy.

In an economy which has enjoyed 21 years of consecutive economic growth and shown a resilience through the Global Financial Crisis (GFC) which is the envy of many nations, the financial sector has played a strong and pivotal role. The past decade, however, has been one of significant change. The impact of the GFC and the subsequent wave of global re-regulation have had a profound effect on patterns of financing, financial sector structure, and attitudes towards financial sector regulation. Identifying the extent to which these changes are transitory or likely to be more permanent is crucial to understanding how financing patterns and the financial sector will develop over the next decade or so.

Stage Two of Funding Australia's Future drills down into the key issues identified in Stage 1 of the project culminating in a set of recommendations aimed at placing Australia's financial system in a position to best meet the challenges presented by a rapidly changing and increasingly globalised economy.

In undertaking this analysis, ACFS has worked with a group of financial sector stakeholders, including the Australian Bankers Association (ABA), the Australian Finance Conference (AFC), the Australian Financial Markets Association (AFMA), the Association of Superannuation Funds of Australia (ASFA), the Australian Securitisation Forum (ASF), the Australian Securities Exchange (ASX), Challenger Limited, the Customer Owned Banking Association (COBA), the Financial Services Council (FSC), the Financial Services Institute of Australasia (Finsia) the Insurance Council of Australia (ICA), KPMG, National Australia Bank (NAB), the SMSF Professionals' Association of Australia (SPAA) and Vanguard Investments, as well as Treasury and the Reserve Bank of Australia (RBA).

This paper is one of four in Stage Two, which include:

1. Financing Australian Business:
   Associate Professor Sam Wylie, Melbourne Business School and the University of Melbourne
2. Australian Household Sector Finances:
   Professor Michael E. Drew, Griffith University and Drew, Walk and Co
   Dr Adam N. Walk, Griffith University and Drew, Walk and Co
3. International Linkages: Financial Markets and Technology:
   Professor Deborah Ralston, Australian Centre for Financial Studies and Monash University
   Mr Martin Jenkinson, Australian Centre for Financial Studies
4. Regulating the Australian Financial System
   Mr Alex Erskine, Erskinomics Consulting

All Funding Australia's Future papers can be accessed through the Funding Australia's Future Website: www.fundingaustraliasfuture.com

Notes on the Author

Mr Alex Erskine: Alex Erskine is Managing Director and Founder of Erskinomics Consulting Pty Limited, focused on promoting economic and financial development, both national and international. Mr Erskine can draw on lessons from 4 decades of economic and financial cycles, reforms and crises, seen in government, in financial markets and as a regulator. Most recently he served 6 years as head of research with the Australian Securities and Investments Commission (ASIC), responsible for its economics and consumer market research team. With ASIC he helped lead some rethinking of the approach to securities regulation after the Global Financial Crisis. He started employment at the Reserve Bank of Australia in Sydney, then worked in progressively more senior roles with the Economist Intelligence Unit Limited in London, the Department of the Prime Minister and Cabinet in Canberra when the response to the Campbell Inquiry was being framed and implemented, and then Citibank (in Sydney and then Singapore) in the era of financial deregulation, before he launched Erskinomics, undertaking development assistance projects in post-Asian-crisis South East Asia. Mr Erskine was a Visiting Fellow of Macquarie University Applied Finance Centre from 1999 until 2008, teaching his course on 'the economics of financial markets' in Asian and Australian financial centres to aspiring Masters of Applied Finance. He has a BA in economics and an MA from the University of Cambridge. He has been a Fellow of the Australian Institute of Company Directors and a member of the Executive Committee of Australian Business Economists since 1999, and was President of the NSW Branch of the Economic Society of Australia in 1993–94. He is also a former Board member of Diabetes Australia NSW and Australian Diabetes Council.

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Executive Summary

Questions on the regulation of Australia's financial system remain unanswered after the Global Financial Crisis (GFC), especially relating to the boundary of prudential regulation, the balance between safety and risk and any trade-offs that may exist. The Financial System Inquiry (the Murray Inquiry) reporting this year will be making important recommendations to government on these topics.

This paper may help inform those considerations. Chapter 1 sets out some key questions on the way Australia regulates the financial sector and Chapter 2 provides some perspective on the financial system and its importance in the economy. Amongst other observations it finds an absence of a trade-off between competition and efficiency on the one hand and stability on the other. It also finds a disappointing short-termism in the financial system, which regulation may have contributed to. Chapter 3 then reviews the philosophies that have underpinned Australia's approach to financial sector regulation in light of the GFC and the challenges and uncertainties that lie ahead. Its main focus is the implications of ever-present threats to financial stability, the need to recognise the threat this poses to taxpayers and the need to contain that risk. Amongst other improvements, changes are put forward that might encourage the availability of longer-term investment capital. Finally Chapter 4 canvasses proposals to add macroprudential policy to the set of regulatory tools available and to reform the regulatory architecture so that regulatory agencies have clear objectives, effective tools and can be held to account.

The 'efficient markets' regulatory philosophy that was the centrepiece of the Wallis/Costello approach to regulation of the Australian financial system failed in the GFC. The philosophy had depended on banks and their investors fearing they can go bust and consumers fearing they will lose their deposits, creating sufficient incentives to manage their risks and in doing so, aided by prudential regulation, perpetually nudging the financial system towards equilibrium even while permitting individual failures. This unreality was made obvious in the systemic financial shock of the GFC. In Australia every prudentially regulated entity became too-big-to-fail, key borrowings were guaranteed by government, and deposits are now largely insured through the Financial Claims Scheme (FCS), all in contradiction to the Wallis Inquiry intellectual underpinnings.

The GFC showed beyond doubt a determination from governments, including the Australian government, to limit through policies and regulations the risk and damage of systemic crises. In doing so, taxpayers were put at great risk, though fortunately in Australia the cost of support measures remained contingent and were not drawn on. It is time now to recognise the reality of this support and to devise a regulatory system that limits the risk to taxpayers in future crises. Financial system regulation, especially prudential and macroprudential, needs to be reassessed in this 'systemic stability' light, and the risk to taxpayers appropriately managed.

Nevertheless the most basic premises of 'efficient markets' philosophy, that no one knows the future and that market-based adaption is the least costly and quickest means of adjusting to changing expectations, are more clearly correct than ever. Though there is greater awareness of behavioural and psychological biases and of procyclicality in finance, there is no comprehensive alternative philosophy on which to base Australia's approach to regulation.

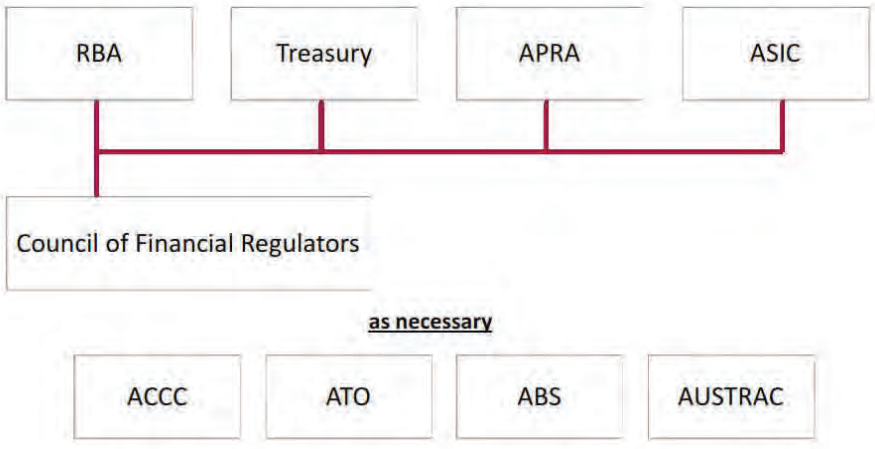
What has fundamentally changed is our understanding that the financial system is (and was) more complex and interconnected than envisaged, the systemic shocks more severe and potentially frequent and the public's expectation of stability more acute. Other countries, hit harder in the GFC, have had to make much more massive regulatory reforms. Australia by comparison needs a relatively modest rearrangement of what has been overall a successful approach to regulating the financial system and a renewed determination to protect taxpayers from the safety net created to support prudentially regulated financial activities.

The Tinbergen Principle, that the number of achievable policy goals cannot exceed the number of available policy instruments, has led to many practical rules including that, if you want something done, you give it to an agency that has it as its sole mission. Wallis got this uniquely right, separating bank regulation out of the central bank, the Reserve Bank of Australia (RBA), grouping all prudential regulation into a prudential regulator, the Australian Prudential Regulation Authority (APRA), and at that time correctly entrusting all market conduct regulation to what became the Australian Securities and Investments Commission (ASIC). The world has been envious of these 'twin peaks'. But Australia's financing is now more complex, systemic risks are ever-present, regulatory gaps are emerging and the status quo increases risk of the next crisis. This creates important issues for the Murray Inquiry.

Where Wallis failed was in not sufficiently recognising the wisdom of Hyman Minsky's 'financial instability hypothesis', which identified the systemic proclivity of financial crisis. Once financiers (let alone the public) come to believe that stability lies ahead, they gear up speculatively and inexorably bring on instability. Australia's regulatory focus on instability is informal and unaccountable: this needs to be improved, or Australia risks being taken unawares.

The main change proposed in this paper is an elevation of the role and responsibilities of the Council of Financial Regulators (CFR). This Wallis inspiration relies on clubby cooperation, is not necessarily proactive and is unaccountable. It has worked well so far, but the future is likely to be more testing.

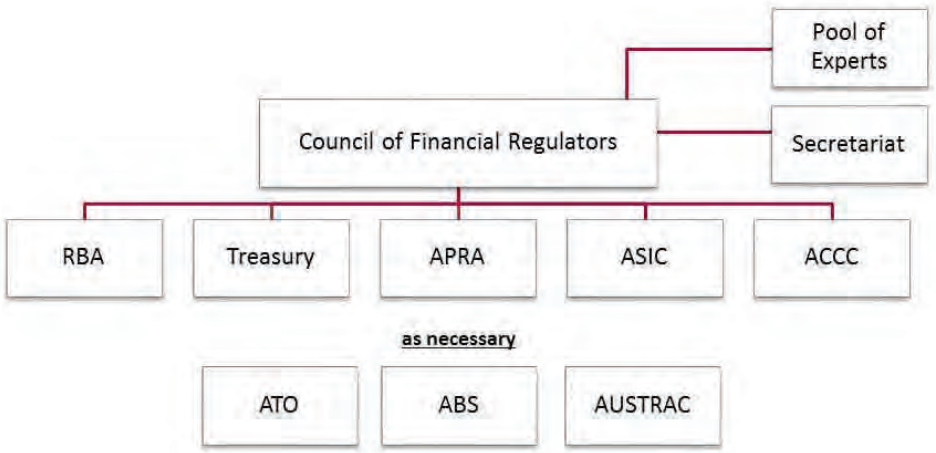
Figure 1 Current Australian financial system regulatory architecture



Recreated as a statutory body with an independent non-executive Chair, publishing an agenda and minutes for regular meetings and accountable half-yearly to parliament, the CFR should have two roles, one to oversee the effectiveness of regulation, and the other to be perpetually paranoid about

systemic financial instability and make decisions on the conduct of macroprudential policy. The Council could contract the RBA and other regulatory agencies as appropriate to implement its macroprudential policy decisions, resolving the confusion between the RBA and APRA over macroprudential policy.

Figure 2 Proposed Australian financial system regulatory architecture



Turning to the regulators themselves, there are some consequential changes proposed if the CFR takes ultimate responsibility for financial stability and macroprudential policy, and there are other changes proposed because the present regulatory structure either is failing or is unlikely to cope with the pressures of the future.

The Reserve Bank of Australia. The RBA currently has three objectives, financial stability, low inflation and an effective payments system but only two tools, monetary policy and payments system supervision/regulation. Its financial stability and inflation goals already clash: surges in housing lending and house prices have taken monetary policy hostage. Shifting the RBA's responsibility for financial stability to the CFR and the CFR determining macroprudential policy actions on a pre-emptive basis will allow monetary policy to focus on inflation.

The Australian Prudential Regulation Authority. APRA has almost the right prudential regulatory boundary (Approved Deposit Institutions (ADIs), most insurers and large superannuation funds) but needs to have a mandate of protecting Australia's taxpayers from risk of bail-outs made explicitly part of its objectives. It should be required to prepare a risk appetite statement, agreed with the government, and set capital and liquidity standards for prudentially-regulated institutions to protect taxpayers from all except a periodic 'unavoidable' financial crisis (the probability frequency can be pre-set – it could be as frequently as once every twenty years with relatively low capital and other requirements or as infrequent as once in a hundred years with relatively higher requirements). To clarify its role and responsibilities, APRA's competition mandate, which it has largely overlooked, should be transferred to the Australian Competition and Consumer Commission (ACCC).

The Australian Securities and Investments Commission. ASIC is the predictable failure of the Tinbergen Principle, with confused legislation giving it six objectives and often inadequate instruments, and since then its responsibilities have only grown. Systemic risks and globalization

mean more emphasis should be put on market integrity. There is focus already on taking away ASIC's registry operations: the National Commission of Audit (NCOA) suggested its transfer to the Australian Taxation Office (ATO) and the Budget is funding a scoping study for its possible privatisation. ASIC's several other functions, including licensing, market integrity and surveillance, consumer protection and financial literacy, also need review. To enable ASIC to focus, competition and consumer responsibilities should be transferred to the ACCC, where they fit. This would leave ASIC with one objective, market integrity, and it can be equipped with effective data, analysis, policy and regulatory tools. Funding for market integrity regulation should remain with taxpayers to limit risk of regulatory capture.

The Australian Competition and Consumer Commission. The competition regulator, the ACCC, has been almost irrelevant within the finance sector, undermined by the government's four pillars policy and swept aside in the post-GFC scramble to avoid prudential failures. A vigorous competition regulator will be more important for Australia's future: key competition questions will arise from the increasing vertical integration of the dominant banks into all aspects of finance and the implications of the emerging international trend to ring-fence core banking from riskier trading businesses. The ACCC should receive the competition mandates currently held (and generally ignored) by APRA and other regulators. The ambiguity in the border between the consumer responsibilities of ACCC and ASIC can be removed by transfer to ACCC of ASIC's consumer responsibilities. Responsibilities regarding consumer financial education can be simplified by making clear that the FCS has made ADI deposits safe, and that there is a safety net for consumer exposures to prudentially regulated entities, and everything else is more complex, less safe and not as protected.

To best protect the public interest, the Murray Inquiry will have to recommend improvements beyond just the regulators. The immediate trends are not encouraging.

The devil is in the detail of regulation and in the availability of quality data. As adviser to government, Treasury will be more deficient on detail and capacity to respond quickly after the staff cuts now in train. The ATO has an objective of promoting confidence in administration of the superannuation system as well as the tax system. It has fared well as regulator of the fast-growing Self-Managed Superannuation Fund (SMSF) sector, even in face of the superannuation system's persisting complexity, but it could usefully host a superannuation funds transfer exchange. Better regulation and forward-looking actions to handle systemic shocks also depend on better data. The ABS presides over data collections on funds management and superannuation that need significant improvement.

Finally, in the quest to avoid regulatory overload, industry needs to pre-emptively identify and deal with emerging problems before they explode into divisive political issues leading to complex legislation and regulation, costly to implement and yet often ineffective in execution. Effective industry self-regulation might promote and restore bipartisanship. And parliament itself will need to divert scarce resources to more effectively hold regulators to account.

1. The main regulatory questions

1.1 Introduction – the prudential boundary and other concerns

This paper seeks to stand back and assess whether the way the financial system has been regulated in Australia is appropriate for the future and lay out the options for reform. In comparison to some other countries which had very severe outcomes in the Global Financial Crisis (GFC) and are engaged in radical reform of the regulation of their financial systems, Australia fared comparatively well, in part because of differences in financial system regulation, and reform of regulation thus far has been incremental, though no less drawn out.

Nevertheless in Australia the approach to regulation remains contentious, and there is an underlying unease that the present approaches are not the best settings for Australia's future. There is an opportunity for reform: the entire approach to financial system regulation is under review this year by the government's Financial System Inquiry chaired by David Murray (FSI 2013).

One of the key questions for the FSI is whether regulation should create a fail-safe system or a system with a balance between risk and stability and, if a balance is appropriate, how that balance might be achieved while still protecting taxpayers and keeping financial system costs down. Davis 2013 and Maddock and Munckton 2013 both saw the persistent demand from the public and government for financial system stability as potentially having an adverse impact on the prospects for funding Australia's future, and posing a set of as yet unanswered regulatory dilemmas.

"The emergence of an international financial regulatory agenda emanating from the G20 and international organizations such as the BIS, Basel Committee, IOSCO, FSB, and the IMF" led Davis 2013 to foresee an "increase [in] the cost of intermediation relative to capital market funding" and "a likely increase in activity outside the prudentially regulated sector – including capital market innovations".

Finding the most significant features of Australian financing arrangements being issues of prudential regulation (relatively few significant sized financial institutions are outside the [prudential] regulatory perimeter and [prudentially-regulated] banks and superannuation funds dominate the financial sector in scale), Davis recommended that "identifying the appropriate perimeter of prudential regulation and designing appropriate investor protection arrangements outside of this perimeter remains a major issue".[1]

Davis also drew attention to segments outside that perimeter: "SMSFs are a rapidly growing savings/investment vehicle outside the prudential perimeter, while managed fund and direct investments in equities and debt instruments also escape prudential regulation".

He conjectured:

> "This raises the question of investor protection in the non-prudentially regulated sector and in terms of arrangements for direct issues of securities by firms to investors. Both disclosure issues and issuance requirements are important in this regard. We have seen both attempts at reducing costly disclosure requirements and ability of companies to have more discretion in issuance

[1] Recommendation 8 in Davis 2013.

arrangements (such as placements) which reduce the transaction costs of issuance, but create greater risks for investors. The net effect on the availability and cost of such finance is thus unclear.

… There may be valid arguments, on the grounds of encouraging a greater degree of appropriate risk taking from an economic perspective, for a smaller proportion of financial sector activities being undertaken within the prudential net and more outside.

But to achieve such an outcome involves two substantive problems. One is that it may require some structural separation of some prudentially regulated institutions – in particular banks. Developments overseas, such as proposals for "ring fencing" of retail banking in the UK and Europe, and the Volker rule in the USA Dodd Franks Act, appear to be heading in this direction. …. The second problem is that while the concept of a significant, nonprudentially regulated, financial sector facilitating risk taking and investment is economically appealing, there is little evidence that participation in such a sector would involve only those who are able to appropriately assess, manage, and bear the risks involved. With an increasing amount of household wealth being accrued in SMSFs, this is an increasingly important concern. Policies focused upon disclosure, education, and advice as the pillars for reconciling freedom of choice and investor (and borrower) protection have had limited success.

Appropriately delineating the prudentially regulated sector and politically and socially managing the consequences of risk taking outside of that sector remain major unsolved regulatory and political challenges."

Maddock and Munckton 2013 also reflected on the regulatory dilemma:

"Regulators face a difficult transition. The current approach has been to define key institutions, like banks and other aspects of the financial system (including payments), and to regulate them more tightly. This creates a natural tendency for more risk to be taken outside the regulated boundaries. It will be difficult to graduate regulation from the core to the periphery of the system."

These are dilemmas being faced around the world. World Bank 2013 says somewhat optimistically:

"The global financial crisis has also triggered a healthy policy debate on approaches to regulation and supervision. This ongoing debate among regulators, policy makers, and academics has led to multiple reform proposals, highlighting the diversity of views. This is likely to inform the regulatory reform process and improve future outcomes."

There is a vast array of related questions pertaining to Australia, some of which the paper will seek to respond to:

- Some ask, in light of the experience in the GFC, why there have been any heightened standards imposed in Australia. Seeing more onerous regulation as negatively impacting on Australia's future through raising the cost of finance and impeding competition and efficiency, they ask if regulation has overreached, and seek to wind back the coverage and extent of prudential regulation. Some ask if the financial system would operate better for Australia's future if there were more self-regulation rather than regulation imposed by agencies of government.
- Some question whether Australian regulations should continue to harmonise with the crisis-driven US and European repairs or whether they should be oriented more at ensuring

compatibility with regulation in emerging Asia, to facilitate participating in the flow of funds within the region on which Australia's future increasingly depends. Those favouring the latter may well also be concerned by the extraterritorial reach of steps in prospect in the US and some of Europe to 'ring fence' core banking activities.

- Others, observing a regulatory tendency to provide increasing protection to consumers of financial services, ask what has happened to the concept of caveat emptor. They, or yet others, regret what they see as a tendency for regulators, rather than legislators, to make the case for new regulations and restrictions without appropriate democratic authority.

The questions reflect significant uncertainty and an unhappiness with the lack of coherence in the narrative describing financial system regulation in Australia. This paper is an attempt to resolve some of the uncertainty and to provide some of the missing coherence.

Making the case for change in Australia is hard, because on the surface there is little that is demonstrably broken, but it is no less important for the future. What Reinhart and Rogoff 2009 said to their readers is particularly apt now in an Australia that easily lapses in to complacency: we all too readily believe "this-time-is-different", "financial crises are things that happen to other people in other countries at other times; crises do not happen to us, here and now. We are doing things better, we are smarter, we have learned from past mistakes." Instead we should reflect on James Maddison's wisdom: "If men were angels, no government would be necessary". As we all know, financiers and regulators are not angels.

1.2 Aims and shortcomings

This paper seeks to give a high level view on these issues and on how regulation of Australia's financial system might be improved, highlighting some important changes in the regulatory architecture and approach.

Regulation itself is inherently detailed. The paper is not a comprehensive catalogue of the regulatory changes that would help remove often unintended barriers to most effectively funding Australia's future.

It is also not an attempt to provide the sort of 'holistic view of how the Australian and global financial system is being transformed by' … 'implementation of the vast regulatory reform agenda', as sought by Debelle 2013. There are too many reforms yet to be settled, let alone implemented. But this is a dangerous circularity in this: the IMF suggests "reaching a better understanding of the implications of these reforms for financial services and their impact on different economies is key to the completion of the reform agenda" (IMF 2014). At some point, Debelle's request does need to be addressed.

Chapter 2 sets out some context, highlighting some often overlooked features of Australia's financial system; Chapter 3 then addresses the theories underpinning the regulatory philosophy that has prevailed from the 1997-98 Wallis Inquiry until now, reviewing the extent they have been undermined by the GFC, as well as other specific regulatory questions, including those pertaining to the prudential regulatory perimeter; and Chapter 4 outlines some proposals for reform of the regulatory architecture and the roles of the regulators.

2. The financial system funding Australia's future

This chapter addresses the unique characteristics of Australia's financial system, which often differ from common perceptions, to help inform the key regulatory questions to be addressed in later chapters.

Australia's financial system stands out as a large, stable, highly profitable, hybrid financial system that is neither the most nor the least efficient and competitive of a same reference group of countries. One of its worst tendencies is its short-termism.

2.1 Funding and stability of services – what the economy needs

Financial systems are engaged in provision of several services, though funding is perhaps the most indispensable. The full range of functions include:

- funding consumption and fixed capital spending through:
    - 'classic intermediation' (where the financier and its shareholders take the credit and other risk exposures, limiting their own debt funders' exposure to those risks); and
    - market-based funding (in which usually the intermediary – in effect an agent – has little credit or other risk 'skin in the game' but generally on-sells all or most of those risks to investors in securities);
- investing and managing residents' money (asset and liability management, acting as agents and advisers), which involves placing funds in both debt and equity and all hybrids in between, as well as providing term and life insurance;
- providing risk management services such as general insurance and derivatives;
- operating markets that produce relative price signals important for resource allocation; and
- operating the payments system, vital economic infrastructure.

The financial system in Australia is the result of a unique process of development, as is its regulation, which has made the Australian financial system and its regulation quite different to other countries. The same is true of each of the other countries across the world, which is what makes harmonisation and the imposition of common regulatory standards a very hard task.

Regulation of the financial sector has to consider the full range of activities, not just its funding activities. Proposals for regulatory reform have to be made with care, and must be regarded as a package: a lesson repeatedly learned before and since the GFC is that altering one parameter can lead to unintended and possibly undesirable consequences.

In the post-GFC context, the official mantra is that financial sector regulation is intended to help ensure, to the extent possible, that financial services are supplied on a sustainable basis, both efficiently and fairly, but not in such a way that there are no failures.

In fact, there have been many failures amongst non-prudentially-regulated financial services participants in recent periods, not only in the GFC, some resulting from commission-driven selling and fraud and almost always from business models involving leverage and illiquid assets. None of

these failures was systemic, essentially because households *in toto* had capacity to absorb the losses; none caused the financial system (as opposed to the individual customers, management and owners of the failing entities) significant grief.

But there has not been a significant failure in the prudentially regulated space since HIH Insurance. The public and political tolerance for failure in prudentially regulated entities is very low, even non-existent.

This intolerance of failure also applies to payments system failures: the smooth conduct of business requires confidence in the secure and efficient settlement of payments. The future will be challenging but potentially very rewarding. The mooted move to implement T+2 clearing and settlement of equity transactions will reduce risks. The regulatory perimeter will have to be extended as new payment media become available. The threats to established payments systems are evident: contactless payments technologies, providers such as PayPal and mobile innovators are already inside the door, or on the doorstep. Bitcoin, amongst other innovations, has shown how technological innovation and its potential rapid consumer adoption may be transformative and disruptive. To get appropriate balance between innovation and stability, there is reason to make the introducers of new payments mechanisms carry a burden of responsibility, require rigorous pilot exercises ahead of any wider roll-out, and ensure that any true shadow banking operations are regulated as banks.

Australians have high expectations of the financial system, which helps to determine the appropriate approach to regulation and the regulatory architecture. What Australians appear to seek is a financial system that is:

- dynamic, where financiers earn reward for quality services and failures occur;
- stable, and can weather more frequent volatile financial and economic shocks, no matter the source;
- adaptable, so that new technology is adopted;
- domestically competitive, so that the gross return on risk is not disproportionately consumed by operating expenses;
- internationally competitive, so there is an array of choices when raising or investing funds at home or abroad;
- fair, so consumers have reason to trust financial service providers;
- diverse, so there are specialists as well as generalists;
- complete, so there are no market gaps such as with long-term finance and annuities;
- efficient, in the sense that prices quickly incorporate all available information; and
- efficient, in the sense that services are perceived as value for money.

2.2 The financial system rising in importance to the economy

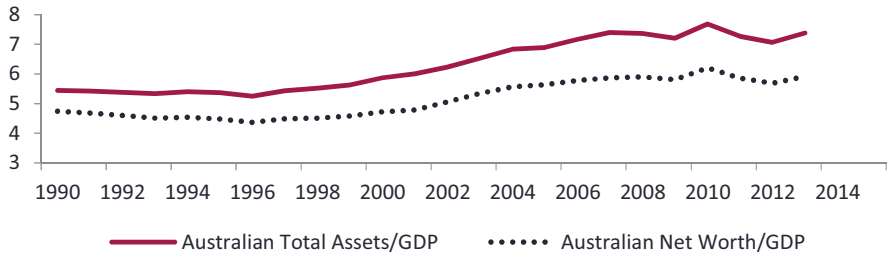
The financial system and its regulation are entwined in, and interact with, the economy. Perspective comes from 'big picture' national accounts balance sheet and income flows and their implications for the financial sector as analysed in the lifetime works of Raymond W. Goldsmith (eg Goldsmith 1985).

Following Goldsmith, Piketty 2014 recently has thrown a light on how wealth (net worth) as a multiple of annual income (GDP) has risen strongly over the decades once the destruction of the capital stock in WW2 had been paid for, and may rise further.

Bearing in mind that that wealth is a stock at a point in time and annual GDP is a flow of one year's income, a wealth to GDP multiple is very akin to a country's Price/Earnings (P/E) ratio. A higher multiple implies its reciprocal, a lower return on wealth.

ABS national balance sheet and national accounts data show Australia had recorded net worth of 7.4 times GDP by end-FY2012-13, up from 5.25 times GDP at end-FY1995-96, in line with Piketty's global observations. The setback represented by the GFC would appear to be temporary.

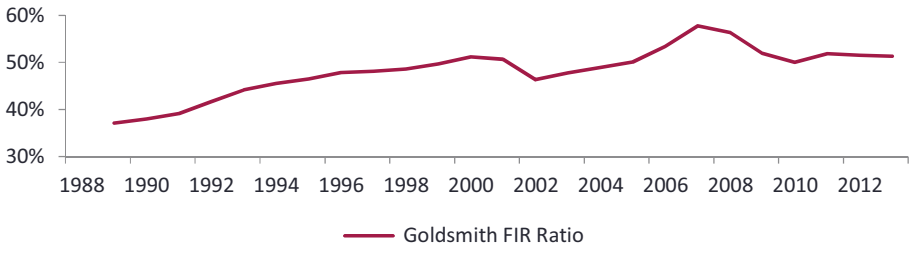
Figure 3 Australian net worth divided by GDP, percentage



Source: ABS 5204.0

In Australia, this increase in the wealth/GDP multiple is mainly the result of growth in land values/house prices above the rate of GDP growth and the rate of interest. Not surprisingly the rise in wealth has been accompanied by a rise in financial assets and liabilities. 'Financialisation' of the economy, as judged by the Goldsmith Financial Interrelations Ratio (FIR), calculated here by dividing financial liabilities (debt and equity) of the domestic non-financial sector by wealth (net worth), would still seem to be rising, notwithstanding a pause since the peak in 2007. The higher the FIR, the more financialised the economy.

Figure 4 A 'Goldsmith' financial interrelations ratio for Australia



The Financial interrelations ratio (FIR is calculated as): debt and equity outstandings of the domestic non-financial sector as a percent of net worth

Source: ABS 5232.0 and 5204.0

The FIR now stands at 51%, having risen from below 40% in the late-1980s/early-1990s to a peak of 58% in 2007. A FIR of 100% would imply every asset (or the income stream that flows from it) has been borrowed against or securitised through the financial sector. In theory almost all assets can be used as collateral for loans or securitised as equity, and a FIR of 51% means there still is as much as 49% of assets to utilise to secure financing (in the form of either debt or equity).[2]

Proxies in several other developed countries suggest their FIRs are higher than those presented for Australia above.[3]

Despite concerns in the media and elsewhere regarding overleveraged households, rising government indebtedness, increasing scale in the finance sector and rising volumes of market transactions, it appears there is a high likelihood of further increases in the financialisation of the Australian economy, especially if superannuation assets accumulate and are invested in debt and equity of the domestic non-financial sector. An ageing Australia is saving to finance spending and consumption in retirement. The regulatory system needs to be oriented to cope with the pressures that will emerge as wealth accumulates. Key regulatory issues – in addition to prudential regulation – will continue to be the principal-agent problems and information asymmetries that are endemic when the financial sector interacts with the household sector.

Another important development that seems very likely is a continuation of the trend towards economic and financial globalisation, with further increases in interdependence ahead (Ralston and Jenkinson 2014).

Over the decades Australians have been gathering more international exposures as borrowers and lenders and as investors from capital inflows and outflows:

- in terms of gross international liabilities through inflows (often intermediated through Australia's banks, though now also more directly from government bond issues) and during the resource investment boom the inflows counted from non-repatriation of dividends to foreign owners of mines and other projects;
- in terms of gross international assets largely through investment of a proportion of superannuation savings in foreign assets (equities, bonds and property); and
- in net terms, more inflows than outflows so that the current account deficit is financed.

These developments (net and gross) are likely to continue while-ever Australians in aggregate spend more on fixed capital expenditure than is saved from income and remain in the retirement savings accumulation phase, increasing savings for later consumption. These increasing international

[2] Consider a house: if it is owned outright, there is no loan attached, so it can be used to secure a borrowing, though often not quite to 100% of the value of the house. If it is currently mortgaged on a loan-to-value ratio of 60%, there is still equity equivalent to 40% of the value of the house that could be offered as security for a further loan.

[3] International comparisons are always difficult, in this instance hampered by inconsistencies in compiling balance sheet data. This shortcoming is being addressed: after the GFC, the G20 asked the Financial Stability Board (FSB) and the International Monetary Fund (IMF) to identify data gaps shedding light on economic and financial vulnerabilities, and make recommendations whose implementation by countries would close those gaps. The FSB and IMF made 20 recommendations, the 15th being that G-20 member economies extend their national accounts by compiling financial and nonfinancial stocks and flows by economic sector, see Shrestha et al 2012.

exposures will be a source of activity for the financial services sector and for regulators, while regulators will also be obliged to make clear the regulatory protections to those engaged in the international transactions. As the cross-border financing flows increase, there will be more cross-border regulatory issues, requiring cooperation with foreign regulators in enforcement actions and in data sharing.

2.3 Competition, efficiency and stability – no trade-off

There is still a widely-held belief that there is a trade-off between competition, efficiency and stability (most recently see as a prime example FSI TOR 2013). It was certainly the conventional wisdom in Australia at the time of the Wallis inquiry. Nevertheless, it seems a very pre-GFC way of thinking, as Chapter 3 will address in greater depth. This section of Chapter 2, by contrast, sets out some practical facts from a cursory inspection of the international data since the GFC. It questions the reality of such a trade-off in the light of what has happened.

Though international comparisons are fraught with difficulty, it is a task that must be done. Data to 2011 from the World Bank Global Financial Development Database[4] on bank competition, efficiency and stability measures for Australia and 5 reference countries (Canada, the Netherlands, New Zealand, the United Kingdom and the United States of America) shows Australia at the more financially stable end of the reference group (with Canada), but Australian banks are middling overall for competitiveness and efficiency. Interestingly, on some measures of competition and efficiency Australian banks are the best of the reference group, on others the worst and on others in the middle. Stability certainly seems to have helped investors, by maintaining high pre-tax profitability.

Competition measures – mixed

Australia is not exceptional in having a handful of major banks with a dominating share of banking sector assets. Comparing two concentration ratios and three estimates of the degree of competition and market power, Australia ranks in the middle of the group of countries, on one measure the least competitive of the six (the Boone Indicator of the elasticity of bank profits to marginal costs), on another the most competitive (the Lerner Index comparing output pricing and marginal costs) and on concentration and a measure of the elasticity of revenues to input prices in the middle.[5]

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[4] Version 17, updated 5 November 2013

[5] Bank concentration ratio (%) GFDD.OI.01. Assets of three largest commercial banks as a share of total commercial banking assets. Total assets include total earning assets, cash and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax assets, discontinued operations and other assets. USA is the least concentrated, then the UK. Then Canada and then Australia. Netherlands and NZ are the most concentrated.
5-bank asset concentration GFDD.OI.06. Assets of five largest banks as a share of total commercial banking assets. Total assets include total earning assets, cash and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax, discontinued operations and other assets. Similar results.
H-Statistic GFDD.OI.03. A measure of the degree of competition in the banking market. It measures the elasticity of banks revenues relative to input prices. Under perfect competition, an increase in input prices raises both marginal costs and total revenues by the same amount, and hence the H-statistic equals 1. Under a monopoly, an increase in input prices results in a rise in marginal costs, a fall in output, and a decline in revenues, leading to an H-statistic less than or equal to 0. When H-statistic is between 0 and 1, the system operates under monopolistic competition. However, it is possible for H-stat to be greater than 1 in some oligopolistic markets. Very limited data (for Australia only 2010, for Canada, Netherlands, UK and USA only 2010 and 2011). For the one year for which there is data for Australia, Canada was the closest to perfect competition, then the Netherlands. Australia, UK and USA were broadly similar, least like perfect competition.

What would seem to matter more than concentration is the concept of market contestability. According to World Bank 2014, "The behaviour of banks in contestable markets is determined by threat of entry and exit. Banks are pressured to behave competitively in an industry with low entry restrictions on new banks and easy exit conditions for unprofitable institutions—even if the market is concentrated". Local experience bears this out: competition – and the threat of competition – from non-bank sources, such as securitisers and other shadow banks, clearly made a difference in pre-GFC Australia. In the foreseeable future heightened contestability is more likely to stem from a technology upstart or retail industry entrant than from an established foreign financial entrant (most are weak after the GFC).

Efficiency measures – mixed

A comparison of efficiency measures provide a ranking somewhat similar to the competition measures: Australian banks are the most efficient of the group of countries on one measure (a cost to income ratio), least efficient on another (a lending-deposit spread) and in the middle on a third (an overhead cost ratio).

In terms of profitability measures against assets and equity, the performance of Australian banks is exceeded only by Canadian banks, though economic adversity and financial instability clearly has held back the US, UK and Netherlands in this ranking.[6]

Financial stability measures – the key

The stability measures that are compared are an estimate of the probability of default, the extent that bank credit is funded by deposits, bank capital ratios and whether and when a bank crisis occurred. In terms of financial stability, Australia not surprisingly ranks towards the stronger end of the countries, consistent with having not had a banking crisis in the GFC. Nevertheless, a key

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Lerner Index GFDD.OI.04. A measure of market power in the banking market. It compares output pricing and marginal costs (that is, markup). An increase in the Lerner index indicates a deterioration of the competitive conduct of financial intermediaries. Australia and the Netherlands seem more competitive than Canada and NZ which again are generally more competitive than UK and USA.

Boone Indicator GFDD.OI.05. A measure of degree of competition based on profit-efficiency in the banking market. It is calculated as the elasticity of profits to marginal costs. An increase in the Boone indicator implies a deterioration of the competitive conduct of financial intermediaries. On this measure, NZ is the most competitive, followed by Canada, the USA, the UK and the Netherlands. Australian estimates are the only ones with a positive sign – the least competitive.

[6] Bank cost-to-income ratio (%) GFDD.EI.07. Operating expenses of a bank as a share of sum of net-interest revenue and other operating income. Australia and New Zealand have become the most efficient on this criteria, sustainably achieving ratios of less than 50% whereas Canada, Netherlands, UK and US could not hold onto such gain and now record ratios of 60%.

Bank lending-deposit spread GFDD.EI.02. Difference between lending rate and deposit rate. Lending rate is the rate charged by banks on loans to the private sector and deposit interest rate is the rate offered by commercial banks on three-month deposits. On this measure, Australia is the least efficient, with the widest spread, followed by Canada. The Netherlands has the narrowest spread. There is no data for the UK and US.

Bank overhead cost to total assets (%) GFDD.EI.04. Operating expenses of a bank as a share of the value of all assets held. Total assets include total earning assets, cash and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax assets, discontinued operations and other assets. Australia ranks in the middle, the US and Canada have the highest overhead cost ratio, the least efficient, and the UK and Netherlands, the lowest, the most efficient.

Bank return on assets (pre-tax, %) GFDD.EI.09. Commercial banks' pre-tax income to yearly averaged total assets. Returns vary according to the economic cycle as well as efficiency. Canadian banks in 2011 were the most profitable on this measure and the UK and Netherlands the least. Australian banks' pre-tax returns were 1.17% in 2011, in line with the US.

Bank return on equity (post-tax, %) GFDD.EI.10. Commercial banks' pre-tax income to yearly averaged equity. Similar to the rankings of pre-tax returns on assets – Australia and NZ ranking behind Canada.

deterioration in Australia, an increased risk of instability, is seen in the switch over several decades from deposits exceeding credit to credit exceeding deposits, but this rising threat of instability in practice would seem to have been ameliorated over the same period by a strengthening in capital positions.[7]

Though the World Bank measures of banking sector efficiency and competition give a mixed, rather than clear, ranking for Australian banks versus the reference group, on some other more local measures there must be some concern. For instance, the big 4 banks' market dominance is rising towards levels that in other industries the Australian Competition and Consumer Commission (ACCC) would regard as a concern if considering mergers (see Australian Bankers Association 2014 Appendix E). Furthermore, whereas there is widespread confidence in the degree of competition and contestability in the market for mortgage finance, such confidence appears less certain regarding the market for SME loans.

At this stage there do not appear to be ready estimates of the extent of additional market power that has been flowing to the major banks from their strategies of vertical integration into wealth management, stock broking and financial advice. This appears likely to be extending their influence over individuals' financial choices and gathering a greater share of total spending on financial services. Further research is suggested for the implications for competition, given that a small number of banks is reported to have ownership of 80 per cent of the financial planners.

2.4 Economies of scale – the benefits not readily apparent

Around the world the industry of finance has had a tendency to size and oligopoly. Scale confers significant advantages. So it is legitimate to ask if the economy, the community, is paying more or less as scale increases. As with the global evidence on economies of scale in much of finance, the local answer is mixed.

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[7] Bank Z-Score GFDD.SI.01 It captures the probability of default of a country's commercial banking system. Z-score compares the buffer of a country's commercial banking system (capitalization and returns) with the volatility of those returns. The USA and NZ are furthest from default, and the UK and the Netherlands closest to default. Canada and Australia are between these extremes, with the Canadian system somewhat less risky.

Bank credit / bank deposits (%) GFDD.SI.04. The financial resources provided to the private sector by domestic money banks as a share of total deposits. Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Total deposits include demand, time and saving deposits in deposit money banks. On this measure, the US system is the most stable, with credit substantially less than deposits, whereas the Netherlands and Canada are the least stable. Australia is between these extremes, closer to the Netherlands and Canada. (There is no data for the UK.)

Bank capital to total assets (%) GFDD.SI.03. Ratio of bank capital and reserves to total assets. Capital and reserves include funds contributed by owners, retained earnings, general and special reserves, provisions, and valuation adjustments. Capital includes tier 1 capital (paid-up shares and common stock), which is a common feature in all countries' banking systems, and total regulatory capital, which includes several specified types of subordinated debt instruments that need not be repaid if the funds are required to maintain minimum capital levels (these comprise tier 2 and tier 3 capital). Total assets include all nonfinancial and financial assets. Australia on this measure is the most stable, slightly ahead of Canada and the UK, both of which saw precipitous declines in capital to total assets in 2008 before capital was rebuilt. (No data for the Netherlands, NZ or the USA.)

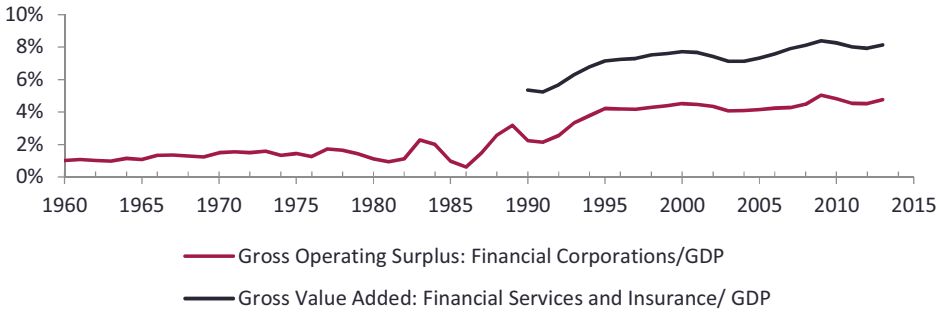
Bank regulatory capital to risk weighted assets (%) GFDD.SI.05. The capital adequacy of deposit takers. It is a ratio of total regulatory capital to its assets held, weighted according to risk of those assets. No data in the World Bank database for Australia, though locally available data suggests Australia ranks strongly.

Bank crisis dummy GFDD.OI.19 Dummy variable for the presence of banking crisis (1=banking crisis, 0=none). The UK and USA both recorded banking crises for five years (2007 – 2011) and the Netherlands for four years (2009 – 2011). Australia, Canada and NZ escaped crisis.

For Australia we present graphs of the Gross Operating Surplus of Financial Corporations (GOS) and the Gross Value Added of Financial Services and Insurance (GVA) as a proportion of GDP (Figure 5) and as a proportion of total domestic non-financial sector funding (Figure 6).

Compared to GDP it is clear the total incomes earned by the financial sector are rising faster over time than other incomes and the financial services sector has increased in size compared to the non-financial sector of the economy.[8]

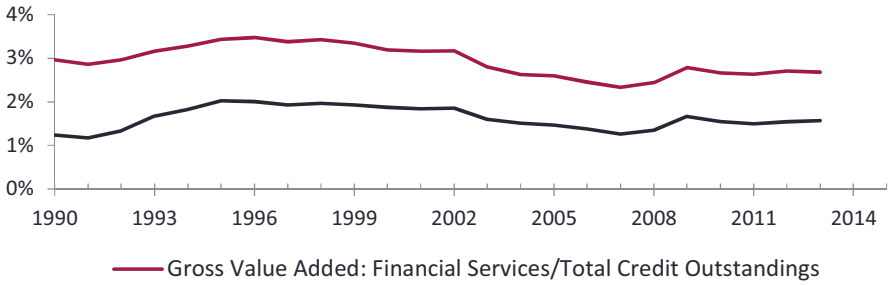
Figure 5 Financial Sector Gross Operating Surplus (GOS) and Gross Value Added (GVA) as a percent of GDP



Source: ABS 5204.0

Compared to total domestic non-financial sector funding, it is equally clear that the income earned by the financial sector per $ of financing is below the peak levels of the mid-1990s, but has plateaued at a level above the low reached in 2007. This is in spite of an increase in funding that might have been expected to see some pricing benefits flow from some 'economies of scale'.

Figure 6 Financial Sector Gross Operating Surplus (GOS) and Gross Value Added (GVA) as a percent of total credit outstandings[9]



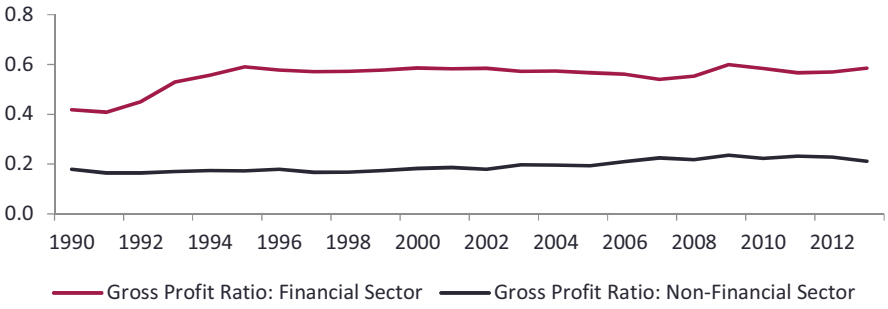
Source: ABS 5204.0 and 5232.0

The 'gross profit ratio' (GOS divided by GVA), plotted in Figure 7 for both the financial sector and the non-financial sector, is an indicator of profitability showing the proportion of the value added created during the production process which remunerates capital. It confirms that the profitability of financial services increased in the mid-1990s (after the 'recession we had to have') and has since stabilised at a high level, barely disturbed by the GFC. There has been a less perceptible trend

[8] The growth of financial incomes relative to GDP is probably understated as value added does not include capital gains. See Bazot 2014.
[9] The Figure is an ABS aggregation of domestic non-financial sector funding through debt and equity.

improvement in profitability of the non-financial sector over the period, most visible in the immediate pre-GFC period.

Figure 7 Gross Profit Ratios (Gross Operating Surplus (GOS) divided by Gross Value Added (GVA) for the financial sector and for the non-financial sector



Source: ABS 5204

Especially in banking, the lack of apparent lower margins as the banking sector has grown (ie a lack of economies of scale) perhaps is not surprising. Notwithstanding a good record on operational efficiencies in Australia, the worldwide search for economies of scale in banking has come up with no conclusive evidence: complexities that come with scale (some doubtless regulatory) often seem to offset apparent economies.

There is clearer evidence that there are economies of scale in asset management, from overseas and domestic sources. From abroad, setting somewhat of a global benchmark, the operating cost (total asset management costs including performance fees) of the Norwegian Pension Fund Global (Norway's oil-funded sovereign wealth fund), which has assets now exceeding NOK 5 trillion (around AUD$0.9 trillion, mostly invested offshore in debt and equity), have been in an range of 0.06 to 0.14 percent annually (6 to 14 basis points) since 1998 (Grande 2013), much less than the costs for this function of the individually smaller entities within Australia's superannuation industry.

From Australia, Chant West 2011 shows that there are economies of scale in superannuation asset management, with and even without what it found is a benefit to risk adjusted returns of asset diversification into unlisted assets that comes with size.[10]

Chant West estimates "large funds have outperformed small funds over the longer term within both the 'funds with a high exposure to unlisted assets' and 'funds with a low exposure to unlisted assets' universes".

[10] The Chant West analysis compared the performance of their multi-manager, growth investment options of 45 superannuation funds (32 not-for-profit funds and 13 master trusts), defining 'growth' as a 61 to 80% allocation to growth assets, the typical risk/return profile of most funds' default options. Performance was reviewed over one, three, five, seven and ten year periods to March 2011, with all the funds having a seven year performance history, but only 36 of the 45 having a ten year history. Returns are net of investment fees and tax, and do not include administration fees or any adviser commissions, to ensure that the comparisons are investment related, and that funds in the different market segments are evaluated equitably. 'Large funds' involved multi-manager assets of more than $6 billion and 'small funds' multi-manager assets of $6 billion and less.

Table 1 Scale benefits: large funds outperformance of small funds (% pa)

Universe	5 Yrs	7 Yrs	10 Yrs
High unlisted assets	1.1	1	1.1
Low unlisted assets	0.2	0.4	0.6

Source: Chant West 2011

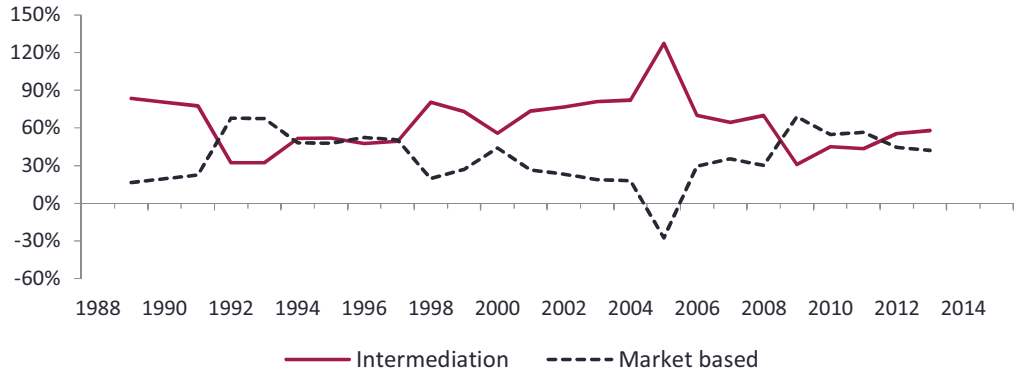
More recent data is soon becoming available, including from APRA. Preliminary indications discussed with some stakeholders suggest it may show a reduction in fees of retail funds over the period 2011 to 2013, suggesting a pricing benefit from MySuper.

2.5 Market-based funding – Australia to remain a hybrid

The conventional wisdom is that over several decades the Australian financial system has become more market-based. There has been a rapid accumulation of assets in superannuation funds which, partly because of superannuants' access to 'choice', are invested largely in liquid, readily-marketable and frequently traded assets, especially equities. There have also been an increasing availability and use of interest rate risk management and other financial instruments, more trading on stock exchanges and Ralston and Jenkinson 2014 report a strong increase in corporate bond issuance. The exchange rate is flexible and heavily traded. In addition, interest rates on borrowing and lending are no longer determined by regulation.

However, if 'more market-based' means that the sources of funding for the Australian economy have shifted from 'classic intermediation' to 'market-based funding', then the perception is not yet reality. ABS data on the funding of the Australian economy (the domestic non-financial sector) reveals that 'classic intermediation', where the intermediary (typically a bank and its shareholders) stands between the borrower and the lender and assumes credit, market and liquidity risks in the transaction, remains the more important. This is so for both net transactions during periods and outstandings at the end of a period. By contrast, aggregating as 'market-based funding' the diverse instruments in which the investor takes the credit, market and liquidity risks in providing finance to the borrower/issuer, market-based funding has rarely been the dominant source of funds, and never for long.

Figure 8 Net transactions: Intermediation versus Market-Based Funding[11]



(Domestic non-financial sector demand for credit, including equity and debt: loans and placements are 'classic intermediation', all other forms of financing are 'market-based', including bonds, bills, and equities)

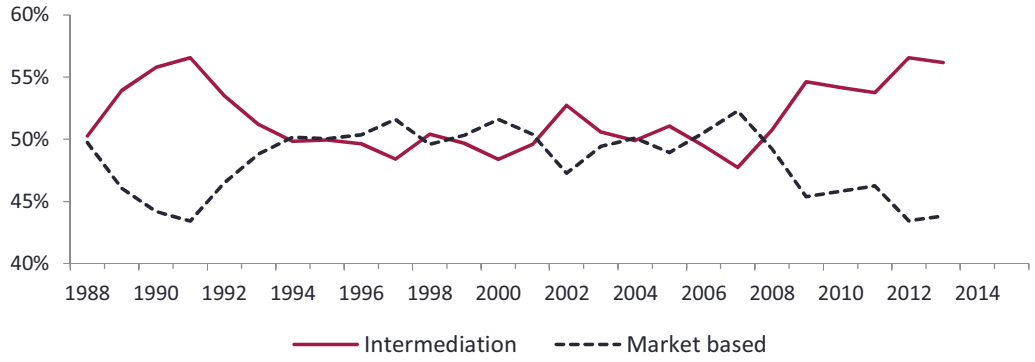
Source: ABS 5232.0

Twice in the period for which we have ABS Financial Accounts data the flow (net transactions) of market-based financing has exceeded classic intermediation, both times in periods of financial distress and slow growth/feared recession, which directly impeded classic intermediation. In the early-1990s, the rescue came from overseas funding. In 2009 and 2010, domestically-supplied market-based financing was the countercyclical source of funding supply (albeit at deeply discounted equity issue prices). The latter is an Australian phenomenon arising from the comparatively large and essentially unleveraged institutionally managed superannuation sector, and stands in contrast to the global experience of market-based financing reinforcing pro-cyclicality in the 'age of asset management' (see Haldane 2014 and Papaioannou *et al* 2013).

In terms of outstandings, there was a long period following the early-1990s 'recession we had to have' when market-based liabilities were as important as classically intermediated liabilities, presumably the result of the banking sector writing off loans and the corporate sector reducing its borrowings from banks. But the revived dominance of the stock of 'classically intermediated' finance over market-based finance has become clearer in the post-GFC period. This runs against the expectation (eg from Davis 2013) that the higher bank regulatory standards in the post-GFC period will cause demand to spill over into increasing use of market-based instruments. It certainly has not been seen yet.

[11] The recorded spikes upwards in intermediation and downwards in market-based funding in 2005 are atypical, due in large part to one large one-off transaction, being News shifting its domicile from Australia to the US. The surrounding years are more representative of the trend, which is that classically intermediated flows then comfortably exceeded market-based funding flows.

Figure 9 Net Outstandings: Intermediation versus Market-Based Funding



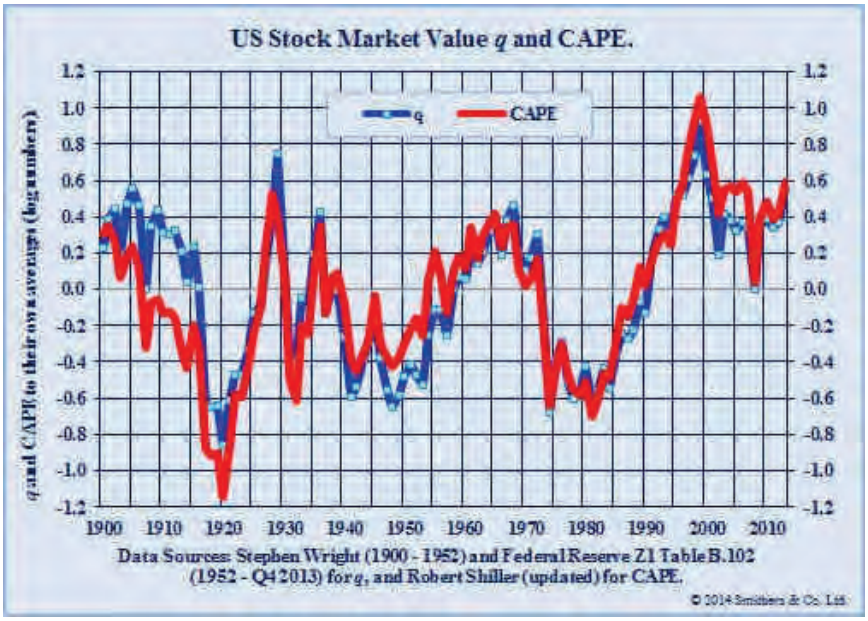
Source: ABS 5232.0

Domestic non-financial sector credit, including equity and debt: loans and placements are 'classic intermediation', all other forms of financing are 'market-based', including bonds, bills, and equities

Despite the growth of superannuation and lesser regulatory requirements, market-based funding seems quite unlikely to exceed 'classic intermediation' in funding the Australian economy during the next decade or beyond. This is largely because monies contributed from businesses and households to superannuation funds for deployment in diverse assets in aggregate do not leave the banking system, especially when they are used to purchase domestically-source financial assets. The funds diverted from household claims on banks (typically deposits) to superannuation funds are typically placed in short-term loans to banks, then exchanged for equities and the seller of those equities now has an increase in her deposits at the bank. Even if superannuation funds invest in assets abroad, the monies do not necessarily leave the Australian banking system, depending on foreign preference for Australian financial system exposures.

It is true that market-based instruments (especially equities) are subject to greater price revaluations, up and down on a daily basis, than are the loans and deposits that comprise the main assets and liabilities of the intermediaries involved in 'classic intermediation' (mainly the banking sector and other ADIs, who once a cycle or so may have to mark down or write-off some loans). But the same factor in the long-term – nominal GDP growth – drives both the flows and long-term asset pricing affecting superannuation funds and the flows and balance sheet size of banks. Though there are lengthy periods when the prices of equities move above fundamental, economy-driven values, the prices of equities in history have always reverted to fair value in the long run (see for instance Shiller 2000 and Smithers and Wright 2000 and the graphical update below).

Figure 10 US Stock Market Value q and CAPE



Source: http://www.smithers.co.uk/page.php?id=34 downloaded on 20140605

There has been a significant rise in the volume of market-based transactions, for instance on exchanges. The effect of this volume of transactions in terms of the net provision of finance to the economy tends to net out over a period, suggesting the transactions are driven by factors other than the business of supplying long-term funds from long-term savers to long-term users of funds, such as 'active management', pursuit of liquidity, herding and momentum trading.

The implications would seem to be that rising market-based financing will increase as funds accumulate in superannuation but, unless superannuation funds allocate substantially more to Initial Public Offerings (IPOs), secondary raisings and other new corporate debt and equity financing (eg Private Equity (PE) and Venture Capital (VC)), 'classic intermediation' will continue as the bedrock of financial system provision of credit to the domestic non-financial sector. The implication is that we must plan for regulation to cater for both 'classic intermediation' and market-based financing: in effect a hybrid financial system.

2.6 Short-termism a defect – merit in a longer-term investment horizon

One finance-wide development over several decades has been an obsession with liquidity and an increasingly short-term investment horizon, and its counterpart, a diminution of longer-term investment horizons. The ever-increasing pursuit of liquidity across all aspects of finance (something John Maynard Keynes described as the 'fetish of liquidity' in 1936) is driving a preference for short-term instruments, shorter holding periods and increased transaction speeds and turnover, leading to herding and momentum at the expense of longer-term returns.

Overseas there has been a start made to identify the causes and costs of short-termism and to identify measures to encourage the adoption and pursuit of longer-term investment horizons, see Myners Report 2001, the Kay Report 2012, OECD 2013 and, for the IMF, Papaioannou et al 2013.

Research has been highlighting the pro-cyclical behaviour of institutional investors, sheeting home many of capital market failings to 'institutional herding'. Further research is progressing, especially from the London School of Economics and The Paul Woolley Centre for the Study of Capital Market Dysfunctionality in Sydney, into the drivers of increasing short-termism, with uncertainty, a decline in trust, behavioural incentives and regulations all contributing.

The capacity of the financial system to fuel asset price bubbles and procyclical economic volatility now stands out in sharp relief. Despite the apparent concentration in superannuation on active asset allocation strategies (RBA 2014), there has been and is still a paucity of genuine 'Friedman-ite stabilising speculators', prepared to 'buy low' and hold for long periods in line with the long tenor of superannuation fund liabilities before 'selling high' (Grenville 1998, Haldane 2014).

Matching the lack of long-term investors has been a quite surprising lack of financial services meeting longer-term needs – for instance for annuities, for infrastructure, for agriculture and for private equity and venture capital. Conversely, there has been an excess of financial services meeting shorter-term needs – for consumption, for equity market trading and asset allocation shifts. Market practices are becoming short-term, viz. high frequency trading and algorithmic trading, the short holding periods of equities and very liquid instruments such as ETFs etc.

The lack of capital for long-term investment has numerous deleterious effects on the economy, incomes, jobs and infrastructure, and distorts the development of the financial system, for instance channeling resources into facilitating herding, momentum-trading and volatility.

The implementation of policies and regulations that create a large and vibrant pool of long-term investment funds, and the removal of roadblocks that limit investment horizons, will improve the efficiency of capital allocation and increase productivity, jobs and incomes across Australia. This will make Australia a competitive destination for domestic and offshore investors and is critical to future economic welfare.

Some missing elements in the financial system include:

- a deep and vibrant corporate bond market;
- a ready funding market for quality infrastructure assets;
- a dynamic VC and PE industry; and
- the full set of instruments required for a deep and flexible annuities market.

The drivers of the low asset allocation to longer-term assets in Australia are partly regulatory, with regulations creating a bias towards liquidity. For instance:

- the requirement to provide 30-day portability biases trustees from investing in illiquid assets
- MySuper default funds, intended to "deliver a better deal for all default fund members, including through improving the simplicity, transparency and comparability of superannuation products", in practice have focused on high liquidity and low fees, limiting the range of assets they will invest in, in order to keep their implementation and compliance costs down, at the expense of longer-term returns. Data from FCS shows reduced fees for MySuper retail funds in 2013 compared to 2011.

One measure that might facilitate a longer-term investment horizon for superannuation funds, even while they maintain liquidity for operational purposes, would be creation of a liquidity back-stop such as access to a committed liquidity facility for qualifying superannuation funds, possibly provided by RBA. A liquidity backstop could allow qualifying superannuation funds to hold higher asset allocations of less liquid, longer-term assets, better matched to the duration of the funds being saved for funding retirement.

In providing this liquidity facility, it would of course be important to ensure that superannuation funds did not transform themselves into shadow banks, taking excessive credit risks, or market and liquidity/maturity risks. Data will be required for the provider of such a liquidity provider (as mentioned, potentially the RBA), to give it comfort that the asset quality was acceptable. In addition, requirements for prudential supervision of superannuation would have to be heightened to reflect such a change. The greatest merit of Australia's institutionally-managed superannuation system from a stability perspective is its lack of leverage, an attribute which should be maintained, even reinforced.[12]

2.7 Taxation and financing – better if distortions reduced

Taxation is a significant determinant of the development of the financial system and a driver for its services, quite apart from the role of the Australian Taxation Office (ATO) as regulator of the administrator of SMSFs.

Four matters in tax policy stand out as having important financial system development and associated regulatory consequences, the first two concerning biases embedded in the current tax system (both contributing to short-termism) and the latter two reflecting Australia's international engagements:

1. The current structure of the capital gains tax (CGT) distorts financing and capital allocation, and is one factor promoting short-termism in investments. The distortion is the single step to a much reduced tax rate after a one-year holding period. It would be less distorting, and more supportive of longer-term investment horizons, if the rate reduction was smoothed and stepped down progressively over a longer holding period, for instance to a zero tax rate if assets are held for more than 10 years. While the present approach prevails, regulation has to focus on issues of short-term transactions and volatility: were a longer-term investment horizon to emerge, there would have to be increased requirements for, and surveillance of, appropriate disclosures of longer-term risks and uncertainties.
2. In aggregate, the tax system is biased in favour of consumption (due to the low rate of the GST relative to income tax rates) and borrowing (due to the deductibility of full nominal interest costs incurred for a business purpose) and against saving (due to taxing full nominal interest receipts). Some of the few offsets are the tax concessions favouring superannuation savings (bearing in mind these savings are intended to fund future consumption, not to fuel

[12] Some leverage has long been permitted, for instance through instruments such as instalment warrants. Note however that the essentially unleveraged nature of the superannuation sector as a whole is being undermined by legislation explicitly enabling SMSFs borrowing for property or other asset purchases through non-recourse loans. At this stage the overall leverage incurred is relatively modest, and a long way yet from a systemic risk.

intergenerational transfers). Any reform to the tax system that reduces the bias against saving would add (appropriately) to the responsibilities of the financial sector regulators, as well as encourage a longer-term investment horizon.

3. As a result of company tax dividend imputation, the tax system is also biased towards business within Australia and against Australian businesses engaged in international trade and investment. In addition, according to industry, a key factor detracting from the international competitiveness of Australian fund managers is to do with taxation of international investors. There has been longstanding uncertainty and inconsistency over the tax rules that apply to foreign investors for foreign funds management services. Several inquiries (eg Johnson Report 2009) have recommended improvements to the tax regime applying to foreign investors investing through Australian funds managers, endorsing flow-through tax treatment of investment income so derived. Were there a way to give certainty for this (or for allowing imputation credits on company earnings taxed abroad) without opening options for tax avoidance, its introduction could be a catalyst for internationalisation of some Australian financial services providers (though some – eg Magellan Financial Group, according to Boyd 2014 – have already built such a business). Australia's financial regulators would have to internationalise further, cooperating more with foreign regulators in enforcing bilateral laws and regulations.
4. Other countries, at this stage in Europe especially, are considering introducing – and in some cases (France, Italy) have actually implemented – a financial transactions tax (FTT) at a low rate that, like the tax proposed by James Tobin in 1978, puts 'sand in the wheels of finance'**.** Australia has a long experience of such transaction taxes, in many formats, as assessed by the Campbell and Wallis Inquiries and, over time, has sought to abolish or reduce the coverage of such taxes. Were many countries, and especially the rest of the world, to plan to implement an FTT, Australia will confront a choice, whether to also implement an FTT (if all countries, including Australia, implemented an FTT, it might be reasonably non-distortive) or whether to stand aside and reap a competitive, tax-arbitrage-driven advantage. The policy considerations will be highly contested. Whichever way the decision goes will have regulatory consequences.

There are bound to be tax changes in future that will impact the domestic and international flow of finance and have consequences for the regulation of the financial system.

3. The regulatory philosophy

This chapter looks at the failure of the 'efficient markets' philosophy that underpinned the approach to regulation in the Wallis Inquiry and over the period until the GFC. It also addresses many of the regulatory conundrums current in regulatory debate in Australia, including what should be in the prudential regulatory boundary and what should be outside of that boundary.

There are devilish issues to address – globalisation increasing the likelihood of volatility, efficient markets theories going astray, Minsky keeping regulators permanently on edge, the success of Tinbergen's insights, protecting taxpayers if the prudential boundaries are kept as they are, and making it easier for consumers to know when they are protected and when they are not.

3.1 Globalisation, the GFC and a state of ongoing crisis – recognise reality

After the GFC we cannot forget that our globalising world has made a collective decision to avoid future financial crises. Through the leadership of the countries meeting as the G20 (including Australia), the world has collectively determined to limit the risk and scale of future financial crises that could otherwise be systemic. These could be shocks from a build-up in risks overseas or they could be from Australian sources: the focus for the G20 is to lessen the risk of threatened spill-overs across borders.

The Global Financial Crisis (GFC) that started in 2006-08 was the third, but most costly, severe shock emanating from the global financial sector since the Wallis Inquiry, with the Asian Financial Crisis 1997-99 breaking soon after the committee had finished and the US 'Tech Wreck' following in 2000. The direct and indirect costs of the GFC were massive, many percentage points of GDP, in the most affected countries and the policy and regulatory measures taken to get back on track have been unprecedented and persistent.

The immediate realised cost of the GFC in Australia was limited because no financiers of systemic significance collapsed. However the Australian regulatory system was found inadequate in the face of the systemic shock from offshore. To avoid collapse of the Australian financial system when foreign funding markets froze, through government action taxpayers took on significant contingent liabilities and some financial markets were stopped from operating. Amongst the most decisive steps, all in contradiction to the leanings of the Wallis/Costello philosophy:

- banks' international borrowings were guaranteed by the government,
- deposits were guaranteed by the government and a Financial Claims Scheme was established as a form of broad deposit insurance, and
- short-selling was banned for a limited period for all listed equities and for a longer period for equities of financial corporations.

That said, it is important not to under-sell the financial strength and flexibility of Australia's financial system, supported by a strong fiscal position. The dominant financial sectors, banks and superannuation funds, helped Australia ride through the crisis without a recession. The banks were able to deleverage from then-unwanted corporate exposures when superannuation funds subscribed to new corporate issues of equity (albeit at discounted prices). This was in effect an on-

market debt-equity swap. Households provided the ultimate shock absorption capacity, underwriting the measures taken to shore up the prudential strength of the banks and accepting (through direct holdings and increasing exposures through superannuation funds including from continuing contributions) the markdown on equity prices.

In thought exercises to create a counterfactual, many senior policy makers, analysts and commentators consider Australia was lucky the GFC came when it did, rather than a year or two later when Australian asset and credit markets (and households) would likely have been more extended, and lucky that China stimulated when it did, keeping demand high and incomes flowing in Australia. The timing, the household sector resilience, the government's fiscal position and China's macroeconomic policy actions may be less supportive next time.

The G20 then kicked off a thorough improvement in the regulation of almost every component of the financial system on a global basis, encouraging domestic reforms in readiness. The more challenging issues, such as too-big-to-fail (TBTF), the designation of systemically important institutions and infrastructure and the whole approach (design and rules of engagement) to macroprudential regulation, remain works in progress. Despite pressure from G20 leaders, the progress with even the microprudential and market instrument reforms are not yet complete, hardly surprising in view of the breadth and complexity of the issues and the need to accommodate exceptions for the legitimate circumstances of some countries (including Australia).

The received wisdom in Australia (eg Macfarlane 2006 and Edey 2014) has for several years recognised that the financial system and regulation has to prepare for more frequent and more severe financial and economic volatility in future, as a result of two structural factors:

- the increasing use of market-based financial instruments, as they are inherently more sensitive to swings in sentiment as expectations change, reacting sharply and quickly, and
- the rapidly rising importance to Australian living standards of China and other Asian emerging economies, which are likely to experience greater business cycle fluctuations (because of high capital spending intensity) than more developed consumer-oriented economies such as the US, Japan and Europe.

The failures in the GFC affirmed the aphorism that most business is global but all failures are local. While some say the global financial system is safer now after the repairs to surviving institutions and regulatory reforms put in place since the GFC (Cunliffe 2014), this is a clearly a work in progress and much remains to be done. Not least, there is a need for resolution mechanisms that are compatible across borders. Completing the current suite of reforms is the focus of annual G20 leadership meetings.

3.2 The failure of 'efficient markets' theories – we are all Minskian now

Comparing what was known at the time of Wallis/Costello and what is known as the Murray Inquiry proceeds, the basic problems with finance are unchanged but the experience of the GFC and other crises have heightened sensitivities to systemic risks.

The Wallis/Costello philosophy understood that finance is special, different from other services, because of the unavoidable inherent embedding of information asymmetries and principal-agent

problems. Taxes and other costs (including regulation) can add to these problems. Together, these problems lead to market failures, adverse selection, moral hazards and behavioural biases that do not have the characteristics of an 'efficient market'. These market failures warrant government intervention if the outcome of the intervention is cost-effective. Nevertheless Wallis/Costello invested considerable faith in the merits of efficient markets: the belief was that markets would self-correct, behaviours be disciplined, reputations valued and incentives adjust, in order to achieve what was perceived as an acceptable trade-off between competition, efficiency and stability. (Costello differed from Wallis on competition, banning mergers of the 4 major banks.)

The Wallis/Costello era embodied an official fiction that consumers behave as if even bank deposits are 'unsafe', to limit the government's exposure to moral hazard that a more realistic assessment (effectively an implicit guarantee for the banks) inexorably creates.

As things have turned out, the financial system in practice has fallen well short of hoped-for 'efficient markets' ideal, lurching towards systemic collapse.

It is true that those in finance (the markets, institutions, agents and customers) have not lived up to the tenets of efficient markets theories, not acting rationally or in a way that suggests a belief that the harsh disciplines of 'efficient markets' will be visited on them. There have been very clear evidence of information asymmetries, moral hazard and adverse selection, principal-agent problems, frictions and costs in transactions, apparent behavioural biases and incentives all distorting relative prices and leading to a misallocation of still scarce capital and other tendencies assumed away in the theoretical perfection of the underlying Efficient Markets Hypothesis. None of these observations however are actually new or especially unexpected (except perhaps to the most theoretical of the Wallis supporters).

Over time, behavioural economics research has highlighted biases that do not match the characteristics of actors as assumed in efficient markets. Learnings from behavioural studies have led to useful improvements in consumer interactions. However, there has been relatively little progress in identifying what – beyond defaults, where they are appropriate – can be done either to accommodate 'inefficient' or 'myopic' behaviours or to help those prone to behave 'inefficiently' to behave 'efficiently'. What we have also learned is that finance is easily misunderstood, that a little [or even a lot of] education can breed overconfidence and that having a regulator intervene in provision of education, licensing or even product information, may give the least informed a sense of unwarranted comfort. What would be best (or the least bad) in this very second-best environment (and has yet to be done) is to clearly delineate what is safe because the government will stand behind the investments – ie ADI deposits, life insurance contracts and, in the event of fraud, institutionally-managed superannuation – and any investments beyond those boundaries are riskier and are much less protected.

The prevailing philosophy in Wallis/Costello was undermined most by its misperception of systemic risk. Here the better insight comes from the 'economics theory and practice' fringe occupied by Hyman Minsky. Reviled by mainstream economics and finance, Minsky had long argued that financial crises are inevitable (see for instance Minsky 1982 and 1986) because of his 'financial instability hypothesis' drawn from the observed pro-cyclical behaviour of financiers and others

across the economy. Minsky is amongst the few economic theorists to have come out of the GFC with his reputation and relevance enhanced.

Minsky died in 1996. Were he alive today he would remind us that system stability is an illusory goal: like perfection it cannot be attained. If those involved in finance believe stability is in prospect, they would leverage themselves so much the financial system outcome would become unstable. Paradoxically, if financiers are wary and do not believe stability is guaranteed, they will gear up less, and the outcome is more likely to be that the financial system is comparatively stable and self-correcting.

However, the basic premises of 'efficient markets' philosophy, that no one knows the future and that markets are the least bad way of accommodating changes in expectations, still remain unchallenged. Despite new insights from economics, finance and psychology, including behavioural economics and insights from Minsky, it is clear there is no prospect that consumers, investors and business can learn how to save, invest and borrow without bias with any conceivable allocation of resources to education/literacy improvement. As such, the quest remains to build a strongly performing and sustainable financial system providing the services sought by the non-financial sector, even while coming to terms with the reality that systemic instability concerns mean taxpayers will have to be ready to stand behind the promises made by prudentially regulated entities, where these are systemic. Thus the taxpayers need to be protected themselves, to minimise the risk that the financial safety net will be required.

3.3 The Wallis successes – many worth preserving or building on

The Wallis committee certainly got many things right. The stand outs have been the assignment of regulators to objectives according to the Tinbergen principle, the 'twin peaks' comprising APRA and ASIC, the Council of Financial Regulators and the prudential regulation boundary. These have been 'core' gains, and should be re-used or built on in the Murray Inquiry considerations.

The Tinbergen Principle – a timeless guiding light

Jan Tinbergen, later the first Nobel Laureate in economics, established a principle that the number of achievable policy goals cannot exceed the number of available policy instruments (Tinbergen 1952). This wisdom has never been in dispute. In line with the Tinbergen Principle, Wallis/Costello decided on a regulatory structure comprising four separate agencies, each assigned the objective of addressing one of the four main sources of market failure.

This Tinbergen-inspired "objectives-based" regulatory architecture involved:[13]

- the Reserve Bank of Australia (RBA), responsible for monetary policy, the payments system and financial stability;
- the Australian Prudential Regulation Authority (APRA), which has responsibility for the prudential soundness of all deposit taking institutions, general and life insurance companies and private superannuation funds;

[13] See Carmichael 2009.

- the Australia Securities and Investments Commission (ASIC), which is responsible for conduct regulation across the financial system, including all financial institutions, markets, and market participants; and
- the Australian Competition and Consumer Commission (ACCC), which is responsible for competition regulation and consumer protection throughout the whole economy.

The 'twin peaks' – pathbreaking and a launching pad

The creation of APRA and ASIC created the 'twin peaks' that identified the Australian regulatory architecture as quite different to anything in the rest of the world. Bringing all prudentially regulated entities across the financial sector (essentially deposit takers, insurers and superannuation funds) under the regulation of a single prudential authority and grouping all market conduct matters under a single securities and investments regulator was pathbreaking at the time. The regulatory architecture served Australia well in the period until and during the GFC.

Because the philosophy behind the regulatory architecture, the Tinbergen Principle, is timeless, it can again be applied by the Murray inquiry as we re-think the regulatory architecture and match it to our changed circumstances. A proposal to move from 'twin peaks' to 'three peaks' is in Chapter 4.

The Council of Financial Regulators – an innovation that made a difference

In terms of perspective when discussing the successes of Australia's regulatory architecture, perhaps too much might have been made of the creation of the 'twin peaks' and not enough of another innovation from Wallis/Costello: the creation of the Council of Financial Regulators (CFR). Coordination of the separate regulators through the CFR, chaired by the governor of the Reserve Bank of Australia, proved a vital element in Australia's response to the GFC, and a significant differentiator from the way events unfolded in some countries (the UK and US spring to mind).

Approaching the GFC, the presence of the CFR was low key and its processes informal, relying on clubby cooperation amongst the regulators represented. This proved sufficient at the time and much better than achieved in most other countries (even facilitating – as we have seen – the efficient markets regulatory philosophy to be swiftly discarded by government as the crisis developed).

APRA's FSI 2014 submission aptly describes the CFR as a "non-statutory body that has no regulatory functions separate from those of its members". It did not have significant official status, lacking even a website until 11 February 2013[14], years after perhaps its finest hours. The CFR website emphasises facilitating regulatory cooperation and collaboration, contributing to the efficiency and effectiveness of regulation and promoting stability of the Australian financial system.

Whether such an 'all care but no responsibility' approach is sufficient for the future is moot. Chapter 4 outlines some of the elements of a more formal and accountable CFR, with responsibilities that might include regulatory effectiveness and macroprudential policy.

[14] See http://www.cfr.gov.au/media-releases/2013/mr-13-01.html

The prudential regulation boundary – almost spot on

The prudential regulation boundary that prevails now is very much as it was recommended and implemented by Wallis/Costello. The three criteria the Wallis Committee used to allocate activities to prudential regulation or to non-prudential regulation were:

- the importance of the promise;
- the difficulty in meeting the promise; and
- if the promise is not performed, the adversity of the consequences.

The more important the promise, the greater the difficulty in meeting it, and the greater the adversity from failure leads to prudential regulation. Lesser importance or difficulty leads to non-prudential regulation. The criteria remain entirely appropriate. On this basis, banking, insurance and superannuation services provided by institutional agents clearly should remain prudentially regulated. Similar criteria led to deposits being singled out as the critical banking liability to protect.

The prudential boundary has proved durable thus far in the face of the doubts and questions raised by Davis, Maddock and Munckton in 2013. Their main concerns focused on the already wide coverage of the prudential regulation boundary, the extra cost of 'safe' finance given heightened prudential regulation, the fairness of not extending the boundary to protect more consumers, the riskiness of activities outside the boundary especially to less informed consumers, the potential for regulatory arbitrage by shadow banks, and the issue of potentially far-reaching reforms to the prudential boundary emanating from abroad.

Given that the financial system as a whole appears to work, and changing the prudential regulation boundary would be potentially very disruptive, there would need to be a strong rationale to justify moving the boundary rather than addressing the issues. The main issue is management of the risk to taxpayers that *in extremis* they may have to support the promises of prudentially regulated entities with cash (throwing the government's budget, and the economy, into disarray), as they nearly did in the GFC. The issue is the frequency and extent of the potential call on the taxpayers. A proposal to have this explicitly addressed by the prudential regulator, APRA, is outlined in Chapter 4.

Other matters are questions of balance, as the Australian financial system seems to perform at least acceptably on a range of criteria of competition, efficiency and stability (see Chapter 2), with a bias towards stability but by no means the worst on average in terms of competition and efficiency. Though it may be latent rather than regularly demonstrated, there is substantial public support for the present boundary. The boundary has proved effective: at no stage have non-prudentially-regulated failures threatened the system.

Maintaining essentially the present boundary would seem the most effective path into the future. Very minor adjustments, to include health insurers[15] and any absolutely genuine 'shadow banks' should be contemplated. However, as issues arise, such as the proposals abroad for ring-fencing, it

[15] The entities with the best claim to be included in APRA's prudential net are health insurers, which are currently regulated by the Private Health Insurance Administration Council (PHIAC) and 'ought to be' prudentially regulated, see Insurance Council of Australia 2014. PHIAC is small and probably captured by industry. Bring health insurance into the prudential net life insurance could see more innovation in financial products.

will be important to have a full strength set of regulatory agencies including a competition regulator to address the way ahead.

We focus on some of these issues below, the first two being shadow banking and consumer protection.

3.4 Shadow banking, securitisation and small business lending – market drivers

If it walks like a duck and talks like a duck … regulate it as a duck.

- Adapted with apologies from McCarthy-era USA.

Regarding shadow banking there are three conflicting regulatory concerns:

- One is regulatory arbitrage if higher regulatory standards for regulated banks raise the cost of prudentially regulated services, increasing risk in the financial system as business is disintermediated from prudentially regulated entities;
- Another is that if shadow banks are be regulated as banks, this will increase taxpayers' risk of having to bail out the shadow banks if they fail; and
- A third is that regulating so that every financial flow is banking business is unduly restrictive and would rule out some socially and economically useful activities.

The regulation of non-banks conducting the business of banking (*aka* shadow banks) is a moving feast. Basel III, like Basel II and Basel I, doubtless opens up new regulatory arbitrage opportunities. From a global perspective, investment banks seem to be the riskiest element still outside the prudential regulation perimeter. Interestingly, almost all major US investment banks chose to become banks at the apex of the crisis in order to get access to Federal Reserve System funds.

The regulatory arbitrage view presumes that regulatory capital ratios for banks are higher than the actual capital that would be sufficient to survive without government support over a run of economic cycles (so-called 'economic capital'). This would seem unlikely: capital ratios in eras when central banks were not present as lenders of last resort were a quantum higher than Basel III's ratios. So far in Australia, there has been no noticeable trend to shift capital from banking into shadow banking, suggesting investors do not think the regulatory arbitrage is appealing. Indeed, in Australia the shadow banking sector is "small and declining"[16] and seems not a systemic risk. Only in the pre-deregulation era did Australia have a significant shadow banking problem, largely the result of banks booking business in less regulated associates.

Other sectors that at times appear to have a claim to be brought into the prudential net are payments system operators and the providers of systemically important financial infrastructure (central counterparty clearers, the ASX and any non-bank entities that are designated Systemically Important Financial Institutions (SIFIs), though none – especially funds managers – are obvious candidates). However, there is virtual prudential oversight of some of these sectors, especially those involved in the payments system.

[16] See Eyers 2014

Where disintermediation may make progress is with a revival of securitisation. The essential defect of the pre-GFC securitisation model was the lack of retained 'skin in the game' of the initial lender, which exacerbated inherent principal-agent problems. In addition, some securitisations were too complex to understand. With 'skin in the game' now required, and complexities frowned on by the market, the revival of simple securitisations as an effective means of capital management seems only a matter of time, when the economics of the transaction make sense. Quite what will be the catalyst is unclear: it may be rising demand from superannuation funds for investible quality securities, banks seeking to retain high returns on equity or non-bank competitors again finding a cost-effective funding source to compete with the banks. This may produce a welcome boost to competition in lending for housing, but it is likely to leave SMEs, whose borrowings are less homogenous, ever more dependent on bank lending.

The frustrations pervading the relationship between the potential lenders (essentially the banks) and would-be SME borrowers is never likely to be resolved. Numerous inquiries have failed to find a breakthrough. Small companies will always be more dependent on bank finance than either big companies (which can go direct to markets, even overseas) or households (whose assets and potential liabilities are largely homogenous, and can be securitised, inviting non-bank financiers to compete with the banks in the supply of finance).

There is no market failure in the credit scrutiny undertaken by banks: that is their role. SMEs seeking loan funding can reduce the prospect of rejection of loan applications by better business planning processes and other risk-minimisation techniques: they have every incentive to do so.

3.5 Consumer protection versus buyer beware – clarify what is safe

The Wallis philosophy could rely on *caveat emptor*, with increased protection for smaller, less sophisticated financial consumers most likely to suffer from information asymmetries, by requiring appropriate disclosure. As Davis 2013 has reported, disclosure has not been a satisfactory answer in every circumstance. With consumers never the 'rational, well informed beings' assumed in the 'efficient markets' regulatory philosophy, governments and regulators have been focusing more on consumer protection and less on *caveat emptor*.

This could be in response to the risks arising in the increasingly financialised lives that individuals and families are expected by government to lead. The decisions by government to transfer responsibility for management of retirement incomes and longevity risk to individuals (albeit with the age pension safety net in place) presuppose that individuals either have the requisite skills, can learn them or can be protected from apathy, ignorance, mistakes and frauds. They also presuppose that the financial sector seeks, and has the products, to meet households' needs.

Finding a regulatory balance that – in the face of apparent increased consumer protection – encourages the supply of services to meet consumers' needs is likely to be difficult. For instance in the UK and the USA the balance seems to have been shifting all the way to *caveat vendor.* The UK's newly-commissioned Financial Conduct Authority (FCA) has been successful in several charges of miss-selling of complex financial products. In the USA, the new Consumer Financial Protection Bureau (CFPB) is criticised for creating ambiguity in the exercise of its powers that is likely to reduce the supply of financial services to protected consumers, a counterproductive outcome, and for

extending its scope to SMEs, a broadening of the class of protected users of financial services (see The Economist 2014). The fines and/or settlements have been substantial.

Education programs to improve financial understanding and decision-making (often under the rubric of promoting financial literacy) have also been a popular response of government, industry, workplaces and community groups in Australia and in other countries, even though the program objectives are often ambiguous and their effectiveness uncertain and unproven (Worthington 2013).

Several problems arise. Programs aimed at the young through the school curriculum seem appropriate but will take decades to have an impact and the appropriateness of their design will be unknown for a similar period. Programs providing potentially valuable assistance that would be useful at critical decision points in financial life (eg just before or at retirement, when substantial sums become available and need to be invested) often do not reach those who would most benefit. Nevertheless, industry can be very effective in reaching susceptible consumers/investors: see for instance the 'skill' with which Storm and Westpoint investors were identified and targeted. Utilising industry's skills to first identify the consumers most in need and then provide suitable and effective products could be more effective than general programs. Regulators seem bound to pursue the *caveat vendor* line, or government may set regulations limiting who can be sold what, if industry does not grasp this thistle.

But, for this to be effective, other changes in the burgeoning 'consumer protection' arena will be needed. Most fundamentally, the regulation of AFSLs needs to have teeth, with issuance and renewal dependent on the license holder being responsible for the good behaviour of its representatives, all involved in financial advice should have an AFSL (NB including accountants advising on SMSF establishment and asset allocation), and product issuers need to be made responsible for product performance in line with advertised claims and other marketing, similar to that required of goods and services subject to regulation by ACCC.

Furthermore, there is considerable scope to improve consumer-focused messaging about regulation and safety. At present consumers are misled that their investment choices beyond the limits of the Financial Claims Scheme and prudentially regulated/institutionally managed superannuation funds will be both 'improved and safe' with more financial literacy and protection implicitly promised from ASIC.

There has been official obfuscation over both the Financial Claims Scheme and the protection provided by prudential regulation more generally. It is time for government, academics and industry to get over their embarrassment that the FCS and its generous deposit coverage makes inconceivable the existence of a risk-fearing 'efficient market' and its *faux* virtue in containing moral hazard. Even if the amount of deposits covered is reduced in legislation, the public will not believe governments will not protect them in a crisis.

Two useful consequences could flow from advertising the FCS:

- Financial literacy messaging could be much improved if it was made clear that 'the government has made ADI deposits and prudentially regulated financial institutions safe, and everything else is not safe and is your risk'. It is a simple, 'insight the flags, outside the flags' message.

- With what is safe in bright lights, it will make more understandable the distinction between prudentially regulated superannuation and non-prudentially regulated SMSFs when it comes to public compensation for frauds.

Another feature of the Wallis/Costello era was that only prudential regulation would be preventative, whereas conduct regulation would be merely corrective after the event. Having conduct regulation also take on some preventative aspects was resisted because it might open taxpayers to an obligation to provide a safety net in the quite likely event that a non-prudentially-regulated entity fails. However, the benefits of prevention is increasingly seen in other fields, for instance in health policy, where – similar to financial service – information asymmetries, principal-agent problems and consumer myopia and other behavioural biases are common. Provided a way can be found to limit taxpayers bearing a risk, there seems no reason to confine conduct regulation to correction after the event.

The distinction between prudential regulation and non-prudential regulation seems valuable, so long as the risk to taxpayers of the provision of prudential regulation is properly recognised and managed and so long as consumers are always educated to understand what is safe, and the boundaries for that safety. Wallis/Costello was wrong on this: there now is an opportunity (indeed a need), after the GFC and the imposition of the FCS and some higher prudential regulatory standards, to protect taxpayers with more certainty next time.

3.6 Harmonising with the developed world or with Asia – safety is valued

The extraordinary cost of the GFC has led to an across-the-globe impetus to improve the safety of the financial system and its components, in a way only seen once before – after the Great Depression and WW2 – when the Bretton Woods institutions (the IMF, the World Bank and the General Agreement on Tariffs and Trade (the GATT)) were created. The GATT has developed into the World Trade Organisation (WTO), an intrusive set of globally-applicable rules for trade. Every country in the WTO 'club' has had to conform to the rules, with a few contested and transparent exceptions. In hindsight, the process of 'winning over' countries to sign on to the GATT or WTO had a greater degree of difficulty than the crisis-driven G20 financial reforms, as it required suspending innate 'mercantilist' beliefs and trusting the eventual benefits of something quite counter-intuitive, the economic law of comparative advantage. The G20-led financial reforms otherwise are little different in scale, importance or complexity.

Thus far, despite difficulties, the G20-led reforms have been remarkably successful (Hampson and Heinbecker 2013), in terms of "averting grievous harm to the global economy", engaging "in re-engineering the financial system to prevent a recurrence of the crisis and to maintain the global flow of capital." Most significantly, "it has put issues on the table that were once regarded as the exclusive province of sovereign governments, notably monetary policy, exchange rates and debt levels, thereby taking preliminary steps toward longer-term global macroeconomic governance."

None of the steps taken by the G20 are yet completed, not because of sloth but because of the enormity of the tasks. It is a case of 'so far, so good', and 'let's get to the end'.

It is hardly surprising Australia, a capital exporter as well as bigger capital importer and a net borrower from the rest of the world, can argue only for modest exceptions to the overall parameters for global regulation, though we do so from a position of strength, generally having a better starting point than others. By all accounts, Australian participants in meetings of international regulators consistently do make the case for Australian exceptionalism.

Australian entities seeking to engage in business in overseas financial markets and businesses have no choice but conform to local rules pertaining overseas. This is being made easier where negotiations allow 'substituted compliance', enabling Australian regulated entities to substitute compliance with foreign rules by complying with the Australian regulatory regime. Almost by definition, effective and widespread substituted compliance involves virtual harmonisation across countries.

Only if the world economy and financial system was fragmenting would it be a real option to stand aside from international harmonisation and cooperation. The 'G20 and WTO club' would be failing. Were the world economy to fragment and divide into regional or other isolationist groupings, and for instance Asia to go its own regulatory way, Australia could opt to follow that divergent approach – doubtless at considerable short term cost, as much of its activity and financing is with the developed world. But so far, despite grumblings, Asia has stayed within the 'club'.

Australia and Asian countries, even as a regional grouping, may benefit from persuading the developed countries to adopt regulatory standards that provide greater benefits, especially where the standards being developed are on a current 'lowest common denominator' basis. This is generally what our regulators have argued in the international committees such as the G-20, the Basle Committee, IOSCO and other global, regional and bilateral forums.

However, the more important narrative is that Australia's high regulatory standards, and the growth and stability that has flowed from those standards, are held in high regard in Asia. This recognition is an advantage not to be sacrificed for some short-term gain and long-term regret. Australia would be well advised to seek to lead Asia to improve standards that we know will be needed as Asia's development proceeds. Asian investment is likely to be greater in the long-term if there is consistency in Australia's positioning and pursuit of firm regulatory settings, much as Warren Buffett's investment targets, selected for their slow but reliable growth profile, pay off in the long-term (Frazzini *et al* 2013).

3.7 If the world 'ring fences' core banking – Australia has to go with the flow

For banking the most sensitive future issues are ring fencing and additional equity. The major 'thought pieces' abroad include "Volcker rule" in the United States, the Liikanen Report to the European Commission and the proposals of the Vickers Commission for the United Kingdom.

Figure 11 A stylised comparison of selected structural reform proposals

	Volcker	Liikanen	Vickers
Broad approach	**Institutional separation** of commercial banking and certain investment activities	**Subsidiarisation**: proprietary and higher-risk trading activity have to be placed in a separate legal entity	**Ring-fencing**: structural separation of activities via a ring fence for retail banks
Deposit-taking institution may:			
- deal as principal in securities and derivatives	No	No	No
- engage in market-making	Yes	No	No
- perform underwriting business	Yes[1]	Yes	Restricted
- hold non-trading exposures to other financial intermediaries	Unrestricted	Unrestricted	Restricted (inside the group)
Holding company with banking and trading subsidiaries	Not permitted	Permitted	Permitted
Geographical restrictions	No	No	Limitations for ring-fenced banks in the UK to provide services outside the European Economic Area

[1] Underwriting in response to client/counterparty demand.

Source: Gambacorta 2013

To the extent that foreign regulators do move to ring fence their Global SIFIs (G-SIFIs) or Domestic SIFIs (D-SIFIs), to make their household and simple commercial financing banking businesses safer and insulated from the vagaries of their trading and other riskier activities, the questions have to be asked:

- why would Australia not do the same (as our banks and other entities need to interact with others abroad), and, if so,
- what would be the process of consideration in Australia?

Australia has a strong regulatory and analytical focus on prudential, market integrity and some consumer issues, but it does not achieve as much as is needed in terms of competition regulation and analysis. The ring-fencing issue is very much about competition, and the regulation and analytical capacity of the regulators needs to be strengthened. A proposal is advanced in Chapter 4.

3.8 Funds management and superannuation – short-termism can be overcome

For funds management/superannuation, the most sensitive regulatory-relevant issue is reducing the obsession with liquidity where it is unnecessary and/or counterproductive (some of which comes from regulation) and promoting longer-term investment horizons where they are appropriate. Short-termism is too prevalent (see Kay 2012 and the collective writings of the members of the Financial Services Research Group of The Paul Woolley Centre for the Study of Capital Market Dysfunctionality).

The prudential net appropriately covers institutionally-managed superannuation funds, not because of the hopefully modest leverage they use, but because of difficulty in meeting the promises made

by superannuation funds as a result of liquidity risks and the potentially important adverse consequence for individuals of a failure.

The feared systemic risk in superannuation is a panic amongst superannuation savers, leading *in extremis* to demands for withdrawals or transfers and a rush for liquidity, which could cascade in a manner similar to a bank run and inflict significant damage on all markets, financial institutions and the economy. More normal (ie non-systemic) business model risks in superannuation are 'slow runs' as contributors retire, cease to contribute new funds and start to withdraw or as contributors exercise choice of funds in a non-crisis atmosphere. Both require liquidity of the funds to be the focus of prudential regulation. But the essence of superannuation savings is that their tenor is long-term: they are going to provide retirement incomes for increasingly long-living Australians.

Rather than having all institutionally-managed superannuation funds hold a high proportion of their assets in very liquid form, there may well be significant benefit of setting up a liquidity facility accessible by such superannuation funds so they can increase their asset allocation to longer-term investment assets more in line with the duration and real underlying liquidity needs of superannuation savers. One unavoidable consequence of such a facility, however, would be a requirement for much more information on the investment performance of individual assets held by the superannuation funds that might be collateral for the liquidity facility.

If only because of its rapid growth and size, the SMSF sector has produced rising concerns amongst some regulators and across the financial sector. Nevertheless, it is welcome evidence of competition in the financial system and engagement of the trustees of SMSFs in the management of their retirement incomes and associated risks. Though the predominant reason given in surveys for establishing an SMSF is usually 'control', it is hard to dispel suspicion that another underlying reason is the comparatively high cost of institutionally-managed superannuation services.

The growth of SMSFs also raises fears of regulatory arbitrage. Here the fears seem unwarranted: SMSFs individually are small in the context of the financial system and pose no systemic risk as yet, and furthermore it is clear, and can be made yet clearer, that SMSFs lie outside the prudential regulatory net. There is no access to a bail-out by taxpayers were an SMSF to fail, beyond the age pension safety net that is available to all. The publicity on who was to be bailed out for the Trio/Astarra losses from fraud and why the compensation flowed only to prudentially-regulated superannuation funds was useful in this respect, and needs to be re-iterated more clearly.

There are other improvements that can be made to the regulatory arrangements affecting SMSFs and superannuation contributions and transfers. For instance:

- To speed transfers between funds (both institutional and SMSFs) when contributors are exercising choice, a central exchange and registry seems appropriate, perhaps established in the ATO. This can be expected to be especially useful when SMSF trustees are older and seeking to transfer their by-then onerous trusteeship and management responsibilities to a more institutionalised retirement incomes provider.

- To add to choices available to superannuation savers, institutionally managed superannuation funds (and funds managers) could be encouraged to attract 'locked in' long-term funds from younger contributors, attracting them with discounted fees as compensation for the 'cost' of

sacrificing liquidity. This would help overcome the apparent shortage of investors with a long-term investment horizon.

4. Options regarding the regulatory architecture

This chapter reviews the future appropriateness of the regulatory architecture and puts forward options that will advance the incorporation of macroprudential policies into the range of policy tools available to regulators and clarify the assignment of achievable goals for Australia's current regulators.

The approach taken here is as close to a single goal and an effective instrument as is possible in this complex world (perhaps 'pure Tinbergen'), to improve accountability. An alternative some favour is assignment of all regulatory objectives – stability, efficiency, competition, fairness and ultimately economic growth – to all the agencies, though this would mean no regulatory agency could be held responsible for what occurs.

4.1 Role of the regulators – needs focus and pre-emptive industry solutions

There have been many suggestions of additional activities the regulators might become responsible for. The Tinbergen principle would commend the idea of making the regulators responsible for only those roles for which there are effective tools, and restricting the number of objectives to as few as possible, ideally only one per regulator. More extreme overseas proposals come from Claessens and Kodres 2014, who favour setting incentives for regulators so they perform their regulatory roles better, and from Barth et al 2013, who take such a dim view of the performance of financial sector regulators and the ease with which they are captured by industry that they propose establishment of a Sentinel, with no responsibilities other than to independently look over the regulators to ensure they are doing what they are being paid to do. By contrast, the proposals advanced here are a modest realignment of roles so that a regulatory system that works well can adapt to meet the challenges of the next several years of supply of financial services.

Industry Promotion – never a good idea

Some propose the financial sector regulators take on an industry promotion or investment promotion function. The role at times has been accepted by Austrade, which is where it should reside. Wherever industry promotion by regulators has been seen abroad, for instance in the UK, the conduct of regulation has suffered.

Promotion by government should come through the budget as either increased outlays on the expenditure side of the budget or reduced revenues on the tax and other revenue side of the budget. Australia has been well served by not distracting its regulators with a need for industry or investment promotion. As a result APRA and ASIC have not been at the forefront of the push for 'Australia as an international financial services hub'. It is much preferable if financial sector regulators continue not to have targets for industry development or for attracting flows of finance.

Policy development – not a role in an ideal world

Others are concerned that regulators have been engaged in policy development. This was not envisaged in the original twin-peaks model. Treasury has the major policy advising responsibility, but has facilitated government receiving advice from other agencies. One typical question arises from the termination of Corporations and Markets Advisory Committee (CAMAC): will Treasury pick up its

responsibilities for research and advice, or will it fall to ASIC? As a general principle, the same agency should not be both policy developer and the enforcer of the rules.

APRA and ASIC are perceived to have 'campaigned' for regulatory and policy changes (for instance higher prudential standards and improvements to the regulatory framework for financial advisers), as has the RBA. To some significant extent, this is the product of the complexity and dynamics of finance and of scarce resources in central government and, while it was always thus, the GFC and the need for speed in addressing some problems has probably exacerbated the tendency.

As NCOA 2014 says "Between the categories of policy and service delivery, however, choices need to be made about how things get done. A key challenge, therefore, lies not so much in the separation of policy and delivery (which already exists at the Commonwealth level for the most part) but in working out how best to connect them more effectively".

Treasury, which is responsible for policy advice to government, has lost/is to lose a high proportion of its workforce over the near-term. The need for policy development is not going to reduce. Unless industry can take out some recognised sources of misaligned interests, such as distortive incentive payments that exacerbate information asymmetries rather than provide assurance that trust is warranted, it seems very likely that regulators will continue to participate in policy development, at the request of the policy agencies.

Rationalisation of the roles and responsibilities of the regulatory agencies as considered in this Chapter may create at the margin an opportunity to refocus the regulatory agencies on enforcing the law and restore balance, with the main policy advice role again being filled by Treasury.

Costs and benefits – the case for pre-emptive self-regulation

Given the range of issues canvassed in this paper, the starkest challenge is going to be designing regulations that maximise the benefits and minimise the costs for both the short- and long-term. The experience with recent regulatory reform has not been encouraging.

One approach Australia clearly gets right, in comparison to other countries, is the commissioning every decade or so of a Financial System Inquiry (eg Campbell, Wallis and now Murray). The main merit of these holistic reviews are that they have put the focus on the system, and all elements in the system, in producing benefit for the entire community.

Between these inquiries, the process of regulatory reform too often is adversarial, with government identifying a need for reform and proposing options, and industry opposing both the need and the options proposed. Within this process, to minimise costs and focus on smarter regulation, industry might reflect that government would be better informed if the industry made stronger efforts (albeit at some cost) to quantify and illustrate the costs of alternatives when consultation processes are under way.

Reform of financial regulation has also become party political, moving away from the comparative bipartisanship achieved in the Hawke/Keating and Howard/Costello periods of government. Recent examples, arguably inefficient in achieving stated objectives and costly to implement, have been Stronger Super and Future of Financial Advice (FOFA) reforms.

It would be advantageous to all if bipartisanship could be restored. In part this might be achieved by the development of shared narratives on the changes in regulatory philosophy following the GFC, the emerging pressures on Australia's financial system and stability and the challenges posed in efficiently investing Australians' rising net worth and converting savings to retirement incomes.

Restoration of bipartisanship could be assisted by greater pre-emptive self-regulation: industry leading when problems emerge, and dealing with problems before they become so severe that a political reaction is inevitable. The implementation of the policy and regulatory changes involved in FOFA and the superannuation reforms that followed the Cooper Review would have been less contentious if industry had self-diagnosed the problems that gave lead to the reforms and acted on them pre-emptively.

Of course successful pre-emptive self-regulation as envisaged would require considerable cultural change within regulated entities, itself warranting regulatory oversight to ensure the processes for assuring behaviours are consistent with the improved culture are in place. Almost certainly Boards will have to lead from the top: measuring and reporting and therefore able to manage.

4.2 The regulatory architecture helped in the GFC - but may not in future

As we saw in Chapter 3, the Wallis/Costello 'Tinbergen Principle' assignment of four regulatory tasks (central banking, prudential regulation, market conduct regulation and competition regulation) to four separate regulators (RBA, APRA, ASIC and ACCC) was enlightened, unique around the world, and stood the Australian financial system in good stead through the first decade of the 2000s.

As a regulatory structure, it is the envy of many in other countries, and more recent regulatory architecture reforms in other countries are often based on what is described as the Australian 'twin peaks' approach (a prudential regulator separate from the central bank and market conduct regulation in a separate single regulator). For instance, the UK claims to be pursuing a 'twin peaks' approach in breaking up its all-in-one Financial Services Authority into two regulatory agencies, a Prudential Regulation Authority (PRA) and a Financial Conduct Authority, even though the PRA is placed within the central bank, the Bank of England.

The wisdom of the objectives-based architecture have been borne out to a considerable extent by the Australian experience. "This model avoids the conflict of objectives faced by regulators under virtually every other architecture. Where an agency faces multiple objectives there is a danger is that one will, for whatever reason, dominate the other in terms of visibility with senior management and/or allocation of resources (as appears to have been the case with Northern Rock in the UK)." (Carmichael 2009).

Despite the comparatively good performance of the Australian regulators and regulatory architecture in the GFC, it is instructive that no country is seeking to transplant the architecture in Australia and apply it elsewhere. The focus on financial sector stability has been heightened, and the new challenges need a strong and effective response. This applies as much to Australia as elsewhere. It is important that the regulatory architecture that served over the last 15 years be refined to be the most suitable for the next periods.

4.3 How the regulatory architecture can be reformed – from the top

Under the Wallis/Costello assignment, the regulators generally had clear missions, encapsulated in their names and equipped with effective instruments to achieve their single goals. But the complexities of finance have increased, additional functions have been added and other functions moved from one agency to another and, above all, systemic risk has become more important. The proposals advanced here start with the organisation that should be at the top of the regulatory pyramid that is accountable to government: the Council of Financial Regulators (CFR).

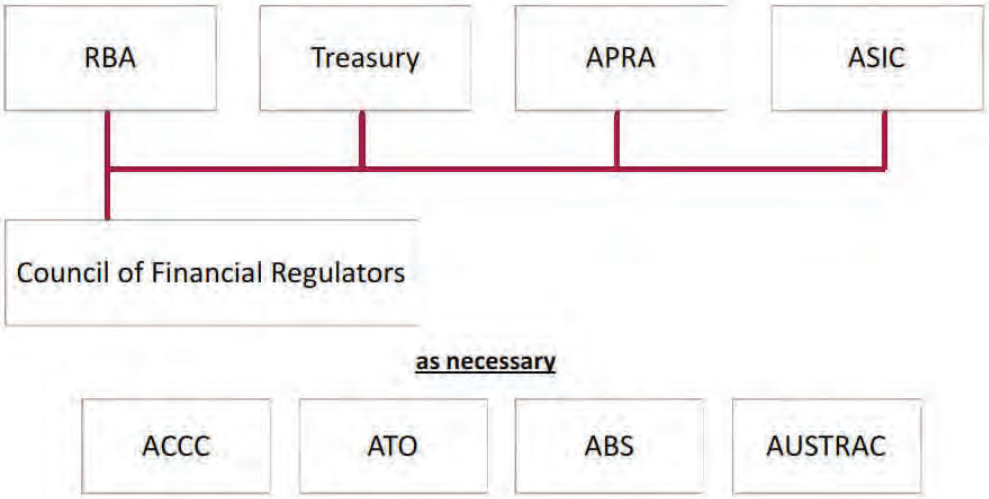
The RBA says that the present non-statutory CFR arrangements and process work well, embodying valuable flexibility, and no change is needed (see also IMF 2012). But with the risk of systemic crisis now always present, a more formal existence for CFR would seem necessary. This would involve a higher statutory profile, and formal responsibilities and accountabilities. The dynamic of CFR's meetings can be invigorated: the agencies meeting at CFR need competitive tension to contest the tendency to complacency that pervades high-level and permanent committees. Dynamic financial stability assessments must be made, written from a perspective of paranoia about what can go wrong. This can be achieved by, for instance, putting CFR in charge of, and accountable for, macroprudential policy decisions, with their implementation delegated to the appropriate agency (typically the RBA or APRA, or even ASIC, ACCC or the Treasury/ATO).

There is an emerging wealth of research showing that pre-emptive use of macroprudential policy will allow better focusing of monetary policy on inflation control (see for instance Borio 2012) and will help stabilise and make economic cycles less disruptive and more sustainable. The tools that might be brought into action have been used or explicitly considered in other countries (though not the place for a full listing, these include limits on bank lending at high loan-to-value ratios when such lending has been driving housing prices upwards, dynamic loan loss provisions, counter-cyclical liquidity ratios and others). Australia has done well so far without exercising macroprudential policy tools[17] but the challenge is how to continue to limit the normal economic swings now that balance sheets are extended with housing assets and liabilities. Freeing up the use of additional policy tools seems one of the few rational responses.

Some suggest CFR should be given an economic growth objective or mandate (eg ABA FSI 2014). This author's sense is that the responsibility for economic growth and macroeconomic policy should rest with the elected government, which has control of fiscal policy. The CFR would seem to be more likely to be effective in improving financial system regulation and maintaining financial stability if it did not have an economic growth responsibility.

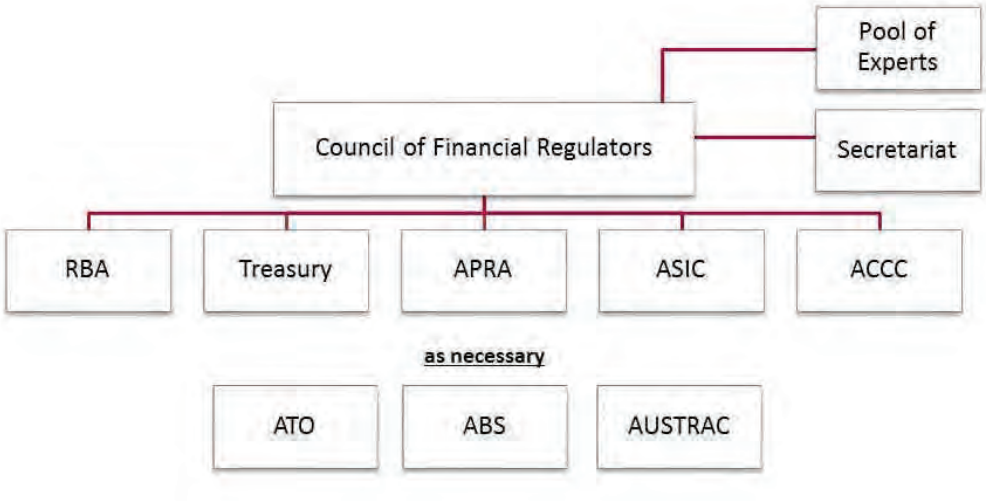
[17] There is an argument from the 'official family' that APRA does consider macroprudential policy and implement macroprudential policy tools in the regular discharge of its prudential policy responsibilities. But no macroprudential actions can be discerned in anything APRA has done: there have been no heightened or lowered regulatory ratio settings because of the state of the economic cycle and no regulatory actions taken to alleviate pressure on the central bank to adjust interest rates.

Figure 12 Current Australian financial system regulatory architecture



The reforms proposed touch all agencies involved in in financial system regulation. In summary, the proposals are to elevate the importance of the Council of Financial Regulators by making it a statutory body responsible for macroprudential policy and for overall efficiency of financial regulatory policy and by appointing an independent non-executive Chairman, allowing the RBA to focus on monetary policy and on payments system efficiency and stability, transferring the competition and consumer functions of APRA and ASIC to the ACCC which would be a member of the CFR (effectively making 'three peaks'), enabling APRA to focus on prudential regulation and ASIC on market integrity.

Figure 13 Proposed Australian financial system regulatory architecture



Starting from the top, with more detail:

- The coordinating body, the Council of Financial Regulators (CFR), a creation of Wallis/Costello, needs a higher statutory profile. As noted, this Wallis inspiration is informal, unaccountable and

not necessarily proactive. Recreated as a statutory body, publishing a regular agenda and minutes and accountable to parliament, it should have two roles, to oversee the effectiveness of regulation, and to be perpetually paranoid about systemic financial instability and make forward-looking macroprudential regulation decisions. CFR could contract the RBA and other regulatory agencies to implement its macroprudential policy decisions, bypassing the present problem where a decision to engage in macroprudential policy action implies acknowledging failure in the regulatory agencies' conduct of their day-to-day policy responsibilities. In fulfilling its responsibilities, CFR could be expected to monitor and review overseas proposals for regulatory reform for their appropriateness for adoption in Australia. The re-cast CFR should have an independent non-executive Chairman (appointed by government and not an agency head attending ex-officio), and a membership that includes as executive/ex-officio members the heads of the RBA, Treasury, APRA, ASIC and ACCC. It would probably be unwieldy to require a majority of independent non-executive members as executives, though that should be considered. For some deliberations CFR might draw on a rotating pool of industry experts, much as the Takeover Panel does. In any event, the Chair would need to be very well-informed, with excellent access to research resources.

With the statutory CFR and other regulators accountable to parliament, it would seem appropriate to ensure parliament has the resources to hold the regulators to account. This might have an ancillary benefit of increasing bipartisanship, focusing governments on priority legislative and regulatory reforms and reducing the focus on less priority matters.

Turning to the regulatory agencies, there are some consequential changes if the CFR takes ultimate responsibility for financial stability, macroprudential policy and regulatory coherence, and there are other changes simply because the present structure is failing.

- The Reserve Bank of Australia. The task of central banking has evolved into 3 tasks, monetary policy, the payments system and systemic risk/financial stability. Fortunately, thus far, the monetary policy tool has not been badly compromised by systemic risk considerations, but an additional policy tool for macroprudential policy (essentially for counter-cyclical reasons) seems very desirable. The confusion as to the location of responsibility for macroprudential policy will be resolved by elevating macroprudential policy decision-making to the CFR. The central bank's current three objectives, which includes financial stability, would be reduced to two: low inflation (the best means of creating a climate for sustained economic growth and full employment) and an effective payments system. Its stability and inflation goals already clash: surges in housing lending and house prices have taken monetary policy hostage. With the CFR determining macroprudential policy actions pre-emptively, monetary policy can then focus more acutely on inflation.

- The Australian Prudential Regulation Authority. Despite the more-encompassing words used by regulators in Australia, prudential regulation actions have all been of a 'micro prudential' nature affecting categories of institutions and individual institutions on a structural – not counter-cyclical – basis, with higher and rising prudential requirements and sharper tools to counter the moral hazards arising from the formal acknowledgement that the big ADIs are too-big-to-fail (TBTF). With CFR making macroprudential policy decisions, APRA may well be the prime agency

for implementation. APRA's 'micro prudential' mandate should explicitly require agreement of a risk appetite with government (which would be published) and managing the risk of taxpayers to having to bail out either prudentially regulated financial entities facing failure or their depositors and policy holders. The anticipated frequency and extent of resort to taxpayer funds will clarify the appropriate prudential ratios for ADIs, insurers and APRA-regulated superannuation funds. The regulatory capital ratios set for individual entities might also be published. The prudential boundary should be extended to obviously genuine shadow banks and to health insurers and motor vehicle insurers. APRA's data collection could be reformed and improved (as could the ABS's), arguably at little net cost. Its competition mandate, largely overlooked in practice as stability concerns have dominated decision-making, should be transferred to the ACCC, where the concerns of the regional banks might receive a hearing.[18] Finally, there is still a need for APRA to explicitly replace the previous pretence that depositors would not be bailed out with an – as yet unfunded – Financial Claims Scheme (FCS).

- The Australian Securities and Investments Commission. ASIC's confused legislation gave it six objectives and often inadequate instruments, and since then its responsibilities have only grown, making ASIC a predictable failure of the Tinbergen Principle. The task of market conduct regulation in practice has become several quite distinct and thus separate tasks under the rubric of market integrity, consumer protection and registry. The two main objectives (market integrity and consumer protection) often clash, creating uncertainty. Arguably both are rising in importance, integrity vital for safe globalization (and needs more high-tech data and analysis) and consumer protection vital as superannuation balances build up (and deplete) for funding retirement incomes. The case has been growing for reallocating some functions away from ASIC so it can focus on one priority objective with effective tools. Government has already identified moving out ASIC's registry responsibilities (the NCOA suggests its transfer to the ATO, the Budget proposes its privatisation). To focus ASIC on one objective means choosing between integrity and consumer priorities. Competition issues might be transferred to the ACCC, as the NCOA suggests, and consumer protection also move to ACCC, equipping the ACCC to be an integrated competition and consumer regulator. ASIC as a market integrity regulator should remain funded by taxpayers. Industry funding would make regulatory capture more certain. As for ASIC's tools, the scope to make AFSL holders responsible for the actions of their representatives should be enhanced, with the regulator equipped with a practical power to remove the AFSL if this responsibility is not properly discharged. At the same time, more responsibility should be put on product issuers to attest the product is what it says it is and will perform in the way the product issuer claims (whether this should be regulated by ASIC or ACCC has to be determined). This facilitates an 'inside the flags'/'outside the flags' description of products. That way, both integrity and appropriateness objectives will be covered.
- The Australian Competition and Consumer Commission. The task of competition regulation in the financial sector for the ACCC has focused on regulating to ensure no collusive conduct that would be detrimental or impact on the Australian market (whereas ASIC has focused on

[18] For their part, the regional banks who complain that regulatory settings support the dominance of the big four banks might reflect on the virtual complete failure of even well-endowed foreign banks in competing with the big four.

regulating to limit misleading and deceptive conduct). However, the carriage of ACCC's role was immediately overwhelmed by the mandating of 6 pillars and then 4 pillars, and then sidelined into irrelevance by the urgency created by the GFC to allow weakened mid-sized ADIs to be incorporated within the big 4 (whereas weak non-ADIs were allowed to fail). Competition policy in the financial sector is likely to be more important and challenging and a stronger competition regulator is required. The impact on competition of the increasing vertical integration of the already dominant banks needs to be assessed, and may run counter to the possible international trend to ring-fence core banking from riskier trading businesses and enable frameworks for the orderly failure of prudentially regulated entities. The ACCC should receive the competition mandates currently held by APRA and ASIC, as well as the consumer functions that have been in ASIC's responsibilities. The exact border between ACCC and the other regulators will need detailed attention[19]. Whatever the outcome, ACCC should join the CFR, becoming in effect a 'third peak'. It would need to be equipped with sufficient powers and penalties, especially as regards product issuers,[20] and sufficient resources.

- The Treasury. The Treasury is the government's pre-eminent adviser on economic and financial sector policy, legislation and regulation. A great truism in finance and regulation is that the devil is in the detail. The staff reductions in train in Treasury, amounting to one-third of all positions or more, do raise the question of whether its responsibilities can be adequately discharged in future: the quality and appropriate timing of advice is likely to suffer.
- Australian Taxation Office. An additional regulator has emerged, the superannuation administrator. The ATO's Portfolio Budget Statement says its role "is to ensure the community has confidence in the administration of Australia's taxation and superannuation systems". The ATO has substantial and rising superannuation responsibilities: it is *de facto* regulator of SMSFs, the fastest growing component of the superannuation sector, and superannuation tax concessions for entity earnings and contributions are collectively the biggest tax expenditure of the government (The Treasury 2014). These are made more difficult to discharge by the complexity (and at times inexplicability) of the rules and legislation for superannuation. Fortunately, the systemic instability risk of SMSFs is very minor and the direct exposure to individual risks make trustees more engaged than many to the risks posed by *caveat emptor*. Castillo 2012, a PhD thesis on the role of the ATO and its regulatory powers, finds that the ATO is a competent regulator for the SMSF sector. One important function that ATO might take up would be provision of an easy-to-use, efficient and timely mechanism for the movement of contributions between superannuation funds, facilitating choice and getting rid of months of frustration and delays.
- The Australian Bureau of Statistics. With the experience of the GFC confirming the value of rich financial sector data in helping look forward to guide policy, it seems even more important to

[19] Whether ACCC should inherit the financial literacy functions still in ASIC after establishment of the not-for-profit entity Financial Literacy Australia (whose grants are funded by 'voluntary' contributions from companies signing ASIC-negotiated enforceable undertakings) is moot.

[20] Powers and penalties raised against a financial institution providing a service that does not deliver what was promised at a minimum might be the same as for non-financial entities. Variations might be upwards, if necessary.

improve the data the ABS prepares on the financial sector, and especially on superannuation and funds management.

The reforms to the regulatory architecture proposed in this paper are comparatively modest. A powerful critique of the failure of overseas (mainly US) regulators, Barth *et al* 2012, would have a publicly-funded Sentinel set up to act as public-spirited watchdog over the gamut of financial regulators, to ensure sufficient focus on systemic stability. In Australia that might be a duplication if the CFR is given real responsibility, supported by and accountable to the parliament, sufficient to counter the ever-present self-interest of the financial sector. It might also seem unnecessary in Australia in light of the vigour of the press and the commentariat.

However, the reforms cannot be only domestic. More TransTasman and Asia regional cooperation will be needed. In addition, Callaghan 2013 has set out a proposal for an international equivalent of the Australian CFR, tied in with the G20, to cover 'higher order' financial regulation issues:

> "… a Finance Ministers and Central Bank Governors Committee on Financial Regulation [should] be established. It would consist of G20 finance ministers, central bank governors and heads of regulatory agencies along with the non-G20 members of the International Monetary and Financial Committee (MFC) plus Hong Kong. It would meet at the time of the spring and annual IMFC meeting and would replace the G20 finance ministers meeting held at that time. The committee would have a specific charter, which would cover not only oversight of the development and implementation of the new regulatory standards, but also their overall impact on financial stability and economic growth. The secretariat to this committee would be the FSB and IMF."

Were such a G20 committee on financial regulation to proceed, in practice there would need to be a limit on the number of heads of regulatory agencies present at meetings. Australia's representative should be the head, or a delegate, of the reformed statutory Council of Financial Regulators.

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