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Papers from the 2017 Melbourne Money and Finance Conference
FINSIA acknowledges the contribution of the papers from the 22nd Melbourne Money and Finance Conference to this issue of JASSA. The conference — Evolutionary Trends in the Australian Financial Sector — was held on 10–11 July 2017 by the Australian Centre for Financial Studies and Monash University.

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The self-managed superannuation fund (SMSF) sector has become an important and enduring part of the Australian superannuation system with over 1.1 million Australians choosing to use an SMSF to manage their retirement savings. This paper provides an overview of the current state of the SMSF sector and assesses the challenges that lie ahead for the sector. These include increased compliance complexity, the ageing of SMSF trustees and members, and the need for appropriate asset allocation and high-quality financial advice during the retirement phase.

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ANGELA PEARSALL, LIAM HENNESSY and JESSICA TAYLOR
This paper examines the regulatory reforms that have been introduced internationally in the wake of the global financial crisis and their impact on the culture of financial services firms. It also considers how the introduction of the Banking Executive Accountability Regime (BEAR) is likely to shape Australia’s financial services landscape.
Concentration and contagion risks in the Australian banking system

KATIA D’HULSTER

This paper seeks to find answers to four questions on concentration and contagion risks in the Australian banking sector. First, what types of concentrations are observed in the banking sector and how do these compare internationally? Second, are these concentrations posing or exacerbating contagion and systemic risks? Third, how is the prudential supervisor addressing the systemic risks arising from the concentrations in the Australian banking sector? Finally, are there any remaining gaps in the policy response?
This issue of JASSA includes a submitted paper by John Evans and Abdul Razeed on the adequacy of the Australian superannuation guarantee levy, followed by a special section containing papers from the 10–11 July 2017 Melbourne Money and Finance Conference, which focused on Evolutionary Trends in the Australian Financial Sector.

The papers in the special section of the journal consider important trends in the secured money markets, the self-managed super fund sector, asset management, industry culture, and concentration and contagion risks in the Australian banking sector. The conference was organised by the Australian Centre for Financial Studies and Monash University, and was sponsored by the Reserve Bank of Australia, Australian Prudential Regulation Authority and FINSIA. While not subject to the usual double-blind process, each of these papers was reviewed by a member of the Editorial Board and by me prior to inclusion.

The paper by John Evans and Abdul Razeed indicates that most of the previous analysis of the adequacy of the superannuation guarantee levy (SGL) system has focused on the pre-retirement phase and ignored the volatility of the variables that affect SGL accumulations. This paper extends the analysis of Ganegoda et al. (2017) by considering the combined effect of both longevity and the volatility of the equity capital market during the retirement phase. Evans and Razeed find that those in the SGL system for around 40 years with an average retirement SGL amount could attain the ASFA modest standard of living in retirement, and those with a shorter life expectancy than average could attain a comfortable standard of living. But those who expect to live longer than the average can only expect to achieve a modest standard of living in retirement. The authors also suggest that it appears there is an unintended option for retirees to withdraw amounts at the comfortable standard of living, since the age pension is available if they run out of assets, and it would provide only a slightly lower living standard in retirement than the alternative ASFA modest standard of living.

The first paper in the special section is by Chris Becker and Peter Rickards examining recent trends in the Australian repo market. The paper highlights the importance of understanding how money market rates are determined, and the impact on the financial sector and thereby the economy more broadly. Becker and Rickards note that since 2016 there appears to have been a demand-driven increase in repo rates, which at least in part can be linked to non-residents becoming more active managers of their portfolios of Australian dollar denominated securities. They suggest that the rise in repo rates has been accompanied by an increase in volatility for reasons that are very different to the crises-related market conditions observed during earlier episodes over the past decade. They also point out that higher repo rates have not been translated into the broader interest rate structure in the economy (such as the rate at which banks issue debt).

Next, Jordan George provides an overview of the current state of the SMSF sector and assesses the challenges that lie ahead for the sector. He indicates that these include increased compliance complexity, the ageing of SMSF trustees and members, and the need for appropriate asset allocation and high-quality financial advice during the retirement phase. George also notes that the 2016 changes to the superannuation laws, especially the introduction of the transfer balance cap, have resulted in a significant increase in complexity for individuals affected by the changes, increasing the need for professional advice and assistance with compliance.

The paper by Scott N Pappas focuses on the rise of indexing and evolution of active asset management. Pappas says investors have been encouraged to revaluate their perspectives on active management by: a history of underwhelming performance in comparison to index returns; generally high costs, which erode performance; and an increasingly challenging environment for generating alpha. He notes that continued inflows into passive management seem to suggest a bleak outlook for active managers. But despite this rather dim view, he believes there is scope for active management to recast itself, by increasing the focus on costs and transparency, and leveraging developments in factor investing.
Angela Pearsall, Liam Hennessy and Jessica Taylor examine the international regulatory reforms introduced in recent years, which are designed to heighten senior management responsibility and bring about cultural change in financial institutions, where people take ownership and responsibility for ‘doing the right thing’ and ensuring ‘good outcomes for customers’. The paper also considers the likely impact of the introduction of the Banking Executive Accountability Regime (BEAR) on Australia’s financial services landscape, which the authors note appears to be largely modelled on the UK Senior Managers Regime (SMR) that came into effect in March 2016. Pearsall et al. indicate that the implementation of these reforms remains at an early stage and only time will tell if they will ultimately close the gap between desired values and actual conduct.

And, finally, Katia D’Hulster addresses a number of questions on concentration and contagion risks in the Australian banking sector including the types of concentrations, whether they pose or exacerbate contagion and systemic risks, how the prudential supervisor is addressing these risks and whether there are any remaining gaps in the policy response. She finds that almost all banks in Australia have significant housing portfolios and are thus exposed to adverse events in this systemic market. In addition, each of the major four banks poses a systemic risk in itself and they are also correlated by the similarity in business models. D’Hulster indicates that there are also market distortions as a result of the too-big-too-fail banks and conglomeration risk. She suggests that while the Financial System Inquiry recognised these risks and recommended that the Australian banking system become ‘unquestionably strong’, regulation alone cannot achieve this objective; it needs to be complemented by ‘unquestionably strong’ independent, adequately resourced and proactive supervision.

I would like to thank all of our contributors for their insightful papers on some of the most pressing issues facing industry and policy makers currently. We look forward to many more topical articles in 2017 and encourage our readers to contact us at membership@finsia.com with any suggestions about the sorts of issues you would like to see addressed in JASSA in the future.

2016 JASSA prize
The JASSA Editorial Board, on behalf of FINSIA, awards the JASSA prize annually to the most innovative and insightful papers published in the journal. Among dozens of peer reviewed publications in 2016, we are delighted to announce that the 2016 JASSA Prize was awarded to the authors of the following papers:

**JASSA Main Prize**
‘Patterns of voluntary contributions to superannuation: A longitudinal analysis’ by Jun Feng and Paul Gerrans (2016 issue 2).

**JASSA Merit Award**
‘The impact of dividend imputation on share prices, the cost of capital and corporate behaviour’ by Andrew Ainsworth, Graham Partington and Geoffrey J Warren (2016 issue 1).
ADEQUACY OF THE AUSTRALIAN SUPERANNUATION GUARANTEE LEVY: A post-retirement analysis

JOHN EVANS, Director of the Centre for Analysis of Complex Financial Systems
ABDUL RAZEED, Lecturer at the University of Sydney Business School

To date, most of the analysis of the adequacy of the superannuation guarantee levy (SGL) system has focused on the pre-retirement phase and ignored the volatility of the variables that affect SGL accumulations. Introducing volatility into the analysis, Ganegoda et al. (2017) conclude that the SGL system will provide highly variable retirement benefits. This paper extends their analysis by considering the combined effect of both longevity and the volatility of the equity capital market during the retirement phase. We find that the SGL system delivers highly variable standards of living in retirement across various cohorts of retirees, but in most situations provides the ASFA (2017) modest standard of living in retirement. We note that the age pension appears to provide retirees with the option to enjoy the ASFA (2017) comfortable standard of living knowing that if their assets run out they can access the age pension, which provides a standard of living only slightly lower than the ASFA modest level.

Academics have for some time used stochastic analysis to research the broad area of how people determine lifetime consumption and the effect of investment strategies on retirement benefits. Ando et al. (1963) determine a theoretical model of lifetime consumption in which consumption is a function of both income and wealth, with implications for consumption in retirement. Blake et al. (2001) undertake stochastic analysis of the impact of varying asset strategies on UK retirement accumulation benefits and conclude that a long-term high allocation to equities provides the best outcome. Blake et al. (2003) extend their 2001 study by considering the effects of alternative asset strategies in the post-retirement phase and again conclude that the most important decision for retirees is the allocation to equities.

Several studies analyse specific aspects of the SGL system. Basu et al. (2009) use stochastic analysis to illustrate that the gender inequality in Australian retirement funds, arising from periods of being out of the workforce, can be reduced by modest changes to contribution rates and asset strategies. Bianchi et al. (2016) use stochastic analysis to consider the retirement benefits of Indigenous Australians relative to non-Indigenous Australians. While several authors examine the overall adequacy of the SGL system (Gallagher 2011; Rothman 2011; Treasury 2009), as noted by Ganegoda et al. (2017), these papers ignore the effect of capital market volatility, which could have a serious impact on the adequacy of the SGL system.

Ganegoda et al. (2017) show that as a result of variables affecting the accumulation of SGL assets in the pre-retirement phase, the replacement ratio for different cohorts of retirees can vary from 40 per cent to 400 per cent. Ganegoda et al. (2017) assume retirees buy an annuity to fund their retirement and, therefore, their study considers neither the continued impact of capital market volatility into the retirement phase nor post-retirement longevity issues.
In this paper, we analyse the impact of longevity and capital market volatility on the assets available from the SGL system in the retirement phase. We also estimate superannuants’ subsequent eligibility for the age pension.

Methodology
We examine the case of a couple, a single male, and a single female retired with a retirement benefit (the retirement SGL amount) derived from the benefits estimated by Ganegoda et al. (2017). For each post-retirement year, we then add the investment return to the remaining capital, deducting drawdowns at either the comfortable or the modest standard of living, as determined by the Association of Superannuation Funds of Australia (ASFA 2017), and adding any age pension entitlement. We terminate our projections at age 100. We test for sensitivity to alternative investment strategies. The major assumptions and variables in our projections are as follows.

The retirement SGL amount
We assume a retirement SGL amount equal to the mean derived by Ganegoda et al. (2017) with five capital market shocks but we adjust for their assumption that employers would make contributions of 12 per cent of salaries, as this level of contribution has now been deferred until 2025.\(^2\) We adjust the Ganegoda et al. (2017) retirement SGL amount to reflect an employer contribution of 9.5 per cent of salary. While they assume retirees commence employment in 2010, and work for 42 years, the assumed commencement date for the accumulation of contributions has little effect, and it is the duration of employment that has the material affect, and hence the adjusted Ganegoda et al. (2017) retirement SGL amounts are reasonable for our purposes. The assumed retirement SGL amounts are shown in Table 1.

<table>
<thead>
<tr>
<th>Retiree</th>
<th>Retirement SGL amount ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couple</td>
<td>$1,302</td>
</tr>
<tr>
<td>Single male</td>
<td>$712</td>
</tr>
<tr>
<td>Single female</td>
<td>$590</td>
</tr>
</tbody>
</table>

Post-retirement investment strategy and returns
We assume retirees choose either a ‘balanced’ or ‘conservative’ investment strategy and do not change their strategy during the retirement phase. Investment returns for each year are simulated using @Risk\(^3\) with a normal distribution of returns based on the data in Table 2, plus additional shocks to the equity capital markets.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Annualised return (% p.a.)</th>
<th>Annualised standard deviation (% p.a.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced</td>
<td>7.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Conservative</td>
<td>5.4</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Three scenarios for the shocks to the equity capital market are simulated, viz. no shocks, one shock in each seven-year period and one shock in each five-year period. The shocks are estimated by considering the equity market shocks that are reported in Ganegoda et al. (2017) and these are summarised in Table 3.

<table>
<thead>
<tr>
<th>Year</th>
<th>Australian equities (%)</th>
<th>International equities (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>−50.9</td>
<td>−40.8</td>
</tr>
<tr>
<td>1981</td>
<td>−16.8</td>
<td>−10.0</td>
</tr>
<tr>
<td>1982</td>
<td>−2.5</td>
<td>−21.4</td>
</tr>
<tr>
<td>1987</td>
<td>−40.7</td>
<td>−16.3</td>
</tr>
<tr>
<td>1990</td>
<td>−14.6</td>
<td>−17.5</td>
</tr>
<tr>
<td>2002</td>
<td>−27.2</td>
<td>−11.3</td>
</tr>
<tr>
<td>2008</td>
<td>−24.5</td>
<td>−38.4</td>
</tr>
<tr>
<td>Average</td>
<td>−25.3</td>
<td>−22.2</td>
</tr>
</tbody>
</table>
To determine the return to be used to estimate the equity capital market shocks, the average annual returns in Table 3 are applied to the asset allocations shown in Table 4. The resulting average impact of a capital market shock is also shown in Table 4.

**TABLE 4: Assumed asset allocations**

<table>
<thead>
<tr>
<th>Allocations</th>
<th>Australian equities (%)</th>
<th>International equities (%)</th>
<th>Average impact (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced</td>
<td>25</td>
<td>35</td>
<td>-14</td>
</tr>
<tr>
<td>Conservative</td>
<td>25</td>
<td>10</td>
<td>-9</td>
</tr>
</tbody>
</table>

The equity market shocks are introduced on a random basis at the average impact rate shown in Table 4 as additional investment returns for each year.

**Post-retirement drawdowns**

We assume retirees draw down an annual amount in addition to any age pension entitlement to achieve a total income necessary to maintain either a comfortable lifestyle ($60,000 p.a. for couples and $45,000 p.a. for single retirees) or a modest lifestyle ($35,000 p.a. for couples and $25,000 p.a. for single retirees) as defined by ASFA (2017).

**Age pension eligibility**

We determine the eligibility for the age pension by assuming that the only assets held by the retirees are their superannuation assets and their own home, and that the asset and income tests shown in Appendix A are applied throughout the retirement phase with the lower age pension from the application of the two tests (Australian Government Asset Test and Income Test) being paid (Department of Human Services 2017a).

To determine the application of the income test to the retirees’ account balances each year we assume that the interest rates included in the age pension deeming provision shown in Appendix A will apply (Department of Human Services 2017b).

**Real return adjustments**

As we are using current age pension amounts and current ASFA (2017) drawdowns, for consistency we adjust the investment returns and the equity market historical shocks for inflation of 1.9 per cent p.a., being the average change in the Consumer Price Index (CPI) for the five years to 1 September 2016.

**SGL post-retirement adequacy**

Table 5 indicates the age at which the retiree runs out of assets for each of the scenarios considered, with the age of 100 indicating that the retiree still has assets remaining at that age.

**TABLE 5: Age at which retiree has nil retirement account balance**

<table>
<thead>
<tr>
<th>Investment strategy</th>
<th>Frequency of capital market shocks</th>
<th>Lifestyle drawdown</th>
<th>Couple</th>
<th>Single male</th>
<th>Single female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced</td>
<td>nil</td>
<td>Modest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Balanced</td>
<td>nil</td>
<td>Comfortable</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 7 years</td>
<td>Modest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 7 years</td>
<td>Comfortable</td>
<td>100</td>
<td>99</td>
<td>87</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 5 years</td>
<td>Modest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 5 years</td>
<td>Comfortable</td>
<td>95</td>
<td>84</td>
<td>79</td>
</tr>
<tr>
<td>Conservative</td>
<td>nil</td>
<td>Modest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Conservative</td>
<td>nil</td>
<td>Comfortable</td>
<td>100</td>
<td>98</td>
<td>87</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 7 years</td>
<td>Modest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 7 years</td>
<td>Comfortable</td>
<td>100</td>
<td>88</td>
<td>82</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 5 years</td>
<td>Modest</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 5 years</td>
<td>Comfortable</td>
<td>91</td>
<td>83</td>
<td>79</td>
</tr>
</tbody>
</table>

Allowing for reasonable and random equity market crashes, the results indicate that regardless of the investment strategy adopted retirees who are prepared to accept the ASFA modest standard of living could fund their retirement through to age 100. If retirees chose the higher, comfortable standard of living, they could run out of assets in their mid-to-late-80s depending upon the frequency of equity market crashes.
The current average life expectancy of retirees is around 20 years (Australian Government Actuary 2010), i.e. on average, retirees can expect to live until age 85, which suggests that for those whose lives are shorter than average, and have around the average expected retirement SGL amount, the SGL system will likely support a comfortable standard of living. But for those living longer than average, the SGL system is only likely to support a modest standard of living in retirement. The age pension eligibility does, however, provide an interesting option for retirees in that they could withdraw funds at the comfortable standard of living level knowing that if they run out of funds they would be eligible for the age pension, which would provide a standard of living not much lower than the ASFA modest standard of living.

Allowing for reasonable and random equity market crashes, the results indicate that regardless of the investment strategy adopted retirees who are prepared to accept the ASFA modest standard of living could fund their retirement through to age 100. If retirees chose the higher, comfortable standard of living, they could run out of assets in their mid-to-late-80s depending upon the frequency of equity market crashes.

### Age pension entitlement

We include any age pension entitlement in the total amount drawn down each year. To illustrate the significance of the age pension to retirees once the SGL system becomes mature, Table 6 shows, for the scenarios considered, the earliest age at which retirees would become eligible for a part age pension.

**TABLE 6: Age at which retiree is eligible for part age pension**

<table>
<thead>
<tr>
<th>Investment strategy</th>
<th>Frequency of capital market shocks</th>
<th>Lifestyle drawdown</th>
<th>Couple</th>
<th>Single male</th>
<th>Single female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced</td>
<td>nil</td>
<td>Modest</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Balanced</td>
<td>nil</td>
<td>Comfortable</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 7 years</td>
<td>Modest</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 7 years</td>
<td>Comfortable</td>
<td>0</td>
<td>83</td>
<td>71</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 5 years</td>
<td>Modest</td>
<td>0</td>
<td>88</td>
<td>73</td>
</tr>
<tr>
<td>Balanced</td>
<td>1 in 5 years</td>
<td>Comfortable</td>
<td>75</td>
<td>73</td>
<td>68</td>
</tr>
<tr>
<td>Conservative</td>
<td>nil</td>
<td>Modest</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Conservative</td>
<td>nil</td>
<td>Comfortable</td>
<td>0</td>
<td>82</td>
<td>71</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 7 years</td>
<td>Modest</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 7 years</td>
<td>Comfortable</td>
<td>91</td>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 5 years</td>
<td>Modest</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Conservative</td>
<td>1 in 5 years</td>
<td>Comfortable</td>
<td>78</td>
<td>73</td>
<td>68</td>
</tr>
</tbody>
</table>

Table 6 indicates that retirees who choose to live at the ASFA modest standard of living will not draw any age pension. It needs to be recognised, however, that the modest standard of living is only marginally higher than that provided by the full age pension and retirees may not be happy with effectively having to fund their own age pension when the Australian Government is currently viewed as providing the age pension for nil direct cost to retirees. If retirees choose to live at the ASFA comfortable standard of living they would need age pension support as their assets fall below the level to support this standard of living from their 70s, particularly if equity market crashes occur reasonably frequently. In this situation, their total income would be below that of the comfortable standard of living.

### Conclusion

Our analysis indicates that those in the SGL system for around 40 years with an average retirement SGL amount could attain the ASFA (2017) modest standard of living in retirement, and those with a shorter life expectancy than average could attain a comfortable standard of living. But those who expect to live longer than the average can only expect to achieve a modest standard of living in retirement.
This raises the issue of the suitability of the SGL system for the typical retiree when it appears that attaining a standard of living in retirement that is significantly higher than the age pension is largely dependent on the vagaries of equity markets and the longevity of retirees. It also appears that there is an unintended option for retirees to withdraw amounts at the comfortable standard of living, since the age pension is available if they run out of assets, and it would provide only a slightly lower living standard in retirement than the alternative ASFA modest standard of living.

Our analysis indicates that those in the SGL system for around 40 years with an average retirement SGL amount could attain the ASFA (2016) modest standard of living in retirement, and those with a shorter life expectancy than average could attain a comfortable standard of living. But those who expect to live longer than the average can only expect to achieve a modest standard of living in retirement.

Acknowledgement
The authors would like to acknowledge the contribution of Amandha Ganegoda to an earlier unpublished version of this paper, and also to some valuable comments from an anonymous referee on an earlier version of this paper.

Notes
1. Replacement ratio = disposable income post-retirement/disposable income pre-retirement.
3. @Risk Add-In for Microsoft Excel published by Palisade Corporation.
4. Data was sourced from Morningstar Australasia Pty Ltd.
5. Ganegoda et al. (2017).
6. Derived from the website for a large superannuation fund.
8. Age 0 indicates the retiree does not become eligible for the age pension at any time during the projections.

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### APPENDIX A: Age pension tests

#### Summary of age pension eligibility tests

<table>
<thead>
<tr>
<th>Retiree</th>
<th>Income test</th>
<th>Asset test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couple</td>
<td>&lt;$292 income per fortnight = full pension;</td>
<td>Assets &lt;$375,000 = full pension;</td>
</tr>
<tr>
<td></td>
<td>&gt;$292 income per fortnight = full pension</td>
<td>Assets &gt;$375,000, pension reduces by $3 per</td>
</tr>
<tr>
<td></td>
<td>~$0.5 per $1 over $292;</td>
<td>fortnight for each $1000 of assets;</td>
</tr>
<tr>
<td></td>
<td>nil pension at $2,936 income per fortnight</td>
<td>nil pension at $816,000.</td>
</tr>
<tr>
<td>Single male or female</td>
<td>&lt;$164 income per fortnight = full pension;</td>
<td>Assets &lt;$25,000 = full pension;</td>
</tr>
<tr>
<td></td>
<td>&gt;$164 income per fortnight = full pension</td>
<td>Assets &gt;$250,000, pension reduces by $3 per</td>
</tr>
<tr>
<td></td>
<td>~$0.5 per $1 over $164;</td>
<td>fortnight for each $1,000 of assets;</td>
</tr>
<tr>
<td></td>
<td>nil pension at $1,918.20 income per fortnight.</td>
<td>nil pension at $542,000.</td>
</tr>
</tbody>
</table>

#### Age pension deeming provisions

<table>
<thead>
<tr>
<th>Retiree</th>
<th>Lower deeming asset level</th>
<th>Deeming rate for lower asset level</th>
<th>Deeming rate for balance of Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couple</td>
<td>$81,600</td>
<td>1.75%</td>
<td>3.25%</td>
</tr>
<tr>
<td>Single male or female</td>
<td>$49,200</td>
<td>1.75%</td>
<td>3.25%</td>
</tr>
</tbody>
</table>
SPECIAL SECTION:
PAPERS FROM THE 2017 MMF CONFERENCE

FINSIA acknowledges the contribution of the papers from the 22nd Melbourne Money and Finance Conference to this issue of JASSA. The conference — Evolutionary Trends in the Australian Financial Sector — was held on 10–11 July 2017 by the Australian Centre for Financial Studies and Monash University.
SECURED MONEY MARKET TRANSACTIONS:
Trends in the Australian repo rate

CHRIS BECKER and PETER RICKARDS

This paper examines recent trends in the Australian repo market. It also highlights the importance of understanding, now and in the future, how money market rates are determined, and the impact on the financial sector and thereby the economy more broadly. The paper was presented at the 22nd Melbourne Money and Finance Conference, Monash University and Australian Centre for Financial Studies, 10 to 11 July 2017.

The repo market is an integral part of money markets that facilitates a more efficient financial system and assists in the allocation of capital in the real economy. The use of collateral, combined with the practice of haircutting the value of securities to reflect credit risk and margining transactions to account for valuation changes, provides participants with a less risky means of transacting than unsecured money markets. As a result, repos are actively used to take positions in securities, arbitrage price differentials, manage cash flows, raise short-term financing without undertaking outright sales, and by the Reserve Bank of Australia to conduct its monetary policy operations (Wakeling and Wilson 2010). However, an excessive build-up of short-term leverage associated with over-reliance on repos can also be problematic, as was the case in the North Atlantic economies leading up to the 2008 financial crisis.

The value of positions in repos was around $120 billion as at the end of 2016. The position of repo dealers in lending cash and accepting securities as collateral was broadly in line with the value of cash they borrowed on a secured basis. In aggregate, the Australian repo market can therefore be characterised as a means of intermediating cash flows (‘matched book’) rather than a key net funding market. As has been the case for several years, deposits, long-term debt and equity represent the main sources of funding for banks in Australia (Cheung 2017), so that developments in the repo market have little direct impact on the cost of funds for banks or the interest rates at which borrowers access intermediated loans.

Since 2015, the composition of the market has shifted considerably, so that currently around half of all cash lent by repo dealers is directed to non-residents. Excluding cash lending to non-residents, there has been little change in repo dealers’ positions vis-à-vis other segments of the market over the past decade (Figure 1). Non-residents have been an important source of demand for secured cash borrowing and exert notable influence on price determination in the repo market.
On the other side of the repo market, the Reserve Bank is the source of around half of all cash borrowed by repo dealers. The central bank position in the repo market reflects its domestic liquidity management operations. These are exogenously determined by, among other factors, offsetting the liquidity impact resulting from the issue of banknotes and the cash management activities of the government. That is, when system liquidity would otherwise decline because payments are made into accounts held at the central bank to pay for new banknotes or to make transfers to the government, liquidity management operations are undertaken to offset the drain by lending cash back into the interbank market (Baker and Jacobs 2010). Although driven by different factors, the rising demand for cash from non-residents has occurred at the same time that the Reserve Bank has supplied more cash into the repo market. This reflects the fact that repo dealers fund part of their client activity by borrowing from the central bank at its daily liquidity management auctions.

Notably though, while the Reserve Bank accounts for around half of cash borrowing positions outstanding, it is far less important as a share of market turnover. The typical duration of interbank repo agreements is very short, at less than one-tenth of the average duration of the Reserve Bank’s repo book associated with market operations. Accordingly, the dollar value of turnover is also more than 10 times higher, albeit only at the shorter tenors. Aggregate turnover in repos is likely to be approximately $30 billion per day or around $8 trillion per annum, although no precise metrics of this aspect of the repo market exist.3

**Long-term perspective on the repo rate**

Prior to disruptions during the financial crisis in 2008, and ensuing stress-related volatility in European financial markets in 2011, repo rates in Australia broadly traded as could be expected. The Reserve Bank’s transaction rates for one-month secured cash lending under repo were typically below the unsecured interbank cash rate (Figure 2).4 This was in large part attributable to the inherent credit risk premium in the unsecured rate that does not affect appropriately collateralised lending.
Financial markets began to experience a series of severe stresses in the period from 2008 to 2011. North-Atlantic economies especially experienced wide-ranging financial disintermediation that adversely affected liquidity in repo markets. While the repo market in Australia had not been used to fund leveraged positions in sub-prime instruments as was the case in the more directly crises-affected economies, there was a spillover that resulted in a rise in repo rates. The demand for cash was reflected in one-month repo rates that no longer traded lower than the unsecured rate but well in excess. Rates spiked to over 40 basis points above the overnight indexed swap rate around the time of the Lehman Brothers collapse, and around 20 basis points when European markets relapsed into a bout of volatility. During that time there was little activity in the interbank repo market for anything other than very short terms using only the highest quality sovereign-issued collateral. The remainder of activity was intermediated by the Reserve Bank, using securities considered to be of lower grade and at longer terms that market participants were not willing to enter into with each other. Like other central banks during these times of stress, the Reserve Bank helped to complete the market in a manner that contained the impact of the crises.

Following the worst stresses related to European financial markets in 2011, the premium that had opened up in repo rates narrowed but never reverted to be consistently below the unsecured rate. Repo rates were therefore not only higher but notably above unsecured rates, albeit for non-crisis related reasons. This was also evident in other jurisdictions. Repo market activity in the major economies declined noticeably, while the Australian market was becoming deeper and more active in line with issuance of government debt securities. However, at this time implementation of a new suite of prudential regulations was also affecting the way that market participants began to price short-term money market instruments (Committee on the Global Financial System (CGFS) 2017). At least part of the failure of repo rates to normalise following the crises might therefore be attributable to the interaction of markets with regulations and the possibility that there is now a greater degree of segmentation that inhibits arbitrage between money markets.

The repo rate had also started to become noticeably more volatile, not necessarily in absolute day-to-day changes, but exhibited signs of events that can be characterised as cycles. In October 2016 rates rose by more than 10 basis points over a two-week period and subsequently reverted at a similar speed. In December of the same year, repo rates rose by 25 basis points, from below 10 basis points to around 35 basis points. Consistent with the interaction of markets with regulatory requirements, these cycles appear to have been at least loosely correlated with reporting periods of financial institutions.
More recent dynamics in repo pricing

The diverse range of participants in the repo market and the various functions that short-term secured money market transactions perform mean that there is always a confluence of factors that affect how the interaction between demand and supply determines price. These dynamics make it difficult to ascertain with certainty why repo rates move in the manner observed over recent years. Nonetheless, one of the most notable developments in the repo market, which is consistent with the observed shift higher in rates, has been strong demand for cash from non-residents. Since 2015, repo dealers have sharply increased the amount of cash they lend to non-residents (Figure 3).

FIGURE 3: Position of repo dealers*

<table>
<thead>
<tr>
<th>Year</th>
<th>$b</th>
<th>$b</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2011</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>2017</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

* Entered into by banks and RFCs; data prior to 2009 is unpublished

Sources: APRA, RBA.

The increase in the quantity of cash traded in the domestic repo market, alongside the rise in repo rates, is consistent with a significant increase in demand for secured borrowing from non-residents rather than explanations of higher interest rates that rely on supply-side explanations. Notably, the recent rise in the repo rate is not reflected in higher rates in other domestic money markets.

Cash borrowing by non-residents and the cross-currency swap basis

In order for non-residents to participate in the Australian repo market, they either have existing holdings of the appropriate securities for collateral or need to acquire them (outright or on loan). While cash borrowing does not necessarily have to be secured by a particular type of security, it is often the case that liquid and highly rated Australian Government Securities (AGS) are used as collateral (Cheung et al. 2014).

More than half of all AGS outstanding is currently held by non-residents (Figure 4). However, a significant proportion of that amount is thought to be held by central banks or other buy-and-hold investors who are not likely to have a frequent need to raise cash. Nonetheless, at the margin, sovereign wealth funds, offshore pension funds, life insurance corporations and other financial institutions are now probably more active than several years ago in managing their Australian dollar denominated investment portfolios. Non-resident holders of AGS therefore have substantial collateral to directly engage with domestic repo dealers to raise Australian dollar cash. As non-residents have become more active in the repo market, they have lent part of their holdings of AGS back to Australian residents in return for cash. The measured non-resident holdings of legal title to securities declines for the duration of a repo but is reinstated on the second leg of the transaction as the repo matures. Reflecting this, while the non-residents’ legal title holdings to AGS has declined to around 55 per cent of the outstanding stock, adding back in the net repo positions of non-residents shows that their underlying economic interest in AGS is actually around $25 billion higher at 60 per cent of the stock. While this is lower than in preceding years, it is a significant adjustment to consider.
Given the low global interest rate environment over recent years, it is not surprising that when profitable opportunities present themselves, debt holders seek to engage in some return enhancement. For example, even though non-residents wish to retain the underlying economic interest in Australian dollar denominated securities, from time-to-time there might be advantages to lending out the stock to reinvest the cash proceeds in a complimentary investment. One of the most prominent of these has been swapping Australian dollars into foreign currencies, notably the European euro and especially the Japanese yen, to earn the premium embedded in the forward foreign exchange swap rate (Figure 5). This trade is generally referred to as the cross-currency swap basis trade. It is also possible for non-residents that do not have an existing position in the relevant collateral to acquire securities by entering into collateral transformation transactions (Dive et al. 2011). For example, an institution might enter into a transaction with a securities custodian to swap foreign currency securities for AGS, which is then more easily used in the Australian repo market. The visibility of such transactions is limited and currently there is no reliable way of estimating how important the associated flows might be.

**FIGURE 4: Holdings of AGS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Residents</th>
<th>Non-residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>1997</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>2002</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>2007</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>2012</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>2017</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* Adjusted for repurchase agreements entered into

Sources: ABS, APRA, RBA.

**FIGURE 5: Repo rates and FX swap basis**

Sources: Bloomberg, ICAP, RBA, Tullett Prebon (Australia) Pty Ltd.
Take the following stylised example as an illustration. If a non-resident financial institution at the centre of initiating a series of transactions were to borrow Japanese Government Bonds (JGBs) in the Japanese repo market with yen cash, it could then use the JGBs as collateral to borrow AGS through a custodian or securities lending arrangement (steps 1 and 2 in Figure 6). In a separate transaction, the non-resident could then use the AGS as collateral in a secured transaction with a domestic repo dealer to borrow Australian dollar cash, which in turn could be swapped into Japanese yen through the foreign exchange market in order to earn the swap basis (steps 3 and 4). In the final step of the trading strategy, the Japanese yen cash acquired by the non-resident via the swap could be used to fund the initial repo where JGBs were borrowed (step 5). If the foreign exchange swap basis is sufficiently wide, so that it clears the hurdle of more than covering the costs implied by each transaction in this example, the trade would be profitable for the non-resident financial institution. It is not clear what the threshold for entering into the sequence of trades is, but it most likely varies not only by investor type, but over time, and is influenced by a spectrum of other investment returns.

FIGURE 6: Stylised example of cross-currency swap basis involving the Australian repo market

The Australian repo dealer acquires the cash lent to the non-resident by re-selling the AGS received in the repo with a different counterparty in the Australian repo market, possibly the Reserve Bank. In this manner the demand for the cross-currency basis trade might also indirectly influence the way repo dealers price their approach rates at the Reserve Bank’s daily auction and explain the correlation between repo rates and the basis in cross-currency swaps. Notably, while increases in the basis have tended to be associated with higher repo rates, falls in the basis do not appear to be immediately reflected in lower repo rates. This suggests that repo rates are subject to a degree of persistence, or stickiness, and are also affected by a range of other factors such as arbitrage between bond futures and the market for physicals (Becker et al. 2016).

Possible spillover to term premia in repo rates

Until recently, overnight repo rates transacted between commercial banks moved broadly in line with term rates contracted by the Reserve Bank (Figure 7). At least in part this might be because repo dealers sometimes benchmark their transactions to the spreads observable at the Reserve Bank’s 09:45 AEST auction window. This co-movement occurred despite different eligibility criteria for collateral. While the overnight market repo rate shown is contracted exclusively against first-grade general collateral (Australian Government Securities and semi-government paper), the Reserve Bank accepts a wider range of collateral. Since the additional collateral accepted in central bank open market operations is haircut in a manner that replicates the credit characteristics of general collateral, the Reserve Bank auction rate and market rates reflect similar credit risks.
The shift higher observed in one-month rates in the Reserve Bank’s auction was initially mirrored in overnight repo rates. Notably however, since mid-2016 overnight market rates have averaged around 10 basis points above the overnight indexed swap rate, whereas rates observed at tenors longer than this continued to rise. This divergence exhibits characteristics of a term premium in the repo market out to one-month agreements and could be due to a number of non-credit related factors. It is possible that prudential regulations that aim to limit the short-term positions of banks make term repos more attractive, although the relevant regulations did not change at the time the observed divergence opened up.

The term premium could also be related to the cash lending position the banks have with their clients. Since we know that non-residents who borrow in the repo market to fund their cross-currency basis trades have become more important, there might be a connection. That is, because the Japanese yen cross-currency swap basis trade itself has a term premium, investors probably enter into swaps at terms that are not as short as day-to-day cash management transactions. Repo dealers, who are party to related transactions, might seek to match the maturity of their cash funding with their cash lending. This could manifest itself as the gap between the overnight and one-month rates. In other words, repo dealers prefer not to roll their funding for a term loan on a daily basis because of the associated refinancing risk. Consequently, bids received at the daily Reserve Bank liquidity auction may reflect the preference of repo dealers to manage the refinancing risk on these transactions that cannot easily be covered in the interbank market.

Adjustments and possible implications

Since 2016 there appears to have been a demand-driven increase in repo rates, which at least in part can be linked to non-residents becoming more active managers of their portfolios of Australian dollar denominated securities. The rise in repo rates has been accompanied by an increase in volatility for reasons that are very different to the crises-related market conditions observed during earlier episodes over the past decade. To a degree, it can be argued that the observed flows in the repo and foreign exchange markets described in this paper are an indication that investors respond to arbitrage opportunities. Money markets are therefore not completely segmented, even if there are some barriers to perfect and riskless arbitrage. On the other hand, a question arises as to whether higher and more volatile repo rates are somehow having adverse effects. Given that demand-side pressures appear to be bidding up prices to take advantage of profit opportunities, there is no immediately obvious reason why higher repo rates should be a major source of concern. The repo market mainly performs an intermediation function and is not a main source of funding for bank lending activity. As such, higher repo rates have not been translated into the broader interest rate structure in the economy (such as the rate at which banks issue debt). There is also some evidence to suggest that the demand-driven increase in rates induces an increase in supply. Nevertheless, it remains important to understand, now and in the future, how money market rates are determined, and the impact on the financial sector and thereby the economy more broadly.
Notes

1. Repurchase agreements, or ‘repos’, are money market transactions typically collateralised by fixed income securities. The agreement is a contract under which the seller lends the legal title to securities over a period of time in return for cash. Lending of securities under repo is therefore equivalent to borrowing cash. At the agreed future date, the securities and cash are returned to their original holders at a price that was determined at the time the agreement was entered into. The difference between the cash borrowed in the first leg of the transaction and the cash returned to the original holder in the second leg is the rate of interest on the cash borrowed — the ‘repo rate’. A reverse repurchase agreement or ‘reverse repo’ is a contract where the buyer who is borrowing securities for cash undertakes to return them to the seller at an agreed price and future date (Cook 2012). Repurchase agreements and reverse repurchase agreements are referred to as ‘repos’ hereafter.

2. In the major economies and financial centres, institutions are more active in funding trading positions using the repo market. This type of activity and the associated leverage have been significantly curtailed since 2008 as a result of disintermediation during the financial crisis and deliberate regulatory actions.

3. The Reserve Bank deliberately contracts repurchase agreements at terms that do not interfere with the functioning of very short-term money markets (i.e. at or close to overnight). Terms can vary widely, typically anywhere between one week to six months, with an average duration of around one month. The remainder of the market is very skewed to short terms, with an average duration closer to just two days. See also (Australian Financial Markets Association (AFMA) 2015) for measures of turnover, and (Hing et al. 2016) on the cash market in Australia. These findings are also relevant to Section 3.2.

4. The overnight unsecured interbank cash rate is the operational target for the implementation of monetary policy in Australia. While the Reserve Bank Board sets the cash rate target, liquidity management operations are never conducted on an unsecured basis, and hence the central bank does not transact in the market in which the cash rate is determined. Expected future cash rates are reflected in the overnight indexed swap (OIS) rate, which banks use to swap between fixed and floating interest rate exposures.

5. A comprehensive series of explanations of the policy actions taken by the Reserve Bank and associated risk mitigation can be found in speeches by senior management and publications such as the Annual Report, Bulletin, and Statement on Monetary Policy. Refer, for example, to (Battellino 2007), (Debelle 2007) (2008a) (2008b), as well as (Kearns 2009).

6. In a repo the legal title to securities used as collateral passes from the seller of securities to the cash lender for the duration of the agreement, after which the legal title reverts to the seller. The economic interest in the security (e.g. the coupon payment), however, remains with the seller of the security at all times.

7. For a discussion of the cross-currency swap basis and covered interest party, see (Borio et al. 2016).

8. Securities eligible as collateral in open market operations are listed in the technical guidelines on the Reserve Bank website.

9. Notwithstanding that there is much less liquidity in interbank repo rates beyond a seven-day term, the market transacts one-month repos at a spread to OIS similar to the rates more readily observable at Reserve Bank liquidity operations. It is therefore unlikely that the difference between short-term market rates (general collateral only) and term rates (all market operations eligible collateral) are attributable to differences in the composition of collateral.

10. A related question is whether or not the cross-currency swap basis underlying these observed trends in Australian financial markets is a source for concern. Generally the answer to that question appears to be ‘no’ (Debelle 2017).

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THE OUTLOOK FOR
the self-managed super fund sector

JORDAN GEORGE, Head of Policy, SMSF Association

The self-managed superannuation fund (SMSF) sector has become an important and enduring part of the Australian superannuation system with over 1.1 million Australians choosing to use an SMSF to manage their retirement savings. This paper provides an overview of the current state of the SMSF sector and assesses the challenges that lie ahead for the sector. These include increased compliance complexity, the ageing of SMSF trustees and members, and the need for appropriate asset allocation and high-quality financial advice during the retirement phase. The paper was presented at the 22nd Melbourne Money and Finance Conference, Monash University and Australian Centre for Financial Studies, 10 to 11 July 2017.

SMSF sector overview
The SMSF sector had 590,742 funds with 1,120,117 members and approximately $675 billion in funds under management as at March 2017, representing close to a third of all superannuation assets (ATO 2017). SMSFs had average assets of approximately $1.1 million during the 2015 financial year.

TABLE 1: Average and median SMSF assets

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average assets per member</td>
<td>475,698</td>
<td>510,136</td>
<td>551,217</td>
<td>589,636</td>
</tr>
<tr>
<td>Median assets per member</td>
<td>275,313</td>
<td>299,407</td>
<td>325,542</td>
<td>354,882</td>
</tr>
<tr>
<td>Average assets per SMSF</td>
<td>902,917</td>
<td>968,139</td>
<td>1,043,812</td>
<td>1,111,732</td>
</tr>
<tr>
<td>Median assets per SMSF</td>
<td>493,348</td>
<td>535,274</td>
<td>581,710</td>
<td>631,077</td>
</tr>
</tbody>
</table>

Source: ATO (2016).

SMSF sector growth
Over the past decade, the SMSF sector has continued to attract new members and achieve strong growth in its asset base to support members’ retirement income. Since June 2006 there has been a doubling in the number of individuals who are members of an SMSF and a tripling of the assets held by SMSFs.

FIGURE 1: Total SMSF member growth since June 2006


While SMSF growth has been significant over the past decade, growth has been more modest recently. For much of the past decade the sector has seen quarterly SMSF establishments of 8,000 funds per quarter, although quarterly establishments have fallen since 2015. However, in 2015 and 2016, the growth in the number of SMSFs was still 4.4 per cent and 5.5 per cent, respectively (ATO 2017).
The softening in SMSF growth numbers can be largely attributed to legislative uncertainty over this period, with significant speculation concerning superannuation tax concessions occurring from the time the Abbott government launched its Tax White Paper process. Speculation and debate around superannuation changes continued following the 2016 federal budget and even after the 2016 federal election until legislation was passed by parliament in late November.

With a more stable legislative environment for superannuation in the future, it will be interesting to see whether SMSF establishment numbers will increase again or remain flat.

**SMSF sector demographics**

One positive factor for the SMSF sector has been the growth in new SMSFs with younger trustees. The past six years has seen a significant increase in the establishment of SMSFs by people aged between 35 and 44. While in 2011, 17 per cent of new SMSFs were established by people in this age bracket, by 2015 this had increased to 28 per cent of SMSFs (ATO 2016). This reflects a shift towards SMSFs being viewed as the chosen vehicle for accumulation and drawdown rather than simply being seen as a savings vehicle prior to retirement (for people making large ‘catch-up’ contributions to their SMSF).

While the new member growth from younger trustees is positive, SMSF members are an aging demographic. As of June 2016, 51.4 per cent of SMSF members were aged between 55 and 75. This will present a number of challenges as the SMSF sector shifts towards having a significant percentage of members in the retirement phase drawing down on their assets. New thinking around financial advice in the retirement phase, asset allocations and more sophisticated approaches to managing retirement income will be needed.
While the new member growth from younger trustees is positive, SMSF members are an aging demographic. As of June 2016, 51.4 per cent of SMSF members were aged between 55 and 75. This will present a number of challenges as the SMSF sector shifts towards having a significant percentage of members in the retirement phase drawing down on their assets. New thinking around financial advice in the retirement phase, asset allocations and more sophisticated approaches to managing retirement income will be needed.

**SMSF assets**

Strong growth in SMSF assets has continued since the global financial crisis, with average quarterly growth of 2.6 per cent since March 2009. Total SMSF assets reached $674.7 billion as at March 2017 (ATO 2017).

SMSF asset allocation has remained relatively steady over time, with a significant proportion of assets being invested in listed shares and cash investments. This persistent feature of SMSF asset allocation has been a source of significant commentary and analysis. The key drivers for this asset allocation include:

- tax preferences for domestic equities — fully refundable franking credits increase the after-tax return for domestic equities for SMSFs, especially those in the retirement phase
- a desire for liquidity to pay pensions in retirement — this is especially relevant to the SMSF sector where 48 per cent of funds are in the retirement phase (ATO 2016)
- cognitive biases towards assets familiar to trustees, especially blue-chip ASX-listed shares.

It is also important to recognise the limitations of the ATO statistics which underlie these figures, with many internationally focused listed investments such as exchange-traded funds (ETFs) and listed investment companies (LICs) being identified as domestic listed shares, potentially understating the international asset exposure of SMSFs. However, improved diversification of SMSF portfolios is an ongoing challenge that the SMSF sector will need to address.
**FIGURE 6: SMSF asset allocation, as at March 2017**

- Listed shares: 30.8%
- Commercial property: 11.6%
- LRBAs: 3.8%
- Residential property: 4.2%
- Cash, term deposits and debt securities: 24.5%
- Trust and managed investment: 19.7%
- Overseas assets: 1.3%


**Property investment and borrowing**

One aspect of SMSF asset allocation that has drawn significant attention is investment in unlisted property, especially residential property funded through limited recourse borrowing arrangements (LRBAs).

As at the end of March 2017 quarter, SMSFs had $78.2 billion invested in non-residential domestic property and $28.2 billion in residential domestic property, representing 11.6 per cent and 4.2 per cent of total SMSF assets, respectively (ATO 2017).

The use of LRBAs in SMSFs has been a source of ongoing interest, especially since the Financial System Inquiry investigated LRBA usage and recommended that they be prohibited from further use by superannuation funds in 2014. The then Abbott government rejected the recommendation and this position has been maintained by the current government. The Australian Labor Party has recently announced that it will prohibit new LRBAs if elected.

While the use of LRBAs has grown significantly they represent only a very small proportion of SMSF assets (3.8 per cent), which are held by a small number of SMSFs.

The use of LRBAs to invest in residential property has received criticism for contributing to a potential Australian housing bubble. However, this seems unjustified given that SMSFs hold $28.2 billion of Australia’s $6.6 trillion total dwelling stock (ATO 2017), representing only 0.42 per cent of the entire housing market.

Furthermore, ATO data from the 2015 financial year shows that the use of LRBAs is almost evenly split between funding residential and non-residential property, contradicting the theory that all LRBAs are being used to speculate on Australia’s red-hot housing market.
### TABLE 2: SMSF limited recourse borrowing arrangement asset allocations, 2015

<table>
<thead>
<tr>
<th>LRBA investment by asset type</th>
<th>($m)</th>
<th>Proportion of total SMSF assets (%)</th>
<th>Proportion of SMSF population holding those assets (%)</th>
<th>Mean* ($)</th>
<th>Median* ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian residential real property</td>
<td>9,372</td>
<td>1.55</td>
<td>3.39</td>
<td>507,798</td>
<td>424,500</td>
</tr>
<tr>
<td>Australian non-residential real property</td>
<td>9,150</td>
<td>1.52</td>
<td>1.52</td>
<td>1,112,562</td>
<td>650,000</td>
</tr>
<tr>
<td>Overseas real property</td>
<td>29</td>
<td>0.00</td>
<td>0.01</td>
<td>451,331</td>
<td>242,205</td>
</tr>
<tr>
<td>Australian shares</td>
<td>635</td>
<td>0.11</td>
<td>0.41</td>
<td>283,484</td>
<td>115,247</td>
</tr>
<tr>
<td>Overseas shares</td>
<td>428</td>
<td>0.07</td>
<td>0.53</td>
<td>146,334</td>
<td>31,900</td>
</tr>
<tr>
<td>Other</td>
<td>751</td>
<td>0.12</td>
<td>0.32</td>
<td>437,856</td>
<td>100,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20,364</strong></td>
<td><strong>3.40</strong></td>
<td><strong>6.02</strong></td>
<td><strong>623,684</strong></td>
<td><strong>420,000</strong></td>
</tr>
</tbody>
</table>

*Mean and median values are only applicable to the funds that held those types of assets. Source: ATO (2016).

### Challenges ahead

#### Superannuation legislation

The changes to the superannuation tax settings made in the 2016 Federal Budget, which took effect on 1 July 2017, represent the most significant changes made to superannuation in a decade. The key changes affecting SMSFs are:

- lower concessional and non-concessional contribution caps
- a $1.6 million ‘transfer balance cap’ on assets in retirement phase that benefit from earnings exempt from tax
- removal of the tax exemption for earnings from assets supporting transition to retirement income streams (TRIS).

These changes present two key challenges for the SMSF sector:

- an increase in the complexity of superannuation laws, especially for those with higher balances
- a limit on contributions to superannuation.

#### Complexity

The changes to the superannuation laws, especially the introduction of the transfer balance cap, have resulted in a significant increase in complexity for individuals affected by the changes, increasing the need for professional advice and assistance with compliance.

The changes which are simplest for individuals to comply with are the reductions in the annual contribution caps. However, even the changes to non-concessional contributions include transitional arrangements for those who have used the ‘bring forward’ provisions and have a superannuation balance of $1.3 million to $1.6 million.

Similarly, changes to TRIS are relatively simple but transitional capital gains tax (CGT) relief for affected assets and broader strategic considerations of maintaining a TRIS create complexity.

The introduction of the transfer balance cap is the most complex change for SMSFs to contend with. The transfer balance cap functions on the basis of credits and debits that limit the amount of assets held in the retirement phase to $1.6 million. While simple in concept, the reality is that the law applies differently to account-based pensions, market-linked and term-allocated pensions, defined benefit pensions, child pensions and death benefit pensions. In addition, transitional CGT relief for assets affected by the new transfer balance cap adds further complexity as will real-time reporting to the ATO of events that give rise to changes in a transfer balance cap.

The estimates of SMSFs affected by the legislation changes vary but some credible estimates are:

- transfer balance cap — 13.8 per cent of SMSFs, 9.9 per cent of SMSF members
  (Class Limited 2017)
> concessional cap reduction — 23.8 per cent of SMSF members made contributions above $25,000 in the 2015 financial year (Class Limited 2017)

> non-concessional cap reduction — 10.6 per cent of SMSF members aged 49 and over contributed above $100,000 in the 2015 financial year (Class Limited 2017)

> TRIS changes — ATO statistics indicate that 21 per cent of SMSF members received a TRIS in the 2015 financial year (ATO 2016).

**Less contributions to superannuation**

The reduction in both concessional and non-concessional contribution caps will have a longer-term impact on the growth of assets in the SMSF sector. The lower caps will constrain contributions to the sector in the future, slowing the growth rate of SMSF assets. (However, the carry forward of unused concessional cap space will allow individuals with under $500,000 in superannuation to make additional contributions.)

For individual SMSF members, lower contribution caps will result in a reduced ability to make top-up contributions to their superannuation, especially later in life. SMSF Association−Rice Warner research illustrated the prevalence of higher personal contributions to SMSFs later in a person’s life (SMSF Association 2016).

**FIGURE 7: Split of SMSF members making personal contributions by age and gender**

Sources: SMSF Association, Rice Warner.

**Investment allocation**

SMSFs remain heavily weighted to their traditional asset allocation of Australian equities, cash and property as illustrated above in ATO asset allocation statistics. This has stood SMSFs in good stead over the past decade with Rice Warner finding that SMSFs have outperformed their APRA-regulated counterparts in eight out of 12 years between 2005 and 2016 (Rice Warner 2017). However, this asset allocation should be re-examined going forward.

SMSFs need to consider increasing their portfolio diversification by increasing exposure to:

> different markets to reduce home bias

> different market sectors to better harness the benefits of economic growth in new industries (e.g. greater exposure to technology companies not found on the ASX)

> different asset classes, especially fixed interest and bond investments.

SMSFs should also consider and understand the risk they are accepting for their asset allocation’s return. Research by Vanguard has shown that the risk of a typical SMSF that aspires to have a ‘growth’ asset allocation is double that of a diversified growth fund (Bowerman 2014). If this level of risk is unintended (which it most likely is), then SMSF trustees and their advisers should be considering greater diversification away from Australian equities and cash to reduce the risk and volatility of their investments.

Ultimately, this may be a financial advice challenge for advisers servicing SMSFs.
Retirement income
As a significant percentage of the SMSF sector moves towards retirement phase, the ability for SMSFs to deliver stable, long-term retirement income will be put under the microscope.

To date, SMSFs have been successful in providing retirement income to members with 94 per cent of all benefits taken from SMSFs being in the form of an income stream (ATO 2016). This is dominated by account-based pensions. SMSFs have had a very low uptake of retirement income products that can be used to provide stable income and insure against longevity risk.

With the development of comprehensive income products for retirement (CIPRs) the SMSF sector may benefit from a deeper pool of retirement income products and also be challenged to innovate and look at greater sophistication in the drawdown phase. Greater depth of available products and competition for SMSF/retail investors may deliver more attractive product options for SMSFs, which could lead to an increase in the take-up of retirement income products by SMSFs.

As the SMSF demographic shifts, greater attention will need to be paid to asset allocation in retirement, including self-insuring against longevity risk by using a ‘pooled’ or ‘bucket’ approach for investing assets to provide current income, flexibility to access capital and manage longevity risk.

Aging SMSF member population
The SMSF sector has a significant number of members who are either beginning retirement or retiring in the next 20 years with 51.4 per cent of members being aged between 55 and 75.

In addition to the need to consider changing investment and retirement income strategies, this demographic shift poses additional challenges associated with aging.

The key challenges stemming from aging include:

> the effects of aging and cognitive declines causing individuals to lose capacity to be a trustee of an SMSF
> increased disputes over death benefit payments from SMSFs.

Loss of capacity
This issue of loss of capacity to be a trustee was recently cited as an emerging risk for the SMSF sector in the Australian Law Reform Commission (ALRC) review of elder abuse which culminated in the ALRC’s report ‘Elder Abuse — A National Legal Response’ (Australian Law Reform Commission 2017).

Where an SMSF trustee loses the capacity to be a trustee of an SMSF (or a director of a corporate trustee of an SMSF) the SMSF will become non-compliant unless certain management steps are taken. A common strategy to overcome this issue is for the trustees of the fund (or directors of a corporate trustee) to have an enduring power of attorney (EPOA) in place, and the attorney can step into their role in managing the SMSF.

However, this arrangement can create a number of risks including elder abuse by the attorney and also legal complications with replacing the trustee who has lost capacity with their attorney (this issue is not as common for corporate trustees where a change of directors occurs).

These complications can be exacerbated when there has been poor planning for succession of trusteeship. The ALRC Report made a number of recommendations to curb these emerging risks around loss of capacity and trusteeship including:

> introducing new safeguards against the misuse of EPOAs
> introducing ‘replaceable rules’ for SMSFs into the Superannuation Industry (Supervisory) Act 1993, which provide a mechanism for an attorney to become a trustee/director where the EPOA allows for it but the fund’s trust deed does not
> introducing an additional operating standard in the Superannuation Industry (Supervisory) Regulations 1994 for SMSFs requiring them to consider planning for loss of capacity as part of their overall investment strategy
> requiring an attorney who becomes a trustee of an SMSF to notify the ATO that they are doing so as a consequence of an EPOA.
These reforms are sensible adjustments to the existing superannuation laws that mitigate risks of losing capacity and elder abuse without over-regulating SMSFs. In addition to these reforms, SMSF advisers need to be aware of the risks associated with aging SMSF trustees and ensure that their clients are advised and have appropriate strategies in place to meet these challenges later in life.

**Death benefit disputes**

As the SMSF population ages more death benefits will be paid out by SMSFs. In the 2015 financial year 12.5 per cent of lump sums and 0.8 per cent of income streams paid from SMSFs were death benefits (ATO 2016). These figures have the potential to increase substantially as the SMSF demographic ages and the transfer balance cap forces more superannuation money out of the system. With increased numbers of death benefit payments from SMSFs there is increased potential for disputes and litigation over these benefits.

Already there has been a substantial increase in litigation over SMSF death benefits in recent years. This mirrors the increase in complaints to the Superannuation Complaints Tribunal (SCT) over death benefit payments in recent times. The SCT cites 21.5 per cent of all complaints in the March 2017 quarter related to distribution of death benefits (Superannuation Complaints Tribunal 2017). This trend will continue and grow as more death benefits are paid.

SMSF trustees seeking specialist SMSF and estate planning advice will be a crucial factor in mitigating the risk of death benefit disputes. Trustees need professional assistance in ensuring that binding death benefit nominations are drafted correctly and that SMSF trust deeds are structured properly to allow for appropriate succession of trustees so that death benefits are paid in accordance with the deceased member’s wishes.

The ALRC’s report also dealt with this issue (albeit from an elder abuse perspective) and has recommended a review of the superannuation death benefit provisions to clarify their application. This review would be welcome given the increase in death benefit disputes arising in SMSFs, and superannuation more broadly.

**Advice to SMSF trustees**

Financial advice is a key driver of a well-functioning SMSF sector and it is therefore essential to ensure that SMSF trustees are receiving high-quality advice.

This will be supported by the new education and ethical standards for financial advisers, which will be created by the new Financial Adviser Standards and Ethics Authority and backed by legislation and broad industry support. The new regime will mean that new professional standards for all advisers who operate in the SMSF space will be introduced over a period of time.

New financial advisers will need to meet minimum education and exam requirements from 1 January 2019. In addition, a supervision year will commence for new entrants. A new code of ethics is to apply to all financial advisers from 1 January 2020. All financial advisers will be required to pass an exam by 1 January 2021 and have achieved degree qualifications by 1 January 2024. All of these changes will affect all advisers who are providing advice, which requires licensing under the Corporations Act.

Recent SMSF Association–Commonwealth Bank research indicates that key areas in which advisers could assist trustees include retirement advice, pension strategy/management and the provision of clarity around investment research and products (SMSF Association, CommBank 2017).
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THE SHIFTING SANDS OF ASSET MANAGEMENT:
The rise of indexing and evolution of active

SCOTT N PAPPAS, Investment Analyst, Vanguard Australia

Investors are increasingly shifting to passive investment vehicles. This trend has been motivated by an increasing focus on costs and performance. Rather than being seen as a move from active to passive management, it is more accurately characterised as a shift from high- to low-cost investment. This evolution will have an impact on the industry, investors and active management. Investors will potentially benefit through greater access to more transparent and lower-cost investment vehicles. The paper was presented by Aidan Geysen at the 22nd Melbourne Money and Finance Conference, Monash University and Australian Centre for Financial Studies, 10 to 11 July 2017.

Driven by technology, costs and investor preferences, the structure of the investment industry is changing. Globally, investors are migrating to passive funds, increasingly moving away from traditional actively managed funds. This shift has typically been viewed as a move from active to passive management, however, a more accurate characterisation is a move from high to low cost. This paper explores the potential impact of this trend on the industry, investors and active management itself.¹

The shifting landscape of the investment industry has important implications for the active management industry. This paper argues that, although in retreat, active management will continue to play an important role in investment management, albeit in a different guise. Active managers that embrace low-cost, transparent factor-based investment vehicles will be among those well placed for future success. Competition for alpha will continue to increase and profitable trading opportunities will become increasingly scarce as market participants become more sophisticated and low-cost factor-based products potentially crowd out traditional high-cost managers. Traditional active managers will not disappear, however, they will increasingly need to adapt to developing technologies and growing competition within the marketplace. In the future, the fees which managers charge to generate active returns will need to reflect the availability of alpha opportunities and, more importantly, a more equitable division of the rewards from outperforming the market.

Competition for alpha will continue to increase and profitable trading opportunities will become increasingly scarce as market participants become more sophisticated and low-cost factor-based products potentially crowd out traditional high-cost managers. Traditional active managers will not disappear, however, they will increasingly need to adapt to developing technologies and growing competition within the marketplace. In the future, the fees which managers charge to generate active returns will need to reflect the availability of alpha opportunities and, more importantly, a more equitable division of the rewards from outperforming the market.
The birth of indexing

When it comes to investment alternatives, today’s investor is spoilt for choice. Exchange-traded and managed funds, index funds in a variety of forms, and a wide range of actively managed products provide flexibility for investors looking to achieve their investment objectives. This hasn’t always been the case. Fifty years ago, the funds management industry consisted only of actively managed products: investment portfolios relied solely on the discretion and judgment of portfolio managers and analysts. Fledgling computer technology, a limited understanding of investment performance, and a belief in the skills and abilities of portfolio managers conspired to limit the availability of alternative investment options. As late as the 1970s, actively managed funds were the only option for many investors.

But, despite its ubiquity at the time, the effectiveness of active management was contentious to some. Academics were sceptical that investment advisors could consistently outperform the market and started analysing the data for evidence to confirm or refute this thesis. By the mid-1960s, developments in technology and data collection provided the opportunity to determine how well actively managed mutual funds performed. Research conducted around this time failed to find evidence that actively managed funds outperformed simple indexes. For advocates of the managed fund industry, the results were disappointing.

The confirmation that the average mutual fund failed to outperform a simple benchmark motivated research into index funds. It was argued that a fund that simply held the stocks in the index — for example, the S&P500 — that required little human discretion and portfolio turnover, and could be run for a minimal fee, was a potentially superior way to manage assets. However, it was only towards the end of the 1960s that the technology, knowledge and evidence to support such an approach began to emerge.

In 1971, after many years of development, the first index fund, the Samsonite Luggage Fund, was created. This was influenced by the Capital Asset Pricing Model (CAPM), developed and refined by Sharpe (1964), Lintner (1965) and Mossin (1966) and academics from the Chicago School of Business — the cradle of the efficient markets hypothesis. The goal of the fund was to provide a diversified portfolio based on the concept of the market portfolio introduced in the CAPM. The fund wasn’t managed in the same way traditional funds were — i.e. with analysts and portfolio managers making investment decisions — it was simply based on the 1500 stocks traded on the New York Stock Exchange. For the first time, an investment portfolio was being passively managed.

Inspired by the Samsonite Luggage Fund and the small handful of institutional index funds that followed it, John Bogle launched the first index mutual fund in the late 1970s. For the first time, individual investors could access a passively managed fund. Although slow to take hold, indexing has now become a common part of the investment landscape and is shaping the way global investors build investment portfolios.

Global cash flows into passive funds have grown strongly over the past decade. US investors, in particular, have led the charge investing approximately US$500 billion into passive funds for calendar year 2016. The strong cash flows have been partially at the expense of active funds which suffered outflows of US$204 billion. The disparity between flows into active and passive in the US continues to grow. Other regions are following suit with flows into indexing gradually increasing in Europe and Asia, although flows into active still dominate those into passive funds. It’s taken the better part of 50 years, but index investing appears to be on track to displace active management as the dominant form of investing throughout the world.
Performance
As alluded to above, a key driver of the interest in passive investing has been the uninspiring performance of active management. Since the late 1960s, researchers have challenged the effectiveness of active management, with the vast majority of research demonstrating that active managers typically underperform simple indexes. Today, the barometer for active management performance is the so-called SPIVA report, published by Standard and Poor’s. The report compares the performance of active managers to the relevant index and calculates the percentage of managers that underperform over particular timeframes, for example five years. Its most recent data for Australia show that over the 10 years to 31 December 2016, more than 80 per cent of international equity and Australian bond funds and more than 70 per cent of Australian equity funds underperformed their benchmarks. And the message is consistent across the globe with similar results in Japan, Europe, the US and other countries. After fees, the majority of active managers underperform the relevant index — across time periods, countries and asset classes. It seems that this poor performance has driven investors to use passively managed funds.

To some extent this outcome is not surprising. As Sharpe (1991) point out, in aggregate, active management is a zero-sum game — one manager’s outperformance is another’s underperformance. So-called alpha, outperformance above a benchmark return, is a finite quantity. For it to exist, someone must be underperforming the benchmark. Despite improving professional standards and technological advances, the supply of alpha is not increasing. Because active investors are essentially competing against each other for returns, increasing levels of skills in the industry simply make the competition more challenging for those participating. Mauboussin and Callahan (2013) call this the paradox of skill. The implication for active managers is that increasing standards don’t provide an edge, they are simply the minimum requirement necessary to keep up with the ever-more skilful competition. Put another way, rather than improving the chances of outperformance, increasing standards are making the competition for alpha fiercer.

Investor preferences
Comparisons between active and passive management have typically focused on performance. But there are other important differences between funds; for example, the fees they charge. Typically, active managers charge higher fees than passive managers, however, not all active managers are high cost. The shift from active to passive may be as much to do with investors seeking lower fees as it is to do with performance.

There is a strong rationale for investors seeking lower-costs — a dollar saved in fees is an extra dollar kept. Research also demonstrates that cost is one of the few statistically significant variables related to performance. Testing this relationship, Figure 1 shows that low-cost funds typically outperform high-cost funds. This is not limited to a particular style of investing. Low-cost passive funds typically outperform their high-cost equivalents and low-cost active funds have a higher probability of outperforming their benchmarks. The lower the fees an investor pays, the greater their chance of investment success.
FIGURE 1: Lower costs can support higher returns

![Graph showing cost vs return]  
Notes: Period ended 30 June 2014. Our analysis utilises expenses and fund returns for all Australian domiciled active equity funds in the following categories that were operating at the start of each analysis period: Asia Pacific ex-Japan, Australia Derivative Income, Australia Large Blend, Australia Large Geared, Australia Large Growth, Australia Large Value, Australia Mid/Small Blend, Australia Mid/Small Growth, Australia Mid/Small Value, Australia Other, Australia Real Estate, Emerging Markets, Europe, Global Real Estate, Japan, North America, World — Currency Hedged, World/Australia, World Large Blend, World Large Growth, World Large Value, World Mid/Small, and World Other. Fund populations sizes were 1,155, 534, and 253 for the past 10, 15, and 20 years, respectively. Their performance was compared with their prospectus benchmark. Funds which were merged or liquidated are considered underperformers for the purposes of this analysis.  
Source: Vanguard calculations using data from Morningstar Inc.

This relationship is increasingly being reflected in industry assets under management (AUM) data. Sorting industry AUM based on expenses, Figure 2 shows a persistent and strong trend towards low-cost funds. While the dominant narrative highlights the switch from active to passive, the reality is not as straightforward. At least part of the shifting landscape is due to investors seeking more cost-effective investment solutions with most of the growth in the lowest cost funds.

FIGURE 2: Percentage of industry assets under management by expense ratio

![Graph showing AUM by expense ratio]  
Notes: Figure includes all US domiciled funds and Exchange Traded Funds (ETFs) excluding funds of funds. Data include all asset classes. Weights are calculated using year-end assets under management and annually reported expense ratios for the given calendar years.  
Sources: Morningstar data, Vanguard calculations.

Exploring the relationship between costs and asset flows further highlights an interesting nuance in investor preferences. Based on aggregate data, the flows indicate a clear preference for passive over active investing. But, focusing on the flows into active alone, there is also a clear preference for low-cost over high-cost active funds: flows into high-cost active are negative while those into low-cost active are positive. Categorising active funds by cost, Morningstar (2017) reports that asset flows into the lowest-fee quartile of funds have been positive since 2000 for all but the calendar year 2008 when the global financial crisis struck. However, the asset flow data is analysed, a clear message is an increasing preference for low-cost management, both active and passive.
On the surface, it appears that the outlook for active management is grim considering its poor historical performance, increasingly fierce competition for alpha and growing flows into passive funds. However, investor flows suggest that the future success of active management may rely on the industry’s ability to provide low-cost solutions. This, perhaps, hints at what active management will look like in the future. Below is an exploration of three factors that will potentially shape how active management is delivered in the future: transparency, factors and costs.

**Transparency**

The attribution of investment performance has advanced significantly since the first punch card-driven studies into securities were conducted in the 1960s. Prior to these early studies, it was thought that investment managers were the main influence on portfolio performance. The Capital Asset Pricing Model (CAPM), however, suggested that the return on an investment was mostly due to its exposure to the market, that is, its sensitivity to the return of a portfolio of all investable assets. According to the CAPM, discretionary decisions by active managers still impacted on performance — for better or worse — but they were not the dominant influence on investment performance. For investors, this implied that by simply replicating the market, they could achieve much of the return that had previously been attributed to the skill and talent of professional fund managers. As index funds became available, investors were able to achieve their investment objectives in a more cost-effective manner.

Even with the widespread acceptance of the CAPM, it was understood that skill (or luck) still played a role in explaining portfolio returns — just not to the extent that was previously thought. Put another way, there was still a place for skilled managers in the investment process. However, as academics tested the validity of the CAPM, they discovered other factors influenced returns. Synthesising the evidence that preceded them, Fama and French (1992) demonstrated that non-market factors — value and size — also influence investment returns. This research set the foundations for the investment innovations being developed today.

One of the key findings from the research on non-market factors was the evidence that traditional active managers played even less of a role in portfolio performance than was previously thought. It wasn’t just market exposure and manager skill that influenced risk and return, but so-called factor exposures as well. Bender et al. (2014), demonstrate empirically that factor exposures, or risk premia, can explain a significant proportion of the actual outperformance of active funds. Put another way, the influence of the typical traditional active manager on performance is even less than that implied under the CAPM.

Academic developments such as the CAPM, the work of Fama and French, and others, have provided investors with valuable insights into what determines portfolio performance. Armed with these insights, investors are better placed to make informed decisions on portfolio construction. For example, index funds allow investors to replicate the market exposure discussed in the CAPM. In more recent times, the tools to replicate other factor exposures have become available and it is these funds that may provide important insights into the future of active management.

One of the key findings from the research on non-market factors was the evidence that traditional active managers played even less of a role in portfolio performance than was previously thought. It wasn’t just market exposure and manager skill that influenced risk and return, but so-called factor exposures as well.
Factor investing
Studying Norway’s sovereign wealth fund, one of the largest in the world, Ang et al. (2009) find that the fund’s underlying factor exposures have an impact on performance. This study subsequently drew industry attention to factors — the underlying exposures that influence and determine the risks in an investment portfolio — and the role they play in explaining performance. Importantly, it motivated investors to consider the most efficient way to construct portfolios based on factor exposures, so-called factor investing. This study ignited a body of research that challenged the way investors thought about active management and what influenced its performance.

Similar to index funds, factor investing typically employs rules to determine a portfolio’s holdings. In contrast to index funds, however, factor investing does not determine security allocations according to the market capitalisation of stocks alone. Allocations are based on other metrics, for example, the ratio of a company’s book value to market value, a commonly used measure of the so-called value factor. Simply put, factor investing is a framework for constructing actively managed portfolios: it is a transparent, rules-based and potentially low-cost approach to active management. Rather than teams of analysts and portfolio managers deciding what securities should be held in a portfolio, factor-based investing uses algorithms to select securities. In the context of the migration towards passive investing, factor-based investing may provide a beacon of hope for active management. Not only is factor-based investing an alternative means of active management, but it can also be implemented at a low cost, a potential advantage it holds over other forms of active management.

Costs
Our research suggests that historically, investors have paid too much for too little active return. Using data for the period from 1990 to 2015, for every $1 of active return generated by US domiciled active equity funds, investors have paid $1.50. As previously noted, flows into low-cost active and passive funds suggest investors are demanding a more equitable division of the investment spoils. Locally, those investors with the means — for example, superannuation funds of sufficient scale — are developing in-house investment capabilities or using passive funds to express active views. Active managers are also beginning to embrace techniques that can cut the cost of investment management services. For example, managers are beginning to use academic insights to provide passively managed funds with the potential to outperform the market, while keeping fees low. Relying on fewer analysts, and highly scalable, these techniques provide the potential to manufacture low-cost active funds. As mentioned previously, cost is one of the few variables that is associated with higher returns.

Conclusion
Continued inflows into passive management suggest a seemingly bleak outlook for active managers. Investors have been encouraged to revaluate their perspectives on active management by: a history of underwhelming performance in comparison to index returns; generally high costs, which erode performance; and an increasingly challenging environment for generating alpha. Despite this rather dim view, there is scope for active management to recast itself. Increasing the focus on costs and transparency, and leveraging developments in factor investing, may be critical success factors for active management in the future.
Notes
1. The changing landscape of the investment industry has many important impacts. One particularly contentious area that is receiving increasing focus is the market impact of increased indexing.
2. For example, Jensen (1968), Fama (1970), and others.
4. SPIVA stands for S&P Dow Jones Indices Versus Active.
6. Figure 1 is presented in Vanguard (2016).

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REGULATION OF culture in finance

Following the global financial crisis (GFC) and subsequent scandals in the financial services industry, including allegations of LIBOR and FX manipulation in wholesale markets, policy makers have concluded that fines were not a wholly effective deterrent.

Poor corporate culture has been identified as the root cause of many of the issues underpinning the GFC. According to the London School of Economics, between 2008 and 2012 the cost of poor conduct for the 10 most-affected global banks was approximately GBP150 billion.

Individual accountability has become the new zeitgeist, starting in the Northern Hemisphere. In Australia, these developments have recently coalesced into an announcement in the 2017–18 federal budget of the introduction of the BEAR. Once implemented, it will serve to increase the potential for personal liability of Australia’s top banking executives.

While there is limited information currently available it appears that the BEAR is largely modelled on the UK Senior Managers Regime (SMR), which came into effect on 7 March 2016 and marked a shift in regulatory compliance for banks based in the UK and UK branches of foreign banks. The regime, which has been implemented by the UK Financial Conduct Authority (FCA) and Prudential Regulation Authority (PRA) was designed to ensure the accountability of senior managers whose actions fall below the standards expected in respect of the particular area(s) of the firm’s activities for which they are responsible.

The US took a different approach, favouring issuing directives to Department of Justice (DOJ) employees to specifically focus on individuals when investigating instances of corporate misconduct.

This paper looks at the reforms that have taken place globally, the impact they have had on the culture of financial firms and how the BEAR is likely to shape Australia’s financial services landscape.
United Kingdom
The Parliamentary Commission on Banking Standards was established in June 2012 to consider and make recommendations in relation to the ‘professional standards and culture of the UK banking sector’. It is worth noting that, in the UK, since the GFC, virtually no personal convictions have been made. In that forum, the former CEO of the FCA, Tracey McDermott, stated that investigators looking into alleged misconduct found that the trail often went cold as they looked at the upper echelons of firms’ management. She described an ‘accountability firewall’ in financial institutions.

Following that statement was another by Martin Wheatley, also a former CEO of the UK FCA, to the UK Treasury Select Committee in September 2013 in which he indicated: ‘It has been hard to nail an individual against responsibility because matrix organisations structures, committee decision-making means that individuals always defuse responsibility … it is not the powers that are lacking, but frankly, evidence is hard to gather in a way that would allow you to take action’.

The Commission’s final report was released in June 2013 and led to the introduction of the SMR. It is important to note that the impetus behind the regime came from lawmakers and not regulators.

The SMR, together with the Certification Regime and new Conduct Rules replaces the previous approved persons regime (APR), which involved formal pre-approval of individuals by regulators to undertake certain roles within financial institutions. The key changes from the pre-existing APR are: the population of individuals required to be pre-approved by the regulators has decreased in size significantly (with substantial new obligations on institutions themselves to certify larger populations of individuals as ‘fit and proper’ under the Certification Regime); and the introduction of a statutory duty of responsibility on senior individuals and some non-executive directors (NEDs) to take reasonable steps to prevent regulatory breaches by the firm in the area(s) for which they are responsible. These areas are required to be set out concisely in documents which are called ‘statements of responsibility’. These statements are to be used at the approval, supervision and enforcement stages. The intention is that, if something awry happens on a global banks’ trading floor, irrespective of committees, dotted lines and direct involvement, the regulators know who to focus on. The same goes for other divisions (e.g. risk and compliance). Firms are also required to prepare Management Responsibilities Maps providing an overview of governance arrangements within their organisations.

Senior Managers are subject to new Conduct Rules (as are almost all of the other employees in financial services firms), which set out the basic standards of behaviour that are required to be met. For example ‘[y]ou must act with integrity’ and ‘[y]ou must pay due regard to the interests of customers and treat them fairly’. There are additional rules applicable to Senior Managers only.

As noted above, the SMR has been introduced alongside a Certification Regime requiring firms to certify the fitness and propriety of individuals who could inflict significant harm on the firm or its customers (determined by reference to nine ‘significant harm functions’, some of which have given rise to intensive debate, particularly in respect of individuals not physically located in the UK).

Finally, changes to regulatory frameworks relating to individual accountability have been accompanied by a new criminal offence, applicable only to Senior Managers, of taking a decision leading to the failure of a financial institution. Although this new offence attracted much fanfare when it was placed on the statute book, it is not likely to be widely used (if at all). Prosecuting authorities would encounter substantial evidential difficulties when seeking to establish that a decision taken by an individual Senior Manager led to the failure of an institution.

There is no territorial limitation on the SMR, so someone who sits in New York and has responsibility for the trading activities of a UK arm will likely be caught. At present, all regulated firms are expected to fall under the SMR regime by 2018.
United States
The US does not have a directly comparable regime to the SMR. Playing to the strengths of its more flexible system, it has largely eschewed wholesale structural reform in favour of realigning investigators’ and prosecutors’ focus.

On 9 September 2015, the then-Deputy Attorney General Sally Yates issued a memorandum entitled, *Individual Accountability for Corporate Wrongdoing*, otherwise known as the “Yates Memo.” Before its release, Yates had foreshadowed her policy intentions and publicly stated that ‘by holding individual[s] accountable, we can change corporate culture to appropriately recognise the full costs of wrongdoing, rather than treating liability as the cost of doing business’.8

The memo provided guidance to criminal prosecutors and civil enforcement lawyers and set out six steps to ensure corporate investigations were handled consistently across the DOJ. Importantly, two of these guiding principles stated:

> Both criminal and civil DOJ corporate investigations should focus on individuals from the inception of the investigation.

> To be eligible for any cooperation credit, corporations must provide to the DOJ all relevant facts about the individuals involved in the corporate misconduct.

The US approach does not introduce new laws designed to increase individual liability. Instead, policy makers are working within an existing structural framework.

Hong Kong/Singapore
On 16 December 2016, the Securities and Futures Commission (SFC) announced it was taking steps to enhance the senior management regime of licensed corporations. These requirements seek to promote senior individuals’ awareness of their regulatory obligations and accountability for misconduct that falls within their area of responsibility. There are a number of similarities to the SMR, although the regime is not targeted at banks. There is a requirement to provide information as to ‘managers in charge’ and organisational charts to the SFC.

The *Banking Amendment Bill 2016* was passed by the Singapore Parliament on 29 February 2016 to strengthen the Monetary Authority of Singapore’s (MAS) oversight over banks’ risk management controls. The Bill reflects the MAS’ increased focus on individual accountability and includes widened powers of the MAS to remove directors and executive officers of banks on the basis that they are not ‘fit and proper’ (among others). On 9 January 2017, the MAS announced the second reading of the Bill in the Singaporean Parliament, with the amendments yet to take effect.

Separately, the MAS issued a consultation paper in February 2017, which proposes new banking regulations in relation to risk management controls. As to individual accountability, the proposed new regulations require banks to specify the roles and responsibilities of officers and employees of the bank to ensure its compliance with laws and regulations, codes of conduct and standards of good practice. Notably, the proposed new regulations do not go as far as the UK SMR and the HK regime, in that they do not require specific individuals to be identified/named. The industry in Singapore is speculating as to why the Banking Amendment Bill has not yet become law, despite being passed by the Parliament in early 2016. It is likely that the MAS is firming up subsidiary regulations and guidelines in relation to the new amendments, by reference to the consultation paper, before implementing them into law.

Impact on culture in finance to date
The full impact of the introduction of the SMR and the other enhancements to regulatory frameworks relating to individual accountability in the UK remains to be seen. There have not yet been any concluded enforcement actions against Senior Managers, although we are aware that there are at least two ongoing enforcement investigations looking at the role of individual Senior Managers in regulatory breaches by firms. The message emerging from the UK regulators is that it is not the purpose of the regime to drive up the number of enforcement cases, but rather to encourage changes to behaviours obviating the need for such action in the first place. In the course of acting for numerous institutions in connection with the implementation of the regimes, we have observed noticeable changes in the ways in which governance arrangements
are structured and responsibilities are assigned between senior executives, as well as the ways in which key day-to-day processes such as delegation and decision making are undertaken. Institutions and individuals have been required to ask difficult questions of themselves and re-evaluate heavily entrenched structures, practices and arrangements.

By contrast, in the US, the Yates Memo may prove to be a case of, ‘the more things change, the more they stay the same’. Notwithstanding that the then-Deputy Yates described the memo as a ‘substantial shift’ in Department policy, many practitioners believe that the level of candour that the Yates Memo demanded were well-enshrined in the Department’s federal prosecution policy. The DOJ’s pursuit of the LIBOR and FX criminal investigations against a plethora of large financial institutions as well as criminal prosecutions of individual employees evidences this in practice. These cases preceded the Yates Memo by a number of years. There also remains a concern that the Yates Memo has made company-level cooperation more challenging, time consuming and expensive. This is particularly relevant to companies conducting their own internal investigations and finding that their employees are unwilling to provide needed detail, for fear that they are exposing themselves to individual liability. Nevertheless, it remains to be seen how, if at all, the new US presidential administration and the corresponding change in leadership at the DOJ will affect the Department’s focus on individual wrongdoing.

The message emerging from the UK regulators is that it is not the purpose of the regime to drive up the number of enforcement cases, but rather to encourage changes to behaviours obviating the need for such action in the first place. In the course of acting for numerous institutions in connection with the implementation of the regimes, we have observed noticeable changes in the ways in which governance arrangements are structured and responsibilities are assigned between senior executives, as well as the ways in which key day-to-day processes such as delegation and decision making are undertaken. Institutions and individuals have been required to ask difficult questions of themselves and re-evaluate heavily entrenched structures, practices and arrangements.

Australia: Pre-BEAR
ASIC’s focus on the risks associated with culture was made clear in its 2014–2015 Strategic Outlook. It identified corporate culture as a key risk driver and potential root cause of conduct threatening the integrity of financial services regime.

Since then, key statements made by ASIC’s Chair Greg Medcraft have included that he has ‘constantly been disappointed’ at the ‘gap in culture or ethics in the banks in the past few years’ and ‘culture is not something that can be regulated by black-letter laws’. The latter statement is in line with earlier statements made by the Chair pushing back against the SMR, including in November 2015 when he stated (emphasis added):

While I do believe that holding senior managers and key staff accountable is important to culture, I don’t think we want, or need, to micromanage in the way the UK regime does …

Media statements aside, ASIC has incorporated culture into its risk-based surveillance reviews. A comprehensive guide has been prepared for its surveillance teams, which includes ‘positive and negative indicators of culture, documents to ask for and questions to ask’. ASIC has also tested the limits of directors’ duties under the Corporations Act 2001 (Act) in the litigation it has conducted. One such case is the September 2016 decision of Australian Securities and Investments Commission v Cassimatis (No 8) [2016] FCA 1023 relating to Storm Financial in which ASIC argued that section 180 of the Act creates an independent public duty requiring consideration of a ‘general norm of conduct’ which is not limited to the interests of the corporation; it is a duty which requires consideration of the public interest. Justice Edelman (who has since been appointed to the High Court of Australia) explored this topic, however, did not consider it necessary to decide at that juncture.
APRA has also been focused on corporate culture, with its Chair Wayne Byres stating that failings in culture were one reason underpinning the GFC. Its main contribution to date is prudential standard CPS 220 introduced in January 2015, which requires a bank’s board to ‘form a view of the risk culture in the institution, and the extent to which that culture supports the ability of the institution to operate consistently within its risk appetite’. It requires the board to ensure: ‘a sound risk management culture is established and maintained throughout the institution’.

Two recent Parliamentary inquiries of the House of Representatives Economics Committee have explored culture in financial services: the first in October 2016 and the second in March 2017. Both inquiries questioned the CEOs of major Australian banks on measures to improve corporate culture within the financial sector as well as the imposition of a SMR. At the October 2016 hearing, two of the four main bank CEOs voiced tentative support for the SMR. Greg Medcraft repeated his view that the SMR was micromanagement and stated that, while it seemed to be going well in the UK, it was premature to judge whether it was a success or not. Conversely, Wayne Byres backed the introduction of a regime akin to the SMR where details of roles and responsibilities of managers are provided to regulators to enhance accountability.

In November 2016, the Committee released a report titled ‘Review of the Four Major Banks (First Report)’. A key recommendation emanating from that report was that ASIC would require Australian Financial Service License holders, which extend far beyond banks, to publicly report any significant breaches of licence obligations within five business days of reporting the incident to ASIC, including a description of the breach, how it occurred, steps taken to ensure it will not occur again, the names of the senior executives responsible for the teams where the breach occurred and consequences for those senior executives.

In the March 2017 hearing, the Committee received feedback on the recommendation to ‘name and shame’ senior executives for breaches. Only one major bank CEO appeared to voice some qualified approval, with other CEOs objecting to the timeframes, potential misinformation and that it could act as a disincentive to report breaches.

**The BEAR**

On 9 May 2017, the federal government outlined its budget agenda. This included proposed reforms to introduce a BEAR for all authorised deposit-taking institutions (ADIs).

The key elements of the BEAR largely mirror the SMR, and include:

> a requirement that all senior executives and directors will register with APRA (the choice of the term ‘register’ suggests a lower requirement than the UK regime which extends to regulatory approval of senior executives)
> a requirement that all ADIs prepare accountability maps identifying the roles and responsibilities of their senior executives
> stronger powers for APRA to remove and disqualify senior executives and directors of all APRA regulated institutions, not just ADIs. APRA decisions will be reviewable by the Administrative Appeals Tribunal
> the introduction of new principles-based misconduct rules, akin to the UK regime, setting out how ADIs and their executives/directors conduct their business with integrity, due skill, care, diligence and acting in a prudent matter
> the introduction of a new civil penalty regime, with maximum penalties of $200 million for larger ADIs and $50 million for smaller ADIs
> deferred senior executive remuneration, with at least 40 per cent of the variable remuneration of senior executives to be deferred for at least four years (in the case of CEOs that percentage will increase to 60 per cent)
> APRA intervention powers to require ADIs to review and adjust their remuneration policies when it believes such policies are not appropriate.
What happens next?
As with the UK SMR, the devil will be in the detail in the new regime. As yet, there is no clear indication as to when further details will be released, but as the government has the benefit of the UK blueprint, it is unlikely the horizon will be long. In any event, the implications of the BEAR on the Australian regulatory landscape for financial services are likely to be significant.

Based on the overseas experience, some changes that we anticipate include:

> Banking executives will be concerned about the practical, day-to-day requirements of an expected statutory duty to take ‘reasonable steps’ to prevent regulatory breaches in their area of control. What will this encapsulate and how will they need to modify their behaviour and practices (if at all) to ensure compliance? This will be of particular concern given the likely breadth of the conduct rules. Executives can expect guidelines to be issued by APRA, which will be broadly defined to provide it with a sufficiently strong enforcement mandate.

> Internal training regimes will be implemented for banking senior managers, as well as policy and procedure guidelines and rules concerning decision making and record-keeping.

> Significant review, and perhaps overhaul, will occur in terms of current internal governance arrangements within banks in relation to senior executives’ roles and responsibilities. The extent of any ‘no-gaps’ approach applied internally will largely depend on the definition of a senior manager adopted under the BEAR regime.

Conclusion
We are witnessing international reforms focused on heightening senior management responsibility with a view to bringing about cultural change in financial institutions where people take ownership and responsibility for ‘doing the right thing’ and ensuring ‘good outcomes for customers’. The implementation of these reforms remains at an early stage and only time will tell if the proposed measures ultimately close the gap between desired values and actual conduct.

Addendum
On 13 July 2017, the Treasury released its consultation paper on the BEAR. The closing date for submissions was 3 August 2017. Please contact the authors if you would like a copy of Clifford Chance’s submission.

Although relatively brief, the paper provides some additional detail to that announced in the Budget papers, including as to the expectations for ADIs and individuals. As we foreshadowed, the proposed expectations are broad and based on some of the key expectations under the SMR, including (critically) that an ‘accountable person’ captured under the BEAR would be expected to:

… take reasonable steps to ensure that: the activities of the ADI for which they are responsible are controlled effectively; the activities or business of the ADI for which they are responsible comply with the relevant regulatory requirements and standards …

Naturally, how such expectations, among others, translate into practice will be the subject of some concern for executives.
Other details revealed include: a focus on legal entities (including ADI subsidiaries not regulated by APRA); an outline of 12 proposed prescribed accountable person functions (for example, Chair of the Risk Committee and C-suite executives) in addition to individuals who otherwise may have significant influence over conduct and behaviour; a proposal to have minimum (as yet unspecified) prescribed responsibilities for accountable persons to assist the accountability mapping mechanism; and a proposal for APRA to be able to disqualify a person without having to apply to the Federal Court and also to permit APRA to seek civil penalties against ADIs, including where they fail to hold accountable persons to account under the BEAR or to appropriately monitor their suitability. Mostly, these details find their precedent in the SMR.

This paper affirms our expectations as to the likely direction the BEAR will take, though there are many outstanding details. Further, some additional questions are raised by the paper, including the statement that the BEAR will apply where there is 'poor conduct that is of a systemic and prudential nature'. When is this apparent conditionality engaged?

For now, we consider that ADIs have sufficient information to begin planning their implementation of the BEAR. From our experience with the SMR and other like regimes, early engagement with executives will pay dividends in the future.

Notes
1. The views expressed in this paper are the authors’ own and should not be taken as representation of the views of Clifford Chance. This publication does not necessarily deal with every important topic or cover every aspect of the topics with which it deals. It is not designed to provide legal or other advice.


3. Financial Conduct Authority 2015, CP15/22 Strengthening accountability in banking: Final rules (including feedback on CP14/31 and CP15/5) and Consultation on extending the Certification Regime to wholesale market activities.


8. Yates, S 2015, remarks at New York University School of Law announcing new policy on ‘Individual Liability in Matters of Corporate Wrongdoing’, speech delivered at the NYU Program on Corporate Compliance and Enforcement, New York University, 10 September.

9. A director must exercise their powers and discharge their duties with the degree of care and diligence that a reasonable person would exercise.


11. Ibid.

12. Ibid.

13. The ‘name and shame’ recommendation appears to have disappeared into the ether.
CONCENTRATION AND CONTAGION RISKS IN the Australian banking system

KATIA D’HULSTER, Lead Financial Sector Specialist, The World Bank

This paper seeks to find answers to four questions on concentration and contagion risks in the Australian banking sector. First, what types of concentrations are observed in the banking sector and how do these compare internationally? Second, are these concentrations posing or exacerbating contagion and systemic risks? Third, how is the prudential supervisor addressing the systemic risks arising from the concentrations in the Australian banking sector? Finally, are there any remaining gaps in the policy response? The paper was presented at the 22nd Melbourne Money and Finance Conference, Monash University and Australian Centre for Financial Studies, 10 to 11 July 2017.

Concentration and systemic risk
Concentration risk
The numerous bail-outs in other developed countries during the global financial crisis (GFC) have put a spotlight on a key category of concentration risk: individual bank concentration. Large banks pose the risk of becoming so large and interconnected that creditors assume that they will be saved by the government because their failure would lead to financial instability. Large banks thus gain competitive advantage as they can access cheaper funding. The result is a vicious circle of ever-increasing bank size, exacerbating concentration risk and creating moral hazard. It may also pressure smaller banks to take on more risk.

During the GFC, these ‘too big to fail’ (TBTF) banks became distressed and many authorities had to decide whether to use taxpayers’ money to bail them out or risk further financial instability. Since then, an international consensus has emerged that policy makers need to be able to resolve large and complex institutions in an orderly manner. The first step is to identify these TBTF institutions. Once identified, supervision can be intensified and recovery and resolution policies can be implemented to address the TBTF problem.

The Basel Committee on Banking Supervision (BCBS) has developed a methodology to identify two types of institutions, those institutions that are systemic from a global perspective (G-SIBs) and those that are systemic from a domestic perspective (D-SIB). Both methodologies consist of a set of principles and quantitative indicators for assessing the importance of individual banks. Accordingly, APRA has assessed the systemic importance of individual banks and concluded that there are four majors D-SIBs in Australia (APRA 2013). Table 1 shows the number of G-SIBs and D-SIBs in a number of comparable countries.

TABLE 1: G-SIBs and D-SIBs in Australia and international peers

<table>
<thead>
<tr>
<th>Individual bank concentration risk</th>
<th>Australia</th>
<th>EU</th>
<th>USA</th>
<th>Switzerland</th>
<th>Canada</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of systemically important banks, of which:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; globally systemic (G-SIB)</td>
<td>0</td>
<td>13</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>&gt; domestically systemic (D-SIB)</td>
<td>4</td>
<td>70</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>N/A*</td>
</tr>
</tbody>
</table>

Overall banking system concentration is a second type of concentration risk. Generally speaking, a banking system composed of large banks is thought to be more efficient and more stable (Beck et al. 2005). But it will also involve more bank market power and political influence than a less concentrated system, raising the risk that banks become ‘too big to discipline’, the supervisor becomes ‘captured’, and banks use their influence to shape banking regulations. Yet, size and profitability may also attract political attention. As Table 2 indicates, compared to its international peers, the Australian banking system is fairly concentrated at the top end.

### TABLE 2: Overall banking system concentration in Australia and international peers

<table>
<thead>
<tr>
<th>Australia (%)</th>
<th>Eurozone (%)</th>
<th>USA (%)</th>
<th>Switzerland (%)</th>
<th>Canada (%)</th>
<th>China (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate G-SIB as a percentage of total banking assets</td>
<td>-</td>
<td>49.0</td>
<td>51.5</td>
<td>46.0</td>
<td>-</td>
</tr>
<tr>
<td>Aggregate D-SIB as a percentage of total banking assets</td>
<td>80.0</td>
<td>(*)</td>
<td>51.5</td>
<td>55.8</td>
<td>90.1</td>
</tr>
<tr>
<td>Assets of the three largest banks as a percentage of GDP</td>
<td>68.8</td>
<td>70.2</td>
<td>34.9</td>
<td>49.3</td>
<td>60.6</td>
</tr>
</tbody>
</table>

**Strength indicators**

<table>
<thead>
<tr>
<th>Australia (%)</th>
<th>Eurozone (%)</th>
<th>USA (%)</th>
<th>Switzerland (%)</th>
<th>Canada (%)</th>
<th>China (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital adequacy ratio of G-SIBs</td>
<td>-</td>
<td>15.4</td>
<td>17.0</td>
<td>23.4</td>
<td>-</td>
</tr>
<tr>
<td>Capital adequacy ratio of D-SIBs</td>
<td>14.3</td>
<td>(*)</td>
<td>17.0</td>
<td>17.5</td>
<td>15.1</td>
</tr>
</tbody>
</table>

(*) Data is not available as some D-SIBs are subsidiaries of larger groups which report at the consolidated level.


A third way of looking at concentration is by examining the size of the banking system and the financial system as a whole relative to that of the overall economy. A large banking system relative to a country’s GDP can raise concerns about the capacity of the government to save its banks and the likelihood that the banks would have to be resolved by imposing large losses on creditors, depositors and taxpayers (Demirgüç-Kunt and Huizinga 2010). Table 3 suggests that the size of the Australian banking system is not disproportionate compared to its international peers. The large superannuation sector explains much of the difference between the size of Australia’s banking sector and its financial sector assets relative to GDP.

### TABLE 3: Approximate size of the banking and financial system compared to gross domestic product (GDP)

<table>
<thead>
<tr>
<th>Australia (%)</th>
<th>EU (%)</th>
<th>USA (%)</th>
<th>Switzerland (%)</th>
<th>Canada (%)</th>
<th>China (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking assets as a percentage of GDP as at end-2014</td>
<td>128.5</td>
<td>138.2</td>
<td>58.1</td>
<td>176.1</td>
<td>140.7</td>
</tr>
<tr>
<td>Financial sector assets as a percentage of GDP at end-2015</td>
<td>370</td>
<td>610</td>
<td>480</td>
<td>-</td>
<td>500</td>
</tr>
</tbody>
</table>

Source: Banking assets as a percentage of GDP from The World Bank, Global Financial Development Database, 2015/2016 (data as at end-2014).

Authors’ calculations and estimates for financial sector assets based on documents mentioned in the indicated footnotes. Switzerland figure unknown for now, but one of largest in the world.

The fourth and final type of concentration refers to an exposure or a group of exposures large enough (relative to a bank’s capital, total assets or overall risk level) to threaten the bank’s health or its ability to maintain its core operations. These concentrations may arise from excessive exposures to individual counterparts, groups of related counterparties, or groups of counterparts with similar characteristics (e.g. counterparties in particular industry sectors, countries or asset classes). Importantly, concentrations by counterpart or category can arise on both the asset and the funding sides. Since the GFC, the Australian banks have become less exposed to wholesale funding markets, having significantly increased their deposit funding to around 60 per cent of total funding.
Residential mortgage lending constitutes the largest credit exposure in the Australian banking system (APRA 2014c). The data in Table 4 suggest that Australian banks are more focused on mortgage lending than their international peers.

**TABLE 4: International comparison of residential mortgage concentration**

<table>
<thead>
<tr>
<th>Residential mortgages</th>
<th>Australia (%)</th>
<th>EU (%)</th>
<th>USA (%)</th>
<th>Switzerland (%)</th>
<th>Canada (%)</th>
<th>China (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; as a proportion of total bank assets</td>
<td>40.1&lt;sup&gt;12&lt;/sup&gt;</td>
<td>23.3&lt;sup&gt;13&lt;/sup&gt;</td>
<td>26.9&lt;sup&gt;14&lt;/sup&gt;</td>
<td>30.4&lt;sup&gt;15&lt;/sup&gt;</td>
<td>25.5&lt;sup&gt;16&lt;/sup&gt;</td>
<td>10.6&lt;sup&gt;17&lt;/sup&gt;</td>
</tr>
<tr>
<td>&gt; as a proportion of total loans and advances</td>
<td>60.9&lt;sup&gt;19&lt;/sup&gt;</td>
<td>38.1&lt;sup&gt;19&lt;/sup&gt;</td>
<td>46.9&lt;sup&gt;14&lt;/sup&gt;</td>
<td>75.1&lt;sup&gt;16&lt;/sup&gt;</td>
<td>51.7&lt;sup&gt;18&lt;/sup&gt;</td>
<td>171&lt;sup&gt;17&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Housing lending is generally considered low-risk banking (RBA 2014). Yet, several indicators point to increasing risk such as high levels of household debt, the threat of rising interest rates, relatively high house prices and subdued income growth.

**Systemic risk**

‘Systemic risk is the risk of financial system disruption so widespread or severe that it causes, or is likely to cause, material damage to the economy’ (RBA 2014). When assessing if a large individual bank or market poses systemic risk, size is a determining factor. Apart from size, interconnectedness and correlation can also give rise to systemic risk. Interconnectedness is the degree to which banks or markets have connections to other financial institutions, markets or infrastructure. Correlation can cause even small entities or markets to experience financial distress at the same time, or behave in the same way in particular circumstances. Both interconnectedness and correlation can cause contagion or the ‘domino’ mechanism through which shocks spread. Contagion can occur even in the absence of direct exposures; a change in behaviour or sentiment is sufficient. A typical example of this type of contagion is the shrinkage of the Australian securitisation market caused by the dislocation of the US subprime market.

Contagion can occur across sectors, depending on the perception of actual or implied support. A simple example is contagion from banks to the sovereign or from banks to wealth management activities (or the other way around). Yet, banking groups involved in insurance and asset management are also exposed to conglomerate risks across their functional business lines. This means that in a situation of financial distress subsidiaries of a conglomerate may expect help from the holding company or parent bank. Similarly, the bank may expect help from its cash-rich subsidiaries. Members of conglomerates can thus be lured into taking on more risk than they would otherwise have done because they rely on the brand name. In addition, clients are often tempted by strong brand names and, absent proper consumer protection, can misunderstand the risks of the products they buy (Van Lelyveld and Schilder 2002).

The Australian housing market has been identified as systemic because of its size, importance to the real economy and interconnection with the financial system (RBA 2014). Most Australian banks have asset concentrations in the housing market. The four major banks are not only systemic because of their size, but are also more interconnected than the average deposit-taking institution (Tellez 2013) and correlated by their similarity in business models and their reliance on overseas funding. Uncertainty about the financial condition of one of these banks would probably quickly impact the other three and creditors might decide to ‘run’. Thus, in the case of one of the major banks getting into serious trouble, there is a very high probability of contagion causing ‘joint distress’ of a large share of banking assets (RBA 2014). This scenario then raises concerns about the government’s capacity as well as the combined impact of banks’ responses to a potential crisis. For instance, simultaneous capital raisings may test market capacity in an adverse environment. Similarly, tightening underwriting standards as a response to increasing non-performing loans could have an impact on collateral values and affect the real economy. (Byres 2014).
Importantly, systemic risk is not a static concept, but it is driven by circumstances. Whether a crisis affecting a particular institution is systemic or not, depends to a large extent on the circumstances under which it occurs. In other words, institutions or markets that are not considered systemic in normal times, may become so in a crisis (Dijkman 2010). Thus, there is a clear distinction to be made between the failure of a smaller bank because of a contained idiosyncratic event — for example, a bank failing because of management fraud or a fatal operational failure — and a full-blown systemic crisis. The authorities will have to consider their appropriate response in light of the specific circumstances, recognising that systemic problems are more likely to arise during relatively weak economic conditions with lower levels of confidence than with strong economic conditions. As pointed out in the Government’s Statement of Expectations to APRA (Treasury 2014), it is not the objective of prudential regulation to guarantee a zero failure regime.

In summary, almost all banks in Australia have significant housing portfolios, and are thus exposed to adverse events in this systemic market. In addition, each of the major four banks poses a systemic risk in itself. Yet, they are also correlated by the similarity in business models, evidenced by their strong linkages to the housing market and their reliance on overseas funding, which raises the risk of joint distress. There are also market distortions as a result of the TBTF banks and conglomeration risk.

**Policy response**

Systemic risk cannot be eliminated, but it should be monitored, managed and mitigated by sound macroeconomic policies, prudential supervision and regulation, oversight and regulation of financial market infrastructure, robust crisis management and resolution, as well as sound policies in the areas of consumer protection and market integrity.

With regard to the housing lending concentration in banks’ portfolios, APRA’s stress tests provide comfort in terms of the banks’ ability to withstand direct credit losses (Byres 2014). Still, it is possible that individual banks survive but the system in its current form does not; for example, large losses in housing portfolios could worry creditors and result in a withdrawal of funding.

For the TBTF banks, an international consensus has emerged that this problem needs to be mitigated by reducing the impact of systemically important institutions and the probability of them failing. The impact of a failure can be reduced by more effective resolution mechanisms and plans, and bail-in and higher loss-absorbing capacity. Identification of systemically important banks, capital surcharges, the preparation of recovery plans and increased supervisory intensity aim to reduce the likelihood of failure. In recent years, global policy development and supervisory activities have been stepped up in those areas.

For instance, APRA imposed a 1 per cent capital surcharge on the D-SIBs. Moreover, they are subject to a Level 3 conglomerate regime from 1 July 2017 and a heightened supervisory stance due to the likely large impact of their failure. Furthermore, APRA has lifted supervisory intensity for residential mortgage lending portfolios. This includes reinforcing stronger lending standards and seeking ways to moderate the rapid growth in investor lending by introducing macro prudential measures (see details in Appendix 1). These efforts have had an impact: there is more conservatism in terms of mortgage lending decisions today relative to a few years ago, and double-digit growth rates in lending to investors have returned to single figures (Byres 2017b). That said, only time will tell whether the macro prudential measures were timely, went far enough and did not create distortions in the financial system.
The Financial System Inquiry (FSI)\(^{19}\) recommendations in the area of banking system resilience are aligned, and go beyond this international policy consensus. Significantly, the inquiry recognised the important concentrations in the Australian banking system and acknowledged that the safety of the banking system is of paramount importance. It highlighted the need to lower the probability of failure, including setting Australian bank capital ratios such that they are ‘unquestionably strong’ by being in the top quartile of internationally active banks. It also recommended that in order to reduce the cost of failure, authorised deposit-taking institutions (ADIs) should maintain sufficient loss absorbing and recapitalisation capacity to allow effective resolution with limited risk to taxpayer funds\(^{19}\) (Commonwealth of Australia 2014). The government has agreed with these recommendations (Treasury 2015) and APRA is considering how to judge ‘unquestionably strong’ (Byres 2017a).

Regrettably, increased supervisory intensity, and good supervision practices in general, have received much less attention than the regulatory reforms globally. Implementation and oversight of complex regulations is difficult, but matters as much as the regulation itself. The importance of supervision is illustrated by the fact that most supervisors operated under broadly the same internationally agreed regulatory standards during the global financial crisis, yet the outcomes in terms of bank failures were very different (IMF 2010).

Hence, a precondition for an ‘unquestionably strong’ banking sector is an equivalently strong supervisor. Certainly, the inquiry acknowledged the role of supervision by recommending ‘regulators be provided with more stable funding, increase their capacity to pay competitive remuneration, boost flexibility in respect of staffing and funding and require them to perform periodic capability reviews’. The government responded positively to these recommendations, yet their implementation does not appear to be as high on the agenda and as fiercely debated as the implementation of ‘unquestionably strong’ capital ratios. Maybe this is because it is easier to compare bank capital ratios internationally than to benchmark the effectiveness of bank supervision against international standards.

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An assessment of the Basel Core Principles (BCP)\(^{20}\) as part of the Financial Sector Assessment Program (FSAP)\(^{21}\) aims to do exactly that. More than five years ago, the IMF performed a BCP assessment in Australia and raised concerns regarding APRA’s operational and budgetary independence. It noted that government approval of APRA’s budget left it exposed to cutbacks for political and budgetary reasons. Since then, there have been the occasional warning signs. For example, APRA used to target average remuneration at the 25th percentile of the market rate for like work in the financial sector. As APRA salaries have remained flat for the past couple of years, the gap with the banking sector, the key recruitment ground for APRA staff, has further widened (APRA 2014). Three years after the IMF assessment, the FSI continued to raise concerns that it had become difficult to meet that target.

Furthermore, efficiency dividends\(^{22}\) have been imposed across the public sector, including on APRA. This mechanism is ill-suited for an agency funded by levies. Indeed, the efficiency gains imposed on APRA are returned to the regulated entities, in individually insignificant amounts, without making any contribution to the budget. Even so, the FSI final report stopped short of explicitly banning them.

It is also interesting to note that the supervisory resources APRA dedicates to the supervision of large and complex institutions are at the lower end of the scale compared to its international peers. For example, the Financial Stability Board (2010) states that on average supervisory teams for a large and complex institution range from 14 people to high of 100, with 40–50 people on average (Laker 2010).
These observations may sound trivial and anecdotal, but one needs to be mindful that their collective impact may sow the seeds for a slow and unnoted erosion of financial safety levels. Supervisory skills take a long time to build, yet can be lost very quickly. When governments run deficits, some general belt tightening is often the responsible thing to do. After all, the recent budget announcement imposed a bank levy on the five largest banks while APRA received a range of special appropriations. To put this into perspective though, the latter amounts to low single-digit millions of dollars, while the bank levy is expected to raise $6.2 billion over four years. Nonetheless, it is not the most responsible policy choice to direct this levy towards general budget repair instead of earmarking it, at least partly, to help strengthen the resilience and oversight of the financial system (Davis 2017).

Finally, the cost-benefit ratio of ‘unquestionably strong’ supervision is attractive. When APRA raised the risk weights for mortgages from 16 to 25 per cent for banks using the internal ratings based approaches (APRA 2015), the four major banks had to raise around $10 billion in equity. At a cost of equity of say, 10 per cent per annum, this equates to around $1 billion. This is about 10 times what APRA spends on bank supervision each year (APRA 2016). It is highly debatable as to whether the Australian financial system has become significantly safer following this relatively small increase in risk weights. Instead, a substantial increase in supervisory capacity could have given more assurance on financial safety levels, and at a much lower cost.

Conclusion

Australia has seen less financial instability than most developed countries. The quality of the regulatory system and the timely action by supervisors and the government contributed, among other factors, to this successful outcome.

Compared to its international peers, the Australian banking system is characterised by three interrelated forms of concentration risks: individual bank concentration risk; banking system concentration; and housing sector concentrations in individual banks. The FSI recognised that these concentrations pose systemic risk and have to be monitored, managed and mitigated carefully. It recommended the Australian banking system become ‘unquestionably strong’. Even so, this objective cannot be achieved by regulation alone. It must be complemented by ‘unquestionably strong’ independent, adequately resourced and proactive supervision.

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Notes

1. This paper’s findings, interpretations, and conclusions are entirely those of the author and do not represent the views of the World Bank, its executive directors, or the countries they represent.
2. This paper focuses on bank safety and soundness; competition matters are outside of its scope.
3. The BCBS uses five indicators to assess globally systemically important banks: cross-jurisdictional activity; size; interconnectedness; substitutability; and complexity. No Australian bank is a G-SIB. In the assessment methodology for D-SIBs, cross-jurisdictional activity is dropped and more discretion for the designation of D-SIB is granted to the domestic supervisor.
4. D-SIBs are yet to be designated in China.
5. Luxembourg stands out with assets representing 1,557 per cent of GDP, followed by Malta, Cyprus and the Netherlands 535 per cent, 420 per cent and 374 per cent of GDP, respectively, as at 31 December 2015.
6. The only data available is at end-2008.
7. RBA 2014, p. 15. Data is as at 31 December 2013.
8. The size of the overall financial sector ranges from almost 200 times GDP (Luxembourg) to slightly below 100 per cent of GDP (Lithuania). Other countries with a financial sector of more than 10 times GDP are Malta, Ireland, Cyprus and the Netherlands. At the other end of the spectrum, the size of the financial sector stood at about 200 per cent of GDP or less in most eastern European euro area countries. In most central euro area countries, such as France, Belgium, Germany or Austria, the ratio of total financial sector assets to GDP was between 400 per cent and 600 per cent. Data from the ECB report on financial structures, 2016.

9. US Financial Sector Assessment Program (FSAP), figures as at end-2014.

10. Canada FSAP, figures as at end-2014.

11. Author’s estimate.

12. APRA 2017b, Quarterly Authorised Deposit Taking Institutions Performance, 31 March.

13. ECB 2017, Supervisory Banking Statistics, data as at 31 December 2016. Only lending to household figures are published.


18. The Financial System Inquiry (FSI) was tasked with examining how the financial system could be positioned to best meet Australia’s evolving needs and support Australia’s economic growth.

19. The FSI also recommended keeping in place the ‘four pillars policy’ preventing the four major banks from merging with one another. The inquiry argued that it confines concentration by limiting the size of the four major banks, and thus keeps the impact of their potential failure more limited. That said, the policy has not prevented the major banks becoming systemically important. Also, the resolution of one of the large banks following an idiosyncratic fatal event cannot be avoided by this policy. This course of events would also increase the systemic importance of the remaining three.

20. The Basel Core Principles for Effective Banking Supervision are the de facto minimum standard for sound prudential regulation and supervision of banks and banking systems. They are used by countries as a benchmark for assessing the quality of their supervisory systems and for identifying future work to achieve a baseline level of sound supervisory practices. The Basel Core Principles are also used by the International Monetary Fund (IMF) and the World Bank, in the context of the FSAP, to assess the effectiveness of countries’ banking supervisory systems and practices.

21. The FSAP, established in 1999, provides a comprehensive and in-depth analysis of a country’s financial sector. FSAP assessments are the joint responsibility of the IMF and World Bank in developing economies and emerging markets and of the IMF alone in advanced economies. G20 countries are committed to an assessment every five years and to publicly disclose the results.

22. Under the efficiency dividend, the government reduces agency funding with the objective of driving efficiency savings and improving its overall budget position. Agencies are required to meet reductions in their expenditure base as a set percentage amount per year. Over the period from 2011 to 2017 APRA’s expenditure was reduced by $21 million from its originally approved budget.

23. While the Treasurer did not provide a rationale for the new levy, several commentators justified it as part of the price to pay for ‘the too big to fail’ implicit subsidy and argued that its calibration at 0.06 per cent of a subset of liabilities was entirely reasonable.

24. APRA was granted $4.2 million over four years to implement the new Banking Executive Accountability Regime (Treasury 2017). The Government will also provide APRA with $1 million per annum for a fund to ensure it has the necessary resources to enforce breaches of the new civil penalty provisions.
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### APPENDIX 1: Supervisory actions and macro prudential measures communicated by APRA

<table>
<thead>
<tr>
<th>Date and topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2014</strong></td>
<td>Issuance of Prudential Practice Guide on Mortgage Lending&lt;br&gt;This document lays out supervisory expectations with regard to the risk management framework, loan origination, specific loan types, security valuation, hardship and collections, stress testing and lenders mortgage insurance.</td>
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<tr>
<td><strong>2014</strong></td>
<td>Stress testing of Australia’s 13 largest ADIs for a significant housing downturn.</td>
</tr>
<tr>
<td><strong>Investor growth</strong></td>
<td>Letter of 14 Dec to ADIs&lt;br&gt;Annual investor credit growth materially above a benchmark of 10 per cent will be an important risk indicator that supervisors will take into account when reviewing ADIs residential mortgage risk profile and considering supervisory actions. The benchmark is not intended as a hard limit, but ADIs should be mindful that investor loan growth materially above this rate will likely result in a supervisory response.</td>
</tr>
<tr>
<td><strong>Serviceability</strong></td>
<td>Letter of 17 March to ADIs&lt;br&gt;Prudent serviceability policies should incorporate a serviceability buffer of at least 2 per cent above the loan product rate, with a minimum floor assessment rate of 7 per cent. Review and ensure that serviceability metrics, including interest rate and net income buffers, are set at appropriate levels for current conditions.</td>
</tr>
<tr>
<td><strong>Higher risk lending</strong></td>
<td>Continue to restrain lending growth in higher risk segments of the portfolio (e.g. high income loans, high LVR loans, and loans for very long terms.)</td>
</tr>
<tr>
<td><strong>Interest-only flow</strong></td>
<td>Limit the flow of new interest only lending to 30 per cent of total new residential mortgage, and within that:&lt;br&gt; &gt; Place strict internal limits on the volume of interest only lending at loan to valuation ratios above 80 per cent; and&lt;br&gt; &gt; Ensure there is strong scrutiny and justification of any instances of interest only lending at and LVR above 90 per cent.</td>
</tr>
<tr>
<td><strong>Warehouses</strong></td>
<td>APRA has been monitoring the growth in warehouse facilities provided by ADIs and would be concerned if these were growing at a materially faster rate than and ADIs own housing loan portfolio.</td>
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</tbody>
</table>

Sources: APRA website, APRA’s letters to ADIs, Macquarie Research, June 2017.