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For 40 years, JASSA has enabled industry practitioners and academics across Australia and New Zealand to publish peer-reviewed research, providing Finsia members and subscribers with access to industry-leading material. JASSA is listed in EconLit, Social Sciences Citation Index, Scopus, ProQuest, RMIT Informit and EBSCOHost services.
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The responses by the banking sector to the Basel III reforms will present both potential challenges and opportunities for Australian superannuation funds due to the significant interactions between these segments of the financial services industry. These regulatory changes will create an added layer of investment complexity, and new risk management and liquidity considerations for super funds, particularly against the backdrop of other prevailing market trends.
The first few papers in this issue of JASSA address a range of important corporate governance and corporate financing issues for practitioners, with the remainder of the issue being devoted to edited versions of papers presented at the 18th Melbourne Money and Finance Conference — Financial Sector Evolution: Prospect and Determinants — held in July 2013. The conference was organised by the Australian Centre for Financial Studies and sponsored by ANZ, APRA, the Reserve Bank of Australia 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.

Using the annual reports of Hastie Group as an example, Andrew McRobert SF Fin examines whether there are any warning signals in the annual accounts about likely corporate failures. He suggests that every corporate collapse can be attributed to one or more of the well-documented causes of failure, and a few simple calculations and the determination to read and think beyond the purple prose set out by the directors (and the brokers) will, in many cases, identify a company heading inexorably towards failure. McRobert says, for example, it is net operating cash flow that pays the bills, not profits, and Hastie’s very thin cash debt service cover is remarkable in view of the positive statements of the directors prior to its failure and the consistently bullish analyses of Hastie issued by brokers.

Next, Hung Chu and Wayne Lonergan SF Fin highlight the pitfalls in adjusting merger ratios for mergers involving a cash payout. They indicate that derivation of the technically correct post-cash payout merger ratio is case-specific, requiring a proper assessment of the equity value of the merged entity, which inherently involves taking into account the expected synergies (net of implementation costs) from the merger. They say this critical input is wrongly excluded in the derivation of the post-cash payout merger ratio under an alternative short-cut adjustment method, resulting in the cash receiving merging party’s share of the value of the expected synergies being understated.

Following the strengthening of corporate governance codes in many countries over the past decade in response to large and high-profile corporate collapses, the paper by Christofer Adrian, Sue Wright and Alan Kilgore examines directors’ views on the relative importance of corporate governance mechanisms or attributes. The authors note that although previous studies in Anglo-American countries (such as Australia and the US) place more emphasis on board composition as an integral attribute affecting corporate governance, the findings of their study show that Australian directors perceive CEO duality to be the most important corporate governance attribute. The results also confirm that Audit Committee composition and Board composition are important to directors. These results provide feedback to regulators which may help to inform any potential future amendments of corporate governance codes in Australia.

In the first of the papers from the 18th Melbourne Money and Finance Conference, Rodney Maddock raises the question of whether Australia’s financial sector, which is large by global standards, is too big. Maddock finds that most of the growth within the sector over the past decade has been the result of outward shifts in the demand for financial services driven by household preferences, the availability of a wider range of financial tools, and active government policy. He also suggests that it is not surprising that Australian banks are among the most profitable banks globally because they have driven productivity faster than most of their international peers and have been able to retain more of the benefits for shareholders without excessive (but still substantial) margins.

The paper by Carl Schwartz and Tom Carr focuses on the evolution of shadow bank-based finance in Australia and a number of other countries around the recent crisis, and, for Australia, around the late 1980s/early 1990s period of financial upheaval and regulatory reform. The authors find that recent history internationally and in Australia suggests a general procyclical pattern in shadow banking. They note that shadow banking has mainly flourished in an environment where solid risk appetite has tested the limits of the regulatory and supervisory framework, with subsequent contraction when risk appetite falls and regulatory...
and supervisory frameworks are tightened. They indicate that Australia’s past experience suggests the financial crisis-related shock to risk attitudes and global regulatory focus on shadow banking will remain considerable near-term headwinds for aggregate shadow banking sector activity but, nonetheless, regulators should remain focused on fast-growing components and their linkages to other parts of the financial system.

Charles Littrell explores the difference between macroprudence and macroprudential supervision as well as some emerging international and Australian themes in safety and stability, in the context of systemic effects. Littrell notes that regulators, as with bankers, are tempted to act with the cycle, when acting against the cycle should be a core competence. He also says APRA considers that the global deployment of macroprudential supervision, while generating much that is positive, risks muddling the role and effectiveness of prudential supervisors; and APRA’s preferred strategy is a broader reliance, with its colleague agencies, on proactive macroprudence.

With legislation coming into effect in March 2014, allowing credit providers such as banks and other lenders to share positive information about consumers through a credit bureau, Steve Johnson examines the implications for consumer lending. He says that the Australian transition from negative reporting to comprehensive reporting is largely an unprecedented and unique approach that will create challenges for government, regulators and the industry. He also believes that taking into account the rational response to competitive threats and technology impediments of some lenders, it is likely that a fully comprehensive credit environment will not be in place until late 2015.

Also focusing on the impact of regulatory change, Brad Carr indicates that the banking sector’s response to the Basel III reforms will present both potential challenges and opportunities for Australian superannuation funds due to the significant interactions between these segments of the financial services industry. He says these regulatory changes will create an added layer of investment complexity, and new risk management and liquidity considerations for super funds, particularly against the backdrop of other prevailing market trends. He notes that APRA has indicated that superannuation funds will be treated as ‘financial institutions’, while self-managed super fund (SMSF) depositors are eligible for the more generous ‘retail’ treatment.

Please note that the guidelines for submission to JASSA are available at www.finsia.com and any comments on these or any previous articles are also welcome at m.fahrer@finsia.com.
HASTIE GROUP LIMITED: DID THE ANNUAL REPORTS PROVIDE ANY WARNING SIGNALS?

ANDREW McROBERT SF Fin, PRINCIPAL, ANDREW McROBERT & ASSOCIATES

Whenever Australia experiences a significant corporate collapse, the question is asked: why weren’t we warned? Notwithstanding the best efforts of the brokers’ analysts, it is clear that many such collapses come without warning. In hindsight, it is often very apparent that, for several years before, there were plenty of warning signals in the annual accounts. It appears that brokers are so dedicated to looking for ‘winners’ that they often neglect to identify potential losers.

McRobert and Hoffman1 have outlined a number of causes of corporate failure including companies seeking to achieve growth at all costs, companies whose boards seem to think that they could achieve greatness in whatever sector they choose, companies that cannot adapt to a changed competitive environment and, of course, gearing (a feature found in almost corporate collapses).

This article examines whether any of the identified causes of failure were apparent in the history of Hastie as a public company. If they were, the question then follows: why were brokers and commentators not able to identify these potential causes before, rather than afterwards?

As in a previous article on ABC Learning Centres Limited,2 this article focuses on the annual reports themselves. Most retail investors do not have regular access to the companies in which they invest. They do have an opportunity at the annual general meeting, but few retail investors actually attend the AGM or pay attention to continuous disclosure releases by companies. For the most part, retail investors’ major sources of information are brokers’ reports and the annual report. By the time brokers’ reports began to highlight Hastie’s problems, the group was already well down the road to collapse.

Background
Hastie Group Limited (referred to throughout this article as ‘Hastie’) listed on the Australian Securities Exchange on 29 March 2005. The 2006 annual report clearly disclosed the intention of the directors of Hastie (p. 1):

The group’s strategy is to expand, through organic growth and acquisitions, its range of building services to the commercial, industrial and infrastructure sectors and its geographic coverage.

Table 1, drawn from the 2005–2011 annual reports,3 indicates the extent to which Hastie was able to fulfil this strategy.

Table 1: Acquisitions ($’000)

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<tbody>
<tr>
<td>Total acquisition costs ($’000)</td>
<td>23,800</td>
<td>36,930</td>
<td>56,118</td>
<td>326,737</td>
<td>31,397</td>
<td>20,054</td>
<td>7,340</td>
</tr>
<tr>
<td>Number of business 100% acquired</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
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</table>

Does the ‘growth at all costs’ issue apply to Hastie? It certainly looks that way.

Business model
Initially, Hastie’s focus was on specific target sectors, mostly in Australia and New Zealand. It is, however, significant that it took until 2010 for Hastie to report that the group had ‘moved to standardised estimating packages, complementing its existing uniform Group-wide IT platform’ (p. 19).

In other words, notwithstanding 33 acquisitions between 2005 and 2010, there is no evidence that Hastie had attempted to achieve any synergies in its program of acquisitions. The following figures...
Discretionary expenditure
Hastie also disclosed in 2011 that it had been adversely affected by:

> extreme weather and the Christchurch earthquake
> low discretionary maintenance expenditure
> tightening credit terms from suppliers and looser terms demanded (or taken) by customers
> depressed market demand with the downturn in retail expenditure
> project delays.

These are all what McRobert and Hoffman in Corporate Collapse: An Early Warning System for Leaders, Investors and Suppliers referred to as ‘normal business hazards’. Hastie boasted that it had an active and dynamic risk management system. Does the fact that these normal business hazards had such a major impact on the group cast doubt on the effectiveness of this risk management system?

Certainly, the vulnerabilities suggest that there was a mismatch between the aggressive expansion strategy, both in terms of revenue growth and geographically, and the relatively aggressive financial structure that Hastie maintained. Arguably, gearing of 2.51:1 does not sit well with the degree of risk pursued by Hastie.

Large-scale projects
Hastie was a group that proudly talked about the very large developments with which it was associated, in each of the three regions. However, the ‘downside’ of continuously working on very large developments is that a company is vulnerable to very significant cost overruns and defaults. Engineering contracting is a high-risk business: every sale is up for tender; there are few if any repeat sales; profit margins are thin at best; and sponsors penalise cost or time overruns.

In 2011, the sort of major impacts experienced by Hastie through the strategy of focusing on large-scale developments included:

> the Dubai downturn and the resultant diminution in the profitability of, and the value in Hastie’s balance sheet of Rotary
> a very significant bad debt in the Turks & Caicos Islands.

TABLE 2: General and administrative expenses

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</thead>
<tbody>
<tr>
<td>General and administrative expenses</td>
<td>49,661</td>
<td>51,000</td>
<td>74,461</td>
<td>129,356</td>
<td>186,195</td>
<td>180,485</td>
<td>190,023</td>
</tr>
<tr>
<td>G&amp;A expenses as a percentage of revenue</td>
<td>13.4%</td>
<td>10.6%</td>
<td>9.6%</td>
<td>10.2%</td>
<td>10.5%</td>
<td>10.9%</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

reinforce this suggestion (see Appendix for further details).

Figure 1 illustrates Hastie’s dramatic growth in revenue over the time that it was listed. Given growth at this rate, one would have expected the G&A expense ratio to have significantly declined over time. Anecdotal evidence indicates that, apart from the costing system, there was little or no attempt to standardise operating procedures or gain access to potential economies of scale. Indeed, one would have to question whether acquisition of a diverse range of electrical, plumbing, air conditioning, fire and refrigeration companies scattered across Australia and New Zealand (let alone the UK and the Middle East) could generate the opportunity for economies of scale.

Does this reflect the failure of Hastie to generate economies of scale from integrating its enormous number of acquisitions? There are two possible explanations:

> the Board and management were incapable of generating the economies of scale or
> the nature of the business meant that economies of scale were simply not available. If this is the case, it would invalidate the objective of Hastie’s aggressive expansion strategy.

Financial statements
Having examined Hastie’s business model, let us now turn to the financial statements.
Reorganisation

For any person attempting to make sense of Hastie’s financial statements over a period of time, the company did not make things easy. The financial statements featured continuous restatements in the financial accounts themselves:

- The 2006 annual report contained a material restatement of fixed assets ($1.6m), described as ‘reallocation to correct classes’. There was a further minor ($24,000) reallocation in the 2009 accounts.
- In 2010, the reallocation of $1.1b out of fixed assets was described as ‘reallocation to intangibles’.
- The reductions in goodwill in the 2007, 2008, 2009 and 2010 annual reports were attributed to ‘Reassessment of deferred consideration for prior year acquisitions’. These reassessments were substantial: $1.7m in 2007, $0.8m in 2008, $23.3m in 2009 and $1.9m in 2009.
- The 2007, 2008, 2009 and 2010 annual reports also contained $3.1m, $3.2m, $4.3m and $6.3m, respectively for reductions in the provision for warranty claims, attributed to ‘Re-measurement or settlement without cost’.
- The 2008, 2009, 2010 and 2011 annual reports contain $5.4m, $4.9m, $2.3m and $3.8m adjustments to the income tax provision attributed to ‘Over-provision in prior years in relation to Research & Development Allowance’.

Reassessment of deferred consideration for prior year acquisitions would have had a negative impact on the P&L. By contrast, reductions in the provision for warranty claims and adjustments to the income tax provision in respect of the Research & Development Allowance would have positively impacted the P&L. However, in neither case was there any specific disclosure of the impact of these adjustments in the notes to the accounts on the P&L. All of these items, and the fact that the word ‘consistent’ never appears in the Statement of Accounting Policies might perhaps have provided some grounds for concern about the reliability of the financial statements. When comparing results between years for any company, unless there is consistency in the preparation of the accounts, there is a risk that numbers prepared on different bases may not actually be comparable. Comparing apples to oranges in financial analysis is just as dangerous as in any other sphere of life.

Apparently, the auditors (Deloitte) were satisfied, because the accounts were not qualified in any year up to the collapse of Hastie.

Goodwill

Table 3 examines the relationship between Hastie’s valuation of goodwill and solvency.

Goodwill is treated in financial statements as a non-current asset, the value of which is required to be assessed by the directors every year and written down if they consider it to be overstated. The last row in Table 3 recalculates Hastie’s gearing on the assumption that the goodwill was, in fact, worthless. As many liquidations have shown, goodwill is, in very many cases, only valuable as long as a company continues to operate. Moreover, when the total value of goodwill exceeds shareholders’ funds, the capacity of the company to demonstrate that it is still solvent is wholly dependent on assumptions regarding the valuation of goodwill.

In Hastie’s case, it is clear that, from the outset, the group’s capacity to demonstrate that it was solvent was completely dependent on the valuation of goodwill. Hastie’s valuation of goodwill was based on assumptions as to the level of profitability of each of the key operating units within the group. The author has undertaken an analysis of these assumptions. This analysis demonstrates that those assumptions were completely inconsistent with Hastie’s actual performance.

In its 30 June 2011 annual report, Hastie reported a massive write-down of goodwill. Belatedly, it seems, Hastie was acknowledging what is apparent from the analysis: they had paid too much for their massive expansion program, and the investments were not generating the anticipated profits.

And what did the goodwill and other intangibles generate for the receivers? Nothing.

<table>
<thead>
<tr>
<th>TABLE 3: Goodwill &amp; other intangibles related to shareholders’ funds</th>
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<tbody>
<tr>
<td><strong>Gearing</strong></td>
</tr>
<tr>
<td>Total liabilities/shareholders’ funds</td>
</tr>
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<td><strong>Gearing, excluding goodwill</strong></td>
</tr>
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</table>
Accounting Standards Board to treat operating leases the same as finance leases, i.e. bring them into the balance sheet and P&L. From an analyst’s perspective, operating and finance leases are effectively both forms of structured secured lending. Therefore, it is valid to calculate Hastie’s debt capacity to service over its time as a listed company, its interest on loans and finance leases and the payments on its operating leases.

Table 4 discloses that, on a cash basis, Hastie was generally ‘close to the line’ in cash debt service capacity. At the end of the day, it is net operating cash flow that pays the bills, not profits. Hastie’s very thin cash debt service cover is remarkable, in view of the positive statements of the directors throughout this period and, of course, the consistently bullish analyses of Hastie issued by brokers.

**TABLE 4: Debt service capacity of operating cash flow**

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<tbody>
<tr>
<td>Net cash provided by operating activities (before interest expense)</td>
<td>21,408</td>
<td>31,328</td>
<td>80,386</td>
<td>35,027</td>
<td>51,609</td>
<td>-27,186</td>
</tr>
<tr>
<td>Cash debt service coverage ratio</td>
<td>4.07</td>
<td>2.14</td>
<td>2.92</td>
<td>1.49</td>
<td>2.45</td>
<td>n/a</td>
</tr>
<tr>
<td>Cash debt service coverage ratio, including operating leases</td>
<td>2.40</td>
<td>2.00</td>
<td>2.64</td>
<td>1.09</td>
<td>1.65</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**FIGURE 1: Summary of profitability, (A$000)**

*Performance*

Figure 1 summarises Hastie’s profitability over the period that the group was listed.

Hastie was clearly able to maintain its gross margins in the face of the significant growth in revenue and, until 2009, EBIT. However, growing gross profits is not the same as growing net profits. Failing to control the level of overheads (as discussed in relation to Table 2) meant that Hastie was, in effect, treading water. The author’s analysis shows that net profit/shareholders’ funds peaked in 2006 and declined every year after that. Why didn’t the brokers, who were busy recommending Hastie as a ‘buy’, highlight this trend?

*Cash flow and debt service capacity*

Table 4 relates Hastie’s net operating cash flow to (i) interest expense and other associated finance costs and (ii) interest expense and other associated finance costs PLUS operating lease expense. The Australian Accounting Standards Board is currently considering a proposal from the International
Conclusions
1. Hastie aggressively pursued growth in business, much of it with large-scale projects, and in an astonishing range of countries.

2. Hastie failed to generate the economies of scale that could have been anticipated from the acquisition program and the very substantial growth in revenue throughout its time as a listed company. Failure to achieve economies of scale meant that profit growth was always very substantially less than revenue growth.

3. There were, over the eight years, an extraordinary number of adjustments to provisions, fixed and intangible assets that do not inspire confidence in (and should not have inspired reliance on) the reliability of the published figures in the annual accounts.

4. The assumptions on which the valuation of goodwill was based were flawed, resulting in the continued overvaluation of goodwill. Indeed, given the discrepancy between the valuation basis of goodwill and the actual results achieved from the acquisitions, it appears that Hastie consistently overpaid for its acquisitions and failed to achieve any significant synergies from them.

5. The aggressive strategy of revenue and geographic expansion was not matched with a prudent conservative financial structure appropriate to such a strategy.

6. Debt service capacity, particularly when measured on an operating cash flow basis and including servicing of operating leases, was weak and declining.

Unlike many such analyses of failed companies, there is no ‘smoking gun’ in the case of Hastie. But this analysis suggests that Hastie combined the financial profile of a start-up, the risks of a large diversified multi-national and an inadequate level of high-level expertise to manage their strategy. Under the circumstances, was it such a surprise that this high-wire act should have unstruck?

Trying to avoid the perils of hindsight, this article therefore concludes that there were two sets of failures:

> failure by the Board and management of Hastie which directly led to the collapse of the group
> failure by brokers who failed to identify the emerging disaster during the time that Hastie was listed.

Companies are always going to fail, and failure is an integral part of the process whereby the economy renews and refreshes itself. However, it is clear that every corporate collapse can be attributed to one or more of the well-documented causes of failure. And it is clear that a few simple calculations and the determination to read and think beyond the purple prose set out by the directors (and the brokers) will, in very many cases, identify a company heading inexorably towards failure.

Notes

2. ‘ABC Learning Centres Limited: Did the annual reports give enough warning?’, JASSA, issue 1, 2009.

3. The full financial analysis is available by contacting Andrew McRobert at amra@amcrobertandassocs.com.au

4. Rotary was a large UK-based provider of mechanical, electrical and hydraulic services for commercial, industrial and infrastructure projects acquired by Hastie during the 2008–09 financial year. Hastie used Rotary as the vehicle for expanding into the Middle East and other locations.

5. Corporate Collapse op. cit.

6. Hastie's treatment of goodwill and other intangibles is discussed in more detail in the next section.

7. This analysis is also available by contacting Andrew McRobert at amra@amcrobertandassocs.com.au

8. The accounting treatment of finance expenses in the cash flow statement changed in 2008. The 2006 and 2007 figures in Table 5 have been adjusted from the figures in Hastie's annual reports to ensure consistency of treatment. The 2009–2011 figures for operating leases have been estimated, as from 2009 Hastie ceased to disclose the P&L impact of operating leases in the group.
### Hastie Financial Statements

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<tbody>
<tr>
<td>Sales</td>
<td>369,891</td>
<td>479,393</td>
<td>778,633</td>
<td>1,270,672</td>
<td>1,781,049</td>
<td>1,651,081</td>
<td>1,848,843</td>
</tr>
<tr>
<td>EBIT</td>
<td>13,113</td>
<td>29,716</td>
<td>42,450</td>
<td>69,050</td>
<td>93,690</td>
<td>73,555</td>
<td>-58,569</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>6,306</td>
<td>19,073</td>
<td>22,531</td>
<td>38,388</td>
<td>58,698</td>
<td>40,578</td>
<td>-87,826</td>
</tr>
<tr>
<td>Total assets</td>
<td>174,243</td>
<td>274,260</td>
<td>386,571</td>
<td>1,032,269</td>
<td>1,005,907</td>
<td>1,053,929</td>
<td>965,701</td>
</tr>
<tr>
<td>Shareholders’ funds</td>
<td>40,776</td>
<td>55,305</td>
<td>99,003</td>
<td>259,421</td>
<td>366,521</td>
<td>387,228</td>
<td>275,453</td>
</tr>
<tr>
<td>Current ratio</td>
<td>1.2</td>
<td>1.4</td>
<td>1.3</td>
<td>1.2</td>
<td>1.3</td>
<td>1.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Total liabilities/shareholders’ funds</td>
<td>3.27</td>
<td>3.96</td>
<td>2.90</td>
<td>2.98</td>
<td>1.74</td>
<td>1.72</td>
<td>2.51</td>
</tr>
<tr>
<td>Interest cover</td>
<td>3.24</td>
<td>5.29</td>
<td>3.85</td>
<td>3.14</td>
<td>3.78</td>
<td>3.40</td>
<td>-1.65</td>
</tr>
<tr>
<td>Gross margin</td>
<td>19.7%</td>
<td>18.3%</td>
<td>16.9%</td>
<td>17.2%</td>
<td>17.0%</td>
<td>17.0%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Net profit after tax/sales</td>
<td>1.7%</td>
<td>4.0%</td>
<td>2.9%</td>
<td>3.0%</td>
<td>3.3%</td>
<td>2.5%</td>
<td>-4.8%</td>
</tr>
<tr>
<td>EBIT/Total assets</td>
<td>7.53%</td>
<td>10.83%</td>
<td>10.98%</td>
<td>6.69%</td>
<td>9.31%</td>
<td>6.98%</td>
<td>-6.06%</td>
</tr>
<tr>
<td>Sales/fixed assets</td>
<td>36</td>
<td>32</td>
<td>37</td>
<td>25</td>
<td>31</td>
<td>30</td>
<td>37</td>
</tr>
</tbody>
</table>
For merging entities, this paper identifies the technically correct adjustment to the merger ratio when some part of the consideration is cash rather than shares in the merged entity. It also highlights the problems arising from adopting an alternative short-cut adjustment method.

A merger is a combination of two or more merging entities to create a larger merged entity. A critical component of the merger transaction is the merger ratio which determines the relative shareholding of the shareholders of each merging entity in the merged entity.

The merger ratio for a given merger transaction depends on a multitude of factors including, but not limited to, the relative enterprise value and relative equity values of the merging entities, the nature of the expected synergies from the merger, the extent to which the merging entities (particularly if they are listed entities) are perceived as being overvalued or undervalued, and the relative bargaining positions of the merging parties.

When the merging entities have similar pre-merger (interest bearing) debt-equity ratios, a common starting point in establishing the merger ratio is the pre-merger standalone equity value 1 of each merging entity. 2 This merger ratio also implicitly reflects each merging party’s contribution to and determines their share of the expected synergies from the merger.

A complication in establishing the merger ratio arises when shareholders in one (or more) merging entity receive a mixture of cash and shares. Such circumstances require, inter alia, the adjustment of the merger ratio based on the pre-merger equity values to allow for the cash payout.

Despite its practical necessity, our review of a sample of 10 corporate finance textbooks which have chapters dealing with takeovers/mergers indicates that none of the textbooks contains discussions on this type of adjustment.

The aim of our paper is twofold. The first is to identify the technically correct adjustment to the merger ratio when some part of the consideration is cash rather than shares in the merged entity. The second is to alert practitioners to the problems arising from adopting an alternative short-cut adjustment method which we have seen used in practice.

The technically correct adjustment method

Assume a scenario in which two merging parties, A and B, have agreed on the first step being a merger ratio based on their respective pre-merger equity values (assuming consistent initial debt-equity ratios). However, shareholders in Entity A will receive part payment in cash, necessitating a cash payout from the combined entity. The aim is to determine the correct post-cash payout merger ratio for Entity A (the cash receiving entity) and Entity B. For the remainder of this paper, the terms Entity A and Entity B are used to represent the shareholders in Entity A as a whole and the shareholders in Entity B as a whole.

Notations

We have adopted the following notations:

- \( PV (A) \) = Pre-merger standalone equity value of Entity A
- \( PV (B) \) = Pre-merger standalone equity value of Entity B
- \( PV (\text{Synergies}) \) = Present value of expected synergies (net of implementation costs) from the merger
- \( X \) = Entity A’s agreed pre-cash payout merger ratio, which is equal to \( \frac{PV (A)}{PV (A) + PV (B)} \)
- \( C \) = the amount of cash to be received by shareholders in Entity A as part of the consideration for its shares
- \( Y \) = Entity A’s post-cash payout merger ratio to be determined

For merging entities, this paper identifies the technically correct adjustment to the merger ratio when some part of the consideration is cash rather than shares in the merged entity. It also highlights the problems arising from adopting an alternative short-cut adjustment method.
The short-cut adjustment method

A short-cut method sometimes (albeit wrongly) adopted in practice to allow for the cash payout received by the shareholders of the relevant merging entity is simply to deduct the amount of the cash payout (C) from both the pre-merger standalone equity value of the merging party receiving the cash and the sum of the pre-merger standalone equity values of all the merging parties. Expressed mathematically:

\[
Y_{\text{short-cut}} = \frac{[PV (A) - C]}{[PV (A) + PV (B) - C]}
\]

Using Equations (1) and (3), \(Y_{\text{short-cut}}\) can be expressed as follows:

\[
Y_{\text{short-cut}} = X - \frac{C (1 - X)}{PV (A) + PV (B) + PV(Synergies) - C}
\]

It is obvious from Equation 5 that \(Y_{\text{short-cut}}\) is less than \(X\) (as expected). Moreover, the denominator of the second term in Equation 5 is less than the corresponding component of Equation 4 because it ignores synergies. Hence \(Y_{\text{short-cut}} < Y\).

Table 1 provides a simple example involving two merging entities A and B to illustrate the calculation of the merger ratio based on the short-cut method.

Taking into account Entity A’s cash payout of $300 million under the short-cut method reduces Entity A’s post-cash payout merger ratio from 80 per cent to 50 per cent. By definition, this also reduces Entity A’s share of synergy benefits from 80 per cent to 50 per cent for which reduction Entity A receives no consideration.

At the simplest level, the fundamental flaw of the short-cut method can be demonstrated by assuming that Entity A withdraws 100 per cent of its pre-merger value in cash. Entity B would gain 100 per cent of the value of the expected synergy, despite the fact that on a pro rata pre-merger basis Entity B is only entitled to only 20 per cent of the value of the expected synergy from the merger transaction.

<table>
<thead>
<tr>
<th>Entity</th>
<th>Pre-merger standalone equity value $m</th>
<th>Cash payout $m</th>
<th>Pre-merger post-cash payout standalone equity value $m</th>
<th>Pre-cash payout merger ratio %</th>
<th>Post-cash payout merger ratio %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>400</td>
<td>(300)</td>
<td>100</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>B</td>
<td>100</td>
<td>-</td>
<td>100</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>500</td>
<td>(300)</td>
<td>200</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
As noted earlier, \( Y - Y_{\text{short-cut}} \) is greater than zero as can be seen by subtracting Equation 5 from Equation 4 and rearranging:

\[
Y - Y_{\text{short-cut}} = \frac{C (1 - X) \ PV (\text{Synergies})}{(PV (AB) - C) [PV (A) + PV (B) - C]}
\]  

Equation 6 confirms that the short-cut method underestimates the appropriate post-cash payout merger ratio of the cash receiving merging party. This is because the short-cut method wrongly excludes Entity A’s share of the value of expected synergies. The larger the value of the expected synergies and hence Entity A’s pre-cash payout share of this value, the larger the extent to which \( Y_{\text{short-cut}} \) underestimates \( Y \). The combination of a relatively large cash payout received by Entity A and a relatively large value of the expected synergies magnifies the downward bias of the short-cut method.

Using the same example contained in Table 1 and assuming that \( PV (\text{Synergies}) \) is $200 million, the difference between \( Y \) and \( Y_{\text{short-cut}} \) is around 15 per cent. That is, taking into account the same amount of cash payout received by Entity A should technically only reduce Entity A’s merger ratio from 80 per cent to 65 per cent, instead of 50 per cent as indicated by the short-cut method.

**Conclusion**

It is clearly incorrect to use the short-cut method to adjust a starting merger ratio based on the pre-merger equity values of the merging entities for the cash payout received by one of the merging parties.

The derivation of the technically correct post-cash payout merger ratio is case-specific. It requires, *inter alia*, a proper assessment of the equity value of the merged entity, which inherently involves taking into account the expected synergies (net of implementation costs) from the merger. This critical input is wrongly excluded in the derivation of the post-cash payout merger ratio under the short-cut method, resulting in the cash receiving merging party’s share of the value of the expected synergies being understated.

The apparent merger ratio using the short-cut method can be distorted — compared to the properly calculated merger ratio — by the relative sizes of the merging entities, synergy value, cash payout, method of funding the cash payout, and technical discrepancies/incorrectness in the way in which the pre-merger standalone enterprise values and equity values of the merging entities are calculated.

Further complications arise if the value of equity in the merged entity is materially altered by the change in the debt to equity ratio due to the equity debt swap to fund the cash payout or if one party can generate ‘unique’ synergies. Even more complications arise if there are significant differences in the initial debt–equity ratios and price earnings multiples of the merging parties.

The flow-on commercial and tax implications are self-evidently significant, given that the merger ratio calculated under the short-cut method is often a poor indicator of the technically correct merger ratio. There is no substitute or short-cut for the technically correct derivation of the post-cash payout merger ratio if a correct commercial and tax outcome is to be achieved.

**Acknowledgements**

The authors would like to thank Kevin Davis, the Editor, and an anonymous referee for their helpful suggestions and comments on the earlier drafts of the article.

---

**TABLE 2: Calculation of the appropriate post-cash payout merger ratio**

<table>
<thead>
<tr>
<th></th>
<th>Pre-merger standalone equity value $m</th>
<th>Pre-merger post-cash payout standalone equity value $m</th>
<th>Cash payout $m</th>
<th>Pre-cash payout merger ratio(1)</th>
<th>PV of expected synergies</th>
<th>Pre-cash payout merger ratio(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>400 [a]</td>
<td>100</td>
<td>(300)</td>
<td>80(1) [e]</td>
<td>160(3) [g]</td>
<td>65(5) [i]</td>
</tr>
<tr>
<td>B</td>
<td>100 [b]</td>
<td>100</td>
<td>-</td>
<td>20(2) [f]</td>
<td>40(4) [h]</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>500 [c]</td>
<td>200</td>
<td>(300) [d]</td>
<td>100(5) [j]</td>
<td>200 [t]</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes:
1. \([e] = [a] / [c]\).
2. \([f] = [b] / [c]\).
3. \([g] = [e] \times [d]\).
4. \([h] = [f] \times [t]\).
5. \([i] = [e] - (1 - [e])x [d] / ([a] + [b] + [t] - [d]).\)
Notes

1. This is the difference between the pre-merger standalone enterprise value and the existing net interest bearing debt of each merging entity, where the existing net interest bearing debt is equal to interest bearing debt less (surplus) cash. In addition, it should be noted that the standalone enterprise value of a merging entity does not reflect that merging entity’s share of the expected synergies from the merger transaction. To the extent that the expected synergies are ‘common’ synergies (as opposed to unique synergies), which would be available to a hypothetical willing but not anxious buyer, the standalone enterprise value (even when correctly derived) does not represent the market value of each merging entity’s total assets; nor does the pre-merger standalone equity value of each merging entity represent the market value of its equity at the time of the transaction.

2. In this case, a merger ratio based on the pre-merger enterprise values of the merging entities is similar to a merger ratio based on the pre-merger equity values of the merging entities anyway. In cases where the debt-equity ratios differ significantly between merging entities, the starting point for establishing the merger ratio and the necessary adjustment for cash payout are case specific, depending on negotiations between the merging parties. In these cases, the final merger terms are required to reflect both synergy share adjustments and financial leverage adjustments.

3. These are the expected synergies from the merger, which accrue to the shareholders of the merging entities. For simplicity we ignore the flow-on benefits from the merger (in terms of improved security and credit ratings) to the existing holders of interest bearing debt to the merging entities, which is assumed by the merged entity.

4. Implicit in this equation is the assumption that the existing interest bearing debt securities of the merging entities are valued at their face value. Technically, this might have already reflected the flow-on synergistic benefits of the merger to these debt securities. However, such benefits, if any, would generally not be material.

5. If the merged entity is a listed entity, a minority interest discount issue also arises.

6. For confidentiality reasons, we are unable to disclose details of the transactions (that we know) in which the (incorrect) short-cut methods were adopted in establishing the merger ratios.

7. For simplicity we have assumed there are no ‘unique’ synergies.
In Australia, the Australian Security Exchange (ASX) focuses on effective corporate governance to maintain investors’ confidence in capital markets, through the establishment (and subsequent amendments) of ASX Corporate Governance Council’s Principles of Good Corporate Governance (POCG) in 2003 and Corporate Law Economic Reform Program (CLERP) 9 in 2004. These principles address several corporate governance areas (which we term, attributes), such as recommendations on the proportion of independent directors on the Board and the Audit Committee. While the purpose of these attributes is to protect the interests of corporate stakeholders, there has been little prior investigation of the views of those stakeholders on which corporate governance mechanisms they consider to be most important.

Why do we focus on directors? They have positional power in the corporation. They are an important link between shareholders and management, and are able to make decisions that can affect other stakeholders. They oversee the requirements of the corporate governance codes in their firms. As well as representing shareholders, directors also have financial interests in the firm, including both remuneration and the risk of financial penalties for fraud. Arguably, there has been too much focus on protecting shareholders from directors’ supposed misbehaviour, without identifying directors as important stakeholders of firms. This research seeks to address this imbalance.

To examine the relative importance of corporate governance attributes from the directors’ perspective, we conducted interviews and an online survey. We based our survey of directors’ perceptions of effective corporate governance on nine attributes that we identified from prior literature and the requirements of the relevant corporate governance codes. These nine corporate governance attributes are summarised in Table 1, along with their operational definitions, relevant studies and, where applicable, the relevant recommendations that address these attributes.

One attribute that is not part of an existing code is the prohibition on multiple directorships. A thorough review of the literature guided the initial selection of the attributes, which we refined and reduced in number, through interviews with a range of stakeholders. The operational definitions of these attributes are based on prior studies and the recommendations of ASX POGCG.

The directors’ reputation and legal liability arguments guided us in predicting that Board Composition, CEO Duality and Multiple Directorships would be viewed by directors as relatively more important than other attributes. These arguments posit that directors’ concern for effective corporate governance is related to their financial interests in the firm, which are affected by their reputation.

The Board of Directors is the main monitoring mechanism in firms and the importance of its independence in achieving effective corporate governance is widely known. Board independence is publicly disclosed, and affects both the reputations of the company and the directors. Previous studies have measured Board independence by the proportion of non-executive directors on the Board and also by whether the positions of CEO and Chairman are held by the same person. As Board independence is closely
linked to the directors’ reputation, we predict that directors will rate Board Composition and CEO Duality ahead of other attributes.

According to Fama and Jensen (1983), a director’s reputation is measured by the number of directorships held, that is, more directorships indicate a better quality of director. Because the directors’ reputation argument suggests that directors need to maintain their reputation in order to secure existing and future directorships, we predict that Multiple Directorships will also be important to them.

Directors are expected to be relatively less concerned with attributes related to the Audit Committee and the audit process, such as the Size and Composition of the Audit Committee, the provision of Non-audit Services and Audit Partner Tenure. These attributes will not have a direct impact on directors’ reputations. We have no strong expectations regarding the relative importance of the remaining corporate governance attributes (Board Size and Remuneration Committee Composition).

Interviews
The first phase of this research involved interviews with 11 key industry figures from various backgrounds including academics, a financial analyst, professional accounting body executives, a financial commentator, an accounting practitioner and, of course, directors. The interviews were undertaken to refine the corporate governance attributes identified from the literature and to ensure that those included (summarised in Table 1) are consistent with the interviewees’ notions of effective corporate governance.

Online survey
The second phase of this research was conducted using an internet-based survey. We used Adaptive Conjoint Analysis (ACA) developed by Johnson (1987) from Sawtooth Software. Conjoint analysis is built around the concept of utility, i.e. people’s judgment in measuring the value of products and/or concepts. Conjoint analysis can be used to assess and analyse trade-offs for particular products and services with multiple attributes and characteristics (Green and Srinivasan 1990). It allows respondents to indicate their preference for particular attributes that comprise a product/concept and to indicate the extent to which they would choose one attribute over others. ACA is a computer-administered survey that customises the questionnaires uniquely to each respondent according to their previous responses. This method, being both adaptive and dynamic, enables us to obtain information on the relative importance, rather than the absolute importance of corporate governance attributes. Not only does

<table>
<thead>
<tr>
<th>CG Attributes</th>
<th>Operational Definition</th>
<th>Relevant Studies</th>
<th>Relevant Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Composition</td>
<td>Proportion of independent directors on the Board</td>
<td>Agrawal and Knoeber (1996), Beasley (1996), Klein (2002)</td>
<td>ASX POGCG 2.1</td>
</tr>
<tr>
<td>Board Size</td>
<td>Number of directors on the Board</td>
<td>Yermack (1996), Kiel and Nicholson (2003)</td>
<td>ASX POGCG 2.4</td>
</tr>
<tr>
<td>Multiple Directorships</td>
<td>Number of directorships a director holds</td>
<td>Ferris et al. (2003)</td>
<td>N/A</td>
</tr>
<tr>
<td>Audit Committee</td>
<td>Proportion of independent directors on the Audit Committee</td>
<td>Cotter and Silvester (2003), Klein (1998), Klein (2002)</td>
<td>ASX POGCG 4.2</td>
</tr>
<tr>
<td>Committee Size</td>
<td>Number of directors on the Audit Committee</td>
<td>Xie et al. (2003), Anderson et al. (2004)</td>
<td>ASX POGCG 4.2</td>
</tr>
<tr>
<td>Provision of Non-audit Services by the Auditor</td>
<td>Ratio of Non-audit services fees to total audit fees</td>
<td>Dhaliwal et al. (2008), Kilgore et al. (2011)</td>
<td>CLERP 9</td>
</tr>
<tr>
<td>Audit Partner Tenure</td>
<td>Length of tenure of audit partner (in years)</td>
<td>Gates et al. (2007), Fargher et al. (2008), Kilgore et al. (2011)</td>
<td>CLERP 9</td>
</tr>
<tr>
<td>Remuneration Committee</td>
<td>Proportion of independent directors on the Remuneration Committee</td>
<td>Vafeas and Theodorou (1998), Cotter and Silvester (2003)</td>
<td>ASX POGCG 8.2</td>
</tr>
<tr>
<td>Chief Executive Officer Duality</td>
<td>Whether Chief Executive Officer and Chair of the Board are the same person</td>
<td>Donaldson and Davis (1991), Carter et al. (2003), Rechner and Dalton (1991)</td>
<td>ASX POGCG 2.3</td>
</tr>
</tbody>
</table>
relative importance rank the attributes’ importance, it also shows the extent to which an attribute is more important than the others. This benefit, which is not provided by other methods, is the main reason for using ACA for this study.

This survey asked respondents which attributes they perceive will constitute effective corporate governance. An ACA survey consists of four sections: (i) ACA Rating Section; (ii) ACA Importance Section; (iii) ACA Trade-Off Section and (iv) ACA Calibration Section. These are discussed in detail below.

In the ACA Rating section, the respondent is asked to provide a rating preference for different levels of a particular corporate governance attribute using a seven-point Likert-scale ranging from ‘extremely desirable’ to ‘not desirable’. In the second section the ACA Importance section, ACA utilises the previous responses from the participant to develop questions that ask the respondent which corporate governance attribute he/she considers most important. This section also uses a seven-point Likert-scale ranging from ‘extremely important’ to ‘not important’. The third section contains the ACA Trade-Off questions. Based on previous responses, ACA provides the respondent with combinations of two to three attributes with different attribute levels in each combination, which he/she is asked to rate. This section enables the collection of conjoint data so that relative importance scores can be calculated. The final section, the ACA Calibration section, uses the answers about which attributes are rated as most important, provided by the participant in the previous sections, to compose a set of ‘calibration concepts’. Respondents are asked to rate these calibration concepts to indicate their preference. The answers obtained in this section are used to calibrate the relative importance scores calculated earlier for use in further data analysis.

Data collection
The survey instrument was pre-tested, taking approximately 20 minutes to complete. Our target respondents are members of the Australian Institute of Company Directors (AICD). As the largest directors’ association in Australia, their membership is representative of the population of directors in Australia. The AICD executive agreed to provide a link to the survey in their fortnightly newsletter to all members. In total, 56 directors participated in the survey and 46 of them completed it.

Results
The output of the ACA analysis is a relative importance score (RIS) for each corporate governance attribute. Each score is a ratio, so an attribute with a score of 10 is twice as important as an attribute with a score of 5. This interpretation is consistent with Clark-Murphy and Soutar (2004) and Kilgore et al. (2011), two prior studies that use ACA to investigate the relative importance of factors affecting individuals’ investment decisions and perceptions of audit quality, respectively.

The results of this study are shown in Table 2 and Figure 1. The top three attributes are CEO Duality (19.34), Audit Committee Composition (12.65), and Board Composition (12.31).

### Table 2: Relative importance scores of attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Relative Importance Scores (RIS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Composition</td>
<td>12.31</td>
</tr>
<tr>
<td>Board Size</td>
<td>10.79</td>
</tr>
<tr>
<td>Multiple Directorships</td>
<td>9.03</td>
</tr>
<tr>
<td>Audit Committee Composition</td>
<td>12.65</td>
</tr>
<tr>
<td>Audit Committee Size</td>
<td>6.59</td>
</tr>
<tr>
<td>Provision of Non-audit Services by the Auditor</td>
<td>11.45</td>
</tr>
<tr>
<td>Audit Partner Tenure</td>
<td>7.87</td>
</tr>
<tr>
<td>Remuneration Committee Composition</td>
<td>9.98</td>
</tr>
<tr>
<td>CEO Duality</td>
<td>19.34</td>
</tr>
</tbody>
</table>

The results provide partial support for our earlier predictions. CEO Duality and Board Composition are confirmed to be relatively more important to directors than other attributes, but Multiple Directorships is not.

**CEO Duality**
This attribute was ranked as the most important corporate governance attribute compared to the others (Relative Importance Score: 19.34), supporting our prediction. The result confirms the findings of Rechner and Dalton (1991) who find that when the CEO and Chair of the Board is the same person, firm performance is negatively affected as management’s opportunistic behaviour increases agency costs and affects the wealth of shareholders. It also affirms the ASX Principles of Good Corporate Governance (ASX POGCG) Recommendation 2.3 which states that the chair position should be held by an independent director in order to ensure a separation of duties in the top-management of the company.
Audit Committee Composition
Audit Committee Composition was ranked as the second most important attribute (Relative Importance Score: 12.65), contrary to our expectation. Our explanation is that as the audit committee is an important subset of the Board, its performance and independence would also affect the Board of Directors and, in particular, their reputation. Nevertheless, this result affirms ASX POGCG (Recommendation 4.2) which states that the Audit Committee should consist of non-executive directors with a majority of independent directors.

Board Composition
The respondents ranked Board Composition as the third most important attribute (Relative Importance Score: 12.31). This finding supports our prior prediction and also affirms Recommendation 2.1 of ASX POGCG which states that a majority of the Board should be independent directors.

Provision of Non-audit Services by the Auditor
This attribute was ranked fourth in terms of its relative importance compared to the other attributes (Relative Importance Score: 11.45). This result is not surprising since the Provision of Non-audit Services has been given significant media attention, particularly in the aftermath of large corporate collapses in the US and Australia. It is widely believed that significant levels of Non-audit Service fees render auditors financially dependent on their clients, thereby reducing their ability to detect material misstatements. Our survey indicates that directors are concerned that lack of auditor independence might significantly affect their reputation.

Other Attributes
Directors identify three attributes that are closely related to the board, i.e. Board Size, Remuneration Committee Composition, and Multiple Directorships, to be relatively less important than other attributes. The result for Multiple Directorships is surprising to the authors and contrary to our expectation.

Conclusions
This study has investigated the relative importance of corporate governance attributes from the perspective of an important and often overlooked stakeholders group, directors. The results of the study provide feedback to regulators which may help to inform any potential future amendment of corporate governance codes in Australia. In particular, the results confirm that current regulations in relation to the separation of roles between CEO and Chairman (CEO Duality), and Audit Committee Composition and Board Composition are important to directors. Any future revisions to regulations might consider modifications in respect of those attributes that are perceived to be less important by directors.

An important implication of this study is that it broadens our understanding of which factors contribute to effective corporate governance. While previous studies in Anglo-American countries such as Australia and US place more emphasis on Board Composition as an integral attribute affecting corporate governance, the findings of this study show that one key group of Australian stakeholders (directors) perceives CEO Duality to be the most important corporate governance attribute. While all attributes might be important for the respondents, this study is able to identify which attributes are more important and to what extent they are more
important than others by requiring respondents to make trade-offs among attributes and attribute levels.

This study is subject to two limitations. First, the respondents who chose to participate may have a particular interest in the issue of effective corporate governance, which might affect the generalisability of the results. Second, we acknowledge that the views of directors may be influenced by existing codes and guidelines, and might not reflect their independent and unconstrained views.

The next step for our research is to listen to the views of other key stakeholder groups such as shareholders and analysts.

Acknowledgements
An earlier version of this paper was presented to the 3rd Financial Market and Corporate Governance Conference, Melbourne, Australia in April 2012, Financial Reporting and Business Communication Sixteenth Annual Conference, Bristol, UK in July 2012, and Curtin Research Seminar, Perth, Australia in April 2013. We thank participants and the anonymous reviewer for their helpful comments.

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PAPERS FROM
THE MELBOURNE
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ANZ, APRA, Reserve Bank of Australia and Finsia — The Financial Services Institute of Australasia
IS THE AUSTRALIAN FINANCIAL SECTOR too big?

RODNEY MADDOCK, ADJUNCT PROFESSOR OF ECONOMICS, MONASH UNIVERSITY AND VICE CHANCELLOR’S FELLOW, VICTORIA UNIVERSITY

The Australian financial sector has grown rapidly in recent decades and now looks big by global standards. This paper suggests that most of the growth has been the result of outward shifts in the demand for financial services driven by household preferences, the availability of a wider range of financial tools, and active government policy. Despite the increase in demand, margins for many financial services have fallen sharply, most notably in areas where better technology has been brought to bear. An earlier version of this paper was presented to the 2013 Australian Centre for Financial Studies’ Melbourne Money and Finance Conference.

The financial sector of the economy has grown rapidly over recent decades. It now represents more than 10 per cent of the total value added, up from 5 per cent in the mid-1980s, and closer to 2 per cent in the years immediately following World War II. The Australian financial sector is also large relative to many other countries (see Figure 1).

While an effective financial sector is essential to the efficient operation of the national economy, it is not clear that it is appropriate to have the finance sector generating one dollar of value for every 10 created in the economy. The rapid growth in finance globally has led to an emerging debate about whether the current balance is desirable, and if it has arisen out of particular distortions in our economy. Most pointedly the Bank for International Settlements recently found that financial sector growth above a certain level has a negative impact on overall economic growth (Cecchetti 2012). The Journal of Economic Perspectives, Spring 2013, collected a series of papers addressing this topic but mainly with a US focus.

FIGURE 1: Financial sector as a percentage of the total value added in the economy

Source: BIS.
The normal approach to demonstrating that a particular sector is too large is to look for economic and regulatory distortions which support its growth. To do that, we first have to unpack the growth of the sector.

There are three background problems:

> The Australian Bureau of Statistics (ABS) simply presents the sector (in value-added terms) as an undifferentiated mass. There are no time series data for the different sub-sectors of finance in Australia.

> Whether the output of the sector is well measured in value-added terms (essentially profits plus labour payments) has been disputed.

> International comparisons are complicated because superannuation in Australia falls clearly into the measured financial sector rather the corporate sector.

Looking below the level of the single aggregate, it is clear that three sub-sectors have been responsible for much of the growth of the financial sector: lending for housing, the growth of superannuation and the expansion of capital markets trading. Figure 2 tracks the main trends; it is important to note that the growth in stock market turnover had to be rebased to fit it on the chart. While these are partial indicators, they do suggest areas in which we should look for the drivers of financial sector growth.

The approach adopted in this paper is simply to ask:

> Questions about volumes: Why has demand for these financial services grown? To what extent are regulatory distortions responsible for the growth?

> Questions about margins: Are financial service profit margins and wages too high? Are regulatory distortions responsible if margins appear excessive?

**Demand-side drivers**

Scaled to GDP or incomes, the growth in house prices over recent decades has been large: average house prices went from two to four times household disposable income between 1980 and 2010. This seems mainly to have been driven by households’ choices. While it is well known that the failure to tax capital gains on the family house in Australia causes a degree of overinvestment in the sector, and we have had changes which promoted purchases by investors, it is notable that house prices in many countries rose sharply over the same period, with Australia in the middle of the pack (see Figure 3).

This suggests that the price rise was not the result of a local distortion, or if it was, that the distortion was shared by many other countries. The literature has focused on the key drivers as being: the fall in inflation and the increase in female workforce participation which allowed households to service higher borrowings; and the removal of financial market distortions which had restricted the supply of credit to many households. The broad inference

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**FIGURE 2: Indicators of increased demand for financial services relative to GDP**

Sources: GDP data from ABS; financial assets data from Reserve Bank of Australia (RBA); Australian Securities Exchange (ASX) turnover data from annual reports (with some changes in classification). All based at 1989 = 100 except the market turnover based at 2005=100.
is that households were credit constrained during the post-war period, and that the removal of those constraints combined with an ability to service larger loans induced the large increase in house prices experienced globally (Maddock and Munckton 2013). Planning restrictions combined with agglomeration amenities may too have contributed.

The behaviour of financial institutions played a role but it is fairly clear that this was a secondary role. Lending margins fell and new products were introduced, both of which will have helped drive up volumes. In some countries it is also clear that credit standards were reduced and business processes weakened but there is no clear evidence that this played a major role in Australia. Where local banks borrowed offshore to fund lending, they paid prices appropriate to their credit ratings so that if there was an underlying distortion it was in global rather than local markets, or they had the wrong credit ratings.

Overall it is difficult to conclude that any increase in the size of the financial sector as a result of the rapid growth in household borrowing was the result of financial sector distortions. Individuals made their own decisions to live with higher levels of debt and bid up asset prices.

Superannuation is a second sector where growth has been significant. Connolly (2007) finds that superannuation increased domestic savings significantly with only a minor displacement of other private savings — perhaps 20 per cent. If this is the case, 80 per cent of the increase in superannuation funds was driven by a tax distortion. By shifting funds from consumption into savings, the tax distortion has shifted value added in the economy from other sectors into the financial sector. While there will be second-round effects as the economy has adjusted to changes in savings levels and the flow of funds, the primary impact has been to deflect resources into finance. The growth of the sector has been driven primarily by a tax distortion.

Measurement issues are also likely to have been important. Before the introduction of compulsory superannuation, only about half the workforce had retirement benefits and 80 per cent of that was provided by employers (some outsourced to insurance companies). Much of this would have been managed internally since the number of corporate funds has fallen from over 2000 to under 200 in the past decade. This suggests that much of these retirement savings was previously hidden within defined benefit retirement schemes run by corporates and governments, rather than run externally. From a measurement point of view this means any value added has been moved from the other sectors and is now measured in the financial sector (see Table 1).

The third area where we have seen very significant growth in the demand for financial services is in financial markets, for equities, debt, currencies and their derivatives.

### FIGURE 3: Average dwelling price to average disposable income in developed markets

Source: RBA Bulletin, December 2012. Countries covered are Belgium, Denmark, Canada, France, Germany, Ireland, Italy, Netherlands, New Zealand, Norway, Spain, United Kingdom.
Taking a positivist stance, we see households now increasing savings and reducing debt, which suggests they have taken on more debt than they really prefer, so the housing market may well be too big i.e. households appear to think they made a mistake. Similarly, the volume of contributions to superannuation in excess of the compulsory minimum level has fallen. This could be for many reasons but it too is consistent with the view that more households may increasingly reduce private savings as they are forced to save more: it is too early to tell. The increase in the compulsory contribution rate should see the sector manage greatly increased funds and, all else being equal, it will continue to expand.

For markets, the picture is less clear. The opening up of new markets clearly creates demand but if the pace of innovation slows, or if innovations are increasingly peripheral, the new markets should stabilise at their natural equilibria. That is, behaviourally, individual players may have decided that they have consumed more financial services than they really prefer.

Costs, margins and wages

Normally when the demand curve for a service shifts outwards, as has apparently happened in these three markets, we would not see supplier margins fall. In fact, they would normally rise at least for a period until entry chiselled away the excess profits. Surprisingly then, bank margins have fallen quite consistently with net interest margins roughly halving since the 1990s and bank fees per asset funded also falling (see Figure 4). However, since most countries have had a downward trend in net interest margins, technology and globalisation were probably the drivers rather than local factors (e.g. mortgage brokers). And, while Australian bank margins have fallen sharply over 20 years, the Bank for International Settlements suggests they are still only in the middle of the range globally (US 249 bps, Spain 238 bps, Australia 183 bps, Canada 160 bps, UK 115 bps, France 102 bps). What does stand out, however, is the efficiency of the banking system. The Productivity Commission has found the sector to have sustained levels of total factor productivity improvement well above industry averages. The global data reveals a similar picture with operating...
costs (including personnel costs) as a share of assets running at US 323 bps, Canada 187 bps, Spain 172 bps, UK 141 bps, Australia 117 bps, and France 112 bps (BIS data).

This and the data cited above suggests that local banks have driven productivity faster than most of their international peers and have been able to retain more of the benefits for shareholders without excessive (but still substantial) margins. It is not surprising that they are among the most profitable banks globally. This provides part of the explanation for the large size of Australia’s financial sector.

While there are clear distortions in the highly regulated banking sector, it is not clear how these might have protected bank margins. There are a lot of banks and there has been a lot of entry, for example, HBOS, Citi and HSBC, and opportunistic entry by Macquarie Bank which should have made it hard to sustain excessive margins. Banks are often said to be protected by an implicit government guarantee which allows them to access funds more cheaply than other institutions and which provides them with a competitive advantage. The argument is actually hard to sustain since other Australian corporates with the same credit rating can borrow more cheaply in wholesale markets than the banks, so there is no obvious subsidy. Further, many of the entrants to the Australian market are also large in their home markets and are likely to enjoy a similar subsidy, if one exists, thus competing on equal terms, so there is no advantage. Clearly, there are other firms with different business models, funded from the wholesale market rather than from deposits, which are not very competitive at the moment, and there are banks with lower credit ratings which pay more for funds, but these are not distortions, they are business model choices.

With superannuation being nearly a complete net additional to savings, with funds under administration a bit larger than GDP and with the annual cost of superannuation between 1 per cent and 2 per cent, the political decision to make superannuation compulsory adds about some 1.5 per cent to the measured size of the financial sector. While not-for-

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**FIGURE 4: Decline in bank net margins and fees**

<table>
<thead>
<tr>
<th>Major Bank’s Net Interest Margin*, domestic, half yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
</tr>
<tr>
<td>2002</td>
</tr>
<tr>
<td>2005</td>
</tr>
<tr>
<td>2009</td>
</tr>
<tr>
<td>2012</td>
</tr>
</tbody>
</table>

*From 2006 data are on an IFRS basis; prior years are on AGAAP basis; excludes St. George Bank and Bankwest prior to the first half of 2009.

Sources: RBA; banks’ financial reports.

**FIGURE 5: Diversity of superannuation business models**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Administration %</th>
<th>Investment Management %</th>
<th>Administration &amp; Investment Management %</th>
<th>Cost of Advice %</th>
<th>Total Expenses %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate</td>
<td>0.21</td>
<td>0.47</td>
<td>0.68</td>
<td></td>
<td>0.68</td>
</tr>
<tr>
<td>Industry</td>
<td>0.38</td>
<td>0.67</td>
<td>1.05</td>
<td></td>
<td>1.05</td>
</tr>
<tr>
<td>Public Sector</td>
<td>0.21</td>
<td>0.46</td>
<td>0.67</td>
<td></td>
<td>0.67</td>
</tr>
<tr>
<td>Retail</td>
<td>0.69</td>
<td>0.69</td>
<td>1.37</td>
<td>0.44</td>
<td>1.81</td>
</tr>
<tr>
<td>SMSF</td>
<td>0.31</td>
<td>0.52</td>
<td>0.83</td>
<td>0.15</td>
<td>0.98</td>
</tr>
<tr>
<td>Total</td>
<td>0.42</td>
<td>0.59</td>
<td>1.02</td>
<td>0.19</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Source: Bank of America Securities Merrill Lynch estimates based on Rice Warner 2008 fee analysis.
profit providers are important, the fact that they outsource much of their activity means that they feed the profit component of the value chain. As with banking, there appears to have been some gradual reduction in fees of about 2 basis points per year across all fund types.

The superannuation sector has a large number of players and has been subject to a lot of new entrants, both of which would suggest excess margins should have been bid away. Nevertheless, the sector looks very immature from a competitive standpoint: the fees, returns and business models deviate wildly.

One concludes that the sheer growth of the sector has insulated it from many of the normal pressures of competition.

The Cooper Review (2010) effectively concluded that there were large inefficiencies and recommended the introduction of some standardised low-cost products, and some significant procedural efficiencies. Households have also voted with their

Source: APRA.

FIGURE 6: Size and growth of different types of fund, ($ billion)

Source: Westpac annual reports.

FIGURE 7: Westpac profits, wage bill and unit wage growth, nominal dollars, based on 1995 = 100
been significant entry. Given the large expansion expected. Margins have tended to fall, and there has been significant entry. Given the large expansion in demand for financial services, such margin compression reflects well on the institutional design. The broad impression, however, is that competition has worked better in banking than in superannuation.

The other issue to note is the extent to which the growth of the financial sector is a consequence of its servicing wealth accumulation and protection rather than income generation. The rising value of the housing stock, the savings now being managed in the superannuation sector, and the rapid development of secondary markets all derive essentially from wealth and only indirectly from income. To the extent that we become a materially richer society we can expect any sector servicing that wealth to grow relative to national income.

It also seems possible that people enjoy consuming financial services directly. The share of consumption expenditure directed towards services has grown through time as we have found it easier to meet our material wants. The amount of media effort now directed towards supplying financial information suggests that part of the growth in the financial sector relates to the provision of entertainment services which are consumed for their own sakes.

The personal-account-based superannuation system has increased the degree of financial awareness which appears to have generated demand for such services.

Conclusion
The economy is distorted in support of the financial sector mainly as a result of government policies favouring compulsory superannuation and housing investment. It is too big in that sense.

Household behaviour has also changed in ways which support financial sector growth. Households seem more comfortable with higher levels of debt, and more accustomed to volatile financial assets than was the case historically. This may be a matter of households being richer and hence desirous of diversifying their portfolios, or it may simply be that they are gradually learning how to operate in a more open capital market.

Institutional and individual adaptation to these distortions have been in the direction which suggests competitive processes have operated as expected. Margins have tended to fall, and there has been significant entry. Given the large expansion

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SHADOW BANKING: Australian and international experience around times of financial stress and regulatory reform

CARL SCHWARTZ, Deputy Head, Financial Stability Department, Reserve Bank of Australia
TOM CARR, Analyst, Financial Stability Department, Reserve Bank of Australia

This paper examines how the share of ‘shadow bank’-based financing has evolved in Australia and a number of other countries. It focuses on developments around the recent crisis and, for Australia, around the late 1980s/early 1990s period of financial upheaval and regulatory reform. Australia’s past experience suggests that the financial crisis-related shock to risk attitudes and global regulatory focus on shadow banking will remain considerable near-term headwinds for aggregate shadow banking activity. Nonetheless, regulators should remain focused on fast-growing components and their linkages to other parts of the financial system, particularly given the potential for financing patterns to change in response to the wave of global financial reforms. An earlier version of this paper was presented to the 2013 Australian Centre for Financial Studies’ Melbourne Money and Finance Conference.

Shadow banking — credit intermediation involving entities and activities outside the regular banking system — played a key role in the financial crisis. In a number of countries, Australia included, shadow banking rose procyclically with risk appetite, assisted by deficiencies in global regulation and supervision. As risk attitudes turned, shadow banking activity widely contracted and exposed a number of vulnerabilities in the financial system, triggering a wave of global regulatory reforms.

These developments have spawned a large literature on shadow banking, and there is considerable uncertainty about how the sector might evolve. Retrenchment from risk is a natural response to such a tumultuous period and this has generally dampened shadow banking growth in recent years. Nonetheless, risk attitudes are inherently cyclical, and there are signs of improving sentiment influencing shadow bank activity. Growth in shadow banking in many countries reflected regulatory arbitrage, with financing activity ostensibly moving out of the prudentially regulated sector. With the regulatory net tightened in myriad ways, is this likely to occur again? Where should regulators be directing their attention?

While acknowledging that we are in uncharted territory, this paper looks for guidance in past experience with the shadow banking sector. In particular, we focus on developments in Australia around the late 1980s/early 1990s period of financial system upheaval and wave of regulatory reforms, and contrast that with developments in recent years.

International background
International shadow banking developments are of interest for a number of reasons. They impacted heavily on Australia by helping to create ultimately unsustainable financing conditions, particularly with respect to demand for Australian securitisation. Shadow banking developments abroad also provide points of comparison for our own system. The Financial Stability Board (FSB)’s annual shadow banking monitoring exercise examines shadow banking in 25 jurisdictions and the euro area. The definition of shadow banking used in that exercise is credit intermediation activity ‘outside the regular banking sector’. In practical terms the definition basically relies on a non-prudentially regulated concept and covers all financial institutions that are not banks, insurance companies, pension funds, public financial institutions or central banks. This provides a useful summary definition for examining broad trends. As alluded to throughout the text, however, risk analysis generally requires moving beyond this aggregated measure into the details of the underlying components, as the level of regulation varies and certain types of entities have more bank-like risks than others.
The aggregated data show that activity in the shadow banking sector is broadly procyclical. Pre-crisis, shadow banking growth typically outpaced growth in GDP and other parts of the financial system — across the selected aggregated groups for advanced and for developing countries, shadow banking accounted for a rising share of total assets in the financial system (Figure 1). Shadow banking growth was supported by the environment of high risk tolerance and, in many countries, regulatory arbitrage and growth of structured investment vehicles. During and post-crisis, however, the share of shadow banking assets fell as risk perceptions and attitudes shifted, prompting a relative return of financing activity to the regulated sector, a not uncommon phenomenon in times of stress.5

Notwithstanding the aggregated trends, however, there is a wide divergence in shadow banking activity by country. For example, the international comparison highlights that the size of shadow banking in Australia is quite low by international standards, particularly following the recent decline.6 Among financial systems in large advanced economies, the highest share of shadow banking assets is in the US, reflecting in part the role of government agencies in supporting securitisation of housing debt. As is well known, US shadow banking grew strongly in the lead-up to the crisis, but subsequently fell after 2008 with contraction occurring in components such as money market funds, structured finance vehicles and securities broker-dealers. In contrast, in the euro area and the UK, the data show a continued increase in the share of shadow banking activity. In the case of the UK, the FSB’s report suggests this may reflect factors associated with London’s large share of the OTC derivatives market and accounting treatment, but that further work would be needed for a full understanding.7

In non-Japan Asia, considerable recent attention has focused on China’s shadow banking system, with reports that tight bank regulations in China are encouraging credit intermediation activity through entities such as finance companies and trusts. The data above suggest that the shadow banking system remains very small in China, though some analysts believe that the true size of China’s shadow banking system could be many times larger.8 In the region, Hong Kong has a relatively large shadow banking sector, mainly reflecting investment funds.

Differences in growth, importance and form of the sector underscore that generalisations about shadow banking may not always be widely applicable.

**Evolution of Australian shadow banking**

**Developments in aggregate**

The focus of this section is on the rise and fall of shadow banking in two phases: around the late 1980s/early 1990s asset price boom and bust; and the 2008 financial crisis. The data are based on the ‘non-prudentially regulated’ shadow banking concept used in previous Reserve Bank of Australia publications,9 with the data extended back to 1960 for a longer run historical perspective.10

The shadow banking sector had strong relative growth during the 1960s to early 1980s amid heavy banking regulation, led by registered financial corporations (RFCs) (Figure 2). The rise is even larger if we include credit unions and building societies (CUBS) which were less tightly regulated than banks.11 While the shadow banking sector picked up a considerable share of financial sector assets over this period, the expansion of the overall financial sector was negligible (Figure 3). The shadow banking sector’s share peaked in the early 1980s as the banking system was deregulated, and eventually fell sharply in the wake of the late 1980s/early 1990s asset price boom bust.

The second wave of growth in the share of shadow banking started in the mid-1990s, plateauing in the lead-up to 2008. This phase was led by strong growth in securitisation, amid ongoing declines in the share of RFCs. Another distinguishing feature of this period was that the rise in share of the shadow banking sector occurred at a time of very strong overall financial sector growth, such that the peak in shadow bank assets as a share of GDP in 2007 was around double the peak in 1989. Shadow banking reacted to the shock with a much steeper decline post 2008, both as a share of financial system assets, and as a share of GDP.
Other investment funds cover a range of managed fund products, such as public unit trusts investing in equities and property, and cash management trusts and hedge funds. This aspect of shadow banking has also shown strong procyclical movements, reflecting both valuation effects and the reaction of investor inflows to changes in risk conditions and policy changes (Figure 5). Many of these ‘shadow bank’ activities are not very bank-like, such as unit trusts invested in listed equities. Products such as cash management and unlisted property or mortgage trusts lend themselves more to maturity and liquidity risks at varying stages of the financing process.

Cash management trusts — pooled investment vehicles to access wholesale money markets — came to prominence in the mid-1990s. By offering higher interest rates and greater flexibility on cash investments than authorised deposit-taking institution (ADI) deposits, funds under management grew solidly until the early 2000s (Figure 6). However, the onset of the financial crisis in 2008, and high-profile concerns about money market funds in the US, marked a sharp contraction in the sector; ADI deposits became more attractive, reflecting more competitive pricing and terms, and additional depositor protection available through the Financial Claims Scheme.

Unlisted property and mortgage trusts are also products that have grown strongly in high risk appetite periods before falling away sharply in response to market turmoil. In the late 1980s a run on popular unlisted property vehicles led to restrictions on investor withdrawals, in an attempt to manage the inherent liquidity mismatch of products offering prompt withdrawals while invested in illiquid assets. Post 2008, funds under management at mortgage trusts have fallen sharply, with the attraction to investors undermined by greater appreciation of the associated liquidity and credit risks, and uncompetitive returns relative to the ADI deposit market.

Developments by sector

Registered financial corporations (RFCs) cover finance companies, which are involved in activities such as consumer finance, motor vehicle sales or the financing of equipment, and money market corporations which are involved in investment banking. These institutions grew strongly between 1960 and the 1980s (Figure 4), reflecting that they were able to perform bank-like activities without the battery of interest rate and other controls imposed on the banking system. Money market corporations continued their strong growth even post deregulation during the high debt growth period of the 1980s.

FIGURE 4: Registered financial corporations

Sources: ABS; RBA.

However, RFC activities wound back significantly in the ensuing slump. Many domestically owned merchant banks closed after large losses in the late 1980s/early 1990s and some foreign banks converted their money market corporations to bank branches when foreign bank guidelines changed in 1992. This sector has subsequently declined further, with the pace hastening following the 2008 financial crisis, partly reflecting a pullback in activity from foreign bank-owned money market corporations.
Securitisation has driven the main movement in shadow banking in the recent cycle. Securitisation barely existed around the time of the late 1980s/early 1990s period of financial stress, with recorded residential mortgage-backed securities (RMBS) issuance commencing in modest volumes in the late 1980s, associated with state government housing programs. Given its small size, and the relatively limited shock to housing markets in the late 1980s cycle, the RMBS market was relatively unaffected during this period.\(^{13}\)

RMBS issuance (which has accounted for the bulk of overall asset-backed securities (ABS) issuance) picked up strongly through the 1990s and into the 2000s (Figure 7), and accounted for an increasing share of the fast growth in housing credit (Figure 8). The market was supported by a number of well-known structural factors buoying the housing market generally. Structurally lower inflation and interest rates that lowered debt-servicing burdens enabled households to increase borrowing. Households were lowly leveraged and seen as a sound credit risk relative to the business sector that had just emerged from the boom-bust cycle.\(^{14}\)

In this environment non-bank mortgage originators increasingly accessed funding through securitisation markets (Figure 9), partly reflecting that banks’ activities in the housing market were ripe for competition. Cross-subsidisation of payment services meant that lines of business like housing could be targeted, and lower interest rates eroded banks’ low-cost deposit advantage.\(^{15}\) Smaller banks also increasingly tapped RMBS markets for the lower cost funding on offer.

However, the aftermath of the 2008 crisis has refocused attention on the importance of demand for RMBS in supporting the market growth. By the early 2000s foreign investors accounted for more than half of Australian ABS ownership (Figures 7 and 8). As became apparent, much of this demand came from structured investment vehicles (SIVs), which, owing to gaps in regulation and supervision, operated with a particularly vulnerable business model of funding.

- **FIGURE 6: Investment funds**

- **FIGURE 8: Securitisation indicators**

*Foreign ownership classified by currency denomination

Sources: ABS; RBA.
themselves with short-dated liabilities while investing in long-dated assets like RMBS. This demand subsequently fell away, creating pressures for the mortgage originators and banks that had become too reliant on securitisation markets for funding. Volumes have picked up again to date in 2013, reflecting issuance by banks more than non-bank mortgage originators.

Comparison of periods of financial stress and regulatory reform

Two themes emerge from the Australian history of shadow banking. First, growth in shadow banking is highly related to perceptions of risk and risk appetite. Second, developments and growth in shadow banking are often shaped by the regulatory environment. As it happens, significant changes in these risk and regulatory aspects are often closely linked. Both around the late 1980s/early 1990s and the more recent financial crisis around 2008, significant financial trauma prompted a widespread reassessment of risk and significant changes to the regulatory structure.

With that in mind, this section focuses on the shocks experienced in the two episodes, and the regulatory reform that emerged — or is emerging for the recent period. Given our knowledge of how the shadow banking sector evolved from the late 1980s/early 1990s shock, this comparison provides a point of reference to gather thoughts on how the shadow banking sector may develop in the future, and potential areas of risk for regulatory vigilance.

Financial stress

The shocks of the late 1980s/early 1990s and the 2008 financial crisis to Australia had both similarities and important differences.

Domestically, in both periods there was a considerable build-up in debt in Australia followed by sharp debt reduction, led by the business sector (Figure 10 and Table 1). Housing debt to GDP and house prices were relatively stable in the aftermath of both. However, the office property price cycle was considerably larger in the earlier period, and domestic macroeconomic and financial sector outcomes were materially worse. There was a sharp recession, unemployment rose more sharply and the Australian banking sector sustained significant losses. In contrast, in the recent episode, Australian growth outcomes were relatively resilient and the banking sector remained highly profitable.

Globally, however, macroeconomic and financial sector outcomes were considerably worse around the 2008 financial crisis relative to the late 1980s/early 1990s. The earlier period was marked by recessions in many countries and considerable financial sector stress, with the US savings and loan crisis and the onset of Japan’s ‘lost decade’. However, the global recession was relatively mild in this period and indebtedness was generally lower across governments, economies and banking systems. The period lacked the sense of global financial panic associated with the failure of Lehman Brothers and the subsequent deep recession in many advanced economies.

Reflecting this, pressure on the Australian financial system was more evident in financial indicators around the 2008 financial crisis relative to the earlier period, despite the Australian banks’ relatively better profit performance. The decline in Australian bank equity prices was much more marked and there was greater focus on the banks’ wholesale funding requirements — including the amount sourced offshore (Figure 11) — giving rise to measures such as the Australian Government Guarantee Scheme. In comparison, there was scant discussion of wholesale funding pressure arising for the Australian banking sector in the late 1980s/early 1990s episode, consistent with the smaller scale of foreign borrowing during that period, though in the lead-up banks had also increased foreign borrowing to fund credit growth well in excess of deposit growth.
TABLE 1: Changes in selected Australian indicators around periods of financial stress

<table>
<thead>
<tr>
<th></th>
<th>4 years to peak</th>
<th>Peak to trough</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Late 80s/early 90s</td>
<td>2007/08 crisis</td>
</tr>
<tr>
<td>Debt (to GDP, ppt)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>Business</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Household</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Asset prices (per cent)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>89</td>
<td>86</td>
</tr>
<tr>
<td>Residential</td>
<td>92</td>
<td>22</td>
</tr>
<tr>
<td>ASX 200</td>
<td>111</td>
<td>139</td>
</tr>
<tr>
<td>Financial sector and activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank share index (per cent)</td>
<td>142</td>
<td>114</td>
</tr>
<tr>
<td>Bank return on equity (ppt)</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Unemployment (ppt)</td>
<td>-2.1</td>
<td>-1.3</td>
</tr>
<tr>
<td>Consumer confidence index (per cent)</td>
<td>-8</td>
<td>8</td>
</tr>
</tbody>
</table>

(a) Peaks generally taken from 1989/90 and 2007/08.

Regulatory reforms coming out of financial stress periods

The late 1980s/early 1990s and 2008 financial crisis also shared the common ground that both periods were associated with subsequent significant financial regulation reforms and increases in bank capital. There are, however, more differences than similarities, with the more global and pervasive financial sector upheaval of the latter period drawing a more global and wide-ranging reform response.

The first Basel Capital Accord was announced in July 1988, prior to the economic and financial disturbance of the late 1980s, but was progressively implemented over the recession period. The period was associated with a large lift in bank regulatory capital in Australia (Figure 12) and abroad. In the more recent period, Basel III is a direct response to the financial crisis. In addition to increased minimum capital ratios and enhanced quality of capital, Basel III calls for a capital conservation buffer and a countercyclical capital buffer, and global systemically important banks will face additional capital buffers.

Another factor common to both periods is a focus on more effective supervision. In Australia in the early 1990s there was clear recognition that supervisory practices had not kept up with the shift from a regulated to deregulated banking system. This marked a shift away from rule-based supervision towards a more risk-based approach, including more on-site visits and moves to strengthen consolidated supervision. Global failings in supervision in the lead-up to the crisis have sparked a global push towards more effective supervision.

There are, however, important differences in the regulatory response. The global reach of the financial

FIGURE 11: Net foreign debt

![Net foreign debt graph](chart1.png)

Sources: ABS; RBA.

FIGURE 12: Banks’ capital ratio*

![Capital ratio graph](chart2.png)

*Per cent of risk-weighted assets; break in March 2008 due to the introduction of Basel II for most ADIs; break in March 2013 due to the introduction of Basel III for all ADIs.

Source: APRA.
crisis drew a more global and wide-ranging reform response including to: reduce liquidity risk; address the problem of ‘too big to fail’; strengthen financial market infrastructure through requirements for central clearing of standardised OTC derivatives; address weaknesses arising from use of credit rating agencies; introduce securitisation reforms; and provide explicit shadow banking rules.22

Clearly, as part of this regulatory response, there has been quite a focus on addressing the risks that became apparent from shadow banking. In addition to the reforms explicitly targeting areas well known for their role in shadow banking excesses (credit rating agencies, securitisation and ‘shadow banks’) a number of measures within other reforms should also serve to reduce shadow banking risks. These include tighter controls on banks moving securitisation off balance sheet when credit and liquidity risks remain, and ‘too big to fail’ reforms that will reduce the complexity that previously helped to obfuscate banks’ shadow banking activity.

Looking ahead
Recent history internationally and in Australia suggests a general procyclical pattern in shadow banking. Shadow banking has mainly flourished in an environment where solid risk appetite has tested the limits of the regulatory and supervisory framework, with subsequent contraction when risk appetite falls and regulatory and supervisory frameworks are tightened.

Looking at a longer time frame, in Australia, aggregate growth in shadow banking was slow to recover from the late 1980s/early 1990s financial shock. Overall growth was curtailed by contraction among the shadow banking components that proved particularly vulnerable, both through the response of investors and of regulators. The driver of growth came from securitisation — a component that attracted relatively little attention during the problems of the late 1980s/early 1990s.

What lessons might this imply for the period ahead?
Shadow banking is very diverse globally so we should be wary of attempting to draw sweeping conclusions. However, for Australia at least, past experience suggests that we should not expect the overall shadow banking sector to return to its pre-crisis share of financial system assets anytime soon. The big shock to risk attitudes, higher indebtedness levels here and abroad, and globally tighter regulation and supervision of the sector are considerable headwinds.

Subdued growth in overall shadow banking should not, however, be seen as grounds to declare victory that regulatory and supervisory settings have tamed risks in the shadow banking sector. While overall shadow banking activity is likely to be held back by risk aversion and regulatory responses in market segments that proved problematic during the crisis, other shadow banking components could well flourish, perhaps spurred by measures taken to address existing challenges. For example, unconventionally easy monetary policy in some large advanced countries has encouraged a search for yield, and regulatory changes could encourage growth in other products. On this point it is noteworthy that the SIVs that ultimately proved so damaging in the financial crisis were first created in 1988 — the year of the Basel Accord.23

History suggests that any fast-growing form of financial activity is a sensible place to start looking for risk and damaging linkages. Looking internationally, the low-yield environment has encouraged strong growth in some non-bank products engaging in maturity transformation. One example is US agency real estate investment trusts (REITs), which engage in leveraged maturity transformation by financing mortgage-backed securities with repurchase agreements (repos). The US Financial Stability Oversight Council has noted the potential for disruption to arise as a shock to agency REITs could induce repo lenders to raise margins or pull back funding which, in turn, could compel agency REITs to sell into a declining market.24

Inflows into mutual funds and exchange-traded funds that invest in less liquid assets such as high-yield bonds have been increasing, potentially creating pressures if redemption pressures were to increase suddenly.

Collateral transformation is also looming as an area worthy of, and receiving, close regulatory attention. This is the idea that regulatory reforms that require higher holdings of liquid assets (Basel III) and collateralisation of exposures (OTC derivatives reforms) will create collateral shortages, which can be alleviated with financial intermediaries arranging potentially complex collateral lending arrangements.25

Domestically, as noted, there has been a recent pick-up in securitisation. It is clear with hindsight that the previous growth was unsustainable and ultimately created some tensions, though securitisation activity has a long way to go to return to anywhere near those levels. Risk sensitivity among investors, borrowers and regulators,26 and the less favourable fundamentals for housing debt growth, are all factors likely to limit the potential for unsustainable growth and damaging linkages, though it will remain an area of regulatory attention.

On the principle of remaining vigilant on fast growing sectors, one potential area of interest is self-managed superannuation funds (SMSFs). The sector, which currently accounts for around a third
of superannuation fund assets (Figure 13), has grown rapidly over the past decade and, since 2007, SMSFs have been permitted to borrow to buy assets. The sector is not ‘prudentially regulated’ in line with the broader superannuation industry, though as a personal investment vehicle the sector does not naturally fit what most would consider ‘shadow banking’. Regulators have been active in this area: in April 2013 ASIC released a report focusing on investor protection risks, and in January 2013 APRA clarified guidance that ADI loans to SMSFs for residential mortgage property should be treated as ‘non-standard’ because they may, as a result of the structures involved, have a different and potentially higher loss profile than standard loans.27

Notes
1. The authors are from the Financial Stability Department at the Reserve Bank of Australia. The views expressed in this paper are not necessarily those of our employer. We thank colleagues at the Reserve Bank for comments and assistance in preparation of this paper, including Mihovil Matic, Benn Robertson, Chris Stewart and Mustafa Yuksel.
2. For a summary see, Adrian and Ashcraft (2012b). Papers discussing potential regulatory responses relating to shadow banking include Adrian and Ashcraft (2012a), Bianchi and Drew (2010) and Davis (2010).
4. For example, there is less liquidity and maturity transformation for managed funds investing in listed equities than those investing in relatively illiquid assets such as property or mortgages. The FSB report also highlights the need to look beyond the aggregates for risk-based analysis.
5. Adrian and Shin (2009) note that banks have traditionally acted as a buffer for their borrowers in the face of deteriorating market conditions.
7. The Report (p. 15) states that ‘a significant part of growth in UK shadow banking assets is increased value of non-bank financial institution derivative holdings, which is matched by a commensurate increase in derivative liabilities, and is in line with trends in the gross market value of global OTC derivatives.’
8. See, for example, Moody’s (2013).
10. Recent data are from RBA Statistical Table B1; where earlier data were not available in B1, data come from tables 3.4a and 3.4b of RBA Occasional Paper No. B: Life insurers include friendly societies; Superannuation assets for June 1987 are interpolated from March and September 1987.
11. It is worth reiterating the earlier caveat about the broad nature of the shadow banking definition, as the distinction between ‘prudentially regulated’ institutions and the ‘non-prudentially regulated’ or ‘shadow banking’ sector is not always clear. Some would contend that credit unions and building societies were ‘shadow banks’ during the period of financial regulation, but as they were subject to state-based supervision they are included in the prudentially regulated category here. More recently, self-managed superannuation funds sit somewhat awkwardly within the broader prudentially regulated superannuation category, but the characteristics of this product are not what would generally be considered shadow banking.
13. RBA (1991), which dissected the boom and bust in detail, barely mentioned securitisation.
14. The Reserve Bank of Australia has produced many pieces on these developments. See, for example, RBA (2003) and Debelle (2010).
15. See Edey and Gray (1996)
16. SIVs were able to take on credit and liquidity risk without the prudential safeguards imposed on banks.
18. In addition, many of the worst-affected banks in the late 1980s episode were unlisted state government-owned banks or subsidiaries of foreign banks that were simply handled by foreign parents. Also, as noted previously, a distinguishing feature of the financial crisis was the evaporation of foreign buyers of RMBS, creating stresses that were not evident in the late 1980s/early 1990s: by the onset of the crisis, banks outside of the four majors were sourcing more than a quarter of funding from securitisation (see Littrell (2012)).
19. The original Capital Accord set down the agreement among the G-10 central banks to apply common minimum capital standards to their banking industries, to be achieved by end-year 1992. The standards almost entirely addressed credit risk, which the paper considered ‘the major risk’ faced by banks (BCBS 1988).

Sources: ABS; RBA.
20. In Australia, total regulatory capital rose from just under 10 per cent in 1990 to over 12 per cent in 1994 before easing back. Overseas, the average ratio of capital to risk-weighted assets of major banks in the G10 rose from 9.5 per cent in 1988 to 11.2 per cent in 1996 (BIS 1999).


22. Regular updates on global reforms are provided in ‘Chapter 4: Developments in the Financial System Architecture’ in the RBA Financial Stability Review.

23. See Adrian and Ashcraft (2012b, p. 6).


25. This issue is discussed briefly in Lowe (2013).

26. Littrell (2012) outlines that APRA’s prudential reforms around securitisation will address the lessons learned about agency, liquidity and business model risks.

27. See ASIC (2013) and APRA (2013).

References


ASIC (Australian Securities and Investments Commission) 2013, ‘SMSFs: Improving the quality of advice given to investors’, Report no. 337.


FSB (Financial Stability Board) 2012, Global shadow banking monitoring report, 18 November.


Moody’s 2013, ‘Risks to China’s lenders from shadow banking: Frequently asked questions’, special comment, 13 May.


WHAT IS THE DIFFERENCE BETWEEN MACROPRUDENCE and macroprudential supervision?¹

CHARLES LITTLER, Executive General Manager, Australian Prudential Regulation Authority (APRA)

APRA’s statutory mission² includes the requirement to balance safety with competition, efficiency and contestability in our regulated industries, and also to promote financial system stability. This paper explores some emerging international and Australian themes in safety and stability, in the context of systemic effects. In particular, it considers the differences between macroprudential supervision (MPS), and macroprudence. An earlier version of this paper was presented to the 2013 Australian Centre for Financial Studies’ Melbourne Money and Finance Conference.

For the purposes of this paper, I will focus on two aspects of financial stability that are most relevant to the Australian Prudential Regulation Authority (APRA):

> depositors, policyholders, and other creditors of regulated institutions are justifiably confident that their claims on these institutions will be met in full and without difficulty

> there is neither a mania nor a panic in the Australian credit, insurance, or investment markets.

This definition ignores many elements of financial stability that are not APRA’s primary responsibility, including sound payment and clearing systems, and macroeconomic stability measures such as exchange rates, interest rates and inflation.

Furthermore, given their relative size and systemic impact, this paper will focus upon Australian banking institutions (hereafter ‘banks’ for convenience). This is not to say that insurance companies and (increasingly) the superannuation industry are not systemic, but that the systemic issues in those industries require consideration that is beyond the scope of this paper.

The above restrictions mean that this paper is not intended to address financial stability in a broad sense, but instead will focus upon how systemic issues are relevant to ensuring that Australia’s banking system is sound, and continues to allocate credit in a reasonably efficient and confident manner.

Systemic duality—endogenous and exogenous

The banking system and the broader economy are closely linked, in ways that mean problems in one sector usually affect the other, and the direction of causation may be difficult to determine.

We know that banking sectors may become impaired by exogenous forces, usually a recession or depression in an important industry or the general economy. Conversely, we know that banks can become too exuberant in their lending, which creates short-term and unsustainable apparent prosperity, followed by a bust which impairs not only the banking sector but the general economy.

The global focus upon MPS has its origins in the post-2008 insight that economies need to be protected from the banking system’s excesses. We should not forget that the inverse might too easily apply as well: the banking system needs to be protected from the economy’s vulnerabilities. Some vulnerabilities might originate from poor banking practices, and others might be entirely exogenous to the domestic banking industry. In the Australian case, for example, the economy and the banking sector have greatly benefitted from historically high terms of trade. Neither the economy nor the banking system could be expected to perform so well should Australia find itself facing much more adverse terms of trade.

Is systemic failure inevitable?

The historic record³ on systemic crises is not encouraging; Western economies and banking systems have regularly failed over the centuries. The failure rate in recent decades does not indicate that we have learned how to avoid systemic failure, and maintain dynamic and competitive financial systems. Australia is relatively well placed in a historic sense. Our last banking crisis, defined as multiple failures of systemic banks and a general loss of confidence, was in the 1890s.

As at 2013, and depending upon the analysis used, the Australian banking system is typically rated
among the two or three soundest in the world. But prior ratings of soundness, by credit ratings agencies or others, are no guarantee of actual soundness. APRA is confident that the Australian banking industry is sound, on both an absolute and relative basis, but we are always aware that soundness is a perishable commodity, and needs constant replenishment across many inputs.

In a statistical sense, given that there is a non-zero chance of systemic bank failure, it is arithmetically inevitable that at some point Australia will face a banking and/or economic crisis. But some point need not be this year, this decade, or possibly even this century. There is also scope to minimise the damage from any crisis that eventually erupts.

Furthermore, it is economically observable that the risk of such a crisis is not constant but cyclical. Successful survival of each test, typically a recession, earns the right to continue for another cycle.

As shown in Figure 1, economies and banking systems run in cycles, with the following general pattern:

1. **After some period where economic fundamentals, asset prices and bank behaviour are more or less in balance, we see a growth in confidence**. This growth in confidence in turn leads to more open lending windows, and growth in asset prices somewhat in excess of long-term trends.

2. **At some point, the confidence phase segues into a boom, possibly an unsustainable boom.** We move from sound investments to speculative investments, in the worst cases to manic investments. In this last phase, investments are made and financed under the assumption that asset price growth will make the investment profitable.

3. **At some point this trend becomes unsustainable, and we know that when a trend can’t continue forever, then it will eventually stop.** There is a proverb that markets go up by the stairs, and down by the lift; sometimes banking systems and economies do the same thing.

4. **Once we get to the bust, the economy can go one of three ways.** If the initial response to the bust is particularly ineffective, it can continue into a full-fledged depression. We hope that the public and private sectors between them have learned enough over the past century to avoid this fate, though unfortunately there are no guarantees. In any event, at least so far the global financial crisis has not evolved into a full-blown depression in either the United States or most of Europe, though some of the smaller and most afflicted European countries have experienced or are experiencing depression conditions.

5. **Ideally, the public and private response to the crash results in a V-shaped recovery, with the economy rapidly returning to its long-term equilibrium.**

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**FIGURE 1: A simple model of cyclical risk**

![Cyclical Model](image-url)
In 2008 and 2009, Australia and most of Asia generated this pattern in response to contagion from the crisis.

6. **Less ideally, we see a U-shaped recovery**, when the economy takes several years to recover its equilibrium.

**Effective public and private sector responses to cyclical risk**

One of the great frustrations for economics and public policy, not to mention for corporate finance, is: if we all know about cyclical risk, why can’t we prevent this well-known risk from so frequently leading to disaster? The simple answers are that we collectively under-respond to booms, because it is so easy to accept apparent success as normality. Later in the cycle, we over-respond to busts, because we collectively accept continued disaster as more likely than it really is.

Conversely, the only way to disrupt this cycle, particularly for the banking industry, is to induce more timidity into bankers during the boom, and more courage into bankers during the bust and recovery. As noted early in this paper, the problem is broader than just banks, but this paper’s focus is limited to the banking industry.

How do we induce the necessary changes in attitude for banks and bankers to smooth the credit cycle?

Figure 2 identifies the key elements in the cyclical form shown in Figure 1. APRA’s greatest value-added probably lies at point B, where a confident economy and/or banking system crosses an unknowable inflection point into overconfidence. From this point and with increasing urgency and force, APRA’s challenge is to push the system back towards normal confidence, and away from a cyclical boom and bust. Put another way, if APRA, our public sector colleagues, and the banking sector respond effectively at point B, we revert to A, rather than progressing to the exuberant C and disastrous D.

**The MPS approach to countercyclicality**

APRA and the Reserve Bank of Australian (RBA) have jointly written about macroprudential topics, and my colleague Dr Luci Ellis at the RBA has given a number of speeches and papers on the topic. One can argue at the margins about the definition of MPS, but there is an emerging global consensus that MPS features include:

- The use of prudential rules to counteract systemic risk, as well as to reduce failure rates for individual regulated entities. Macroprudential supervision is probably more accurately named macroprudential regulation, as the focus is normally on the use of rules across the banking industry, not upon supervisory activity.

- Very often but much less so in Australia, the triggers for using MPS tools are controlled by parties other than or additional to the prudential regulator. Central banks, treasuries, and inter-
agency committees feature prominently in international MPS arrangements.

> MPS tools generally have the effect of constraining credit creation by banks, either in aggregate, such as the Basel Committee’s planned introduction of a countercyclical capital buffer or, for particular exposures, most commonly property lending.

We see several threats to good supervision emanating from an overly rules-based MPS approach.

Implementing MPS in many national jurisdictions runs the risk of the central bank or the finance ministry telling the prudential regulator how to use the regulator’s tools, even when the regulator doesn’t necessarily want to use them in that way. There are a great many problems with such an approach. The list starts with a resultant fuzziness in responsibility for prudential outcomes, continuing through the potential to impair relationships between the key public sector agencies, and finishing with a reduction in confidence on the part of the prudential regulator. In the Australian context, these would be disastrous results.

Fortunately, there is no intent in Australia to take such an approach. APRA, and only APRA, uses the regulatory tools related to prudential supervision, and the more general tools of supervision for sensible behaviour by our regulated flock.

A second problem with MPS is that it has become something of a ‘magic wand’ in the global regulatory debate. Overconfidence in a regulatory tool risks under-reliance upon supervision, and good supervision is the best countercyclical tool available to us.

At its best, MPS is something that the prudential regulator already undertakes, and at APRA we hope that we are in this category. Our macroprudential work receives substantial assistance from the Reserve Bank of Australia (RBA) in particular and the public sector in general, but at the end of the day, all supervision, micro and macro, is in APRA’s hands.

MPS creates the further problem that, at its current state of development, it is a one-sided countercyclical tool. That is, MPS only works to restrain a boom, if it works at all. In theory MPS would also work to ameliorate a bust and accelerate a recovery, but the global MPS mindset is very much about adding constraints to bank credit creation, not easing these constraints when such an approach is suitable.

APRA observes that many countries have used MPS techniques with evident success. To take the leading examples from this part of the world, Singapore, Hong Kong, and China have implemented loan-to-valuation restrictions on property lending. This approach seems to have had a good effect on bank safety. Over the longer term, it will be interesting to see what effects such an approach has on the shadow banking sector.

**Macroprudence**

> Macroprudence is in essence a shared mindset among the relevant public sector agencies, which in Australia’s case comprise APRA, the RBA, the Commonwealth Treasury, and the Australian Securities and Investments Commission (ASIC). Common elements in this shared mindset include:

> > A strong commitment to coordinated effort to protect the economy and the financial system from material shocks, and to assist the recovery of the economy and the financial system when such shocks, despite our best efforts, inevitably emerge.

> > The use of prudential tools remains with the prudential supervisor, and the lead tool is typically supervision, not new regulation. Furthermore, supervisory intensity is most intense on those banks contributing most to systemic risk, as opposed to the MPS approach of applying rules across the board.

> > The lead agency or agency for macroprudence varies depending upon where we are in the economic cycle, but all agencies work throughout the cycle to support each other.

In this context, the four core agencies need to achieve three outcomes:

> > we need to know and agree, at least approximately, where we are in the financial stability cycle

> > we need to know what responsibilities accrue to each agency in each part of the cycle

> > above all, we need to coordinate and help each other achieve our respective tasks.

We can define the economic cycle in four phases: normal (more or less), boom, crisis, and recovery. Table 1 outlines which agencies have which roles in these phases.

The task allocation indicated in Table 1 means that APRA is most valuable when it is least valued. When overconfidence is turning into a boom, by definition there is a consensus that risk is low, and a lax supervisory hand is warranted. APRA takes the unpopular but necessary lead role in constantly but generally mildly intervening with the banking industry, to prevent overconfidence leading to disaster. Similarly, after a bust, APRA needs to refrain from unduly constraining the banking sector during the recovery. Regulators, as with bankers, are tempted to act with the cycle, when acting against the cycle should be a core competence.

When crises arise, on the other hand, the RBA and Treasury come to the fore, as agencies with funding and legislative expertise.
The role of government

Globally, prudential supervisors require three inputs from governments: enough funding to operate a reasonably resourced agency; sufficient statutory powers; and moral support. Globally, prudential regulators have reasonable funding and powers expressed in black letter law. The large difference seems to come from the degree to which there is relatively more political support for a large financial sector, or a safe financial sector. Since 2008, this difference in political preference seems to have dominated any other criterion for determining which countries suffered most from the financial crisis. Countries with a strong political consensus for sound financial sectors have included Australia, Canada, Asia and the Nordic countries. These countries generally had a good crisis, if any crisis can be described as good. Financial disasters in the United States, the UK, Ireland, Switzerland, and Spain, among others, were highly correlated with political systems preferring to let at least some bankers and other financiers operate under less tight control. It is not the case that prudential regulators in these countries were somehow less committed to financial soundness, or less able to deliver it; it was more the case that these regulators may not have been allowed to deploy the tool set necessary to achieve systemic soundness.

In the Australian context, there is bipartisan support for a sound banking system ahead of a large banking system. This support allows APRA to supervise in an appropriately sceptical and, where necessary, intrusive manner. Curiously, by focusing upon safety first, the Australian banking system does not seem to have suffered any loss of size or profitability. Australia’s largest banks are simultaneously among the most valuable in the world, measured by debt ratings and similar means. This combination suggests that there is a remarkably high long-term value associated with conservatism in banking, and that this value is shared among the banking sector’s stakeholders.

As long as Australia’s parliamentarians continue to favour sound banking, APRA can continue its focus upon delivering a sound banking system.

Summary

APRA recognises the potential value of MPS, but in our approach, MPS is simply part of ongoing supervision. With our colleague agencies, we look beyond individual banks, and consider the likely effects arising from broader industry and economic shocks.

APRA considers that the global deployment of MPS, while generating much that is positive, risks muddling the role and effectiveness of prudential supervisors. Our preferred strategy is a broader reliance, with our colleague agencies, on proactive macroprudence.

Notes

1. This paper has benefited from seminar presentation and discussion at the Third Annual Macquarie University Centre for Financial Risk Seminar, March 2013.
2. See section 8 of the APRA Act 1998.
5. See, for example, Macroprudential Policy: A Suite of Tools or a State of Mind?, October 2012, available on the RBA website.
CONSUMER LENDING: implications of new comprehensive credit reporting

STEVE JOHNSON, Principal, FIMA

In March 2014, legislation will come into effect allowing credit providers such as banks and other lenders to share positive information about consumers through a credit bureau. The Australian transition from negative reporting to comprehensive reporting is largely an unprecedented and unique approach which will create challenges for government, regulators and the industry. An earlier version of this paper was presented to the 2013 Australian Centre for Financial Studies' Melbourne Money and Finance Conference.

There have been many studies presented about the benefits of comprehensive credit reporting relative to the negative-only credit reporting environment that has been operating in Australia since the Privacy Act was introduced in 1988.1 Creating growth in lending, making lending fairer and helping lenders mitigate against risk are among the benefits advocated by these studies.

With the new comprehensive credit reporting due to be implemented in March 2014,2 some realities are beginning to emerge. The consequences of the US sub-prime crisis, the differences for Australia relative to other countries with positive reporting and the structure of the Australian financial market create challenges for government and industry as we transition to the new credit reporting environment.

In March 2014, legislation will be effected to allow credit providers such as banks and other lenders to share positive information about consumers through a credit bureau. However, the industry has substantial work to complete prior to implementation including completion of the Credit Reporting Code, Credit Reporting (Industry) Code and Data Exchange Standards.

Components of comprehensive credit reporting

In simple terms, the industry refers to comprehensive credit reporting as introducing five new data elements:

- date account opened
- credit limit of the account
- type of credit
- date account closed
- repayment history.

Repayment history refers to the customer’s monthly payment performance over the previous 24 months. Sharing of repayment history is permitted for credit licensees only (as defined by the NCCP (2009) Act and subject to responsible lending obligations). Telecommunications and utilities cannot share repayment history.

The new characteristics provide powerful additional information for lenders to better assess the creditworthiness of borrowers. Some of the insights that have been identified in studies show:

- Payment history is a very strong risk measurement characteristic and provides evidence of willingness to meet loan commitments.
- Total customer exposure (derived from the sum of credit limits) provides a reliable indication of exposure relative to customer disclosed.
- The type of credit providers are an indication of the customer’s risk appetite and product mix.
- Analysis of the age of accounts has shown that long-term account relationships are lower risk.
- The number of lenders used by a borrower is a strong indication of high risk.

Participation options

While all credit providers will need to ensure compliance with the new legislation from March 2014, credit providers will have a choice in their level of participation in credit reporting. Essentially there are three participation options: negative only; partial; and full.

The rules of reciprocity mean that lenders can only use and access data at the level at which they supply data. The level at which a credit provider decides to participate will depend on their analysis of costs, risks and benefits. However, organisations that do
not participate in comprehensive credit reporting are at risk of adverse selection. More importantly, the degree of adverse selection depends on the industry participation level.

Some lenders may be reluctant to participate fully in comprehensive credit reporting as sharing information will dilute their relative competitive advantage. For example, Commonwealth Bank holds around 23 per cent of customer lending accounts in the banking sector (see Figure 1). If they were to contribute full comprehensive data they would be providing more benefit in improved risk discriminatory power to other lenders relative to what they would get themselves.

**Industry perspectives**

Industry has been lobbying for positive reporting for at least a decade through the industry body ARCA (Australasian Retail Credit Association), drawing on research which supports the introduction of positive reporting in Australia. For example, frequent citations can be found to a research paper by Barron and Staten comparing the impacts of a positive reporting system (the US model) with negative reporting (the Australian model). This research found that implementation of positive reporting in an economy which used negative reporting would significantly reduce default rates while at the same time increasing consumer access to credit.

Further, a report prepared for MasterCard which modelled the economic impacts of implementing comprehensive reporting in Australia concluded the following benefits would be delivered:

- improved competition in credit markets resulting in lower interest rates for borrowers
- more accurate pricing of risk premiums to individual borrowers
- broader access to credit across the income distribution
- a large credit market characterised by greater competition
- greater innovation in financial services
- increased productivity in the Australian economy valued at a net present value of $5.3 billion over 10 years.

A recent report by Policy and Economic Research Council (PERC) suggested that introduction of comprehensive credit reporting will create growth in lending to the private sector, make lending fairer and help lenders mitigate against risk.

**Implementation issues and consequences**

While some lenders may be reluctant to contribute data due to competitive advantage, there is a number of lenders in the process of implementing large-scale technology programs which may impact the timing of their contribution to comprehensive reporting. Taking into account the rational response to competitive threats and technology impediments of some lenders, it is likely that a fully comprehensive credit environment will not be in place until late 2015.

As we now approach implementation, some realities are emerging:

- The US sub-prime crisis demonstrated that over-reliance on credit reporting (e.g. FICO credit scores) for credit decisions is flawed.
- Regulators now insist on lenders assessing a borrower's ability to repay (e.g. NCCP), limiting the impact of credit reporting.
- Australia’s proposed credit reporting is different from overseas (e.g. does not include balance).
- The competitive advantage of bigger lenders is threatened.
- Australia is different from other countries studied (i.e. mature environments in the US and UK; emerging markets in Asia, South America and Eastern Europe):
  - ready availability of credit and high consumer indebtedness
  - competitive financial markets
  - consumer and privacy advocates are more influential
  - higher socioeconomic population (fewer underserviced segments).

The over-indebted segment is particularly vulnerable to adverse consequences of comprehensive credit reporting. In today’s negative-only credit reporting regime, consumers generally have ready access to credit and are able to exploit information asymmetry to manage their over-indebtedness. Over-indebted consumers are able to use multiple lenders, multiple accounts (credit cards, personal loans, store finance etc.) and if they are a home-owner, they are able to leverage home equity from rising house prices.

As Australia transitions to comprehensive credit reporting, a borrower’s lender will become aware of credit provided to the borrower by other lenders. The lender is unlikely to offer any further increase in credit and is more likely to decrease/restrict credit to the borrower. As other lenders become aware of previously undisclosed debts, the borrower’s access to credit diminishes. The problem is exacerbated if house prices fall, which will also restrict the borrower from drawing on home equity.

If the borrower is unable to reduce their debt repayments or alter their lifestyle expenses, they are likely to be left with three options:

- Find a lender which does not rely on credit reporting to make the lending decision. These types of lenders are typically defined as sub-prime
lenders that are prepared to lend to borrowers with credit impairment history at an interest rate that is commensurate with the risk of the borrower.

> Continue with mainstream lenders but seek financial hardship arrangements from their lenders. The sustainability of this option depends upon the willingness of mainstream lenders to provide suitable debt restructure alternatives for over-indebted borrowers and work with the borrower’s other creditors.

> Realise that their financial position is unsustainable and declare bankruptcy.

Studies by Veda, Australia’s largest credit bureau have suggested that 5–10 per cent of borrowers could be in an over-indebted situation. The adverse impact of credit reporting on the economy is dependent upon the timing of transition to comprehensive credit reporting, the size of this segment as well as government and lender responses.

**FIGURE 1: Loan market shares**

![Loan market shares diagram](image)

<Sources: APRA Monthly Banking Statistics, RBA Lending Aggregates, Author estimates.>

**Conclusion**

There is strong evidence that comprehensive credit reporting provides significant advantages over a negative-only credit reporting regime. However, the Australian transition from negative reporting to comprehensive reporting is largely an unprecedented and unique approach which will create challenges for government, regulators and the industry. Most studies into the implications of positive credit reporting have relied on translating overseas experience into an Australia environment. The timing and approach in Australia is different and therefore the impacts are largely untested.
APPENDIX 1: Credit Assessment in Retail Lending

Additional information from comprehensive credit reporting will improve the accuracy of credit assessment by lenders. In a negative-only credit reporting environment, a lender is restricted to information provided by the borrower in the application form, verification of the information through various sources and supplemental information from the credit bureau. In a comprehensive credit reporting environment, a lender will have additional verified information such as the total customer exposure, length of relationship with lenders, type of credit and monthly repayment history.

The additional information means that the lender will have more confidence in their assessment of the creditworthiness of the borrower. Typically, lenders define the level of confidence by comparing actual default rates for groups of borrowers against their predicted default rates. For consumer credit such as home loans, personal loans and credit cards, most large lenders use credit scorecards to predict the likelihood of a borrower defaulting on their loan.

Consumer credit scorecards are developed by assessing information known about the borrower at the point of application and determining the predictive nature of certain characteristics. For example, a borrower who has long-term full-time employment will have a lower likelihood of defaulting compared to an unemployed borrower. The characteristics are analysed and modelled to create application scorecards.

A good scorecard is defined as one which is able to discriminate between good borrowers (i.e. those that do not default on their loan obligations) and bad borrowers (i.e. those that do default). A perfect scorecard would identify all bad borrowers distinctly from good borrowers, however, in reality there will be a margin of error and it is the margin of error that determines a good scorecard.

The most common metric used by lenders to measure the discriminatory power of a scorecard is the Gini coefficient.

The Gini coefficient generally improves relative to the amount of good quality data available to the lender at the point of application. For example, a scorecard that relies on unverified information disclosed by a customer in an application form will perform worse (i.e. a lower Gini) than a scorecard that relies on verified data from reliable sources.

Industry studies have shown that inclusion of comprehensive credit reporting information can improve the Gini performance of a lender’s scorecard by around 20 per cent compared to a scorecard that relies on negative-only credit reporting information.

The uplift in Gini performance is even greater for borrowers who do not have an existing relationship with the lender. The ability to assess the creditworthiness of new-to-lender borrowers is considerably higher because in a comprehensive credit reporting environment the lender can access previously unavailable information about the borrower’s credit history with other credit providers.
HOW BANKS’ RESPONSES TO BASEL III AFFECT
superannuation funds

BRAD CARR, Director, Superannuation Funds, Financial Institutions Group, National Australia Bank

The responses by the banking sector to the Basel III reforms will present both potential challenges and opportunities for Australian superannuation funds due to the significant interactions between these segments of the financial services industry. These regulatory changes will create an added layer of investment complexity, and new risk management and liquidity considerations for super funds, particularly against the backdrop of other prevailing market trends. An earlier version of this paper was presented to the 2013 Australian Centre for Financial Studies’ Melbourne Money and Finance Conference.

There are significant interconnections between the banking and superannuation segments of the Australian financial services industry. Superannuation funds use an extensive range of bank products and services, from transactional banking, cash management and custodial services, to hedging and investment products.

Superannuation funds also invest significant sums of money in banks — in deposits, in a variety of bank securities, and in bank stocks. As an economy that has historically had an underdeveloped domestic bond market, Australia has relied on the intermediation of banks to fund the economy, ensuring that trends in banking have important implications for the investor community.

As a consequence, when major regulatory changes emerge within the banking system, the impacts will not be quarantined to the banking sector alone, but will affect superannuation funds in their capacities as both bank customers and investors.

Re-regulation
Arguably representing the biggest change to global banking regulation since the end of Bretton Woods in the early 1970s, the new regulatory changes have profound impacts for Australian and international banks, both domestically and in offshore markets. These reforms change the way banks manage their businesses, including how they interact with their customers across all sectors of the economy.

While there is a temptation to focus on Basel III (particularly from the perspective of the Australian banking sector), this global trend towards the ‘re-regulation’ of financial services is certainly not limited to Basel, with several other changes progressing in parallel, most notably:

> *The Dodd-Frank Act*, including OTC derivative reforms, the Volcker rule, Lincoln push-out and the Collins amendment; this huge regulatory program included 236 new rule-making requirements across 16 titles; currently, 48 per cent of final rules have been published, 29 per cent are published in draft form, and 23 per cent are yet to be published

> *The Vickers Report (UK)*, which proposed to ‘ring-fence’ UK banks’ retail operations, with the UK Independent Commission on Banking articulating a need to ‘electrify’ that ring-fence

> Solvency 2 (Europe) and Australia’s Life and General Insurance Capital (LAGIC) requirements, which set governance, risk management and capital requirements for insurers, broadly harmonised with the Basel III requirements for banks.

The European Union and the European Insurance and Occupational Pensions Authority (EIOPA) have also been exploring the extent to which pension funds might also be regulated in the future, perhaps along the lines of Solvency 2.

Baseline III
Given the weaknesses in some parts of the global financial system that were highlighted in the global financial crisis (GFC), banking regulators have developed the third Basel Accord.

While it has been widely accepted that Australian banks are better regulated than the majority of their global counterparts and do not exhibit the weaknesses outlined above, Basel III is a global standard and will be applied in Australia under the
regulations of the Australian Prudential Regulation Authority (APRA). Similarly, these changes will also affect international banks, both in their home markets (based on how their domestic regulator implements Basel III) and in the way they operate in Australia.

The Basel III requirements on banks can be broadly categorised into two main areas: (i) funding and liquidity; and (ii) capital (see Figure 1).

**Basel III: Funding and liquidity**

Basel III’s most direct impacts in the Australian market are on the funding and liquidity side, with significant impacts for the returns that various customer segments (including superannuation funds) will generate on cash holdings with banks.

The Net Stable Funding Ratio (NSFR) aims to reduce banks’ structural reliance on short-term funding, by requiring banks to hold more ‘stable’ forms of funding, such as ‘stickier’ retail deposits and longer-dated wholesale funding, rather than short-term money market funding or deposits from institutional investors.

Concurrently, the Liquidity Coverage Ratio (LCR) requires banks to hold sufficient unencumbered, high-quality liquid assets for the net cash outflows they might experience in the event of a 30-day liquidity shock.

Taken in concert, these ratios will together help to ensure that banks have stronger liquidity profiles, strengthening their ability to withstand a future crisis. But the specific factors within these ratios also create imperatives for investors, if they are to optimise their cash holdings.

Significantly, both of these ratios give a much more favourable weighting (and value, effectively) to longer-term funding and to deposits from bank customers designated as retail and small- and medium-sized enterprises (SME), compared to corporate and public sector entity deposits, which are in turn rated higher than deposits from ‘financial institutions’ (see Table 1). Crucially, APRA have indicated that superannuation funds will be treated as ‘financial institutions’, while self-managed super fund (SMSF) depositors are eligible for the more generous ‘retail’ treatment.

As such, for institutional funds, banks would prefer funding that is for greater than one year (for NSFR value), or with tenors of at least 30 days (to mitigate the LCR requirement for liquid assets).

The NSFR also demands that a higher level of stable funding is in place for illiquid assets such as infrastructure and corporate loans with longer tenors. Meanwhile, the LCR requires banks to hold...
a portfolio of high-quality liquid assets against the potential withdrawal of funding, in the event of a 30-day liquidity shock. The LCR run-off assumptions in Table 1 mean that for shorter-dated deposits from a financial institution, the receiving bank will need to hold a liquid asset on a dollar-for-dollar basis against that deposit, whereas they may only need to do so for as little as 5 per cent of a retail deposit.

While the Basel Committee has defined HQLA to include a broad range of assets such as corporate and covered bonds, registered mortgage-backed securities (RMBS) and equities, APRA has declared that only sovereign bonds have sufficient liquidity to be eligible as HQLA in Australia. With only a limited supply of government debt available here, the Reserve Bank of Australia (RBA) is extending a secured Committed Liquidity Facility (CLF) to partially augment the available stock of HQLA for Australian banks.

Australian banks have some substantial ground to make up against both the NSFR and LCR, with APRA's 2011 analysis of Australia's six largest banks showing shortfalls on both measures (see Table 2).

The Australian banking system's starting-point on these measures is a function of our economic circumstances, including historically low domestic savings rates, relatively low levels of government debt, and limitations on the depth of the domestic bond market. We also have a capital-intensive economy in which investment is required for longer-term infrastructure and resources projects, which has required Australian banks to 'import' wholesale funding.

Given the magnitude of these shortfalls, the introduction of these measures significantly influences banks' behaviours. There is unlikely to be a 'silver bullet' or simple solution to these challenges, meaning that banks' deposit pricing and product offerings will be heavily shaped by the requirements of the NSFR and LCR.

**Basel III: Bank capital**

Australian banks are generally well-capitalised, with all major banks at or near the new levels required under Basel III.

As such, the major impacts regarding capital where Australian banks are concerned will be more focused around specific products (e.g. derivatives) and defined customer types (large or unregulated financial institutions). However, several international banks will be subject to balance sheet constraints while they rebuild their capital reserves to meet the new requirements.

Basel III requires that banks hold significantly more capital for the counterparty credit risk (CCR) on their derivatives transactions such as interest rate swaps, cross currency swaps, inflation swaps and FX forwards. The Basel Committee has published an estimate that the required capital for derivatives products will (on average) double.7

For capital-constrained international banks, this compounds what is already a major challenge. Australian banks will have sufficient capital to be able to comply, but there will be price impacts if banks look to maintain their return on capital.

The impacts will be greater for trades that are longer-dated, uncollateralised and involve a principal-exchange (such as cross currency swaps). Accordingly, credit support annexes (CSAs) are becoming increasingly important tools, not only for managing counterparty risk on derivatives, but also to collateralise derivatives trades and drive more favourable pricing.

Also, there is a further multiplier that banks need to apply in their capital requirements for exposures to counterparties that are large or unregulated financial institutions. While currently Australian superannuation funds each have funds under management (FUM) of less than $100 billion and so should not be affected if contracting with a bank counterparty directly, this may arise as an added 'capital cost' factor if the superannuation fund executes its hedging via an external fund manager (if that manager is large or unregulated).

**The cash market**

Banks have already been adjusting their funding profiles since the height of the GFC, with Australian banks shifting their funding bases away from short-term debt and instead towards an increased base of domestic deposits (see Figure 2).

The impact of Basel III then is to solidify this shift as a structural change, preventing any mean-reversion as market conditions change.
FIGURE 2: Funding composition of banks in Australia

FIGURE 3: RBA cash rate pricing and bank average TD ‘Special Rates’

Source: RBA data.
Concurrently with the shifts observed in bank funding composition, the price of bank deposits (for retail depositors) also increased significantly at the height of the crisis, and has consistently averaged in the range of 125–150 bps above the cash rate in recent years, as opposed to being approximately 50 bps below cash pre-crisis (see Figure 3).

Given the structural shifts generated by Basel III, it is considered unlikely that this gap relative to the cash rate will converge. Indeed, when the demand for credit subsequently picks up and investor confidence in other asset classes recovers and investors look to switch out of bank deposits, it may be that this spread to cash actually increases further.

The values that the Basel III ratios attach to different funding sources are also significant, being especially favourable to ‘retail’ depositors and to longer-tenor funding. While this is still emerging, it can be seen in NAB’s current pricing of term deposits (see Figure 4).

For institutional superannuation funds, the advantage for retail and SMSF depositors adds to the importance of member engagement, and the challenge for those funds with members more oriented towards conservative investments. This has become a supporting driver for the development of ‘member direct’ investment options.

**Liquid assets**

The limitation of eligible HQLA in the Australian jurisdiction to Australian state and federal government bonds exacerbates the demand for Australian government securities, given Australia’s relatively low level of government indebtedness.

Compounding this, Australian government debt has been increasingly held by offshore investors, particularly as those investors find a diminishing range of securities available to satisfy AAA mandates, instead being attracted to highly rated AUD securities and diversification of reserves away from USD securities and other less well-rated government counterparties (see Figure 5).

With the relative scarcity of Australian government bonds available, the embedded demand for banks should help to reinforce demand, even if offshore conditions change in the future, preserving strong conditions for government issuers, but maintaining pressure on yields for investors.

It also creates another set of challenges for other investors, who increasingly find themselves being ‘crowded out’ of government securities by banks and offshore investors. This may add to the demand for other fixed income securities that funds may choose to hold in their liquidity portfolios.

**Debt markets**

Basel III may also serve to provide a welcome stimulus for the still-fledgling Australian corporate bond market, and the widening of the domestic fixed income market beyond governments and financials.

The first element driving this trend relates to banks’ repositioning of their funding profiles, with less emphasis on the historical tendency of ‘maturity transformation’ (borrowing shorter-dated funding and providing longer-term funding to corporate borrowers) and more focus on a ‘matched funded’ position. With corporates often seeking longer-tenor funding (to manage refinancing risk and satisfy ratings expectations), there is added impetus for banks to arrange their corporate clients’ term funding via debt capital markets, rather than by deploying...
their own balance sheets, and banks have actively invested in their debt capital markets capabilities as a result.

Compounding the funding challenges that face Australian banks, a number of international banks also need to raise considerable amounts of additional capital — a Basel Committee survey of 102 internationally active banks found that they will need an aggregate additional €374 billion in Core Equity and €219 billion in other Tier 1 Capital (i.e. a total of €593 billion in new Tier 1 Capital). This is a significant hurdle, adding a sense of ‘capital scarcity’ for some banks, and we have already seen some major European banks reduce their balance sheet participations in Australian lending (see Figure 6). Some US banks may also face similar pressure from Dodd-Frank’s Collins amendment.

Notably, the capital raised to date has largely been via corporate issuance into offshore markets where there are deeper investor pools and greater liquidity. Over the past decade, offshore issuance by Australian corporates has tripled while domestic corporate bond activity has remained constant (see Figure 7).

Clearly, there are a number of reasons why the domestic bond market has been slow to develop — not only the availability of cheaper and easier bank debt for corporates, but also the tax treatment compared to equities, the market depth and liquidity, superannuation funds’ legislated requirements to satisfy member 30-day portability, and institutional and retail investor appetite. While the imperatives from Basel III and tighter management of banks’ liquidity risk don’t necessarily overcome all of these issues, they add support to the development of a domestic bond market, at a faster rate than would otherwise be the case.

Similarly for infrastructure, these trends make bank funding more challenging. It may emerge that banks will increasingly look to provide bridge-funding through the construction phase, with new fixed income product being marketed to other investors (such as superannuation funds) in the operational phase.

**Key considerations for superannuation funds**

These market implications present both potential challenges and opportunities for superannuation funds. The web of regulatory reforms underway creates an added layer of investment complexity and new considerations, particularly against the backdrop of other significant market trends such as: risk-averse investors switching to cash in the wake of the GFC; low interest rates prevailing in much of the world; the superannuation sector’s increasing FUM here in Australia; and sovereign downgrades in Europe that leave less eligible securities available to satisfy AAA mandates.
Most immediately in the Australian market, the different deposit rates that retail investors (including SMSFs) are able to earn compared to the returns on cash within an institutional superannuation fund result in a heightened focus on member engagement and retention strategies, and the need to match the options and returns that SMSFs can offer. For institutional investment cash holdings, optimising efficiency means investing for longer tenors (ideally for terms greater than a year, but at least beyond the 30-day LCR window), which adds increased emphasis on liquidity management and forecasting.

Funds may need to review their investments in government and semi-government bonds, as well as securities that are classed as repo-eligible for banks providing collateral for RBA liquidity support.
The heightened demand for some securities may prompt a reassessment of funds’ liquidity policies, while there are also broader market impacts for offshore liquid assets, as some national regulators tweak their own definitions of eligible HQLA for banks in their own markets.

The impacts for derivatives (and hedging costs) make it pertinent for superannuation funds to revisit their existing currency and interest rate risk management policies. Superannuation funds may need to review internal policies to consider the impacts of entering into a collateral agreement, as well as monitoring the trends towards use of central counterparties for executing derivatives trades.

Superannuation funds also need to prepare for how they will assess new investment opportunities and products as they emerge. As banks increasingly look to partner with superannuation funds in order to meet the funding needs of their corporate and infrastructure clients, this may require a revision of asset allocation approaches, and new capabilities for assessing potential investments in corporate debt-related products, concurrently with strategies for ensuring sufficient fund liquidity for members’ switching entitlements.

The twin impacts in both the expanded range of domestic fixed income opportunities and the costs associated with using derivatives to hedge risks, become amplified when considered in the context of the overall growth of the superannuation sector. With the system-wide growth of FUM forecast in the coming decade, superannuation funds will need to further broaden the range of assets they invest in, in many cases prompting greater examination of fixed income and offshore opportunities. The second-round effects of banking regulation are an added dimension to these considerations.

Notes
5. Assumptions vary for operational cash holdings including those in transactional and custody relationships; the values shown here apply to investments, including term deposits.
6. APRA, Basel III Impacts and Implications for Australia, 23 November 2011.
7. BIS Basel Committee on Banking Supervision, media release, Basel Committee finalises capital treatment for bilateral counterparty credit risk, 1 June 2011.
8. Sources: APRA, RBA, Standard & Poor’s.
9. Source: RBA.
10. Indicative rates as at 5 September 2013.
11. Sources: RBA, ABS, Bloomberg.