

AUSTRALIAN SECURITISATION FORUM

2014 RESEARCH PRIZE

Submission

*Does the eligibility of RMBS tranches rated 'AAA' for repo with the RBA increase liquidity of the entire RMBS market?*

*Would a similar liquidity support mechanism through a repo facility for Australian fixed income managers benefit demand for AUD RMBS tranches?*

*How would such a repo facility work considering the limitation on gearing for the Managed Investment Scheme sector?*

July 2014

## Abstract

The Australian Prudential Regulatory Authority's implementation of the Basel III reform, through its "APS 210: Liquidity" includes new standards in defining and measuring how much liquidity a financial institution needs, both qualitatively and quantitatively. This ensures that banks and non-bank investors comprising the Australian financial system maintain substantial amounts of the right types of capital for liquidity on their balance sheets. This cautious measure is to prevent a liquidity stress event from suppressing confidence in Australia's financial system, ensuring it is self-sufficient with a diminishing reliance on government funding and support especially in future liquidity stress events.

APRA has recognised the shortage of liquidity in Australia's financial system, resulting in the inclusion of senior tranches of RMBS as eligible assets for repurchase agreements through the new Committed Liquidity Facility that can be initiated with the Reserve Bank of Australia. This eligibility is only open to Australia's top 40 ADIs, consequently putting all other RMBS market participants at a disadvantage which needs to be accounted for. Furthermore, APRA's objective from implementing this reform is to promote stronger capital accumulation within Australia's financial system to enable banks to be able to offset their liabilities with assets of a higher quality of liquidity, given a liquidity stress event.

Home loans comprise the largest share of total assets on the balance-sheets of Australia's top 40 ADIs, and securitisation is a means with which a large portion of an ADI's balance-sheets can be transformed into cash during a liquidity stress event, and used to meet an ADI's liabilities in such an event. This research paper finds that the APS 210: Liquidity ultimately serves the purpose of closing the liquidity gap Australian banks face during a liquidity stress event, without the intention of contemplating the effects that APS 210: Liquidity has on the liquidity of the entire RMBS markets. Its implementation may have a subtle effect on the senior tranches of RMBS in that their repo eligible status will ensure they are considered more marketable and liquid, but this won't be the case for the lower tranches.

This research report delves into the perceived shortcomings of APRA's APS 210: Liquidity, and makes recommendations that complement the implemented changes already made. Offering a repurchase agreement facility open to all RMBS market participants, with senior RMBS eligibility for collateral, will provide a more effective manner to increase liquidity across the entire Australian financial system - and not at the expense of the non-bank investors. This ensures that the liquidity shortage currently experienced is shared and resolved across the entire financial system, and will not be detrimental to non-bank investors. Consequently, these recommendations will preserve and promote the liquidity currently inherent in RMBS, preserving the senior tranches of RMBS as rich sources of liquidity.

# Table of Contents

<b>ABSTRACT</b>	<b>2</b>
<b>INTRODUCTION</b>	<b>6</b>
<b><u>DOES THE ELIGIBILITY OF RMBS TRANCHES RATED 'AAA' FOR REPO WITH THE RBA INCREASE LIQUIDITY OF THE ENTIRE RMBS MARKET?</u></b>	<b>7</b>
WHAT IS LIQUIDITY?	7
RBA REPURCHASE FACILITIES	7
THE RMBS STRUCTURE	7
APS 210: LIQUIDITY	8
APS 210: LIQUIDITY IMPACTS ON LIQUIDITY IN THE RMBS MARKET	10
SUMMARY	14
<b><u>WOULD A SIMILAR LIQUIDITY SUPPORT MECHANISM THROUGH A REPO FACILITY FOR AUSTRALIAN FIXED INCOME MANAGERS BENEFIT DEMAND FOR AUD RMBS TRANCHES?</u></b>	<b>15</b>
WHAT IS A REPURCHASE AGREEMENT?	15
THE RBA'S CLF	15
APPLYING APS 210: LIQUIDITY IN ITS CURRENT FORM	16
THE IMPACT OF A CLF OPEN TO ALL PARTICIPANTS OF THE RMBS MARKET	17
ADOPTING THE FED'S DISCOUNT WINDOW FACILITY	18
PRACTICAL IMPACT OF APPLYING APS 210: LIQUIDITY CONDITIONED ON THE FED'S DISCOUNT WINDOW FACILITY	19
THE IMPACT OF A CLF PROVIDING A LIQUIDITY UPGRADE USING AN ASSET SWAP	20
ADOPTING THE BOE'S DISCOUNT WINDOW FACILITY	20
PRACTICAL IMPACT OF APPLYING APS 210: LIQUIDITY CONDITIONED ON THE BOE'S DISCOUNT WINDOW FACILITY	21
SUMMARY	23
<b><u>HOW WOULD SUCH A REPO FACILITY WORK CONSIDERING THE LIMITATION ON GEARING FOR THE MANAGED INVESTMENT SCHEME SECTOR?</u></b>	<b>25</b>
WHAT IS A MANAGED INVESTMENT SCHEME?	25
THE ROLE OF MANAGED INVESTMENT SCHEMES IN THE AUSTRALIAN FINANCIAL SYSTEM	25
<b><u>THE MECHANICS OF A CLF OPEN TO ALL PARTICIPANTS OF THE RMBS MARKET</u></b>	<b>27</b>

<b>USING A REPO FACILITY TO FUND A MANAGED INVESTMENT SCHEME'S REDEMPTIONS</b>	<b>27</b>
<b>A DISCOUNT WINDOW FACILITY THAT PROVIDES FOR A ONE-WAY ASSET SWAP OF LOWER LIQUIDITY COLLATERAL</b>	<b>29</b>
<b>THE PRACTICAL APPLICATION OF THE APS 210: LIQUIDITY WITH RECOMMENDATIONS APPLIED</b>	<b>31</b>
<b>SUMMARY</b>	<b>32</b>
<b>CONCLUSION</b>	<b>33</b>
<hr/>	
<b>REFERENCES</b>	<b>35</b>

## Table of Figures

FIGURE 1: AUSTRALIAN RMBS ISSUANCE

FIGURE 2: PRIVATE INVESTMENT

The APS 210: Liquidity has resulted in complying ADIs using the eligibility of senior tranches of RMBS as collateral for repo with the CLF as a means to self-securitise their loan books, facilitating a direct transaction between complying ADIs and the RBA. ADIs are therefore limiting their purchases of RMBS in open-market transactions, while simultaneously retaining their internally securitised lines of RMBS on their balance-sheets; reducing their demand for new issues in the RMBS primary market. Self-securitisation therefore has added to the liquidity and marketability of existing lines of senior tranches of RMBS, but simultaneously has to a mild degree reduced activity in the primary markets for RMBS. The surge for Australia's top 40 ADIs to self-securitise a greater portion of their loan books (Figure 3 below) is a more efficient short term solution, as these loan books would be too large for non-bank lenders to securitise themselves through warehousing facilities; hence achieving the objectives of the APS 210: Liquidity in the short term.

FIGURE 3: COMPOSITION OF RMBS ISSUES.....  
..... FIGURE 4: BIG FOUR HQLA ASSETS

The APS 210: Liquidity has resulted in complying ADIs using the eligibility of senior tranches of RMBS as collateral for repo with the CLF as a means to self-securitise their loan books, facilitating a direct transaction between complying ADIs and the RBA. ADIs are therefore limiting their purchases of RMBS in open-market transactions, while simultaneously retaining their internally securitised lines of RMBS on their balance-sheets; reducing their demand for new issues in the RMBS primary market. Self-securitisation therefore has added to the liquidity and marketability of existing lines of senior tranches of RMBS, but simultaneously has to a mild degree reduced activity in the primary markets for RMBS. The surge for Australia's top 40 ADIs to self-securitise a greater portion of their loan books (Figure 3 below) is a more efficient short term solution, as these loan books would be too large for non-bank lenders to securitise themselves through warehousing facilities; hence achieving the objectives of the APS 210: Liquidity in the short term.

FIGURE 3: COMPOSITION OF RMBS ISSUES.....  
..... FIGURE 4: BIG FOUR HQLA ASSETS

FIGURE 5: GROWTH OF AUSTRALIAN ADIS AND NBIS

	Ratio to GDP			Share of total assets		
	1987	1997	2007	1987	1997	2007
<b>Deposit-taking institutions</b>	<b>75.6</b>	<b>105.4</b>	<b>177.9</b>	<b>47.3</b>	<b>48.2</b>	<b>51.5</b>
Banks	66.4	100.4	172.3	41.6	45.9	49.9
– Major Australian-owned banks	45.7	63.7	107.6	28.6	29.1	31.2
– Other Australian-owned banks	13.6	20.4	26.7	8.5	9.3	7.7
– Foreign-owned banks	7.1	16.3	38.1	4.4	7.5	11.0
– Subsidiaries	..	9.1	12.1	..	4.2	3.5
– Branches	..	7.2	26.0	..	3.3	7.5
Credit unions and building societies	9.2	5.0	5.6	5.7	2.3	1.6
<b>Other financial institutions</b>	<b>84.1</b>	<b>113.3</b>	<b>167.2</b>	<b>52.7</b>	<b>51.8</b>	<b>48.5</b>
Registered financial corporations	30.7	22.1	19.9	19.2	10.1	5.8
Securitisation vehicles	0.0	3.7	23.7	0.0	1.7	6.9
Managed funds and life insurance	45.4	77.3	111.8	28.4	35.4	32.4
General insurers	8.1	10.1	11.9	5.1	4.6	3.4
<b>Total</b>	<b>159.7</b>	<b>218.7</b>	<b>345.2</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: Figures as at June, except for 2007, which are for March. All figures are on an unconsolidated basis. Numbers may not add up due to rounding.

Sources: ABS; APRA; RBA

FIGURE 6: POST-GFC RMBS MARKET ACTIVITY

FIGURE 7: MANAGED INVESTMENT INDUSTRY SIZE BY TOTAL ASSETS

FIGURE 8: COMPOSITION OF THE MANAGED INVESTMENT INDUSTRY

FIGURE 9: COMPOSITION OF THE MANAGED INVESTMENT INDUSTRY

## Introduction

This research report is divided into three parts:

- Part 1: Does the eligibility of the RMBS tranches rated 'AAA' for repo with the RBA, increase liquidity of the entire RMBS market?
- Part 2: Would a similar liquidity support mechanism through a repo facility for Australian fixed income managers benefit demand for AUD RMBS tranches?
- Part 3: How would such a repo facility work considering the limitation on gearing for the Managed Investment scheme sector?

Part 1 of this research report looks at APRA's APS 210: Liquidity, implemented as per the Basel III reform, with respect to its different components including the RBA's new repo mechanism- the CLF, specific for repo during a liquidity stress event; the qualifying criteria for an application to use the CLF both with respect to eligible applicants and the circumstances in which an application may be made; and the intended outcomes of the CLF as applied under APS 210: Liquidity. A comparison of the intended and actual outcomes will draw conclusions on the effectiveness of the CLF as currently applied, and from this inference will be drawn with respect to the degree with which the APS 210: Liquidity achieves its intended objectives in a liquidity stress event.

Part 2 of this research report makes two recommendations to be considered for inclusion in APRA's APS 210: Liquidity to align this prudential standard with the objectives it is intended to achieve. The recommendations explored in Part 2 are adopted from the existing discount window facilities of both the UK and US money market and repo systems respectively. Part 2 highlights the benefits of each recommendation as a compliment to the merits of the APS 210: Liquidity as it currently stands, and also highlights the ease with which both recommendations could be integrated. Part 2 then discusses the benefits of each recommendation from a more practical perspective, and combines both recommendations with the strongest features of the CLF to yield the best possible solution.

Part 3 of this research report delves into the role and importance of the managed funds industry, as well as its gearing limitations. Using stylised examples Part 3 compares the application of the APS 210: Liquidity as it currently stands to the modified APS 210: Liquidity as per the recommendations made in Part 2 of this research report. A direct comparison of these two scenarios intends to explain more practically the benefits of the recommendations made in Part 2 of this research report, with respect to APRA achieving the objectives of its APS 210: Liquidity, and the longevity of the entire Australian financial system especially during a liquidity stress event.

## Does the eligibility of RMBS tranches rated 'AAA' for repo with the RBA increase liquidity of the entire RMBS market?

### What is Liquidity?

The concept of liquidity can be understood in many ways in financial markets. Liquidity is defined as “the ability to quickly convert an investment portfolio to cash.”<sup>1</sup> High volume, market depth and price resilience are common features of a liquid market, but fundamentally a liquid market is described as one where an investor can exchange their (financial) assets for cash with the upmost efficiency and transparency.

### RBA Repurchase Facilities

Global financial systems, by nature, are comprised mostly of highly geared financial institutions and intermediaries, and Australia’s banking sector “has grown to approximately 185% of Australia’s nominal GDP.”<sup>2</sup> APRA has concluded that in the event of a liquidity stress event, liquidity requirements are relatively too large to be backed by the current outstanding’s of Australian government bonds (and securities), which are deemed most liquid. APRA believes that Australian government bonds are most liquid because they are fully backed by the federal government and are traded in a highly liquid market; and therefore are considered the best sources of high quality liquidity. The remedial regulatory solution to this funding shortage is APRA’s APS 210: Liquidity- as applied under the Basel III reform on Capital and Liquidity- within the Australian financial system. The APS 210: Liquidity extends regulated liquidity sources through a new dedicated mechanism facilitated by the Reserve Bank of Australia (RBA), and is now open to a broader range of marketable securities. The RBA’s Committed Liquidity Facility (“CLF”) is open to Australia’s top 40 ADIs (by asset size); when “such approval is granted, the RBA may, in return for a fee, commit to purchasing eligible securities from an ADI under RBA repurchase agreements (repos)”<sup>3</sup> to aid eligible ADIs to meet their liquidity requirements during a liquidity stress event.

### The RMBS Structure

The ‘AAA’ rated tranches of an RMBS issue, are most commonly known as the senior tranches or Class A notes. They are noted in the series, to rank in regards to the principal allocation in a sequential order. This class of securities arguably contributes the most to liquidity for the RMBS asset class as it comprises a significant portion of each deal. Furthermore being nominated the safest tranche of an entire issue by its credit rating as such, the ‘AAA’ rated tranches of RMBS are traditionally last to absorb losses. This leaves the senior tranches favourable for investors seeking secure returns. Implementation of the APS 210: Liquidity deems the senior tranches as “liquid in markets during a time of stress and...eligible for use in central bank repo operations.”<sup>4</sup> The eligibility of the senior tranches of RMBS as collateral for repo with the RBA’s CLF makes clear how liquid the senior tranches of RMBS are and their eligibility as repo with the RBA’s CLF will increase the marketability and liquidity of the senior tranches of RMBS specifically. The exclusion of subordinated

---

<sup>1</sup> <http://www.businessdictionary.com/definition/liquidity.html>

<sup>2</sup> <http://www.rba.gov.au/speeches/2011/sp-ag-231111.html>

<sup>3</sup> <http://www.rba.gov.au/mkt-operations/resources/tech-notes/liquidity-facilities.html>

<sup>4</sup> <http://www.apra.gov.au/Speeches/Pages/Financial-regulation-and-financial-sector-evolution---Looking-ahead.aspx>



tranches from repo eligibility doesn't help the liquidity of these tranches nor their marketability, and hence doesn't necessarily leave the entire RMBS market in a more liquid state.

### APS 210: Liquidity

Through the APS 210: Liquidity, APRA intends to preserve higher capital buffers and stronger liquidity scores amongst Australia's largest ADIs, to prevent a systemic collapse during a liquidity stress event. Prior to the Global Financial Crisis (GFC) the RBA engaged in liquidity transactions (repos) separate to its open market operations enabling, in effect, an exchange of repo-eligible collateral for short term liquidity in the form of cash. Such temporary loans entail fees payable on the borrowed funds and other costs incurred by transacting ADIs. Complimenting this structure of liquidity enhancement, APRA had recommended all ADIs to comply with the Minimum Holding Liquidity (MHL) ratio and maintain a minimum 9% of total assets as a stock of "liquid assets...free from encumbrance including cash, Commonwealth Government and semi-government securities, debt securities guaranteed by Commonwealth/State/Territorial or other foreign governments, bank bills, certificate of deposits, debt securities issued by ADIs that are eligible for repurchase and aren't subordinated, net deposits of other ADIs and other securities approved by APRA"<sup>5</sup>. The MHL ratio and its additional requirements ensured that outside of acute stress scenarios detrimental to the Australian financial system, Australian ADIs would self-sufficiently preserve their liquidity and rely less on federal government funding to meet their day-to-day liquidity requirements.

Post the GFC the need for additional liquidity is apparent, with approximately \$311 billion in domestically issued government bonds and securities as of March 2014<sup>6</sup>, to support the Australian financial system during a liquidity stress event; relative to approximately \$1.7 trillion in total deposits comprising the Australian banking sector<sup>7</sup>. The implementation of the APS 210: Liquidity through the standards set out in the Basel III reform introduces further liquidity provisions governed by more stringent qualifying criterion and regulations. This requires Australia's top 40 ADIs to periodically report to APRA their estimate of liquidity shortages using approved internal measures. The new CLF has been introduced as an alternative method for APRA and the RBA to aid lacking ADIs to meet their liquidity requirements. To determine the sufficient level of stock of HQLA that complying ADIs should have in their asset mix is the quantitative measure of the LCR. The LCR "aims to ensure that banking institutions have sufficient high-quality liquid assets to survive an acute stress scenario lasting for one month."<sup>8</sup> The LCR requires that 60% (increasing in 10% increments annually) of an ADI's net cash outflows are met by the ADI's stock of HQLA for the duration of the stress test period. An ADI unable to meet its respective liquidity requirements is able to access temporary short term liquidity at the discretion of APRA and the RBA, in accordance to standards and expectations. APRA has introduced a new mechanism- the CLF- by which ADIs experiencing liquidity shortages can mitigate this shortage through a short term exchange of assets and securities eligible for collateral with the RBA, for cash. The use of the CLF comes at a cost to complying ADIs, imposing an on-going fee to open this line of credit, as well as a haircut(s) commensurate with the attributed risk of the collateral securities. The notional amount and on-going fee(s) are calculated on the post-haircut(s)

---

<sup>5</sup> [http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

<sup>6</sup> <http://aofm.gov.au/cgs-monthly/march-2014-7/>

<sup>7</sup> <http://www.apra.gov.au/adi/Documents/MBS%20March%202014.pdf>

<sup>8</sup> <http://www.apra.gov.au/adi/PrudentialFramework/Documents/Implementing%20Basel%20III%20liquidity%20Reforms%20in%20Australia%20-%20May.pdf>

notional amount exchanged for collateral with the RBA. To guide complying ADIs through accurate assessment, APRA has outlined the necessity for efficient internal measures for managing liquidity requirements with a “process that explicitly quantifies liquidity costs and benefits and allocates those costs and benefits to the appropriate business and product; and that ADIs have a formal, documented funding strategy (approved by the Board).”<sup>9</sup>

To extend the CLF in the broadest manner APRA has broadened the scope of assets eligible for collateral as part of using the RBA’s CLF. These assets are subdivided into three levels (HQLA1, HQLA2 and HQLA2B) which are differentiated by the level of [market and credit] risk inherent at each level. HQLA1 comprises of the most liquid and hence least risky assets, which is a subset of assets including “currency, central bank reserves, and federally and globally issued marketable securities including those of the Bank for International Settlements (BIS) and the International Monetary Fund (IMF), and are assigned a 0% risk-weight under Attachment A of APRA’s Standard APS 112 Capital Adequacy: Standardised Approach to Credit Risk”<sup>10</sup>. The APS 210: Liquidity encourages generating liquidity with the benefit of minimal risk by imposing a no-restriction rule on the weight of HQLA1 an ADI’s HQLA pool is made up of. Further to this, complying ADIs are subject to a 0% haircut under LCR rules, as well as a 0% spread over the target cash rate for the interest payable on this repo transaction. In making such amendments, APRA is enforcing the RBA’s provision of liquidity of last resort to be most generous and cost efficient when it is funded by the most liquid securities that can be used as collateral. The next subset of eligible assets is HQLA2, assets already eligible include “marketable securities representing claims on or guaranteed by central bank reserves, and federally and globally issued marketable securities including those of the Bank for International Settlements (BIS) and the International Monetary Fund (IMF), and are assigned a 20% risk-weight under Attachment A of APRA’s Standard APS 112 Capital Adequacy: Standardised Approach to Credit Risk”<sup>11</sup>. These are grouped as HQLA2, and in combination with HQLA2B assets deemed eligible by APRA. HQLA2 are subject to a 40% maximum weighting of an ADI’s total pool of HQLA, an upfront minimum 15% haircut, and a non-zero spread over the target cash rate to calculate the interest payable on the life of the repo. Eligible RMBS and other assets are grouped as HQLA2B, and subject to 25% and 50% haircuts respectively. Assets eligible under HQLA2B include “RMBS not issued by, and the underlying assets not originated by the bank itself or any of its affiliates, rating AA or higher in the long term or equivalent in the short term, traded in large, deep and active cash or repos market characterised by low concentration, and is a proven source of liquidity especially during events of acute stress.”<sup>12</sup> Additional requirements for the included (relatively) riskier assets such as RMBS are continuous data analysis and performance monitoring to be undertaken and communicated to APRA and the RBA for effective risk matching between the complying ADI and the RBA. This ensures that the quality of riskier assets eligible for repo through the CLF remains at the highest calibre so that these efforts continue to serve a more self-sufficient banking sector that is liquid enough to withstand a liquidity stress event that may be perceived detrimental to the Australian financial system.

---

<sup>9</sup> <http://www.apra.gov.au/adi/PrudentialFramework/Documents/Implementing%20Basel%20III%20liquidity%20Reforms%20in%20Australia%20-%20May.pdf>

<sup>10</sup> [http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

<sup>11</sup> [http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

<sup>12</sup> <http://www.bis.org/publ/bcbs238.pdf>

## **APS 210: Liquidity Impacts on Liquidity in the RMBS Market**

Through the standards and requirements set out in the Basel III reform, the APS 210: Liquidity aims to strengthen the Australian financial system by preserving capital and increasing liquidity, to protect it against scenarios of acute stress that may threaten the Australian financial system. Though accomplishing this in the short term, the APS 210: Liquidity does not support the Australian financial system in the long term because the support it gives is limited only to Australia's top 40 ADIs. The APS 210: Liquidity recognises that home loans comprise the largest portion of total assets on the balance-sheets of the top Australian ADIs. To generate the highest level of additional liquidity, the APS 210: Liquidity allows complying ADIs to use the RBA's CLF to transform their home-loans into cash through the securitisation process. NBIs of the Australian financial system aren't by their nature deposit-taking institutions, and therefore the APS 210: Liquidity does not cater for the entire Australian financial system. The liquidity generated from the APS 210: Liquidity is therefore restricted to Australia's top 40 ADIs, and consequently doesn't support the entire Australian financial system in the long term.

In the aftermath of the GFC in 2007-08, NBIs had lost confidence in securitisation markets globally. Australia was a casualty of this change in asset allocation, both domestically and abroad. It could be argued that the real cause of illiquidity in the Australian RMBS markets was driven by the high concentration of Australian RMBS held by Special Investment Vehicles ("SIVs"). These SIVs, who all required liquidity, almost all at the same time (liquidity shock), escalated a rapid reprising of the RMBS market to attract capital so as to clear the imbalance between the demand shortage and supply overhang.

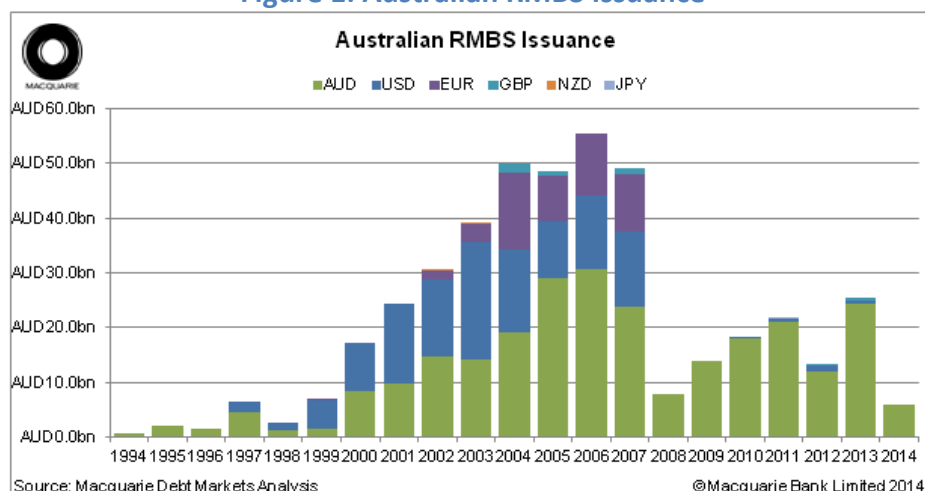
This affected the domestic RMBS markets in two ways. It firstly saw the RMBS markets reprised within the markets themselves, and caused many NBIs to suffer performance issues. As a result, some NBIs became bankrupt, and many reduced or removed their allocation to the RMBS markets due to the asset class experiencing unforeseen volatility. Volatility of this magnitude is generally associated with an increased risk of default, which at the time, was not prevalent in the Australian RMBS market.<sup>13</sup> Despite this, Australian RMBS suffered a liquidity shock.

Secondly the RMBS primary market virtually closed to new issuance, as new RMBS issuance became uneconomical to clear at the prevailing market spreads. Existing lines of RMBS experienced added volatility in the secondary market. This was driven not just from the liquidity shock, but also by RMBS investors in many offshore markets suffering losses on many loan pools. As can be seen in Figure 1 below, domestic RMBS issuance in 2008 was at its lowest since 2000, and issuance in foreign currencies was at its lowest since 1994 due to this event.

---

<sup>13</sup>

Figure 1: Australian RMBS Issuance



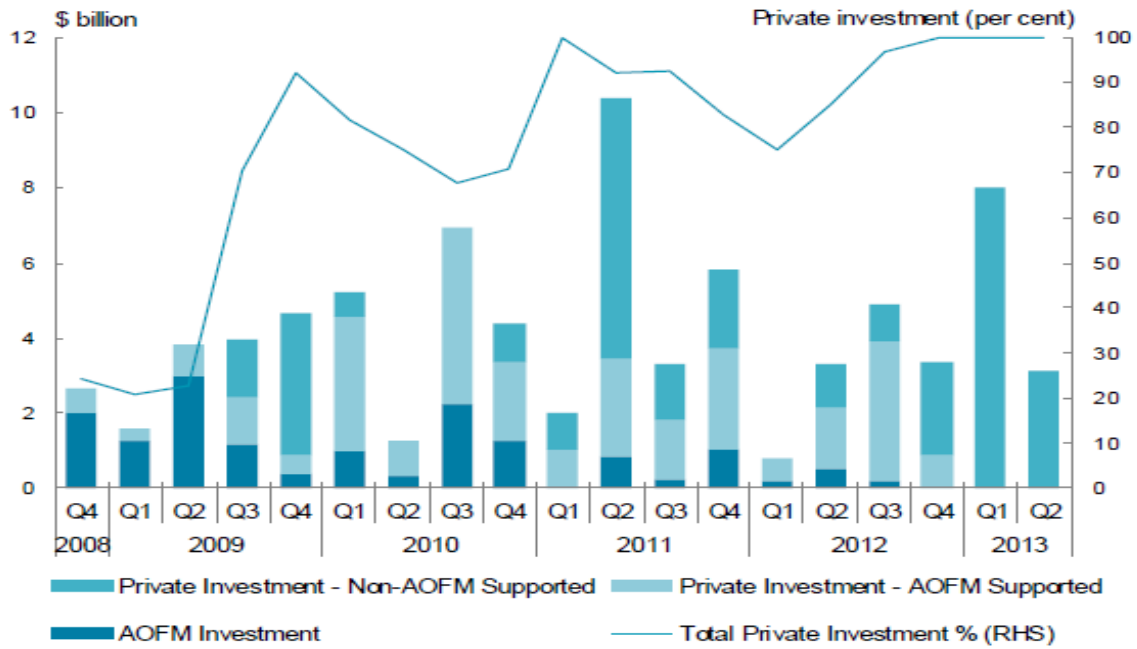
Though the downturn in RMBS issuance wouldn't have materially affected the balance sheets of Australia's big four banks, it was a detrimental downturn for smaller lenders and corporate home loan originators due to their limited access to broader capital markets and for the most part, being solely dependent on RMBS issuance to support funding.

To rejuvenate confidence in the Australian RMBS markets, the federal government allowed the Australian Office for Financial Management (AOFM) to invest in three instances; two lots of \$8 billion in both 2008 and 2009, and a further \$4 billion in 2010. Acknowledging that Australian RMBS is a critical source of funding for NBIs especially non-bank and smaller mortgage lenders, the AOFM invested in domestic RMBS "to support competition in lending for housing during the market dislocation."<sup>14</sup> The AOFM's involvement in driving the liquidity of the Australian RMBS markets resulted in "relatively buoyant conditions in 2012-13 with improved investor demand and economic sentiment resulting in good issuance volumes and tighter spreads."<sup>15</sup> The AOFM's investment in the Australian RMBS markets can be seen from Figure 2 below.

<sup>14</sup> <http://aofm.gov.au/files/2013/11/AOFM-Annual-report-2012-13.pdf>

<sup>15</sup> <http://aofm.gov.au/files/2013/11/AOFM-Annual-report-2012-13.pdf>

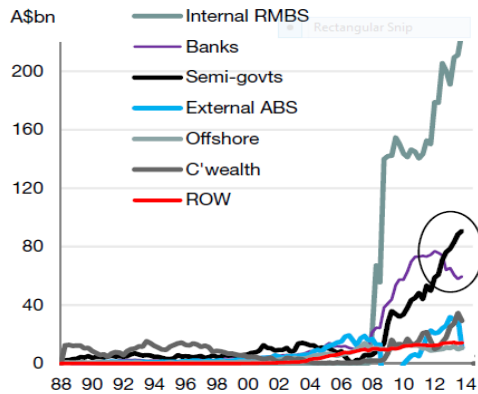
**Figure 2: Private Investment**



Source: <http://aofm.gov.au/files/2013/11/AOFM-Annual-report-2012-13.pdf>

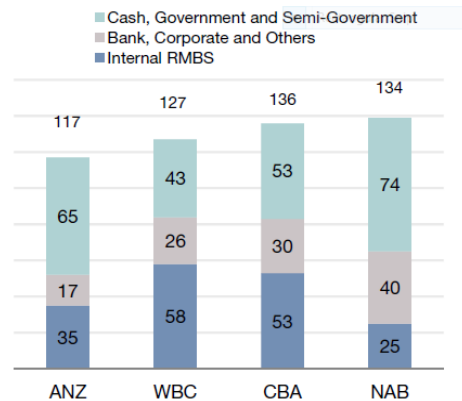
The APS 210: Liquidity has resulted in complying ADIs using the eligibility of senior tranches of RMBS as collateral for repo with the CLF as a means to self-securitise their loan books, facilitating a direct transaction between complying ADIs and the RBA. ADIs are therefore limiting their purchases of RMBS in open-market transactions, while simultaneously retaining their internally securitised lines of RMBS on their balance-sheets; reducing their demand for new issues in the RMBS primary market. Self-securitisation therefore has added to the liquidity and marketability of existing lines of senior tranches of RMBS, but simultaneously has to a mild degree reduced activity in the primary markets for RMBS. The surge for Australia's top 40 ADIs to self-securitise a greater portion of their loan books (Figure 3 below) is a more efficient short term solution, as these loan books would be too large for non-bank lenders to securitise themselves through warehousing facilities; hence achieving the objectives of the APS 210: Liquidity in the short term.

**Figure 3: Composition of RMBS issues**



Source: ABS, CBA

**Figure 4: Big Four HQLA Assets**



Source: Company data, CBA as at Dec13, the rest as at Mar-14.

To quantify the extent to which Australia's big four banks are self-securitising their own loan books, Figure 4 above gives a breakdown of each respective bank's liquidity books. Australia and New Zealand Bank Group Ltd (ANZ)'s \$52 billion of non-CGS (Commonwealth Government Securities), \$35 billion were of self-securitised RMBS, while RMBS of other ADIs and non-banks was a fraction of this, combined with bank, corporate and other non-CGS secured and unsecured notes in a \$17 billion pool. This break-up in self-securitised RMBS relative to RMBS issued by other ADIs and non-banks holds also for the Commonwealth Bank of Australia (CBA) and Westpac Banking Corporation (WBC). The National Australia Bank (NAB) doesn't exhibit this relationship in the Figure 4 above. But as at 30 September 2013, the NAB had \$27 billion in self-securitised RMBS (post central bank haircuts) while comparatively held only a fraction of that in RMBS from other ADIs and non-banks and covered bonds combined of \$6.7 billion.<sup>16</sup> Though adding to the liquidity books of eligible ADIs, APS 210: Liquidity leaves NBIs at a disadvantage to their ADI counterparts. Both ADIs and NBIs rely on RMBS, but only allowing (eligible) ADIs to realise this liquidity through the RBA's CLF leaves NBIs without support and a source of last resort liquidity during a liquidity stress event.

The competitive advantage of ADIs relative to NBIs is that they are deposit-taking institutions, hence can take deposits to increase funding their requirements through internal measures. ING Bank (Australia) CEO Vaughn Richtor was quoted in April 2014 to resist the urge of relying heavily on RMBS investments to meet liquidity requirements, stating that he plans to "take the share of deposits to 80% of its (ING) funding requirement from 76%."<sup>17</sup> Deutsche Bank AG predicted in March 2014 that Australian RMBS sales for the year would slip \$3 billion below last year's (2013) A\$26.1 billion (peak since 2007). Supporting this observation, the Australian Securitisation Forum (ASF) wrote in a submission to the Financial System Inquiry that "the government should restart RMBS purchases."<sup>18</sup> Despite a boom in the housing markets driven by lower interest rates and appreciating property prices, "issuers say trading volumes have failed to revive."<sup>19</sup> Offshore RMBS investors were also a big driving force pre-GFC. The aftermath saw poor liquidity in the secondary market for RMBS, restricting returns for off-shore RMBS investors and tapering liquidity in the entire RMBS market.

The biggest deterrent of the APS 210: Liquidity is that it is intended only to transform the most prevalent asset on the balance-sheets of Australia's top 40 ADIs into cash in a liquidity stress event. The resulting outcome of increased self-securitisation is only the means with which the APS 210: Liquidity achieves this, using RMBS as the vehicle to provide Australia's financial system with regulated liquidity in such an event. The inability of the NBIs of RMBS to accept deposits and hence issue loans, means that an integral part of the Australian financial system, though a minority, is denied of this regulated liquidity. The inability of the APS 210: Liquidity to cater for the managed investment industry prevents it from achieving a financial system that is both self-sufficient and less reliant on federal government support in the long term.

---

<sup>16</sup> <http://www.nab.com.au/content/dam/nab/about-us/shareholder-centre/financial-results/documents/full-year-results-2013.pdf>

<sup>17</sup> <http://www.bloomberg.com/news/2014-04-11/ing-australia-targets-deposit-growth-to-limit-reliance-on-rmbs.html#>

<sup>18</sup> <http://www.bloomberg.com/news/2014-04-06/taxpayer-aid-sought-for-mortgage-bond-trading-australia-credit.html>

<sup>19</sup> <http://www.bloomberg.com/news/2014-04-06/taxpayer-aid-sought-for-mortgage-bond-trading-australia-credit.html>

## Summary

Close analysis of the APS 210: Liquidity and its impact on the RMBS market highlights its caveats in such a concentrated banking sector. Though the eligibility of 'AAA' rated tranches of RMBS for repo with the RBA enhances liquidity for the top 40 Australian ADIs, it also suppresses (though not greatly) activity in the primary RMBS market, which doesn't add to the liquidity of RMBS as a whole.

A closer look at the liquidity books of the big four banks sheds light on the inevitable outcome of APRA's APS 210: Liquidity. A large majority of Australia's financial system is bypassing the RMBS market by self-securitising their own loan books for direct use as collateral with the RBA's CLF repo mechanism. Though the self-securitisation of the loan books of Australia's top 40 ADIs may not necessarily improve activity levels of RMBS in both of its primary and secondary markets, a surge in the self-securitisation of the loan books of Australia's top 40 ADIs will generate more liquidity for complying ADIs. This is because the RBA's balance sheets are large enough to hold the combined lines of senior tranches of RMBS of Australia's top 40 ADIs, as opposed to the relatively smaller balance sheets of Australian non-bank lenders. Conversely, the eligibility of RMBS senior tranches for repo with the RBA's CLF only adds to the liquidity of the senior tranches of RMBS through their repo eligibility. Restricting this eligibility only to the senior tranches though, does not extend this increase in liquidity to the entire RMBS market.

Following the above critique and unveiling the caveats of the APS 210: Liquidity as applied under the Basel III reform is the exploration of recommendations to be included as modifications that compliment APRA's APS 210: Liquidity thus far. These modifications will strengthen Australia's financial system without excessive strain on the cash flows of the federal government, complementing the federal government's currently restricted expenditure. The recommendations made in Part 2 of this research report are practical in their application, are easily integrated into APRA's APS 210: Liquidity as it currently stands, and serve to achieve APRA's objective as per the Basel III reform.

## Would a similar liquidity support mechanism through a repo facility for Australian fixed income managers benefit demand for AUD RMBS tranches?

### What is a repurchase agreement?

Repos (repurchase agreements) are defined as “an agreement between two parties under which one party sells a security to the other, with a commitment to buy back the security at a later date for a specified price. The difference between the sale and repurchase prices reflects the rate of interest to be earned by the cash provider.”<sup>20</sup> The securities traded in a repo are here referred to as ‘collateral’ because in the event that the borrowing party defaults on the terms of the repo, “the lender can sell the security, with the proceeds used to satisfy any remaining obligations.”<sup>21</sup>

### The RBA’s CLF

The RBA engages in two types of Open Market Operations, Daily Open Market Operations and Long-dated Open Market Operations. Daily Open Market Operations are repos with the RBA, and are conducted on a daily basis. Such transactions are intended to reconcile outstanding repos with the RBA at the cash rate, as well as Exchange Settlements (ES) that are outstanding. The RBA also uses its Daily Open Market Operations to assess whether or not “the banking system has the appropriate amount of liquidity.”<sup>22</sup> Conversely, Long-dated Open Market Operations have a maturity greater than 18 months, and are conducted on an outright basis rather than under a standard repo.

Within the context of repos with the RBA, repos can be of either an intraday term to maturity or an overnight (or longer) term to maturity. For intraday repos, the price received by the borrowing party upon entering of the repo, as well as the price the borrowing party pays at the maturity of the repo are identical because, being an intraday agreement, the RBA isn’t subjected to any credit risk. For repos with the RBA that mature the following day (overnight repos) or later, the funds effectively borrowed are subject to an interest payment to compensate the RBA for the potential credit risk it accepts for the life of the repo. The interest rate payable to the RBA is calculated on a daily basis as 25 basis points over the cash target rate, and these calculations continue on a daily basis until the maturity of the repo agreement. For both intraday and overnight repos with the RBA, the security used attracts a discount or “haircut” to the security’s value. Haircuts are applied to limit the RBA’s counterparty default, and hence are contingent on the inherent risk of the type of securities used for collateral in the repo agreement.

Where the RBA’s CLF differs to its existing repos is with respect to the RBA’s commitment to facilitating the liquidity shortage of eligible ADIs while maintaining its role as a lender of last resort. The CLF enables “participating ADIs to access a pre-specified amount of liquidity by entering into repurchase agreements of eligible securities outside the RBA’s normal market operations.”<sup>23</sup> Such a commitment from the RBA comes at an opportunity cost; therefore the RBA charges a 15 basis points fee to each complying ADI. This fee is payable in full regardless of what portion of the

---

<sup>20</sup> <http://www.rba.gov.au/publications/bulletin/2010/dec/pdf/bu-1210-4.pdf>

<sup>21</sup> <http://financial-dictionary.thefreedictionary.com/Collateral>

<sup>22</sup> <http://www.rba.gov.au/mkt-operations/resources/tech-notes/open-market-operations.html>

<sup>23</sup> <http://www.rba.gov.au/media-releases/2011/mr-11-25.html>



provided liquidity is undrawn at the maturity of the repo after the 30 day stress period (as per the APS 210: Liquidity) has lapsed.

Further differences include the restrictions on the participants eligible as per APRA's approval, given that they are one of Australia's top 40 ADIs. The other prevalent distinction between the RBA's open market operations and the CLF is the securities eligible for collateral. Due to the significant shortage in HQLA, as has been established in Part 1 of this research report, the CLF opens the eligibility of assets to those considered liquid in that in a time of stress, these securities are easily exchanged for cash.

### **Applying APS 210: Liquidity in Its Current Form**

What is evident from the impacts of the APS 210: Liquidity on the liquidity of the RMBS markets (above) is that its implementation does not provide liquidity to the entire Australian financial system, thereby excluding Australian fixed income managers from the regulated liquidity the APS 210: Liquidity creates. This is because the APS 210: Liquidity does not contemplate the nature of the RMBS NBIs, nor does it acknowledge the importance of the role of the managed investment industry in the Australian financial system. A similar liquidity support mechanism through a repo facility that does cater for Australian fixed income managers would benefit demand for AUD RMBS tranches, as it is a repo facility that caters to all participants of the RMBS markets. By taking into account Australian fixed income managers, the CLF would extend its support to the RMBS market participants who would mostly transact in the subordinated tranches of RMBS (below the senior tranches). This repo mechanism, catering for participants in all tranches of RMBS, would benefit demand for all Australian dollar denominated RMBS tranches.

Prior to the implementation of the APS 210: Liquidity, an Australian ADI would embark on one or both of two paths to generate liquidity with a position in RMBS. An ADI can lease its balance sheets to a non-bank lender so that it can securitise the ADI's loan books on its behalf. The non-bank lender would do so on a wholesale level through a warehouse facility provided by the ADI to the non-bank lender at a fee. This has a two-fold effect on an ADI's liquidity. The securitisation of its loan books reduces the riskiness of its balance sheets, and the fees the ADI is paid by the non-bank lender for its warehousing facility is an added cash flow also yielding liquidity for the ADI. The non-bank lender would then issue new RMBS lines in the primary market or would retain its position in this new line of RMBS, both alternatives funding the non-bank lender to continue its business operations and issue cheaper loans to the real economy. Alternatively, an ADI could self-securitise its own loan books, still reducing the risk on its balance sheets. In this instance, the ADI can either retain the new lines of RMBS on its balance sheets (in which case it will need to offset risks with additional liquid assets) or can issue this new line in the primary RMBS market, with the broader market outcome being the same as in the first alternative above. Both paths for the ADI yield an overall positive outcome for the entire RMBS market, as both outcomes facilitate an interaction between ADIs and non-bank lenders in the RMBS market. Outsourcing an ADI's securitisation process, and off-loading counterparty risk to non-bank lenders, allows for a more active and hence a more liquid RMBS market supporting the Australian financial system; as well as cheaper loans issued to the real economy through the role and function of non-bank lenders (and other RMBS NBIs).

The APS 210: Liquidity fails to account for the pivotal role played by NBIs especially non-bank lenders, and their deep integration into the Australian banking system. Table 2 (below) illustrates

the similar growth in assets, as well as the relatively small difference in contribution to the size of the Australian banking sector, of both Australian ADIs and non-banks respectively from 1987 to 2007. Figure 5 below highlights the importance of NBIs in the Australian financial system today and for government support to Australian NBIs during a liquidity stress event.

**Figure 5: Growth of Australian ADIs and NBIs**

	Ratio to GDP			Share of total assets		
	1987	1997	2007	1987	1997	2007
<b>Deposit-taking institutions</b>	<b>75.6</b>	<b>105.4</b>	<b>177.9</b>	<b>47.3</b>	<b>48.2</b>	<b>51.5</b>
Banks	66.4	100.4	172.3	41.6	45.9	49.9
– Major Australian-owned banks	45.7	63.7	107.6	28.6	29.1	31.2
– Other Australian-owned banks	13.6	20.4	26.7	8.5	9.3	7.7
– Foreign-owned banks	7.1	16.3	38.1	4.4	7.5	11.0
– Subsidiaries	..	9.1	12.1	..	4.2	3.5
– Branches	..	7.2	26.0	..	3.3	7.5
Credit unions and building societies	9.2	5.0	5.6	5.7	2.3	1.6
<b>Other financial institutions</b>	<b>84.1</b>	<b>113.3</b>	<b>167.2</b>	<b>52.7</b>	<b>51.8</b>	<b>48.5</b>
Registered financial corporations	30.7	22.1	19.9	19.2	10.1	5.8
Securitisation vehicles	0.0	3.7	23.7	0.0	1.7	6.9
Managed funds and life insurance	45.4	77.3	111.8	28.4	35.4	32.4
General insurers	8.1	10.1	11.9	5.1	4.6	3.4
<b>Total</b>	<b>159.7</b>	<b>218.7</b>	<b>345.2</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Notes: Figures as at June, except for 2007, which are for March. All figures are on an unconsolidated basis. Numbers may not add up due to rounding.  
Sources: ABS; APRA; RBA

The APS 210: Liquidity also neglects the importance of the inherent advantage of ADIs relative to NBIs, in that ADIs are able to increase liquidity through taking deposits, consequently allowing them to hold such large loan books on their balance-sheets. ADIs can capitalise by advertising ‘special’ deposit rates to attract higher deposits, increasing their liquidity and therefore able to offset their liabilities during a liquidity stress event. The risk of implementing the APS 210: Liquidity as it stands is that it will ultimately see ADIs rely on higher deposits and self-securitisation as means to meet their liquidity requirements during stress periods. This doesn’t help activity in the broader RMBS markets as it slightly suppresses it through less issuance. Further to this, the absence of a support mechanism that caters for NBIs and the managed investment industry fails to support the remainder of the Australian financial system outside the top 40 ADIs. This lack of support will prevent the APS 210: Liquidity from achieving a self-sufficient Australian financial system in the long term.

### **The Impact of a CLF Open to all Participants of the RMBS Market**

One of the recommendations presented in this research report, is to have the RBA’s CLF open to all RMBS market participants- keeping senior tranches of RMBS as still eligible collateral for repo for the RBA’s CLF. In doing so, the CLF gives NBIs an alternative means to transact in RMBS when the Australian financial system is suffering a liquidity stress event. In being able to repo their lines of RMBS, NBIs are also able to maintain high levels of liquidity on their balance sheets, ensuring that they can continue to operate during a liquidity stress event. Therefore a CLF open to all RMBS market participants would support the Australian financial system as a whole.

This recommendation will have a two-fold positive effect on the RMBS markets. The self-securitisation of the top 40 ADIs allows them to hold more liquidity on their balance sheets in the

event of a liquidity stress event, allowing the larger portion of the Australian financial system to meet its liabilities and not suffer a failure. This recommendation will also support the NBIs comprising the Australian financial system in the face of a liquidity stress event. NBIs, by the nature of their daily operations, are not able to generate liquidity through the means that ADIs can. Their eligibility to access liquidity through the RBA's CLF provides them with support, and on a whole ensures that Australia's financial system is a self-sufficient financial system, with a diminishing reliance on government funding and support especially during future liquidity stress events.

### **Adopting The Fed's Discount Window Facility**

One of the various roles of the US Federal Bank (the Fed), like the RBA, is to "provide liquidity directly to borrowers and investors in key credit markets."<sup>24</sup> The Fed does so through its Discount Window Facility (DWF), where the DWF acts as a "safety valve in relieving pressures in reserve markets; extensions of credit can help alleviate liquidity strains in a depository institution and in the banking system as a whole...helps ensure the basic stability of the payment system by supplying liquidity during times of systemic stress."<sup>25</sup>

The Fed's DWF is a repo facility in which, albeit under certain extreme circumstances, extends liquidity to individuals, partnerships and corporations that are not depository institutions by the nature of their day to day business operations. Under Regulation A of the Fed's Discount Window, an extension of emergency credit can be made to NBIs "in unusual and exigent circumstances"<sup>26</sup> after undergoing various levels of approval with Board members and authorities. This 'emergency' credit can be extended to such entities given that certain criteria are met. Evidence of the failure of these entities to obtain credit elsewhere must be witnessed; as well as clear evidence that this emergency credit to be provided is not intended to remove items from a specific institution's balance sheets so as to prevent it from bankruptcy, and nor shall this line of emergency credit be for the purposes of aiding one specific firm or institution. The Fed's emergency line of credit extended to entities not of a depository nature is ultimately to be a 'last resort' source of liquidity for a market experiencing a liquidity stress event.

Applying the RBA's CLF in the same manner would yield an extension of this repo facility to all market participants of RMBS as a last resort source of liquidity in a liquidity stress event. During a liquidity stress event, it is expected that financial institutions would raise liquidity through various sources such as the fire sale of assets and other means of raising cash levels. With Australia's top 40 ADIs self-securitising their loan books for collateral with the CLF, leaving NBIs that rely on ADIs for new issuance with a slowing primary market and a suppressed secondary market. Ultimately, the outcome for NBIs of RMBS in a liquidity stress event is that they lack a mechanism that will allow them also to generate liquidity from their pool of assets due to the restrictions they face from the nature of their daily operations. The evidence above stresses the importance of non-bank lenders and other NBIs in the Australian financial system. As of October 2013 Australian non-bank lenders had increased the growth in their lending at twice the pace of Australian ADIs<sup>27</sup>, leaving Australia's

---

<sup>24</sup> [http://www.federalreserve.gov/monetarypolicy/bst\\_lendingother.htm](http://www.federalreserve.gov/monetarypolicy/bst_lendingother.htm)

<sup>25</sup> <http://www.newyorkfed.org/banking/discountwindow.html>

<sup>26</sup> <http://www.frbdiscountwindow.org/regulationa.cfm?hdrID=14&dtlID=77#s20151>

<sup>27</sup> <http://www.smh.com.au/business/home-loans-nonbank-lenders-capturing-more-of-mortgage-market-share-20131215-2zfbf.html>

Federal Treasurer to refer to non-bank lenders in particular as a “fifth pillar to Australia’s financial system.”<sup>28</sup>

## **Practical Impact of Applying APS 210: Liquidity Conditioned on the Fed’s Discount Window Facility**

The GFC of 2007-08 was a result of depository institutions with large balance sheets, like Australia’s top 40 ADIs, simultaneously exiting multiple financial markets. To take advantage of the highly deregulated global financial system, ADIs established off-balance sheet Structured Investment Vehicles (SIVs) from which capital was raised, then leveraged through issues of short term commercial paper and debt instruments of the like. The borrowed funds were then used to acquire portfolios of complex securities backed by assets and mortgages.<sup>29</sup> The maturity mismatch between short term issued debt and long term acquired portfolios, as well as the inherent complexities with respect to the understanding, pricing and investing in the securities underlying SIVs largely contributed to the unfolding events of the GFC. As ADIs began unwinding the complex investments underlying their off-balance sheet (and therefore not publicly disclosed) SIVs, what occurred was a unanimous abandonment of various securities. This large scale market exit left many NBIs without the support of ADIs to continue operating, and so various markets experienced liquidity shocks and the affected assets were considered as toxic. Similarly, if Australia’s top 40 ADIs experienced a liquidity shock of similar proportions to the GFC, such that they would have to self-securitise their own loan books for direct access to the RBA’s CLF for additional liquidity, this could warp the primary and secondary markets of various securities. Searching for liquidity but to no avail, NBIs would suffer in the long term to the detriment of the Australian financial system.

The above scenario meets the criteria (above) for a market-wide liquidity stress event. All RMBS market participants would be affected to a similar magnitude by a liquidity stress event affecting the entire Australian financial system. Furthermore, with the deep integration of NBIs in both Australia’s financial system and Australia’s real economy, leaving NBIs to ‘fail’ without a safety net reserve or source of liquidity to rely on would be detrimental to many facets of the Australian economy. Government intervention or regulated liquidity would be needed to prevent a catastrophic failure in this instance, which could be provided through a discount window facility similar to that of the Fed; a CLF open to all RMBS market participants. In meeting the same criteria for this liquidity source of last resort- as that of the Fed in extending its credit- the RBA would extend credit to the entire Australian financial system, which encompasses all participants in the RMBS markets to aid in generating short term liquidity; as opposed to bailing out individual entities due to their firm-specific risk and resulting illiquidity. In providing RMBS NBIs the added support they need in the absence of ADIs, the RBA’s CLF extension is also ensuring the preservation of liquidity in RMBS “as a deep, active and resilient market.”<sup>30</sup> This support then goes to ensure that the collateral ADIs are using for repo with the RBA continues to meet APRA’s standards, and that RMBS continues to be a liquid security for domestic (and foreign) ADIs and NBIs; and thus, providing support to the demand for Australian dollar (AUD) tranches of RMBS.

---

<sup>28</sup> <http://www.smh.com.au/money/borrowing/more-buyers-turn-to-nonbank-loans-20120612-2079o.html>

<sup>29</sup> <http://www.ft.com/intl/cms/s/0/8eebf016-48fd-11dc-b326-0000779fd2ac.html#axzz36OuGg6Bt>

<sup>30</sup> [http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

## The Impact of a CLF Providing a Liquidity Upgrade Using an Asset Swap

The RBA looks to provide an appropriate amount of liquidity through its CLF, by requesting that eligible institutions “submit an application for a pro forma CLF to cover their expected Australian dollar LCR shortfall for the calendar year.”<sup>31</sup> In a time of more volatile markets, unorthodox economic (and other) policies and consequently more stringent standards and expectations of regulators, it is expected that eligible ADIs take a more conservative stance on their liquidity requirements. Therefore the CLF, in providing regulated liquidity to the top 40 ADIs (and subsequently 85% of the Australian banking sector) will put a strain on the RBA’s funding and the federal government’s balance sheets. To alleviate this strain, the implementation of an asset swap allowing eligible ADIs to swap their senior RMBS tranches for government bonds (and securities) will provide ADIs with their required liquidity while diverting government spending elsewhere to meet fiscal and monetary policy requirements in a time of strong fiscal tightening. This asset swap simultaneously delivers a liquidity upgrade to eligible ADIs, as government bonds are of the highest liquidity (and therefore comprise the Level 1 HQLA subset referred to above); while doing so in a cost-effective manner in such a financially testing time.

The asset swap can be readily implemented as the RBA can transact with its existing stock of government bonds in exchange for eligible ADIs’ senior tranches of RMBS. The already-available stock of government bonds ensures smooth transactions and transparency on behalf of the RBA with respect to the RMBS market pricing mechanism.

## Adopting The BoE’s Discount Window Facility

The Discount Window Facility (DWF) in the Sterling Monetary Framework (SMF) is a “bi-lateral on-demand facility... it allows participants to borrow highly liquid assets in return for less-liquid collateral in potentially large size and for a variable term.”<sup>32</sup>

The Bank of England (BoE) plays various roles in the UK money markets, two of which are setting interest rates and providing a last resort of liquidity for money markets. The BoE manipulates the repo rates- at which the BoE “buys back securities it has previously sold in the money markets. Money markets include banks, building societies, and specialist securities dealers.”<sup>33</sup> By altering the repo rates at which the BoE buys back the securities it previously sold, the BoE is therefore setting all other rates as a consequence. The BoE also acts as a lender of last resort, by providing additional emergency liquidity when the UK banking system undergoes a liquidity shortage, and does so through its DWF. The BoE simultaneously fulfils both of these roles efficiently and effectively, altering the size of the pool of gilts to set the repo rate, while doing so as a lender of last resort to provide the UK Banking sector liquidity in an acute stress event.

The structure of the DWF is that it allows eligible financial institutions to engage in an asset swap with the BoE, by receiving from the BoE their required liquidity in the form of gilts (UK Government liability issued by HM Treasury and listed on the London Stock Exchange<sup>34</sup>) for a fee, in exchange for less liquid (but eligible) collateral. The DWF can have a term to maturity of various lengths

---

<sup>31</sup> <http://www.apra.gov.au/adi/PrudentialFramework/Documents/140130-ADI-letter-Implementation-of-the-Basel-III-liquidity-framework-in-Australia-Committed-liquidity-facility%20%282%29.pdf>

<sup>32</sup> <http://www.bankofengland.co.uk/markets/Documents/money/publications/redbookdwf.pdf>

<sup>33</sup> [http://www.economicsonline.co.uk/Managing\\_the\\_economy/Bank\\_of\\_England.html](http://www.economicsonline.co.uk/Managing_the_economy/Bank_of_England.html)

<sup>34</sup> [http://www.dmo.gov.uk/index.aspx?page=gilts/about\\_gilts](http://www.dmo.gov.uk/index.aspx?page=gilts/about_gilts)

depending on the respective financial institutions' needs, with a maximum maturity of 30 days (meeting the 30 calendar day stress period condition of the CLF). The BoE's DWF has a set of eligible collateral for swapping for gilts, subdivided into various classes based on the inherent risk of each security type (as per the eligible collateral set of the the APS 210: Liquidity). Fees and additional costs to using the DWF are commensurate with the type of collateral used for the asset swap undertaken through the BoE's DWF.

### **Practical Impact of Applying APS 210: Liquidity Conditioned on the BoE's Discount Window Facility**

In applying the BoE's DWF, the mechanism will allow the RBA to conduct an asset swap with eligible RMBS investors, providing them with a liquidity upgrade. By swapping senior tranches of RMBS (plus commensurate fees and haircuts) for an equivalent value of government bonds and securities, the federal government will see less strain on its balance sheets as it'll be swapping from its existing pool of government bonds, rather than issuing more bonds to provide liquidity in the form of cash. This mechanism results in the same outcome of a provision of liquidity in a liquidity stress event, but in a more cost-efficient manner. Given that the only change required achieving this outcome is the form of liquidity provided, this change will not hinder meeting the requirements outlined under APRA's Prudential Standard APS 210: Liquidity.

An asset swap would usually, like a repo, mature at a future agreed date at which the swap would be closed out and the assets would be returned to their original holders, with any outstanding fees and/or other costs paid before unwinding the asset swap. Implementing a one-way asset swap for the CLF would also result in a cost-efficient mechanism in the long run for both the RBA and eligible RMBS participants needing liquidity. A one-way asset swap is one that is treated as a transaction rather than a swap lasting for a finite period of time, therefore doesn't need closing out at a future date. Less strain is put on eligible RMBS participants to repay the amount borrowed at the maturity of the liquidity provided by the RBA; which only supports the longevity of Australia's banking sector. The RBA would then be a holder of RMBS, which the RBA is able to manage as it already has in place the resources and procedures needed to do so. The RBA has instructed that for RMBS (and other similar securities) it be provided with "details on the composition of the assets underlying the security"<sup>35</sup> including the quality of the pool of underlying assets, credit facilities and insurers to the pool of underlying securities. With this policy in place, the RBA can take a position in RMBS to provide liquidity to the financial system without taking on risks it isn't able to manage.

A one-way asset swap of RMBS (plus commensurate fees and/or other costs) for government bonds supports the RMBS market in ensuring it remains a "large, deep and active market"<sup>36</sup> with a two-fold outcome. Eligible RMBS investors will close out their positions in RMBS by the amount of their RMBS holdings they swap for government bonds. If these investors want to reopen their closed out positions in RMBS in future, they must do so by issuing new RMBS in the primary RMBS market, or transacting with other RMBS market participants in the secondary RMBS market. Both outcomes result in further RMBS market activity, adding to the liquidity of the entire RMBS market, and ensuring its preservation as eligible collateral for repo with the RBA's CLF. Simultaneously, the RBA's

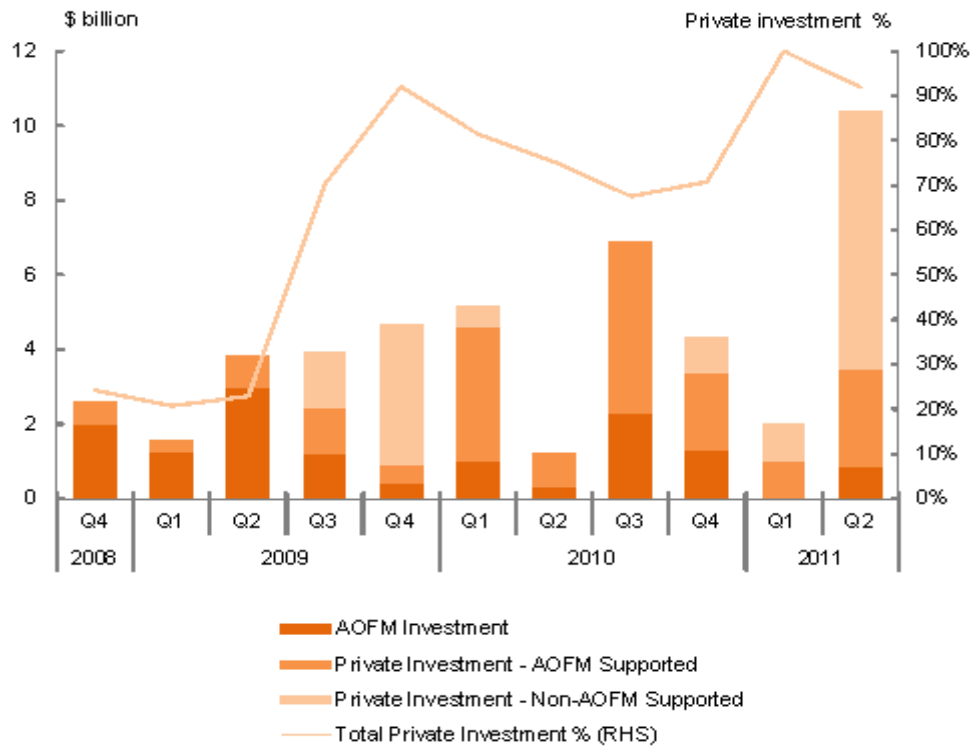
---

<sup>35</sup> <http://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-securities.html>

<sup>36</sup> <http://www.apra.gov.au/adi/PrudentialFramework/Documents/Prudential-Standard-APS-210-Liquidity-%28January-2014%29.pdf>

new position in RMBS at the execution of the one-way asset swaps results in government support and activity in RMBS. This has been seen to yield positive outcomes for the RMBS markets in the AOFM’s support to RMBS post the GFC- as seen in Figure 6 below.

**Figure 6: Post-GFC RMBS market activity**



Source: <http://aofm.gov.au/publications/annual-reports/annual-report-2010-2011/>

The AOFM’s position in RMBS supported the RMBS markets, resulted in tightening spreads, and “enabled investors to reinvest, helping to regain confidence in the asset class.<sup>37</sup>” Both the public and private sectors appreciated that this was necessary to prevent spill overs of the GFC to Australia’s real economy, and the AOFM’s support to RMBS ultimately “kept costs down for Australian home loan borrowers in a time of stress.<sup>38</sup>” In a liquidity stress event, the impact that may be had on Australia’s financial system may be of a similar magnitude to that of the GFC, and could result in shocks to the real economy. The RBA can therefore transfer its holdings of RMBS to the existing AOFM portfolio and continuing public sector support to RMBS during a liquidity stress event. The AOFM’s involvement will only serve to achieve its objectives from its support to RMBS during 2008-2013, by supporting “competition in (residential) mortgage lending and lending to small business.<sup>39</sup>” Confidence in RMBS as an asset class, as previously, will be restored and therefore protecting the RMBS asset class during a liquidity stress event. This protection will ensure that the senior tranches

<sup>37</sup> <http://www.australianbankingfinance.com/capital-markets/aofm-profitably-supports-mortgage-market/>

<sup>38</sup> <http://www.australianbankingfinance.com/capital-markets/aofm-profitably-supports-mortgage-market/>

<sup>39</sup> <http://aofm.gov.au/files/2009/09/12930.pdf>

of RMBS remain as a form of eligible collateral during a liquidity stress event. Simultaneously, the federal government's position in RMBS provides a means for NBIs to also receive the support and regulated liquidity resource they would need to endure a liquidity stress event.

## Summary

A detailed breakdown of the components of the APS 210: Liquidity unveils its caveats, and consequently highlights its inability to achieve its intended objectives. In understanding how the RBA's CLF would function, and the behaviour of Australia's big four banks (and subsequently the remaining 36 ADIs of Australia's top 40) given the eligibility of the senior tranches of RMBS as collateral for repo with the RBA's CLF, emphasises the short-sightedness of the APS 210: Liquidity. A CLF that exploits the fact that Australia's top 40 ADIs predominantly hold home-loans on their balance-sheets is a repo mechanism clearly favouring these eligible institutions. The CLF does so by allowing Australia's top 40 ADIs to self-securitise their loan books, while deeming the senior tranches of RMBS, as a result of self-securitisation, a means with which Australia's top 40 ADIs can generate liquidity during a liquidity stress event.

The APS 210: Liquidity doesn't provide liquidity and support to the NBIs comprising Australia's financial system, which though comprise a smaller portion of Australia's financial system relative to their ADI counterparts, are deeply imbedded in the financial system. The RBA's CLF does not cater for RMBS NBIs due to their inability to accept deposits and hence hold loan books on their balance-sheets. Though paling in asset size with respect to their ADI counterparts, the NBIs of the Australian financial system play an integral role, and therefore denying NBIs of access to the support mechanism that is the RBA's CLF is detrimental to the Australian financial system during a liquidity stress event.

By modifying the CLF in accordance to the recommendations made in this research report and combining the best features of the money market and repo systems of Australia, the UK and the US, the APS 210: Liquidity will be most effective in achieving its intended objectives in the long term. Combining the merits of all three systems would result in a repo system that is both self-funding (therefore cost-efficient) and non-discriminatory in that it can aid the entire Australian financial system in meeting its liquidity requirements during a liquidity stress event. Both of these features serve to support the Australian financial system, thusly achieving the intended objectives of APRA with respect to the Australian financial system in the long term.

Broadening access to the CLF to include ADIs as well as NBIs, is the first recommendation of this research report, and will ensure that in a liquidity stress event the RBA fulfils its role as the lender of last resort by providing the entire market (industry) with additional liquidity. As implemented by the US Federal Reserve Bank, supporting all participants will strengthen the entire system, rather than only supporting a subgroup of participants at the expense of the broader market (industry).

The second recommendation supports the RMBS markets while relieving both the federal government and the Australian financial system of their long term liabilities; through a modified asset swap mechanism as implemented by the UK's Bank of England. An asset swap acts as a liquidity upgrade by allowing participants to exchange eligible collateral for government bonds. Modifying the asset swap to become a transaction relieves the Australian financial system of generating short term liquidity at the expense of long term liabilities. Therefore, removing the



gearing aspect of the CLF and invoking an asset swap instead will promote liquidity by minimising liabilities and risks altogether.

Part 2 of this research report isolates each recommendation and explores the depth to which each will enhance the effectiveness with which the APS 210: Liquidity will meet its intended objectives. Therefore a CLF that caters to Australia's top 40 ADIs as well as, a similar liquidity support mechanism through a repo facility for Australian fixed income managers will benefit demand for Australian dollar denominated RMBS tranches, as it would extend regulated liquidity to the participants that transact in all tranches of RMBS.

Given the gearing restrictions that NBIs face (especially with respect to ADIs), Part 3 of this research report combines both recommendations and applies the modified CLF (in-line with the requirements of the APS 210: Liquidity) to the Australian financial system; with the outcome clearly highlighting the strength of the modified CLF in meeting its objectives given the recommendations made in this research report.

## How would such a repo facility work considering the limitation on gearing for the Managed Investment Scheme sector?

### What Is A Managed Investment Scheme?

Managed Investment Schemes (MISs) consist of many investors who “together contribute money to get an interest in the scheme.<sup>40</sup>” The pooled funds are managed collectively by an Investment Manager on behalf of the investors.

A MIS consists of various financial products including cash, fixed income, property and equities. The purpose of a MIS is to pool the funds of various investors into one aggregate fund. This gives all unit holders (investors) diversification benefits through “access to a broad range of assets or markets with a relatively small amount of cash.<sup>41</sup>” A MIS in the long run is wholly owned by its unit holders. The day to day management and administration of a MIS is the responsibility of an investment manager who oversees that the MIS’ decisions and investments converge in line with the key objective of the MIS.

Unit holders invest in a MIS by purchasing units, and can redeem their units for cash within the notice period of the MIS. The MIS will pay out its unit holders redemptions with its cash reserves, which are generated from the pool of assets the MIS owns. If the MIS does not maintain enough cash when these redemption requests are made it will need to liquidate an asset(s) to raise the cash for this redemption. MISs are not deposit taking institutions.

### The Role of Managed Investment Schemes in the Australian Financial System

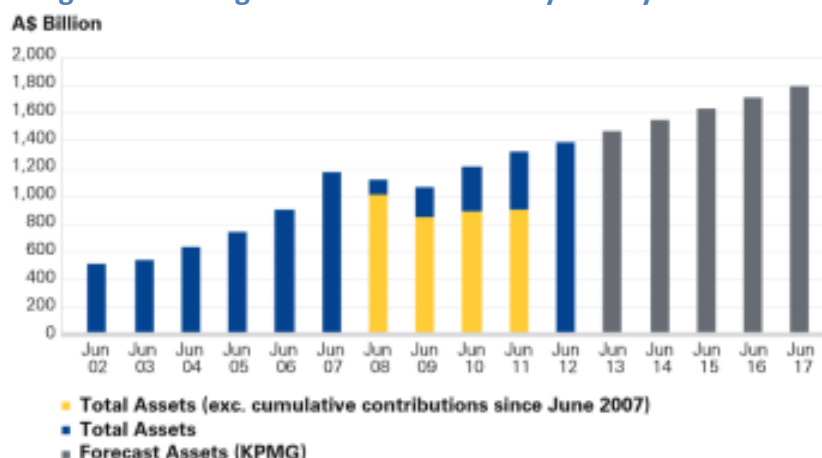
MISs have been deeply imbedded in the Australian financial system for many decades, and play an integral role as providers of various financial services; as well as giving investors alternative structures, markets, strategies and products to invest in. With compulsory superannuation as part of Australian federal policy, the managed investment industry’s role has emerged in the retail, corporate and wholesales spaces, and is a key industry in Australia’s financial system. Figure 7 below illustrates the growth in total assets invested in the managed investment industry. As a cost-efficient means of accessing various markets and asset classes otherwise inaccessible, total assets were at AUD\$1.4 trillion by the quarter ending June 2012, and grew to AUD\$1.8 trillion at the quarter ending March 2014- as seen in Figure 8 below.

---

<sup>40</sup> <http://www.asic.gov.au/asic/asic.nsf/byheadline/Managed+investment+schemes?openDocument>

<sup>41</sup> <https://www.moneysmart.gov.au/investing/managed-funds#pros>

Figure 7: Managed investment industry size by total assets



Source: APRA Statistics – Annual Superannuation Bulletin June 2011 and Apr Statistics – Quarterly Superannuation performance June 2012

Figure 8: Composition of the managed investment industry

Type of fund	Total assets (\$billion)	No. of funds	No. of accts (mil., June 13)
Corporate (a)	61.7	108	0.5
Industry (a)	323.2	52	11.5
Public sector (a)	256.8	38	3.3
Retail (a)	422.4	127	14.4
Funds with less than 5 members	560.7	531,742	1.0
Balance of statutory funds	47.8		
<b>Total</b>	<b>1,837</b>		<b>30.7</b>

Source: APRA Statistics – March quarter 2014

(a) as at June quarter 2013

The segmentation of the managed investment industry can be seen in Figure 9 below, showing the relative size (by size of consolidated assets) of the types of MISs that comprise a large part of the Australian financial system- excluding ADIs. With the managed funds industry totalling AUD\$2.307 trillion in the quarter ending December 2013, and growing to AUD\$2.338 trillion in the quarter ending March 2014, it is evident from the data that a failure in the managed investment industry would be detrimental to both the Australian financial system and the real economy.

Figure 9: Composition of the managed investment industry

	Dec Qtr 2013 \$m	Mar Qtr 2014 \$m
Total managed funds industry	2 307 516	2 338 809
Consolidated assets total managed funds institutions	1 833 104	1 857 530
Cross invested assets between managed funds institutions	475 174	480 130
Unconsolidated assets total managed funds institutions	2 308 278	2 337 660
Life insurance corporations	273 761	275 553
Superannuation (pension) funds	1 706 115	1 731 041
Public offer (retail) unit trusts	291 731	294 982
All other managed funds institutions	36 671	36 083

Source: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/5655.0>

## The Mechanics of a CLF Open to all Participants of the RMBS Market

MISs play an integral role in Australia's financial system and therefore should qualify for support in line with other financial entities as part of their day to day operations, especially during a liquidity stress event. The advantage of ADIs in being able to accept deposits to then issue loans (predominantly home loans) adds to their ability to hold more liquid assets, thereby offsetting their liabilities and being able to meet their financial obligations as they fall due. MISs conversely, are not able to accept deposits in their day to day operations, they can only accept applications. Their inability to accept deposits exempts them from banking standards and regulations, but simultaneously means that MISs are limited in their gearing capacity, unless specifically stated to the public.

The composition of a MIS' balance sheets consists of its assets (A), liabilities (L) and net tangible assets (NTA). A MIS's assets is the aggregate of all of the investments the MIS currently holds on behalf of its unit holders including cash held in the MIS' cash account(s). Equivalently, the MIS' total liabilities consist of any financial obligations that the MIS may have to fulfil in the (near or distant) future, including borrowed funds and securities from a repo or asset swap. The balance of a MIS' assets and liabilities is its NTA; defined as "the total assets of a constitutional corporation, less total liabilities of the corporation, less any intangible assets."<sup>42</sup> The stylised examples below show the mechanics of the balance sheets of a MIS. These examples contrast the accounting of a MIS given the APS 210: Liquidity as it currently stands, in comparison to the APS 210: Liquidity with the recommendations made in this research report. Assuming no transaction costs, fees and haircuts for repos, taxes, interest, and any other implicit costs to the MIS:

Take MIS<sub>1</sub>' assets (A<sub>1</sub>) as equal to the aggregate of its liabilities (L<sub>1</sub>) and its NTA (NTA<sub>1</sub>),

Therefore for MIS<sub>1</sub> given the above assumptions:  $A_1 = L_1 + NTA_1$

$$\text{And so, } A_1 - L_1 = NTA_1$$

Furthermore, once having calculated MIS<sub>1</sub>' NTA<sub>1</sub>, dividing MIS<sub>1</sub>' NTA<sub>1</sub> by the number of units on issue (in terms of MIS<sub>1</sub>' portfolio that unit holders have invested in) gives the unit price for one unit of investment in MIS<sub>1</sub>' portfolio (comprising of securities and/or cash)

If MIS<sub>1</sub> has \$100 of pooled funds invested in securities then its total assets equal \$100, therefore

$A_1 = \$100$  and doesn't have any liabilities therefore  $L_1 = \$0$ , giving  $A_1 - L_1 = NTA_1$  hence  $\$100 - \$0 = \$100$

Assuming MIS<sub>1</sub> has 100 units on issue, its unit price is therefore  $NTA_1/100 = \$100/100 = \$1/\text{unit}$

## Using a Repo Facility to Fund a Managed Investment Scheme's Redemptions

If MIS<sub>1</sub> wishes to pay its unit holders \$20 in redemptions but currently does not have the \$20 ready in its cash accounts, it can either sell a portion of its pool of securities to raise the cash or use the repo market to temporarily exchange a portion of its pool of securities for \$20 cash to fund the redemption (in reality the repo market is expected to be more time efficient than the secondary

---

<sup>42</sup> <http://www.apra.gov.au/Super/PrudentialFramework/Documents/SGN-150-1-Capital-requirements-net-tangible-assets.pdf>

market for securities and derivatives, therefore the MIS would be more inclined to fund a redemption by entering into a repo rather than trading in the secondary market for securities and derivatives).

Upon entering into a repo, MIS<sub>1</sub> will offer \$20 of its securities as collateral in exchange for \$20 in cash today, under the agreement that it will repurchase this \$20 of securities at a future point in time. After entering into the repo, MIS<sub>1</sub>' balance sheet now has non-current assets of \$100 in securities, made up of \$80 of its existing pool of securities and \$20 of unsettled future obligations (current liabilities) to purchase from the repo counterparty \$20 of securities when the repo must be settled. It also has \$20 cash (current assets) from the repo that MIS<sub>1</sub> entered into. Total assets have increased to \$120, and simultaneously MIS<sub>1</sub> has created current liabilities of \$20 (unsettled future purchase) which it is expected to repay at the maturity of the repo.

After the repo, MIS<sub>1</sub>' balance sheets is:

$$A_1 = \$20 \text{ (cash)} + \$80 \text{ (existing Securities)} + \$20 \text{ (unsettled security purchases)} = \$120$$

$$L_1 = \$20 \text{ (unsettled repo obligation)}$$

After paying the \$20 redemption to its unit holders, MIS<sub>1</sub> now has balance sheets of:

$$A_1 = \$0 + \$80 \text{ (existing securities)} + \$20 \text{ (unsettled security purchases)} = \$100$$

$$L_1 = \$20 \text{ (unsettled repo obligation)}$$

To calculate MIS<sub>1</sub>' NTA it must be considered that MIS<sub>1</sub>' creditor entry in its liabilities will only be nullified when it repays its cash loan from the repo. The debtor entry won't offset this as it's a receivable of a physical asset (repurchase obligation at a future point) and not a current asset that can be used to offset MIS<sub>1</sub>' current liabilities. By this, MIS<sub>1</sub> technically has not created liquidity, but in fact has leveraged its liquidity. Its ability to remain solvent and meet its short term obligations as they fall due may, as a result, be called into question. MIS<sub>1</sub>' investment manager would still need to sell physical assets to raise the \$20 to settle the creditors of MIS<sub>1</sub>'.

The advantage of a repo system in this instance is that it allows a MIS to receive cash to meet its financial obligations in the short term, provided that this cash balance is repaid in the future. A repo therefore provides liquidity in the short term under the assumption that the repo is unwound at a future date; a MIS repays the cash it borrowed and retains the securities it used as collateral. But as a MIS does not accept deposits, it is unable to unwind the repo it has entered into. To meet its outstanding debt and unwind the repo, a MIS will have to enter into another repo using a larger portion of its pool of securities as collateral to generate cash so that it can unwind the first repo. This will then leave a MIS with a larger debt to pay to unwind the second repo, because in reality a MIS is also subjected to fees and transaction costs for each repo it enters into. Though in the short term this repo mechanism may provide a means for a MIS to generate liquidity, in the long term it only leverages a MIS, and could lead to its insolvency.

This repo mechanism is ultimately fulfilling its role and function, but in the long term is only intended for ADIs that have (large) loan books that they can securitise, and use the senior tranches of the resulting RMBS lines as collateral for repo with the RBA's CLF (in compliance with APRA's APS

210: Liquidity). This repo mechanism, however, does not cater for the managed investment industry whose constituents are not able to accept deposits, hence does not hold loans on its balance-sheets.

### **A discount window facility that provides for a one-way asset swap of lower liquidity collateral**

The limitations of the APS 210: Liquidity highlighted in Part 2 of this research report can be alleviated with a CLF that is open to all RMBS market participants (including NBIs), and for the CLF to conduct one-way asset swaps rather than repos with eligible counterparties. Such a proposition is on the merit of constructing a repo mechanism such as the CLF that achieves the objectives of the APS 210: Liquidity's by combining the strongest features of the Australian, UK and US money market and repo systems.

A CLF that commits the RBA to its role as the lender of last resort ensures that eligible institutions undergoing a liquidity stress event will not be left to fail to the detriment of Australia's financial system, but also will not be bailed out at the expense of tax-payers. Rather, the financial system will ease these financial institutions out of a liquidity stress event at a manageable cost. The fees and haircuts associated with the CLF are commensurate with the liquidity to be provided (not the liquidity that is consumed), which limits the misguided use of the CLF, and further supports the RBA in its role as lender of last resort. These features of the APS 210: Liquidity are credit to the RBA's CLF.

A CLF that is open to both ADIs and NBIs works effectively because it isn't selective in providing liquidity. For a CLF where the senior tranches of RMBS are made eligible for repo with the RBA, this eligibility must therefore be extended to all issuers and holders of the senior tranches of RMBS in order for this regulated liquidity and support to be directed at the entire Australian financial system. Therefore by adopting a repo mechanism as is used in the US, the CLF would more effectively support the entire financial system, rather than protect Australia's top 40 ADIs at the expense of Australia's managed investment industry.

The UK's repo system conducts a liquidity upgrade by swapping a pool of eligible and high quality liquid securities for government securities (here gilts). Applying a one-way asset swap rather than a temporary asset swap would result in a self-funding CLF that still incorporates the market mechanism during a liquidity stress event, adding to the liquidity of RMBS and the wider financial system. The UK's temporary asset swap acts as a liquidity upgrade in that participants upgrade their liquidity by accepting gilts in exchange for their less liquid collateral. A one-way asset swap ensures that the CLF is still providing liquidity as it is intended to do, but requires participants to interact with the market and trade their government bonds for cash in the bonds secondary market. Simultaneously, the federal government can remain a holder of RMBS through the AOFM's existing portfolio, or it can sell its RMBS holdings when the liquidity stress event passes. Either scenario will somewhat alleviate suppressed activity in the RMBS markets (as did the AOFM's RMBS market participation post the GFC from Part 2) and delivers liquidity during a liquidity stress event at no added cost to the federal government or the Australian financial system.

In a financial system where the APS 210: Liquidity is applied in combination with the strongest features of the UK and US money market and repo systems (mentioned above), the same stylised example is explored as to how this would affect a MIS' balance sheet.

Assuming again no transaction costs, fees and haircuts for repos, taxes, interest, and any other implicit costs to the MIS:

Take another MIS<sub>2</sub>' assets ( $A_2$ ) as equal to the aggregate of its liabilities ( $L_2$ ) and its NTA ( $NTA_2$ ),

Therefore for MIS<sub>2</sub> given the above assumptions:  $A_2 = L_2 + NTA_2$

$$\text{And so, } A_2 - L_2 = NTA_2$$

Furthermore, once having calculated MIS<sub>2</sub>' NTA<sub>2</sub>, dividing MIS<sub>2</sub>' NTA<sub>2</sub> by the number of units on issue (in terms of MIS<sub>2</sub>' portfolio that unit holders have invested in) gives the unit price for one unit of investment in MIS<sub>2</sub>' portfolio (comprising of securities and/or cash)

If MIS<sub>2</sub> has \$100 of pooled funds invested in securities then its total assets equal \$100, therefore

$A_2 = \$100$  and doesn't have any liabilities therefore  $L_2 = \$0$ , giving  $A_2 - L_2 = NTA_2$  hence  $\$100 - \$0 = \$100$

Assuming MIS<sub>2</sub> has 100 units on issue, its unit price is therefore  $NTA_2/100 = \$100/100 = \$1/\text{unit}$

If MIS<sub>2</sub> wishes to pay its unit holders \$20 in redemptions but currently does not have the \$20 ready in its cash accounts, it can either sell a portion of its pool of securities to raise the cash or enter into a one-way asset swap whereby it exchanges a portion of its securities for (higher in liquidity) government bonds. MIS<sub>2</sub> then trades its government bonds for cash in the secondary market for government bonds, and uses the cash from this trade to pay the \$20 in redemptions to its unit holders.

MIS<sub>2</sub>' balance sheets after this series of transactions is now:

$A_2 = \$80$  (residual securities) + \$20 (cash) = \$100 and doesn't have any liabilities therefore

$L_2 = \$0$ , giving  $A_2 - L_2 = NTA_2$  hence  $\$100 - \$0 = \$100$

After paying the \$20 cash to its unit holders to fund redemption's, MIS<sub>2</sub> now has balance sheets of:

$A_2 = \$80$  (residual securities) + \$0 (cash) = \$80 and doesn't have any liabilities therefore

$L_2 = \$0$ , giving  $A_2 - L_2 = NTA_2$  hence  $\$80 - \$0 = \$80$ , giving a unit price of  $NTA_2/800 = \$80/800 = \$1/\text{unit}$

The above example illustrates the ability of a CLF open to both ADIs and NBIs, which uses a one-way asset swap rather than a repo to provide liquidity to the entire Australian financial system. The RBA here isn't disadvantaged as the federal government already holds a portfolio of various assets and securities on its balance sheets through the AOFM and other departments. In addition, the funding of an asset swap is automatic through existing government bonds and securities held by the federal government. The trade of government bonds for cash therefore becomes the onus of the MIS' investment manager, resulting in the RBA only facilitating part of the process rather than remaining an active party in the process until the repo is unwound.

In the absence of transaction costs, fees and haircuts for repos, taxes, interest, and any other implicit costs to the MIS, a CLF open to all RMBS market participants that conducts a one-way asset swap will ensure a liquid and self-sufficient Australian financial system that can undergo a liquidity stress event without detrimental spill over to the real economy.

In reality, transaction costs and liquidity costs would need to be incorporated in the asset swap to determine the exchange rate of eligible securities to government bonds. Their inclusion in the asset swap will also act as a penalty to applying participants to ensure that this source of liquidity is used only during liquidity stress events, and isn't considered as an alternative generating liquidity through market activity.

The following points describe the broad nature of the CLF while incorporating the recommendations made in this research report:

1. A CLF that is open to all RMBS market participants- ADIs and NBIs alike;
2. A CLF that conducts a one-way asset swap of eligible collateral for an equivalent amount of government bonds after the relevant fees and haircuts are applied;
3. A nominated size of the facility has to be made annually for an accessibility fee, equal to at least the current 15 basis points paid by eligible ADIs, that is commensurate to the size of the facility provided (not the percentage of the facility used). Managers must opt in for the facility at the start of each financial year;
4. A CLF with a corresponding set of eligible collateral inclusive of senior tranches of RMBS, and haircuts commensurate with the respective risk-weight of each category of eligible collateral. For RMBS collateral, haircuts aren't relevant to distinguish between various risk categories of RMBS as there is only one tranche of RMBS eligible (the senior tranche);
5. Variability in the size of the facility is determined by the same rules that facilities for eligible ADIs are subjected to under APRA's Prudential Standard APS 210: Liquidity;
6. Additional fees and penalties to prevent the gaming of this CLF are included in the exchange rate of eligible collateral for government bonds and securities. This exchange rate can be calculated as the aggregate of a fair value price of RMBS (as calculated by an independent price-marker) or the mid of the bid-offer spread on senior tranches of RMBS, plus an exchange fee.
7. The term to maturity of the collateral exchanged should be commensurate with that of the government bonds and securities received, noting that there may be a mismatch in duration, which will need to be hedged.

## **The Practical Application of the APS 210: Liquidity with Recommendations Applied**

The stylised examples illustrate the shortcomings of the APS 210: Liquidity if it were to be applied without the recommendations made in this research report. By applying these recommendations of a CLF that is open to all RMBS market participants, and altering the repo mechanism of the CLF such that it facilitates a liquidity upgrade through a one-way asset swap rather than a temporary repo of securities, the CLF would more strongly support the Australian financial system by providing all RMBS market participants with liquidity during a liquidity stress event. The RBA will continue to fulfil its role as a lender of last resort (here a buyer or facilitator of last resort), and aid all RMBS market participants in meeting their liquidity requirements; both in the short term and the long term.



During a stress event, the most efficient and effective influx of liquidity to support the entire Australian financial system, would be the ability of larger part of Australia's financial system to be able to transform the most prevalent assets of their balance-sheets into cash. Australia's top 40 ADIs comprise approximately 85% of Australia's financial system, and their most prevalent assets in their asset mix are their loan books. Quite fittingly, the APAS 210: Liquidity extends the RBA's repo mechanism through its CLF, to facilitate a conversion of the loan books of Australia's top 40 (and hence largest) ADIs into liquidity in the form of cash; and uses the securitisation process as the vehicle to deliver this outcome. Thus this achieves the intended objectives of the APS 210: Liquidity only in the short term.

The APS 210: Liquidity fails to achieve its objectives in the long term though, because it doesn't account for the difference in structure, and simultaneously the importance of the role, of the managed investment industry in the Australian financial system. Consequently, Australia's top 40 ADIs have a means with which they can generate liquidity from their large balance-sheets which mainly consist of home-loans, but NBIs of smaller balance-sheets are excluded from this liquidity during a liquidity stress event.

## Summary

The mechanics of a liquidity stress event such as the GFC, as explored above, is that it begins with a market failure in one or more asset classes. ADIs of large balance sheets and a high concentration of assets begin unwinding their positions in certain asset classes and securities, and a market wide sell-off in margins begins to attract capital to clear supply. The events of the GFC are a clear example of this behaviour taking place, resulting in a supply overhang of securities while demand in these markets dissipates. Security prices plummet, bid-ask spreads widen rather quickly, and financial capital deterioration begins to translate to widespread real economic losses. A liquidity stress event that prompts the largest Australian ADIs to self-securitise and repo their senior tranches of RMBS to meet their liquidity needs will result in a dislocation in the RMBS market, separating RMBS transactions of large ADIs from the remaining RMBS market. Protecting the Australian financial system through the availability of regulated liquidity, facilitated by the eligibility of senior RMBS tranches as collateral for repo with RBA's CLF, will ensure that RMBS continues to be a secondary source of liquidity in a stress event (secondary to the financial system's primary source of liquidity of government bonds and securities), and a means for which RMBS market participants, and the whole Financial system to continue to operate despite severe circumstances.

The stylised examples above show that in the absence of a liquidity stress event; and assuming no transaction costs, fees and haircuts for repos, taxes, interest, and any other implicit costs to the MIS; a MIS that utilises the RBA's CLF repo mechanism as a means to generate liquidity in the form of cash to be able to pay out redemptions to its unit holders finds itself potentially facing insolvency without gearing its balance-sheets. Therefore, by this same logic, it easy to conclude that during a liquidity stress event; and in the face of transaction costs, fees and haircuts for repos, taxes, interest, and any other implicit costs to the MIS; a repo facility that is both open to ADIs and NBIs alike, and invokes a one-way asset swap as its repo mechanism, would support the entire Australian financial system in a liquidity stress event. This repo facility does so by appreciating the role and importance of the managed investment industry, and its gearing limitations.

## Conclusion

The purpose of this research report is to explore the real outcomes of the APS 210: Liquidity, applied as per the Basel III reform, if it were to be applied as it currently stands. This research report also makes recommendations to overcome the limitations of the APS 210: Liquidity. These recommendations are both value-adding and easily integrated into APRA's APS 210: Liquidity.

The APS 210: Liquidity recognises the lack of (the highest quality) of liquidity in Australia's financial system. Through the eligibility of the senior tranches of RMBS for repo with the RBA, this reform intends to aid Australian ADIs with stronger balance sheets and less risk through a pool of better quality and more liquid capital. APRA has therefore expanded the pool of HQLA eligible for repo with the RBA's CLF, to also include senior tranches of RMBS. Furthermore, this reform has authorised Australia's top 40 ADIs (by asset size) to use their lines of senior tranches of RMBS as collateral in exchange for liquidity with the RBA. Though the APS 210: Liquidity will induce more liquidity for Australia's top 40 ADIs, it comes at the expense of the remaining RMBS market participants, the RMBS NBIs. During a liquidity stress event, a repeat of some of the events that spurred the start of the GFC are expected to re-occur. To enhance its effectiveness, this research report recommends combining the strongest features of the Australian, UK and US money market and repo systems, so as to align the outcomes of the APS 210: Liquidity with its objectives. Ultimately, taking into consideration the broader market of an asset class will deliver support and liquidity to its entire base of participants, thus supporting the Australian financial system during a liquidity stress event; in both the short term and the long term.

The discount window facilities of both the US and the UK money market and repo systems respectively, offer remedies to the shortcomings of the APS 210: Liquidity. This research report identifies that restricting the RBA's CLF to only a subset of RMBS market participants limits APRA's ability to achieve its objectives in the long-term. A CLF open to all market participants- when under certain circumstances such as a market-wide liquidity stress event- would be more effective as a last resort of liquidity. Equal access to liquidity from the RBA will support the Australian financial system through the RMBS markets, especially financial institutions that rely on RMBS to pass on cheaper loans to the real economy. Adopting this feature from the discount window facility of the US money markets ensures wide-spread support that isn't restricted to specific institutions APRA believes shouldn't fail.

The APS 210: Liquidity includes an expansion in the RBA's set of eligible securities for repo due to the shortage of Australian (and other) government bonds and securities needed to support the Australian financial system during a liquidity stress event. The CLF therefore will accept senior tranches of RMBS as collateral for liquidity from the RBA as a last resort. The shortage of government bonds and securities means a shortage in securities of the highest quality of liquidity, implying that the RBA will have to hold less liquid securities as collateral from financial institutions experiencing a liquidity gap. Modifying the CLF mechanism to a one-way mechanism of the asset swap applied by the Bank of England will result in a self-funding repo system that isn't restricted by the shortage in government bonds. With the federal government's reporting lines and existing AOFM portfolio, the federal government is equipped to invest in RMBS as the AOFM once did post-GFC. The liquidity upgrade will see NBIs upgrading the liquidity of their balance-sheets by exchanging lines of senior tranches of RMBS (and commensurate fees) for government bonds, which they can subsequently trade for cash in the Australian secondary bond market. The application of this

recommendation to the APS 210: Liquidity will also alleviate the RBA from counterparty risk as this liquidity upgrade is a transaction and not a temporary asset swap that needs to be closed out at a future date.

Appreciating the gearing challenges of NBIs of RMBS illustrates the practical limitations of the APS 210: Liquidity as it currently stands. A close look at the accounting of MISs shows that a repo requires an influx of cash (e.g. from deposits) at a future date so as to offset the liability that the MIS has entered into (the repo itself). The inability of MISs to accept deposits, as their ADI counterparts do, results in leveraging as a requirement for the MIS to unwind the repo it had first entered into to enhance its liquidity. A CLF that is open to all market participants, and provides a one-way liquidity upgrade through an asset swap, doesn't require a MIS to be leveraged. Though a one-way asset swap may significantly reduce the assets of a MIS every time an asset swap is entered into to pay unit holders distributions (holding all else constant), it ensures that the managed investment industry doesn't generate liquidity by leveraging itself. Therefore, the managed investment industry will not have to generate short term liquidity at the cost of long term liabilities.

The recommendations made in this research report will align the APS 210: Liquidity, as applied under the Basel III reform, more closely to the objectives it is intended to achieve. Though the APS 210: Liquidity seems to enhance the liquidity of the Australian financial system in the short-term if it were to undergo a liquidity stress event, its long term objectives are not achieved, and regulated liquidity and support isn't provided to the entire Australian financial system. The APS 210: Liquidity recognises that the largest share of assets on the balance-sheets of the largest financial institutions of the Australian financial system is their books of home loans. The APS 210: Liquidity offers a short term solution by allowing Australia's top 40 ADIs, and hence 85% of the constituents comprising Australia's financial system, to use securitisation as the vehicle with which liquidity can be provided to complying institutions. Limiting the eligibility of this process of generating more liquidity to the senior tranches of RMBS ensures that in holding RMBS during a liquidity stress event, the RBA isn't overly subjected to risk as it is holding the most liquid and therefore least risky tranche of RMBS. The long term implications of the APS 210: Liquidity is that its inability to cater for the RMBS NBIs comprising the remaining portion of the Australian financial system denies regulated liquidity and support being provided to the entire Australian financial system.

Applying the recommendations made in this research report will ensure that the eligibility of RMBS tranches rated 'AAA' for repo with the RBA will increase liquidity of the entire RMBS market; that a similar liquidity support mechanism through a repo facility for Australian fixed income managers will benefit the demand for Australian dollar denominated RMBS tranches; and that such a repo facility will work to take into consideration the limitation on gearing for the managed investment scheme sector.

## References

<http://www.businessdictionary.com/definition/liquidity.html>

<http://www.rba.gov.au/speeches/2011/sp-ag-231111.html>

<http://www.rba.gov.au/mkt-operations/resources/tech-notes/liquidity-facilities.html>

<http://www.apra.gov.au/Speeches/Pages/Financial-regulation-and-financial-sector-evolution---Looking-ahead.aspx>

[http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

<http://aofm.gov.au/cgs-monthly/march-2014-7/>

<http://www.apra.gov.au/adi/Documents/MBS%20March%202014.pdf>

<http://www.apra.gov.au/adi/PrudentialFramework/Documents/Implementing%20Basel%20III%20liquidity%20reforms%20in%20Australia%20-%20May.pdf>

<http://www.apra.gov.au/adi/PrudentialFramework/Documents/Implementing%20Basel%20III%20liquidity%20reforms%20in%20Australia%20-%20May.pdf>

[http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

[http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

<http://www.bis.org/publ/bcbs238.pdf>

[Macquarie Debt Market Analysis](#)

<http://aofm.gov.au/files/2013/11/AOFM-Annual-report-2012-13.pdf>

<http://aofm.gov.au/files/2013/11/AOFM-Annual-report-2012-13.pdf>

<http://aofm.gov.au/files/2013/11/AOFM-Annual-report-2012-13.pdf>

<http://abs.gov.au>

<http://www.commbank.com.au>

<http://www.nab.com.au/content/dam/nab/about-us/shareholder-centre/financial-results/documents/full-year-results-2013.pdf>

<http://www.bloomberg.com/news/2014-04-11/ing-australia-targets-deposit-growth-to-limit-reliance-on-rmbs.html#>

<http://www.bloomberg.com/news/2014-04-06/taxpayer-aid-sought-for-mortgage-bond-trading-australia-credit.html>

<http://www.bloomberg.com/news/2014-04-06/taxpayer-aid-sought-for-mortgage-bond-trading-australia-credit.html>

<http://www.rba.gov.au/publications/bulletin/2010/dec/pdf/bu-1210-4.pdf>

<http://financial-dictionary.thefreedictionary.com/Collateral>

<http://www.rba.gov.au/mkt-operations/resources/tech-notes/open-market-operations.html>

<http://www.rba.gov.au/media-releases/2011/mr-11-25.html>

[http://www.federalreserve.gov/monetarypolicy/bst\\_lendingother.htm](http://www.federalreserve.gov/monetarypolicy/bst_lendingother.htm)

<http://www.newyorkfed.org/banking/discountwindow.html>

<http://www.frbdiscountwindow.org/regulationa.cfm?hdrID=14&dtIID=77#s20151>

<http://www.smh.com.au/business/home-loans-nonbank-lenders-capturing-more-of-mortgage-market-share-20131215-2zfbj.html>

<http://www.smh.com.au/money/borrowing/more-buyers-turn-to-nonbank-loans-20120612-2079o.html>

<http://www.ft.com/intl/cms/s/0/8eebf016-48fd-11dc-b326-0000779fd2ac.html#axzz36OuGg6Bt>

[http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft\\_APS\\_210\\_Liquidity-May\\_2013.pdf](http://www.apra.gov.au/adi/PrudentialFramework/Documents/Draft_APS_210_Liquidity-May_2013.pdf)

<http://www.apra.gov.au/adi/PrudentialFramework/Documents/140130-ADI-letter-Implementation-of-the-Basel-III-liquidity-framework-in-Australia-Committed-liquidity-facility%20%28%29.pdf>

<http://www.bankofengland.co.uk/markets/Documents/money/publications/redbookdwf.pdf>

[http://www.economicsonline.co.uk/Managing\\_the\\_economy/Bank\\_of\\_England.html](http://www.economicsonline.co.uk/Managing_the_economy/Bank_of_England.html)

[http://www.dmo.gov.uk/index.aspx?page=gilts/about\\_gilts](http://www.dmo.gov.uk/index.aspx?page=gilts/about_gilts)

<http://aofm.gov.au/publications/annual-reports/annual-report-2010-2011/>

<http://www.rba.gov.au/mkt-operations/resources/tech-notes/eligible-securities.html>

<http://www.apra.gov.au/adi/PrudentialFramework/Documents/Prudential-Standard-APS-210-Liquidity-%28January-2014%29.pdf>

<http://www.asic.gov.au/asic/asic.nsf/byheadline/Managed+investment+schemes?openDocument>

<https://www.moneysmart.gov.au/investing/managed-funds#pros>

<http://www.australianbankingfinance.com/capital-markets/aofm-profitably-supports-mortgage-market/>

<http://www.australianbankingfinance.com/capital-markets/aofm-profitably-supports-mortgage-market/>

<http://aofm.gov.au/files/2009/09/12930.pdf>

<http://www.asic.gov.au/asic/asic.nsf/byheadline/Managed+investment+schemes?openDocument>

<https://www.moneysmart.gov.au/investing/managed-funds#pros>

<http://www.apra.gov.au>

<http://www.abs.gov.au/ausstats/abs@.nsf/mf/5655.0>

<http://www.apra.gov.au/Super/PrudentialFramework/Documents/SGN-150-1-Capital-requirements-net-tangible-assets.pdf>