



December 2021

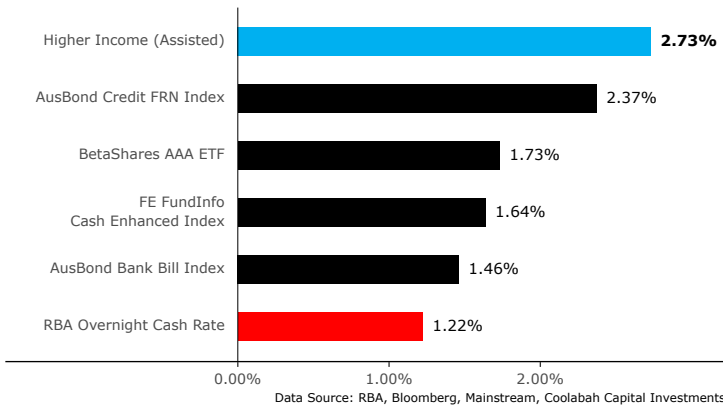
**Objective:** An independently-rated/recommended strategy targeting low-risk cash and fixed-income returns that exceed the RBA's cash rate by 1.5%-3.0% pa after fees, over rolling 12 month periods.

**Strategy:** We actively invest in a diversified portfolio of Australian deposits, investment grade floating-rate notes and hybrid securities with a weighted-average "A" credit rating. We do not invest in fixed-rate bonds (unless interest rate risk is hedged), direct loans, use leverage, or take currency risk. We add value via active asset-selection using a range of valuation models with the aim of (1) delivering lower portfolio volatility than traditional bond funds and (2) providing superior risk-adjusted returns, or alpha, without explicitly seeking interest rate risk, credit risk or liquidity risk. The strategy is managed by Coolabah Capital Investments, which is a specialist active credit manager.

Period Ending	Gross Return (Assist.)	Net Return (Assist.) <sup>†</sup>	RBA Cash Rate	Gross Excess Return <sup>‡</sup>	Net Excess Return (Assist.) <sup>†‡</sup>
2021-12-31					
1 month	0.30%	0.24%	0.00%	0.30%	0.24%
3 months	0.22%	0.05%	0.01%	0.22%	0.04%
6 months	0.27%	-0.08%	0.02%	0.25%	-0.10%
<b>1 year</b>	<b>1.24%</b>	<b>0.47%</b>	<b>0.03%</b>	<b>1.21%</b>	<b>0.44%</b>
2 years pa	2.60%	1.62%	0.14%	2.46%	1.48%
3 years pa	3.19%	2.18%	0.48%	2.71%	1.70%
5 years pa	3.28%	2.34%	0.89%	2.39%	1.45%
<b>Inception pa Oct. 2014</b>	<b>3.73%</b>	<b>2.73%</b>	<b>1.22%</b>	<b>2.51%</b>	<b>1.51%</b>

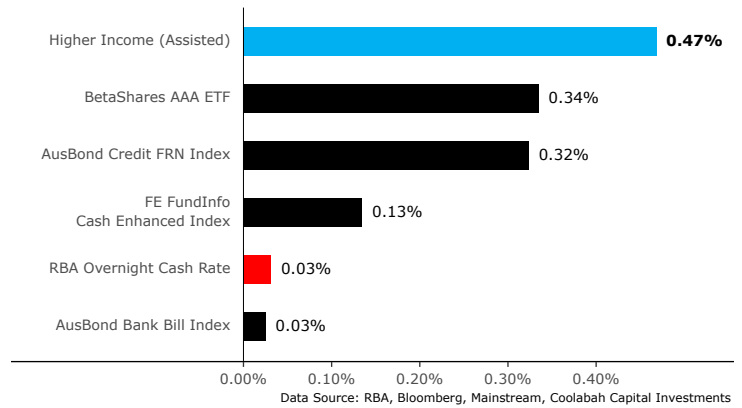
**Smarter Money Higher Income Fund Returns (Net) vs Comparisons**

Annualized Returns Since Inception in October 2014 to 31 December 2021



**Smarter Money Higher Income Fund Returns (Net) vs Comparisons**

1 Year Returns to 31 December 2021



<sup>†</sup> Net returns are calculated from the historic gross returns using the current fee structure as displayed in the Product Disclosure Statement. <sup>‡</sup> The Excess Return columns represent the gross and net return above the RBA cash rate.

**Disclaimer:** Past performance does not assure future returns. Returns are shown net of all Management and Performance fees unless otherwise stated. All investments carry risks, including that the value of investments may vary, future returns may differ from past returns, and that your capital is not guaranteed. To understand Fund's risks better, please refer to the Product Disclosure Statement available at Coolabah Capital Investments' [website](#).

Net Monthly Returns > RBA Overnight Cash Rate	80%	Gearing Permitted?	No
Portfolio Weight to Cash Securities	31.8%	1 Year Av. Portfolio Weight to Cash	17.1%
Portfolio Weight to Bonds	68.2%	Portfolio Weight to AT1 Hybrids	6.0%
Av. Portfolio Credit Rating	A+	Cash Securities + RBA Repo-Eligible Debt	75.7%
Portfolio MSCI ESG Rating	A	Portfolio Weight to ABS/RMBS	0.0%
No. Cash Securities	6	Credit Spread Duration Ex Govt	0.98 years
No. Notes and Bonds	75	Net Annual Volatility (since incep.)	0.86% pa
Modified Interest Rate Duration	0.04 years	Gross/Net Sharpe Ratio (since incep.)	2.84x/1.76x
		<b>Awards:</b> FE Alpha Manager 2019: Christopher Joye; <b>Ratings:</b> Lonsec available to advisers; Highly Recommended (Atchison); 'Superior Relatively Simple' (Foresight Analytics)	

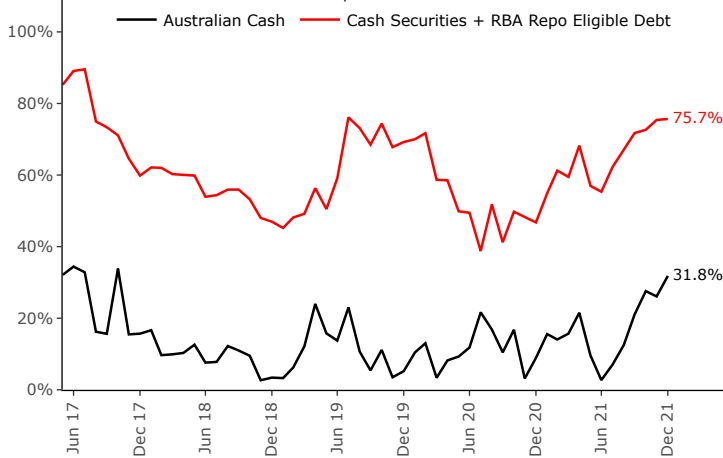
Signatory of:



Asset weighted average rating

**Portfolio Weights: Cash + RBA Repo Eligible Debt**

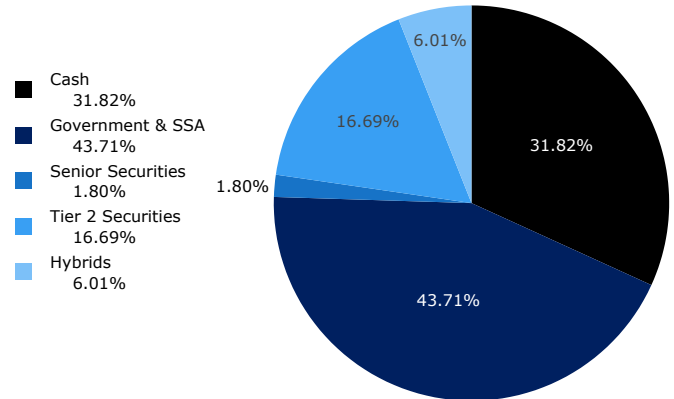
End of Month, December 2021



Data Source: Coolabah Capital Investments

**Smarter Money Higher Income Fund Portfolio Composition**

31 December 2021

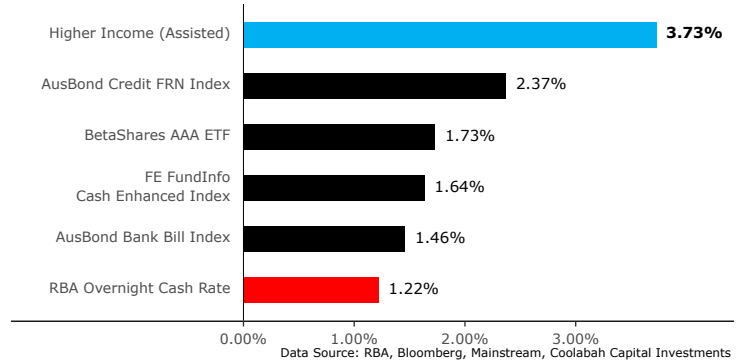


Data Source: Coolabah Capital Investments



**Smarter Money Higher Income Fund Returns (Gross) vs Comparisons**

Annualized Returns Since Inception in October 2014 to 31 December 2021



Data Source: RBA, Bloomberg, Mainstream, Coolabah Capital Investments

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The since inception gross (net) return of 3.73% pa gross (2.73% pa net) is the total annual return earned by the fund since Oct. 2014, including interest income and movements in the price of the bond portfolio after all fund fees (assuming net returns are calculated from the historic gross returns using the current fee structure as displayed in the Product Disclosure Statement). The net return quoted applies to the Smarter Money Higher Income Fund - Assisted Investor Class, with quarterly distributions reinvested. Each investor's return will vary depending upon their own investment date and any top-ups and withdrawals they make. The annualised volatility estimate of 0.86% pa is based on the standard deviation of net daily returns since inception, which are then annualised, attributable to the Smarter Money Higher Income Fund - Assisted Investor Class.

Portfolio Managers Christopher Joye, Ashley Kabel, Dr Stephen Parker, Dr Nick Campregher (Coolabah Capital Investments)

APIR Code	SLT0052AU	Fund Inception	30-Sep-14
mFund Code	SMF02	Distributions	Quarterly
Morningstar Ticker	40536	Unit Pricing	Daily (earnings accrue daily)
Asset-Class	Short-Term Fixed-Interest	Min. Investment	\$1,000
Target Return	Net 1.5%-3.0% pa over RBA cash rate	Withdrawals	Daily Requests (funds normally in 3 days)
Investment Manager	Coolabah Capital Investments (Retail)	Buy/Sell Spread	0.00%/0.025%
Responsible Entity	Equity Trustees	Mgt. & Admin Fee	0.69% pa
Custodian	Mainstream Fund Services	Perf. Fee	22.5% of returns over RBA cash + 2.19% pa

**Portfolio commentary:** In December, the zero-duration and daily liquidity Smarter Money Higher Income Fund (SMHI) returned 0.30% gross (0.24% net), outperforming the RBA Overnight Cash Rate (0.00%), the AusBond Bank Bill Index (0.00%), the BetaShares AAA ETF (0.02%), the FE Cash Enhanced Index (0.03%), and the AusBond Credit FRN Index (0.04%). SMHI ended December with a weighted-average credit rating of A+, and a portfolio weighted average MSCI ESG rating of A. Over the previous 12 months, SMHI returned 1.24% pa gross (0.47% pa net), outperforming the AusBond Bank Bill Index (0.03% pa), the RBA Overnight Cash Rate (0.03% pa), the FE Cash Enhanced Index (0.13% pa), the AusBond Credit FRN Index (0.32% pa), and the BetaShares AAA ETF (0.34% pa).

It is interesting to highlight that the much higher risk (volatility) long duration benchmark bond index in Australia, known as the AusBond Composite Bond Index, has fallen by 2.87% over the last 12 months as a result of rising long-term interest rates.

Since the inception of SMHI 7.2 years ago in October 2014, it has returned 3.73% pa gross (2.73% pa net), outperforming the RBA Overnight Cash Rate (1.22% pa), the AusBond Bank Bill Index (1.46% pa), the FE Cash Enhanced Index (1.64% pa), the BetaShares AAA ETF (1.73% pa), and the AusBond Credit FRN Index (2.37% pa). Since inception, SMHI's Sharpe Ratio, which measures risk-adjusted returns, has been 2.84x gross (1.76x net). While SMHI's return volatility since inception has been low at around 0.86% pa (measured using daily returns), as a daily liquidity product with assets that are marked-to-market using executable prices, volatility does exist. This contrasts with illiquid credit (eg, loans and high yield bonds) wherein assets that have very high risk can appear to have remarkably low volatility, which is, in fact, just a mirage explained by the inability to properly value these assets using executable prices.

**Strategy commentary:** December was a robust month for all portfolios performance-wise as the expected mean-reversion in spreads came to pass following spread widening in November. More substantively, December caps off an unusual 12 month period punctuated by a range of rare (or 'multi-sigma') external shocks, and a pandemic that refuses to abate.

The world moved into 2021 full of hope that effective vaccines would lay COVID-19 to rest. To some extent, this optimism has been validated as hospitalisations and deaths were ameliorated via the roll-out of high-efficacy inoculations.

And yet COVID-19 mutations have propagated new and even larger waves of infections via the likes of Delta and Omicron. The one silver lining is that the apparently lower severity of Omicron portends the possibility that the virus will continue to trade-off transmissibility against its human toll. The risk, of course, is that there are future variants with even more potent reproduction rates than Omicron that inflict much higher mortality.

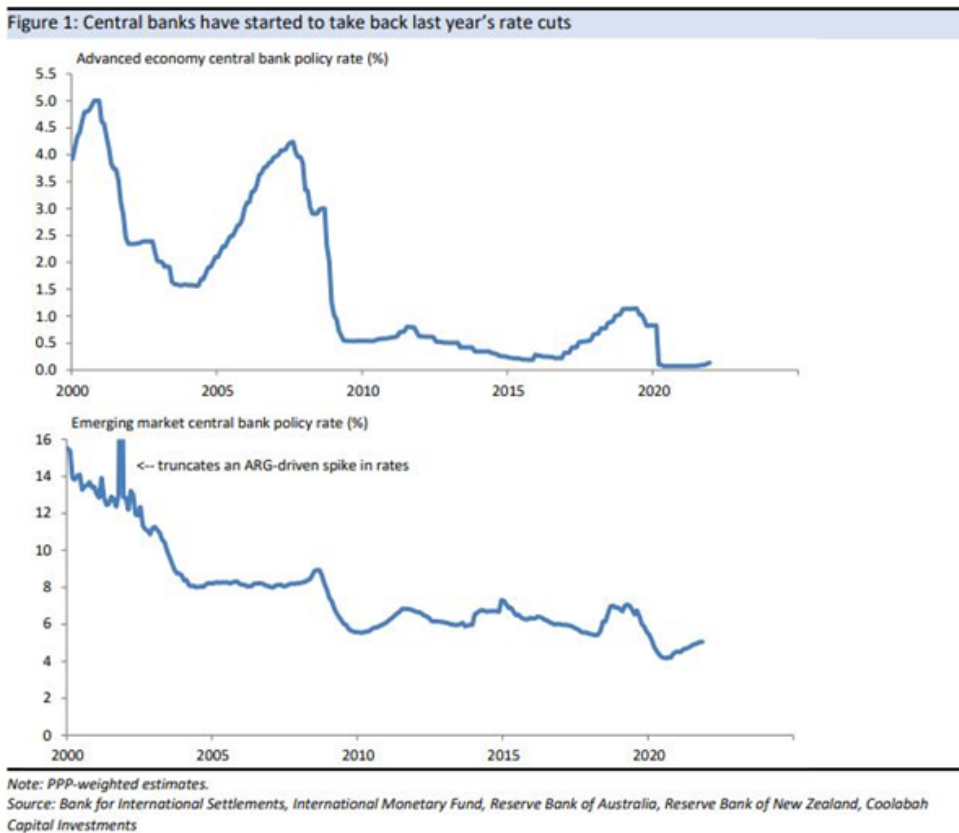
### Rates start long journey towards new-normal

The main intellectual and financial market agenda for 2022 has shifted to questions swirling around the trajectory for inflation, interest rates, and asset prices. In 2021, we saw long-term 10-year government bond yields in Australia and the US lift from 0.97% and 0.91%, respectively, at the end of 2020 to 1.67% and 1.51% by 31 December. As our Chief Macro Strategist, Kieran Davies, [observed in this Livewire piece](#), developed and emerging market central banks have started to slowly increase their overnight cash rates. This was encouraged by a resurgence in core inflation, [with the latest US numbers shocking markets to the high-side](#).

In advanced economies, the weighted policy rate across all countries has increased marginally from a record low of 0.07% to 0.14% over recent months, with 6 out of 17 central banks raising rates, the largest of which have been the UK and Korea. Prior to the pandemic, the advanced economy policy rate was 0.8%.

In emerging markets, the weighted policy rate across all economies has increased from 4.5% to 5%, with 10 out of 21 central banks raising rates and 3 banks cutting rates (Indonesia, Turkey, and North Macedonia). Prior to COVID, the emerging market policy rate was 5.5%.

Strategy commentary cont'd:



Unless COVID derails the economic recovery, the trend to higher policy rates should continue in 2022. Importantly, the US Federal Reserve recently signalled that it is likely to stop buying bonds early next year and commence the process of normalising its cash rate thereafter.

Locally, the RBA is weighing up stopping buying bonds in February, which in our view is all but certain (ie, QE should end in mid February). Yet the RBA is still reluctant to raise rates until wages growth is fast enough to keep inflation in the 2-3% target band. The RBA thinks this will probably take until 2024 - or 2023 at a stretch - but the ongoing decline in the unemployment rate raises the risk of earlier action in late 2022 or the first half of 2023.

The US Federal Reserve's preferred measure of core inflation printed at 0.5% in the month of November and an incredible 4.7% over the last year, which is more than double the Fed's 2% target. We have not seen inflation like this since the late 1980s.

After a modest uptick in core inflation in Australia, the RBA dumped two of its signature pandemic policy platforms—the 3-year government bond yield target and its long-term forward guidance—in November. And then in December it de facto confirmed that its bond purchase program would end in mid February, which is now the dominant consensus view within markets.

**Mean-reversion in December**

Notwithstanding enormous event risk in December, the projected mean-reversion in spreads materialised as had been broadly anticipated. After posting a record three consecutive monthly losses, the AusBond Floating-Rate Note Index bounced modestly in December, increasing by 0.04%. Coolabah's zero interest rate duration, or floating-rate, strategies outperformed, led by the Long Short Opportunities Fund, which returned 1.63% gross (institutional-only, not retail), followed by the Long Short Credit Fund, which returned 1.33% gross (1.23% to 1.27% net) (1.01% net USD class). In the cash enhanced category, the Smarter Money Higher Income Fund returned 0.30% gross (0.23% to 0.25% net) (0.28% net USD class) followed by the Smarter Money Fund, which returned 0.25% gross (0.18% to 0.21% net).

**Strategy commentary cont'd:** Moving to strategies that are long interest rate, or duration, risk, the AusBond Composite Bond Index returned 0.09% in December. This index only contains fixed-rate, as opposed to floating-rate, bonds with an average duration of 5.8 years. As a result of rising long-term interest rates, the Composite Bond Index had its two worst months in 30+ years in 2021 in February (down 3.58%) and October (down 3.56%). Coolabah's Active Composite Bond Strategy outperformed, returning 0.53% gross (0.46% net) in December. Over the last 12 months, Coolabah's Active Composite Bond Strategy has outperformed the Composite Bond Index by 0.70% gross (0.16% net).

There was reasonable spread compression observed across most capital structures and sectors during December. The ASX major bank hybrid curve performed well as we had assumed given the strong seasonality that tends to grip into year-end and the repayment of Westpac's WBCPG hybrid, which put \$700 million of cash in the hands of investors. The 5-year major bank hybrid curve compressed from 237 basis points (bps) above the quarterly bank bill swap rate at end November to 210bps by 31 December. One step up the capital stack, Tier 2 also rallied with 5-year major bank spreads contracting from 146bps to 138bps over the same period. Even the major bank senior curve performed somewhat, with 5-year senior spreads coming in from 71bps to 69bps.

### Bond supply expectations

We have two ASX hybrid maturities from ANZ (ANZPE) and CBA (CBAPF) in March, which should trigger replacement deals in the first few months. And Westpac has flagged it will consider an OTC hybrid issue following in the pioneering footsteps of NAB, which has consummated two OTC deals thus far.

APRA's updated Total Loss Absorbing Capacity (TLAC) regime also means that we are forecasting that the major banks will continue to issue healthy volumes of Tier 2 averaging around \$16.2 billion per year until 1 January 2026, albeit at a marginally reduced pace compared to recent years where the big four banks have issued between \$17.3-\$18.6 billion each year. Current multiples of 5-year major bank Tier 2 spreads relative to 5-year major bank senior bond spreads are sitting at circa 2 times, which is broadly in line with recent historical heuristics.

One technical we have been monitoring is the new Design and Distribution Obligation (DDO) legislation that came into effect in October 2021, which will likely see some hybrid supply shift off the ASX and into the OTC domain. ASX deals will almost certainly be somewhat smaller in size. Current 5-year major bank hybrids are sitting at a touch north of 3 times senior, which is within the historical heuristic range. If the technical of reduced ASX supply plays-out, we could see listed hybrids trade tighter than they have in the past, although this will be influenced by the levels in the OTC market where NAB's most recent security trades 80bps wide of its maturity-matched ASX equivalents.

We have recently updated our estimates of the four major banks' debt funding task over the next few years. As a result of deposit growth continuing to outstrip new lending, the big banks' funding gap has compressed. We currently estimate they need to issue about \$133 billion pa, on average, over the next three calendar years, which compares favourably to the \$147 billion pa they issued on average over the 10-years prior to the COVID-19 shock. Note, however, that funding needs are really back-ended into CY2023 and CY2024.

### NSW slashes debt issuance needs

In the State government bond market, 10-year spreads to the Commonwealth government bond yield curve compressed from 37bps to 33bps over the month (using an index averaging NSW, QTC, TCV and WATC). All the States save Victoria reported much better budget outcomes than the market had been forecasting (Victoria was in line) with material downgrades to future debt issuance consistent with Coolabah's priors. The stand-out in this respect was NSW with a stunning \$20 billion downgrade to debt issuance in FY2022 vis-à-vis bank estimates only a few months prior.

Recall NSW had shocked investors by proposing a staggering \$35.5 billion debt raise in June 2021 (about twice what the market had in mind), which Coolabah asserted would be slashed as NSW came to understand [it could draw-down on its \\$27 billion Debt Retirement Fund](#) to repay debt. This was an immensely contrarian view that no other investor we know of shared.

**Strategy commentary cont'd:** Despite an enormously expensive Delta-induced lockdown, which cost NSW's budget \$11 billion, the Treasurer was still able to announce a huge reduction in debt issuance in FY2022 to just \$27.4 billion, or \$8.1 billion less than what NSW planned before the lockdown. This was also \$20 billion less than the likes of CBA estimated NSW would have to issue after accounting for the cost of the lockdown.

This extraordinary turnaround was enabled when the Premier decided in September 2021 to draw on \$11 billion from the Debt Retirement Fund to repay debt. The NSW Treasurer subsequently resolved to further redirect up to circa \$10 billion of NSW taxpayer revenues, including royalties and state-owned corporation dividends, which had been funnelled to the Debt Retirement Fund (despite record NSW fiscal deficits), back to the budget.

Coolabah initiated an ESG activism campaign to highlight these debt repayment opportunities, which the NSW government has to its immense credit embraced. You can [read more about this topic here](#).

### **Banks need to buy \$408bn of govt bonds**

We've previously published our research on the quantum of government bonds the banking system needs to buy as a result of APRA shutting down the \$136 billion Committed Liquidity Facility and as a result of banks repaying the \$188 billion they owe under the RBA's Term Funding Facility, amongst other drivers. While our updated numbers [imply the banks have to buy about \\$408 billion of government bonds for liquidity purposes over the next few years](#), it is interesting to see how little the market and the banks themselves have focussed on their regulatory liquidity requirements over the near-to-medium term (rather than just the immediate term). There are a couple of good reasons for this.

First, investors tend to not be focussed on regulatory liquidity because it is complex and boring, and were, for example, universally surprised by APRA's decision to close the \$136 billion Committed Liquidity Facility (CLF), with material consequences for both credit (and bank bonds in particular) and government bonds (and State government bonds, or semis, more specifically).

Shutting the CLF forces banks to issue more debt to replace this facility with cash on deposit at the RBA or government bonds (both are classified as Level 1 "high quality liquid assets" or HQLA1). Government bonds encompasses both Commonwealth and State government bonds, although banks strongly prefer the latter because they pay much higher yields.

Investors seem not to have expected the 30-35bps move wider in bank-issued senior bond spreads despite us [repeatedly writing about this risk and forecasting the rapid decline of the CLF](#) (see [also here](#)).

For the banks, managing short-term funding and liquidity is the paramount priority. It is not widely understood---even within banks (albeit outside of the bank treasury teams)---just how volatile the banks' liquidity metrics are. One key metric, called the Liquidity Coverage Ratio (LCR), measures the share of HQLA (ie, government bonds and cash on deposit at the RBA) that banks hold relative to a 30-day stress-test of their expected Net Cash Outflows (known as NCOs) in a simulated liquidity shock.

It is not unusual for a bank's LCR to move by 20-30 percentage points in a single day. The regulatory minimum LCR is 100%. So banks have to hold HQLA sufficient to cover 30 days of NCOs. But because of the inherent volatility of LCRs, banks prudently hold a 25%-50% buffer above this 100% regulatory minimum to insure against the risk of sudden changes in their LCRs. This is why most bank boards target minimum LCRs of 125% to 135%.

Banks do not forecast changes in their LCRs beyond 3-6 months simply because of the complexity and challenge of managing LCRs in the short-term. And bank funding strategies are likewise very focussed on the next 3, 6 and 12 months.

This means that banks can lose sight of medium term funding and liquidity changes. One noteworthy example is the need to repay the RBA the \$188 billion the banking system borrowed under the Term Funding Facility (TFF).

Strategy commentary cont'd:

**Breaking-down the bond-buying drivers**

It is very clear that the banking system has not really turned its mind properly to what happens after they repay this money over 2022, 2023 and 2024. When the RBA established the TFF, it created digital cash in the form of deposits that banks hold at the RBA in what is known as their Exchange Settlement Accounts (ESAs).

So the \$188 billion TFF resulted in the RBA giving the banks \$188 billion of ESA cash. As the TFF is repaid, this ESA cash will disappear. Importantly, all this ESA cash is currently counted in the banks' LCRs as HQLA. And not many banks are running LCRs way above their internal targets. Repaying the TFF will therefore disappear an enormous amount of HQLA (ESA cash) that the banks will have to replace with more HQLA (ie, government bonds).

Our credit analysts have spent an enormous amount of time modelling the banking system's HQLA shortfall as a result of several variables:

- The closure of the \$136 billion CLF in 2022, which disappears \$136 billion of assets that counted in the banks' LCRs as a substitute for HQLA;
- The repayment of the \$188 billion TFF, which disappears \$188 billion of ESA cash and hence \$188 billion of HQLA;
- Growth in deposits, which generally create new NCOs, and require banks to hold more HQLA against those deposits; and
- Changes in NCOs themselves (eg, if banks try to manage NCOs).

We update these models each time banks report their financial results and their Pillar 3 numbers. We also update the models when APRA releases new banking statistics.

Following the release of the latest APRA banking data last week and all the banks' results/Pillar 3 reports, we have revised our estimates of the amount of HQLA the banking system will need to fund and buy over the next three calendar years.

What we discovered in the September quarter was that the banks had no idea the CLF closure was coming, even though APRA had written to them on multiple occasions and warned them to prepare for a world in which the CLF would be zeroed in the "foreseeable future".

Instead, we saw banks selling government bonds, or HQLA, in the September quarter to the tune of \$20.4 billion. At the same time, NCOs increased in the September quarter by 4.1%, driving yet more HQLA demand.

While NCOs normally track deposit growth, banks might try to reduce NCO growth through deposit repricing strategies, although this will cost them in both net interest margins and return on equity. And no banks really appear to believe they can fully control their NCOs (some think they can influence them at the margin).

**CCI Forecast Demand for HQLA1s from 30-Sep-21 to 31-Dec-24**

		Forecast NCO Growth qoq				
		0.0%	0.5%	1.0%	1.5%	2.0%
Forecast LCR	125.0%	247	306	368	434	504
	127.5%	265	324	388	455	527
	130.0%	282	343	<b>408</b>	477	549
	132.5%	300	362	428	498	572
	135.0%	317	381	448	519	595

**Strategy commentary cont'd:** Furthermore, APRA is making the NCO calculations tougher for banks given how rubbery some of the NCO numbers have been in the past, with APRA slapping both Macquarie and Westpac with penalties for dodgy liquidity calculations in recent times.

### CCI Forecast Demand for HQLA1s from 30-Sep-21 to 31-Dec-24

		Forecast NCO Growth qoq				
		0.0%	0.5%	1.0%	1.5%	2.0%
Forecast LCR	125.0%	175	235	300	369	443
	127.5%	191	253	320	390	465
	130.0%	208	271	<b>339</b>	411	487
	132.5%	225	289	358	432	510
	135.0%	242	307	378	452	532

Even if we assume in the most optimistic case that banks can somehow engineer zero NCO growth for three years running (ie, de facto reduce NCOs notwithstanding that the banks' balance-sheets will be expanding), and that they are also able to run lower system-wide LCRs of 125% (vs the current 130% average), they still need to fund and buy \$247 billion of HQLA over the next 3 years. That is equivalent to 2.5x standard RBA QE programs (of \$100 billion each).

There is one important difference, however, when the banks buy government bonds. When the RBA buys government bonds, it splits its purchases 80/20 in favour of Commonwealth vs State government bonds. Yet when the banks buy government bonds, the split them 30/70 in favour of State securities (or semis). This is because these assets pay a positive spread above the swap rate whereas Commonwealth government bonds do not.

### The new VaR shock in Oct/Nov may provide silver-lining

Two things may further help the banks with their bond buying. For banks that hold their government bonds in a mark-to-market portfolio, the capital they retain against these assets is determined using a Value-at-Risk (VaR) model using 2 years' worth of prior rolling data. The shock that was March 2020 should drop out of this VaR model in February next year (as two years passes), reducing the capital they have to hold against government bonds. This could be a very material change.

For those banks that have hold-to-maturity (or accrual rather than mark-to-market) portfolios for their liquid assets, which is most banks, they now have a new VaR shock in the form of the sudden spike in interest rates in October and November 2021. We know this because we run these VaR models ourselves. This new VaR shock, which for banks that were long duration was actually worse than the March 2020 shock, results in a much more favourable capital treatment for State government bonds. This is because in October/November 2021 the spread on State government bonds over the swap rate actually compressed, making banks money, whereas in March 2020 this spread above the swap rate jumped some 30-40bps.

The hold-to-maturity VaR models using 6 years of rolling data (rather than the 2 years used by the mark-to-market portfolios). Importantly, the VaR models only select one shock: so as you shift from the March 2020 shock to the October/November 2021 shock, the capital you have to hold against different types of assets can theoretically shift materially.

Put another way, the March 2020 shock resulted in banks having to hold much more capital against State government bonds because of the spike in their spreads relative to the swap rate. The move out of this shock into a new shock where State government bonds outperform could quite easily reverse this unfavourable capital treatment out.

Of course, this depends on the assets the bank chooses to hold in its liquids portfolio. Different asset mixes could result in a different shock being selected by the VaR model. Equally, though, the bank can then optimise its asset holdings to minimise its capital and maximise its return on equity given a set of capital assumptions.

Strategy commentary cont'd:

**Zombie businesses cannot survive high inflation**

Looking ahead over 2022 and beyond, the contradictory cocktail of extremely high inflation, zero interest rates, tight labour markets, robust wages growth, elevated inflation expectations, and record asset prices should have everyone exercised. But the party may not be over just yet...

As the comparatively more benign Omicron variant of the virus reinforces the new normal of coexisting with the disease, and sluggish central banks get further behind the curve, this bull market could elongate for some time.

That's what we saw in 2016 when the US Federal Reserve commenced a hiking cycle, lifting its cash rate from near-zero to above 2% by late 2018. In 2016 and 2017 equities and credit spreads both rallied. It was not until the latter stages of this tightening process, when the Fed's cash rate rose materially above 1% and the 10-year government bond yield pierced 2.5%, that credit and equities turned.

Current conditions are, however, different because of the absence of an inflation shock between 2016 and 2018. To better understand the downside risks, it's worth considering the deep disconnects in both the data and monetary policy settings.

The cyclically-adjusted Shiller price/earnings ratio for the S&P500 is currently at its second-highest level (39 times) in the last 140 years, surpassed only by the 2000 tech boom when it hit 44 times. Note that peak was quickly followed by a 50% drop in US shares over the next two years.

Given the apparent relationship between extreme deviations in the Shiller price/earnings ratio and sharp subsequent draw-downs, investors should have pause. Based on the average level of this benchmark over the last 20 years, the US equities market looks 40% overvalued.

Following the "tech wreck", the Fed quickly reacted via the infamous "Greenspan put", slashing its cash rate from 6.5% (!) all the way down to 1% by 2003. The Fed could provide this support because core inflation was benign and sitting around its 2% target.

Since 2000 there has been a correlation between rising equity valuations and declining long-term interest rates, which makes sense given the latter are the discount rates used to price the present value of a company's future cash-flows.

The currently very low US 10-year government bond yield of 1.5%, which is a key discount rate proxy, is less than half its average level since 2000, and a full 100 basis points below the Fed's 2.5% estimate of its so-called "neutral" cash rate. This is the interest rate the Fed would maintain if inflation was bobbing around its target and the labour market was fully employed. It is conspicuously much lower than the interest rates required to bring a bona-fide inflation outbreak back to earth.

This is where the financial market outlook gets gnarly. There is an unprecedented divide between the current US inflation pulse and the monetary policy settings of the world's most important central bank. The Fed's preferred measure of core inflation is running at 4.8% on a six month annualised basis or 4.1% year-on-year, which is the highest level recorded since the early 1990s (and double the Fed's target).

To make matters worse, burgeoning price pressures are impacting the way households think about their future with consumer inflation expectations rising to between 4-6%, the loftiest levels since the early 1990s.

The transitory inflation thesis attributed these price spikes to supply-side blockages precipitated by the pandemic, which was undoubtedly a driver of the first-round effects. Unfortunately, there is evidence that a wage-price spiral may be developing.

The world's largest economy is recording the briskest wage growth since the early 2000s. On a six month annualised basis, US wages have expanded at a 4.1% pace. Combined with a very low jobless rate of just 4.2% (close to estimates of full employment), expectations of a higher cost of living may be fuelling more assertive wage claims, which workers can make as the balance of power shifts from employers to employees.

**Strategy commentary cont'd:** Since the GFC, we've argued that continuously trying to mitigate all economic woes by running zero interest rate policies coupled with never-ending money printing that funds unsustainable fiscal stimulus will ultimately end in an inflation crisis.

Policymakers have got into the habit of **thinking they can disintermediate markets** with their own unilateral price settings by having central banks buy trillions of dollars worth of privately traded assets. By bidding up these prices, the monetary policy mavens reduce the cost of both debt and equity capital to levels that participants have never previously seen. Hence the sub-2% home loan rates Aussie households have recently benefited from.

There is, of course, a role for all these tools when we get genuine market failures driven by exogenous shocks. The pandemic was the best possible example of this type of external event. But once the shock passes, the world should normalise.

Instead, governments seem hell-bent on trying to disappear the business cycle even when some of its volatility is an inherently endogenous part of a capitalist system that tries to punish bad businesses and encourage more productive firms to rise-up in their stead.

The GFC was one such internal shock resulting from a misallocation of labour and capital driven by the artificially cheap money that flowed from Greenspan's put. It warranted "creative destruction" in the form of overly levered businesses failing and their capital and labour shifting to more viable concerns. But many were kept on life support.

The moral hazard of having central banks and treasuries constantly bail-out bad businesses since 2007 has led to the rise of "zombie firms" that have earnings that cannot cover the interest repayments on their debts. In the US, around 15-20% of all **listed businesses now meet this definition**.

Crucially, the post-GFC policy reflex of pouring public money on all private problems only works for as long as there is no inflationary cost. While that was true of the last decade, it is no longer true today, which is what makes this cycle different.

For the first time in a long time, we may face an unavoidable inflation-induced reckoning. To re-anchor inflation and consumer expectations, central banks may have to lift interest rates well-above their neutral levels. Much higher discount rates may in turn compel a savage downward rerating of asset prices.

Two simple examples illustrate the lurking risks. Aussie house prices have appreciated more than 30% since mid 2019 simply because mortgage rates declined by 100-125 basis points. If mortgage rates return to their mid 2019 marks, one should expect house prices to do likewise.

Along similar lines, the US equity market is 27% higher than its pre-COVID levels. While it made sense for companies to recover the price falls they suffered in March 2020, the stunning increase in valuations beyond the prior peak must be at least partly attributable to the extreme fiscal and monetary policy stimulus that firms have profited from despite fully employed labour markets and above-target inflation.

There is further downside if one then bakes-in higher discount rates. The S&P500 was, for example, some 50% below its current level the last time the US 10-year government bond yield traded above 3% in late 2018.

Geo-politics, long neglected by markets, may also come into play. The machine learning models **we developed to predict the probability of major power war** using hundreds of years of data handicap the chance of a US-China conflict at almost 50%. If we were President Xi, we would take Taiwan while the insipid President Biden is in power. If he delays, he may have to face a second Trump term, which would raise the stakes of a truly existential military crisis. And if we were President Putin, we would retake eastern Ukraine at the same time as Xi unifies Taiwan so as to splinter the Western allies.

**Strategy commentary cont'd:** One mitigant is that the global economy is now so drunk on cheap money, and so heavily indebted, that central banks may not have to lift rates far to crush inflation. This implies that the neutral cash rates may be lower than they have been in the past. But 100 basis points of mortgage rate hikes will still drop Aussie house prices by 15-25%. And some sort of mean-reversion in discount rates should similarly push global equity valuations down.

When all this comes to pass is an open question. If history is any guide, there may be further asset price appreciation until markets are convinced interest rates are heading into genuinely restrictive territory.

### **Machines invading bond markets**

In closing, allow us to address the chatter about “credit”—otherwise known as the bank and corporate bond market—becoming “the next quant revolution”, as the Financial Times recently described it. There is certainly some merit to this idea.

The \$52 trillion, over-the-counter (OTC) global credit market is among the most inefficient asset-classes one will find. We’ve traded many tens of billions of dollars of physical bonds this year. And yet the price and size of those transactions are not disclosed in the way that they are in, say, listed equities.

Here Australia is different to the rest of the world. If you trade bonds in the US and Europe, there is some delayed price and volume reporting. In the US, price and volume reporting within 15 minutes is mandatory. While it is voluntary in Europe, most banks report trades immediately, although they do have the option of suppressing information should they deem it sensitive.

In Australia, the regulator has for some reason not got around to insisting that the ASX, which owns the monopoly clearinghouse, Austraclear, provide comparable levels of transparency. (We’ve repeatedly pushed for this, but to no avail.)

Imagine if you bought and sold billions of dollars of equities on the ASX, but nobody ever saw the price and volume associated with those transactions. That is what Aussie credit is like. Market-makers in bonds have always opposed price and volume transparency, arguing that it hurts the profitability of their business, and their capacity to inventory risk and intermediate flows. The counter-factual is that the global equities market has managed fine using a pure broking model without the need for market-makers acting as principals.

If global bond trading shifted to exchanges, there would likely be improvements in transparency and liquidity with a reduction in transaction costs. One interesting case study in this context is the ASX hybrid market. During the shock of March 2020, liquidity in many parts of the Australian corporate bond market evaporated.

And yet liquidity in the ASX hybrid market was outstanding. We observed daily turnover in ASX hybrids rising from around \$40 million per day, on average, prior to the pandemic to over \$100 million per day at various points during March 2020.

The main difference between BBB- rated ASX hybrids and BBB-rated OTC corporate bonds is their trading environment. The power of a listed exchange is that it forces all buyers and sellers transparently together into a single platform. By providing immediate price and volume reporting, the exchange gives participants confidence that they can execute orders in all environments.

In contrast, the physical OTC bond market is an informational black hole. Academic research has demonstrated that when there are extreme information asymmetries, you can get outright “market failures”, which is what we observed in OTC credit in March 2020. There were some notable exceptions, such as the major banks’ senior bonds. These assets have unusually high credit ratings, which signal very low risk, and are eligible for the RBA’s repurchase facilities.

Another important feature of OTC bond markets is that a bilateral trade between two parties means that machines, or computer-based algorithms, cannot compete. If we call-up CBA, and ask, “Can you sell me \$10 million NAB Tier 2 bonds”, only the two parties involved get access to this information. This is very different to loading-up a bid on to the ASX for NAB shares where everyone in the world can directly compete with your flow.

**Strategy commentary cont'd:** Bilateral trading in this manner makes OTC credit effectively a “walled-garden” that is inaccessible to machines. This is why systematic “quant” strategies have been historically rare in credit markets. If you are not executing electronically, it is very hard to build an algorithm to pick-up the telephone, or to jump into Bloomberg chatrooms, and engage with counterparties looking for opportunities to buy and sell.

The advent of electronic trading platforms for OTC credit, including the likes of YieldBroker, MarketAccess, TradeWeb, and Bloomberg is, however, starting to change the market. Electronic trading allows for straight-through processing of transactions and the development of bona fide algorithms for executing orders. Increasingly, there are also artificially intelligent systems that can act as digital market-makers.

The need for algorithmic market-making is being amplified by the advent of passive ETFs, and the preponderance of passive styles more generally, which want to execute large numbers of transactions across portfolios comprising thousands of positions. In practice, this is easier for a machine, rather than a human being, to manage.

In Europe, as much as 60% of the total value of OTC credit trading is now executed via electronic platforms. This is greater than the circa one-third share of e-trading in US credit, possibly because of the more dispersed nature of the European market where more banks compete for business.

The emergence of liquid electronic platforms has in turn enabled the development of artificially intelligent market-makers, which are slowly cannibalising the flows that would have once been the domain of human traders.

It is not clear yet whether this is actually changing the informational efficiency of the market. The main driver of both platform and algo trading has been passive products and ETF strategies, which are both informationally agnostic: they are allocating capital based on index weights, not on the basis of what assets are rich or cheap. This unambiguously detracts from, or reduces, the price efficiency of bond markets.

One benefit of these developments has arguably been liquidity, although perhaps only during benign market conditions. The ETF revolution has given vast volumes of retail money access to the once impenetrable OTC bond market. Yet to the extent that these capital flows are herd-like in their movements, sudden shifts into and out of an asset-class can make market liquidity one-sided.

Some argue that this is what afflicted liquidity in bond markets in March 2020 when the dominant passive investment flows suddenly wanted to exit at the same time. We certainly saw passive ETF products start trading at material discounts to their claimed net asset values, which were stale.

It should not, therefore, be surprising that we generally find that OTC credit markets are much slower to react to material news events than their more informationally efficient equity cousins.

When discussing which asset-classes lead others, some claim that bonds are, in fact, smarter than equities. By bonds, folks normally mean the interest rate futures and derivative markets, which are mostly exchange traded and immensely price efficient. In our experience, it is much more difficult to identify mispricings in interest rate derivatives than it is in the opaque and often very sluggish OTC credit markets.



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