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INSIGHT

Cash Portfolios in a Low Interest Rate Environment

The past three years have been unusual from the perspective of Australian investors investing in the domestic money markets. The period was characterised by low volatility in interest rates, a steeper than average short-end curve, reasonably attractive credit spreads, and a cycle of widening BBSW/OIS basis at quarter end.

The resumption of monetary easing by the Reserve Bank of Australia (RBA) signals the start of a new phase, characterised by even lower interest rates and, at least for now, a flatter yield curve.

by Kashi Trathen, Helen Tu & Sjoerd Kitzen

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DEBT INVESTMENTS

In this paper, we examine what a period of structurally low interest rates mean for money market investors. We outline the primary sources of cash portfolio returns versus the bank bill benchmark. We then investigate how much these factors have contributed over the past three years, and whether this is likely to change in the future.

We conclude by putting forward some potential future opportunities and sources of above benchmark returns, and emphasise that cash remains an important asset class, even when rates are very low.

Sources of cash portfolio relative return

From 2016-19, cash portfolios were generally able to outperform their benchmark, whilst still being managed with very conservative constraints.

The outperformance of money market portfolios versus their benchmarks had four key sources:

1. Steepness of the Bank Bill Swap Curve ('roll down' and 'carry')
2. Margins on negotiable certificates of deposit (NCDs), floating rate notes

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(FRNs) and term deposits (TDs) ('credit spreads')

3. Changes in interest rates ('duration' or 'dv01')
4. Changes in credit spreads ('credit spread duration' or 'cs01')

Below we examine how these sources contributed to returns over the past three years, and whether or not we believe they are likely continue to generate outperformance versus the benchmark.

Source 1: Curve steepness

The period from mid-2016 to mid-2019 was characterised by a steeper than average Bank Bill Swap Rate (BBSW) curve. Typically, curve steepness accompanies a cycle in which interest rates are rising. However, in this instance, it occurred despite the absence of RBA interest rate hikes. This is an important observation, because lengthening duration to take advantage of a steeper curve can involve underperforming when the cash rate increases. This recent time period has been somewhat unique in the sense that curve steepness provided a consistent source of additional returns versus the benchmark, without the offsetting negative impact of rate hikes.

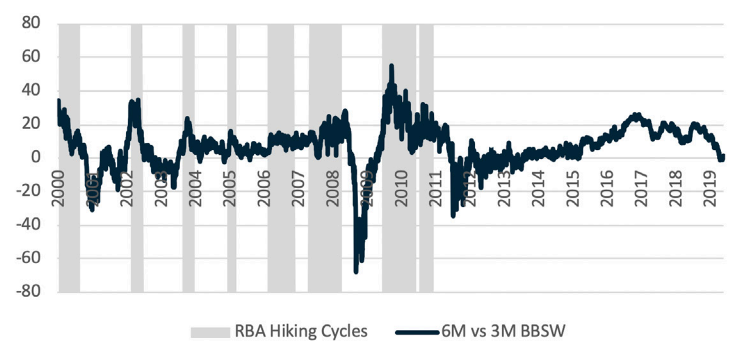
Graph 01 shows the spread between three month and six month BBSW. The grey highlighted areas show periods when the RBA was increasing the cash rate.

From the first quarter of 2019, the curve steadily flattened as funding stress dissipated, and markets began to expect a reduction in official interest rates. Graph 02 shows the BBSW curve in September 2018 compared to July 2019.

When the interest rate curve is upward sloping, it is generally profitable to hold securities with a longer maturity than the benchmark.

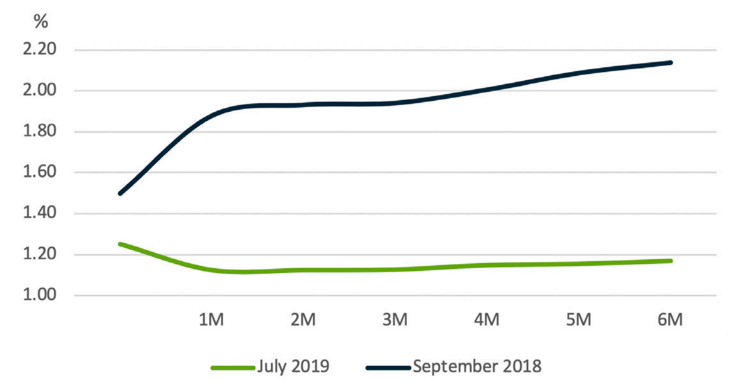
> **We calculate that the curve steepness observed from 2016-19 could have added from 6 to 8 basis points of annual performance to a typical cash portfolio, compared to a flat BBSW curve.[1]**
>
> Kashi Trathen

GRAPH 01 **6-MONTH VERSUS 3-MONTH BBSW**



All previous episodes of curve steepness occurred when official interest rates were being increased. **Source:** RBA, ASX, Bloomberg (June 2019)

GRAPH 02 **THE BBSW CURVE HAS FLATTENED**



Source: RBA, ASX, Bloomberg (June 2019)

How much did roll down and carry add to performance?

In the three years prior to the June 2019 RBA rate cut, the average spread between three month and six month BBSW was 16.1 basis points.

We calculate that the curve steepness observed from 2016–19 could have added from 6 to 8 basis points of annual performance to a typical cash portfolio, compared to a flat BBSW curve.[1]

This calculation makes the assumption that portfolio duration in a typical portfolio was around 65 days (i.e., 20 days longer than benchmark), and that all of this additional duration was derived from six-month NCDs, which were rolled every three months. It ignores the effect of client

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Example of rolling a six-month NCD

In September 2018, an investor could buy a six-month NCD at a yield of 2.14 per cent. Assuming rates remained unchanged, three months later, the same security could be sold as a three-month NCD at a yield of 1.94 per cent. The total annualised return over this three month period is equal to 2.33 per cent, the starting yield of 2.14 percent plus an additional 19 basis points, annualised from the security rolling down the curve and being sold at a more expensive yield.

Throughout this period, the combination of higher initial yields plus attractive roll down made it difficult to justify not being 'long duration' versus the benchmark. Furthermore, this long duration position had the added benefit of generating even higher returns when interest rates declined.

Today (July 2019), the situation is different, as the curve is much flatter. An investor can purchase a six-month NCD at 1.17 per cent. In three months' time (assuming rates don't change), it can be sold at a yield of 1.13 per cent, resulting in a total performance of 1.21 percent over the three-month period. An investor may still generate additional returns in the event of further interest rate cuts, however instead of earning 19 basis points from roll down, the investor will only earn 4 basis points.

This example is for illustrative purposes only and does not reflect actual results.

GRAPH 03 12-MONTH FRN MARGINS VERSUS 6-MONTH/3-MONTH BBSW SPREAD

Source: Bloomberg, ASX, NAB, June 2019

cash flows and market movements over the period. Nevertheless, it is clear that the steepness of the curve is a significant factor in overall portfolio performance.

As at July 2019, the curve is flatter than it has been during the past few years, potentially reducing this particular source of return, should the current circumstance persist. We would emphasise that there can still be curve steepness in a very low interest rate environment, especially if funding stresses reoccur, or if the economic growth outlook improves and the RBA is no longer expected to reduce interest rates. As a result, portfolio positioning will likely need to be more flexible in the future to take advantage of the eventual re-emergence of curve steepness.

Source 2: Margins on NCDs, FRNs and TDs ('credit spreads')

Spreads on NCDs, TDs and notice deposit accounts are, for most cash portfolios, the most significant driver of outperformance. Over the past three years they have accounted for around half of cash portfolio returns relative to the benchmark. Spreads on these instruments are often negotiated, and tend to be quite stable over time. We often see attractive spreads from new entrants to the Australian market. As these banks become established, they tend to be less willing to grow their balance sheet at any expense, and spreads can contract a little. IFM Investors maintains dozens of relationships with domestic and international banks, and allocates funding opportunistically to take advantage of the best value spreads on offer at any given time.

Spreads on FRNs tend to vary, based on supply and demand dynamics. They are also correlated with bills/overnight indexed swap (OIS) spreads, since banks typically need to issue more at times of high funding pressure. The vast majority (over 95 per cent) of FRNs are issued by Australia's major banks.

Discount margins varied significantly from 2016–19. In our experience, FRNs tends to (conveniently) be more readily available when margins are wider. Our experience is that these can make up between 10 and 30 per cent of our holdings at any given time and we do not believe these spreads are significantly correlated with the outright level of interest rates, however they do exhibit some correlation with the level of curve steepness. Graph 03 shows 12-month FRN discount margins since 2015, plotted alongside the spread between three and six-month BBSW (a measure of curve steepness).

It is reasonable to assume that, during a period of lower rates and a flat curve, margins on FRNs and other products could compress further, although we note that there are many other exogenous drivers.

Looking ahead, we believe contracting spreads will likely benefit portfolio returns over coming months, however over the medium to long term, structurally narrower

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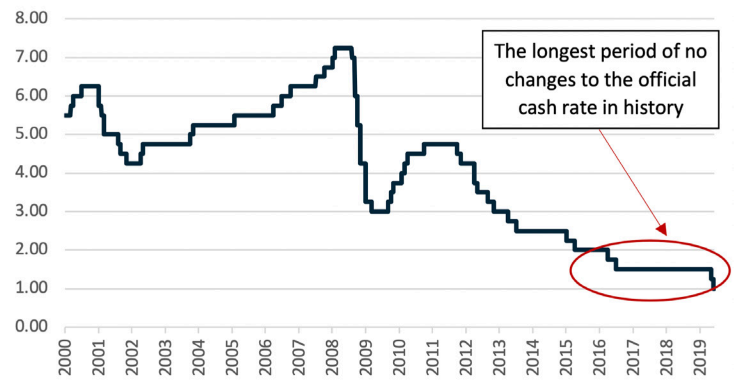
spreads will likely require portfolio managers to examine other sources of return (discussed later in this paper).

Source 3: Changes in interest rates ('duration' or 'dv01')
As discussed previously, in the context of curve steepness, portfolio duration tends to be structurally longer than the benchmark, due to a typically upward sloping BBSW curve. This long duration position benefited returns as interest rates declined. This was most notable in 2016, and again in mid-2019 to a similar degree.

During the period from 2016 to mid-2019 we also saw reduced contribution to performance from interest rate duration. In fact this was the longest period in history during which there was no change to official interest rates in Australia.

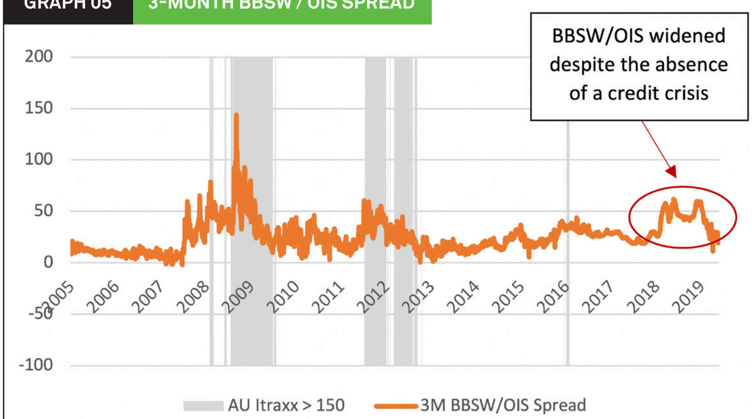
Looking ahead, we anticipate interest rates will remain low for some time, hence we are unlikely to derive as much additional performance from being long duration. Nevertheless, even in a period of stagnant interest rates, duration performance can still be derived from movements in BBSW/OIS spread and credit spreads.

GRAPH 04 RAB OFFICIAL CASH RATE – 'THE LONG PAUSE'



The RBA kept the official cash rate target at 1.5 per cent from August 2016 until June 2019.
Source: RBA, Bloomberg

GRAPH 05 3-MONTH BBSW / OIS SPREAD



Past episodes of widen Bills/OIS spreads have occurred during credit crises.
Source: RBA, ASX, Bloomberg, June 2019

Source 4: Changes in spread ('credit spread duration' or 'cs01')
It is possible to generate additional performance by lengthening duration when credit spreads – broadly defined as a margin over the risk-free rate – widen beyond certain levels.

In 2018 the spread between the yield of bank bills and the OIS rate experienced significant volatility. The bank bills/OIS spread is well known as a measure of funding pressure. In particular, around the March, June and December quarter ends, spreads widened to levels typically seen only during crisis moments, such as the 2008 global financial crisis or the 2011-12 European sovereign crisis. Graph 05 shows the spread between three-month BBSW and OIS, with grey shaded areas showing times when Australian Itraxx – a measure of credit market stress – was above 150 basis points.

In other words, during 2018, bank bill yields were significantly higher than the risk-free rate in the absence of a credit event. This created opportunities for money market investors to lock in higher returns. Portfolio duration could be maintained near the benchmark leading into quarter end, and lengthened once bills/OIS spreads widened to a certain level, or simply lengthened in the days leading up to and immediately following quarter end.

Adding 20 days' duration to the cash portfolios near the peak of each spike in bank bills/OIS spreads could have added around 5 basis points of performance to a typical cash portfolio over calendar year 2018.[2]

There were several causes for these spikes in short-term funding spreads[3]:

- A shortfall between the rate of growth in bank deposits and bank loans
- USD Libor/OIS
- Cross currency basis
- Elevated secured funding rates (the repo market).

It should be noted that it is possible to measure how specific contributors to return will change given new market

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[3] For a more detailed explanation, please refer to our earlier papers on this subject: June 2018 quarter developments in short term funding markets and A primer on recent developments in short term funding markets.
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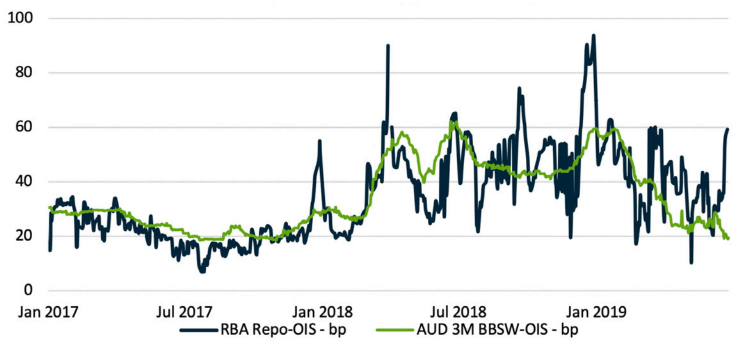
GRAPH 06 RBA REPO VERSUS 3-MONTH BBSW (SPREAD OVER OIS)



Source: RBA, ASX, Bloomberg, June 2019

conditions, however it is more difficult to model how investors may be able to respond to these conditions. For example, even if FRN margins narrow slightly, an investor could theoretically still derive more outperformance from FRNs by increasing the allocation to them, since they outperform six-month bank bills to a greater degree when the curve is flat.

Sources of future potential cash portfolio returns

Investing in the repo market

Repurchase agreements ("repo") are becoming an increasingly important source of funding for banks and foreign investors, and have an economic effect akin to secured loans. Current market inefficiencies periodically give rise to opportunities to lend cash out on a secured basis at higher yields, compared to unsecured lending.

The inefficiency in the Australian domestic repo market is driven by both constraints in the supply of funding and high demand by participants, as evidenced in quarter end spikes in the repo rate versus BBSW. In addition, secured funding transactions are expected to become increasingly important and used by a greater proportion of the market.

On average, overnight repo traded at 1.81% during 2018 – 31 basis points above the cash rate. If repo were merely used as an alternative to holding cash in an 11 am account, returns could theoretically be increased by 1-2 basis points across a typical cash portfolio.[4] Additionally, periodic spikes could be exploited by switching out of other money market instruments.

Potential portfolio impact of using repo

As they may impact return outcomes, repo could potentially be used as a complementary product, and only if the risk-adjusted return were deemed satisfactory when compared to 11am deposits and term deposits. Therefore, the aim of including repo would be to enhance portfolio returns at lower risk. We believe overall portfolio returns could be improved by 4 to 5 basis points by allowing investment in repurchase agreements[4].

With respect to repo investments and liquidity, they are longer than 'overnight', and market convention means they are typically held to maturity – although investors are still able to exit a position earlier, subject to a break cost. The use of repo would therefore need to be carefully considered in conjunction with existing exposures to illiquid asset classes. However, the majority of repo transactions are one month or shorter in tenor, and generally no longer than six months. As a result, we believe they can potentially be used as a secured alternative to 11am cash and term deposits.

In terms of reducing credit risk, repo counterparties need to be selected after careful consideration of their creditworthiness and capabilities, both in terms of their depth of experience and market-making capability. In addition, repo transactions can be collateralised with government and semi-government securities, which can help to maximise the recoverable amount in the event of default.

Globalising cash to improve returns

Another potential source of cash return, particularly for large institutional investors, is to buy highly rated foreign currency denominated paper and hedge it back to AUD using FX swaps. This takes advantage of the positive AUD cross currency basis, and often negative cross currency basis for 'funding' currencies like JPY and EUR.

Cash investors who are able to globalise their portfolios and implement robust hedging processes will likely benefit from this additional source of return over the coming years, particularly as the pool of retirement savings outgrows the Australian market.

Seeking returns in a low interest rate environment

Overall, IFM Investors believe some sources of portfolio returns versus benchmark will be lower in the environment we are about to enter, compared with the period from 2016–19. However, we have been in this situation before, and experience tells us that when one source of return evaporates,

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Example: Buying a Three-Month Japanese Government Treasury Bill

- Purchase a three-month JPY-denominated Japanese Government treasury bill at an outright yield of -0.14%
- Enter an FX swap, to sell AUD/buy JPY T+1, and buy AUD/sell JPY in three months' time
- Receive a fully hedged AUD yield equivalent to 3M BBSW + 33 basis points.

There are a number of advantages that can emerge from this arrangement, including:

- Additional portfolio diversification from investing in sovereign debt.
- These trades can be highly opportunistic. This is because the cross currency basis can be volatile, so positions can be entered when distortions in the market create the opportunity to achieve significantly above average returns.
- Short tenor means there is negligible mark-to-market impact from fluctuations in basis and interest rate differentials.
- It can overcome size limitations in the Australian money markets.

This example is for illustrative purposes only and does not reflect actual results.

other opportunities arise to take its place. The best historical example of this was when term deposit margins narrowed precipitously in 2014, only to have a range of notice deposit products emerge six month later that offered even better yields.

Looking ahead, we see compelling potential for instruments such as repo and hedged foreign treasury bills to enhance cash returns, especially if periodic funding pressures emerge, such as those seen in 2018. We also continue to actively seek new sources of return, and to negotiate the best possible margins with counterparties.

Cash is still important (even when rates are zero)

There has been some recent discussion in the investment community about what cash allocations would look like in a world where rates are zero. It has been suggested by some that cash positions may be reduced if yields declined. While asset allocation considerations are outside the scope of this paper, we nevertheless question this idea. In a world of zero rates, depending on the macroeconomic path taken to get there, liquidity and preservation of capital are likely to have become more important than the level of outright returns.

Zero rates will likely coincide with risk assets being expensive relative to historical averages. Therefore, it is likely, in our view, that investors will be cautious as risk asset valuations reach a cyclical peak. In such a scenario, despite low rates, cash as an asset classes will offer a highly liquid, low-risk store of value at a time when everything else looks expensive.

> **Looking ahead, we see compelling potential for instruments such as repo and hedged foreign treasury bills to enhance cash returns in the future.**
>
> Kashi Trathen

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