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International bond diversification – still the right strategy?

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Over each of the past five years, the returns on a diversified international bond portfolio fully hedged back into Australian dollars have well exceeded the return realised on a typical Australian bond portfolio. As a result, many fixed interest clients are looking to increase allocations to international bonds. This paper examines some of the reasons why international bond portfolios have outperformed their Australian counterparts and asks whether this is likely to continue. It also considers what this means for current portfolio construction considerations as, in a rising yield curve environment, tactical asset allocation will become more important to help minimise potential losses from longer duration international bonds.

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In recent years, the investment community has looked to increase allocations to international bonds in preference to domestic bonds. The following reasons are often cited:

- duration – the longer duration of international bonds is a better hedge when bonds are being used for liability matching;
- diversification – the low correlation between the returns on international and domestic bonds is a source of value to a diversified asset portfolio;
- credit – the ability to invest into credit requires investors to look at offshore names so as to diversify across issuers;
- supply – investors are concerned that the domestic market may not be able to meet demand as supply of government bonds falls; and,
- performance – international bonds have outperformed local indices (Figures 1 and 2).

This paper focuses in particular on the last point and explores why international bonds have outperformed domestic bonds, despite the spread advantage of the local market, and what this means for investors.

Figure 1: Performance – 5 years to 30 June 2006

ASSET CLASS	STD DEV (%PA)	RETURN (%PA)
AU BONDS	3.31	5.87
INT'L BONDS	2.77	7.14
AU SHARES	10.47	12.67
CURRENCY	8.32	4.55

Notes: Australian bonds is represented by the UBS Composite All-Maturities Australian Bond Index. International Bonds is represented by the JP Morgan Global Government Bond Index (ex-Australia, fully hedged to SA). Currency is represented by the SA trade weighted index.

Source: Bloomberg

Why have int'l bonds outperformed?

Much of the outperformance is attributable to two major factors:

- the duration of the typical benchmark international bond index is longer than the equivalent domestic bond index; and,
- offshore yield curves have generally been steeper than the Australian yield curve.

Duration

Bond duration measures how much the capital price of a bond changes for a given movement in interest rates. Generally, the longer the duration, the more a bond's capital price changes for a given change in the interest rates applying to it. As yields have generally fallen in the last two decades, bond portfolios with the longest overall duration have outperformed (as the increase in price (due to the fall in yields) has been highest). Examination of average duration of bond indices for major offshore markets shows that, in general, they have had significantly longer durations than the Australian market. Portfolios aligned with these market index characteristics will (all else being equal) have outperformed Australian portfolios in an environment of declining yields. This has been a major reason why the return on international bond portfolios has exceeded that of Australian bond portfolios.

Yield curve shape relativities

The shape of the Australian yield curve relative to overseas curves is particularly important to investment in international bond portfolios that are fully hedged back to Australian dollars. A portfolio of international bonds, left unhedged, is exposed to an exchange rate risk that in the past has usually proved far more risky than the expected return on the bond portfolio. The forward exchange rate of one currency with respect to another is based on Covered Interest Rate Parity. Under this theory, the difference between the spot (today's) and the forward exchange rate is equivalent to the interest rate difference between two currencies. This



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interest rate difference determines whether buying the domestic currency forward is a cost (higher exchange rate) or benefit (lower exchange rate) to the prevailing spot exchange rate. Over recent decades, Australia has generally had higher interest rates than the rest of the world's major economies. When looking to remove

exchange rate risk in international bond portfolios, Australian dollars are bought forward at a discount to the spot rate, compensating for the higher interest rate foregone when investing in foreign markets compared to investing in local markets.

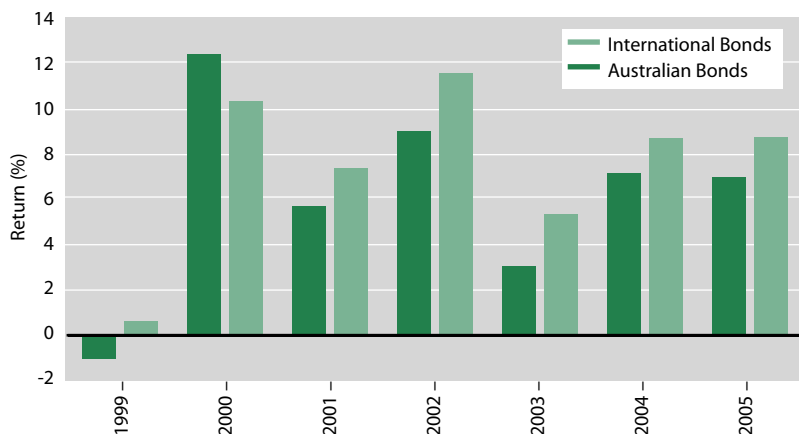
For example, if the 30-month Australian Bank Bill rate is 6% per annum and the 3-month US Libor rate is 4% per annum, the forward benefit of buying Australian dollars today and selling US dollars in three months has to be around 2% per annum. If it was lower, offshore investors could gain a risk free profit by buying Australian dollar assets and forward selling back into US dollars. If the hedging benefit was any higher, domestic investors would profit by buying US dollar assets and forward buying Australian dollars. Arbitrage investors could take advantage of such opportunities should the forward exchange rate drift from its theoretical values based on country relative interest rates.

The corollary is that if an investor buys a bond in an overseas currency and hedges all the currency risk attached to the cash flows (coupon and principal), the expected return on that bond should be equal to the domestic bond's yield. In other words, fully currency hedged overseas bond investments should have the same expected return to maturity as domestic bonds.

However, managers of the majority of international bond portfolios are not restricted to hedging the exchange rate risk of each bond's cashflow through to its maturity. A proficient manager can deliver a benefit through selectively choosing the forward exchange date that maximises the benefit from hedging all currency exposures back to Australian dollars. This can deliver a better return outcome than investing in the domestic bond yield curve. As Figure 3 illustrates, the return on a foreign currency bond can be improved by buying the currency back at the term that gives the largest forward benefit. This will be where the differential in the two yield curves is widest. The return realised on the widely used JP Morgan Global Government Bond Index applies a rolling 30-day hedged currency exposure to the portfolio – that is, this index provides a benchmark return of what would be realised if a portfolio was held and a 30-day maturity date was chosen for hedging all foreign currency exposures back into Australian dollars. The expected return on the index would be equal to the international sovereign bond yield curve plus the forward benefit of hedging the currency exposure back into Australian dollars for 30 days. If this forward benefit was greater than the forward benefit prevailing across the rest of the Australian yield curve, the expected return on the international bond portfolio would be greater than the prevailing yields for domestic bonds.

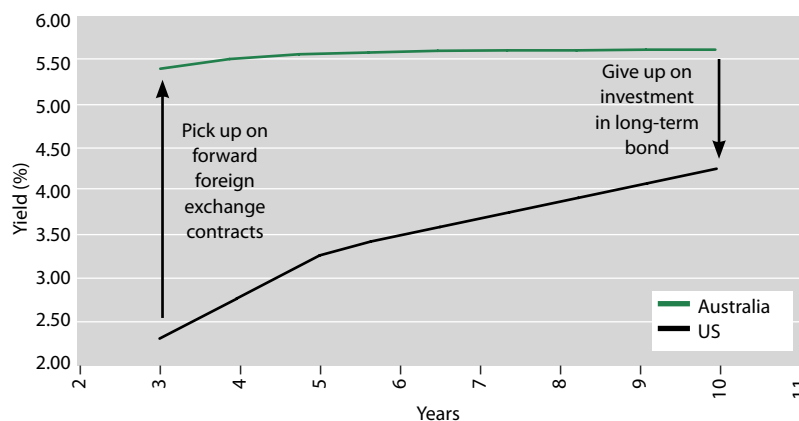
This outcome would not occur if the shape of the offshore yield curve mirrored that of the Australian yield curve. In that case, the forward benefit from hedging the overseas currency forward would be equal across all the maturity dates and provide no forward exchange arbitrage opportunities. For example, in February 2006, the Australian and US yield curves were almost flat (Figure 4) – the advantage from hedging exchange

Figure 2: Australian & international bonds – annual returns



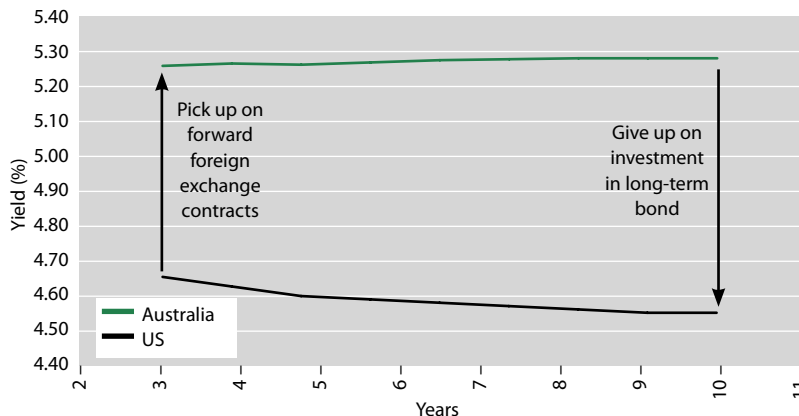
Notes: Au Bonds = UBS All Maturities Composite Au Bond Benchmark Index. Int'l Bonds = JP Morgan Global Government Bond Index (ex-Au fully AS hedged) Source: UBS, JP Morgan

Figure 3: Yield curves – December 2003



Notes: Au Bonds = UBS All Maturities Composite Au Bond Benchmark Index. Int'l Bonds = JP Morgan Global Government Bond Index (ex-Au fully AS hedged) Source: Tyndall, UBS, JP Morgan

Figure 4: Yield curves – February 2006



Notes: Au Bonds = UBS All Maturities Composite Au Bond Benchmark Index. Int'l Bonds = JP Morgan Global Government Bond Index (ex-Au fully AS hedged) Source: Tyndall, UBS, JP Morgan

rate risk on long-term bond investments using short term currency forwards had disappeared.

Australia's interest rate experience relative to the rest of the world's major economies over recent years has provided a good opportunity for international bond managers to add value. As Figure 3 illustrates, the Australian yield curve has not only been flatter but has resided well above the yield curves generally prevailing in other OECD countries. This has meant the largest forward benefit from buying Australian dollars against other OECD currencies has been realisable in the shorter-term (front end) of the domestic yield curve. As a result, a US Treasury 10-year bond when fully currency hedged back to Australian dollars by repeatedly rolling 30-day forward exchange contracts as they expired, delivered a greater return over recent years than realised on the equivalent Australian 10-year bond. This is solely due to the fact that the benefit from buying Australian dollars forward has generally been greater over the shorter term to maturity dates than the longer term dates. As a result, an international bond portfolio aligned similarly to the JP Index, for example, has clearly benefited from the slope of the Australian yield curve relative to those prevailing offshore.

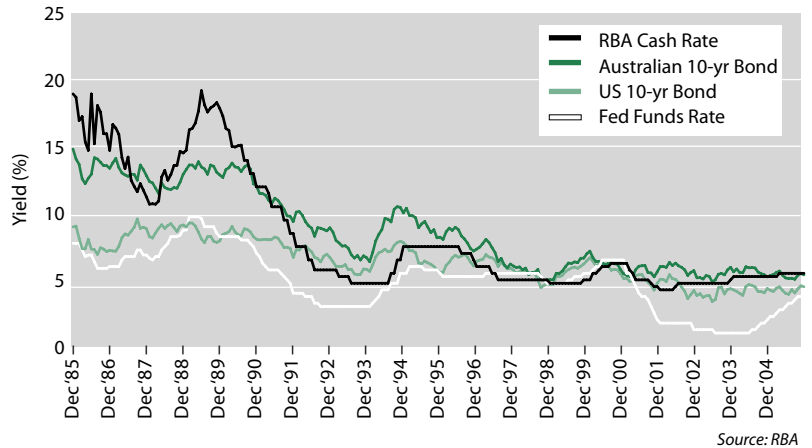
Will this out-performance continue?

Using the above, we can dissect the performance of a fully hedged international bond portfolio. Generally, the total portfolio return is comprised of interest earned on international bonds plus the forward hedging benefit plus the duration effect (the capital return arising from a change in market value on the bonds from movements in interest rates over the period).

Ex-ante or expected return

The expected return on international bonds has been greater than the expected return on domestic bonds over recent years, partially due to the relative steepness of international bond yield curves. This can be attributed to the differing monetary policies prevailing offshore compared to Australia over the period. For example, at the end of 2002, the US Federal Funds' overnight cash rate was set at 1.25% (compared to 4.75% in Australia) and by the end of March 2006 it stood at 4.75% (compared to 5.5% in Australia). Over the period, the margin between the two contracted from 3.5% to 0.75% (Figure 5). Looking back, we see the Reserve Bank of Australia (RBA) started to normalise monetary policy much earlier than other overseas major central banks which really only started to tighten policy in 2005 from what were very easy levels. As a result, the benefit from buying Australian dollars forward against the US and other major global currencies has been sharply reducing over the past year. This return to 'normalisation' for monetary policy has also been accompanied by flatter offshore yield curves – as they flatten, the difference between the shapes of offshore curves and the Australian curve continues to narrow, and the opportunity to add value to fully hedged international bond portfolios via the forward

Figure 5: Cash rates and 10-year bond yields



exchange rate discount has commensurately reduced. The expected return on international bond portfolios should be expected to progressively move closer to the expected return on Australian bond portfolios as the differential between the curves narrows (Figure 4).

Ex-post or realised returns

Additionally, despite many major central banks tightening monetary policy over recent years, long bond rates have been reluctant to increase. This anomaly has been referred to as Alan Greenspan's Bond Conundrum.¹ Without going into the possible causes of this puzzle, the fact is that bond yields currently remain on the very expensive side of most measures of fair value. It is therefore likely that over the coming year, bond yields could retrace to levels more aligned with historical experience, based on fundamental economic theory. In addition, previously, major overseas central banks lowered their cash interest rates much more aggressively than the RBA. After lagging the RBA, they are in the process of raising their rates back to more normal levels. We should expect international bonds to underperform Australian bonds as the gap narrows further between the RBA's Official Cash Rate and that generally prevailing in major overseas countries.

This effect could be tempered if, in a rising interest rate environment, we see the spread on local bonds widen compared with those offshore. However, any widening has to counter the headwinds of extra duration risk usually incumbent within international bond portfolios. Given duration on international bonds was around 6.2 years at end March 2006 compared to 3.5 years for domestic duration, the spread between Australian and US rates would have to widen to around 1.4% from the current 0.65% to offset a 1% increase in bond yields across the curve.

Related issues

With the flattening of bond yield curves, it is likely that some funds may increase risk to prop up returns.

Increased cross currency trading – although an international bond fund will be fully hedged back

into Australian dollars, a manager can still take on foreign exchange risk by trading non-Australian dollar currency pairs. For example, a manager can buy Euros against US dollars, while remaining fully hedged into Australian dollars.

Investment in emerging market debt – such markets have historically been extremely volatile. This volatility is likely to re-occur should the global economy weaken or interest rates rise globally. Emerging market countries are usually characterised by large current account deficits that require financing by foreign capital inflows. This vulnerability to offshore investors makes these markets hostage to sentiment shifts, which increases volatility.

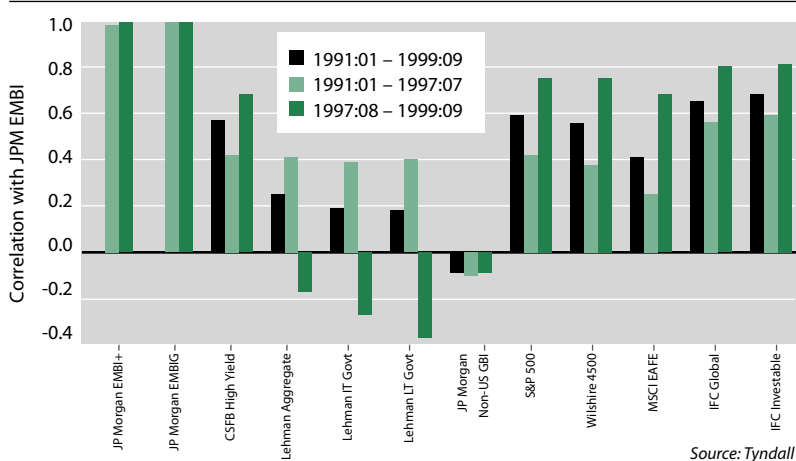
Some managers' mandates permit both types of trades, which can add value if markets are stable but add risk and increase the correlation (Figure 6) with global equity and bond markets when volatility increases.² Given the present low spreads on emerging market debt, the likely return seems to be low compared to risk.

Int'l bonds in a diversified portfolio

It is debatable whether international bonds will be able to outperform domestic bonds in the near future. As the differences in world yield curves narrow, expected differences in return from domestic and international bonds is also likely to reduce. If interest rates rise over coming years, longer duration international bond portfolios could reasonably be expected to underperform Australian bond portfolios more aligned with the shorter duration of the Australian bond market.

Additionally, the diversification argument may be questioned as world bond markets become increasingly correlated (Figure 6). This is likely to reduce the benefit to a diversified portfolio from investing in international bonds compared to domestic bonds. However, the tenor of offshore markets is longer than the domestic market, with the Australian market one of the shortest of all the major world bond markets. With an aging community and more focus on liability-driven investing, international bonds will remain the primary source for matching long-term liabilities.

Figure 6: Emerging market bonds – correlations over time



Conclusion

The only way to minimise the possible effect of underperforming international bonds in a portfolio is through tactical asset allocation (TAA), increasing the allocation to the asset class expected to outperform without changing the fund's overall exposure to fixed interest. This could prove costly and difficult if bond holdings are with different managers. This style of investing has the advantage of differentiating between preferred domestic and international managers. The problem is that one may not be able to take advantage of short-term spread movements. An alternative method is to invest in a diversified fund with exposure to both domestic and international bonds, leaving TAA decisions to the manager. Transaction costs are likely to be minimised, while the manager is able to take advantage of short-term spread movements between markets. A diversified global bond fund with a combined allocation to international and domestic bonds is possibly the best way to achieve optimal bond TAA, and the best risk and return outcomes.

ENDNOTES

1. Federal Reserve Governor Alan Greenspan, in testimony to Congress in February 2005, first discussed the conundrum of why long-term bond yields remained low despite short-term rate increases.
2. Erb, Harvey and Viskanta, 1999, "Understanding Market Bonds," Working Paper

ABOUT THE AUTHOR



Roger Bridges is Australian Bond Manager with Tyndall. He trained as an economist in the UK at the University of Essex from which he graduated with a Masters degree. Before joining Tyndall, Roger worked at the Commonwealth Bank for 16 years in various roles within the Treasury and Money Market operations. In 1986, he joined the Bank's fixed interest section which at the time ran the PAR Asset Bond Portfolio. For the next 12 years, he traded government and corporate bonds both as a price maker and as a portfolio asset manager. In 1998, Roger joined Tyndall where he manages the award-winning Tyndall Australian Bond Fund, a top quartile performer over the last 10 years.

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