

## Why bond options don't price like swaptions

- The relationship between bond and swap prices gives bond options more desirable features than swaptions.
- This week is relatively light-on for data though European Sovereigns are still attracting headlines.
- The AOFM has revised the forecasts for Australian bond issuance lower, and net debt remains exceedingly low.

The market continues to digest the aftermath of the November Central Bank meetings, both here and in the US. It took nearly two weeks for all four major banks to announce a response to the RBA's 25bp increase in the cash rate. Eventually, all major banks raised rates by more than the RBA. The Government announced the Mid-Year Economic and Fiscal Outlook (MYEFO) which prompted the AOFM to review and slightly reduce their forecasts for Australian debt issuance. Adam Donaldson discusses this in detail on page 8.

In the US, the market continued to sell-off as the first round of buying from QE was undertaken. The US 10Y rate has now moved back to over 2.80%, a sell-off of 24bp on the week. Current rates are now well above the circa 2.50% levels which prevailed for most of October (the period that QE was being debated).

There was little Australian data out this week so the US movement dominated Australian rates markets. Since last Monday's close, the Australian 10Y rate has sold off 13bp and the 3Y 3bp.

The coming week will see little data released in Australia and a moderate week in the US. The RBA minutes will be released tomorrow (16th). These minutes will probably cause a somewhat muted reaction. The minutes will be hawkish – the RBA raised rates in November in a surprise decision – but they will not take into account the extra bank rate rises. Hence, if the minutes do surprise the effect will likely be dissipated by the “but that doesn't count the extra rate hikes” rebuttal. Thursday's wage cost index will throw further light on how far the Australian economy is along the path from tight labour markets to inflation.

In the US the focus will be on the CPI data which is released on Thursday morning (Australian time). The recent discussion of “QE2” and its eventual adoption have increased inflation expectations in the US significantly. We expect the release of the actual data will bring market focus to the disconnect between current US CPI outcomes and the CPI expectations priced into the curve. A reduction in inflation expectations would see a rally in US rates. Also released will be Retail Sales (Tuesday morning) and PPI (Wednesday morning) amongst others.

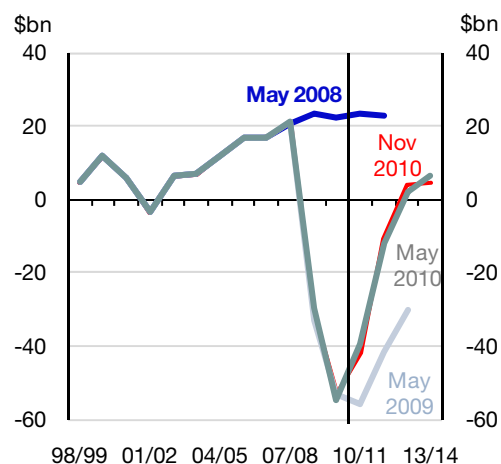
The Australian market seems to have been paying relatively little heed to the evolving European situation. The spreads of several peripheral sovereign issuers have been pushing consistently wider (Friday night's rally being the notable exception). This has started to affect European Supras, but the situation is still unclear and evolving.

This week Philip Brown looks into the bond option market and explains some conundrums of bond vs swap performance (page 3). He finds that the idiosyncrasies of bond market movements make bond options more attractive than swaptions for clients selling puts (swaption payers).

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### Commonwealth general government fiscal balance little changed from May budget



Source: Treasury, CBA



## Key Trades

Trade	Entry	Curent	Profit	Target	Stop	Comment
Buy the NSWTC Jun-20 (Government Guaranteed) as an ASW	-12bp (3-Feb-10)	-18.5bp	+6.5bp	-35bp	0bp	<b>Hold:</b> A long term buy and hold trade. The NSWTC budget suggests borrowing will reduce. QTC has started to consolidate GG bonds.
Sell the May-13 ACGB against the Nov-12 and Dec-13	-11bp (25 May)	-6.5bp	+4.5bp	3bp	-20bp	<b>Hold:</b> Taking longer than we thought – but with Dec-13 included in March 2011 Basket should work eventually.
Pay 3yr AUD EFP	35bp (9 August)	35bp	0bp	45bp	30bp	<b>Hold:</b> Increased mortgage fixing may force this wider as curve flattens. Has come back as 15 <sup>th</sup> passes.
10yr ACGB BEI widening	255 bp (18 August)	293bp	38bp	300bp	260bp	<b>Hold:</b> Spread has widened in the sell-off, inflation expectations growing.
OTM Conditional Steepener. 6M*2Y vs 6M*10Y. Buy 100m 6M*2Y 3.75% receiver. Sell 24.1M 6M*10Y 4.28% receiver.	3.75% and 4.28% 0.4bp premium (25 August)	5.51 and 5.99	-0.4bp (premium)			<b>Hold:</b> An insurance trade for a global double dip. Very unlikely to be used now, but 0.4bp well spent.
Buy the Suncorp Metway Govt Guaranteed Apr-11 Floater.	TM of 29.5bp	25bp	+4.5bp	0bp	40bp	<b>Hold:</b> This bond is Government Guaranteed. It should be much tighter. Can hold to maturity in 6 months. Investec have announced a repurchase of their Feb-12 line and Citi have repurchased A\$1.2b of the Jun-12.
Buy the Jan-15 ADB against the Apr-15 ACGB	58bp (1 Nov)	61bp	-3bp	40bp	70bp	<b>Hold:</b> A buy and hold trade to capture the extra yield on offer from Supras.
Pay 6M*1Y AUD swap	5.29% (3 Nov)	5.39%	+10bp	5.65%	5.15%	<b>New Trade:</b> The front of the curve is expecting too little from the RBA.
Sell ACGB Jun-14 vs ACGB Jul-22	23bp (4 Nov)	30bp	-7bp	-10bp	35bp	<b>New Trade:</b> We think the RBA will continue to raise rates, flattening the curve eventually.
Pay the 20Y AUD swap vs 10Y and 30Y in a butterfly	23.5bp (8 Nov)	24bp	0.5bp	27bp	20bp	<b>New Trade:</b> The 20Y has rallied too far on what appears to be a short-term flow.
Sell 3M, 20bp OTM bond option on Apr-20 ACGB, strike is 5.61%	5.61 / 10bp (15 Nov)			na	5.71bp	<b>New Trade:</b> Bond options are better to sell for investors than swaps. We think the top of the range isn't far away.
Pay 6M*2Y vs Buying the May-21	111bp (30 August)	126bp (incl carry)	-15bp	50bp	135bp	<b>Hold:</b> Not performing well, but longer-term outlook is still good.
Pay the AUD 10Y swap vs NZ 10Y swap	58bp	72bp	+14bp	90bp	45bp	<b>Hold:</b> The recent rally in AUD seems overdone vs. NZ. Carry is also very attractive at circa 5bp per month.



## Bond Options Conundrum: Bond options are much better for clients, but rarely used

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- The dynamics of the bond and swap market make bond options more advantageous for clients.
- However, for historical reasons, the swaptions are more commonly used.
- We recommend selling a put on the ACGB Apr-20, but stuck 20bp OTM.

Bond options are a neglected part of the Australian market. Generally, for historical reasons, the swaption market is preferred. However, we find this somewhat strange. The mathematics of the market means that investors, generally, would be structurally better off selling bond options than selling swaptions. We recommend selling a put option on the Apr-20 ACGB bond, 20bp OTM.

The structural advantage of bond options is because there is a difference in the way banks and other investors use options. Banks, for the most part, will delta-hedge their option book. Investors, for the most part, do not delta hedge. This means the transaction is not zero-sum and both parties can end up profiting from the one trade.

Whether or not the position is hedged is of paramount importance and is one of the primary causes of this anomaly. When different sides of the transaction hedge differently it is possible to create mutually beneficial arrangements.

Please consider a simple example from the bond space. An investor owns a Supranational bond. They sell the bond to a bank and invest the proceeds in an overnight deposit. The bank delta-hedges the bond by selling an ACGB bond future. The next day there is a large sell-off in all bonds and the spread between the supra and the bond future tightens slightly. The investor buys the bond back and the bank ends the hedge. The investor is ahead because they bought the bond back for a lower price and the bank is ahead because the spread tightened.

What allows the trade to be mutually profitable is that the bank hedged the risks differently to the investor. In some ways the game is still zero-sum, it's just that the banks hedging brings a third party in the trade. The trade is now zero-sum across all three parties. Another way of thinking about this concept is that because of the differing hedging undertaken the bank undertook a credit trade, while the investor undertook a rates trade. Obviously, these can both work at the same time.

However, before we consider the hedging parts of the options trades we should examine the actual instruments themselves. In this case, the underlying instruments are bonds and swaps.

### Two true, but contradictory, statements

I want to discuss two widely held beliefs about the relationship between bonds and swaps. They are both “true”, more or less, but they are also (superficially) contradictory.

The statements are:

1. In a daily move, bonds will move further than swap. (i.e. as yields move higher swap spreads become tighter).
2. Generally, high yield environments imply generally wider swap

Figure 1: Regression of 3Y Swap on 3Y Bond

3Y Swap Change		
Multiple R		0.80
R Square		0.64
Adjusted R Square		0.64
Standard Error		4.17
Observations		1008
	Coefficients	Std Error
Intercept	-0.03	0.13
Change in 3Y Bond	0.76	0.02
	t Stat	P-value
Intercept	-0.24	0.81
Change in 3Y Bond	41.90	0.00
	Lower 95%	Upper 95%
Intercept	-0.29	0.23
Change in 3Y Bond	0.72	0.79

Source: Reuters, Bloomberg, CBA

Figure 2: Regression of 10Y Swap on 10Y Bond

10Y Swap Change		
Multiple R		0.78
R Square		0.61
Adjusted R Square		0.61
Standard Error		3.94
Observations		1008
	Coefficients	Std Error
Intercept	-0.02	0.12
Change in 10Y Bond	0.68	0.02
	t Stat	P-value
Intercept	-0.13	0.90
Change in 10Y Bond	39.45	0.00
	Lower 95%	Upper 95%
Intercept	-0.26	0.23
Change in 10Y Bond	0.65	0.72

Source: Reuters, Bloomberg, CBA



spreads.

Statement 1 refers to individual daily moves but statement 2 is on a much longer time horizon, or around three months or more.

The contradiction is that statement 1 suggests that in a small daily sell-off the swaps outperform bonds, yet over the longer term when higher levels of yields are reached, the swap has underperformed bonds. But surely a general move higher in rates must be because of a number of smaller daily sell-offs? How can a swap *outperform* every time there is a move higher in rates and then have *underperformed* in total once a generally higher level of rates is achieved? How does a large sell-off occur that isn't a summation of smaller sell-offs?

Explaining how this apparent contradiction exists explains why bond options should be more preferable for investors than swaptions.

The answer is, in short, that a large sell-off is not a sum of smaller sell-offs, but a sum of a large number of small daily sell-offs interspersed with daily rallies. There will just be slightly more sell-offs than rallies, on average. However, the sum of the absolute values of the daily moves is much larger than the total net move. This large difference in scale and small asymmetry between rallies and sell-offs allows the contradiction.

But I digress, first, we should first prove that these two statements are, more-or-less, true.

### Statement 1: Bonds tend to move further than swap in any given move

This statement will be proved if we can demonstrate that swaps move in the same direction as bonds, but by less, on average. Figures 1 and 2 show the results of regressions between the change in bond rates and the change in swap rates (3Y and 10Y). The change in bond is treated as the independent variable. The regression is calculated on a daily basis since January 1 2007. Please note that the bond rate is an interpolated 3Y bond and so does not have any roll-down effects (just like the swap).

In both Figure 1 and Figure 2 the most important result is the 95% confidence interval for coefficient of the change in the bond yield. In both cases the confidence interval is greater than zero – indicating that, with greater than 95% confidence, the swap tends to move in the same direction as the bond. However, the interval also does not include 1. This shows that although the swap moves in the same direction as the bond, on average, it does so by a less than one-for-one move.

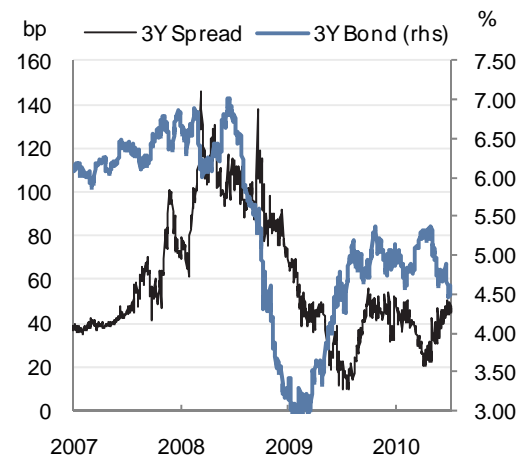
That swaps move in the same direction on a less than one-for-one basis is the same as saying that bonds sell-off faster in a general sell-off and rally faster in a general rally. This is exactly the result statement one claimed.

### Statement 2: When rates are generally higher, swap spreads will be wider

We first approach this statement first by an appeal to logic. Consider the case of a cross-currency basis swap. Even when the cross-currency basis swap is zero, there will still be a difference between the swap spread of a bond in Australian dollars and US dollars even if all other elements are identical.

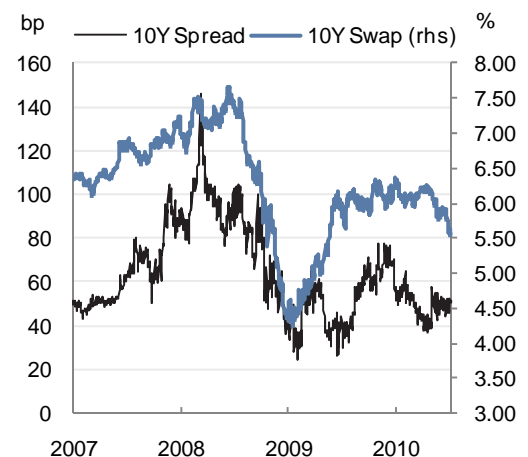
The DV01 of the cash flows is smaller in AUD than in USD because AUD rates are higher. If the credit spread was the same in both currencies the present value of the extra yield in AUD would be smaller than the

Figure 3: Swap spreads tighten in lower rates



Source: Reuters, Bloomberg, CBA

Figure 4: And again with 10Y



Source: Reuters, Bloomberg, CBA



present value of the extra yield in USD. Because the present value of the credit spread should be the same, the spread in AUD must be wider than in USD (while AUD rates remain higher).

The same reasoning applies to two different time periods within one currency. If, all else equal, yields were to rise significantly in Australia, to maintain the same cost of credit the credit spreads must also rise. If the spreads remained the same, the present value of the credit spreads would be smaller because the yields are higher (and the DV01s lower). Since the swap spread contains some measure of credit it must obey this principle. In general, in a higher yield environment swap spreads must be wider than in a low-yield environment.

We can also prove this by appealing to another well-known relationship. When yield curves are generally higher, curves are generally flatter. Also, flatter curves have wider spreads. So, in principle, the generally higher are rates the wider should be swap spreads.

Figures 3 and 4 show the relationship between the swap spread (defined as swap less generic interpolated bond) and the bond rates. The relationship holds relatively well but not perfectly. The problem is that many different influences are affecting swap spreads each day, so the spreads sometimes seem to move without a change in the level of rates. Figure 5 shows the results of a multiple regression which includes a measure of credit (Bills/OIS) and a measure of supply. In the multiple regression the level has a positive coefficient and a t-stat of over 12 for both 3Y and 10Y spread. That is a hugely statistically significant result.

### How does this happen? Asymmetric behaviour

We've now established that on individual days bonds move more than swaps. In a small rally bonds outperform. However, in a large rally, (i.e. when bond yields move much lower over a sustained period) bonds outperform. So how come a large rally isn't a total of smaller rallies? If your brain isn't hurting yet it, should be.

The answer, as best I can see, is that a large rally is not a large number of consecutive small rallies. A large rally is a large number of small rallies interspersed with a large number of small sell-offs. A long-term rally is just slightly more daily rallies than daily sell-offs. (Or even just slightly larger daily rallies than daily sell-offs.)

Consider figure 6, which shows a two-month period from late 2008 to early 2009. Quite clearly, swap spreads narrow over the course of the rally. Between December 22 2008 and February 22 2009 the bond rallied 20bp and the swap 46bp. That's a hefty move in the spread of 26bp. However, the sum of the absolute values of the daily moves was much higher. The bonds moved 318bp and the swaps moved 285bp over the course of the two months.

The average absolute size of a daily move was 7.3bp for bonds and 6.3bp for swaps (confirming statement 1 – bonds move further on any given day).

However, on the days the bonds rallied, bonds rallied by an average of 7.33bp and swaps rallied by an average of 6.73bp. On days bonds sold-off, bonds sold-off by an average of 7.37bp, but swaps sold-off by only 5.88bp. Again, statement one holds. We've now shown that statement one holds for this time period in both up and down moves. But it does not hold symmetrically – and that's very important.

Consider the net effect of a two-day period consisting of an average daily rally followed by an average daily sell-off. The bonds will be essentially unchanged – selling-off just 0.04bp in total. However, the swaps rally more strongly than they sell-off and rally a total of 6.73 –

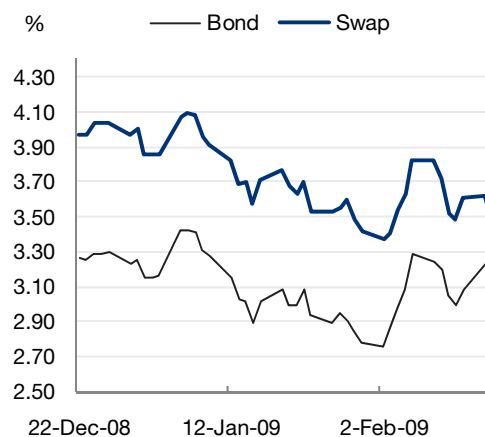
Figure 5: Results of Swap Spread Models

Model of 3Y Swap Spreads		
Variable	Co-eff	Std Err
ACGB Issuance	-2.99	0.29
Bills/OIS	1.05	0.02
Slope	-4.63	1.31
Level	6.36	0.46
Constant	32.45	1.09

Model of 10Y Swap Spreads		
Variable	Co-eff	Std Err
ACGB Issuance	-0.47	0.25
Bills/OIS	0.53	0.02
Slope	4.64	1.10
Level	5.48	0.39
Constant	47.08	0.92

Source: Reuters, Bloomberg, CBA

Figure 6: Asymmetric behaviour of bonds and swaps



Source: Reuters, Bloomberg, CBA



$5.88 = 0.85\text{bp}$ . That's how the contradiction is resolved. Statement 1 is true both in rallies and sell-offs, but to slightly different degrees, so offsetting moves in bonds do not offset in swaps.

The much larger amount of total absolute movements in rates over the period allows multiple sets of offsetting days to be created. Since the offsetting days allow the spreads to move, it is possible for the spreads to move in the opposite way from which statement one would imply.

Doesn't this asymmetric behaviour violate any number of normality assumptions frequently used in option pricing models, like independence and zero serial-correlation? Yes. Yes it does.

It also means that bonds, despite being more volatile on a daily basis, do not, in fact, sell-off further in a large move.

### How to take advantage of this? – sell bond puts

So far the discussion has been reasonably technical. But it has an inescapable conclusion – that clients who don't delta-hedge their options should be selling bond options rather than swaptions. A common strategy involves identifying what you believe to be the top of the trading range and selling an out-of-the-money put and taking the premium. The hope is that the option expires OTM and the premium becomes profit. For someone looking to sell a bond put (or a payer swaption) the bond put will be better on multiple counts than the payer swaption.

First, statement 1 shows that bonds move more on a daily basis than swaps. Hence, the daily volatility, which is used to calculate the option premium, will be higher for bonds than for swaps. This means the premium paid will be higher for bond options than for swaptions.

Second, statement 2 shows that in a large move the bond will, in all likelihood, sell-off less. So if the trade timing is wrong and the sell-off continues, you will lose less money on the bond option than on the swaption.

From the perspective of a seller of puts this is a double-win. The upfront premium received is higher than the swaption, but the risk is lower than the swaption.

Now, if that sounds too good to be true, it's not. Remember the example of the hedged supranational bond trade we gave above. Because the two sides of the trade hedge differently the payoff can be positive for both parties.

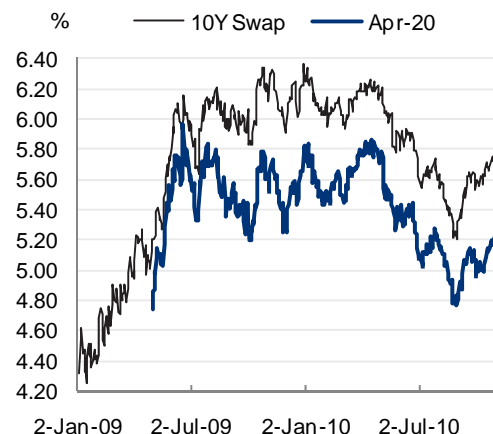
The key is that when a bank buys an option, they delta-hedge. Delta-hedging captures value from the daily moves in rates. We know from statement 1 that bonds are more volatile – they move further on any given move. Hence, the bank will pay more for a bond option than the equivalent swaption.

A client who is selling the option with the intention of not hedging the delta but instead waiting for the expiry price has a different pay-off function. That client cares more about which instrument is likely to have the higher yield at expiry of the option, not the daily volatility. Thanks to statement 2 we know that the bond yield is likely to be lower than the swap (or to have moved less, cumulatively). So for an investor trade looking to sell a put option, the bond is the preferable instrument, it will have a generally lower yield (i.e. higher price).

### So which bond put should we sell?

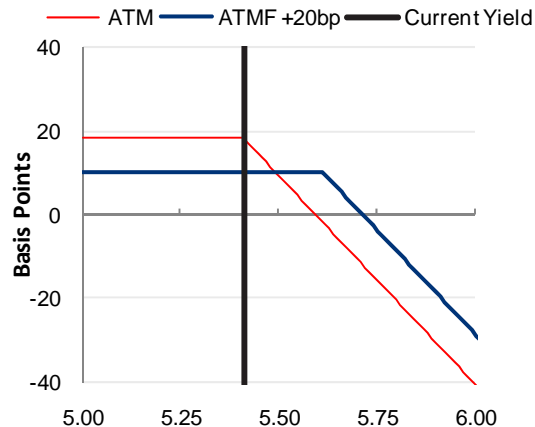
This part is actually slightly more complicated. We are not sure that

Figure 7: Longer yields getting nearer top of the range



Source: Reuters, Bloomberg, CBA

Figure 8: Payoff for Sold Put on Apr-20



Source: Bloomberg, CBA



rates are generally at the top of the range. We have previously recommended paying the front end swaps because we were looking for the front end to sell-off.

However, we expect the US market will prevent the Australian long end from selling-off too far. Hence we suggest that those who are looking to implement this trade we recommend selling the put on the ACGB Apr-20 either ATM or 20bp OTM. This will result in a premium for the seller with less risk than undertaking the same trade with a swaption.

Figure 7 shows that the Apr-20 has not been above about 5.80% recently. Figure 8 shows that a 20bp OTM option would make a profit at all expiry yields below 5.65%. Because we think a small sell-off is likely, we prefer the 20bp OTM option.

### A second approach – conditional spread trades

A second approach would be for the investor to sell a bond put and buy a payer swaption. Given the extra volatility in bonds the investor may be able to do this and receive an upfront premium even after crossing both spreads. The result will be a type of conditional spread widening trade not dissimilar in concept to a conditional slope trade.

If rates rally, then both legs of the trade expire worthless. If the rates sell-off then both legs of the trade will expire in-the-money. The investor will profit if the swap spread widens as the rates rise. As we have already explained, the more likely and more common outcome is that spreads widen as the rates rise.

If the market behaves normally, the investor will receive an upfront premium and a position likely to expire either in a profit or zero. This is a good trade but not an arbitrage, the investor can make a loss if rates rise but spreads widen. This would seem unlikely though, as it would seem to indicate either a significant bear steepening or a notable reduction in the credit quality of ACGBs. Far more likely is a bear flattening with its associated spread widening.



## The AOFM revises down planned CGS issuance

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- The mid-year review raised the Commonwealth's deficit forecasts slightly, but a surplus is still forecast for 2012-13
- Net debt projections little changed, but tighter cash management means \$20b less securities issuance in 2010-11
- Coupon and inflation indexed issuance are set to decline, but the biggest cut is in T-notes

Last week the AOFM revised down its forecast for bond issuance in 2010-11 following the release of Treasury's Mid Year Economic and Fiscal Outlook (MYEFO). The changes to issuance plans reflected changed balance sheet management rather than any significant changes to the fiscal position. Australia's debt levels are still low when compared with developed economy peers.

The latest figuring indicates the large 4.5% of GDP fiscal consolidation forecast over the three years to 2012-13 is on track. Compared with the pre-election update, there is a mild \$800m increase in the underlying cash deficit to -\$41.5b in 2010-11. In 2011-12, the deficit is expected to be \$2b higher than previously forecast at -\$12.3b (though still smaller than \$13.0b forecast in May). However, the government still expects to reach a surplus of 0.2% of GDP in 2012-13. Figure 9 illustrates the close projected path of the Commonwealth November MYEFO with the May 2010 Budget, and the improvement since May 2009.

The main change since the election is a 4.8% downward revision in company tax revenue attributed to the surging Australian dollar. The MYEFO's new working assumption is a flat exchange rate of USD 0.9850. Coinciding with the higher Aussie dollar is the higher terms of trade, which provides some offset to the currency in fiscal terms and certainly in economic terms. Forecast GDP growth for 2010-11 remains unchanged at 3¼%, while the 2011-12 projection has been lowered ¼%pt to a still-healthy 3¼% (See Table 1). Figure 10 shows the big picture trend in net debt is still decidedly downward beyond 2011-12, and much lower than forecast in the May 2009 Budget.

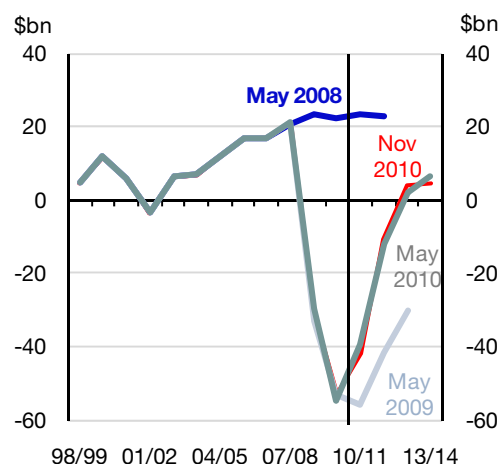
Table 1: MYEFO Economic Parameters

	Forecasts (%)		Projections (%)	
	2010-11	2011-12	2012-13	2013-14
<b>Real GDP</b>	3.25	3.75	3.00	3.00
<b>Employment</b>	2.50	2.00	1.50	1.50
<b>Unemployment Rate</b>	4.75	4.50	5.00	5.00
<b>CPI</b>	2.75	3.00	2.50	2.50
<b>Nominal GDP</b>	9.00	5.00	5.25	5.25

Source: Treasury, CBA

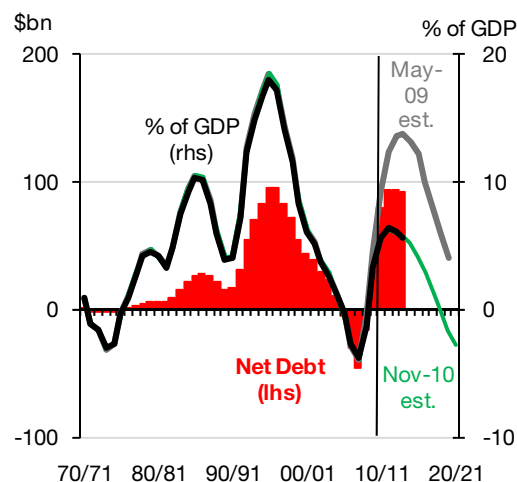
The 2010-11 forecast for general government net debt was raised a marginal \$1.1bn to \$79.6b. However, from a funding perspective, the MYEFO reported a \$19b downward revision to the level of securities outstanding expected at June 30. This revision is broadly offset by a \$20b decline in planned investments, reflecting lower deposits and tighter working capital management. This means the 2010-11 total issuance forecast has been cut from \$60b to \$53-58b. Figure 11 shows the steady downward progression in estimates of Commonwealth outstandings, which now peak just under \$200b relative to a forecast of almost \$300b in May 2009.

Figure 1: Commonwealth general government fiscal balance



Source: Treasury, CBA

Figure 2: Commonwealth general government net debt



Source: Treasury, CBA

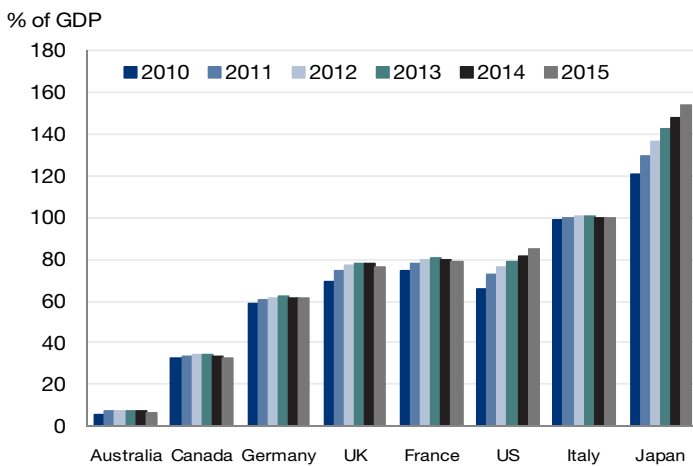


The outlook for the composition of CGS supply has also changed. Most of the cut to securities issuance reflected T-notes, which are no longer expected to contribute significantly to the funding task. AOFM no longer expects to build up issuance of T-notes from \$11b to \$20-25b, but instead to end the year little changed at \$11b. AOFM has cut projected inflation linked issuance from \$4b to \$3-3.5b (issuance to date in 2010-11 is \$1.9b). Expected coupon bond issuance has been reduced from \$56b to \$50-55b. So far in 2010-11, the AOFM has issued \$21.2b (face value).

Figure 11 shows our best guess of the composition of the balance sheet going forward. Coupon bond outstandings are now expected to peak at just over \$160b in 2011-12. New issuance will fall away sharply to around \$23b in 2012-13. This is a mixed blessing for the market given many recent foreign entrants have been attracted by the increase in issuance and liquidity, and may have been expecting outstandings to rise to \$200b as forecast a year ago. However, Figure 12 shows that Australia's debt levels and fiscal management are still modest when compared with developed economy peers. By 2015, net debt in the major advanced economies is expected to reach an average of 90% of GDP in 2015 – 14 times higher than Australia's peak in net debt of 6.4%, to be reached in 2011-12.

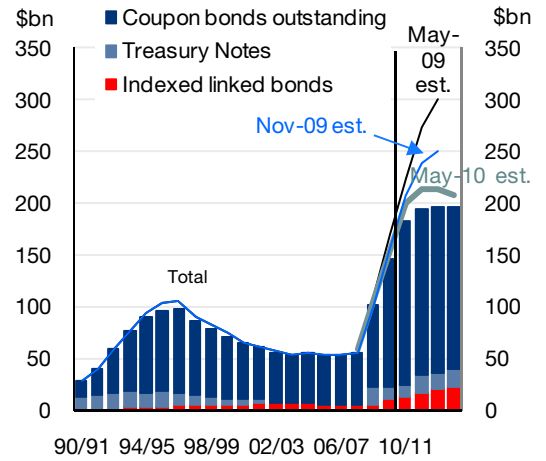
Figure 13 shows how Australian CDS has tightened to be in line with the upper echelon of sovereigns. While we forecast the AUS-US bond spread to widen due to an increasing cash rate differential, we see the limited issuance and appeal of Australian bonds as helping keep bond spreads in check and contributing to a flattening (and eventual inversion) of the yield curve.

Figure 4: Government Net Debt – Australia and G7, 2010-2015



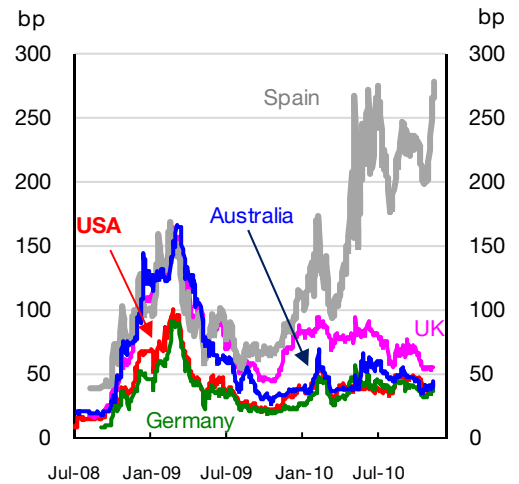
Source: IMF, CBA

Figure 3: Commonwealth securities outstanding



Source: Treasury, CBA

Figure 5: Sovereign CDS Spreads



Source: Bloomberg, CBA



## Key Views

United States		Tactical (<1 mth)	Strategic (>3 mths)
<p>Recent US data has been mixed. Growth is soft (2% annualised in Q3) and supported by inventory accumulation. The headline Payrolls release was very strong (+151K) but the household survey was weaker. The pace of improvement is not enough to satisfy the Fed, which has announced new QE of \$600bn of Treasury securities by June 2011 (approx \$110/month after including reinvestments from current portfolio).</p> <p>Ultimately, we suspect QE2 to keep real bond yields very low, but that the recent back-up in inflation expectations (as the Fed 'targets' higher inflation) will be reversed due to weak growth and persisting disinflation pressure. We expect the curve to flatten and forecast 10yrs to retreat back toward 2.25%, though uncertainty remains very high.</p> <p>This week the US inflation data will draw attention to the difference between current inflation outcomes and inflation expectations. We expect inflation expectations will move down over coming weeks and allow the whole US curve to rally.</p> <p>We expect the USD to correct higher in the near term as short positions are unwound following the Fed's policy meeting. A classic case of sell the rumour and buy the fact. Improving US economic data, including the strong payrolls report, is likely to lift US yields as well as the USD in the short-term. But there is a limit to how high the USD will rise in the short-run.</p>	Policy rate	0.1%	0.1%
	10yr bond	2.35%	2.25%
	2/10 curve	210bp	190bp
	USD/JPY	84	85
	EUR/USD	1.35	1.32
Australia		Tactical (<1 mth)	Strategic (>3 mths)
<p>Australia's economic growth remains strong and is supported by the high terms of trade. Despite the lower CPI, the RBA opted to raise rates in November. That all the major banks will increase mortgage rates more than 25bp takes near-term rate hikes off the table for a while. The bank's move will also detract from the importance of the RBA minutes released this week.</p> <p>The RBA believes it is ahead of the curve on interest rates, which makes picking the exact timing of moves very difficult. However, the RBA is likely to continue raising rates. We forecast 5.75% by end 2011,</p> <p>With minimal RBA hikes priced in (5% by end 2011), we look for the former curve flattening and AUS-US spread widening trends to resume. We have established medium term flattening (Jun-14 to Jul-22 flattener) and hawkish (Pay 6M*1Y) trades.</p> <p>With the USD likely to consolidate, the AUD/USD is going to be on the back foot in the near term. Further interest rate hikes or lifts in China's Reserve Requirement Ratio (RRR) will also apply some short-term downward pressure on the AUD</p>	Policy rate	4.75%	5.00%
	10yr bond	5.20%	5.20%
	3/10 curve	20bp	0bp
	10yr EFP	57bp	65bp
	10yr v US	280	290
	AUD/USD	0.97	1.00
New Zealand		Tactical (<1 mth)	Strategic (>3 mths)
<p>The RBNZ remains on hold, but the income boost coming through from solid growth in Asia points to extension of the cycle and further RBNZ tightening thereafter. The employment result is already showing some improvement in Q3 (+1% employment change, unemployment falling to 6.4%)</p> <p>A higher than expected +1.1% q/q CPI result in Q3 has been overlooked due to the upward impact of the new Emissions Trading Scheme on energy prices. The RBNZ is comfortable that inflation expectations will remain in check as further tax increases push inflation above 5%, but this remains a key source of risk to the outlook. We look for the RBNZ to resume rate hikes early in 2011.</p> <p>New Zealand economic data remains patchy. And the Reserve Bank of New Zealand is unlikely to lift interest rates again until March 2011 at the earliest. In line with some expected short-term strength in the USD, the NZD is likely to head lower in the short-term. The AUD/NZD exchange rate should also head lower as the NZD out-performs the AUD in the short-term. Tighter monetary policy in China will impact the AUD more than the NZD. We see a further move down in AUD/NZD to 1.2650 in the near term before some consolidation occurs. While our forecasts have AUD/NZD heading higher over the next six months, the risk is AUD/NZD stays below 1.3000, rather than gets above it again.</p>	Policy rate	3.00%	3.00%
	10yr bond	5.20%	5.10%
	2/10 swap curve	110bp	100bp
	10yr v US	290	280
	10yr v AUS	-10	-20
	NZD/USD	0.75	0.77
AUD/NZD	1.2650	1.2950	



## CBA Forecasts:

Cash rate	15-Nov	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
US	0.25	0.25	0.25	0.25	0.50	1.00	1.50	1.75	2.00	2.25
Australia	4.50	4.75	5.00	5.25	5.50	5.75	5.75	5.75	5.75	5.75
New Zealand	3.00	3.00	3.25	3.75	4.25	4.50	4.50	4.50	4.50	4.50
United Kingdom	0.50	0.50	0.50	0.50	0.75	1.00	1.25	1.50	1.75	2.00
Eurozone	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.75	2.00	2.00
Japan	0.05	0.05	0.05	0.05	0.05	0.05	0.30	0.30	0.30	0.30
2-yr bond yield	15-Nov	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
US	0.53	0.30	0.35	0.65	1.50	1.75	2.00	2.30	2.60	2.75
Australia	4.99	5.10	5.30	5.45	5.60	5.70	5.60	5.60	5.60	5.60
New Zealand	3.80	4.00	4.20	4.60	4.90	5.00	4.80	4.80	4.70	4.70
United Kingdom	1.06	0.50	0.75	2.00	2.70	2.95	3.25	3.45	3.55	3.65
Eurozone	1.02	0.80	1.00	1.20	1.40	1.70	2.00	2.30	2.50	2.50
Japan	0.16	0.15	0.15	0.20	0.30	0.60	0.70	0.70	0.80	0.80
10-yr bond yield	15-Nov	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
US	2.81	2.25	2.25	2.40	2.80	3.00	3.20	3.30	3.40	3.50
Australia	5.43	5.10	5.20	5.30	5.40	5.50	5.50	5.50	5.50	5.40
New Zealand	5.45	5.10	5.20	5.30	5.50	5.70	5.50	5.50	5.40	5.40
United Kingdom	3.20	2.75	2.80	3.00	3.90	4.00	4.20	4.40	4.50	4.60
Eurozone	2.51	2.30	2.40	2.60	2.80	3.00	3.10	3.20	3.30	3.40
Japan	1.04	0.80	0.90	1.20	1.40	1.50	1.60	1.70	1.80	1.80
AUD Swap Rates	15-Nov	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
2-year	5.41	5.55	5.80	6.00	6.15	6.20	6.10	6.10	6.10	6.00
3-year	5.53	5.55	5.75	5.95	6.05	6.15	6.00	5.95	5.95	5.95
5-year	5.80	5.70	5.80	5.95	6.00	6.10	6.00	6.00	6.00	5.95
10-year	5.99	5.70	5.85	5.95	6.05	6.15	6.10	6.10	6.10	6.00
NZD Swap Rates	15-Nov	Dec-10	Mar-11	Jun-11	Sep-11	Dec-11	Mar-12	Jun-12	Sep-12	Dec-12
2-year	3.95	3.95	4.20	4.55	5.00	5.10	5.10	5.10	5.10	5.10
3-year	4.24	4.15	4.40	4.75	5.15	5.25	5.20	5.20	5.15	5.15
5-year	4.64	4.35	4.60	4.95	5.35	5.45	5.40	5.40	5.35	5.35
10-year	5.26	4.95	5.10	5.30	5.70	5.90	5.75	5.75	5.70	5.70



## Calendar – November 2010

Monday	Tuesday	Wednesday	Thursday	Friday
<p><b>1</b></p> <p><b>AU AI-Group PMI, Oct, Index, (47.3)</b>  <b>AU TD inflat gauge Oct, m/y%ch, (0.1/3.2)</b>  <b>AU NAB Bus conf/cond, Oct, Index, (10/7)</b>  <b>AU ABS House price ind., QIII, q%ch, (3.1)</b>            CH PMI manufacturing, Oct, Index, (53.8)            JP Vehicle sales, Oct, y%ch, (-4.1)            UK PMI manufacturing, Oct, Index, (53.4)            US Personal income/spending, Sep, m%ch, (0.5/0.4)            US PCE deflator/core, Sep, y%ch, (1.5/1.4)            US ISM manufacturing, Oct, Index, (54.4)            US Construction spending, Sep, m%ch, (0.4)</p>	<p><b>2</b></p> <p><b>AU RBA cash rate, %, 4.75, (4.50)</b>            NZ Avg Hourly Earnings, QIII, q%ch, (0.6)            EU/GE/UK PMI manufacturing, Oct, Index, (54.1/56.1/53.4)</p>	<p><b>3</b></p> <p><b>AU CBA/AI-Group Perf of Serv Index, Oct, (45.6)</b>  <b>AU Build approv, Sep, m%ch, 2.0, (-4.7)</b>            CH Non-Manuf PMI Oct, Index, (61.7)            UK PMI services, Oct, Index, (52.8)            US ISM non-manufacturing, Oct, Index, (53.2)            US Factory orders, Sep, m%ch, (-0.5)            US FOMC rate decision, % 0-¼ (0-¼)            US Total vehicle sales, Oct, mn, (11.73)</p>	<p><b>4</b></p> <p><b>AU Retail trade, Sep, m%ch, 0.7 (0.3)</b>  <b>AU Retail trade volumes, QIII, q%ch, 1.0 (0.8)</b>  <b>AU Trade balance Jul, \$ bn, 1.5, (2.3)</b>            NZ Emp Growth/Unemp Rate, QIII, q%ch, (-0.3/6.8)            EU PMI services/composite, Oct, Index, (53.2/53.4)            EU PPI, Sep, m/y%ch, (0.1/3.6)            EU ECB announces int. rate, %, 100, (100)            GE PMI services, Oct, Index, (56.6)            UK New car registrations, Oct, y%ch            UK BoE announces rates, %, 0.50, (0.50)            CA Ivey purchasing manager index, Oct, (70.3)</p>	<p><b>5</b></p> <p><b>AU AI-Group PCI, Oct, Index, (40.8)</b>  <b>AU RBA Statement on Monetary Policy</b>            EU Retail sales, Sep, m/y%ch, (-0.4/0.6)            GE Factory orders, Sep, m/y%ch, (3.4/20.3)            UK PPI Input/Output/core, Oct, y%ch, (9.5/4.4/4.6)            US Avg hrly earnings, Oct, m/y%ch, (0.0/1.7)            US Non-farm payrolls, Oct, '000, (-95)            US Unemployment rate, Oct, % (9.6)            US Pending home sales, Sep, m/y%ch, (4.3/-18.4)            US Consumer credit, Sep, \$bn, (-3.3)            CA Net change in employment, Oct, '000, (-6.6)            CA Unemployment rate, Oct, % (8.0)            CA Building permits, Sep, m%ch, (-9.2)</p>
<p><b>8</b></p> <p><b>AU ANZ Job ads, Oct, m%ch, (0.7)</b>            JP Leading / Coincident index CI, Sep            GE Trade bal, Sep, \$bn, (9.0)            GE Industrial production, Sep, m/y%ch, (1.7/10.7)            CA Housing starts, Oct, '000, (186.4)</p>	<p><b>9</b></p> <p>NZ Card spending, Oct, m%ch, (1.5)            JP Curr a/c total/adjusted, Sep, \$bn, (114.2/1,179.0)            JP Trade balance - BOP basis, Sep, \$bn, (185.9)            GE CPI, Oct            UK RICS house price balance, Oct, %, (-36)            UK Total trade balance, Sep, \$bn, (-4,643)            UK Industrial production, Sep, m/y%ch, (0.3/4.2)            UK NIESR GDP estimate, Oct, m%ch, (0.5)            US Wholesale inventories, Sep, m%ch, (0.8)            CA Housing price index, Sep, m%ch, (0.1)</p>	<p><b>10</b></p> <p><b>AU MI/WBC Consumer Sent, Nov, Index, (117.0)</b>  <b>AU Housing finance, Sep, m%ch</b>  <b>No. of own-occupiers, %, x.x, (1.0)</b>  <b>Value of all loans, %, x.x, (0.0)</b>            NZ RBNZ Financial Stability Report            CH Trade balance Oct, US\$bn, (16.9)            JP Consumer confidence, Oct, Index, (41.4)            UK Bank of England Quarterly Inflation Report            US Trade balance, Sep, \$bn, (-46.3)            US Import price index, Oct, m/y%ch, (-0.3/3.5)            CA Trade balance Sep, C\$, (-1.3)</p>	<p><b>11</b></p> <p><b>AU MI Consumer Inflation Expectat, Nov, %, (3.8)</b>  <b>AU MI Unemp. Expt., Nov, Index, (102.0)</b>  <b>AU Labour force, Oct employment, '000, 20 (49.5)</b>  <b>participation rate, %, 65.5 (65.6)</b>  <b>unemployment rate, %, 5.0 (5.1)</b>            NZ Business PMI Oct, Index, (49.2)            NZ Food prices, Oct, m%ch, (0.7)            CH PPI/CPI, Oct, y%ch, (4.3/3.6)            CH Retail sales/Ind. Prodn, Oct, y%ch, (18.8/13.3)            CH Fxd Ass Investment, Oct, y%ch, (24.5)            JP Machine orders, Sep, m/y%ch, (10.1/24.1)            EU ECB Monthly report</p>	<p><b>12</b></p> <p>EU GDP, QIII, q/y%ch, (0.1/1.9)            EU Industrial production Sep, m/y%ch, (10/7.9)            GE GDP, QIII            US Uni. Of Michigan confidence, Nov, Index</p>
<p><b>15</b></p> <p><b>AU New motor veh. sales, Oct, m/y%ch, (0.9/8.8)</b>            NZ PSI, Oct, Index, (54.8)            NZ Retail sales ex inflation, QIII, q%ch, (1.3)            NZ Retail sales, Sep, m/y%ch, (0.0/-0.6)            JP GDP, QIII, q%ch, (0.4)            JP Industrial production, Sep            JP Capacity utilisation, Sep, m%ch, (-0.9)            EU Trade balance Sep, \$bn, (-14)            US Retail sales, Oct, m%ch, (0.6)            US Business inventories, Sep, m%ch, (0.6)</p>	<p><b>16</b></p> <p><b>AU RBA Board Minutes</b>            JP BoJ target rate, % 0-0.10 (0-0.10)            EU New car registrations Oct, y%ch, (-9.6)            EU CPI, Oct, m/y%ch, (0.2/1.9); core, y%ch, (1.0)            EU/GE ZEW survey (econ. sentiment), Nov, (18/-7.2)            UK CPI, Oct, m/y%ch, (0.0/3.1); core, y%ch, (2.7)            US Producer price index Oct, m/y%ch, (0.4/4.0)            US Industrial production, Oct, m%ch, (-0.2)            US Capacity utilisation, Oct, % (74.7)            US NAHB housing market index, Nov, (16)</p>	<p><b>17</b></p> <p><b>AU DEWR skilled vacancies, Nov, m%ch, (-0.005)</b>  <b>AU WPI QIII, q/y%ch, 1.2/3.4 (0.8/3.0)</b>            JP Leading / Coincident index, Sep            EU Construction output, Sep, m/y%ch, (-0.4/-8.5)            UK Bank of England minutes            UK ILO unemployment rate (3mths), Sep, %, (7.77)            US CPI, Oct, m/y%ch, (0.1/1.1); core, (0.0/0.8)            US Housing starts, Oct, '000, (610)            US Building permits, Oct, '000, (539)</p>	<p><b>18</b></p> <p><b>AU RBA Dep Gov Battellino speaks in Perth</b>  <b>AU AWE Aug, q/y%ch, 1.1/5.4 (0.5/5.2)</b>            NZ P producer prices, in/o inputs, QIII, q%ch, (14/1.1)            EU Current account, Sep, \$bn, (-7.5)            UK Retail sales, Oct, m/y%ch, (-0.2/0.5)            US Leading indicators, Oct, m%ch, (0.3)            US Philadelphia Fed, Nov, Index, (10)            CA Leading indicators, Oct, m%ch, (-0.1)            CA Wholesale sales, Sep, m%ch, (12)</p>	<p><b>19</b></p> <p><b>AU State Annual National Accounts</b>            NZ Credit card spending, Oct, m/y%ch, (0.9/4.1)            GE P producer prices, Oct, m/y%ch, (0.3/3.9)</p>
<p><b>22</b></p> <p>GE GDP, QIII, q/y%ch, (2.2/3.7)            US GDP, QIII, q%chsaar, (1.7)            US Existing home sales, Oct, mn/m%ch, (4.53/10.0)            US Richmond Fed, Nov, Index            CA CPI, Oct, m/y%ch, (0.2/1.9)            CA Retail sales, Sep, m%ch, (0.5)</p>	<p><b>23</b></p> <p><b>AU Construction Work Done, QIII</b>  <b>AU HIA Housing Affordability Index, QIII, (108.3)</b>            EU Industrial new orders, Sep, m/y%ch, (5.3/24.4)            GE IFO - Business climate, Nov, Index            UK GDP, QIII, q/y%ch, (0.8/2.8)            US Personal income/spending, New home sales, Oct            US PCE deflator/core, Oct            US Durable goods orders, Oct            US Uni. Of Michigan confidence, Nov, Index            US FOMC Minutes            CA Teranet House Prices, Sep</p>	<p><b>24</b></p> <p><b>AU Capex, QIII, q/y%ch, 6.0/6.5, (-4.0/-4.8)</b>            JP Trade bal total/adj, Oct</p>	<p><b>25</b></p> <p>JP CPI, Oct            GE CPI, Nov</p>	
<p><b>29</b></p> <p><b>AU HIA new home sales Oct</b>  <b>AU Company profits, QIII, q%ch, 5.0, (18.9)</b>  <b>AU Inventories, QIII, q%ch, 0.4, (-0.5)</b>  <b>GDP contrib, %, 0.2 (0.0)</b>  <b>AU RBA Gov. Stevens speaks in Melbourne</b>            NZ Trade balance, Oct            NZ NBNZ Business confidence, Nov, Index            JP Retail sales, Oct            UK Net consumer credit, Oct            US Dallas Fed, Nov, Index            CA Current account, QIII, C\$bn, (-110)</p>	<p><b>30</b></p> <p><b>AU RBA Ass. Gov. DeBelle speaks in Sydney</b>  <b>AU Build approv, Oct</b>  <b>AU Current acc deficit, QIII, \$bn, -5.5, (-5.6)</b>  <b>AU Net export contrib, QIII, ppt, -0.3, (0.4)</b>  <b>AU Govt Finance Statistics, QIII</b>  <b>AU Private sector credit, Oct</b>  <b>AU RP Data-Rismark house price index, Oct</b>            NZ Building permits, Oct            JP Industrial/vehicle production, Oct            JP Housing starts/Construction orders, Oct            US S&amp;P/Case-Shiller home price ind., Sep            CA GDP, QIII, q%chsaar, (2.0)</p>	<p><b>Also due in November</b>            AU Mid-Year Economic and Fiscal Outlook            EU OECD Economic Outlook (18 Nov)</p>	<p><b>Early December</b>            AU GDP, QIII (1 Dec)            AU Retail trade, Oct (2 Dec)            AU Trade balance, Oct (2 Dec)            AU RBA cash target, Dec (7 Dec)            AU Housing finance, Oct (8 Dec)            AU Labour force, Nov (9 Dec)</p>	<p><b>Central Bank Meetings</b>            AU RBA (2 Nov)            US FOMC (3 Nov)            UK BOE (4 Nov)            EZ ECB (4 Nov)            JP BoJ (6 Nov)            CA Bank of Canada (7 Dec)            NZ RBNZ (9 Dec)</p>

Note: Figures in brackets represent previous result (if available). All information is preliminary and subject to revision. Chief Economist: Michael Blythe ph: 9118-1101 Economist: James McIntyre: 9118-1100



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