

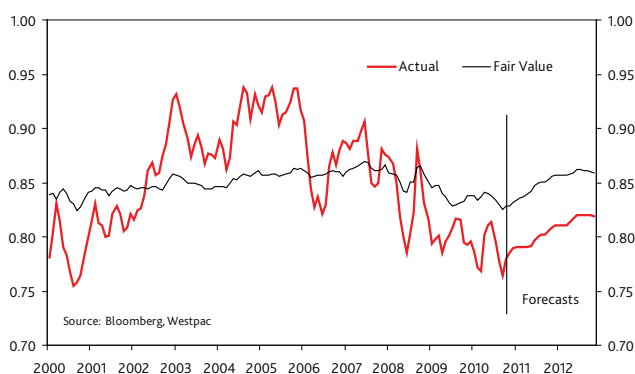
# Why so glum?

## Modelling and forecasting the NZD/AUD cross rate

- **Recent research confirms our suspicion that global financial stress has been a key driver of the low NZD/AUD exchange rate since early 2009.**
- **Australian bank CDS spreads are a useful barometer for the NZD/AUD exchange rate.**
- **If financial stress remains elevated, NZD/AUD will remain below its long run average of 86 cents.**
- **That said, the fundamentals still point to modest NZD/AUD appreciation over 2011.**

We have long suspected that global financial stress has been a key driver of the persistently low New Zealand dollar / Australian dollar cross rate (NZD/AUD) over the past couple of years. Instability in the global financial system poses a greater threat to New Zealand than it does to Australia, due to New Zealand's greater indebtedness and heavier reliance on overseas funding. With the passage of sufficient time to allow evidence to accumulate, we are now able to formalise and verify our suspicion. The research summarised in this bulletin shows that elevated financial stress does tend to depress NZD/AUD, and the effect is larger and longer-lasting than we originally anticipated. The degree of financial stress will remain a critical driver of NZD/AUD going forward.

Figure 1: NZD/AUD

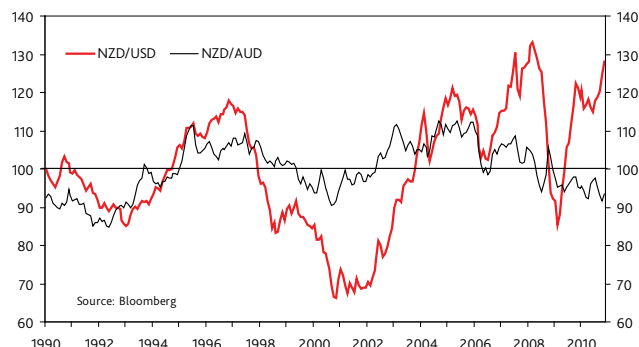


### Unusual behaviour indicates something amiss...

The NZD/AUD has been trading well-below its long-run inflation-adjusted average of 86 cents for almost two years on

the trot. Now, that's not unusual in isolation – the cross has deviated from its long-run average for similar lengths of time in the past. For example, it was persistently low from 1999 to 2002, and persistently high from 2003 to 2005. But it has been very unusual to see the NZD/AUD so low at the same time as the NZD/USD exchange rate is above average. Since 1990, the NZD/USD and NZD/AUD rates have been positively correlated. Furthermore, the level of the NZD/AUD is out of kilter with the normal drivers of the cross. Our NZD/AUD model suggests that although the traditional drivers of the cross do argue for a low cross, they cannot explain the extent of depreciation that occurred in 2009, nor the persistence of the low NZD/AUD through 2010.

Figure 2: NZD/USD and NZD/AUD  
Index level 100 = average



Our monthly NZD/AUD model is divided into two parts. We calculate a fair value based on the long-run average adjusted for inflation and interest rate differentials according to economic theory. We have found that the cross rarely trades more than 10% either side of this estimated fair value. We then model the short-term dynamics of deviations from fair value with other economic variables. We found that relative GDP growth rates, NZ net migration, and relative commodity prices have the strongest short-run effects on the NZD/AUD cross. Or at least they did until 2009.

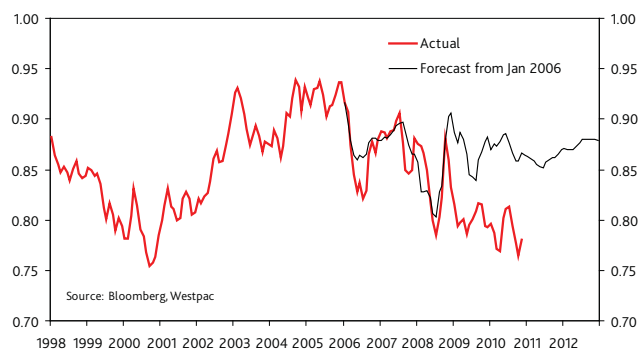
Chart 3 shows that the model successfully picked large gyrations in the cross over 2007 and 2008, indicating that those fluctuations were consistent with the key drivers. The fact that

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the model did not anticipate the extent of depreciation over 2009 and 2010 indicates that something additional to the five traditional drivers has been in play.

**Figure 3: NZD/AUD history and out-of-sample forecast from Jan 2006**



**The worst-kept secret**

We have long suspected that the additional factor keeping NZD/AUD low is New Zealand’s financial vulnerability. Now that we are armed with a sufficiently long period of relevant data, we have been able to formally test this hypothesis, and the answer is affirmative.

Our quantitative proxy for the state of global financial stress as experienced in the Australasian region is the average Credit Default Swap spread across Australia’s four main banks (henceforth referred to as CDS spreads). A CDS spread is the cost, measured in basis points, of insuring the debt obligations of a bank against the risk of default. We chose Australian bank CDS spreads because each large Australian bank owns a New Zealand subsidiary, making the banks regional rather than purely Australian from a risk point of view. Over the GFC period Australasia’s banking system has been very stable, but CDS spreads have reacted to global financial shocks, moving higher during periods of elevated global financial stress.

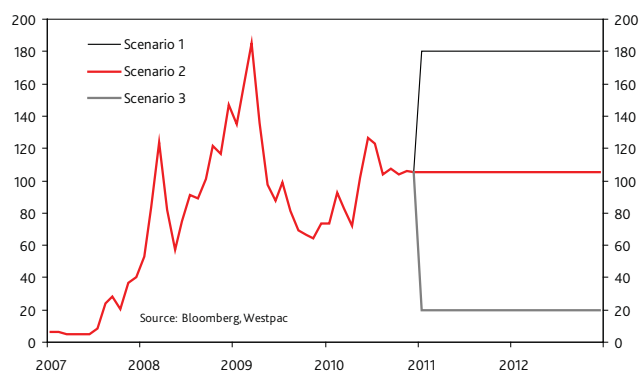
Our empirical investigation found that higher CDS spreads are associated with a lower NZD/AUD, holding the other drivers of the NZD/AUD constant. This indicates that elevated financial stress is worse for the NZD than for the AUD. Accordingly, we have now augmented our model to count CDS spreads as the sixth key driver of the NZD/AUD cross. Note that this will remain appropriate only so long as the financial shocks are emanating from outside the region. Should one of Australia or New Zealand *itself* experience a financial shock, the relationship between CDS spreads and the cross could change.

**Updated forecasts**

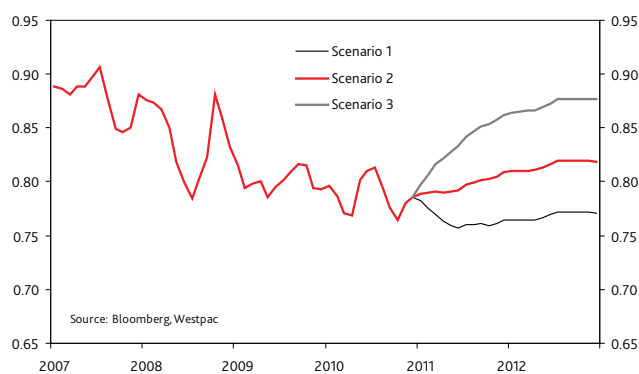
In order for our updated model to forecast the NZD/AUD we must take a position on where the key drivers are heading. This is difficult in the case of CDS spreads. Chart 4 provides three scenarios for future CDS spreads and chart 5 shows the simulated AUD/NZD trajectory for each scenario. Scenario 1 assumes that CDS spreads blow out to 180 basis points in January 2011, equivalent to the darkest days of the global crisis in early 2009, and remain at that level for two years. In that

case, NZD/AUD could be expected to fall back to monthly averages of 76 cents (implying even lower daily ranges). Scenario 3 assumes that CDS spreads suddenly return to their pre-GFC norm of around 20bp in January next year, in which case NZD/AUD would soar to around fair value, 86 cents. Scenarios 1 and 3 provide a sense of the possible range for AUD/NZD under quite extreme alternative assumptions.

**Figure 4: CDS scenarios**



**Figure 5: NZD/AUD scenarios**



For the purposes of our central forecast for NZD/AUD, we have adopted Scenario 2 – CDS spreads remain close to their current value over the whole of 2011 and 2012. In such a scenario, we’d expect the cross to gently appreciate over 2011 and 2012, all the while remaining below the historical average.

The key reason to forecast NZD/AUD appreciation in the absence of changes in CDS spreads is that we expect that the interest rate differential will narrow over the next two years. The RBA has already reached a mildly contractionary setting, whereas the RBNZ is a significant distance from neutral, implying the latter has more work to do in the next phase of the global recovery. The other main drivers are assumed to have relatively small and offsetting effects on the cross – NZ net migration is a short-run positive, while relative commodity price movements are assumed to be a short-run negative.

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