Discussion of: *Understanding New Zealand's Risk Premium* by Craig Burnside

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23 June 2011

High interest rates and low investment ?

- A common view is that there is a link between high interest rates, low investment rates and therefore slow GDP growth in New Zealand.
- Craig's paper has show us in a rigorous and eloquent fashion that whereas interest rates are high, these high rates do not equate to high borrowing costs, once we adjust for exchange rate risk.
- Given the risks to the exchange rate, interest rates have to be high, and therefore the capital stock low, to compensate investors. Investment might be low, but not **too low**.
- Why are interest rates so high in NZ ?
- Rates are high to compensate investors for a small probability of an extreme global event that (a) raises the discount factor of global investors and (b) depreciates the NZD.

Extreme Events

- High interest rates represent compensation for the risk of a rare and extreme event.
- Currency trader's profits :

$$z_{t+1} = \Delta s_{t+1} + (i_t - i_t^*) \tag{1}$$

- Standard pricing theory for this costless trade is :

$$E_t(M_{t+1} z_{t+1}) = 0 \tag{2}$$

- where M_{t+1} is the stochastic discount factor of the investor ... think of marginal utility of consumption.
- Two states of the world (i) normal times where $M_{t+1} = M^N = 1$ occurs with probability $1 - p_t$ and (ii) extreme where $M_{t+1} = M^x > 1$ which occurs with probability p_t.
- The extreme state of the world is bad for the investor, hence $M^x > M^N$

Extreme Events (ii)

- So, how does the investor price the trade ?

$$\left[(1-p_t)E_t^N(M^N z_{t+1}) + p_t E_t^x(M^x z_{t+1})\right] = 0 \tag{3}$$

- Tidy this up :

$$\left[(1-p_t)E_t^N(z_{t+1}) + p_t M^x E_t^x(z_{t+1})\right] = 0 \tag{4}$$

- Recall the evidence that in normal times, ie pre-crisis inflation targeting period UIP failed such that..

$$E_t^N \Delta s_{t+1} = \gamma(i_t^* - i_t) \tag{5}$$

- Finally, use (1) and (5) in (4) and we get...

Extreme Events (iii)

- ... an expression for the interest rate differential and hence the risk premium

$$i_t - i_t^* = -E_t^x(\Delta s_{t+1}) \frac{p_t M^x}{(1-p_t)(1-\gamma) + p_t M^x} \tag{6}$$

- The level of the risk-premium increase with ...
- the probability of an extreme event, p_t
- the size of the expected depreciation, $-E_t^x(\Delta s_{t+1})$
- and the value of the SDF in the extreme event, M^x

Extreme Events - meaning what exactly

- The extreme event is a global shock, after all, it affects the SDF of the global investor (M^x would not change if the event was NZ specific)
- Critical for the extreme event story is that during the extreme event, the NZD depreciates against major currencies.
- as a result of these two assumptions, the NZD is expected to depreciate just when the global investor is feeling a bit off colour.

Why would the NZD depreciate following a global shock ?

- Interesting, albeit unanswered questions is : why should the NZD (and AUD) depreciate during a "global" crisis ? Is it inevitable ?
- An exchange rate is just a relative price. Say, all countries are identical in structure, save for their size, then a global shock should affect all countries in such a way as to leave relative prices unchanged.
- The implication of the extreme result story is that there is something about the structure of the NZ economy that causes the NZD as well as the AUD to depreciate relative to other major currencies in the event of a "global" crisis.

What do have NZ and Australia in common ?

- Funny accent ? Unlikely !
- Commodity exporters.
- Persistent current account deficits.
- Low savings rates.

Commodity exports and exchange rate dynamics

- How do commodity exports react in a recession ?
- Depends what they are used for.
- Say commodities are used in investment, which we know is 3 - 5 as volatile than GDP, then a global downturn in GDP would lead to a disproportionate decline in the demand for commodities. Example : Investment goods producing country like Germany - very steep recession and quick recovery after GFC.
- NZ exports mostly foodstuff with a low income elasticity of demand...
- Worth doing some research into the response of commodity exports to global recessions in a DSGE framework.

Current account reversals and the exchange rate

- Could a "global" event lead to a sudden unwinding of the NZ current account position, and if so, what would happen to the exchange rate ?
- Obstfeld and Rogoff (2004, NBER 10869) show that an unwinding of the US current account position (of then more than 6% of GDP) could lead to a depreciation of the USD of 30% or more.
- Mechanism : CA reversals would imply a reduction in NZ spending on traded goods. To maintain some form of internal balance, the relative price of non-traded goods (housing services, etc) has to decline, thus leading to a large **real depreciation** of the NZD.
- This kind of potential CA reversal could be priced into the interest rate.
- Still none the wiser what would cause this to happen.

Low savings rate

- Why does a low savings rate matter ?
- Definition of current account balance : $CA = S - I$
- If this is true, then NZ's current account deficit is either due to too much investment (would we be having this conference then ?) or too little savings.
- Textbook economics tells us that in an open economy with capital mobility, savings and investment should be uncorrelated... data tells us that savings and investment **are** correlated in an open economy – Feldstein-Horioka puzzle.
- More savings, more investment, smaller current account deficit, smaller expected depreciation following global event, smaller risk premium.

Why is the savings rate so low ?

- Pure speculation ...
- Housing as main form of wealth.
- Preferential tax treatment of housing - no stamp duty.

- Anecdotal evidence from a recent immigrant to NZ ...
- Why is it difficult or unattractive to save in NZ ?

Why is the savings rate so low ?

TAXES

Why is the savings rate so low ?

- Tax treatment of savings - NZ versus UK
- Example : say you want to contribute to a University pension scheme.
- In **UK**, there is tax relief on employer and employee pension contributions. The return generated by pension fund investments is tax free.
- In **NZ**, employees pay tax on employer contributions and make their own contributions out of *post*-tax income. You then pay tax on the interest income of the fund.
- At the end of the day, when you come to enjoy the pension, it is tax-free in NZ.

Why is the savings rate so low ?

- OK, not all savings are tax free abroad, but in addition to tax free pension contributions, every UK tax payer can save up to NZD 10,000 tax free per year - hence for most UK households, most savings are tax free.
- In NZ, there is an effective wedge between the borrowing cost to the firm and the return on savings.
- Low post-tax return to savings and high cost of finance for firms re-enforce one another to subdue savings and investment and stifle growth.

Recommendations - if I may

- From the OECD's Economic Survey of New Zealand 2011 :

  Achieving faster growth will require progress across a broad policy front. This includes bolder fiscal consolidation in the form of spending restraint, coupled with tax and pension reforms to boost national saving. These measures would allow interest rates to stay low for longer and create room for the exchange rate to ease, thereby facilitating the needed rebalancing of the economy, boosting output of tradable goods and services.

Recommendations - if I may

- Why do we tax cigarettes or wine? Because we probably consume more than is good for us.
- Conversely, if you really think that the low household savings rate is a problem, i.e. if savings are sub-optimally low, then STOP taxing savings.