

Real Exchange Rate Impacts on New Zealand Forestry Export Competitiveness

David Evison¹

University of Canterbury

Introduction

The commercial forestry sector is a major contributor to the New Zealand economy, with forestry products being the third-largest merchandise export category by value. Plantation resource projections (Ministry of Agriculture and Forestry, 2010) highlight potential for significant additional harvest, based on trees already in the ground, but not yet of harvestable age.

New Zealand already exports about 70% of the total harvest of plantation wood, so an increase in forestry's contribution to the New Zealand economy depends on increasing exports, and therefore export competitiveness. A competitive and profitable industry will attract funds to expand processing capacity and develop new markets and products.

The export competitiveness of the forestry sector is affected by a number of factors, including the monetary policies implemented by the Reserve Bank of New Zealand (RBNZ), and New Zealand's trading partners. Monetary policy refers to the specific activities of central banks, as well as the system used to determine exchange rates and control international capital flows. The New Zealand Reserve Bank is responsible for maintaining inflation within a band of 1-3%, and the policy instrument to achieve this is the Official Cash Rate. Through this instrument, the RBNZ influences interest rates, exchange rates and economic growth to meet its inflation target (RBNZ, 2007).

The Reserve Bank Act was originally promoted as contributing to improving export competitiveness. It was argued that "runaway" inflation eroded competitiveness by increasing costs relative to our competitors. Subsequently the Reserve Bank was directed to target inflation, but did not link this to an objective to enhance export competitiveness. More recently the Reserve Bank's focus was widened to include consideration of broader economic performance.

There has been growing criticism of the monetary policy focus by exporters, economic commentators (see for example, Sanderson et al., 2007), and the Labour opposition, who announced on 19th November 2009 that

they would no longer offer bilateral support for the Reserve Bank's policy targets and tools².

By contrast the Ministry of Agriculture and Forestry (MAF) has argued recently that exchange rates are cyclical, and that because our competitors are exposed to the same exchange rate fluctuations, our relative competitiveness may be unaffected. The research reported in this paper documents trends in data on exchange and inflation rates, combined in the form of a real exchange rate, to see if they support these assertions.

The objective of this paper is to examine how exchange rates and inflation rates have influenced export competitiveness of the forestry sector. The analysis looks at New Zealand's real exchange rates with major forestry trading partners, and those of two other countries - Chile and Singapore - with the same trading partners. Chile and Singapore were chosen for comparison because they are both small countries, whose economies are dependent on export competitiveness. Chile is a major exporter of radiata pine products, and Singapore, as a major port, must be able to offer an internationally-competitive service to shippers.

Data and Methods

A real exchange rate can be described as the "...rate at which a person can trade the goods and services of one country for the goods and services of another..." (Mankiw et al., 2007)

In this paper, the real exchange rate is calculated from nominal exchange rates and indexes of prices, as follows:

$$\text{Real exchange rate} = e * (P^f / P)$$

where:

e = the (nominal) exchange rate in \$NZ per unit of the foreign currency

P = an index of wholesale prices in the New Zealand economy

P^f = an index of wholesale prices in the foreign economy.

Calculated in this way a numerical increase in the real

¹ Senior Lecturer, Forest Economics, New Zealand School of Forestry

² www.scoop.co.nz. Accessed 2nd December 2009

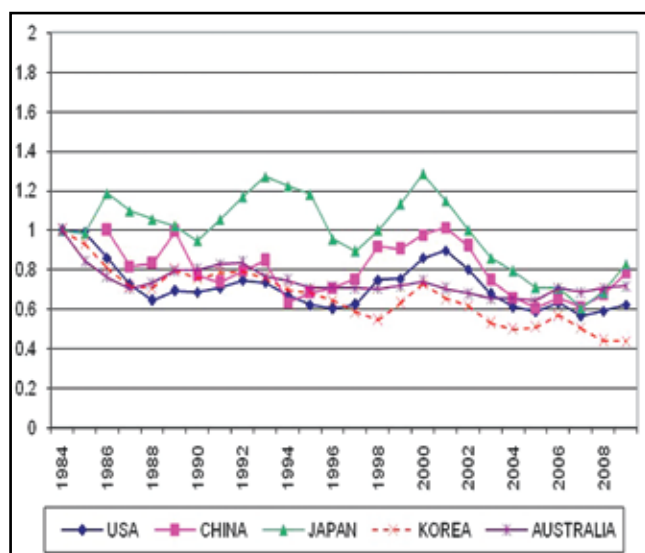


Figure 1: Real exchange rates (indexed at 1984=1) for New Zealand with respect to major forestry markets.

exchange rate indicates an increase in competitiveness, and a decrease in the real exchange rate indicates a decrease in competitiveness. A similar measure of competitiveness was shown in Evison (1990), for New Zealand wood products with respect to the Japanese and Australian markets. At that stage, while there were quite large year-on-year changes in the level of real exchange rates, there was no obvious trend.

Annual exchange rate and price index data from the International Monetary Fund (IMF) International Financial Statistics database were used to calculate real exchange rates. In general, the wholesale price index reported by the IMF was used, except in the case of China where a wholesale price index was not available and the consumer price index was used instead. Most analysis uses data from 1984 to 2009.

This start date was chosen because it was the date that major structural changes were initiated in the New Zealand economy, by the Labour government elected on 14 July 1984. The change of government was associated with a run on the New Zealand currency, followed by a major devaluation. New Zealand has had a freely-floating exchange rate since 1985, and introduced inflation targeting as the major goal of monetary policy in 1989 (Bjorksten and Brook, 2002).

The analysis considers two factors that should be considered in assessing the impact of exchange rates on exporting sectors such as forestry - the absolute level of the real exchange rate with major trading partners, and the volatility of the exchange rate. Both will have an impact on the returns to exporters.

Results

Real exchange rates were calculated for New Zealand's five major forestry markets (Figure 1). 75% of New Zealand's forestry exports by value went to these markets in

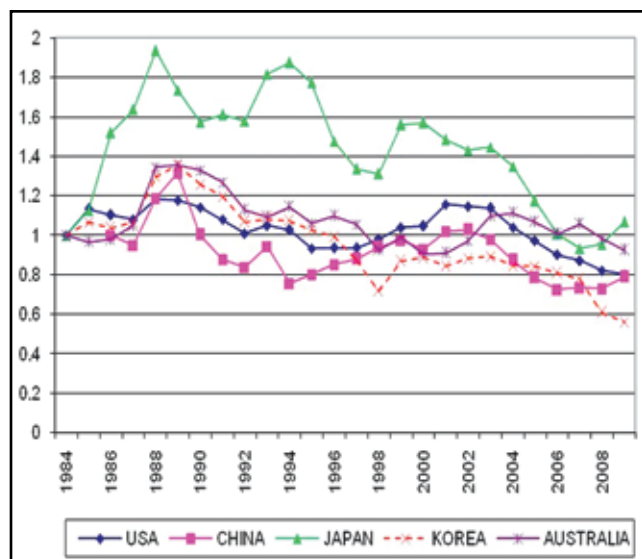


Figure 2: Real exchange rates (indexed at 1984=1) for Chile with respect to New Zealand's major forestry markets.

the year ending Dec 2009 (MAF, 2010). The real exchange rate has been set to 1.0 for the year 1984 in all cases.

Compared to the reference date of 1984, the New Zealand forestry sector is less competitive now by 17% to 56% (depending on the country in question), based solely on changes in exchange rates and relative inflation rates.

Figure 2 shows the Chilean real exchange rate for the same markets. While Chile has also experienced a decline in competitiveness due to appreciating real exchange rates, the decline has been far less severe than in New Zealand's case.

Singapore's real exchange rates with respect to the same markets are shown below in Figure 3. Competitiveness improved against all markets except China and Korea.

Table 1 summarises these results shows the aggregate change in competitiveness from 1984 to 2008 for these three economies, and demonstrates the extent to which New Zealand has been disadvantaged in comparison with some other small export-oriented economies.

Exporters are concerned about exchange rate volatility, as well as the absolute level of exchange rates. Table 5 compares real exchange rate volatility. In this case, volatility was measured as the average of the absolute value of annual changes in real exchange rate.

Table 2 shows that, except with respect to the Australian currency, the New Zealand real exchange rates are more volatile than those of Chile or Singapore.

Conclusion

This analysis shows that there has been a significant decline in competitiveness of New Zealand exporters of forestry products as a result of real exchange rate changes.

Table 1: Change in real exchange rates between 1984 and 2009, New Zealand, Singapore and Chile.

| | USA | China | Japan | Korea | Australia |
|-------------|------|-------|-------|-------|-----------|
| New Zealand | -38% | -22% | -17% | -56% | -28% |
| Singapore | 19% | 8% | 58% | -17% | 37% |
| Chile | -20% | -21% | 7% | -44% | -7% |

Table 2: Average annual volatility of real exchange rates between 1984 and 2009, New Zealand, Singapore and Chile.

| | USA | China | Japan | Korea | Australia |
|-------------|------|-------|-------|-------|-----------|
| New Zealand | -38% | -22% | -17% | -56% | -28% |
| Singapore | 19% | 8% | 58% | -17% | 37% |
| Chile | -20% | -21% | 7% | -44% | -7% |

The analysis quantifies the extent to which forestry exporters have been disadvantaged by unfavourable real exchange rate movements. This disadvantage has been significant, and has occurred concurrently with a significant decline in reported forestry profitability and a lack of investment in new and replacement capacity. These results apply equally to exporters of other products to these markets.

Comparison with Chile and Singapore's exchange rates show that other small export-oriented countries have been far more successful at maintaining, and sometimes increasing, their export competitiveness than New Zealand. The analysis also shows that volatility of the New Zealand real exchange rate was often greater than for Chile and Singapore. It is likely this volatility would result in additional costs to New Zealand forestry exporters.

Over the period studied, the data do not appear to support either the MAF contention that changes in competitiveness due to exchange rate changes are cyclical, or the claim, in the case of Chile, that New Zealand's forestry competitors are affected in the same way.

Discussion

Possible further work includes calculating an overall trade weighted real exchange rate index for forestry. This could be compared with the Trade Weighted Index (TWI) that the Reserve Bank uses as its indicator of exchange rate effects.

This paper has not explored the reasons why other small export oriented economies have not experienced the same loss of competitiveness as New Zealand. Further work is required to understand the impact of different approaches to monetary policy.

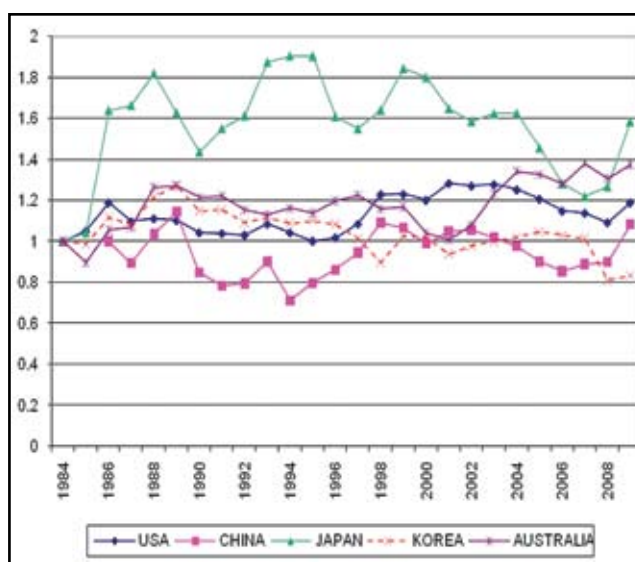


Figure 3: Real exchange rates (indexed at 1984=1) for Singapore with respect to New Zealand's major forestry markets.

The exchange rate changes shown here could be used as scenario inputs to a model of New Zealand forestry production and trade, to estimate the actual impacts of real exchange rates on production, trade and profitability.

References

- Bjorksten, N., Brook, A. (2002). *Exchange rate strategies for small open developed economies such as New Zealand*. Reserve Bank of New Zealand, Wellington.
- Evison, D.C., (1990). *New Zealand wood products industry in the 1980s and beyond*. New Zealand Journal of Forestry, May 1990: 22-27.
- International Monetary Fund (various years). *International Financial Statistics*. www.imf.org
- Mankiw, G.N., Bandyopadhyay, D., Wooding, P. (2007). *Principles of Macroeconomics in New Zealand*. Thompson, Australia.
- Ministry of Agriculture and Forestry (2009). *A forestry sector study*. MAF Policy, Wellington.
- Ministry of Agriculture and Forestry (2010). *New Zealand wood availability forecasts, 2010-2040*. Ministry of Agriculture and Forestry, Wellington.
- Reserve Bank of New Zealand (2007). *Explaining New Zealand's monetary policy*. Reserve Bank, Wellington.
- Sanderson, K, Nana, G., Catt, A. (2007). *BERL's supplementary note on the operation of monetary policy*. Business and Economic Research Ltd, Wellington. www.berl.co.nz, accessed Oct 2009.