

The Impact of Exchange Rate Movements on Vegetable Imports

This paper examines whether movement in the exchange rate of the Australia dollar is the major explanatory factor for changes in the level of vegetable imports. It focuses specifically on 2008-09, when the Australian dollar fell sharply, and 2009-10 and 2010-11 when the movement was in the opposite direction with strong exchange rate gains.

The format of the paper is that the overall picture is examined first by looking at currency movements and the impact on total Australian vegetable imports, and then to break down those imports into major categories of fresh, frozen, processed and other vegetable imports. More detail is provided by examining the performance of the Australian dollar against the currencies of countries that are important sources of vegetable imports. Finally there are case studies on several of Australia's largest vegetable imports:

- Frozen prepared potatoes
- Tomatoes whole or in pieces
- Frozen mixtures of vegetables
- Fresh garlic

These imports have the advantage that they are not counter seasonal to Australian production and therefore the factors that have an impact on demand are likely to be less significant than they are, for example, on most imports of fresh vegetables.

The Australian dollar falls sharply in 2008-09

The Australian dollar fell sharply in 2008-09 as the global financial crisis had a severely negative impact on the outlook for the world economy and commodity prices which, in turn, had a negative impact on the Australian dollar. Against the US dollar, the Australian dollar weakened from US\$0.96 at end-June 2008 to a low of US\$0.62 in November 2008 before staging a partial recovery to US\$0.81 at end-June 2009. The Australian dollar averaged US\$0.76 in 2008-09, down by more than 15% on its average of US\$0.90 in 2007-08.

The Reserve Bank of Australia's Trade Weighted Index (TWI) provides a broader measure of the value of the Australian dollar against the currencies of Australia's trading partners. It is often used as an indicator of Australia's international competitiveness and is a useful gauge of the value of the Australian dollar when bilateral exchange rates show divergent trends. The TWI declined from 73.4 at end-June 2008 to a low of 51.0 in October before recovering to 64.7 at end-June 2009. In average terms the Australian dollar depreciated by 12.6% between 2007-08 and 2008-09.

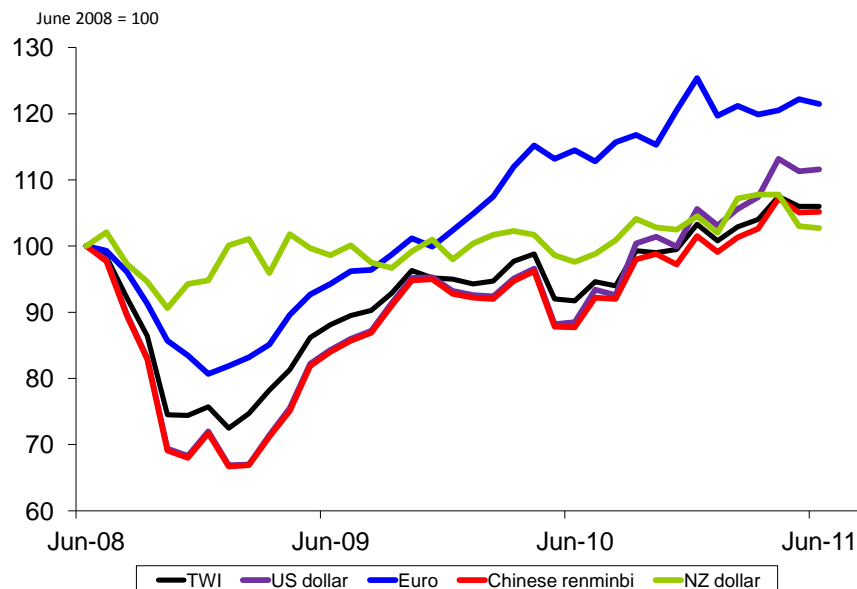
There are significant differences in the movement of the Australian dollar against particular currencies and it is these movements that are relevant when examining the trade in vegetables with individual countries. For example, although the Australian dollar fell against most major currencies in 2008-09, the decline against the Chinese renminbi of 20.4% in average terms between 2007-08 and 2008-09 was much more pronounced than the 10.8% decline against the euro over the same period. The

Australian dollar actually strengthened against the New Zealand dollar in 2008-09, appreciating by 5.6% on an average basis.

.... but appreciated strongly in 2009-10 and 2010-11

The Australian dollar strengthened by 12.4% on a trade-weighted basis between 2008-09 and 2009-10. It made strong gains against the currencies of most of the countries that are important sources of vegetable imports rising on average by 15.4% over this period against the US dollar, by 16.6% against the euro, and by 15.2% against the Chinese renminbi. The Australian dollar's appreciation against the NZ dollar was much more modest with a rise of 1.8%. The appreciation of the Australian dollar reflected much stronger economic prospects than in many other parts of the world, particularly the USA, Europe, and Japan and much higher short-term interest rates in Australia than in most other advanced economies.

Australian Dollar against Individual Currencies



Source: Reserve Bank of Australia

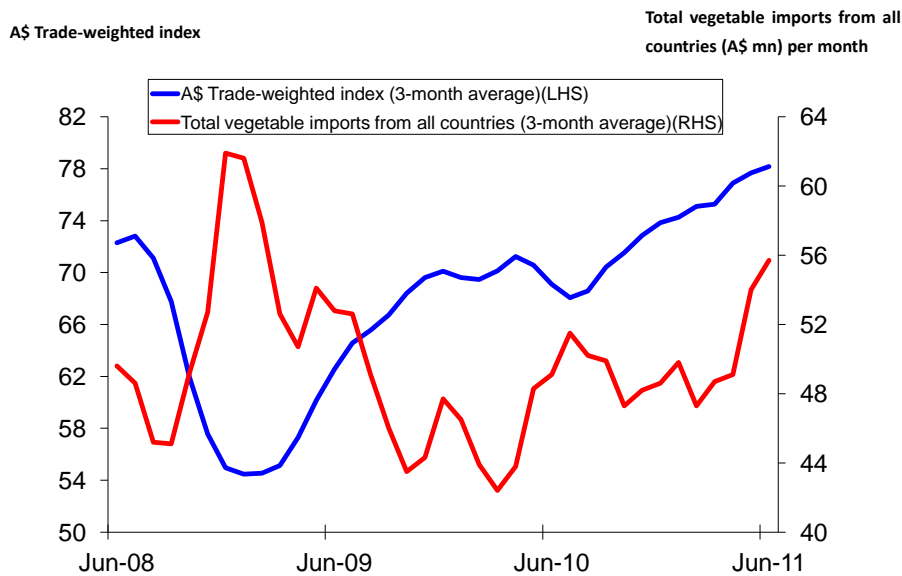
The appreciation of the Australian dollar against most major currencies continued in 2010-11. It rose by 7.6% on a trade-weighted basis from an average of 68.7 in 2009-10 to an average of 73.9 in 2010-11. Against individual currencies it rose by an average 12.5% against the US dollar, by 14% against the euro, by 9.1% against the Chinese renminbi and by 3.7% against the NZ dollar.

The impact of currency movements on Australia's vegetable imports

One would expect that currency movements of these magnitudes would have significant impact on the competitiveness of vegetable imports relative to locally-grown produce. The sharp fall in the Australian dollar in 2008-09 made imports more expensive which would be expected to dampen demand for imports. The opposite impact would be expected in 2009-10 and 2010-11 with the appreciation of the Australian dollar making imports cheaper and thus more competitive with locally-grown produce.

One would also expect time lags between currency changes and the impact on imports as importers adjust to exchange rate movements. Importers may be able to undertake opportunistic imports but there will be some delay as they observe whether the currency change will hold and then organize sourcing of foreign product and freighting of the imports into Australia. For example, the decline in the Australian dollar in 2008-09 appeared to have no impact on the upward trend in vegetable imports evident from the turn of the century with the total rising from \$550 million in 2007-08 to a record \$637 million in 2008-09. The annual increase of 15.8% between 2007-08 and 2008-09 was, however, below the average annual increase of 21.2% in the previous two years and it is possible that the weaker currency was at least partly responsible for this slowdown especially towards the end of the financial year.

Australia's Vegetable Imports from All Countries



Source: Reserve Bank of Australia and World Trade Atlas

Total vegetable imports fell by 12.8% in 2009-10, the first annual decline since 1996-97. It is possible that the impact of the weaker Australian dollar in 2008-09 may have operated with a time lag and had a bigger impact than the currency appreciation that occurred in 2009-10.

The upward trend in vegetable imports resumed in 2010-11 with a rise of 9.6% suggesting that the strong appreciation of the Australian dollar in 2009-10 and 2010-11 had some impact in bolstering demand for vegetable imports.

Table 1: Major Categories of Vegetable Imports

<i>% change from previous year</i>	2008-09	2009-10	2010-11
A\$ TWI*	-12.6	12.4	7.6
Fresh vegetables	-7.6	18.5	31.8
Frozen vegetables	15.0	-21.3	6.9
Processed vegetables	23.5	-15.8	6.4
Other vegetables	14.3	-1.5	8.5
Total	15.8	-12.8	9.6

* The Reserve Bank of Australia's Trade-weighted index (TWI) is the weighted average value of the Australian dollar in relation to the currencies of Australia's trading partners. The base level was set at 100 in May 1970. The TWI is calculated daily.

Table 1 shows changes in the main categories of Australia's vegetable imports against changes in the exchange rate. As noted earlier, changes in the total value of vegetable imports are consistent with the observation that exchange rate movements have an impact but operate with a time lag as importers adjust to these movements. The dollar declined in 2008-09, but it is not until 2009-10 that this is reflected in a fall in vegetable imports.

However, there are significant differences between the main categories of vegetable imports. Although imports fell in most categories in 2009-10, imports of fresh vegetables rose significantly. This suggests that there are other considerations other than the exchange rate that impact on the level of imports.

The stronger Australian dollar in 2009-10 seems to have had an impact in boosting demand for all categories of vegetable imports in 2010-11 although the increase in imports of fresh vegetables was much bigger than increases in the other categories.

Table 2: Vegetable Imports by Country

<i>% change from previous year</i>	2008-09	2008-09	2009-10	2009-10	2010-11	2010-11
	Currency*	Imports	Currency*	Imports	Currency*	Imports
New Zealand	5.6	-11.2	1.8	-12.6	3.7	19.2
China	-20.4	25.2	15.2	-12.7	9.1	13.1
Italy	-10.8	17.4	16.6	-1.1	14.0	-10.5
USA	-15.5	34.9	15.4	-39.2	12.5	43.8
Netherlands	-10.8	28.0	16.6	12.1	14.0	4.5
Total#	-12.6	15.8	12.4	-12.8	7.6	9.6

* Percentage change in the value of the Australian dollar against the currency of the country specified in the table. # Trade-weighted index.

Table 2 examines Australia's imports from its 5 most important source countries (accounting for 70% of total vegetable imports in 2010-11) and compares changes in these imports with changes in the value of the Australian dollar against their respective currencies.

As noted above, the Australian dollar falls quite heavily against most countries in 2008-09, but there are strong increases in vegetable imports from most countries. However, vegetable imports do decline in 2009-10, following a long upward trend, consistent with the observation that importers react to changes in the exchange rate with a time lag. In 2009-10, the currency strengthens boosting the competitiveness of vegetable imports compared with local produce. Imports actually fall in 2009-10, but increase in 2010-11 again supporting the view that changes in the exchange rate do have a significant impact but that this impact is felt with a time lag.

However Table 2 also suggests that factors other than currency movements are significant in determining demand for vegetable imports. For example, the appreciation in the Australian dollar in 2009-10 against the US dollar and Chinese renminbi is of similar magnitude (reflecting the close link between the renminbi and the US dollar), but there are big differences in vegetable import outcomes in 2010-11. Imports from both these countries rise in 2010-11, but the increase in imports from the USA is approximately three times the increase in imports from China. Similarly, Italy and the Netherlands have a common currency, the euro, but despite this there are significant differences in import performance over recent years providing further evidence of other factors at work.

Case Studies

The analysis to date suggests that in aggregate terms changes in the value of the Australian dollar against the currencies of major sources of vegetable imports has an impact on the level of imports albeit with a time lag. However aggregation can hide the impact of other factors that may be important in determining sourcing decisions. Supply is an obvious case in point. Adverse climatic conditions in Australia may lead to a shortage of product which will be replaced by imports. Conversely adverse conditions in import source countries may restrict the amount of product available for export to Australia.

In order to get some handle on these issues closer analysis of individual vegetable products response to changes in the currency may shed some light. Australia's four major imports by value in 2010-11 were chosen. Monthly vegetable import and currency data was collected and a three month moving average of both the respective currencies and the vegetable import observed. A moving average aims to smooth out random monthly fluctuations.

Frozen Prepared Potatoes

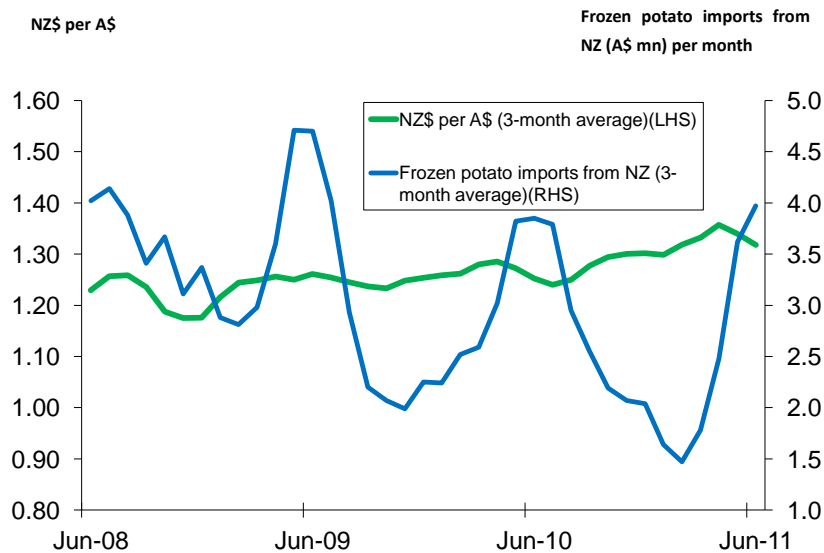
New Zealand has consistently been Australia's leading overseas supplier of frozen prepared potatoes, although there has been significant volatility in imports from New Zealand over the reporting period using a three month moving average. Movements in the New Zealand dollar/Australian dollar exchange rate are smaller than movements in most other currencies due to the shared economic conditions and interests between the two countries.

As there has been little movement in the AUD/NZD exchange rate but significant volatility in the level of imports from New Zealand an initial analysis of the data suggests that currency factors have little impact on imports from New Zealand.

However there is a seasonal spike in imports over the period May-July which distorts the short term pattern. Volatility is much less pronounced and more in line with movement in the currency when imports are viewed on an annual basis. However there is a sharp spike in imports in 2008-09 which coincides with the period of strongest appreciation of the AUD/NZD exchange rate over the period studied. This also was a year when there was a significant fall in the production of processing potatoes in Australia.

No clear economic evidence emerges of the case for or against currency factors being important in the decision to source locally or from New Zealand.

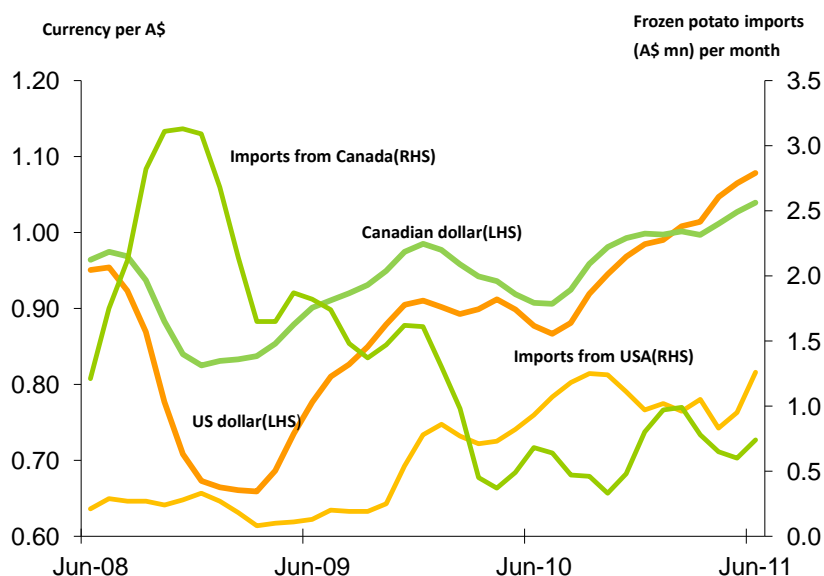
Frozen Potato Imports from New Zealand



Source: Reserve Bank of Australia and World Trade Atlas

Imports of frozen prepared potatoes from the USA have risen since 2008-09, while imports from Canada fell sharply from late 2008 until mid 2010 with only a modest recovery in 2010-11. These divergent trends may reflect the much more pronounced appreciation of the Australian dollar against the US dollar over the past two years than against its Canadian counterpart. The case for a substantial currency impact in choice of sourcing from these countries is much stronger. Some knowledge of the Australian importers and their relationship with overseas suppliers would shed some light on how accurate this statement is.

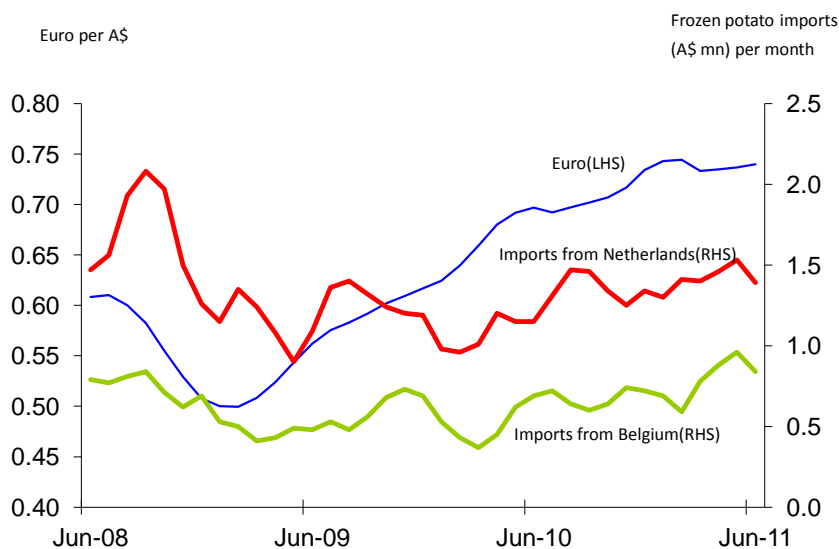
Frozen Potato Imports from Canada and USA



Source: Reserve Bank of Australia and World Trade Atlas. All data series are 3-month averages

The Australian dollar has strengthened significantly against the euro since early 2009. Despite the strong appreciation of the Australian dollar in 2009-10, there was little change in the value of frozen potato imports from the Netherlands and Belgium in 2009-10. But with the Australian dollar continuing to make further gains in 2010-11, the value of potato imports from both these countries rose in 2010-11 suggesting that the level of appreciation of the Australian dollar against the Euro was making it attractive to import.

Frozen Potato Imports from Netherlands and Belgium

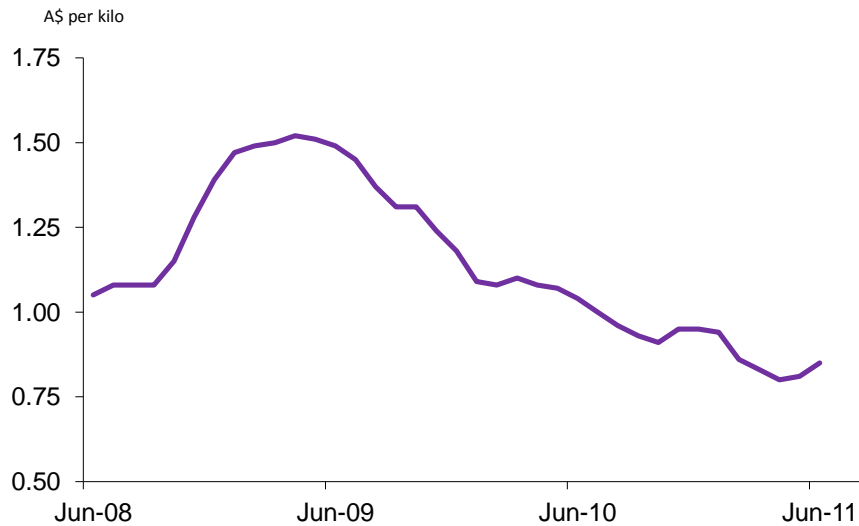


Source: Reserve Bank of Australia and World Trade Atlas. All data series are 3-month averages

Processed Tomatoes whole or in pieces

Imports of canned tomatoes are mainly from Italy. The appreciation of the Australian dollar against the euro has led to a sharp decline in the price of tomato imports from Italy since mid 2009.

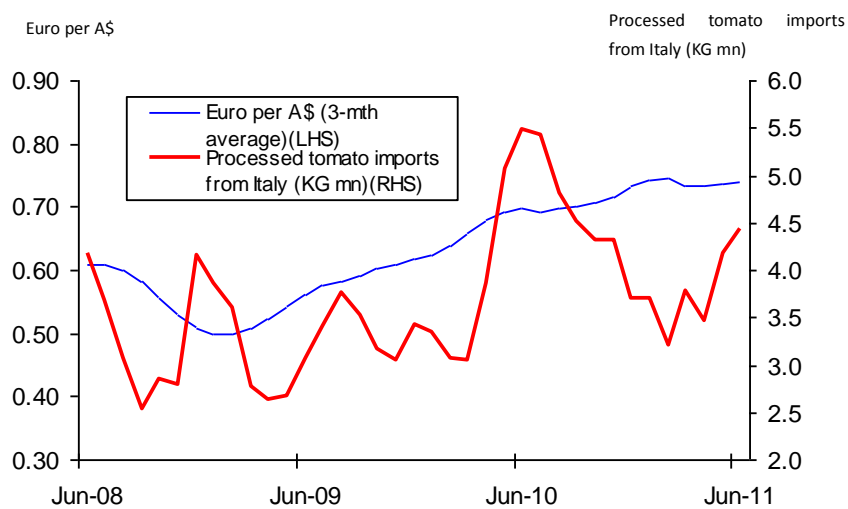
Import Prices (3-month average): Processed Tomatoes from Italy



Source: World Trade Atlas

As a result there has been a significant increase in quantities of tomatoes imported from Italy.

Imports of Processed Tomatoes (whole and in pieces) from Italy

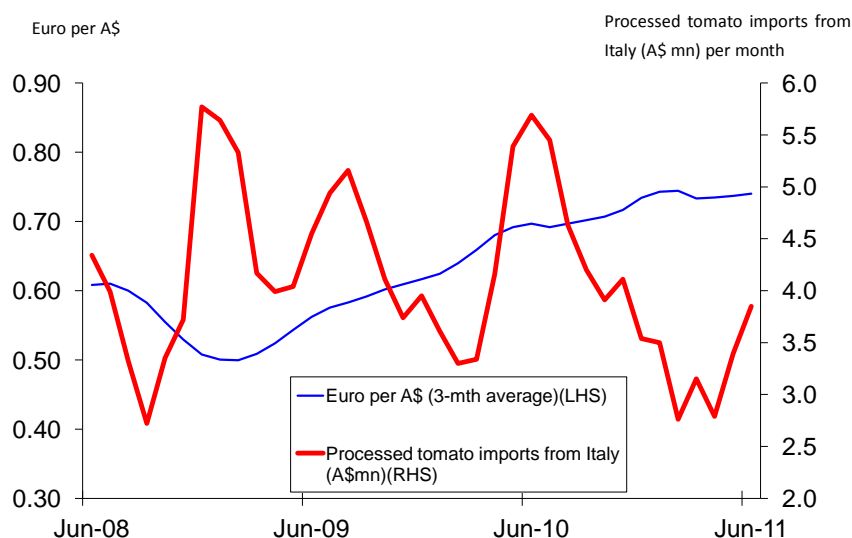


Source: Reserve Bank of Australia and World Trade Atlas

However while volumes have risen the lower import price has meant that the total value of tomato imports from Italy, despite fluctuations, has remained fairly steady in

Australian dollar terms over the reporting period.

Imports of Processed Tomatoes (whole and in pieces) from Italy



Source: Reserve Bank of Australia and World Trade Atlas

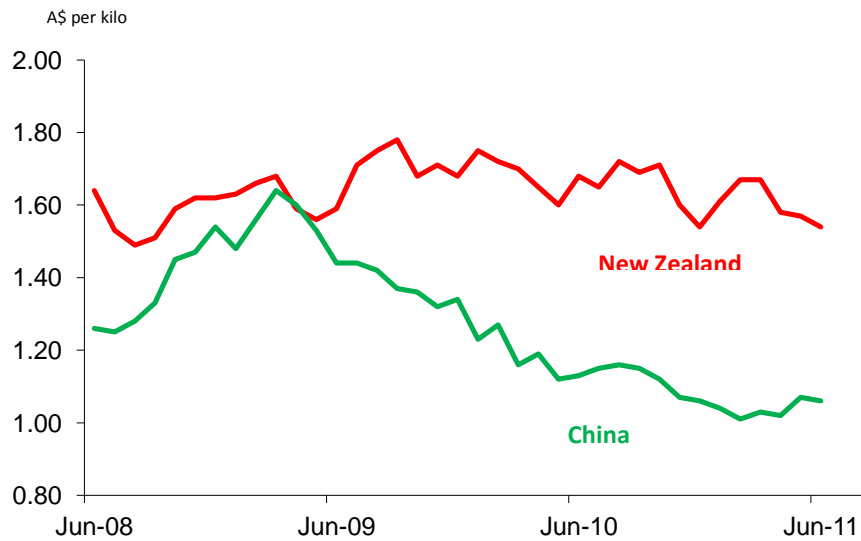
A slowdown in volume growth coupled with a substantial fall in Australian dollar import prices explains the sharp decline in the value of tomato imports in late 2010 and early 2011. The slowdown in volume growth is counter intuitive in the face of a rising dollar and lower import prices. We could speculate on reasons for this such as Italian imports are reaching market saturation. But we do know something about conditions for Australian processing tomato growers which may have impacted on the demand for imports independent of currency changes.

The principle area for growing processed tomatoes in Australia is in the Murray-Darling Basin. Drought over a number of years and increasing water costs both drained the supply of processing tomatoes produced locally and increased their cost while impacting on domestic factory throughput. The slowdown in import volume growth may have something to do with better seasonal conditions in Australia. If that is the case then the up kick in imports at the end of the reporting period may be a precursor of what is to come given widespread floods over the growing season in 2010-11.

Frozen Mixtures of Vegetables

New Zealand is Australia's major source of imports of frozen vegetable mixtures, with China the second most important source. Prices of imports from New Zealand have been fairly steady over the past two years, but there has been a significant decline in the price of imports from China driven by the strong appreciation of the Australian dollar against the Chinese renminbi. A significant price differential has developed with average Chinese prices of \$1.06 per kilo in June 2011, approximately two-thirds the level of the average New Zealand price of \$1.54 per kilo.

Import Prices (3-month average): Frozen Vegetable Mixtures

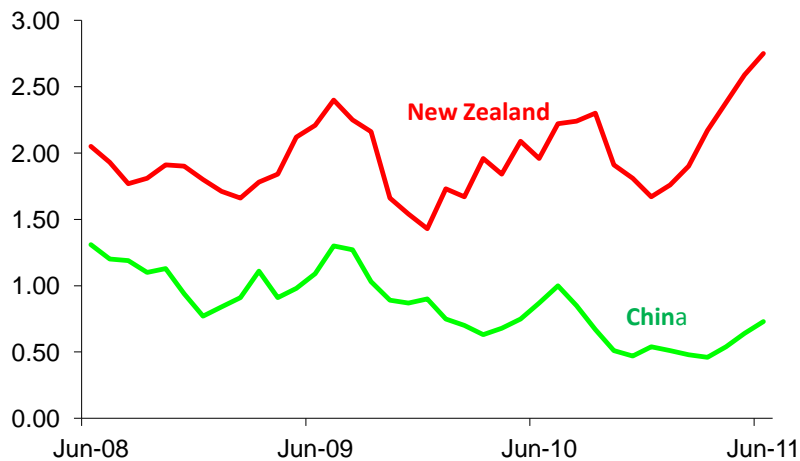


Source: World Trade Atlas

The strong price advantage offered by China has not dented New Zealand's dominance of this sector pointing to other factors apart from price movements caused by relative currency changes having a significant influence on sourcing of imports. The fact that vegetable processors have factories in both Australia and New Zealand and the increasing integration of operations across the Tasman may offer an explanation.

Frozen Mixtures of Vegetables Imports

Frozen vegetable mixture imports (A\$ mn) per month

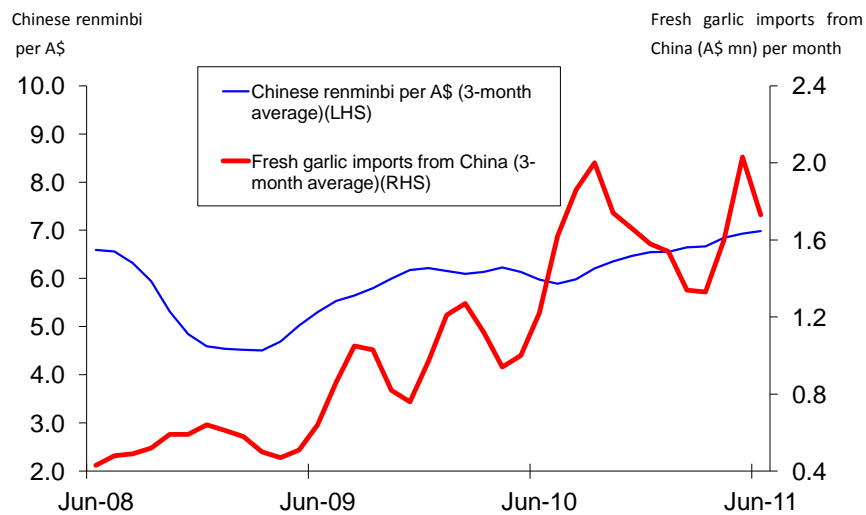


Source: World Trade Atlas

Fresh Garlic

China is the main supplier of fresh garlic to Australia, with imports of garlic from other countries quite volatile and not making sustained inroads into China's dominance. The latter reflects the competitive prices offered by Chinese suppliers which have been consistently lower than prices of imports from other countries over the reporting period.

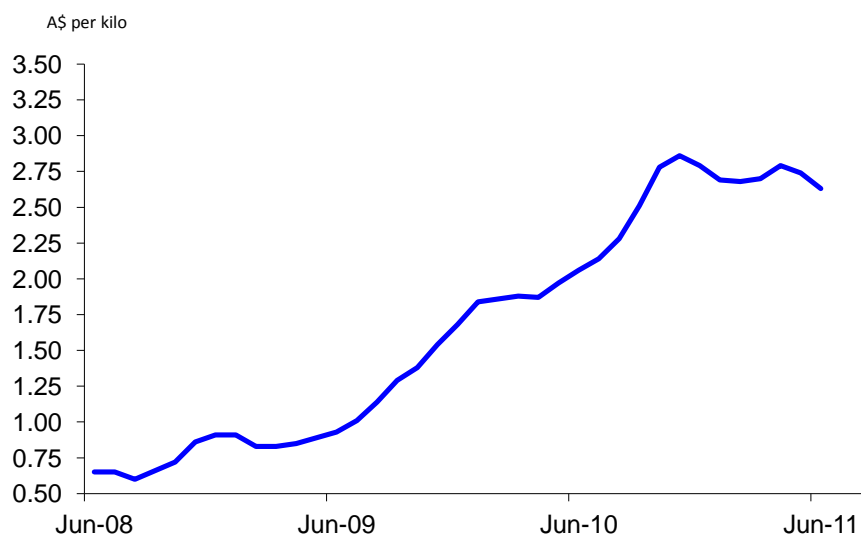
Fresh Garlic Imports from China



Source: Reserve Bank of Australia and World Trade Atlas

Nonetheless there has been a strong increase in Australian dollar import prices of garlic from China over the past two years despite the appreciation of the Australian dollar.

Import Prices (3-month average): Fresh Garlic from China



Source: World Trade Atlas

This has meant that while volumes have hardly moved there has been a sharp acceleration in the value of Chinese garlic imports. Hence the normal impact of a currency appreciation making imports cheaper has not occurred in the case of garlic.

The fact that garlic import volumes have not fallen suggests that there has been little switching to domestic production. Either domestic garlic producers cannot compete on price or there is insufficient supply to meet domestic needs. Anecdotal evidence would suggest that the supply is insufficient because local suppliers cannot compete on price.

In the case of fresh garlic currency changes have had no impact on sourcing between Chinese imports and local producers.

Conclusion

The broad aggregate figures suggest that changes in the value of the Australian dollar have some impact after a time lag on the level of vegetable imports. However, drilling down to individual vegetable products suggests, that while currency movements can impact on decisions to source vegetables from overseas, they appear to be one of the factors in a business pot pourri. The importance of the currency movement relative to other factors varies enormously depending on the vegetable in question and the source country of the import.

We can guess at other factors that are part of the pot pourri.

Price competitiveness independent of currency movements remains critical. Much of the justification for moving vegetable processing offshore or sourcing vegetables from overseas is that production in Australia is high cost and non competitive

The ability to supply required volumes to ensure consistency of supply to retailers and food service clients is important. This can be impacted strongly by climatic conditions.

Relationships between Australian based businesses and overseas vegetable exporters are also in the mix as is the fact that the vegetable food processing sector in Australia is foreign owned with factories located in several countries.

This paper has limitations imposed by the data but suggests that currency changes can have an influence at the margin but are not the principal driver of decisions as to whether or not to import. Given the volatility of the Australian dollar it would be a brave call to undertake sourcing policies with only an eye to currency movements. Businesses faced with a decision to import or source locally will take into account a range of factors and will seek to minimise risk.

Economics suggests that the decision to import rather than source product locally will be influenced by currency fluctuations due to the price impacts in domestic currency. However the vegetable industry would do itself a disservice if it sought to attribute the rising tide of vegetable imports to the appreciation of the Australian dollar. Resort to this plaintive cry can become an excuse for not facing up to more fundamental reasons for loss of markets.