

New Zealand's Exchange Rate Cycles: Impacts and Policy

Gemma Mabin

NEW ZEALAND TREASURY
WORKING PAPER 11/01

MARCH 2011



THE TREASURY
Kaitohutohu Kaupapa Rawa

New Zealand Government

MONTH/YEAR

March 2011

AUTHOR

Gemma Mabin
The Treasury
PO Box 3724
Wellington 6008
New Zealand
Email gemma.mabin@treasury.govt.nz
Telephone +64 4 917 6894

ACKNOWLEDGEMENTS

The author would like to thank Mark Blackmore, Anne-Marie Brook, John Janssen, Paul Gardiner, Michael Reddell and Renee Philip for their substantial input at various stages in the preparation of this paper.

NZ TREASURY

New Zealand Treasury
PO Box 3724
Wellington 6008
NEW ZEALAND
Email information@treasury.govt.nz
Telephone +64 4 472 2733
Website www.treasury.govt.nz

DISCLAIMER

The views, opinions, findings, and conclusions or recommendations expressed in this Working Paper are strictly those of the author. They do not necessarily reflect the views of the New Zealand Treasury. The Treasury takes no responsibility for any errors or omissions in, or for the correctness of, the information contained in this Working Paper. The paper is presented not as policy, but to inform and stimulate wider debate.

Foreword

The Treasury's vision statement focuses on higher living standards for New Zealanders. While a range of factors underpin well-being, raising New Zealand's economic performance is a central driver of permanently higher standards of living. New Zealand faces two key economic challenges that need to be addressed if our economic performance is to lift. These are:

- accelerating productivity growth to raise average incomes per person and to close the income gap with other wealthier countries; and
- reducing imbalances in order to better position us to weather the inevitable economic or financial shocks that will impact our economy in the future.

This paper is one of a suite of four papers that examine key elements of New Zealand's economic performance and the macro- and micro-economic factors that are inhibiting productivity growth and contributing to economic imbalances.

These papers follow on from Treasury's earlier suite of papers examining New Zealand's productivity performance.¹

The four papers in the series are:

- *Why are Real Interest Rates in New Zealand so High? Evidence and Drivers* — examining interest rates in New Zealand, the apparent premium relative to overseas rates, potential drivers of this interest rate differential and the impact this might be having on investment;
- *New Zealand's Exchange Rate Cycles: Evidence and Drivers* — with a key focus on examining the nature of New Zealand's exchange rate cycle over the medium term and possible drivers for this cycle;
- *Economic Imbalances: New Zealand's Structural Challenge* — examining the imbalances in New Zealand's economy and their implications for resilience; and
- *New Zealand's Exchange Rate Cycles: Impacts and Policy* — focusing on the impact that New Zealand's exchange rate cycle has on the tradable sector and wider economic performance and possible policy responses.

The papers are being published to articulate the Treasury's current thinking on these issues. Our hope is that these papers will spark further debate on these important topics and stimulate further research that further advances our collective understanding of New Zealand's economic performance and possible policy change that may lift it.

¹ <http://www.treasury.govt.nz/publications/research-policy/tprp>

Abstract

This paper explores the impact of New Zealand's exchange rate variability on the tradable sector, and policy options for dampening exchange rate variability. It finds that exchange rate variability in the medium term is likely to have a negative impact on the tradable sector. However, the link between exchange rate variability and the performance of the tradable sector is not automatic; many factors are at work. New Zealand's tradable and non-tradable sector trends are mirrored in some other countries with varying degrees of exchange rate variability. This suggests that exchange rate variability may explain part of the story as to why New Zealand's tradable sector has underperformed, but it cannot tell the whole story. This paper recognises the significant negative impact that a sustained high level of the exchange rate can have on the tradable sector.

There are no easy or obvious ways to reduce exchange rate variability without some costs. This paper first explores alternative exchange rate regimes, and finds that the freely-floating exchange rate regime is still the most appropriate for New Zealand. Second, this paper explores ways to reduce exchange rate variability within the existing framework. While there are no silver bullets available to reduce exchange rate variability within the existing framework, fiscal policy and housing policy are worth pursuing in this respect, with the possibility for macro-prudential policy to play a small role in stabilising the cycle.

JEL CLASSIFICATION F31 – Foreign exchange

KEYWORDS Exchange rate; medium-term variability; tradable sector; exchange rate policy; currency union; foreign exchange intervention.

Table of Contents

Foreword	i
Abstract	ii
1 Introduction	1
2 Framework	2
3 The tradable sector	3
3.1 The importance of the tradable sector to the economy	3
3.2 How has New Zealand's tradable sector performed relative to other countries?.....	4
4 Impact of exchange rate fluctuations	6
4.1 The buffering and buffeting role of the floating exchange rate	6
4.2 Do exchange rate fluctuations impact negatively on exporters?	8
4.3 Conclusions on the impact of exchange rate fluctuations	13
5 Policy options for reducing exchange rate variability	14
5.1 Changing the regime	14
5.2 Policies to improve the current regime	23
6 Conclusion	26
7 References	27

List of Figures

Figure 1: New Zealand's tradable sector output and the real effective exchange rate	2
Figure 2: Labour productivity of exporters compared with all firms	3
Figure 3: Real exports to GDP by country	5
Figure 4: Real tradable/non-tradable sector output ratio by country.....	6
Figure 5: Tradable and non-tradable sector GDP in various countries	11
Figure 6: Tradable sector output and the real effective exchange rate	12
Figure 7: Spectrum of exchange rate regimes	14
Figure 8: The appreciation of the nominal Swiss franc against the euro	16
Figure 9: Singapore and New Zealand's real GDP growth.....	18
Figure 10: New Zealand's exports by destination	22

New Zealand's Exchange Rate Cycles: Impacts and Policy

1 Introduction

This paper builds on a preceding paper, *New Zealand's Exchange Rate Cycles: Evidence and Drivers* (Mabin, 2010), which examined the extent of New Zealand's exchange rate fluctuations compared with other countries and the key drivers of those fluctuations. This paper examines whether exchange rate fluctuations are hindering New Zealand's tradable sector and economic growth and, in particular, it focuses on:

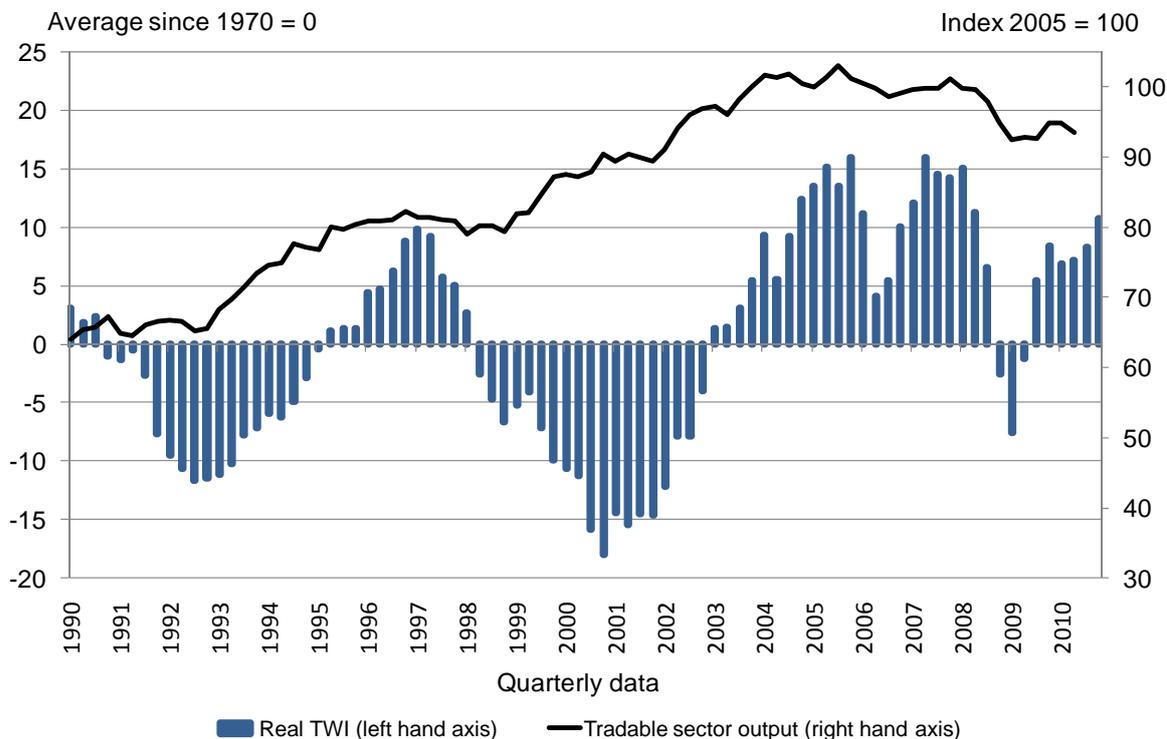
- The links between exchange rate fluctuations and tradable sector performance (the part of the economy particularly exposed to foreign competition); and
- Different exchange rate regimes and policy options within New Zealand's existing regime that could help dampen New Zealand's high exchange rate variability.

Mabin (2010) found that New Zealand's medium-term exchange rate variability – while high – is similar to some other relevant comparator countries. This second paper focuses on the variability of exchange rate cycles in the medium term. The uncertainty created by a heavily fluctuating exchange rate in the medium term is often cited as a major hindrance to the performance of the tradable sector in New Zealand.² Furthermore, sustained deviations away from the equilibrium level of the exchange rate can also be damaging to the tradable sector (in the case of an overvaluation) and possibly to economic growth overall. For example, the sustained high level of the exchange rate is likely to have played a large role in the performance of New Zealand's tradable sector in the past five years. Figure 1 shows the level of the real exchange rate compared to its average since 1970 – a crude measure of under or overvaluation, and tradable sector output. It illustrates the high level of the exchange rate in recent years and the corresponding stagnation and decline in the performance of New Zealand's tradable sector.

The issue of the sustained high level of the exchange rate is part of a wider issue of the imbalances that have built up in the New Zealand economy. This is beyond the scope of this paper.

² See for example Export New Zealand (2010).

Figure 1: New Zealand's tradable sector output and the real effective exchange rate



Note: TWI = Trade-Weighted Index. It is a version of an effective exchange rate (a measure of one economy's currency against a trade-weighted basket of foreign currencies).
Sources: OECD, author's calculations

This paper is aimed at a non-technical but interested audience. It aims to facilitate informed discussion and greater transparency around a complex issue of interest to all New Zealanders.

2 Framework

The behaviour of exchange rates is usually discussed over three timeframes. Distinguishing between them is important as they each have different characteristics, drivers and potential implications for policy.

The long-run level of the exchange rate reflects some notion of an equilibrium real exchange rate. Medium-term cycles (variability) reflect multi-year deviations away from this equilibrium level. Short-term volatility is seen as fluctuations away from the medium-term cycles. The short-term fluctuations are deemed to be those ranging from day-to-day up to a one year horizon.³

³ For a more detailed description of these different time horizons see Mabin (2010).

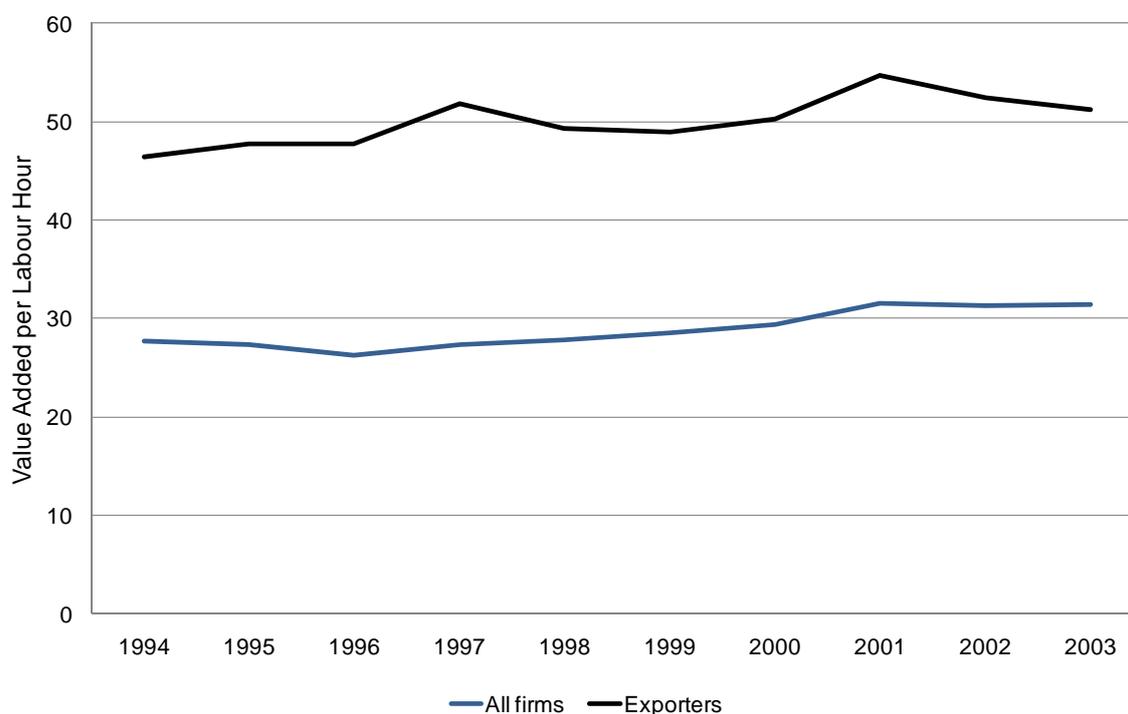
3 The tradable sector

3.1 The importance of the tradable sector to the economy

Although there are reasons to suspect that exchange rate variability may have a negative impact on exporters' performance, whether or not this is detrimental to economic growth and broader living standards in the overall economy depends on what role exporters (or tradable producers more generally) play in an economy. The tradable sector may be particularly important to the New Zealand economy for two reasons.

First, research shows that exporting firms are more productive on average than other firms (figure 2). Given this, a larger export sector would tend to raise economy-wide productivity. This could be either because more productive firms tend to self-select into exporting, or because firms actually become more productive when they export. The empirical literature supports the former. The argument that more productive firms export is based on the weight of evidence that in order to export, firms must be productive enough to afford the fixed costs of entering export markets. These include factors such as transport costs, marketing costs, skilled personnel and modification costs of producing for foreign consumers (Adalet, 2007).

Figure 2: Labour productivity of exporters compared with all firms



Source: Buckle, Hyslop and Law (2007)

However, there is some theoretical literature that supports the idea that firms become more productive when they export (known as learning-by-exporting), because they can improve through the learning effects of being exposed to international markets (for example, through knowledge flows from new buyers). It also increases competition, which can lead to improved innovation, efficiency and economies of scale. Evidence on learning-by-exporting is mixed and tends to depend on the chosen country and methodology.

The second reason why the tradable sector might be particularly important for the economy is the role the sector plays in reducing New Zealand's external vulnerabilities. New Zealand has a large net external liability position,⁴ and the willingness of foreign investors to continue lending to New Zealand depends on their confidence that New Zealand's liabilities will be serviced at face value in the long-run. The export sector plays a key role in this regard, since servicing net liabilities requires the ability to earn foreign exchange, largely by selling goods and services abroad.

3.2 How has New Zealand's tradable sector performed relative to other countries?

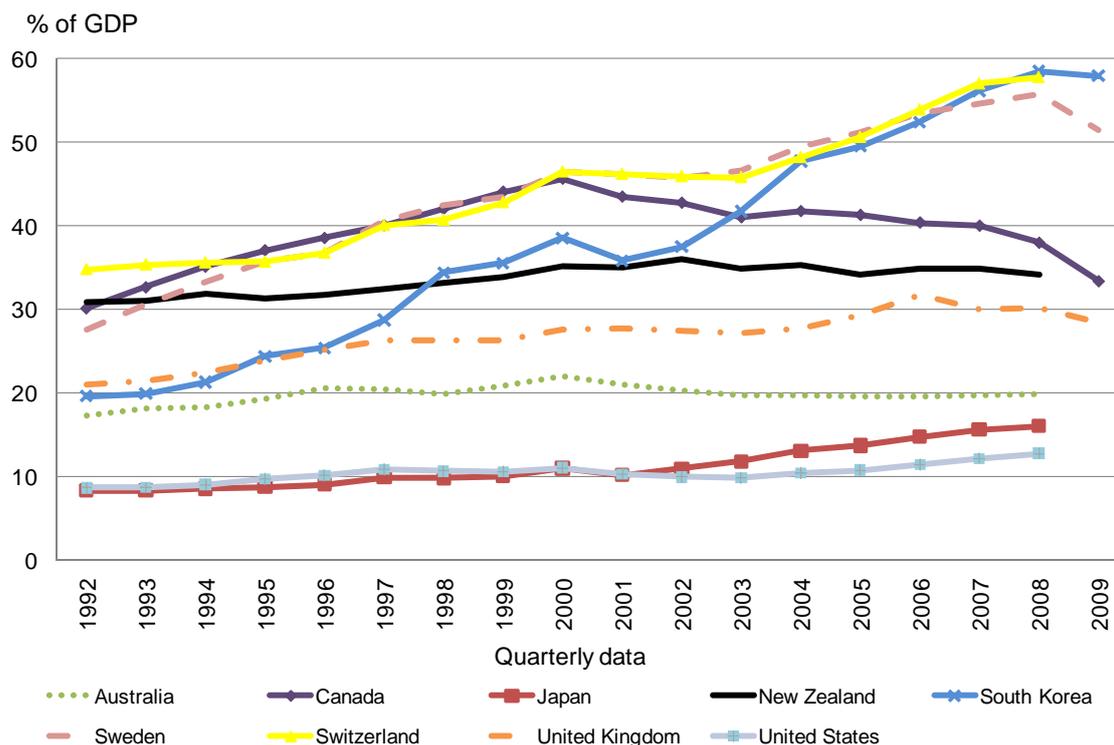
Before the impact of exchange rate fluctuations on the tradable sector is considered, it is important to have an understanding of how New Zealand's tradable sector has performed. It therefore makes sense to compare New Zealand's tradable sector performance to other, relevant countries in order to understand if New Zealand's experience is unusual. However, it is difficult to compare New Zealand's tradable sector performance with that of other countries.⁵ In particular, conclusions drawn often depend on the measure and the comparator countries chosen.

OECD data suggest that New Zealand's export sector has performed less well than the best performers, but in line with a number of other countries. Figure 3 shows that the ratio of real exports to GDP has not grown significantly over the last decade in Australia, the United Kingdom, the United States and New Zealand. Canada has seen a decline in its ratio of real exports to GDP over the last decade, while Switzerland, Sweden and South Korea have seen a significant increase.

⁴ A net external liability means a country has more foreign liabilities than it does foreign assets.

⁵ The measurement of the tradable sector is also subject to judgement. The tradable sector is estimated as the volume of output (i.e. real GDP) in primary and manufacturing industries (highly exposed to overseas trade) combined with the volume of service exports (as it is difficult to estimate what services are tradable). The result is expressed in index form because value-added output by industry cannot strictly be added to a measure of final demand (e.g. service exports). Non-tradable output is estimated as a residual with total real GDP, and therefore includes government.

Figure 3: Real exports to GDP by country



Source: OECD

However, gross measures of exports can give a misleading read of tradable sector performance. It is therefore useful to also consider value-added measures. Typically, manufactured goods are produced using a significant proportion of imports. The absolute difference between what is exported and the import component of the exported good or service matters in determining what is adding the most value to an economy. New Zealand's exports tend to have a low import content, mainly due to its comparative advantage in primary production (White, 2007). Because of this, gross measures of exports may understate the value that exports are contributing to the economy.

Black, Vink and White (2002) found that after adjusting for such compositional effects, New Zealand's export performance has not been materially different from that in other advanced economies. Recent work by Treasury suggests that New Zealand's share of import content in its exports is similar to that found in the research by Black, Vink and White (2002).

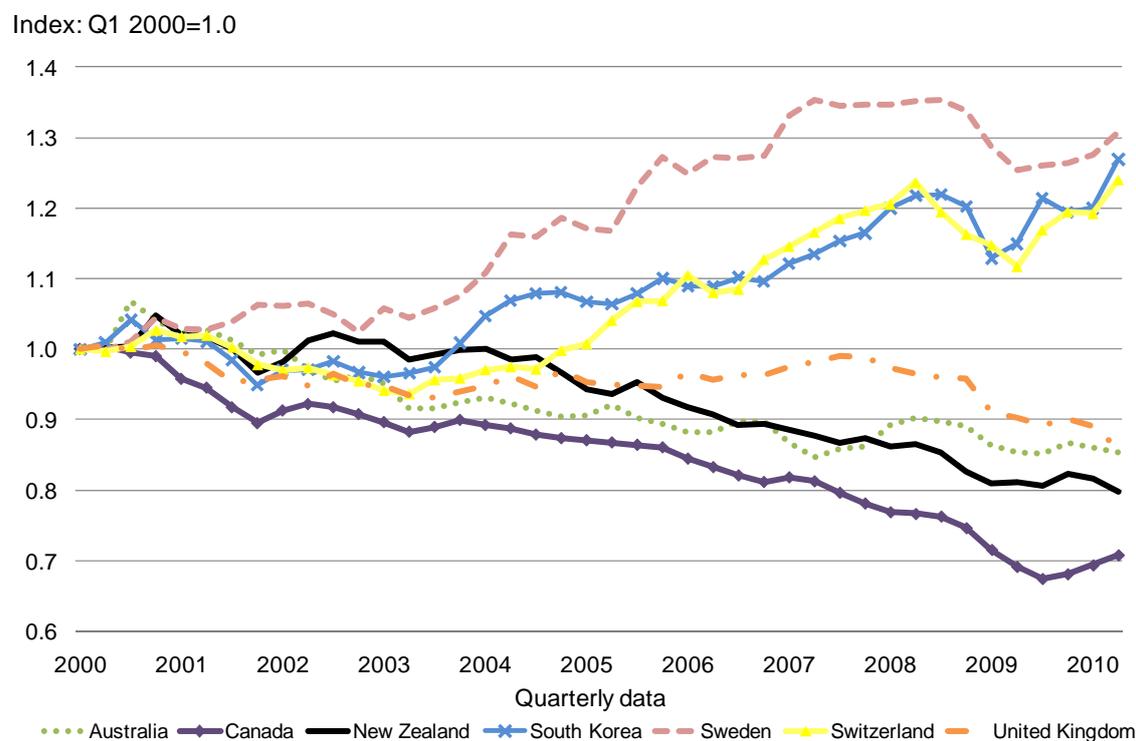
New Zealand's tradable to non-tradable output ratio compared to other countries' ratios can also give some insights into the relative performance of New Zealand's tradable sector.⁶ Figure 4 suggests that the ratio of the tradable to the non-tradable sector has been declining in New Zealand since 2000, broadly consistent with several other countries in the OECD that have experienced either declining or relatively flat ratios.⁷ South Korea, Switzerland and Sweden stand out as the countries that have shown a marked increase in their tradable to non-tradable output ratios. Importantly, New Zealand's declining tradable

⁶ There is a limit to how useful it is to distinguish tradables from non-tradables because the boundary between the two is blurred: some firms are a combination of both tradable and non-tradable and can switch between the two over time. Combining exportable and importable goods into the category "tradable" does not take into account the fact that changes in the price of exports or changes in the price of imports may have different effects.

⁷ Countries included in figure 4 were also the comparator countries used in Mabin (2010). Data are not available for the United States, Japan or the Euro Area.

to non-tradable output ratio is similar to some other relevant comparator countries, such as Australia,⁸ Canada and the United Kingdom.

Figure 4: Real tradable/non-tradable sector output ratio by country



Sources: OECD, author's calculations

4 Impact of exchange rate fluctuations

4.1 The buffering and buffeting role of the floating exchange rate

The flexible exchange rate has played a significant role in buffering New Zealand against external shocks, particularly following the 1997 Asian financial market crisis. The exchange rate also fell significantly at the height of the recent Global Financial Crisis. Subsequently, the exchange rate appreciated as commodity prices recovered and it appeared New Zealand was faring relatively better than a number of other countries.

In determining the buffering versus buffeting role of the exchange rate, it is important to distinguish between the source of the shock, the impact on commodity and non-commodity exporters and the impact on the economy as a whole.

In the case of an external shock to the economy, for example a sudden shift in world demand for New Zealand exports, the exchange rate can move to buffer the economy. A positive shock resulting in higher world prices for New Zealand's exports would typically lead to an appreciation of the exchange rate. This would reduce the amount in

⁸ However, as illustrated in figure 5, Australia's tradable sector still grew over the time period shown. New Zealand's tradable sector was in decline.

New Zealand dollar terms that exporters would have received for their goods or services absent the exchange rate appreciation.

A higher exchange rate also results in cheaper import prices for all New Zealanders. When global demand falls for New Zealand's exports the exchange rate tends to depreciate. By the same process, New Zealand dollar exporting revenues are not typically greatly affected due to the combination of a lower exchange rate and lower world prices. In this case, the adjustment is passed onto the domestic economy which faces higher prices for imports. Thus the exchange rate can act to smooth the revenues that exporters receive. However, this is where the type of exporter becomes important, as the exchange rate does not buffer all exporters.

While commodity exporters are insulated from exchange rate variability to some extent,⁹ often the manufacturing sector (both the exporting and import-competing component) loses out. In New Zealand, the real exchange rate tends to follow movements in world commodity prices, reflecting the relatively bigger role commodity prices play in the economy (Westpac, 2009). If world commodity prices increase, manufacturing exporters face a higher exchange rate, yet could still face the same world price for their exported goods. Thus, they do not receive the same extent of the buffering nature of the exchange rate as do commodity exporters.

Westpac (2009) used empirical evidence to support the idea that the exchange rate helps to reduce the volatility that commodity exporters face. Their research showed that the floating exchange rate has substantially reduced price volatility for New Zealand commodity producers. They also found that the New Zealand dollar has tended to move in the same direction as New Zealand commodity prices, which insulates most (but not all) commodity producers from global market volatility. However, this is neither necessary nor inevitable. It depends on the nature of the shock and what else is going on in the world. For example, over 2000 and 2001 the Trade Weighted Index (TWI) was at record lows, world prices were rising, and New Zealand dollar prices for exports soared. Hence there was no buffering, and in fact the cyclical increase in prices was exaggerated.

If the source of the shock is domestic, for example a large increase in government spending, the exchange rate will appreciate due to higher relative interest rates in response to the increase in domestic demand. Given the higher exchange rate, the shock is then mostly transferred to the tradable sector, which will receive less revenue for its exported goods.

Overall, the exchange rate tends to “over buffer”. While the exchange rate tends to appreciate or depreciate in the wake of a shock as outlined above, it often moves to a level that is beyond what is justified by the economic fundamentals relevant to the medium-term competitiveness of tradable producers. The “over buffering” of the exchange rate is often driven by “trend-following” behaviour. “Trend-following” occurs when the exchange rate is on the rising part of the cycle and it is expected that the currency will appreciate further, increasing the attraction to the currency due to the potential future gains. Another explanation for this “over buffering” is that financial markets are much more flexible than goods and services markets (Dornbusch, 1976; White, 2007).

⁹ Commodities are generally considered to be goods sourced from agriculture and mining.

The role of New Zealand's exchange rate through the Global Financial Crisis

New Zealand's exchange rate can be credited with helping to insulate the economy from a more severe downturn during the recent Global Financial Crisis. When financial turbulence was at its peak at the end of 2008, New Zealand's exchange rate depreciated for a short period of time to a position below its long-term average. This buffered the impact on exporters who experienced a drop in global demand for their goods, allowing exporters to retain more of the revenue they received from overseas. The exchange rate acted as a shock absorber for exporters, thereby helping to mitigate the full extent of the shock. The potential for the exchange rate to depreciate further if necessary may also have helped to support confidence in the economy. However, the exchange rate depreciation was temporary. It began appreciating in February 2009, largely due to the poor economic conditions of other major economies and the recovery in commodity prices.

4.2 Do exchange rate fluctuations impact negatively on exporters?

4.2.1 Theoretical and empirical evidence

A high level of the exchange rate can act to the detriment of the tradable sector in that it lowers the New Zealand dollar revenues that exporters receive. A low exchange rate level raises the receipts that exporters receive. In other words, a fluctuating exchange rate directly impacts both positively and negatively on export receipts. The key concern when discussing the impact of fluctuations in the exchange rate is the uncertainty created for the tradable sector about the future level of the exchange rate over a multi-year horizon. It is this that can negatively affect trend growth.

Exchange rate fluctuations might impact negatively on exporters and trend economic growth by discouraging firms from undertaking investment, innovation and trade. It may also deter firms from entering into export markets (OECD, 2007). Large fluctuations in the exchange rate can also impose adjustment costs on the economy as resources keep shifting between the tradable and non-tradable sectors. This could permanently shift resources to the non-tradable sector if firms are put off entering, or staying in, export markets due to high exchange rate variability.

What is likely to be most damaging to exporters is sustained periods of overvaluation in the New Zealand dollar. While not the key focus of this paper, the impacts of this in the recent New Zealand case will be discussed later in this section.

The effects of exchange rate fluctuations may be *more costly* for New Zealand than for other countries, as New Zealand has a relatively small domestic market. Because of this, firms need to become exporters at a relatively early stage in their development if they are to grow. Given that New Zealand only has a few large exporting firms (e.g. Air New Zealand), its exporting industry in general looks quite different from that of Australia. Australia has many large, multinational mining companies able to diversify against the impacts of fluctuations in the Australian dollar.

Empirical evidence is inconclusive on whether fluctuations in the exchange rate hinder economic growth via the tradable sector. Theoretical evidence finds some more support for a negative impact. It is difficult to isolate the impact of the exchange rate, as there are

many factors that affect exporters. Due to the availability of short-term hedging to mitigate short-term volatility, this paper is mainly focused on medium-term variability (box 1).¹⁰ Unfortunately, data is limited for medium-term studies as New Zealand has only experienced a limited number of cycles since the exchange rate was floated in 1985. Because of this, most studies completed to date have focused on short-term volatility. Of these, studies using aggregate data mostly find no evidence of a link, and most of the few studies that do, only find a small negative effect.¹¹

Some recent work does find a link between short-term volatility and exporting for New Zealand. Sanderson (2009) summarises some recent work from the Reserve Bank of New Zealand (RBNZ) and finds that short-term (i.e. month-on-month) volatility reduces both the number of exporting firms per market and the value of exports per exporting firm. Countries with a 10% higher level of exchange rate volatility after hedging is accounted for receive on average 6% less exports by value per exporting firm. However, no significant impact was found at the aggregate level because the composition of firms exporting to each market shifts towards larger firms, thereby increasing the average level of export receipts per firm.

The recent RBNZ work also examined longer-term fluctuations in the exchange rate and the impact on exporters. They find some evidence that a higher exchange rate (relative to average over the past three years) reduces the volume of trade in a firm-level export relationship, although no impact is found on aggregate trade. More work is needed to determine whether this effect reflects a reduction in the value of exports per firm, or whether firms are shifting exports between markets (Sanderson, 2009).

Box 1: Hedging practices of New Zealand Firms

One way for firms to limit their exposure to exchange rate fluctuations is by hedging currency exposures. The cost of hedging and the extent to which firms hedge is relevant to thinking about the costs of exchange rate volatility faced by exporters and import-competing firms.

There are a number of studies looking at the use of hedging by New Zealand firms.¹ Some of the findings from these studies include:

- Most firms that hedge use forward exchange contracts; these are not generally considered expensive
- Hedging patterns vary considerably by firm characteristic, such as:
 - Larger firms hedge more than smaller firms; however, Fabling and Grimes (2008a) find that smaller exporting firms hedge more than medium-sized exporting firms²
 - Hedging practices vary by sector/industry
 - Firms with the highest export intensities have higher hedging ratios than firms with the lowest export intensities
- A relatively low proportion (around 3%) of Australian dollar transactions are hedged compared with between 60 to 70% of transactions denominated in United States dollars and other currencies (Fabling and Grimes)
- There is evidence of selective hedging, particularly for Australian dollar exposures and larger exporters (Fabling and Grimes, 2008a)

¹⁰ Hedging is a method of reducing the impact of price fluctuations.

¹¹ See for example Clark, Tamirisa and Wei (2004) for a literature review on the effects of exchange rate volatility on trade. See Dekle and Ryoo (2007), Greenaway and Kneller (2007) and Fung (2004) for international studies. For New Zealand centred studies see Davis (2007), Smith (2004), and Buckle, Hyslop and Law (2007).

Most hedging is very short term. Fabling and Grimes (2008) find that most hedging is taken out approximately one month (on average) prior to the transaction. A greater use of hedging over short time periods is not surprising given that hedging over long periods (e.g. over 24 months) can be problematic in the following ways (Brookes et al, 2000):

- It removes the ability of a firm to benefit from any future favourable movement in the exchange rate
- There is uncertainty around forward orders, and it would be risky to lock in cover for orders that might not materialise
- Production costs may change over time due to unexpected inflation, which means the hedged export revenue may not be enough to cover expenses
- Forward contracts can impose an indirect cost by utilising credit lines

A forward exchange option (which gives the right but not the obligation to buy or sell a given amount of a given currency at a future date at an agreed exchange rate) can overcome some of the problems of hedging over longer periods. However, forward exchange options are generally more expensive than forward exchange contracts, more so over longer time periods. Instead, it is cheaper for firms to structure their business in a way that creates a natural hedge to help limit exposure to currency fluctuations over the medium term.

¹ For example, Berkman and Bradbury (1996), Berkman et al. (1997), Brookes et al. (2000), Prevost and Rose (2000), Fabling and Grimes (2008a and 2008b).

² Fabling and Grimes (2008b) find that once prior hedging experience is controlled for, firm size has no effect on the hedging propensity of exporting firms.

4.2.2 Graphical evidence

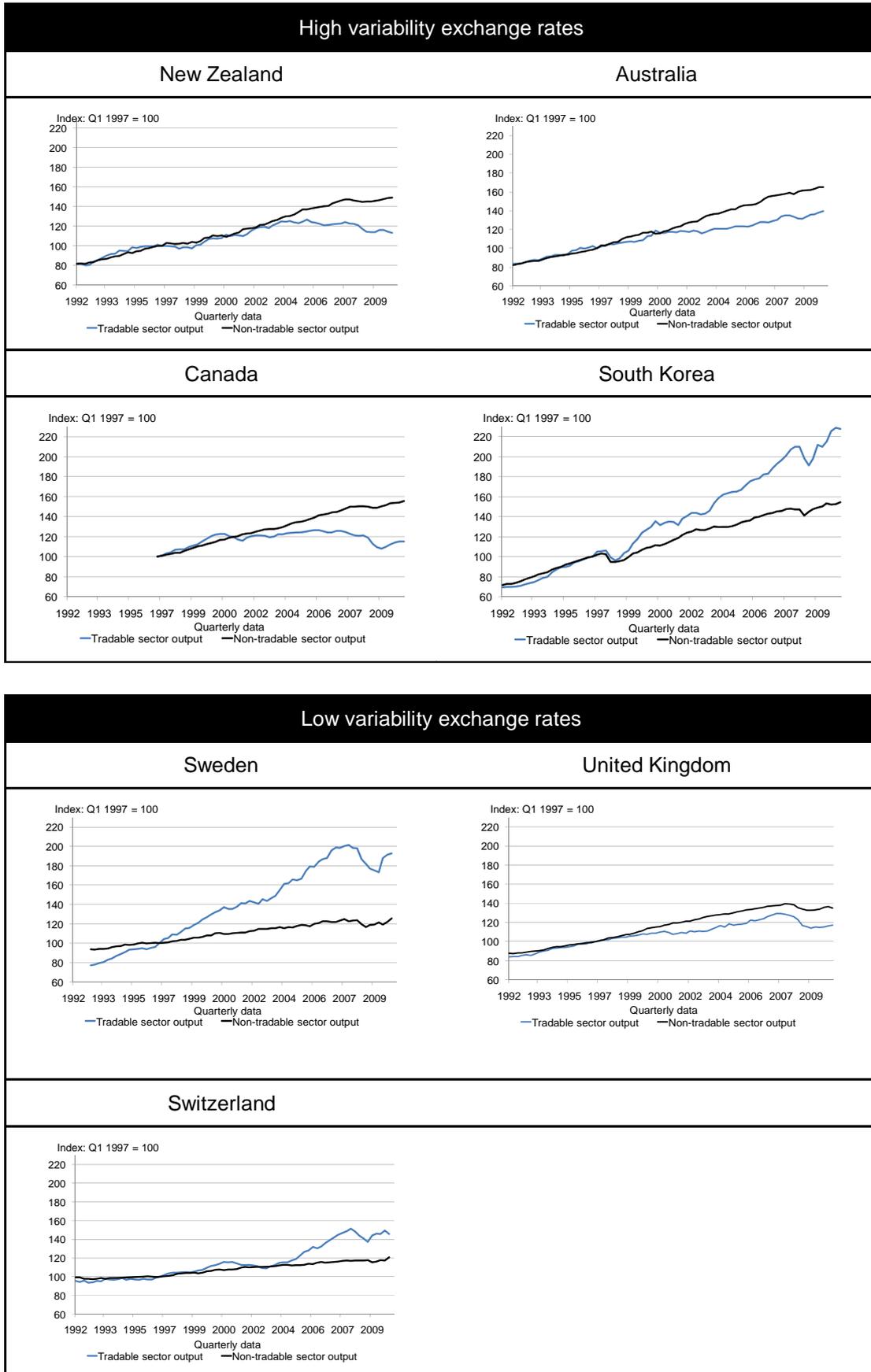
The link between exchange rate variability and the tradable sector

The link between high exchange rate variability and tradable sector performance is not automatic and can be moderated or offset by other drivers of economic performance. Figure 5 illustrates the link between how variable a country's exchange rate has been compared to the performance of its tradable and non-tradable sectors.¹² The results do not point to a strong conclusion. New Zealand and Australia have large exchange rate cycles, and a non-tradable sector that has grown faster than the tradable sector.¹³ South Korea also sees large amounts of variability in its exchange rate, yet its tradable sector has grown much faster than its non-tradable sector. Further, there is not a strong link between countries with low variability in their exchange rates and stronger performance of their tradable sector relative to their non-tradable sector.

¹² This is based on author calculations using OECD data. The exchange rate variability classification of the countries included in the analysis is based on analysis from Mabin (2010).

¹³ Australia's tradable sector has grown throughout the period examined, while New Zealand's tradable sector has been in decline.

Figure 5: Tradable and non-tradable sector GDP in various countries¹⁴



Sources: OECD, author's calculations

¹⁴ The definitions of the tradable and non-tradable sectors are subject to judgement and debate.

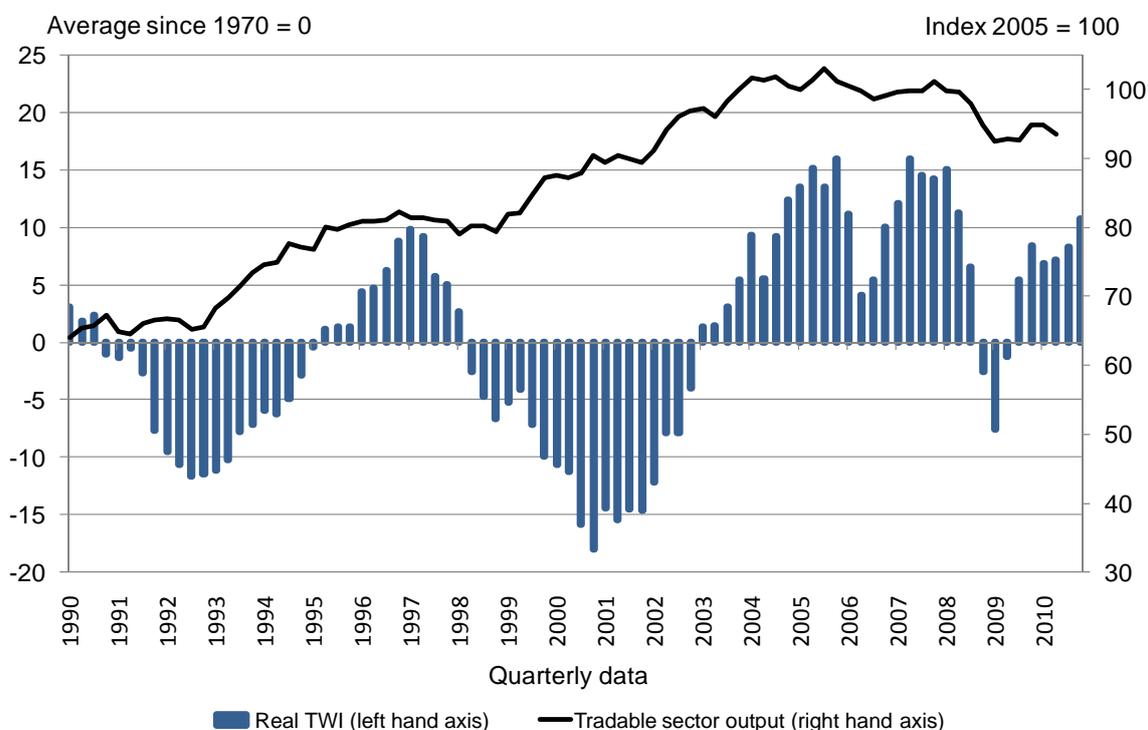
However, this evidence does not suggest that large exchange rate variability does not have any impact on the performance of the tradable sector. Countries with high variability in their exchange rates and a well performing tradable sector could be compensating in other ways. For example, a country could compensate by having an undervalued exchange rate, by keeping costs very low or by exporting a large majority to one major market with whom the bilateral exchange rate is very stable. Further work on this is outside the scope of this paper, but it does mean that exchange rate variability in itself cannot explain the full story of the performance of the tradable sector.

The link between persistent deviations away from ‘typical’ exchange rate cycles and the tradable sector

Growth in the non-tradable sector has been similar in both Australia and New Zealand. However, Australia’s tradable sector has outperformed New Zealand’s (figure 5).

The divergence between the New Zealand tradable and non-tradable sectors that emerged in the mid-2000s is more likely to be explained not by high exchange rate variability *per se*, but by the sustained high exchange rate in the past six years. Figure 6 shows the level of the real exchange rate compared to its average since 1970 – a crude measure of under or overvaluation. The average is likely to understate the extent of the overvaluation but is nevertheless useful for illustrative purposes. Periods of exchange rate depreciation tend to be associated with rising tradable sector output, while an appreciating exchange rate is associated with flat tradable sector output. However, the most recent and sustained period of a high exchange rate, from 2003 to the present,¹⁵ has resulted in an absolute decline in tradable sector output.

Figure 6: Tradable sector output and the real effective exchange rate



Note: TWI = Trade-Weighted Index. It is a version of an effective exchange rate (a measure of one economy’s currency against a trade-weighted basket of foreign currencies).

Sources: OECD, author’s calculations

¹⁵ This is aside from a brief period in 2008 and 2009 in which the exchange rate moved to a level below its long-term average.

The recent period of a sustained overvaluation in the exchange rate was driven by a combination of factors including the house price boom, increasing government spending, the terms of trade and the relatively greater resilience of the New Zealand economy during the recent global recession. Strong domestic spending also added to inflation pressures, which pushed up interest rates, exacerbating the last exchange rate cycle. These factors put pressure on resources in the economy, and meant that resources were attracted to the non-traded sector. Buckle, Hyslop and Law (2007) found that high exchange rate *levels* have an effect on the likelihood of firms exiting export markets.

A well performing economy is likely to see a high performing tradable sector. However, unless tradable performance is sufficiently high to lift overall performance, tradable performance cannot be relied on by itself to raise growth if this higher performance was achieved by policies to the detriment of the non-tradable sector. This reflects the composition of New Zealand's economy, with the tradable sector comprising only approximately one third of New Zealand's GDP. Instead, it would be necessary to pursue a wider growth agenda to lift New Zealand's overall economic performance. As discussed earlier, evidence suggests more productive firms tend to self-select into exporting. A rebalancing driven by complementary, generally growth-enhancing structural change would see the best chance for the economy to grow more strongly.

4.3 Conclusions on the impact of exchange rate fluctuations

The previous section showed that New Zealand's tradable sector performance relative to its non-tradable sector has been weaker than the top performers, but similar to that in several other relevant countries. Theory suggests that New Zealand's exchange rate volatility and variability negatively impact on exporters and those that compete directly or indirectly with imports. But the hard evidence for this is limited. Some recent empirical evidence for New Zealand suggests there are negative effects of exchange rate volatility and variability at the firm level, but there is no clear evidence that it results in a reduction in aggregate exports. The ability of firms to hedge short-term volatility means that this paper concentrates on the effects on medium-term variability. It is likely that *high exchange rate variability may matter more for New Zealand* than for other countries.

It appears that the link between exchange rate variability and the performance of the tradable sector is not automatic; many other factors are at work. The fact that New Zealand's tradable and non-tradable sector trends are mirrored in some other countries suggests that exchange rate variability may explain part of the story as to why New Zealand's tradable sector has underperformed, but that it cannot tell the whole story. This paper does recognise the significant negative impact that a sustained high level of the exchange rate can have on the tradable sector.

Because it is difficult to know the *extent* to which exchange rate variability is constraining the growth of the tradable sector, it is important to be careful when examining policy options. If variability could be reduced – without other negative consequences – this paper makes the judgement that it is likely the tradable sector would perform better. The lack of certainty about the impact of exchange rate variability on exporters means that the costs of various policies need to be taken into account to ensure that they do not outweigh the benefits.

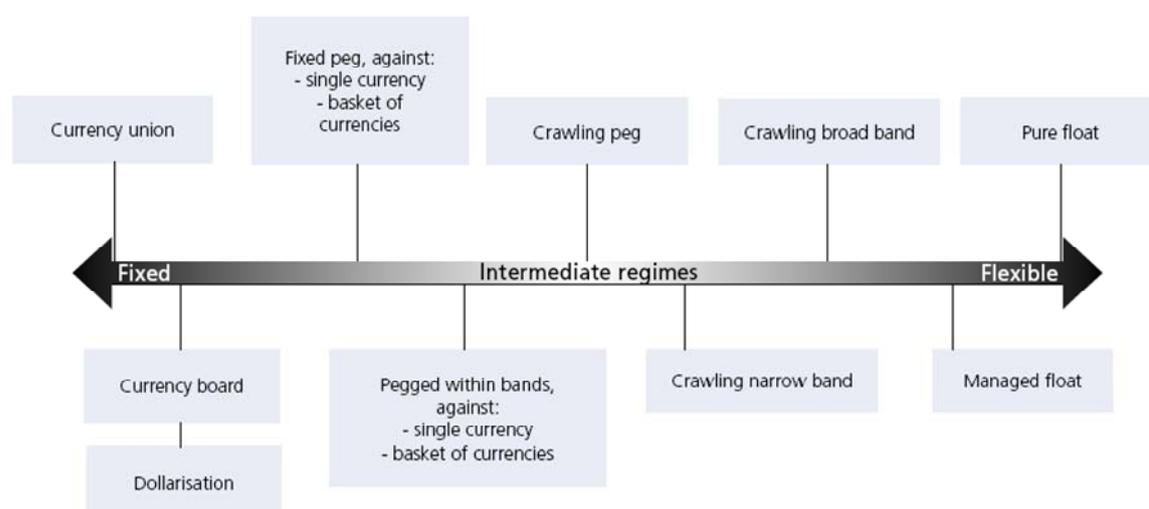
5 Policy options for reducing exchange rate variability

This section considers policy options for dampening high exchange rate variability under two categories: policies that would require a change from New Zealand's current, free-floating exchange rate regime, and policies that could potentially improve New Zealand's current regime.

5.1 Changing the regime

Figure 7 shows a spectrum of possible exchange rate regimes. New Zealand's exchange rate regime lies near the far right of the diagram, despite some foreign exchange intervention in limited circumstances.

Figure 7: Spectrum of exchange rate regimes



Source: Hunt (2005)

There are a number of possible alternative exchange rate regimes. This section focuses on the most often cited alternative regimes for New Zealand and explores their possible economic implications. The smallest change of regime is discussed first, which would be to engage in more active foreign exchange intervention. Some recent examples of foreign exchange intervention both in New Zealand and abroad are explored.

Singapore's intermediate regime and Hong Kong's currency board are then discussed. Finally, this section looks at the options at the fixed end of the spectrum: a currency union with Australia and fixing the New Zealand dollar to the US dollar.

5.1.1 Recent examples of foreign exchange rate intervention

Divergent global economic performance is currently causing a rapidly changing exchange rate policy environment. Due to the complexity and rapid pace of global developments, this paper does not attempt to address the current situation in detail, nor explore all recent examples of foreign exchange intervention. What this paper does do is cite some recent examples of intervention policies that can shed some light on New Zealand's situation and the usefulness or otherwise of employing these policies in New Zealand.

Many countries have engaged in foreign exchange intervention to influence their exchange rates in the previous few years.¹⁶ New Zealand undertook foreign exchange intervention in 2007 for the first time since the dollar was floated in 1985. The RBNZ undertook currency intervention because they had judged that the level of the exchange rate was exceptional and unjustified and that intervention would be consistent with the RBNZ's monetary policy objectives as set out in the Policy Targets Agreement (Eckhold, 2010).

The first round of intervention had an impact on the exchange rate over several days. It helped to create doubt in the market about the future direction of the exchange rate and sent a signal to the market that the RBNZ was concerned about the high value of the New Zealand dollar (Spencer, 2007).¹⁷

A more recent example of exchange rate intervention is by the Swiss National Bank (SNB) in 2010 to slow the appreciation of the Swiss franc against the euro. The Swiss franc was seen as a safe haven currency when the Euro Area began to face financial troubles. The SNB increased its holdings of foreign exchange reserves by SFr77.8 billion (16% of GDP) in May 2010, which took the total acquired to SFr138.5 billion (28% of GDP) since January 2010 (The Financial Times, 2010). The SNB also engaged in foreign exchange intervention from September 2008 until approximately June 2009. Swiss interest rates are near zero, reducing the cost of building up such large foreign exchange reserves. This is in stark contrast to New Zealand, which faces much higher domestic funding costs, significantly increasing the cost of intervention.

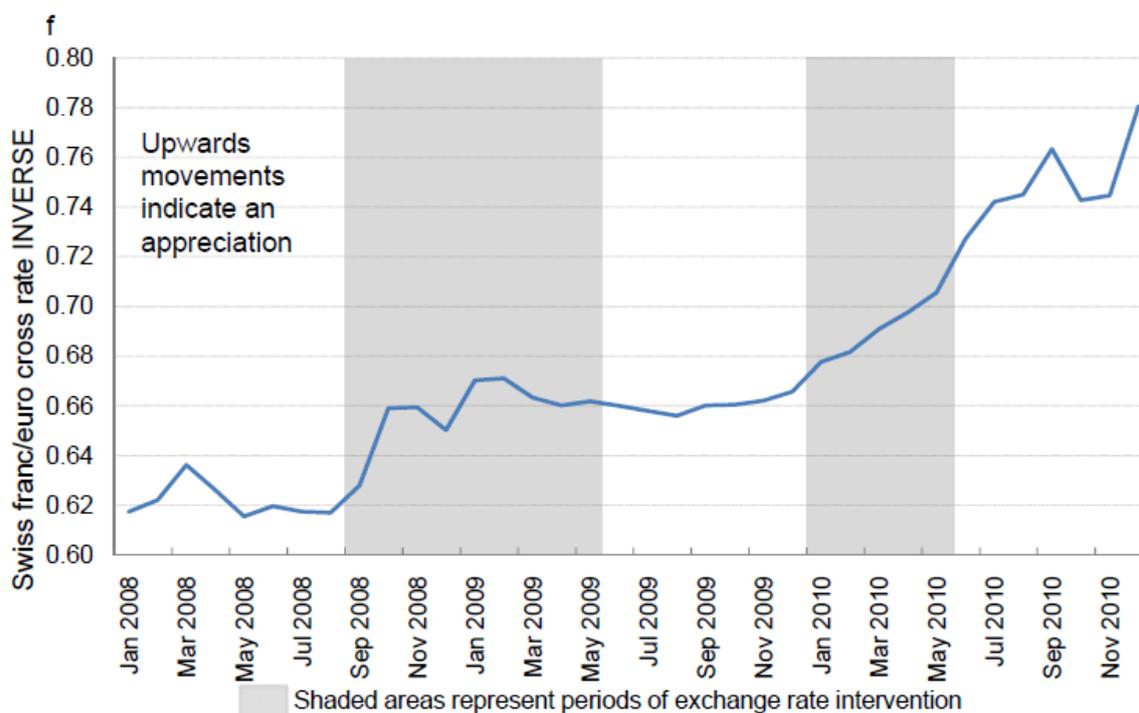
It is difficult to assess the impact of intervention because the counterfactual is unknown. The Swiss franc continued to appreciate against the euro after the SNB periodically intervened in the foreign exchange market from January 2010 until approximately May 2010 (figure 8).¹⁸ This Swiss intervention came at a heavy cost given the exchange rate continued to appreciate. However, this loss may be reversed in the coming months and years if the Swiss franc depreciates, increasing the value of the SNB's existing holdings of foreign reserves (as was the case for the RBNZ in 2007).

¹⁶ A freely floating exchange rate regime accompanied by intervention from time-to-time should be differentiated from a managed float or a pegged regime. A managed float or pegged regime entails making a commitment to defend a particular rate, and this can cause credibility issues (White, 2007).

¹⁷ See <http://www.rbnz.govt.nz/statistics/rbnz/f5/download.html> for the data on the RBNZ's balance sheet.

¹⁸ Periods of intervention are based on significant changes in SNB's asset reserves figures obtained from the SNB website.

Figure 8: The appreciation of the nominal Swiss franc against the euro



Sources: Bank of England, Swiss National Bank, author's calculations

Chile and Israel have also recently engaged in or announced foreign exchange intervention to slow the appreciation of their currencies. Chile announced in January 2011 that it would buy US\$12 billion of foreign reserves in 2011 (The Economist, 2011). Israel ran a pre-programmed intervention policy during 2008 and 2009 to slow the appreciation of its currency in the face of a relatively strong economy compared to many other economies coinciding with an influx of capital.

In the past there has been a tendency among some commentators to view exchange rate regimes in terms of corner solutions, where countries either fully fix or float their exchange rates due to the difficulty of defending a particular level of the currency. The experience of countries like Switzerland suggests a need to monitor and identify how successful active management of the exchange rate can be. Country-specific factors are important to the various outcomes of foreign exchange intervention (e.g. large balance sheet and low average real interest rate in the case of Switzerland), which New Zealand does not possess in most cases.

5.1.2 The exchange rate regimes of Singapore and Hong Kong

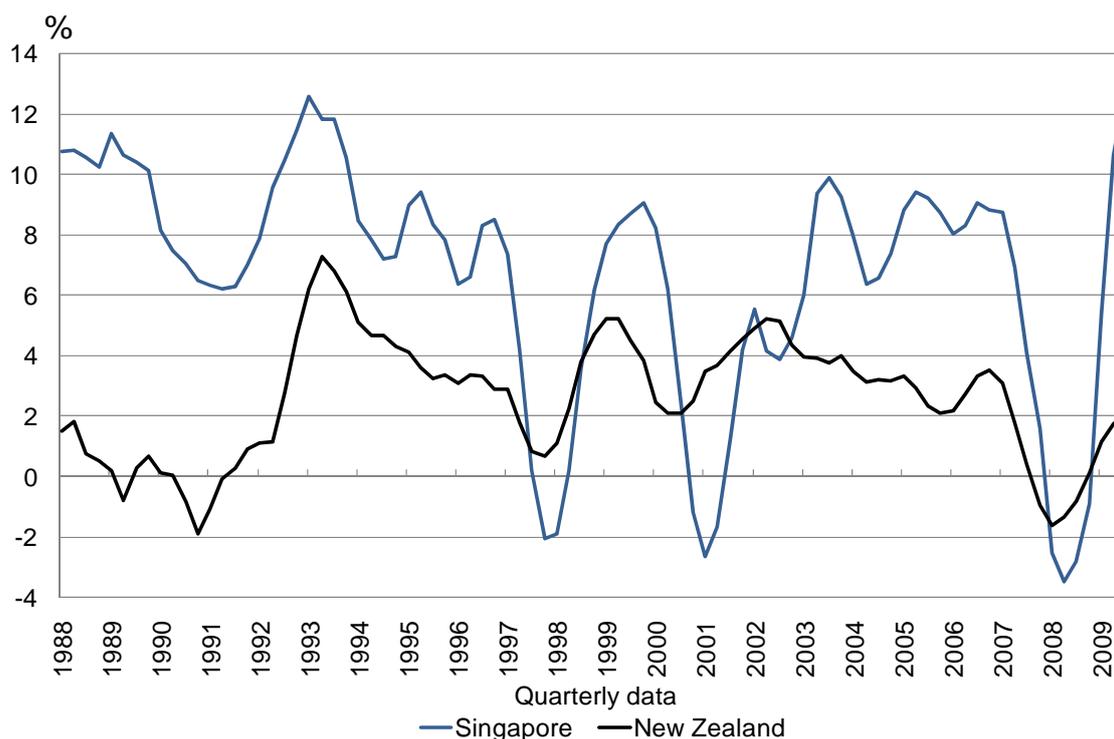
Singapore and Hong Kong are often cited for having successful exchange rate regimes. Singapore has been successful in maintaining low and stable rates of inflation and stability in its exchange rate. Hong Kong has also achieved this to some extent. This section discusses both regimes in turn.

Singapore loosely pegs its dollar to a trade-weighted index and uses it as an intermediate target for managing inflation. The regime works well for several reasons. Singapore has:

- *A very high proportion of external trade.* Exports amount to 158% of GDP (Singapore Statistics), and Singaporeans spend a significant portion of their consumption on imports. This means that trade has a large influence on inflation in Singapore, far larger than in New Zealand. Because of the large influence of trade on inflation in Singapore, stabilising the exchange rate also helps to control inflation. In addition, exchange rate pass-through from imported goods' prices to retail prices is also comparatively low in New Zealand, further limiting the impact of exchange rates on inflation (RBNZ submission to the FEC inquiry, 2007).
- *One of the lowest average real interest rates in the world* (compared to New Zealand which has one of the highest in the OECD) (Labuschagne and Vowles, 2010). Because of this, Singapore is generally an unattractive location for short-term capital flows, which can have a large impact on exchange rates. It also allows Singapore to build up its foreign exchange levels relatively cheaply, facilitating large foreign exchange intervention.
- *A monetary authority with a very large balance sheet that is able to absorb short-term pressures.* It is likely that the RBNZ's balance sheet does not have the capacity to do this. This is linked to second bullet above. New Zealand's high average real interest rates makes the build up of foreign reserves relatively more expensive.
- *Policy settings that have greater than normal influence over banks and that regulate short-term capital flows.* Short-term capital flows can exacerbate exchange rate cycles. However, New Zealand is reliant on short-term capital flows due to its lack of national saving relative to domestic investment. See below for a discussion of capital controls.

Singapore faces large amounts of volatility in other areas of its economy despite achieving relative stability in its exchange rate against the United States dollar and its inflation rate. Figure 9 shows the substantial volatility in Singapore's real GDP growth rates since 1985, compared to New Zealand's real GDP growth. Macroeconomic volatility is largely inevitable, but a country's choice of exchange rate regime will loosely determine where its volatility appears. Singapore's stable exchange rate helps to push that macroeconomic volatility towards its real GDP growth. Singapore is unique in that, while it does face significant volatility in its GDP growth rate, it cycles around a high level. No other country has followed its example in terms of exchange rate regime, suggesting that the uniqueness of their situation cannot likely be replicated. In general, controlling the exchange rate more tightly will tend to result in greater short-term volatility elsewhere. Spain and Ireland are good examples of countries with fixed exchange rates who have faced significant volatility elsewhere in their economies (discussed on page 21).

Figure 9: Singapore and New Zealand's real GDP growth



Sources: Singapore Statistics, Statistics New Zealand

Hong Kong is also an interesting case study because, unlike Singapore, it has not put in place any capital controls. Hong Kong operates a currency board¹⁹ that is linked to the United States dollar. The Hong Kong Monetary Authority (HKMA) argues that this is justified for its economy due to its high degree of openness. However, it has led to greater volatility in other economic variables. The HKMA has attributed the success of its regime to the economy's high level of flexibility and responsiveness, large foreign currency reserves, strong banking system and strong fiscal prudence (HKMA, 2004/05). A currency board would take a large amount of reserves to work, a level which is not likely to be feasible for New Zealand, given the size of New Zealand's balance sheet and high average real interest rates.

5.1.3 Currency unions and fixed exchange rates

A currency union with Australia is likely to be the most viable alternative that is fundamentally different to New Zealand's current regime. The case for a currency union rests on the microeconomic benefits versus the macroeconomic costs. Ultimately, the decision to enter into a currency union would be a political decision, as it would result in a loss of monetary policy sovereignty (and potentially a reduction in fiscal sovereignty).

At what rate the exchange rate would be fixed clearly matters for the competitiveness of the tradable sectors in the respective countries. For example, pegging high relative to Australia would likely mean that New Zealand exporters would need to make more productivity gains to remain competitive.

¹⁹ A currency board is a monetary regime based on an explicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority to ensure the fulfilment of its legal obligation (Adalet, 2008).

Microeconomic factors

The main benefits from entering a currency union with Australia would be largely microeconomic in nature. They include:

- *Increased trade.* New Zealand's exchange rate would be immediately stabilised against the Australian dollar and Australia is New Zealand's largest trading partner. The certainty created by a stabilised bilateral exchange rate and the elimination of currency conversion costs would likely result in more two-way trade with Australia. Studies have found that trade increased within the Euro Area by 5 to 10% following the introduction of the euro.²⁰ Overall, it appears that joining a currency union with Australia would materially increase trade activity with Australia.²¹ This would mostly benefit the manufacturing sector as only a small proportion of New Zealand's commodities are exported to Australia. The increased trade may partly reflect trade diversion effects, where exports are diverted from other countries to Australia. Consequently, the increase in trade with Australia may not be fully reflected in an increase in New Zealand's trade overall.²²
- *Lower interest rates.* Both short and long-term interest rates have been higher on average in New Zealand than they have been in Australia. It is likely that interest rates (particularly short-term) would be set to largely reflect Australian economic conditions, even if the Reserve Bank of Australia was required to take account of New Zealand's monetary conditions in setting interest rates. This is because the Australian economy is more than seven times larger than the New Zealand economy. Recent Treasury work suggests New Zealand's interest rates may be higher than other countries due to domestic factors rather than a risk premium imposed by foreign investors (Labuschagne and Vowles, 2010). Nevertheless, receiving Australia's interest rates would likely result in *increased investment*, especially in the medium-term.²³
- *Increased New Zealander's investment opportunities.* Some work points to a reduction in "home bias". Home bias is where people prefer to invest their money in their home country despite receiving a lesser return. A currency union can then encourage greater risk diversification by creating an environment where people feel more comfortable investing part of their money in the union partner country.²⁴

Macroeconomic factors

There are three major macroeconomic disadvantages to forming a currency union with Australia:

- *Interest rates that are not appropriate for macro stability.* If New Zealand had received Australia's interest rates over the last economic cycle, they would have been too low to reduce the inflationary pressures in New Zealand's economy. Thus asset prices,

²⁰ See for example Baldwin (2006), Micco, Ordoñez and Stein (2003), Bun and Klaassen (2002), Flam and Nordström (2006), Berger and Nitsch (2005), De Nardis and Vicarelli (2003) and Chintrakarn (2008). While the later studies find smaller estimates than the earlier ones, a 5 to 10% increase in trade is still significant.

²¹ It should be noted that while Australia is New Zealand's largest trading partner, only 23% of New Zealand's trade is with Australia (Statistics New Zealand). This would suggest a smaller figure than the 5 to 10% increase in trade the Euro Area experienced. However, in the Euro Area many countries moved from fixed exchange rates to a currency union. This suggests that New Zealand could face a higher increase in trade than 5 to 10%. Overall, the picture is uncertain.

²² Some studies on the Euro Area found no diversion effects. See Baldwin (2006) and Micco, Ordoñez and Stein (2003).

²³ This could be offset to some extent by increased volatility in other areas of the economy. See page 21.

²⁴ However, as people's preferences to invest in their own country could be due to other factors (for example, tax rules that incentivise investment in the home country) this effect could be overstated (Hargreaves and McDermott, 1999).

inflation and debt would have all been higher, increasing New Zealand's economic imbalances. This situation has been experienced by several countries in the Euro Area. Prior to the Global Financial Crisis, more peripheral economies like those of Ireland, Spain and Portugal expanded rapidly because euro-wide interest rates were very low relative to the demand conditions in those countries. This contributed to high inflation and significant asset bubbles (see below).

- *Loss of independent monetary policy.* The loss of independent monetary policy would not be an issue if New Zealand experienced similar shocks to Australia, as in this case Australian monetary policy would also be suitable for New Zealand. However, if New Zealand was hit by a domestic shock that pushed it into a recession, interest rates would not change (or not by much) to support New Zealand's economy during the downturn. The literature on whether Australian monetary policy settings would be appropriate for New Zealand is inconclusive.
 - McCaw and McDermott (2000) find that the two economies would likely experience quite different shocks, and adjust to them quite differently. On the other hand, Grimes et al. (2000) find that New Zealand's economic cycles coincide closely with those of Australia. Importantly, interest rate levels matter, even if the interest rate cycles are similar.²⁵ Grimes et al. (2000) also find that the terms of trade movements of New Zealand and Australia are highly correlated, even though Australia exports quite different commodities than New Zealand (for example, minerals rather than dairy).
- *Adjustment to shocks.* A currency union would likely work in normal times, but perhaps less so in "abnormal" times. McCaw and McDermott (2000) find that in the 40 years leading up to 1999, the monetary policy settings of Australia (and the United States) would have been appropriate for New Zealand 70% of the time. Given this, and with a fixed nominal exchange rate, for the other 30% of the time adjustment to shocks would have had to have come through the real side of the economy. This includes movements in prices and wages, factor mobility (especially labour mobility, for example migration), and potentially fiscal transfers (a payment from one union partner to the other). A currency union can still be viable despite two countries facing asymmetric shocks if these other adjustment mechanisms are available. Several studies have looked at this issue.
 - McCaw and McDermott (2000) find that while labour mobility is high between New Zealand and Australia, there is not enough evidence to suggest that prices and wages could also play an adjustment role. Even then, labour tends to be the slowest factor to adjust to shocks. Fiscal transfers would help, if in the wake of an asymmetric shock the affected country received a transfer from the other. However, this would require a much greater level of political integration between New Zealand and Australia (Hunt, 2005).
 - Leaving aside fiscal transfers, domestic fiscal policy needs to play a more important role under a fixed exchange rate in order to stabilise the economy. If New Zealand's debt levels would allow room, discretionary fiscal policy could help the economy adjust to external shocks. The costs and benefits of monetary policy or fiscal policy as a macro stabilisation tool would need to be closely examined if New Zealand joined a currency union with Australia (Hargreaves and McDermott, 1999).

²⁵ When a country is forced to take a lower interest rate the economic cycle will change.

Finally, as in the case of Singapore, macroeconomic volatility would tend to emerge in other areas of the economy if New Zealand's exchange rate was fixed. This can be more damaging to growth. Some studies have looked at what would happen to other macroeconomic variables if the nominal exchange rate was fixed. The majority of studies find that if New Zealand had adopted the Australian dollar over the 1990s it would have experienced higher and more volatile inflation and output (Hall, 2004; McCaw and McDermott, 2000). Economies tend to experience more overall volatility with fixed exchange rates (White, 2007). Many studies have shown that the best macroeconomic stabilisation outcomes occur from having a floating exchange rate that can adjust in the face of shocks (White, 2007).

European insights

Prior to the Global Financial Crisis, Ireland, Spain and Portugal experienced increased debt in their economies due to having interest rates that were lower than their economic conditions warranted. Once the bubbles burst, their commitment to the euro meant that their exchange rates could not depreciate to buffer the effects as much as they would have otherwise. This has been even more marked in Greece, where the cycle was further exacerbated by loose fiscal policy. Weak fiscal institutions (post the crisis) have reduced the scope for fiscal policy to support the economy, further exacerbating the downturn. Most recently, there have been discussions around how tighter linking of other national policy settings between member countries can strengthen the currency union (Financial Times, 2011a).

In 1997 the authorities in the United Kingdom weighed up the pros and cons of adopting the euro. They decided against joining on the basis of failing to meet all five economic tests that they set to ensure adopting the euro would be suitable for the United Kingdom. The tests were around convergence, flexibility, investment, financial services and growth, stability and employment.²⁶ While it was decided that adopting the euro would improve investment, employment, trade and financial services, the degree of convergence and flexibility was not judged to be sufficient. It was judged that adopting the euro would hinder economic stability.

Overall assessment

On balance, the benefits of a currency union with Australia (increased trade and investment and possibly new investment opportunities) are unlikely to outweigh the macroeconomic costs that could eventuate. Lower interest rates would increase investment, but could also increase New Zealand's debt and vulnerabilities, and New Zealand would lose the ability of monetary policy to automatically adjust to shocks to buffer the economy. New Zealand and Australia do not face similar enough shocks, and there is not enough evidence to suggest that other adjustment mechanisms would work sufficiently. In the future there could be policy changes which might make other adjustment mechanisms flexible enough to improve the case for a currency union with Australia. Also, policies that cause New Zealand's average real interest rate to converge to Australia's would also lower the risk of the macroeconomic costs. Future work could usefully focus on the circumstances under which a currency union with Australia might be more viable.

²⁶ For more information see:
http://webarchive.nationalarchives.gov.uk/+http://www.hmtreasury.gov.uk/euro_assess03_repehexsum.html/webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/euro_assess03_repehexsum.htm

Fixing to the US dollar

The issues discussed above also apply to the option of fixing New Zealand's exchange rate to the US dollar but the outcomes would likely be more extreme. New Zealand would receive even lower interest rates in this situation, which would lead to even faster growth and more investment in the near term. Just as in the previous case, debt would have been higher and asset price bubbles would have been further exacerbated. New Zealand's most volatile bilateral exchange rate pair would be fixed, but this would have the consequence of creating more volatility in the New Zealand dollar/Australian dollar cross rate. Only 9% of New Zealand's goods exports go to the United States (Statistics New Zealand). New Zealand and the United States have very different economies, and this would be reflected through a large number of asymmetric shocks. Very large foreign exchange reserves would be required to make the fix work.

Looking ahead

The Australian and United States economies are currently very important to New Zealand in a trade sense. But the make-up of New Zealand's TWI is changing, and the scope of the countries New Zealand trades with is getting wider. For example, figure 10 illustrates that China is becoming a more significant trading partner with New Zealand, while the United Kingdom and the United States are becoming less significant. Although it is unlikely that the New Zealand economy will share closer links with another country over Australia, these future changes may start to influence thinking on currency unions and fixed exchange rates in the coming years.

Figure 10: New Zealand's exports by destination

2000	%	2010	%
Australia	20.4	Australia	23.0
United States	14.5	China	11.1
Japan	13.5	United States	8.6
United Kingdom	5.2	Japan	7.8
Korea	4.5	United Kingdom	3.5
China	3.2	Korea	3.3
Hong Kong	2.7	Hong Kong	2.0
Singapore	2.4	Singapore	1.9

Source: Statistics New Zealand

5.2 Policies to improve the current regime

Based on current information, there is not a compelling case for New Zealand to move away from a floating exchange rate regime based on current information. This paper now turns to discuss policies that could help to improve New Zealand's freely floating exchange rate regime. An in-depth analysis of policies that could help to dampen large exchange rate cycles was completed in 2006 and 2008 in the Supplementary Stabilisation Instruments (SSI) work completed by Treasury and the RBNZ and the subsequent Finance and Expenditure Committee (FEC) inquiry into monetary policy in New Zealand.²⁷ It is useful to examine whether the views remain the same several years on in light of recent economic developments. However, underlying all of the discussion below is the conclusion from the FEC inquiry and the SSI work by the RBNZ and Treasury: that the current monetary policy framework is the most suitable for New Zealand.

Housing market pressures were a big feature of the last economic boom. House prices were overvalued, and much of the discussion of policies to mitigate large exchange rate cycles focused on policies to reduce these pressures. The next boom may not contain such a presence of housing.

Many of the policies discussed below have been analysed in terms of their ability to dampen high exchange rate variability. It is worth noting that some of these policies may be worthwhile in their own right.

There is unlikely to be a silver bullet that would reduce exchange rate variability without cost. Some policies may have a big impact on exchange rate cycles, but may have other adverse effects. In fact, many of the policies discussed in this paper only have the potential to reduce the very extreme peaks and troughs of exchange rate cycles. This paper now turns to examining some proposed policies.

5.2.1 Policies that are worth pursuing

The FEC inquiry concluded that fiscal policy and housing policy were deemed to be worth pursuing for exchange rate stabilisation purposes.

Fiscal policy has an impact on the exchange rate through two channels. The first is through adding or subtracting from demand in the economy, which has a direct impact on the rate of inflation a country faces. Monetary policy then responds to changes in the level of inflation by altering the level of interest rates. Interest rate differentials between countries are a key driver of the exchange rate. Second, government spending can absorb scarce resources in an economy, potentially taking them away from more productive uses. This can take resources away from the tradable sector.

A more stabilising fiscal policy can thus play a role in helping to stabilise the exchange rate. The key is for fiscal policy to provide more support to monetary policy, so that interest rates do not have to be raised so high during economic upturns. In practice, however, political economy considerations often make it very difficult to run tight fiscal policy during boom years. That, together with the fact that it can be very difficult to

²⁷ For more information on the RBNZ's response to the FEC inquiry into monetary policy see:

<http://www.rbnz.govt.nz/monpol/about/3074316.html>

For more information on the Treasury and RBNZ's work on supplementary stabilisation instruments see :

<http://www.rbnz.govt.nz/monpol/about/index.html#ssi>

distinguish between cyclical and structural revenues, often leads to pro-cyclical fiscal expansions during upturns.

The FEC inquiry proposed further exploration of a range of policies to help reduce pro-cyclical fiscal policy. These included: higher thresholds around discretionary policy changes, targeting structural balances, introducing expenditure targets and rules to allocate surpluses and stabilisation funds as options worth exploring. By constraining the growth in government spending during economic booms the degree of upward pressure on the exchange rate can be reduced. Recently the Government did consider adopting an expenditure limit, although this was intended more to help control the growth in government expenditure, rather than to dampen exchange rate variability. However, the Government has decided not to proceed with an expenditure limit (Minister of Finance, 2010). Further work is currently underway to explore alternative ways of reducing the pro-cyclicality of fiscal policy (Brook, 2011).

Fiscal policy (mainly high government spending) has also played a part in recent times in the sustained overvaluation of the NZ dollar (see pages 12 and 13). In the period from 2005 to 2008 the economy was operating above full capacity. Therefore, via high growth in spending, the government sector was adding directly to inflation and taking scarce resources away from other parts of the economy, particularly the tradable sector. This was despite the Government running fiscal surpluses. For these reasons fiscal policy could play a role in helping to reduce the average level of the exchange rate. If the Government's operating deficit was reduced faster than currently planned this would also assist in achieving a lower exchange rate in the short-term.

Improving the responsiveness of housing supply could help to alleviate price pressures in the housing sector. Improvements to the Building Act and Resource Management Act are underway, though it is unclear whether these changes will significantly increase the responsiveness of housing supply. In any case, it is not clear to what extent the housing market will be a driver of future cycles.

The Global Financial Crisis has highlighted the need for increased resilience and stability of the financial system. There is also increased international attention on whether prudential policies aimed at enhancing financial stability could also have potential side benefits for stabilising the economic cycle. For example, the Basel Committee on Banking Supervision recently released a consultative document outlining a proposal for a countercyclical capital buffer regime (Basel Committee, 2010). Prudential policies could help to reduce the credit cycle and in turn take pressure off monetary policy and the exchange rate. However, while a counter-cyclical capital buffer might help financial stability (by requiring banks to have built up a bigger capital buffer at the end of the upswing), it is unlikely to make a material difference to the cycles themselves. This is because accessing capital is unlikely to be a binding constraint in upswings and very large changes in capital requirements (beyond what is probably credible) would probably be needed to make much material impact.

The Core Funding Ratio (CFR) recently introduced by the RBNZ may have some small stabilising attributes and, at the margin, reduce exchange rate variability. The CFR requires banks to hold a minimum ratio of retail and longer-term (greater than one year) wholesale funding. In the previous economic upswing, much of the increase in credit growth was funded by banks borrowing overseas in short-term wholesale markets, which provided a cheap and readily available source of funding. The CFR will reduce the ability of banks to use short-term offshore funding to expand credit, which may potentially dampen credit growth. The CFR has also increased the margin between retail and

wholesale interest rates, which reduces the extent to which the OCR needs to increase to maintain low inflation. The increased wedge between retail and wholesale interest rates may dampen the carry trade because it may result in less attractive interest rates for foreign investors (Spencer, 2010).²⁸

Further work is needed on these issues, although at this stage it is likely that any potential counter-cyclical effects of macro-prudential policies are likely to be small. They may still be worth having, but they are unlikely to remove the primacy of traditional macro stabilisation instruments like monetary policy and fiscal policy.

5.2.2 Policies that are not worth pursuing based on current assessments

The SSI and FEC inquiries in 2006 and 2008 respectively examined other potential policies and subsequently deemed them not worth pursuing. Moreover, because the last cycle was dominated by the housing market, many policies focused on ways to reduce these housing pressures. Many of the policies that involved housing and lending were considered problematic, in that they were complicated or would create significant distortions. These included a mortgage interest levy, discretionary limits on loan to value ratios, stamp duties, migration policy and loss ring-fencing (for more detail on these policies see the FEC inquiry or SSI reports). However, some of the policies considered not worth pursuing for New Zealand have since been discussed or implemented offshore in the wake of the Global Financial Crisis, in particular, a Tobin tax and variable indirect taxes.

A Tobin tax is a tax on financial transactions, aimed at limiting short-term currency speculation, and has been often proposed as a way of limiting large exchange rate cycles. Such a tax is a tax on gross *transactions*; that is, the tax is paid twice, once when foreign exchange is acquired, and again when it is sold. Double taxation at a fixed rate has the crucial consequence of discriminating automatically against short-term capital (Federal Reserve Bank of San Francisco, 1999). Alternatively, it is possible to have a financial transactions tax that only taxes withdrawals. This is the case in some Australian States (though they exclude wholesale transactions). A tax on financial transactions has been recently proposed by the French as part of G20 discussions (The Financial Times, 2011b). Overall, the assessment of the FEC report was that a Tobin tax is not feasible at a national level; it would need to be part of a global effort to be effective.

There are serious obstacles to implementing an enduring and efficient system of controls on capital movement. Even if the controls could be enforced, long-term effects on the costs of capital for businesses and households could be negative (RBNZ submission to the FEC inquiry, 2008). International evidence also suggests that capital controls have little effect on the exchange rate, although for emerging market economies they may be justified on prudential grounds in some circumstances (Ostry et al., 2010). Overall, there is scepticism as to the effectiveness of capital controls. In a developed economy with sophisticated capital markets it is likely that market players will find a way around the controls. New Zealand is very dependent on the free flow of international capital, and there is a tension between raising the cost of capital and reducing exchange rate variability.

Capital controls have been employed by many countries in the past two years in an attempt to control or restrain the upside of the exchange rate cycle. In October 2009 the

²⁸ The carry trade occurs when investors take advantage of interest rate differentials between countries.

Brazilian authorities imposed a 2% tax on foreign purchases of domestic bonds and equities. The IMF noted in August 2010 that this tax had some impact on slowing capital inflows. But the Brazilian real continued to appreciate and in October 2010 this tax was doubled to 4%, and then again raised to 6% two weeks later. The Brazilian real has appreciated by 38% against the US dollar over the past two years (to 1 January 2011) (The Economist, 2011). Ultimately, it is difficult to isolate the direct impacts of capital controls on the exchange rate because the counterfactual is unknown.

Having a variable rate of GST has been suggested as a supplement to the OCR. The idea is that in periods of significant pressure on resources it could be raised to dampen this pressure, and in times where inflationary pressures were weak it could be lowered to increase demand. New Zealand's recent increase in GST may provide further insights into the potential impact of a change in GST. However, while a variable GST could have an impact on exchange rate cycles, the large administration and compliance costs, together with constitutional and governance issues would likely make it unworkable.

5.2.3 Conclusions on policy options to improve the current regime

There is no silver bullet available to help to moderate the high exchange rate variability seen in New Zealand. Fiscal policy, housing policy and perhaps prudential policy are all worth pursuing in their own rights, and all may have some small impact on the peaks and troughs of exchange rate cycles. More targeted policies could have an impact on exchange rate variability, but they come at a heavy cost.

6 Conclusion

Theory suggests that medium-term exchange rate variability is likely to be causing problems for exporters but the empirical evidence fails to find a link. Exchange rate variability is likely to be more costly for New Zealand than other countries, due to its small domestic market. At the same time, the link between exchange rate variability and tradable sector performance is not automatic. From the evidence it appears that other factors are also at work and New Zealand's exchange rate variability alone cannot tell the full story. However, it is generally accepted that sustained periods of overvaluation in the exchange rate can be significantly damaging to the tradable sector.

Despite the costs of exchange rate variability, this paper concludes that the freely floating exchange rate regime remains the most viable regime for New Zealand. It provides an important "safety valve" in times of extreme events. Nonetheless, this paper also looks at policy options to help reduce the large amplification of the cycle. While there is no silver bullet available to reduce the amplitude of the exchange rate cycle, this paper concludes that it is worth pursuing further study into whether there is scope for adjustments to be made in New Zealand's fiscal, housing and potentially prudential policy-making tool kit that might assist to reduce exchange rate variability. Fiscal policy in particular has the potential to also reduce the imbalance between the tradable and non-tradable sector.

7 References

2025 Taskforce (2009) "Answering the \$64,000 question: Closing the gap with Australia by 2025." First report of the 2025 Taskforce, New Zealand Government.

Adalet, Muge (2007) "Reviewing exchange rate behaviour and consequences for productivity and exports in New Zealand." Internal Treasury paper, Mimeo.

Adalet, Muge (2008) "Implications of the choice of exchange rate regime." Internal Treasury paper, Mimeo.

Baldwin, Richard (2006) "The euro's trade effects." European Central Bank Working Paper Series, No. 594.

Basel Committee on Banking Supervision (2010) "Countercyclical capital buffer proposal - consultative document." Bank for International Settlements.

Berkman, Henk and Michael Bradbury (1996) "Empirical evidence on the corporate use of derivatives." *Financial Management*, Vol. 25 (2): 5-13.

Berkman, Henk, Michael Bradbury and Stephen Magan (1997) "An international comparison of derivatives use." *Financial Management* 26(4): 69-73.

Black, Melleny, Mark Vink and Bruce White (2003) "Aspects of the New Zealand Export Performance." Internal Treasury paper, Mimeo.

Brook, Anne-Marie (2011) "Making fiscal policy more stabilising: Challenges and policy options." New Zealand Treasury paper, forthcoming.

Brookes, Andy, David Hargreaves, Carrick Lucas and Bruce White (2000) "Can hedging insulate firms from exchange rate risk?" *Reserve Bank of New Zealand Bulletin*, 63(1): 21-34.

Buckle, Bob, Dean Hyslop and David Law (2007) "Assessing the Impact of Exchange Rates and Other External Factors on New Zealand Firm Productivity." Internal Treasury paper, Mimeo.

Bun, Maurice and Franc Klaassen (2002) "Has the Euro Increased Trade?" Tinbergen Institute Discussion paper no. 108/2.

Chintrakarn, Pandej (2008) "Estimating the Euro Effects on Trade with Propensity Score Matching." *Review of International Economics*, 16(1): 186-98.

Clark, Peter, Natalia Tamirisa and Shang-Jin Wei (2004) "Exchange Rate Volatility and Trade Flows-Some New Evidence." International Monetary Fund Occasional Paper: 235.

Davis, Nick (2007) "Managing Currency Risk over the Medium Term." Internal Treasury paper, Mimeo.

De Nardis, Sergio and Claudio Vicarelli (2003) "Currency Unions and Trade: The Special Case of EMU." *Review of World Economics*, 139(4).

Dekle, Robert and Heajin Ryoo (2007) "Exchange Rate Fluctuations, Financing Constraints, Hedging, and Exports: Evidence from Firm Level Data." *Journal of International Financial Markets, Institutions and Money*, 17(5): 437-51.

Dornbusch, Rudiger (1976) "Expectations and Exchange Rate Dynamics." *Journal of Political Economy*, 84(6): 1161-76.

Eckhold, Kelly (2010) "The Reserve Bank's new approach to holding and managing its foreign reserves." Financial Markets Department, *Reserve Bank of New Zealand Bulletin*, 73(2): 47-64.

The Economist (2011) "Waging the currency war." 13 January.

Export New Zealand (2010) "Exporters upbeat about 2011." 8 December. <http://www.exportnz.org.nz/news-and-info/national-news/exporters-upbeat-for-2011>

Fabling, Richard and Arthur Grimes (2008a) "Do Exporters Cut the Hedge? Who hedges and why." Ministry of Economic Development, Occasional Paper 08/02.

Fabling, Richard and Arthur Grimes (2008b) "Over the hedge? Exporters' optimal and selective budgeting choices." Reserve Bank of New Zealand Discussion Paper 2008/14.

Finance and Expenditure Committee (2008) "Inquiry into the future monetary policy framework."

Federal Reserve Bank of San Francisco (1999) "Economic letter, 9 April 1999."

The Financial Times (2011a) "Cracks over Franco-German eurozone plan." February 4.

The Financial Times (2011b) "Lagarde outlines France's G20 hopes." February 13.

The Financial Times (2010) "Swiss intervention in context." June 9.

Flam, Harry and Hakan Nordstrom (2006) "Euro Effects on the Intensive and Extensive Margins of Trade." CESifo Working Paper No. 1881.

Fung, Loretta (2004) "Large Real Exchange Rate Movements, Firm Dynamics, and Productivity Growth." University of Alberta discussion paper.

Greenway, David and Richard Kneller (2007) "Firm Heterogeneity, Exporting and Foreign Direct Investment." *The Economic Journal*, 117.

Grimes, Arthur, Frank Holmes and Roger Bowden (2000) "An ANZAC dollar? Currency union and business development." *Institute for Policy Studies*, Victoria University of Wellington.

Hall, Viv, (2004) "An Australasian currency, New Zealand adopting the US dollar, or an independent monetary policy?" Presentation to Motu.

Hargreaves, David, and John McDermott (1999) "Issues relating to optimal currency areas: theory and implications for New Zealand." *Reserve Bank of New Zealand Bulletin* 62(3): 16-29.

Hong Kong Monetary Authority (2004/05) "Hong Kong's Linked exchange rate system."

Hunt, Chris (2005) "A fresh look at the merits of a currency union." *Reserve Bank of New Zealand Bulletin*, 68(4): 16-31.

Ostry, Jonathan, Atish Ghosh, Karl Habermeier, Marcos Chamon, Mahvash Qureshi and Dennis Reinhardt (2010) "Capital Inflows: the role of controls." International Monetary Fund staff position note 10/04.

Labuschagne, Natalie and Polly Vowles (2010) "Real Interest Rates in New Zealand: Evidence and Drivers." New Zealand Treasury Working Paper 10/09.

Mabin, Gemma (2010) "New Zealand's Exchange Rate Cycles: Evidence and Drivers." New Zealand Treasury Working Paper 10/10.

McCaw, Sharon and John McDermott (2000) "How New Zealand adjusts to macroeconomic shocks: Implications for joining a currency area." *Reserve Bank of New Zealand Bulletin*, 63(1): 35-51.

Micco, Alejandro, Guillermo Ordoñez and Ernesto Stein (2003) "The Currency Union Effect on Trade: Early Evidence from EMU Economic Policy." *Economic Policy*, 37: 315-43, 348-56.

Minister of Finance (2010) "Fiscal Strategy Report." New Zealand Government.

OECD (2007) "Economic Surveys: New Zealand". OECD Factbook 2010, Vol. 2007/08.

Prevost, Andrew, and Lawrence Rose (2000) "Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis." *Journal of Business Finance & Accounting* 27(5).

Reserve Bank of New Zealand (2007) "Submission to the Finance and Expenditure Committee inquiry into the future monetary policy framework."
<http://www.rbnz.govt.nz/monpol/about/3074316.html>

Reserve Bank of New Zealand and the New Zealand Treasury (2006) "Supplementary stabilisation instruments." Initial Report to the Governor, Reserve Bank of New Zealand and the Secretary to the Treasury.

Sanderson, Lynda (2009) "Exchange rates and export performance: evidence from micro-data." *Reserve Bank of New Zealand Bulletin*, 72(2): 43-52.

Smith, Mark (2004) "Impact of the exchange rate on export volumes." *Reserve Bank of New Zealand Bulletin*, 67(1): 5-13.

Spencer, Grant (2010) "The Reserve Bank and macro-financial stability." *Reserve Bank of New Zealand Bulletin*, 73(2): 5-14.

Spencer, Grant (2007) "Opinion article by Reserve Bank Deputy Governor Grant Spencer." Reserve Bank of New Zealand.

Westpac (2009) "Buffet or buffer? Does the exchange rate hinder or help commodity exporters?"

White, Bruce (2007) "An analysis of Monetary policy and the exchange rate: paper for New Zealand Treasury." Bruce White Consulting Limited.

Other papers in this series:

Andre, Jean-Pierre (forthcoming) "Economic imbalances: New Zealand's structural problem." New Zealand Treasury Working Paper.

Labuschagne, Natalie and Polly Vowles (2010) "Real Interest Rates in New Zealand: Evidence and Drivers." New Zealand Treasury Working Paper 10/09.

Mabin, Gemma (2010) "New Zealand's Exchange Rate Cycles: Evidence and Drivers." New Zealand Treasury Working Paper 10/10.