Sudden stops, external debt and the exchange rate

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New Zealand has accumulated substantial liabilities against the rest of the world reflecting persistent current account deficits over the past 30 years. International evidence suggests that when international creditors become unwilling to continue to fund a country's external liabilities (a situation known as a 'sudden stop'), the consequences for an economy can be severe. Adjustment has tended to be more painful and disruptive for countries where debt is foreign currency denominated, or in those without an independently floating national currency. This article argues that a disruption to New Zealand's access to external funding could be less disruptive due to the country's freely-floating exchange rate and the fact that the external debt is, in effect, denominated primarily in New Zealand dollars (NZD). The nature of New Zealand's exports suggests that an exchange rate depreciation would help to adjust New Zealand's trade balance relatively rapidly, which would assist in placing the country's net foreign liabilities on a more sustainable path and rebuilding market confidence in New Zealand investments.

Introduction

New Zealand has run current account deficits for most of the last 30 years, and its net liabilities to the rest of the world are substantial by international standards, at around 75 percent of annual national income. If international creditors became unwilling to continue to fund these liabilities, the New Zealand economy would need to shift, perhaps rapidly, from net borrowing to making net repayments – a situation sometimes described as a 'sudden stop'.

Sudden stops have been very disruptive for other economies over the years, and so it seems plausible that one would be for New Zealand as well. However, many disruptive current account reversals have been in economies with an external debt denominated in foreign currency, or in a local currency that is tightly pegged to a foreign currency or other asset class like gold. The key message of this article is that the way adjustment would happen for a country with a floating exchange rate and debt that is effectively denominated in the local currency (like New Zealand[2]) is likely to be quite different. We suggest that the advantages of this configuration are not always emphasised appropriately, which may be because the arrangement is relatively uncommon: most countries that have borrowed in international markets either face substantial foreign currency mismatch (e.g. Latvia or Thailand pre-Asian crisis) or have a fixed exchange rate or currency union that limits domestic monetary autonomy (e.g. Argentina in the currency board period, or Greece and Ireland since the adoption of the euro).

Section 1 presents evidence regarding the impact of current account reversals on industrial countries and the occurrence of sovereign default, particularly when debt is domestically denominated. Section 2 considers the different global financial crisis experiences of countries with national currency debt (such as the US and UK) compared to countries with debt in a foreign or union currency. Section 3 considers what would happen to New Zealand in a scenario where foreign investors became increasingly unwilling to take NZD risk.

1 Current account reversals in advanced economies: historical evidence

Goldstein and Turner (2004) describe evidence that 'currency mismatches' – the situation when foreign-denominated debt is large relative to the domestic resources available to repay it and domestic residents are not adequately hedged against a change in the exchange rate – make financial crises more likely and increase their seriousness. If debt is denominated in foreign currency and a crisis puts downward

[1] Thanks to our team and Bernard Hodgetts, Anella Munro, Michael Reddell and Daan Steenkamp for helpful comments.

[2] While not all of New Zealand's debt is strictly denominated in local currency, almost all of the remaining foreign currency debt is hedged by New Zealand banks, which translates into New Zealand's foreign currency liabilities being effectively domestically denominated – for more on New Zealand's external debt and this hedging arrangement, see Box 1.

Box 1

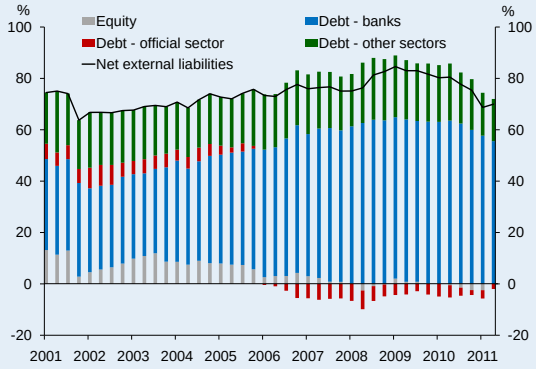
New Zealand's external debt

New Zealand's net international investment position has been negative and persistently large in recent years.[3] A decomposition of New Zealand's net external liabilities is given in figure 1. A large portion of New Zealand's liabilities is debt, rather than equity, and a substantial portion of that is bank borrowing.

Figure 1

New Zealand's net external liabilities

(percent of GDP)



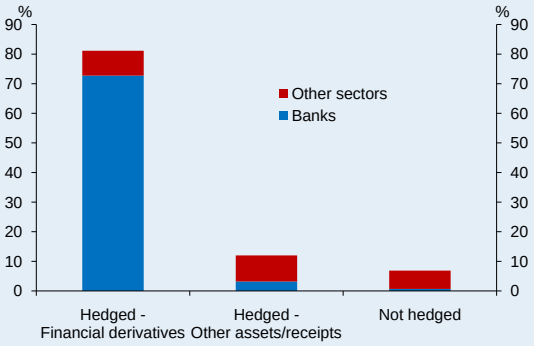
Source: Statistics New Zealand.
Note: Official sector includes general government and the Reserve Bank.

A significant amount of the liabilities of New Zealand entities is domestically denominated. As at 31 March 2011, approximately 52 percent of New Zealand's international liabilities were denominated in foreign currency. Most of the exchange rate risk associated with foreign denominated debt is hedged with financial derivatives or against other assets or receipts (figure 2).

Figure 2

New Zealand's foreign currency-denominated debt hedging arrangements

(as at 31 March 2011)



Source: Statistics New Zealand.

Hedges are often provided by non-resident borrowers, who require foreign currency funding, but are able to obtain this cost-effectively by issuing NZD denominated bonds to foreign investors and then swapping the NZD funding for foreign currency funding raised by New Zealand banks.[4] The New Zealand bank debt is therefore essentially 'domestically' denominated in that it is free from currency risk. In the case of an exchange rate depreciation (perhaps due to a sudden stop in capital flows), the rollover requirement in foreign currency terms will be lower, while the value of required repayments in domestic currency terms will remain constant. Furthermore, as in Australia – see Debelle (2011) – the New Zealand banks do not conduct significant amounts of offshore foreign currency lending, which inherently requires foreign currency funding.

[3] Figure 4 shows New Zealand's external debt is relatively high in comparison to other advanced economies, though no longer an international outlier.

[4] For more on the typical hedging arrangements for foreign currency borrowing by the New Zealand banks see Drage *et al* (2005).

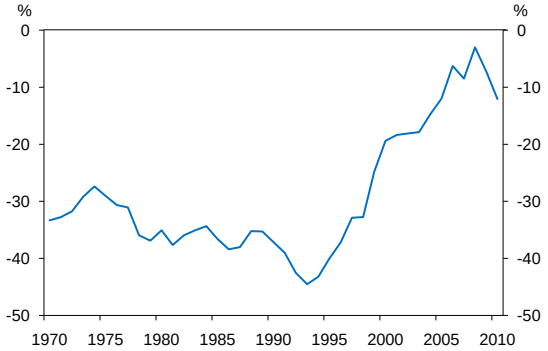
pressure on the domestic currency, the debt will balloon relative to GDP. As a consequence, when a fixed or managed exchange rate is in place, borrowers may be more likely to borrow in foreign currency, since they perceive less exchange rate risk. For these reasons, Goldstein and Turner advocate much more active management of currency mismatches in emerging economies for both public and private sector debt. Moreover, they assess that debtor nations with domestically denominated debt, like Australia and New Zealand, are at less risk of financial crisis because a fall in the exchange rate will not alter the burden of debt in domestic currency terms, but can reduce the value of its debt in foreign currency terms. See box 1 for a decomposition of New Zealand's external debt.

Empirical studies of current account adjustments in industrial countries since the 1970s confirm they are typically relatively orderly. Croke, Kamin and Leduc (2005) show industrial country current account reversals have not been associated with weak macroeconomic performance in the same way as reversals in many emerging economies. Instead, another study by Freund (2005) finds that current account dynamics in industrial countries, including large and growing deficits and subsequent reversals, have been largely a symptom of the business cycle. Certain other countries have run prolonged deficits but then achieved rebalancing without severe disruption (e.g. Canada over the past 15 years – see figure 3 below). On the other hand, the orderly history of debt under floating currencies may reflect the relatively short period most countries have actually had floating currencies.

Figure 3

Canadian net international investment position

(ratio to GDP)



Source: Haver Analytics.

It is also rare to find historical examples of countries that have had an external borrowing position in domestic currency as large as New Zealand's today.

Exchange rates often fall during current account reversals in industrial countries, but that will not push up the local currency value of domestically denominated debt. Gagnon (2005) identified 'currency crashes' in industrial countries since 1985 and found they tended to be associated with falling bond yields and reasonably strong equity prices, which would be atypical in an emerging market sudden stop.

It is also worth noting that the 'crashes' Gagnon uses are generally not particularly large,[5] suggesting that it is rare for investor unease to cause a severe currency crash in an industrial country with local currency debt. This may be an artefact of the 1985-2008 period, but it is plausible that a falling currency naturally tends to restore growth prospects and investor confidence if debt is locally denominated. New Zealand is an interesting data point for Gagnon, as our 1984 'crash' looked relatively disorderly, while the 1997 'crash' was much less so (see Gagnon's footnote 26). This may be partly attributable to the fact that, in 1984, New Zealand had substantial foreign-denominated public debt, which was totally repaid by 1996, and that New Zealand switched to a floating exchange rate regime in 1985.

Until recent years, sovereign debt has been the key component of external debt for many countries, and the greater manageability of local currency debt is also apparent in historical evidence on sovereign default. While Reinhart and Rogoff (2008) note that local currency sovereign debt default is more common than people typically think, they do not find examples of industrial country defaults after 1970, and this remains the case in the updated Reinhart and Sbrancia (2011) dataset.[6] The industrial country defaults reported after the 1880s by these authors were concentrated around the 1930s and 1940s, with some occurring amidst the economic upheaval following World

[5] His criteria is that the exchange rate has to fall by at least 20 percent cumulatively over two years, while 8 percent of the fall must occur in the first year (using annual average data).

[6] Recently, some industrial countries within the euro area have experienced problems with sovereign debt, discussed in the next section.

War II (in Japan, Germany and Austria). Prior to 1970, countries were frequently running currency pegs linked to gold (or another currency), which would have reduced the extent to which capital flight could have been dealt with via a falling currency, although exchange rate adjustments were sometimes part of macroeconomic stabilisation. Reinhart and Sbrancia suggest excessive debt burdens were also managed in the post war period (up to around 1980) via the imposition of capital controls and other financial regulations that helped governments borrow from domestic residents at low or negative real interest rates. These measures helped government debt fall to low levels in most countries by the 1970s.

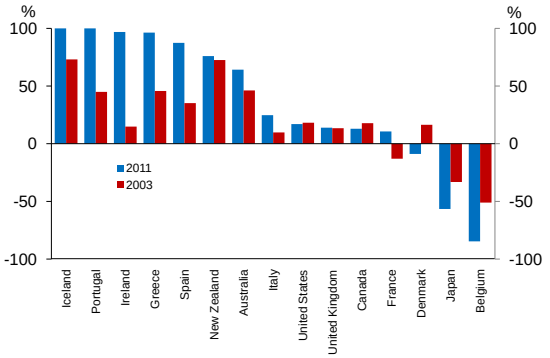
The only example we are aware of where a country with a float and largely domestically denominated debt had disruptive external financing difficulties is Britain (1976). Britain had spent a long period seeking to avoid sterling depreciation while sterling reserves globally gradually wound down. Britain ultimately needed IMF support in 1976, as a number of bilateral swap lines expired (these had been used to borrow foreign currency to repay countries looking to diversify away from sterling reserves – see Schenk (2009)).[7] Britain could presumably have allowed the pound to float and find a market clearing level rather than borrow foreign currency, but this sort of variability in exchange rates may have seemed unacceptable. Notably, sterling had only floated since 1971 and the idea of maintaining price stability via independent monetary policy would have seemed more difficult then. Thus this example differs in important respects from circumstances today.

Overall, there is reason to think that a flexible exchange rate and domestically denominated debt can be important factors in mitigating the risk of a disorderly current account reversal and altering the character of any adjustment that does occur. It is difficult to find an example of a country with those two factors experiencing a current account reversal that looks like it was caused by a withdrawal of international funding and rising bond yields. Furthermore, although historical evidence shows that local currency sovereign debt default is more common than generally assumed, the Reinhart and Sbrancia (2011) dataset suggests industrial countries have not defaulted on local currency sovereign debt in the last 25 years, the period where flexible exchange rates have become more common.

2 Current account reversals and the global financial crisis

A number of economies ran substantial current account deficits in the years leading up to the global financial crisis, leading in some cases to substantial increases in net foreign liabilities relative to GDP (figure 4). Amongst 'advanced' economies, the largest increases in net foreign liabilities were in European countries that had adopted the euro, including Ireland, Portugal, Greece and Spain, as well as Iceland (not graphed). Some emerging European economies, including Latvia and Hungary, also accumulated substantial liabilities.

Figure 4
Net international investment positions of selected countries, 2003 and 2011
(percent of GDP)



Source: International Monetary Fund.

The seven economies noted above have all experienced difficulties adjusting in the wake of the global financial crisis as investors have questioned the sustainability of the debt accumulated in prior years. In some cases, the problems have primarily begun in the banking system (e.g. Ireland) while in other cases (e.g. Greece) the debt problems began with sovereign borrowing. Both of these examples are within

[7] **Schenk and Singleton (2007) is also an interesting New Zealand case study of the support mechanisms used to slow this diversification.**

the euro, constraining the domestic central bank's ability to support the government or banking system.

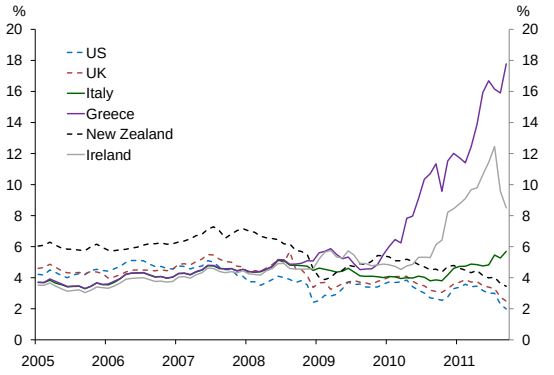
Outside of the euro area, some countries noted (including Hungary and Latvia) have had some difficulties related to lending to domestic households and firms in foreign currency. The banks in those countries can fund this lending by borrowing in international funding markets, and may appear to be hedged because their assets (loans) are also in the same foreign currency. However, if the local currency declines in value relative to the currency the loans are funded in, domestic borrowers may have difficulty repaying their loans, and the banks then have a partially unhedged foreign currency liability.

Other economies, notably the US, ran substantial current account deficits since the 1990s but did not accumulate a substantial stock of net foreign liabilities. This appeared to reflect revaluation effects, with outward investment from the US tending to appreciate in value faster than investments made by foreigners in the US.

At any rate, the US current account deficits were still seen as unsustainable by many commentators, including Mann (2002), Cline (2005), and Obstfeld and Rogoff (2004). This is prescient in light of the global financial crisis, although not everything has gone as predicted. For example, commentators including Roubini and Setser (2004) suggested that US current account reversal would be likely to involve a surge in interest rates and consequent crowding out of investment. At the time of writing, the US current account has shrunk although there is debate about how sustainable that will prove,[8] and the adjustment seems best characterised as being led from the trade side rather than forced by creditors. While the USD has depreciated, the global flight to quality has kept demand for US government debt strong (assisted to some degree by quantitative easing from the Federal Reserve), so that US interest rates have fallen. This has broadly also been true for the UK. Figure 5 shows the evolution of New Zealand, US and UK long term interest rates compared to those of selected countries with debt problems within the euro area.[9]

Figure 5

Government bond yields

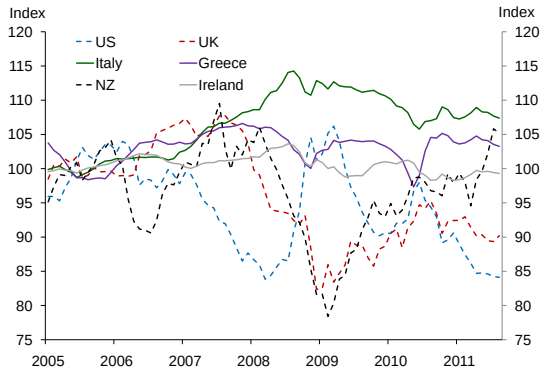


Source: IMF International Financial Statistics.

Figure 6 shows the real effective exchange rates of the same country sample. The New Zealand, US and UK exchange rates fell rapidly at times during the global financial crisis. The US and UK exchange rates remain low, while New Zealand's has recovered as the relative strength of the New Zealand and Australian economies has become evident. Despite significant economic difficulties, the real effective exchange rates of Ireland, Italy and Greece are not able to depreciate quickly or substantially since their nominal exchange rate is fixed through currency union with many of their key trading partners.

Figure 6

Real effective exchange rates



Source: IMF International Financial Statistics

[8] For example, Feldstein (2011) has suggested that current account imbalances will continue to ebb away, while Gagnon (2011) argues that current account imbalances are likely to widen again.

[9] Countries with their own currency and substantial foreign currency-denominated debt have generally had more favourable trends in domestic borrowing rates recently. To some degree, this reflects write-downs imposed on foreign currency lending within their banking systems (in the case of Latvia, Iceland, and Hungary), which have reduced net external liabilities.

Table 1

Current account reversals in emerging and advanced economies

	Emerging economies	Advanced economies
Debt in foreign currency or union currency.	This has commonly led to crises, sometimes severe (e.g. Indonesia, Argentina).	This has led to crises/reversals, particularly recently (e.g. Iceland, Ireland).
Debt in local currency with domestic central bank.	Examples of this are rare.	These reversals do not seem to lead to defaults or economic crisis.

A falling currency boosts a country's competitiveness after a negative shock, facilitating repayment of local currency debt.[10] Conversely, structures where debt burdens become more onerous as a country's perceived economic prospects decline (because bond rates spike, and/or the debt is denominated in a rising foreign currency) are inherently riskier (Pettis, 2003). De Grauwe (2011) describes how euro area debt burdens are currently proving inherently fragile with investor unease pushing up funding costs for some countries. This fragility is not typically highlighted when considering the costs and benefits of small countries entering a currency union,[11] but seems a relevant consideration. The points made by Goldstein and Turner (2004) about monitoring foreign currency mismatch are also highlighted by the contrasting experiences of recent years.

If creditor interest in holding US assets did wane, US long-term interest rates might rise to some degree, but it seems likely a key impact would be an even lower value for the USD. Rather than being a 'crisis' as some commentators have anticipated, Krugman (2011) recently suggested that this would be desirable: "if the Chinese, in a huff, stopped buying Treasuries they would be doing us a favour". While there are important differences between the New Zealand and US situations, the essential point we want to make in the next section is similar – that severely reduced demand for NZD denominated debt would be manageable for the New Zealand economy because the fall in the NZD would act to stabilise the situation.

Reflecting the above discussion, our stylised interpretation of the evidence on current account reversals in emerging and advanced economies is summarised in table 1.

3 Possible scenarios for New Zealand adjustment

The New Zealand current account deficit has seen significant correction over the past three years on the back of weak domestic demand, a high terms of trade, and other factors including declining profits earned domestically by international investors. Furthermore, the NZD continues to appear overvalued (Cline & Williamson, 2010), and a sustained fall in the NZD would likely facilitate further current account adjustment.

Obstfeld and Rogoff (2004) have argued that real exchange rate depreciation would not be a particularly effective way to reduce the US current account deficit. But their arguments do not appear to apply to a country like New Zealand. Edwards (2004) finds that an economy's openness and level of trade is the major factor affecting the size of the adjustment required of the real effective exchange rate. On average, current account adjustments in countries with large traded goods sectors like New Zealand are characterised by smaller real effective exchange rate depreciations and less substantial falls in growth. As described in Brook and Hargreaves (2000), New Zealand's trade balance is also likely to be relatively sensitive to exchange rate changes because many New Zealand exports are commodities, where prices are determined by world markets and producers must

[10] Because the US economy has substantial (foreign denominated) offshore assets, but mainly locally denominated debt, their net external debt actually 'automatically' falls as the value of the US dollar declines - see Tille (2003).

[11] For example, see Hargreaves and McDermott (1999) or Murray (1999).

accept the prevailing foreign currency price.[12] In contrast, large country exporters are typically assumed to price exports in their own currency (and thus do not reap windfall gains as their local currency falls). In a cross-country study, Bussière and Peltonen (2008) find evidence consistent with these theories – specifically that the local currency price of exports is particularly responsive to the exchange rate for New Zealand and many other small open economies, but relatively unresponsive for most larger advanced economies.

As described in box 1, borrowing by the New Zealand government and banking system from offshore is either conducted in local currency or routinely hedged into local currency. This allows the exchange rate to act as an effective shock absorber without causing the local currency value of debt to rise.

Given these conditions, the general mechanics we would expect in a severe funding crisis for the New Zealand economy would be as follows:[13]

Initial shock prompts liquidity support; sharp fall in NZD

- The crisis is either caused by a fundamental solvency issue (e.g. a collapse in dairy prices threatening the farm sector with flow-on effects to the banking system) or purely driven by panic in global funding markets. If the former, it would be necessary to return the banking system to a sound position – potentially via some combination of support from existing shareholders, government support and Open Bank Resolution. Our focus here is how the liquidity dimensions of the crisis would play out.
- We assume the Reserve Bank would provide liquidity to the banks, and that as banks switched to obtaining funding from the Reserve Bank, they would repay their foreign creditors.
- The institutions that were borrowing NZD from offshore investors – often Kauri or Eurokiwi issuers – would settle their swap contracts with the New Zealand banks and pass NZD to their underlying offshore investors.
- These investors are only able to exit their NZD exposure at spot exchange rates (by finding a willing buyer). Given that financial markets are trying to avoid providing NZD funding, the spot exchange rate will potentially weaken considerably (perhaps falling substantially further and faster than in 2008). As the currency falls, it will ultimately be seen as a buying opportunity, prompting some NZD purchasing from international investors and domestic investors with foreign currency assets.

Currency decline drives sharp rebalancing, net international investment position improves

- A very weak NZD would pass through fairly quickly into import prices here, creating a temporary bout of CPI inflation and reduced import demand. For example, we would be using less petrol and importing fewer and cheaper cars. Because New Zealand's trade balance is particularly responsive to the exchange rate, this would fairly quickly push the trade balance into surplus. The investment income balance would also shrink given domestic economic weakness.
- While there would be considerable economic and financial disruption, particularly in sectors reliant on imports such as retail, export industries would be earning record NZD returns.[14] This would help to hold up tax receipts and activity, though both would likely be quite weak.

[12] New Zealand's small size means that any increased export supply stimulated by rising NZD prices will not be sufficient to greatly affect the globally set foreign currency price. Even in the global dairy industry, where New Zealand accounts for a significant amount of world exports, we account for a fairly small proportion of global production.

[13] If New Zealand's trading partners were also affected, the extent that the NZD could depreciate may be limited. In this case, there would be greater risk of a more significant crisis, where tightening of borrowing constraints could lead to a debt-deflation spiral. However, because the NZD is a particularly risk sensitive currency, it might still depreciate materially against other key currencies, even if other global economies are weak and funding conditions are difficult.

[14] There may be some tendency for the world price of NZ exports to fall as the NZD weakens – Kindleberger (1934) suggested such an effect was observable in butter prices then – but it seems unlikely this would be sufficient to significantly erode export returns.

- In terms of the net international investment position, the NZD value of New Zealand's foreign-denominated assets would rise substantially, while the NZD value of foreign equity assets in New Zealand would tend to fall. New Zealand households' foreign assets are low in official statistics, but believed to be poorly measured. These effects would reduce the net foreign liability position substantially.

Economic and financial impact

- Rising import prices would push up other prices: all industries use petrol and other imports to some degree and would have to reprice accordingly, and there would probably be a degree of wage compensation. However, a sustained inflation dynamic would be unlikely given the economic environment and a credible monetary policy framework focused on price stability. Thus a long-lived increase in short-term interest rates seems unlikely and long-term interest rates (following the expectations theory of the yield curve) would not be expected to rise significantly either. Investor nervousness would instead be reflecting in the NZD dynamics discussed above.
- The supply of credit is an important factor determining the degree to which the withdrawal of offshore funding to banks affects the real economy. Banks might have taken losses, and may typically be quite unwilling to write new business until they can fund on a standalone basis, so the supply of credit cannot be guaranteed. Measures may be required to encourage new lending (as in the UK and other countries recently). However, banks would be unlikely to develop the large solvency issues that can happen as a direct consequence of unhedged foreign currency liabilities during substantial exchange rate depreciation.[15] This should mean they would be able to manage their existing book and (potentially with some public assistance) do some new lending. A crisis-like disruption in financial intermediation and widespread bank insolvency is unlikely to occur.[16]
- If the funding crisis were prolonged, these effects (reduced net foreign liabilities in NZD terms, nominal GDP rising via inflation, net foreign liabilities falling via sizable current account surpluses) would rapidly diminish the net foreign liability to GDP ratio. In contrast, in a country inside a currency union, many of these dynamics would not be happening. For example, they may experience deflation, which will tend to increase net foreign debt liabilities relative to GDP.
- As the net international investment position rebalances and investor confidence returns, the real exchange rate is likely to rise back towards historical average, potentially causing the price level to fall back towards pre crisis levels. However, if the initial shock was serious, the exchange rate would probably not fully recover, and this would represent a meaningful fall in New Zealand living standards (through higher import costs).
- As rebalancing occurs, we expect that credit growth would be low for some time, especially if banks were still reliant on the Reserve Bank to meet their funding gap. Banks would move towards funding through retail deposits as domestic savings increased. When investor confidence eventually recovered and banks returned to markets, we would expect that banks would again be able to tap NZD funding or hedge foreign funding, back into NZD to fund new lending – albeit at a potentially higher cost. In this way, we would expect that as market function normalised, New Zealand's current funding arrangement, which enables banks to borrow in domestic currency, would resume.

Consistent with our story that in the rare event of a severe funding crisis, a falling NZD would be an important pressure valve, Burnside (2011) recently suggested that foreign investors require quite high average interest rates on their NZD investments because they see asymmetric risks around the NZD – with the probability of a sharp fall being small, but larger than the probability of a sharp rise. Burnside's work suggests we pay (via slightly higher interest rates) for this 'insurance' during normal times, but would effectively benefit from it in a funding crisis or other severe economic event. It is interesting to note that the NZD fell very rapidly during 2008 as investor risk aversion peaked and funding

[15] This was an issue for many countries, including Indonesia, during the Asian financial crisis.

[16] Unlike in Indonesia (1998) and Argentina (2001).

markets became difficult. This can be interpreted as the market considering that the funding crisis might last a long time and expecting that a prolonged and substantial depreciation of the NZD would result. In the end, global policy actions restored market confidence and the NZ (and Australian) currencies recovered fairly rapidly.

While we expect that adjustment of New Zealand's net liability position following an external funding shock would be relatively orderly, there are certainly valid reasons to be concerned about the external debt accumulated by the New Zealand economy.[17] While a falling currency can ease adjustment, it does so by reducing the purchasing power of New Zealanders, which is a genuine loss of living standards. Rising debt loads in the household, agricultural and business sectors also increase the potential for solvency problems in the banking sector in a severe downturn. For this reason, Reserve Bank *Financial Stability Reports* pay a lot of attention to the credit quality of bank lending to the major sectors of the New Zealand economy.

A scenario such as the one outlined above would undoubtedly involve significant economic and financial disruption. Indeed, any event that entails a significant loss of financial market confidence has the potential to undermine the normal functioning of the economy through a range of channels, some of which might not be easy to fully anticipate in advance. Accordingly, there is little room for complacency. The discussion in this article is simply intended to illustrate that an external funding shock may be more manageable than would be the case if the exchange rate was not able to provide an effective adjustment mechanism.

4 Conclusion

While many commentators have expressed legitimate concerns about the potential vulnerabilities associated with New Zealand's high external debt, we suggest in this article that a disruption in New Zealand's access to external funding might not necessarily be as damaging as international evidence suggests it has been elsewhere. In particular, it is important to not overly generalise from the historical cross-country literature on sudden stops (or the recent European experience), as this ignores the additional flexibility provided by local currency-denominated debt and an independently floating exchange rate.

Adjustment has tended to be more painful and disruptive for countries where debt is foreign currency-denominated (as in most developing countries) or for countries without an independently floating national currency (as in the euro area) than we would expect to see for New Zealand. Because New Zealand is a small, open economy with a floating exchange rate and domestically denominated debt, we suggest that, like the US and UK, we would probably also see substantial exchange rate depreciation as the key result of foreign creditors choosing to curtail their lending to New Zealand. The nature of our exports suggests that depreciation would adjust the New Zealand trade balance relatively rapidly. While a large depreciation would certainly have some painful and disruptive effects, it would also be expected to put the country's net foreign liabilities on a path to a lower level and hence facilitate renewed market confidence in New Zealand investments.

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[17] **See Andre (2011) and Savings Working Group (2011) for further discussion.**

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