

Would adopting the US dollar have led to improved inflation, output and trade balances, for New Zealand in the 1990s?

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Abstract¹

Deterministic simulations with the Reserve Bank of New Zealand's core FPS model show how New Zealand's broad macroeconomic environment might have evolved over the 1990s, if a US nominal yield curve and US TWI exchange rate movements under a common currency arrangement had been experienced.

Relatively looser monetary conditions would have prevailed, and led to modest short-run output gains, greater excess demand pressures, noticeably higher CPI inflation rates over the whole of the 1990s, and less favourable trade balance outcomes, especially for the late 1990s.

These macroeconomic outcomes are overall less favourable than those obtained from simulating the equivalent Australian monetary conditions.

JEL classification: E58, F36, E31, E37, E17.

Key Words: Common currency; monetary policy; deterministic simulation; New Zealand; Australia; United States.

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1. Introduction

There has been considerable debate recently on whether New Zealand should continue to maintain an independent currency, enter into a monetary union with Australia, or adopt the Australian or US dollar as its currency².

From an international perspective, the key arguments for and against abandoning independent national currencies and monetary policies have varied considerably over time and by country³.

For New Zealand, however, Drew *et al.* (DHMS), (2001, p 3) have suggested that a key driving force behind recent debates has been the conduct of monetary policy and improved overall performance of the economy in the longer term, rather than dissatisfaction with its floating exchange rate system.

DHMS have also utilised the core model of the Reserve Bank of New Zealand's Forecasting and Policy System (FPS) to provide insights into the implications for New Zealand's inflation and output performance, had it credibly fixed its currency to the Australian dollar (AUD) over the 1990s. Their historical deterministic simulations show that if New Zealand had faced the relatively looser Australian monetary conditions, then output growth may have been temporarily boosted, but annual inflation would on average have been around 1 percentage point higher. Stochastic simulation results show that the volatility in output and inflation could have been greater under an AUD common currency policy environment, than with New Zealand operating its own monetary policy. Hence, an overall conclusion from these results rests on the relative weighting assigned to the potentially modest output gains, the persistent extra inflation costs, and the greater output and inflation variability. For

² An evaluation of the key underpinning research can be found in Bjorksten (2001). See also Drew *et al.* (DHMS) (2001), Coleman (2001, 1999); Hartley (2001); Bowden (2000); Grimes (2000); Grimes, Holmes, and Bowden (2000); McCaw and McDermott (2000); and Hargreaves and McDermott (1999).

³ Bjorksten (2001) provides examples from the Swedish, Finnish and Canadian debates, emphasising that any decision to join a currency union or adopt another country's currency is predominantly political. He categorises the various arguments on: (i) "traditional" Optimal Currency Area (OCA) grounds featuring welfare gains from increased trade; (ii) "new" OCA grounds such as removal of currency risk premia in interest rates, improved portfolio allocation associated with more sophisticated financial capital markets and elimination of home bias; and (iii) crisis avoidance grounds. DHMS refer to the key factor behind currency union in Europe being the desire for tighter political union, and the

example, placing a high weight on minimising output and inflation variability implies the New Zealand dollar (NZD) should not be fixed to the AUD, and New Zealand should retain its ability to set monetary policy independent of that set in Australia.⁴

However, while Australia accounts for around 20 per cent of New Zealand's exports and is its largest and geographically closest trading partner, New Zealand has no single dominant merchandise trading partner. Other trading partners of significance are the United States (US), Japan, the United Kingdom, Germany, the Republic of Korea, the People's Republic of China, and Taiwan. Moreover, Bowden (2001) has suggested that at least 50 per cent of New Zealand's market traded commodity exports tend to be priced in US dollars (USD). This makes the US dollar New Zealand's largest trading currency and the US one of its top three merchandise-trading partners. Bowden has presented key arguments for and against adopting some form of USD currency arrangement⁵. Hartley (2001), as part of his extensive review of monetary arrangements in New Zealand, has also canvassed potential costs and benefits from New Zealand's abandoning its national currency and adopting the USD as its domestic currency.

The primary aim of this short paper is to present counterfactual deterministic simulation results for 1990 to 1999, to see whether New Zealand could have had cyclically better inflation, output and trade balance outcomes, from facing US interest rate and currency movements. It also provides insights from a macroeconomic perspective on the relative merits of adopting a common currency with the US rather than Australia. Our methodology is the same as that used in DHMS for the AUD, and the empirical results should be seen as complementing the judgements put forward in Bowden (2000), Grimes (2000), Hartley (2001) and others, as to whether New Zealand should adopt a common currency with the USD or not.

driving forces in Latin America being dissatisfaction with floating exchange rates and a lack of monetary and inflationary control.

⁴ In this context, it can be noted that section 4(b) of the Reserve Bank of New Zealand's September 2002 Policy Targets Agreement (PTA), (Cullen and Bollard, 2002), requires that "In pursuing its price stability objective, the Bank shall implement monetary policy in a sustainable, consistent and transparent manner and shall seek to avoid unnecessary instability in output, interest rates and the exchange rate."

⁵ The arguments focus on currency based transactions costs and exposure uncertainty, portfolio impediments and interest rate risk premiums, exchange rate buffering or anti-buffering effects, and political factors.

The remainder of this paper is structured as follows. Section 2 summarises the methodology used, and the historical US monetary conditions imposed. Section 3 presents the counterfactual empirical results for inflation, output and the nominal trade balance, benchmarked against the actual New Zealand and counterfactual Australian outcomes. Specific results are summarised in section 4, and some broader monetary policy implications are drawn.

2. The counterfactual simulations

2.1 Methodology

Deterministic simulations were carried out with the RBNZ's FPS core model⁶, and when interpreting them three factors should be borne in mind. Firstly, the utilisation of core FPS for both common currency and non-common currency regimes implies that structural changes and alterations to the economy's long run steady state properties, would take place only very slowly over time. In other words, FPS is assumed to be a reasonably valid reflection of the economy, whether New Zealand were running a common currency or not⁷. Secondly, as is the case for most small open economy macro models, monetary policy is assumed to affect nominal but not real variables in the long run, and can have significant effects on real activity over short to medium terms. Thirdly, results from deterministic simulations for New Zealand over the 1990s provide counterfactual outcomes solely for that particular historical experience.

However, despite New Zealand, Australia and the US having traditionally experienced quite strongly synchronised business cycles⁸, New Zealand has experienced a number of materially different domestic and foreign shocks, and experienced quite wide ranging movements in interest rates and exchange rates over the 1990s. The deterministic results presented here are therefore considered sufficiently representative to be informative. But if additionally, one needs an

⁶ A succinct overview of that model has been presented in DHMS (2001, Appendix). More complete descriptions are available in Black *et al.* (1997), and Hunt *et al.* (2000).

⁷ For a fuller appreciation of long run outcomes, a possibly important omission from this macroeconomic based analysis could be our not accounting explicitly for potentially significant gains to trade. These could result from reduced financial transactions costs, and the removal of exchange rate uncertainty as non-tariff barriers to exporting by smaller firms. See Grimes (2000).

⁸ See Hall *et al.* (1998), Grimes *et al.* (2000), and McCaw and McDermott (2000).

appreciation of the outcomes from a fuller range of potential economic shocks to the New Zealand economy, then stochastic simulations of the type undertaken by DHMS for the Australian counterfactual would have to be carried out. Stochastic simulation analysis is not, however, within the scope of this paper.

2.2 The historical US monetary conditions

FPS was simulated from September 1983 to December 1999, with US monetary conditions imposed from March 1990 to December 1999. These US monetary conditions reflect an exogenously imposed nominal yield curve (Figure 1) and an exogenous nominal exchange rate growing at the same rate as the US TWI (Figure 3).⁹

US nominal long interest rates were lower than those for NZ throughout the 1990s (Figure 2), and the US yield curve would have provided considerably looser interest rate settings over almost all that period¹⁰. Moreover, for the first half of the 1990s, these interest rate settings would have contributed to more stimulatory monetary conditions than those provided from Australian settings.

NZ experienced relatively large nominal exchange rate movements over the 1990s, appreciating markedly from 1992 to 1997, and depreciating quite rapidly from 1997 onwards (Figure 3). A NZ TWI tuned to the US TWI would also have appreciated markedly from 1995 to 1999, but overall would not have led to a consistently lower nominal effective exchange rate.

But what of *real* effective exchange rate movements, which are computed endogenously in FPS? Figure 4 shows the real TWI exchange rate actually faced by NZ, together with those which NZ would have faced from both US and AUS nominal exchange rate movements. Inheriting Australian exchange rate movements would have led to a lower real TWI over the great bulk of the 1990s, but the US real TWI displays significantly different movements and is likely to have generated considerably different outcomes. It would have been considerably less favourable to exporters and potentially more beneficial to NZ's inflation rate, between 1992 and 1994, and in an even more pronounced fashion from mid-1997 onwards.

⁹ The Bank of England's US TWI was used.

Hence, the combination of NZ adopting a US yield curve and US TWI movements would almost certainly have led to looser monetary conditions. The “on balance” macroeconomic outcomes for inflation, output and the nominal trade balance would not, however, seem *a priori* as clear cut as those that could be expected from imposing Australian conditions.

3. Empirical results

Under US monetary conditions, the estimated output gap would have been on average around 0.4 percentage points higher over the 1990s, compared with NZ’s historical experience (Figure 5). This is only marginally higher than the 0.3 percentage points reported for Australian monetary conditions. The output gains are similar for both currency regimes from 1995 through to 1998, but adopting the US dollar could have produced somewhat less unfavourable growth outcomes from early 1991 through to late 1993. The associated excess demand pressures would have been correspondingly higher for this sub-period.

The somewhat higher levels of activity, associated with relatively looser monetary conditions for most of the period, generate the CPI inflation outcomes in Figure 6. Under US monetary conditions, annual inflation would have been noticeably higher over the whole of the 1990s, and between 1 and 1.5 percentage points higher from 1995 onwards. Peak inflation would have been 3.6 per cent for the year ended December 1996, falling to about 2.4 per cent by the end of the 1990s. These outcomes are considerably less favourable than those emanating from Australian counterfactual conditions, and substantially worse than those obtained under actual New Zealand monetary conditions. The Reserve Bank’s then CPI inflation target band of 0 to 2 per cent would have been exceeded as early as December 1992, and would have persisted for a much longer time period than under Australian conditions. The subsequent 0 to 3 per cent target band, agreed to from the December 1996 year, would also have been exceeded, initially from March 1995, and then by a materially greater amount and for a longer period than from Australian conditions. In short, considerably less favourable inflation outcomes would have resulted from US monetary conditions.

¹⁰ On average, the US yield curve is approximately 150 basis points more stimulatory.

Adopting the USD is likely to have led to a considerably worse nominal trade balance overall (Figure 7), coinciding particularly with the effects over 1997 to 1999 from the Asian financial crisis and New Zealand's two successive periods of drought¹¹. This outcome contrasts with the modestly better trade balance overall, that might have occurred from adoption of the Australian dollar.

4. Conclusions

The more stimulatory monetary conditions associated with a nominal US yield curve and US TWI exchange rate movements, have been applied to New Zealand's economic conditions of the 1990s.

Deterministic simulations show New Zealand's output gap measure to have been on average 0.4 percentage points higher, only marginally better than the modest 0.3 percentage points improvement obtained from adopting Australian monetary conditions.

The somewhat stronger excess demand pressure would, however, have produced noticeably higher CPI inflation throughout the 1990s. Annual inflation would have been 1 to 1.5 percentage points higher from 1995, peaking at 3.6 per cent for the year ended December 1996. These outcomes are considerably less favourable than those obtained from Australian counterfactual conditions, and might have raised concerns quite early in the 1990s about the possibility of ongoing higher inflationary expectations.

A further monetary policy implication from this is that the Reserve Bank's then 0 to 2 per cent inflation target band would have been exceeded much earlier and by a considerably greater amount than from Australia monetary conditions. This might have begun to undermine the credibility of RBNZ monetary policy, at a still early stage of New Zealand's inflation targeting regime.

¹¹ See 'Business cycle developments and the role of monetary policy over the 1990s', pp 54-77 in Reserve Bank of New Zealand (2000).

Movements in the US dollar relative to the NZ dollar in the late 1990s would have led to a substantially greater nominal trade deficit than would have occurred from adoption of the Australian dollar, or was historically the case for New Zealand. Or put another way, the inability of New Zealand to operate its own monetary policy in response to the Asian financial crisis could have been associated with significantly more negative trade balances.

Hence, under US monetary conditions of the 1990s, key cyclical consequences are that New Zealand could have had modest short run output gains, greater excess demand pressures, noticeably higher CPI inflation rates sustained over the whole of the 1990s, and less favourable trade balance outcomes.

These macroeconomic outcomes are overall less favourable than those obtained from adopting the equivalent Australian monetary conditions, and in the context of the counterfactual monetary conditions of the 1990s are consistent with New Zealand retaining its ability to set monetary policy independent of that set in Australia or the US.

However, as the FPS macroeconomic model does not allow for either structural changes or new steady state values which might emerge over the longer term under a common currency regime, a fuller judgement on monetary policy implications should ideally reflect future exploration of these issues as well.

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Figure 1: Nominal Interest Rate Yield Spreads (Short – Long Rates)

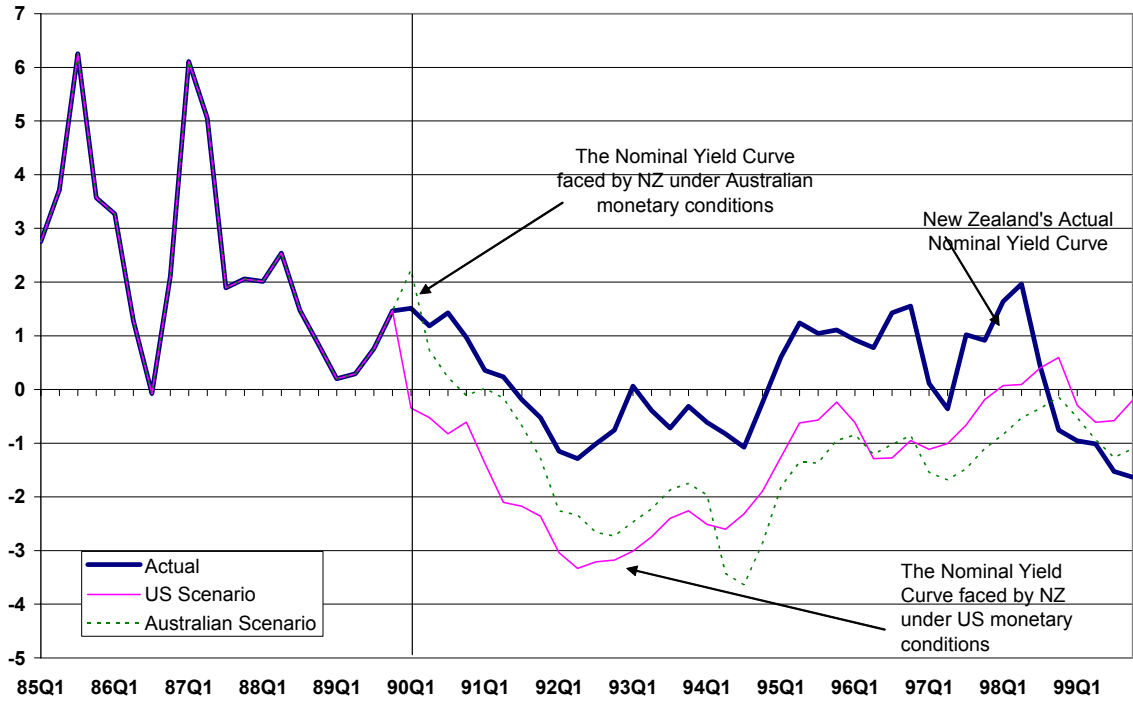


Figure 2: Nominal Long Term Interest Rates

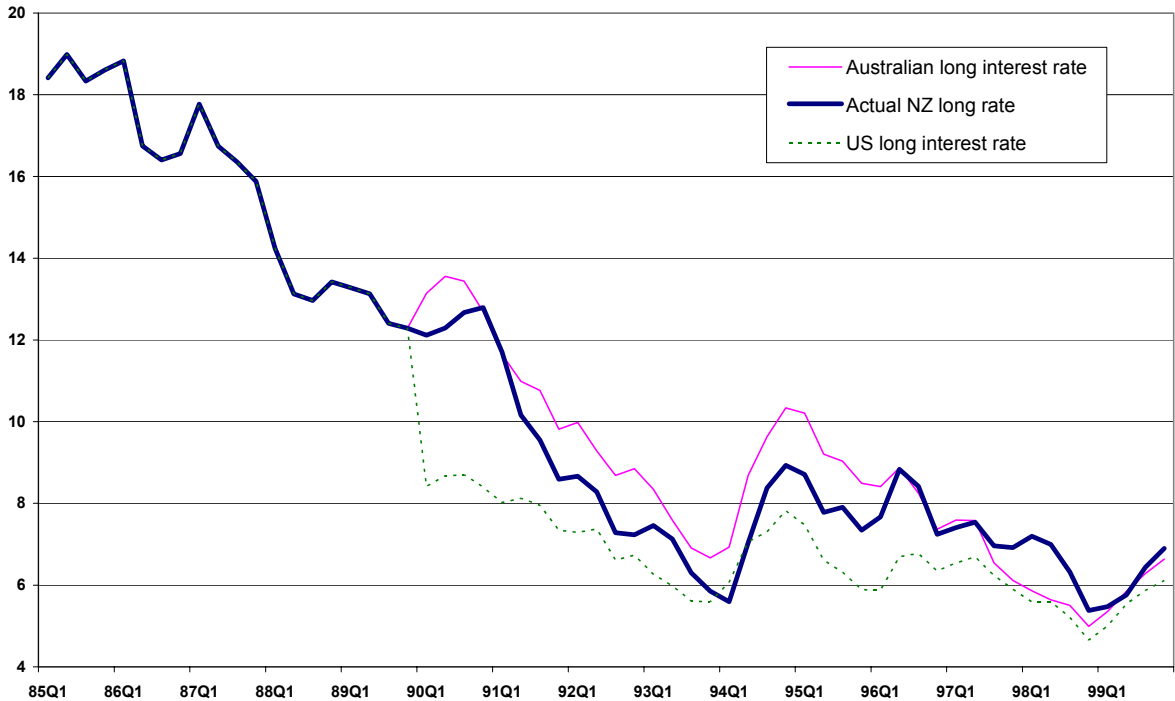


Figure 3: Nominal TWI Exchange Rates

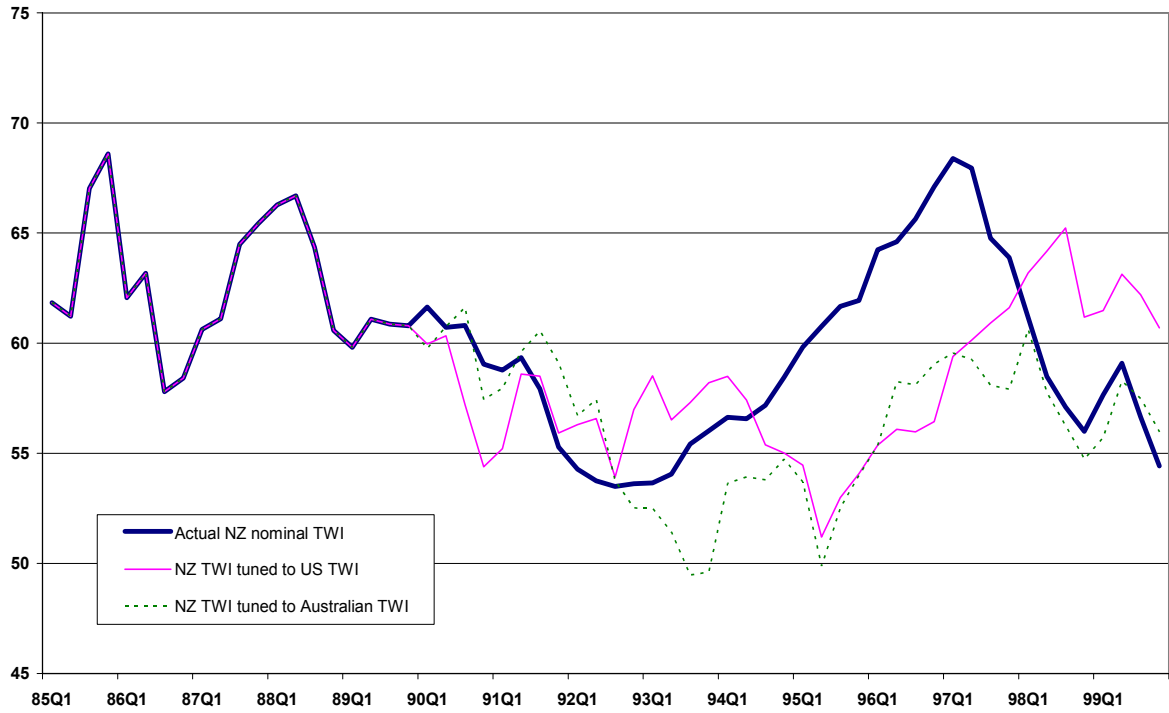


Figure 4: Real TWI Exchange Rates

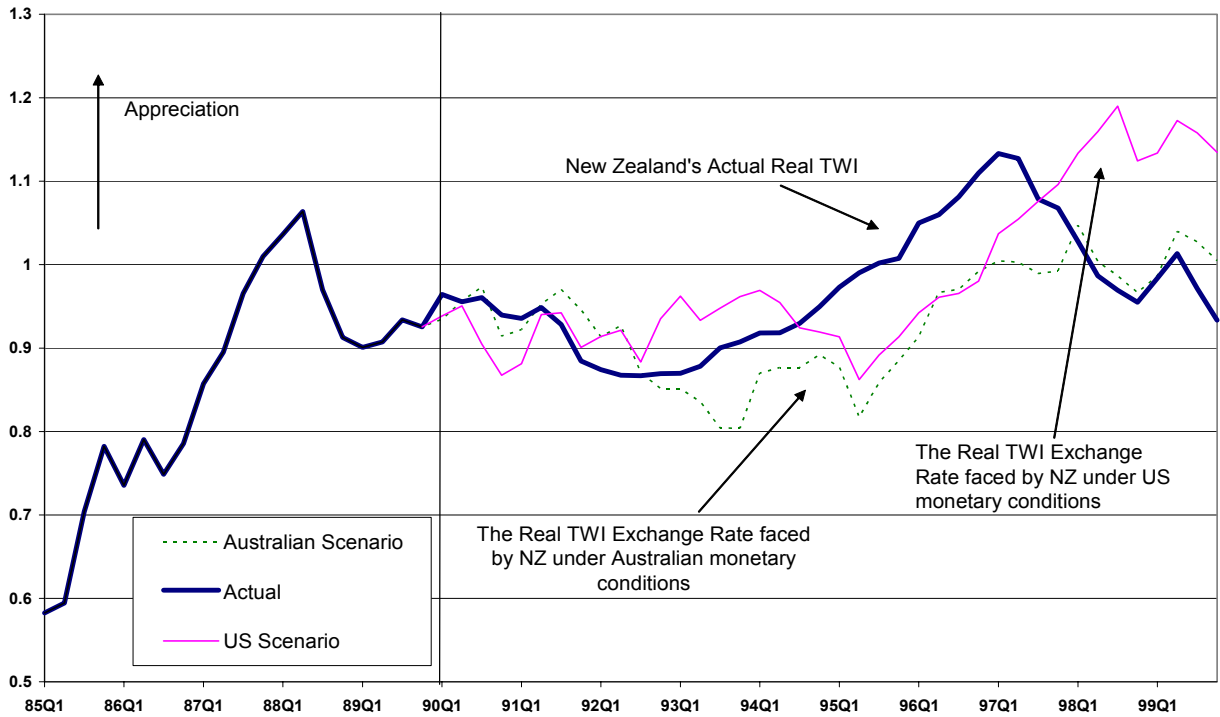


Figure 5: Output Gaps

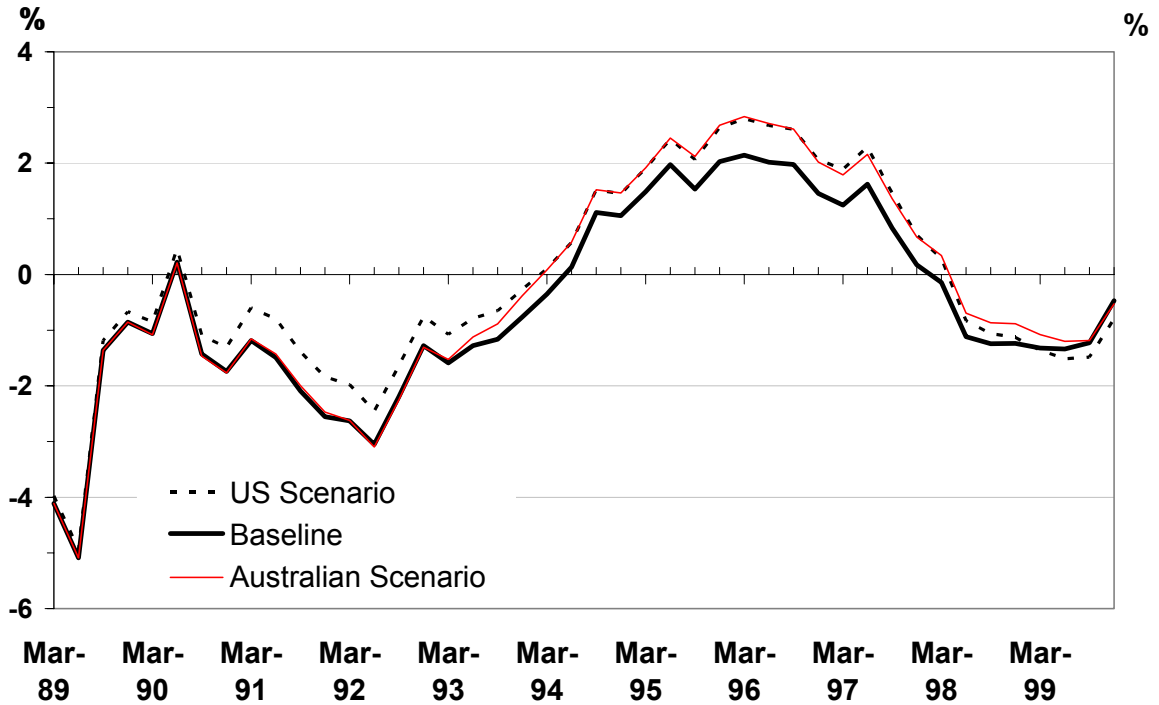


Figure 6: Annual CPI Inflation Rates, relative to Target Bands

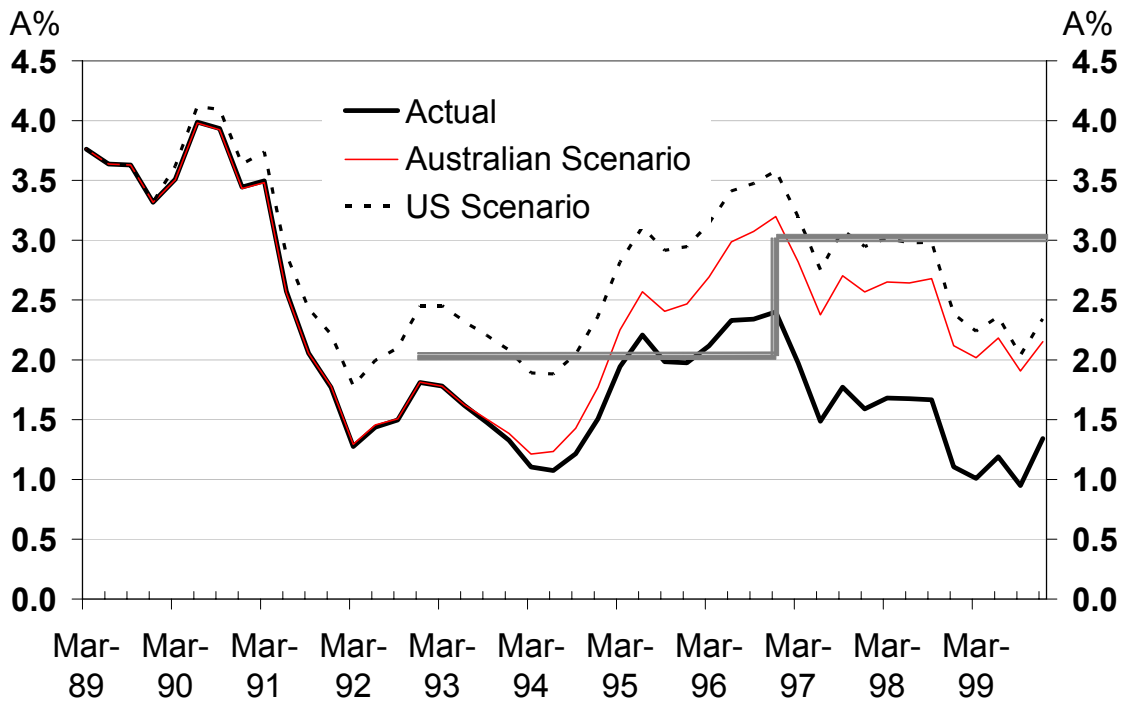


Figure 7: Nominal Trade Balances (\$m SNA Basis)

