RECONSIDERING THE LINK BETWEEN FISCAL POLICY AND INTEREST RATES IN AUSTRALIA

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ABSTRACT

This paper examines the empirical relationship between government debt and the real interest margin between Australian and US 10-year government bond yields. Results for the period 1990 to 2009 suggest that Australian general government net debt has no impact on the short-run real interest margin, and has only a small effect in the long run. Further, the estimates suggest that movements in US general government net debt have a considerably larger effect than Australian general government net debt — implying that US influences take greater prominence in explaining the real interest margin.

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CONTENTS

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1. INTRODUCTION

Policy responses to the global financial crisis and subsequent global economic downturn have seen a marked deterioration in budget balances and debt positions across most advanced economies. The IMF projects a rise in the average net general government debt-to-GDP ratio for the advanced economies from around 63 per cent at end-2009 to around 86 per cent by 2015 (IMF 2010).

In Australia, the Federal Government underlying cash budget is estimated to have peaked at 4.4 per cent of GDP in 2009-10, while net debt is projected to peak at 6 per cent of GDP in 2011-12 — which is relatively low by international standards (Commonwealth of Australia 2010). However, the increase in budget deficits and debt in response to the global financial crisis (particularly in the major advanced economies) has ignited debate on the link between fiscal policy and interest rates.

The empirical literature focusing on the link between fiscal policy and interest rates in Australia is relatively scant. Comley et al. (2002) explored the impact of public sector net foreign debt on interest rates for Australia by investigating the responsiveness of the real interest margin (or premium) between Australian and US 10-year government bond yields to a deterioration in the Australian budget balance and public debt. Comley's results indicate that the real interest margin increases by around 20 basis points in response to a one percentage point of GDP deterioration in the headline budget balance in the short run, while a one percentage point of GDP increase in the stock of public debt was found to increase the long-run real interest margin by around 15 basis points.

This paper reassesses the link between fiscal policy and interest rates in Australia. The work of Comley et al. is extended using a more recent data

sample and, more importantly, incorporating external influences on the real interest differential.

The remainder of this paper is organised as follows. A review of the empirical literature on the link between fiscal policy and interest rates is conducted in Section 2. Section 3 extends the real interest margin model specified by Comley et al. by including US variables to capture external influences on the real interest margin. Section 4 presents data and results, while the final section concludes.

2. LITERATURE REVIEW

The impacts of government debt and its effects on interest rates can be explained in a number of different ways, and with differing underlying assumptions. For a closed economy, and assuming that Ricardian equivalence[1] does not hold, a budget deficit reduces national saving, which implies a shortage of funds to finance investment. This would place upward pressure on interest rates as firms compete to finance their investments from the existing pool of domestic saving (Elmendorf and Mankiw 1999).

If the flow of capital from overseas is assumed to be infinitely elastic, a budget deficit may not reduce the domestic capital stock as the adjustment can occur

1 In its strict form, Barro's (1974) Ricardian equivalence proposition asserts that government bonds do not constitute net wealth, meaning that financing decisions have no real effects on consumption and interest rates. This implies that reductions in public saving resulting from tax cuts are offset one for one by increased private saving leaving consumption, national saving and interest rates unchanged. The same effect also holds for a deficit financed permanent spending increase as private agents cut their consumption in anticipation of future tax increases (Röhn 2010).

through higher capital inflows — which may not necessarily change interest rates.

Economic theory suggests that in an open economy with imperfect capital mobility[2], the decline in national saving and rise in interest rates resulting from a budget deficit will induce a decline in domestic investment and net foreign investment. Under these circumstances higher net capital inflows would bid up the exchange rate.

Given some of the theoretical ambiguities about the connection between debt and interest rates, much of the literature has followed an empirical approach. However, the empirical evidence focusing specifically on the link between fiscal deficits and interest rates is mixed.

Barth et al. (1991) survey 42 papers through to 1989, of which 17 claimed positive effects, 19 showed negative effects, and 6 found mixed effects. In an additional survey of the empirical evidence, Gale and Orszag (2003) report that of 59 papers reviewed, 29 found a significant effect of deficits on interest rates, 19 found a predominantly insignificant effect, and 11 had mixed results. Gale and Orszag conclude that an increase in the fiscal deficit by one percentage point of GDP raises interest rates by about 30 to 60 basis points. In another survey, the European Commission (2004) concludes that the evidence points to an effect of 15 to 80 basis points.

The OECD (2009) also summarises recent empirical work on the link between fiscal policy and interest rates. Overall, the OECD's review indicates that a

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2 It is likely that the Australian economy faces some degree of capital immobility in the short run — but with long-run markets being closer to perfectly competitive.

1 per cent deterioration in the fiscal balance produces a 10 to 60 basis point increase in long-term interest rates. Focusing on stock variables, the OECD's survey suggests that a 1 per cent increase in net public debt raises long term interest rates by 3 to 50 basis points.

Studies based on cross-sectional data have typically found smaller effects than analysis of individual countries. Reinhart and Sack (2000) find that the impact of a deterioration in the fiscal balance by one percentage point of GDP in the current and following year raises government bond yields by nine basis points in OECD countries, and by 12 basis points in G-7 countries (Horton et al. 2009).

Empirical studies which consider the effect of current fiscal deficits on bond yields will inevitably suffer from some degree of endogeneity or reverse causality. For example, this can occur where high levels of debt lead to rising risk premia. One approach to alleviate this problem has been to study the announcement effects of fiscal policy on interest rates. This is because, in an efficient market, if one believes that larger budget deficits will increase interest rates, an announcement of deficits larger than previously anticipated will immediately boost long-term rates. This can occur through two channels. First, the term structure of interest rates hypothesises that the current yield on a long-term bond is related to the geometric average of current and future expected short-term bond yields. If agents believe larger future deficits will raise short-term yields as the deficits are incurred, long-term rates increase as soon as the deficit expectations are formed. Second, larger expected deficits may increase uncertainty about future monetary and other economic conditions and thereby increase the term premium embedded in long-term yields.

Early studies that adopted this approach include those of Cohen and Garnier (1991) and Barro (1991) who estimate the effect of projected government debt on the current real interest rate for the US. This was done by using forecasts of US federal deficits made by the Office of Management and Budget (OMB) or by the OECD.

Canzoneri et al. (2002) use the Congressional Budget Office's (CBO) projected budget balances and find that an increase in projected future deficits averaging one percentage point of current GDP raises the long-term interest rate relative to the short-term rate by 53 to 60 basis points. Laubach (2003) also uses projections from CBO and the OMB and finds that a one percentage point increase in the deficit-to-GDP ratio raises long-term interest rates by 25 basis points. Engen and Hubbard (2004) claim that an increase in government debt of one percentage point of GDP, regardless of whether it is expected or current debt, increases the real interest rate by three basis points.

More recently, Chinn and Frankel (2005) show that current and expected levels of debt affect long term interest rates in Europe and the United States, but the estimates are sensitive to the sample period. Ardagna et al. (2004) find that a one percentage point of GDP increase in the primary deficit leads to a 10 basis point increase in the long-term rate, while public debt has a non linear effect.

Ardagna (2009) identifies periods of large fiscal contractions and expansions in OECD countries, and then studies how large changes affect interest rates. Ardagna's results suggest that sharp changes in the fiscal stance have the largest and most significant impact on long-term bond yields. Interest rates on 10-year government bonds decrease, on average, by 124 basis points around episodes of

fiscal consolidations and increase by 162 basis points during periods of loose fiscal policy.

Thomas and Wu (2009) study the impact of fiscal policy on interest rates by using CBO forecasts of budget deficits five years into the future as well as bond yields expected to prevail five years in the future. Results suggest that bond yields increase by 30 to 60 basis points for each percentage point increase in the deficit to GDP ratio expected to prevail five years in the future.

Ardagna et al. (2004) highlight the non linear effects of public debt on interest rates. Considering a panel of 16 OECD countries, the authors find that the impact of debt on long-term bond yields depends on initial debt levels. Higher initial debt raises the perception that governments will be less able to service their liabilities — leading to increased credit risk. Further, countries with large debt accumulation tend to be more at risk of inflationary pressures. These factors affect the long end of the term structure curve and raise borrowing costs for long-term government securities non-linearly.

For Australia, Comley et al. (2002) investigated the link between government debt and the real interest margin between Australian and US 10-year government bond yields over the period 1985 Q1 to 2001 Q2.[3] Their results indicate that the real interest margin increases by around 20 basis points in response to a one percentage point of GDP deterioration in the headline budget balance in the short run. A one percentage point of GDP increase in the stock of public debt was found to increase the long-run real interest margin by around 15 basis points. As the authors note, these estimates are implausibly large for a

3 Further details of the Comley et al. model and its results are outlined in Appendix 1.

small open economy and are likely to have been affected by high public debt levels over their sample period.

3. EXTENDED REAL INTEREST MARGIN MODEL

Similar to the work of Comley et al., our estimations follow an error correction model:

$$\Delta y_t = \alpha_0 + \alpha_1(y_{t-1} - \beta X_{t-1}) + \psi \Delta y_{t-1} + \gamma \Delta X_t + \varepsilon_t \quad (1)$$

where γ and ψ are short-run parameters. β is the long-run cointegrating parameter.

The real interest margin, y_t, is measured by taking the difference between 10-year Treasury bonds for Australia and the United States, adjusted for expected inflation. The real interest margin is intended to capture cross-country differences that differentiate foreign assets from domestic assets including liquidity, risk, capital flows and tax treatments.

X_t is a vector of explanatory variables that includes general government net debt, the primary budget balance, the current account balance, inflation and real GDP growth.

To improve the quality of the estimates, this analysis makes a number of adjustments to the explanatory variables previously used by Comley et al. For government debt, we use general government net debt[4] rather than public sector net foreign debt, as used by Comley et al. The headline budget balance variable is replaced by a primary budget balance series, which excludes net interest payments — alleviating potential causality running from higher interest rates to rising government debt-to-GDP ratios.[5] An underlying measure of inflation is used to better gauge inflationary pressures, as opposed to the headline CPI measure used by Comley et al. The US 10-year government bond yields are also computed differently. For the period prior to 1997 (during which data for US Indexed Treasury bonds is unavailable), we calculate real US 10-year government bond yields based on inflation expectations.[6]

To extend the analysis beyond that considered by Comley et al., we include the US counterparts of the Australian variables, thereby placing greater emphasis on the extent to which external factors drive movements in the real interest margin.

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4 General Government debt is the total debt incurred by Commonwealth, State and Local governments combined.

5 While Comley et al. (2002) estimated the model separately using the headline and structural budget balance as flow fiscal measures, our analysis is restricted to the headline primary balance due to the difficulty of obtaining consistent measures of the structural budget balance back to the early 1990s. It would be more desirable to carry out the same estimation with a structural primary balance series to identify the effect of the cyclically-adjusted balance.

6 The measure used by Comley et al. back-casted the US 10-year government bond yield series with constant weights assigned to the bond yields, the US Federal Reserve's federal funds rate and inflation.

A deterioration in the Australian primary budget balance is expected to cause the real interest margin to rise, while a worsening in the US primary balance is expected to cause the real interest margin to fall. Similarly, the real interest margin is expected to rise in response to an increase in the stock of Australian general government net debt, and fall when US general government net debt increases.

The real interest margin is expected to be positively related to changes in the inflation rate for Australia, with the converse holding for changes in US inflation. An average of the two underlying measures of inflation (the trimmed mean and weighted median) is used for Australia, while a trimmed mean CPI is used for the United States.

Stronger GDP growth implies that short-term interest rates need to be higher than they otherwise would be — which has potential implications for long-term interest rates. This would likely see a decrease in the spread between Australian and US government bonds.

Movements in the current account are also expected to affect the risk premium. A deterioration in Australia's current account balance will increase the real interest margin (as the risk premium increases), with the converse holding for movements in the US current account balance.

The primary focus of this paper is on the interest rate effects of government debt from an empirical point of view. We have not investigated the degree to which government borrowing might be offset by private domestic saving or inflows of foreign saving (or both).

4. DATA AND RESULTS

In our study the real interest margin is calculated in two ways. The first method is based on indexed bond yields:

$IM10y1_t$ = Indexed 10-year AUS government bond yield — Indexed 10-year US government bond yield

Since the data on US indexed Treasury bonds became available from 1997 Q1, this procedure can only obtain a sample from 1997 Q1 to 2009 Q4. The second method involves splicing separate measures of the real interest margin to obtain a longer sample (1990 Q1 to 2009 Q4).[7] The real interest margin for the first part of this sample, 1990 Q1 to 1996 Q4, is calculated as:

$IM10y2_t$ = Indexed 10-year AUS government bond yield — (Nominal 10-year US government bond yield — 5-year US inflation expectations[8])

The analysis will proceed with these two sets of measures for the real interest margin.[9]

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7 We note that the limited size of the sample implies some caution against putting undue emphasis on our point estimates.

8 The five year inflation expectations series is obtained from the University of Michigan's Surveys of Consumers.

9 A third alternative would have been to calculate the real interest margin using nominal bond yields and inflation data. However, this alternative is less desirable given uncertainties about the relationship between inflation expectations and actual inflation. In addition, using this measure would make it difficult to distinguish between real and nominal impacts on the yield spread given that inflation is one of the explanatory variables.

The real interest margin for the longer sample can then be summarised as follows:

$$IM10y3_t = \begin{Bmatrix} IM10y2_t, & 1990Q1\text{-}1996Q4 \\ IM10y1_t, & 1997Q1\text{-}2009Q4 \end{Bmatrix}$$

Data descriptions and sources are provided in Appendix 2.

Table 1 presents estimation results for both measures of the real interest margin, $IM10y1_t$ and $IM10y3_t$. The estimations were conducted following a general-to-specific approach. Accordingly, the results only show statistically significant explanatory variables.[10]

While not included here, results from unit root tests indicate that most explanatory variables are unit root processes in level form and stationary in first-difference form.[11]

Results for the real interest margin series from 1997 Q1 to 2009 Q4, $IM10y1_t$, suggest no short-run link between government primary balances, either Australian or US, and the real interest margin, with only the US current account and Australian inflation appearing to exert a short-run influence on the margin. Surprisingly, the sign on the coefficient for Australian inflation is negative. This could potentially be explained by sluggish adjustment from inflation expectations to actual inflation outcomes.

10 The variables included in the table are statistically significant at a 5 per cent significance level.

11 However, we note the relatively small sample size makes it difficult to test for unit roots with high precision.

Over the long-run, our results suggest that a one percentage point of GDP increase in the stock of Australian general government net debt is estimated to increase the long-run real interest margin by around three basis points — around one fifth that originally estimated by Comley et al. These results indicate that influences from the United States exert a far greater influence on the real interest margin than Australian influences. In particular, a one percentage point of GDP increase in the stock of US public net debt is estimated to decrease the long-run real interest margin by around nine basis points, while a one percentage point of GDP increase in the US current account balance increases the real interest margin by around 53 basis points.

Table 1: Results of the error correction model

	$IM10y1_t$ (1997Q1-2009Q4)	$IM10y3_t$ (1990Q1-2009Q4)
Explanatory variables: short run		
Constant	2.839	5.178
	(5.347)	(6.414)
ΔAUS_INF_t	-0.277	-0.205
	(-2.851)	(-2.151)
ΔUS_CA_t	0.197	0.322
	(3.249)	(4.545)
ΔUS_RGDP_t		-0.093
		(-2.682)
Error Correction Term	-0.415	-0.610
	(-7.024)	(-7.185)
Explanatory variables: long run		
AUS_GGD_{t-1}	0.025	0.028
	(2.180)	(2.830)
US_GGD_{t-1}	-0.088	-0.098
	(-6.241)	(-11.479)
US_RGDP_{t-1}		-0.077
		(-2.347)
US_INF_{t-1}		-0.555
		(-7.362)
US_CA_{t-1}	0.533	0.471
	(6.790)	(7.884)
Adjusted R squared	0.588	0.531

Note: t-statistics in parentheses.

Results from the error correction model with the extended data series (1990 Q1 to 2009 Q4) are broadly similar. Government primary balances, both Australian and US, are found to be statistically insignificant in the short run. Overall, US factors appear to exert the largest influence on the real interest margin with a 1 per cent increase in the US current account balance estimated to cause the real interest margin to increase by more than 30 basis points in the short term.

The long-run results are again similar to those obtained from the smaller sample, and indicate that a one percentage point of GDP increase in the stock of Australian general government net debt increases the long-run real interest margin by around three basis points. A one percentage point of GDP increase in the stock of US public net debt is estimated to decrease the long-run real interest margin by around 10 basis points, while a one percentage point of GDP increase in the US current account balance increases the real interest margin by 47 basis points. Movements in the trimmed mean US inflation rate are found to exert a relatively large impact on the real interest margin, causing it to decrease by around 55 basis points in the long run for each 1 per cent increase in inflation.

One way of examining the robustness of these estimates is to investigate the unit root properties of the residuals from the implied long-run relationship of the error correction model. If there is a fundamental long-run relationship among the explanatory variables, the null hypothesis of a unit root should be rejected. By observing the stationarity of the residuals of the implied long-run relationship, we can also identify a plausible range for the estimates, potentially providing more useful information as opposed to the point estimates presented in Table 1.

This procedure is done by first estimating the error correction model to obtain the estimated coefficients. The model is then re-estimated after forcing the coefficient of the concerned variable to be a certain value above or below its estimated value. This is followed by an ADF unit root test for the estimated residuals of the implied long-run relationship. The 'imposed' coefficients for which the residuals remain stationary are taken as plausible fundamental estimates.

Essentially, we are interested in how sensitive the estimated residuals of the implied long-run relationship are to changes in the imposed coefficients of general government net debt, both for Australia and the US. To ensure that the actual estimates are covered, the range of the imposed coefficient on the government debt terms is chosen to vary from zero to 0.2, implying a range of zero to 20 basis points in the real interest margin resulting from a one percentage point of GDP increase in general government net debt. For illustrative purposes, these tests are only applied to the residuals of the implied long-run relationship in the case of the longer series of the real interest margin, $IM10y3_t$. The results of these tests are summarised in Table 2.

Table 2: Unit root test on the residuals of the implied long-run relationship

Imposed coefficient of AUS_GGD, β_1	ADF unit root test statistic
0.00	-6.396
0.05	-5.034
0.10	-2.936
0.15	-1.882
0.20	-1.303
Imposed coefficient of US_GGD, β_2	ADF unit root test statistic
0.00	-2.233
-0.05	-3.835
-0.10	-6.081
-0.15	-3.889
-0.20	-2.193
Critical values	
1% level	-5.28
5% level	-4.71
10% level	-4.43

Note: t-statistics are adjusted to correct for serial correction in the residuals (see Case 2 of Table B.9, Hamilton (1994)).

As indicated, the test for a unit root in the estimated residuals of the implied long-run relationship is rejected when the imposed coefficients are around their estimated values — implying the existence of a long-run relationship between the variables in the error correction model. The null hypothesis is also rejected at

the 5 per cent significance level when the coefficient of the Australian general government net debt variable is five basis points or less. For the US, the estimated residuals appear to be only stationary when the coefficient of the US government net debt variable is around 10 basis points. These results suggest that it is reasonable to draw the conclusion that zero to five basis points is a plausible range for the change in the real interest margin for every one percentage point of GDP increase in the stock of Australian general government debt. For the coefficient of US government debt, around ten basis points seems to pass this residual-based robustness testing.

5. CONCLUSION

This study has reconsidered the link between fiscal policy and interest rates in Australia. Building on the work of Comley et al. (2002), we have examined the extent to which external factors drive movements in the interest margin between Australian and US real 10-year government bond yields. Specifically, the model incorporates Australian fiscal variables (primary balance and general government net debt) and a number of macroeconomic variables (the current account balance, GDP growth rate and inflation) that are expected to affect movements in the interest margin. The external influence on the real interest margin was considered by incorporating the US counterparts of these variables.

A general error correction model that incorporates both short- and long-run dynamics was specified and applied for two measures of the margin spanning the period 1990 to 2009. All else equal, the results suggest that, in the long run, the real interest margin rises by around three basis points in response to a one percentage point of GDP increase in the stock of Australian general government net debt, and by around ten basis points in response to a one percentage point of

GDP decrease in US government net debt. In the short run, however, Australian fiscal variables do not have a statistically significant impact on the interest margin. Importantly, the results indicate that a number of US economic variables, namely inflation and the current account, exert the most powerful influence on the real interest margin.

A.1 RESULTS OF COMLEY ET AL. (2002)

Comley et al. (2002) investigated the potential link between fiscal policy and the real interest margin for Australian and US 10-year government bond yields, IM_t, over the period 1985 Q1 to 2001 Q2. The following set of explanatory variables was included in order to capture both long-term fundamentals and short-term influences on the interest margin:

$$IM_t = f(\overset{+}{SB_t}/\overset{+}{HB_t}, \overset{+}{PD_t}, \overset{+}{INF_t}, \overset{-}{GDP_t}, \overset{-}{CA_t}) \quad (2)$$

where:

SB_t = structural budget balance (% of GDP);

HB_t = headline budget balance (% of GDP);

PD_t = net public foreign debt (% of GDP);

INF_t = inflation;

GDP_t = real GDP growth; and

CA_t = current account balance (% of GDP).

This framework attempted to model a long-term equilibrium relationship where the level of the real interest margin is a function of the flow and stock effects of fiscal policy, controlling for the inflation rate, real GDP growth and public debt. Short-term changes in the real interest margin were hypothesised as a function of changes in the budget balance and stock of public debt controlling for changes in the same set of variables. Specifically, the real interest margin is expected to rise in response to a deterioration in the budget balance or a rise in the stock of

public debt. The real interest margin is expected to be positively related to levels and changes in the inflation rate, and in the stock of public debt, but negatively related to levels and changes in GDP growth and the current account balance.

Table 3: Results of Comley et al. (2002)

	Coefficient	Implied long-run coefficient
Explanatory variables: short run		
Constant	-0.265	
	(1.09)	
ΔIM_{t-1}	-0.327	
	(2.35)	
ΔHB_{t-1}	-0.200	
	(2.64)	
Explanatory variables: long run		
IM_{t-1}	-0.407	
	(3.68)	
PD_{t-1}	0.059	0.145
	(2.83)	
INF_{t-1}	0.041	0.101
	(1.81)	
GDP_{t-1}	-0.125	-0.307
	(2.74)	
CA_{t-1}	-0.071	-0.174
	(1.67)	

Note: 1985Q1 — 2001Q2. t-statistics in parentheses. The long-run coefficients are calculated by dividing the coefficients for the relevant variables by the coefficient on the error correction term (lagged value of the dependent variable).

Their results indicate that the real interest margin increases by around 20 basis points in response to a 1 per cent of GDP deterioration in the Australian headline budget balance in the short run. A one percentage point of GDP increase in the stock of Australian public debt was found to increase the long-run real interest margin by around 15 basis points.

For the other variables, a one percentage point of GDP increase in the Australian current account balance decreases the real interest margin by approximately 17

basis points in the long run, while an equivalent increase in the Australian inflation rate increases the margin by approximately 10 basis points. A one percentage point increase in the Australian real GDP growth rate decreases the long-run interest margin by approximately 31 basis points.

A.2 DATA DEFINITIONS AND SOURCES

INTEREST MARGIN

$IM10y1_t$ — Indexed 10-year AUS government bond yield — Indexed 10-year US government bond yield. Source: Ecowin.

$IM10y2_t$ — Indexed 10-year AUS government bond yield — (Nominal 10-year US government bond yield — 5-year US inflation expectations, University of Michigan survey). Source: Ecowin.

$IM10y3_t$ — $IM10y2_t$ (1990Q1-1996Q4), $IM10y_t$ (1997Q1-2009Q4). Source: Ecowin.

EXPLANATORY VARIABLES

AUS_PB_t — Australian primary budget balance, per cent of GDP. (Excludes net interest payments). Source: OECD economic outlook database (as of March 2010).

US_PB_t — US primary budget balance, per cent of GDP. (Excludes net interest payments). Source: OECD economic outlook database (as of March 2010).

AUS_GGD_t — Australian general government net debt, per cent of GDP. Source: OECD Economic Outlook database (as of March 2010).

US_GGD_t — US general government net debt, per cent of GDP. Source: OECD Economic Outlook database (as of March 2010).

AUS_INF_t — Australian inflation rate (average of the underlying measures and adjust for GST effects), through-the-year. Source: RBA Statistical Table G1.

US_INF_t — US inflation rate (16 per cent trimmed mean), through-the-year. Source: Federal Reserve Bank of Cleveland.

AUS_RGDP_t — Australian real GDP growth rate, through-the-year. Source: ABS 5206.0 Australian National Accounts: National Income, Expenditure and Product, Dec 2009.

US_RGDP_t — US real GDP growth rate, through-the-year. Source: Ecowin.

AUS_CA_t — Australian current account balance, per cent of GDP. Source: ABS. 5302.0. Balance of Payments and International Investment Position, Dec 2009.

US_CA_t — US current account balance, per cent of GDP. Source: Ecowin.

Chart 1: Real interest margin, indexed bond yields $IM10y1_t$

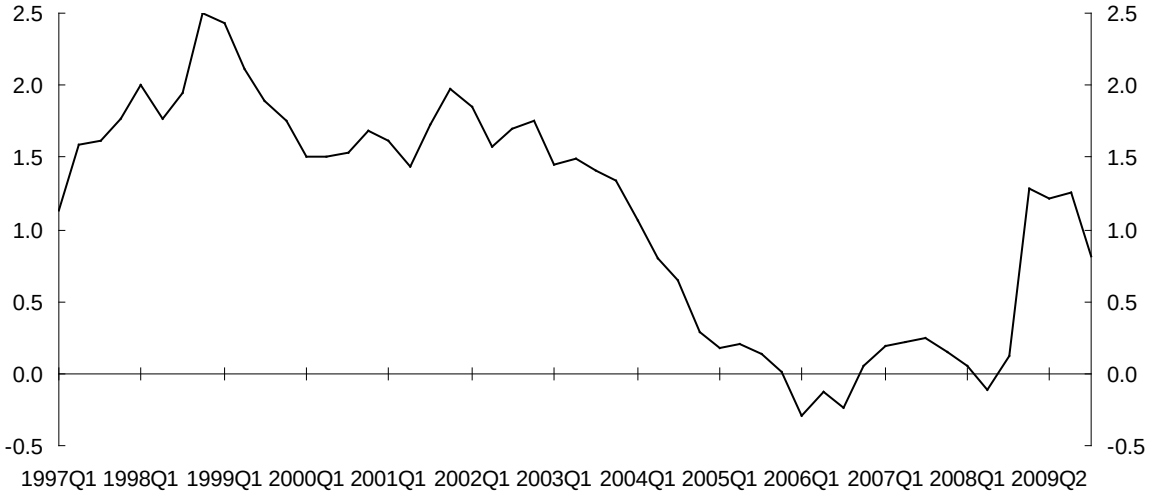


Chart 2: Real interest margin, indexed bond yields and US inflation expectations $IM10y3_t$

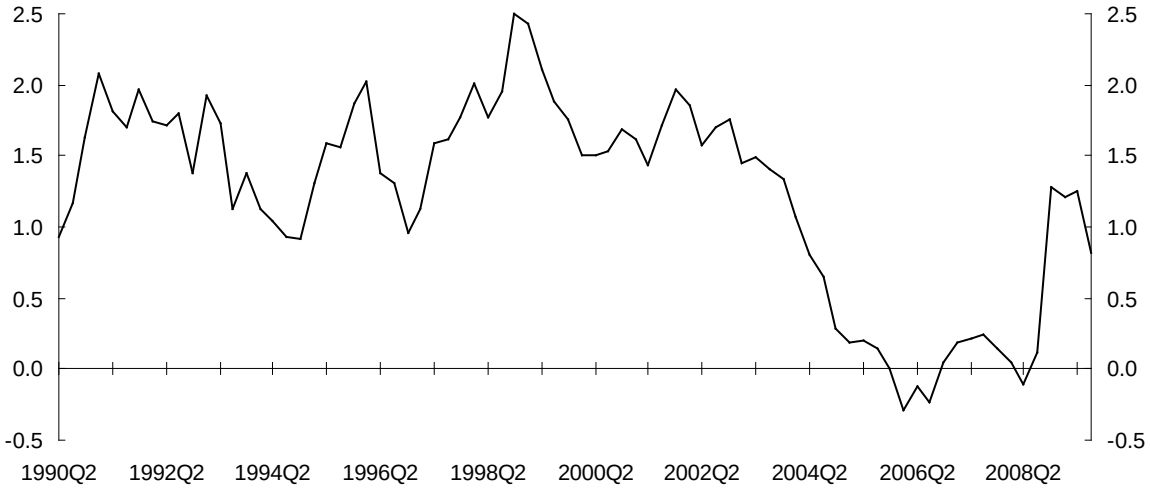


Chart 3: General government net debt

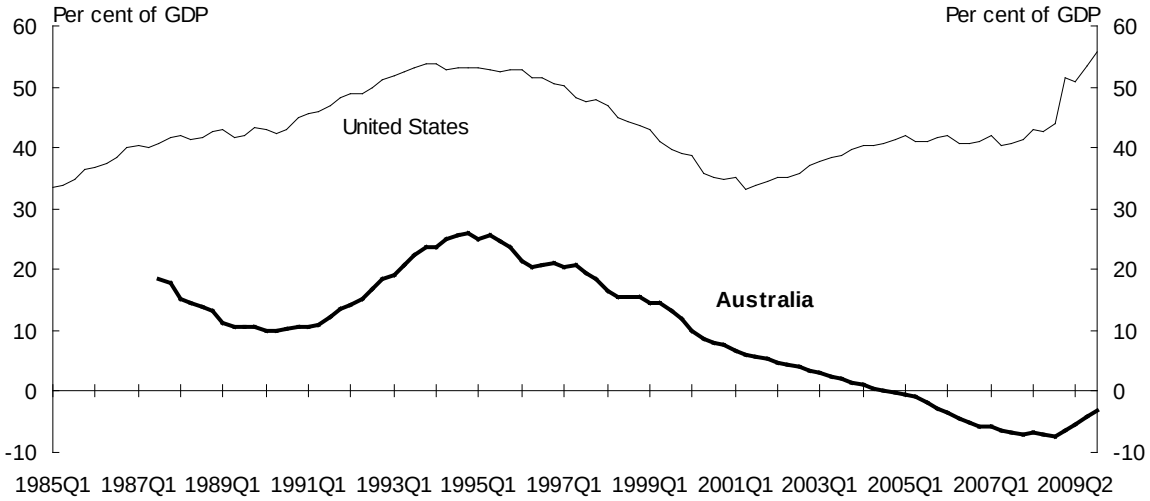


Chart 4: Primary budget balance

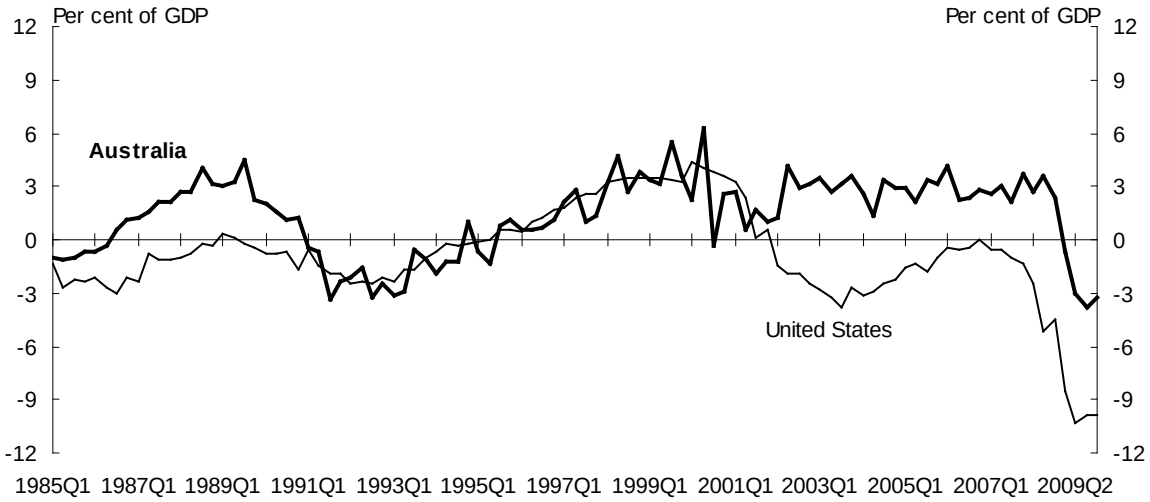


Chart 5: Current account balance

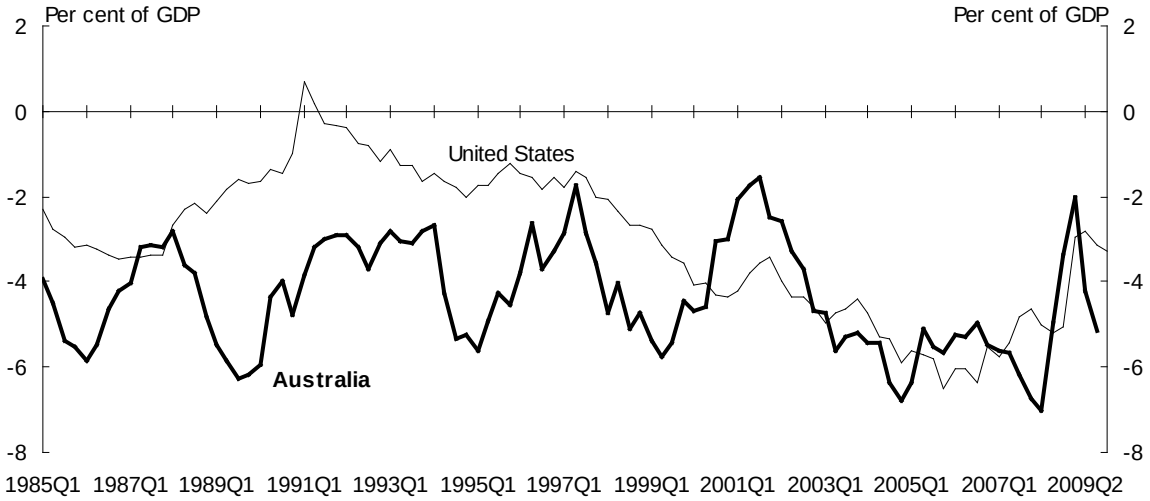


Chart 6: Inflation

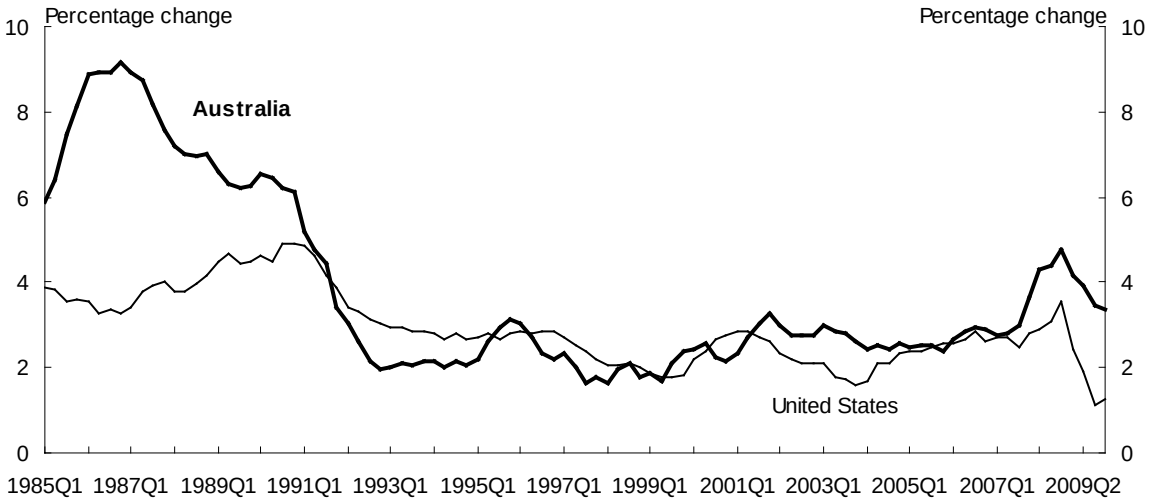
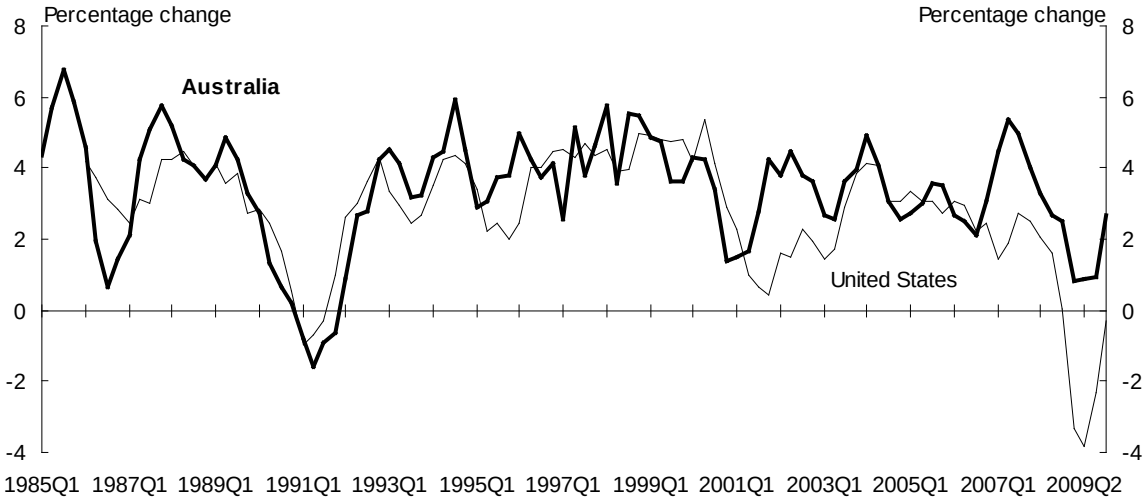


Chart 7: Real GDP growth



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