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Inflation News in Australia: Its Effects on Exchange Rates and Interest Rates

by

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Abstract

This paper investigates the effects of the Australian quarterly inflation news on $A exchange rates and interest rates for the period June Quarter 1984/85 to December Quarter 1992/93. The results indicate that the Australian dollar depreciated and interest rates rose as a result of an announcement of a higher than expected Consumer Price Index inflation before April 1988, and the dollar appreciated and interest rates rose thereafter. This difference in market response to the news is due to the different market perceptions regarding the role of monetary policy by the Reserve Bank of Australia (RBA). Prior to April 1988, an unexpected inflation caused markets to expect further future inflation and caused a rise in the risk premium on domestic assets. Post April 1988, an unexpected inflation was regarded as a signal for an impending tight monetary response by the RBA. The evidence is consistent with the belief that market participants had the Portfolio Balance Model of exchange rate determination in mind when they responded to the inflation news.

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I. Introduction

Since the late 1980s one of the most important macroeconomic objectives of Australian policy makers has been to achieve a low rate of inflation. The collapse of the value of the Australian dollar in 1985 which was caused mainly by the deteriorating Australian current account balance earlier that year, lead to an acceleration of inflation in 1985 and 1986. Consumer price inflation reached a peak of 9.8 percent in the year to December 1986, and then it began to fall (see Figure 1). However, renewed upward pressures on inflation followed as the world and the Australian economies recovered from the recessionary effects of the October 1987 world share market crash, which were avoided mainly by the loosening of monetary policy both here and overseas, and picked up the pace of economic growth in 1988 and 1989. The strong growth of domestic demand in the late 1980s, especially for imported consumption goods, had to be contained if inflation and ultimately the growing current account deficits were to be brought under control. Subsequently, with a view to achieving these goals, the Reserve Bank of Australia (RBA) started tightening monetary conditions in April 1988 resulting in short term interest rates of around 18 percent in the late 1989, and finally yielding a record low inflation rate of 0.28 percent in the year to December 1992. The stance of monetary policy was reversed in January 1990. The reason for this was to facilitate a soft landing of the economy with the belief that the easing of monetary policy would not contribute to higher inflation due to lower inflation expectations brought on by the previous tight monetary stance. Unfortunately, this was not enough to prevent the unemployment rate from reaching its peak of 12.2 per cent in February 1993, however, keeping the inflation at a low level was still one of the objectives of the government since it was perceived that lower inflation could provide an economic environment in which economic recovery from the early 1990s recession could continue and the balance of payment situation improve.

Considering the importance attached to achieving low inflation rates since the late 1980s, the Australian Consumer Price Index (CPI) announcements must have been regarded as

newsworthy. The quarterly CPI figures are published in the Australian Bureau of Statistics (ABS) quarterly CPI publication which was released to the press at 9 am on the day of the announcement until the announcement of the figures for the December quarter 1988/89, and at 11 am afterwards. Financial markets must make a prediction regarding the future announcement of inflation rates so as to determine current prices of assets, and so a significant effect of the CPI announcement on financial prices must imply a significant deviation of announced inflation rate from market expectations (see Figure 2). That is, the extent to which market expectations do not materialise constitutes news and the effects of this inflation news depend on market perceptions regarding the economic policy makers' attitudes towards unexpected inflation.

We identify three models of exchange rate determination that market participants might have in mind when they respond to the inflation news; the flexible price monetary model (FPMM), the sticky price monetary model (SPMM), and the portfolio balance model (PBM). The idea of the FPMM is that changes in exchange rates are due to a change in relative inflation rates between countries, and the SPMM is based on the notion that exchange rate and nominal interest rate movements are caused by a change in expected future real interest rates. Unlike the two monetary models, which assume perfect international asset substitutability, the PBM assumes imperfect asset substitutability and attributes changes in exchange rates to a change in the relative supplies of money and bonds at home and overseas. These models are used to predict the likely effects of the news on exchange rates and interest rates under two possible hypotheses. The first hypothesis deals with pure market responses to the news, whereas the second describes market reactions to the news if an unexpected inflation signals a tight monetary policy response by the RBA. Table 1 summarises the predictions.

First, the realisation of any inadequacy in prior financial market adjustments in anticipation of inflation announcement will promptly be translated into appropriate market price corrections. A higher than expected inflation would imply an unexpected increase in the money supply relative to the money demand and/or an unexpected rise in real activities. Both

of these would raise the expectation of future inflation and so current nominal interest rates would rise and exchange rates depreciate immediately. Furthermore, long term interest rates would be expected to rise by less than short term ones unless the increase in expected inflation is perceived to be permanent (FPMM). An unexpected inflation implies an unexpected decrease in the real money supply in the monetary sector of the economy and/or an unexpected rise in demand in the goods market sector of the economy either/both of which will lead to a current rise in real and nominal interest rates and a spot exchange rate appreciation (SPMM). An unexpected inflation would increase the risk associated with holding domestic currency denominated assets and so higher risk premiums are needed to prevent the selling off of domestic assets by foreign investors. This will cause current nominal interest rates to rise and spot exchange rates to depreciate. Furthermore, the effects on short term domestic interest rates would be expected to be weaker than long term ones since the degree to which they are exposed to this inflation risk is lower (PBM)[1].

Second, it was recognised around early 1988 that in order to address the problem of the current account deficit blow out, continued expansion of domestic demand for foreign goods had to be contained and domestic saving encouraged, and some believed that lower inflation would provide an economic environment in which attainment of these two goals would be possible. With this point in mind it can be argued that an announcement of a larger than expected inflation rate would necessitate an appropriate monetary policy action by the RBA. Markets might be expecting the RBA to respond to an unexpected inflation by tightening its monetary stance in order to remove any upward pressure on expected future inflation. The anticipation of this would lower nominal interest rates and appreciate current exchange rates, and the effects on long term interest rates would be expected to be smaller than those on short term ones as the effect of the monetary tightening would disappear in the long run (FPMM). Alternatively, current nominal (and real) interest rates would rise and the resulting capital inflow would appreciate spot exchange rates (the SPMM). Assuming contractionary monetary policy would be carried out through an open market sale of domestic

currency bonds, the PBM predicts that future domestic interest rates would have to rise to clear the expected excess supply of domestic currency bonds and future exchange rates would appreciate to clear the expected excess supply of foreign currency bonds created by the rise in domestic interest rates. These expectations are discounted in the current rise in interest rates and spot exchange rate appreciation.

The rest of the paper is organised as follows: The literature is briefly summarised in section II; the econometric methodology and the nature of data involved are discussed in section III; the empirical evidence of the effects of inflation news are discussed in section IV; and summary and some concluding remarks are offered in section V.

II. Literature

Goodhart (1985) investigated the impact of the monthly UK retail price index announcement news on the $US/£UK exchange rate and short and long term interest rates for the period January 1977 to December 1983, and his results are that a higher than expected retail price inflation causes the Pound to depreciate and interest rates to rise. However, none of the estimated news coefficients is significant.

Urich and Watchel (1984) examined the US monthly consumer and producer price inflation news on interest rates for the period November 1977 to July 1982, and found that the producer price inflation news has an immediate positive impact on short term interest rates. Hakkio and Pearse (1985) used data for the period September 1977 to February 1984, and found that both types of inflation news do not have a significant impact on exchange rates. Ito and Roley (1987) examined the US and Japanese producer inflation news on the $US/¥JP exchange rate for the period January 1980 to September 1985, and found insignificant response of the exchange rate to the news in both countries. Hardouvelis (1988) studied the news effect on interest rates and US Dollar exchange rates for the period October 1979 to

August 1984 and concludes that only the news effect of the producer price inflation on the 20 year treasury bond rate is significant and positive. Dwyer and Hafer (1989) examined the data for the period February 1980 to December 1987 and conclude that both consumer and producer price inflation news raise the 3 month treasury bill rate and the 30 year treasury bond rate; however the impact of the news is insignificant.

Thus, it would appear that inflation news does not have a robust effect on financial prices in the UK and in the USA.

III. Methodology and Data

III.A. Econometric Model

The econometric model used to test the effects of inflation news on exchange rates and interest rates is as follows:

$$(1) \qquad \Delta P_t = a + b \cdot Exp_t + c \cdot News_t + u_t$$

Where: ΔP_t = Changes in financial prices, namely the five Australian dollar exchange rates defined in terms of foreign currency price (FC/DC, an increase in the rate indicates an appreciation of $A), and short and long term interest rates, measured as the difference between rates before and after the announcement (i.e. P_t-P_{t-1}). Logarithmic changes are used for exchange rates.

Exp_t = Expected inflation announcement measured as the percentage change in the quarterly Consumer Price Index from the previous quarter.

$News_t$ = Inflation news as measured as the absolute difference between the announced and expected consumer price inflation (if positive, it means a higher than expected inflation announcement).

u_t = A stochastic disturbance term with the usual Gaussian properties.

If financial markets are informationally efficient and inflation news has a significant effect, we would expect both a and b to be insignificantly different from zero, c to be statistically significant, and u_t to be a white noise; that is, only the unanticipated part of the inflation announcement should significantly affect financial prices since the expected part has already been discounted into current prices, and the sign on c would help to determine which hypothesis has an empirical support. Furthermore, the speed at which prices adjust to the news should be fast enough to discourage any arbitrage activities.

III.B. Data Description

The sample period for the analysis is from the June quarter 1984/85 to the December quarter 1992/93. The inflation announcements are the percentage change in the quarterly Consumer Price Index (CPI) reported in the quarterly ABS CPI publication (Call No. 6401). Since July 1985 Money Market Services (MMS) Australia has been carrying out surveys on the financial markets' expectations on the Australian economic announcements. It surveys approximately 20 to 25 economists in various postings and financial market participants every week and the results of the survey are released to subscribers usually on Fridays. The market expectations of the quarterly inflation announcement are proxied by the median response in the last survey on quarterly CPI change conducted before the announcement.

If we are to use the MMS median predictions as a proxy for the market expectations of the announcements, we need to ascertain the unbiasedness of the medians as the predictors of the announced figures. The results of the unbiasedness test are given below:

Announced =	-0.31	+ 1.21 Expected
s.e.	(0.15)	(0.094)
t-ratio	(-1.99)	(12.9)

R^2 = 0.85, D-W = 2.43, SEE = .311, F(2,88) = 2.67 (p-value = 0.086).
P-P's Z(t) with trend: Announced = -5.00, Expected = -3.85

This shows that the F statistic for the joint hypothesis of a zero constant and unit slope coefficient cannot be rejected at the 5% level of significance, implying that the medians are unbiased and can be used as a proxy for the market expectations of the inflation announcements.

The five major bilateral exchange rates are the values of the Australian dollar against the US Dollar, the Deutsche Mark, the Japanese Yen, the UK Pound, and the Swiss Franc. Changes in exchange rates are measured as the logarithmic difference between the wholesale closing rates on the day before the announcement and the wholesale closing rates on the day of the announcement for the 9 am announcements, and the logarithmic difference between the closing and opening wholesale rates on the day of the announcement for the 11 am announcements. The short term interest rate is measured by the 90-day authorised bank bill rate which is observable at noon every business day, and the 10 year Commonwealth bonds index rate is used as the long term interest rate. Both interest rates are observable after the announcement. Changes in interest rates are measured as the absolute difference between the observed closing rate on the day of the announcement and the closing rate on the day before the announcement[2]. These were collected from various issues of the Australian Financial Review.

All the data series in the form used in the regression equation (1) were tested for unit roots and the results are reported in Table 2. With the exception of the expected inflation series in the two subsamples, which are I(1)'s, all series are found to be I(0)'s. Despite being I(1) the expected term is not dropped from (1) in the two subsample regressions for the following two reasons. First, dropping the expectations term from the model does not produce qualitatively different results. Apart from the obvious effect on R^2, the signs of remaining variables are not changed and neither is the significance of the news variable. Second, the examination of the estimated autocorrelation function, after removing a linear trend, shows that autocorrelation becomes negative at lag two and five for subsample one and two, respectively, and is insignificant at all lags in both subsamples. Thus, considering the small number of observations

available for unit root testing in each subsample (11 and 20 for subsample one and two, respectively) and the insignificant autocorrelations, it might be the case that the expected inflation term may in fact be I(0) in both subsamples.

IV. Empirical Analysis

IV.A. The Effect of News on Spot Exchange Rates and Interest Rates.

Table 3-A summarises the whole sample estimation results for (1). None of the estimated coefficients is significant and the diagnostics show no evidence of model inadequacy. None of the five exchange rates responded significantly to inflation news. The effects of the news on interest rates are shown in Table 4-A. Both regressions show a significant interest rate response to the news at the one percent significance level, and the positive sign for the news coefficients implies that a one percent higher than expected inflation rate announcement raised the 90 day rate and the 10 year rate by 0.31 and 0.37 percentage points, respectively. The 90 day debt market shows some evidence of inefficiency since the expected term in the regression is significant at the five percent level. On the whole the insignificance of the exchange rate response and the positive and significant response of interest rates to inflation news support none of the predictions discussed in section I. However, if the sample included structural breaks that represent changed market perceptions regarding the impact of inflation news on exchange rates, the whole sample regression results might show the neutralised effects of different market reactions on exchange rates over the whole sample period. Thus, the whole sample regression results might not be useful in distinguishing different market perceptions regarding the effect of the inflation news.

The structural break point may well be April 1988 when the RBA began tightening monetary policy which had been expansionary up to that point. The sequential Chow test for the stability of regression coefficients confirmed that there is a significant structural break around the announcement of the March quarter of 1987/88 figure which was made on 4 May 1988. Another possible structural break is the loosening of monetary policy that began in January 1990, however, this turned out to be insignificant. Accordingly, the sample is broken into two subsamples, the first from the June quarter of 1984/85 figure to the December quarter 1987/88 with 11 observations, and the second is from the March quarter 1987/88 to the December quarter 1992/93 with 20 observations. Instead of estimating the model separately for each subsample, more precise estimates of the coefficients can be obtained by an appropriate use of dummy variables and fully utilising all available observations[3].

Table 3-B shows the two subsample regression results for exchange rates. In subsample one all five exchange rates responded negatively to the news and the news coefficient is significant at the five percent level in all cases with the exception of the Japanese Yen. On average, a one percent higher than expected inflation announcement depreciated the Australian dollar by 1.7 percent on the day of the announcement. The significant expectation term for all the rates might be suggestive of market inefficiency[4]. In subsample two, only the news coefficient is significant at the five percent level in all cases with the exception of the UK pound rate, and the positive sign indicates that, on average, a one percent higher than expected inflation announcement appreciated the Australian dollar against the five major currencies by 0.84 percent. All the diagnostics show no evidence of model inadequacy and the test statistic for model stability is highly significant in all cases confirming the existence of one structural break.

The subsample estimations for interest rates are shown in Table 4-B. The results are fundamentally the same as the whole sample estimations; both interest rates responded significantly to the news, and the positive sign of the news coefficient indicates that in response to a one percent unexpected inflation, short and long term interest rates rose by 0.41 and 0.60

percentage points, respectively in subsample one, and 0.27 and 0.32 percentage points, respectively in subsample two. Although the responses of the long term rate is larger than those of the short term rate the differences are statistically insignificant in all three sample periods[5].

In subsample one, the estimated negative response of exchange rates and the positive response of interest rates to a higher than expected inflation rate announcement is consistent with the predictions made by the FPMM and the PBM under the market equilibrium adjustment hypothesis. Markets seemed to respond to an unexpected inflation by adjusting future inflation expectations upwards and/or raising exchange rate risk premium on domestic assets leading to a spot exchange rate depreciation and a rise in nominal interest rate. In subsample two, an unexpected inflation raised nominal interest rates and appreciated spot exchange rates. This is consistent with the perception that an unexpected inflation signals a future tight monetary response by the RBA, and market participants had the SPMM and/or the PBM in mind when they responded to the news. The evidence is also consistent with the prediction made by the SPMM under the market equilibrium hypothesis.

IV.B. The Effect of News on Forward Margins and Forward Exchange Rates.

With a view to identifying the relevant market perceptions regarding the impact of the inflation news in both subsamples, the effects of the news on forward margins and outright forward $US/$A exchange rates with the maturities of 1, 3, 6 and 12 months were investigated[6]. The $US/$A rate forward margins are called discounts if $A is weaker against $US in the forward markets, and generally speaking $A is traded at a discount if current Australian nominal interest rates are higher than those of the US (i.e. Covered Interest Rate Parity) which implies that the expected future domestic inflation rate determines the forward discount. In addition, the exchange rate risk premium required, by speculators, for taking a

long position in $A in forward markets will also affect forward discounts. In other words, the forward discounts (premiums) on $A ($US) will rise if markets expect that an unexpected inflation would raise the expectation of future domestic inflation or the risk premium on holding $A, or both. Furthermore, if an increased future inflation expectation raises forward discounts, the discounts with longer maturities might be affected more since the degree to which they are exposed to the inflation risk is higher. On the other hand if a higher than expected inflation announcement signals a tight monetary policy response by the RBA aimed at eliminating the unexpected inflation, it might be reasonable to argue that the expectation of higher future inflation would not be forthcoming and consequently if forward discounts rise it must be due to a rise in the exchange rate risk premium that is due to an additional uncertainty created by the news. Therefore, an unexpected inflation might be associated with a rise in the forward discounts on $A.

Table 5-A and 5-B include the empirical evidence of the effect of the inflation news on the changes in forward margins. For the sample as a whole and for the second subsample all four forward margins are significantly affected by the news, the news coefficient is significant and positive at the one percent level of significance in all cases. An announcement of a higher than expected inflation caused all four forward margins to rise. On average, a one percent higher than expected inflation announcement raised the forward discounts by 6.7 percent in the whole sample and by 7.2 percent in subsample two. However, in subsample one, the news did not have an effect on either the forward margins or the outright forward rates. The effects of the news are different depending on the maturities involved, and although, in general, margins with longer maturities are affected less, there is no clear cut pattern. Table 6-A and 6-B contain the regression results of the effects of the news on $US/$A forward exchange rates in the whole sample and the two subsamples, respectively. The qualitative results are the same as the spot exchange rate regressions, that is, the forward exchange rate depreciated in subsample one and appreciated in subsample two in response to an unexpected inflation, and for the sample as a whole the news effect is not significant. Furthermore, it is observed that the

magnitudes of the news coefficient increases in subsample one and decreases in subsample two as maturity of the forward rate gets longer.

In sum, it can be argued that an unexpected inflation caused markets to expect higher future inflation and this apparently raised the risk premium on domestic assets and accordingly exchange rates depreciated and nominal interest rates rose in subsample one. However, the inflation news affected neither the forward margins nor the forward $US/$A exchange rates which implies that the effects of the inflation news was transmitted through a rise in the risk premium on domestic interest rates rather than through a rise in the inflation expectations[7]. In subsample two, an announcement of a higher than expected inflation appreciated spot exchange rates and raised nominal interest rates. The news also raised forward discounts on $A, however, despite this forward $US/$A exchange rates appreciated. Apparently the markets expected tighter monetary conditions in response to an unexpected inflation and a rise in the forward discounts was due to an increased risk associated with taking a long position in $A and domestic assets. Given the evidence, it might be appropriate to argue that a change in the exchange rate risk premium on forward rates is a more important determinant of the forward discount on $A than inflation expectations in both subsamples. Furthermore, markets had the PBM in mind when they responded to the inflation news in both subsamples because the two monetary models can not explain movements in exchange rates and interest rates that are due to a change in risk premiums on interest rates and forward exchange rates.

V. Summary and Conclusion

The effects of the quarterly Australian consumer inflation news on five Australian dollar exchange rates and on short and long term interest rates have been investigated. The evidence suggests that market reactions to the news are different depending on the time period considered. For the sample as a whole, a higher than expected inflation caused both interest

rates to rise but the effects on exchange rates were insignificant. However, the tightening of monetary policy that began in April 1988 meant that market perceptions regarding the RBA's likely monetary policy response to inflation news and the likely effects of the news on exchange rates and interest rates changed around that time. Therefore, the empirical results for the sample as a whole are misleading.

Prior to April 1988, monetary conditions were easy, especially after the October 1987 share market crash, and the unemployment rate was relatively high. Thus, it is argued that there was no case for expecting a tight monetary policy response by the RBA to an unexpected inflation. A higher than expected inflation apparently raised the risk premium on domestic interest rates leading to an exchange rate depreciation and a rise in nominal interest rates.

After April 1988, the relatively low rate of unemployment in the late 80s meant that the costs of implementing a fight-inflation policy on the unemployment front was not substantial, and the need to have a low inflation rate necessitated that monetary conditions be tightened. As a direct consequence of this recent success in tackling inflation with tight monetary policy the inflation expectations have been gradually reduced over the sample period and the easing of monetary policy in January 1990 was not met with a concern for the return to a higher inflation environment. On the basis of this, it is not surprising to find support for the anticipated tight monetary policy hypothesis in subsample two. A higher than expected inflation announcement was expected to be followed by a tightening in monetary conditions leading to a rise in interest rates and an appreciation of exchange rates.

In sum, it can be argued that an unexpected inflation raised nominal interest rates through stimulating the risk premium on holding domestic financial assets leading to an exchange rate depreciation prior to April 1988, whereas thereafter markets anticipated a tight monetary response from the RBA thereby necessitating portfolio redistributions in assets in such a way as to raise current nominal interest rates and appreciate spot and forward exchange rates. The evidence shows that markets had the PBM in mind in both subsamples when responding to the inflation news. Also, the response of the long term interest rate, which is as

large as that of the short term one, might imply that the increase in expected inflation, and hence inflation risk associated with holding domestic assets, was perceived to be relatively permanent in subsample one and that the liquidity effect of tight monetary policy was expected to be long lived in subsample two.

Endnotes

[1] This is similar in spirit to the inflation risk hypothesis for the effects of the US money supply news put forward by Cornell (1983). The idea behind this is that a higher than expected money supply and/or inflation announcement would raise the inflation risk premium on domestic currency denominated assets leading to a rise in long term domestic interest rates, and the effects on short term domestic interest rates would be expected to be weaker than long term ones since the degree to which they are exposed to the inflation risk is lower. However, the effects on exchange rates will not be significant since the increase in the premium is already incorporated in domestic real interest rates, and so exchange rates will not be affected because no capital inflow or outflow will occur.

[2] A more stringent test for market efficiency would be to require the speed of market adjustments to the news be fast enough to discourage arbitrage. For this purpose the changes in financial prices after the inflation announcement (the logarithmic difference between the opening rates on the day after and the closing rates on the day of the announcement for exchange rates, and the absolute difference between the closing rates on the day after and on the day of the announcement for interest rates) were regressed on the expected and unexpected announcement. That is, the model estimated is

$$\Delta P_{t+1} = a + b \cdot Exp_t + c \cdot News_t + u_t ,$$

where $\Delta P_{t+1} = P_{t+1} - P_t$ and P_t is the rates observed just after the announcement. A significant news coefficients in these regressions imply market inefficiency because the necessary adjustments to the news on the day of the announcement were not sufficient and a part of this adjustment spilled over to the next day. The results of the regression results for this time horizon are that all five exchange rates and the two interest rates did not respond significantly to the news confirming that the speed of market adjustment to the news was fast enough. Interested readers can obtain the regression results from the author upon request.

[3] Let

Subsample one: $\Delta P_t = a_1 + b_1 \cdot Exp_t + c_1 \cdot News_t + u_{1t}$, $t = 1, 2, ..., 11$, d.f. = 8

Subsample two: $\Delta P_t = a_2 + b_2 \cdot Exp_t + c_2 \cdot News_t + u_{2t}$, $t = 12, 13, ..., 31$, d.f. = 17

Estimate the following model for t = 1, 2, ..., 31.

(2) $\Delta P_t = a_1 D_{1t} + a_2 D_{2t} + b_1 Exp_t \cdot D_{1t} + b_2 Exp_t \cdot D_{2t} + c_1 News_t \cdot D_{1t} + c_2 News_t \cdot D_{2t} + u_t$, d.f. = 25

Where: $D_{1t} = 1$ for $i \leq 11$, and 0 otherwise,

$D_{2t} = 0$ for $i \leq 11$, and 1 otherwise

In matrix notation (2) can be written as

$$\begin{bmatrix} \Delta P_1 \\ \cdot \\ \cdot \\ \Delta P_{11} \\ \Delta P_{12} \\ \cdot \\ \cdot \\ \Delta P_{31} \end{bmatrix} = \left[\begin{array}{ccc:ccc} 1 & Exp_1 & News_{11} & 0 & 0 & 0 \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ 1 & Exp_{11} & News_{11} & 0 & 0 & 0 \\ \hdashline 0 & 0 & 0 & 1 & Exp_{12} & News_{12} \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ 0 & 0 & 0 & 1 & Exp_{31} & News_{31} \end{array}\right] \cdot \begin{bmatrix} a'_1 \\ b'_1 \\ c'_1 \\ a'_2 \\ b'_2 \\ c'_2 \end{bmatrix} + \begin{bmatrix} u'_1 \\ \cdot \\ \cdot \\ u'_{11} \\ u'_{12} \\ \cdot \\ \cdot \\ u'_{31} \end{bmatrix}$$

OR

$$\begin{bmatrix} Y_1 \\ Y_2 \end{bmatrix} = \begin{bmatrix} X_1 & 0 \\ 0 & X_2 \end{bmatrix} \cdot \begin{bmatrix} \beta_1 \\ \beta_2 \end{bmatrix} + \begin{bmatrix} u'_1 \\ u'_2 \end{bmatrix}$$

The usual OLS estimators are given by

$$\hat{\beta} = \begin{bmatrix} \hat{\beta}_1 \\ \hat{\beta}_2 \end{bmatrix} = (X'X)^{-1}X'Y$$

$$= \left[\begin{bmatrix} X'_1 & 0 \\ 0 & X'_2 \end{bmatrix}\begin{bmatrix} X_1 & 0 \\ 0 & X_2 \end{bmatrix}\right]^{-1}\begin{bmatrix} X_1 & 0 \\ 0 & X_2 \end{bmatrix}'\begin{bmatrix} Y_1 \\ Y_2 \end{bmatrix}$$

$$= \begin{bmatrix} (X'_1 X_1)^{-1} & 0 \\ 0 & (X'_2 X_2)^{-1} \end{bmatrix}\begin{bmatrix} X'_1 Y_1 \\ X'_2 Y_2 \end{bmatrix}$$

$$= \begin{bmatrix} (X'_1 X_1)^{-1}X'_1 Y_1 \\ (X'_2 X_2)^{-1}X'_2 Y_2 \end{bmatrix}$$

Thus,

$\hat{a}'_1 = \hat{a}_1$, $\hat{b}'_1 = \hat{b}_1$, $\hat{c}'_1 = \hat{c}_1$; and $\hat{a}'_2 = \hat{a}_2$, $\hat{b}'_2 = \hat{b}_2$, $\hat{c}'_2 = \hat{c}_2$,

and provided that u_t has a homoskedastic variance the coefficients in (2) will be more precisely estimated compared to the individual subsample regressions due to the increased degrees of freedom of the model.

[4] However, there should not be too much emphasis placed on this result because the significance might be due to the concurrent depreciation of $A and rise in the inflation expectations without implying causation and because of the small size of the sample it may not be possible to be ascertain the true cause of significance of the expectations term.

[5] For subsample one estimations, 95% confidence intervals for the news coefficients in each interest rate regression are (0.0875, 0.7291) and (0.2133, 0.9927) for the short and long term rates, respectively; and in subsample two (0.1206, 0.4237) and (0.1323, 0.5005), respectively. Finally, in the whole sample regressions the intervals are (0.1764, 0.4355) and (0.1940, 0.5475) for the short and long term rates,

respectively. In all three sample period regressions the 95% confidence intervals for the two interest rates overlap implying that the effects of inflation news on short and long term interest rates are not statistically significantly different from each other at the 5% level of significance.

[6] The forward margins are the average daily closing of buy/sell $A margin quotes reported by The Australian Financial Review. The forward margin is called a premium (discount) on $A if forward $US/$A exchange rate is greater (smaller) than the spot rate. The margins are in units of 1/10000 $A, and the outright forward $US/$A exchange rates are calculated by adding the premiums to or deducting the discounts from the relevant spot rates.

[7] This might imply a deviation from Covered Interest Rate Parity, at least for the 90 day interest rate. This is because an unexpected inflation raised the domestic interest rate but failed to have an impact on the forward discount, and since there is no reason to expect that an unexpected domestic inflation would raise the US interest rates the higher domestic interest rate must be due to a rise in the risk premium on the domestic asset. This is in line with the findings of Karfakis and Phipps (1993) who regard the existence of time varying risk premia on domestic private assets (3 and 6 month bank accepted bills) as an explanation of their rejection of CIP in Australia.

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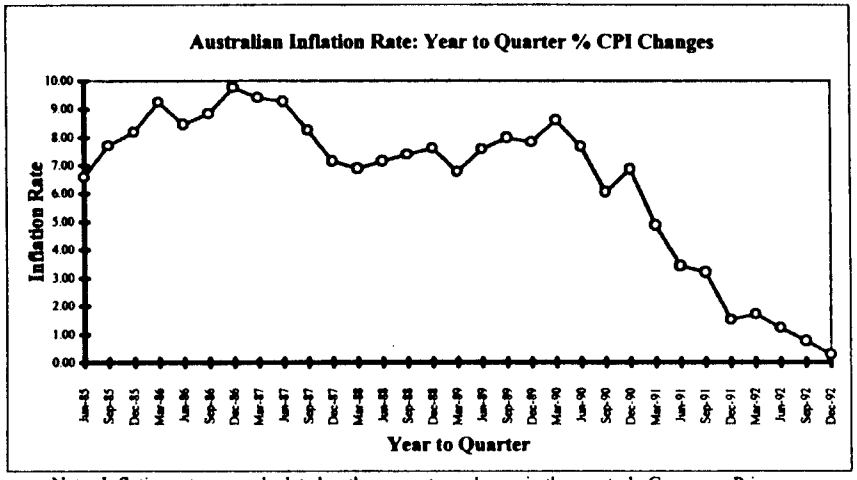
Figures

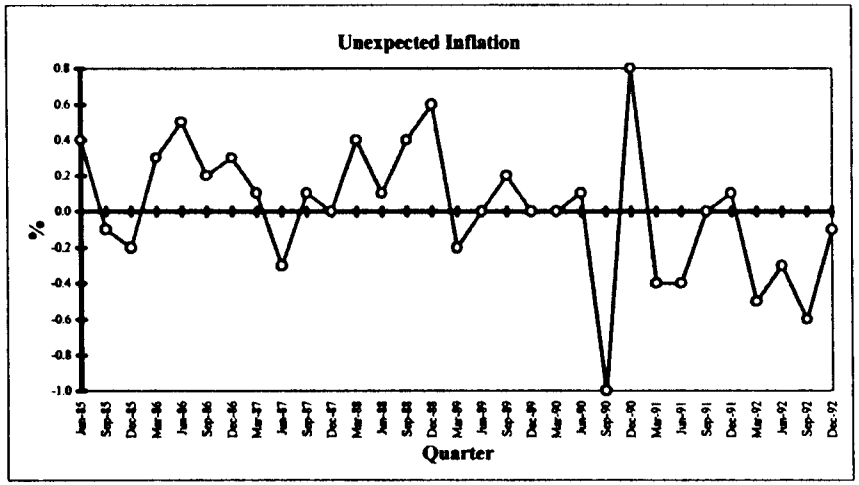
Figure 1



Note: Inflation rates are calculated as the percentage change in the quarterly Consumer Price Index from one quarter to the same quarter one year later.

Source: DX Database file TSSP-R1(Consumer Price Index: Weighted average of 8 cities), EconData Pty. Ltd.

Figure 2



Note: Unexpected quarterly inflation is the absolute difference between the announcement and the market expectation of percentage quarterly change in CPI.

Source: Quarterly inflation announcement is from Australian Bureau of Statistics Publication Call Number 6401, Consumer Price Index, Quarterly.
Market expectation of quarterly inflation announcement is the median response to financial market survey conducted by the Money Market Services, Pty. Ltd.

Tables

Table 1
The Summary of the effects of a higher than Expected Inflation announcement

	Market Equilibrium Adjustments			Tight Monetary Policy Anticipation		
	FPMM	**SPMM**	**PBM**	**FPMM**	**SPMM**	**PBM**
Interest Rates	Rise	Rise	Rise	Fall	Rise	Rise
Exchange Rates	Dep.	App.	Dep.	App.	App.	App.

Table 2

Phillips-Perron Z(t) - Test*

Whole Sample: June-85 Quarter to Dec-92 Quarter, 31 observations

Data	Act. Inf.	Exp. Inf.	Inf. News	ΔUS	ΔDM	ΔJY	ΔUK	ΔSF	ΔSR	ΔLR	5% C. V.(2)
Trend	-5.002	-3.846	-7.118	-6.934	-8.103	-6.253	-5.260	-6.312	-6.045	-5.809	-3.561
No Trend	-2.631	-2.003	-5.792	-6.395	-8.147	-6.429	-5.460	-6.340	-6.124	-4.807	-2.959
Lags(1)	2	1	2	4	4	4	4	4	2	3	
Conclusion	I(0)(3)	I(0)(3)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	

Data	Δ1m$AFD	Δ3m$AFD	Δ6m$AFD	Δ12m$AFD	Δ1m$AFER	Δ3m$AFER	Δ6m$AFER	Δ12m$AFER	5% C. V.(2)
Trend	-6.8922	-6.9199	-7.0812	-7.4961	-5.9330	-6.0111	-6.0814	-6.1838	-3.561
No Trend	-6.6688	-7.0232	-7.0622	-7.4044	-5.848	-5.9489	-5.9714	-6.0331	-2.959
Lags(1)	1	1	1	1	4	4	4	4	
Conclusion	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	

Subsample One: June-85 Quarter to Dec-87 Quarter, 11 observations
Subsample Two: March-88 Quarter to Dec-92 Quarter, 20 observations

	Subsample One			Subsample Two		
Data	Exp. Inf.	Inf. News	5% C. V.(1)	Exp. Inf.	Inf. News	5% C. V.(1)
Trend	-3.202	-4.740	-3.927	-3.112	-9.762	-3.659
No Trend	-2.804	-4.695	-3.180	-1.631	-5.002	-3.020
Lags(1)	0	4		0	2	
Conclusion	I(1)	I(0)		I(1)	I(0)	

Where:

Act. Inf.: Announced Inflation as measured by the percentage change in quarterly CPI figure.
Exp. Inf.: Market expectation of inflation announcement.
Inf. News: Inflation news as measured by the absolute difference between the actual and expected inflation announcement.
US: $US/$A.
DM: DeutschMark/$A.
JY: JapaneseYen/$A.
UK: UKPound/$A.
SF: SwissFranc/$A.
SR: Three month Australian authorised bank bill interest rate.
LR: 10 Year Commonwealth of Australia government bond index rate
?m$AFD: Forward discount (premium) on $A ($US) with the maturities of 1, 3, 6 and 12 months. ($US /$A)/10000 is the basis point.
?m$AFER: Forward $US/$A exchange rate with the maturities of 1, 3, 6 and 12 months calculated by spot $US/$A less 1m$AFD/10000
Δ in Spot Exchange Rates: Logarithmic difference between the opening and closing whole sale rates on the day of inflation announcement.
Δ in Forward: Exchange Rates and Margins: Logarithmic difference between the closing rates on the day of inflation announcement and the closing rates on day before the announcement.
Δ in Interest: Rates: Absolute difference between the closing rates on the day of inflation announcement and the closing rates on day before the announcement.

Notes: (1) The number of truncation lag parameter is set as the highest significant lag order from either the ACF or PACF of the first differenced series.
(2) Critical values are taken from tables derived by MacKinnon (1991).
(3) I(0) since the trend is significant.
* All the unit root tested series have either positive or insignificant moving average terms. This implies that Phillips-Perron test generally has high power and does not suffer from a substantial size distortion as a result of the series having significant negative moving average terms, see Banerjee, et al. (1993, p. 113).

Table 3-A

$$\Delta ER_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Whole Sample: June-85 Quarter to Dec-92 Quarter, 31 Observations

	Constant	Exp. Inf.	Inf. News	R^2-Adj.	S.E.E.	S.C.(1)	Het(2)	Norm(3)	Reset(4)
ΔUS	-.17E-03	-.92E-04	.58E-03	-0.0707	0.0081	0.84	2.32	5.55	0.01
(S.E.)	(.38E-02)	(.24E-02)	(.43E-02)			[0.359]	[0.127]	[0.062]	[0.905]
(t-Stat)	(-0.0443)	(-0.0390)	(0.1363)						
ΔDM	-.39E-03	.21E-03	.17E-02	-0.0639	0.0086	0.47	0.00	4.72	0.03
	.40E-02	.25E-02	.45E-02			[0.495]	[0.962]	[0.094]	[0.861]
	(-0.0967)	(0.0843)	(0.3696)						
ΔJY	-.13E-03	.51E-03	.24E-02	-0.0513	0.0081	1.44	1.76	5.47	0.16
	(.38E-02)	(.23E-02)	(.43E-02)			[0.230]	[0.185]	[0.065]	[0.693]
	(-0.0349)	(0.2156)	(0.5590)						
ΔUK	-.18E-02	.13E-02	-.34E-03	-0.0624	0.0097	0.09	3.78	3.45	0.22
	(.45E-02)	(.28E-02)	(.51E-02)			[0.769]	[0.052]	[0.178]	[0.769]
	(-0.3944)	(0.4695)	(-0.0654)						
ΔSF	-.56E-06	-.82E-04	.15E-02	-0.0671	0.0091	0.13	0.01	5.12	0.54
	(.42E-02)	(.26E-02)	(.48E-02)			[0.722]	[0.928]	[0.077]	[0.462]
	(-0.0001)	(-0.0311)	(0.3220)						

Notes: *: significant at 5 % level of significance.
**: significant at 1 % level of significance.
Numbers in square brackets are p-values.
(1) Breusch-Godfrey LM test of Serial Correlation, asymptotically distributed as $\chi^2_{(1)}$
(2) LM test of Heteroskedasticity based on the regression $\hat{\varepsilon}^2$ on $\hat{Y}^2$, asymptotically distributed as $\chi^2_{(1)}$.
(3) Bera-Jaque LM Normality Test, asymptotically distributed as $\chi^2_{(2)}$.
(4) LM version of Ramsey's RESET Misspecification Test, asymptotically distributed as $\chi^2_{(1)}$.

Table 3-B

$$\Delta ER_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Subsample One: June-85 Quarter to Dec-87 Quarter, 11 observations
Subsample Two: March-88 Quarter to Dec-92 Quarter, 20 observations

	Sample	Constant	Exp. Inf.	Inf. News	R^2-Adj.	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]	$F_{(3,25)}$[5]
ΔUS	One	-.34E-01**	.16E-01**	-.15E-01**	0.4942	0.0056	1.02	0.36	0.38	0.42	11.42
(S.E.)		.92E-02	.45E-02	.71E-02			[0.313]	[0.546]	[0.825]	[0.517]	[0.000]
(t-Stat)		(-3.6498)	(3.4707)	(-2.1357)							
	Two	.35E-02	-.94E-03	.70E-02*							
		.30E-02	.21E-02	.34E-02							
		(1.1792)	(-0.4376)	(2.0954)							
ΔDM	One	-.29E-01**	.14E-01**	-.21E-01**	0.5065	0.0059	1.64	0.77	0.28	0.26	11.79
		.97E-02	.47E-02	.74E-02			[0.200]	[0.381]	[0.869]	[0.610]	[0.000]
		(-2.9749)	(2.9199)	(-2.8414)							
	Two	.35E-02	-.77E-03	.94E-02*							
		.31E-02	.22E-02	.35E-02							
		(1.1144)	(-0.3402)	(2.6732)							
ΔJY	One	-.38E-01**	.19E-01**	-.11E-01	0.4694	0.0057	0.78	0.30	0.13	0.56	10.16
		.94E-02	.46E-02	.73E-02			[0.376]	[0.587]	[0.935]	[0.456]	[0.000]
		(-3.9845)	(4.0572)	(-1.4683)							
	Two	.49E-02	-.20E-02	.89E-02*							
		.30E-02	.22E-02	.34E-02							
		(1.6072)	(-0.9014)	(2.6033)							
ΔUK	One	-.36E-01**	.17E-01**	-.22E-01*	0.4201	0.0072	0.12	0.41	0.77	0.09	8.76
		.12E-01	.58E-02	.91E-02			[0.728]	[0.524]	[0.682]	[0.770]	[0.000]
		(-3.0074)	(3.0089)	(-2.3760)							
	Two	.24E-02	.22E-03	.75E-02							
		.38E-02	.28E-02	.43E-02							
		(0.6366)	(0.0786)	(1.7402)							
ΔSF	One	.33E-01**	.16E-01**	-.18E-01*	0.4329	0.0066	1.01	0.17	0.66	0.15	9.23
		.11E-01	.53E-02	.84E-02			[0.315]	[0.680]	[0.720]	[0.698]	[0.000]
		(-3.0090)	(2.9086)	(-2.1394)							
	Two	.40E-02	-.12E-02	.89E-02*							
		.35E-02	.25E-02	.40E-02							
		(1.1442)	(-0.4554)	(2.2339)							

Notes: (1) to (4) see notes for Table 2-A.
(5) Test statistic for the hypothesis of no structural break:
H_0: $\alpha_{sample\ one} = \alpha_{sample\ two}$, $\beta_{sample\ one} = \beta_{sample\ two}$ and $\gamma_{sample\ one} = \gamma_{sample\ two}$

Table 4-A

$$\Delta IR_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Whole Sample: June-85 Quarter to Dec-92 Quarter, 31 Observations

	Constant	Exp. Inf.	Inf. News	R^2-Adj	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]
ΔSR	0.1018	-0.0904*	0.3059**	0.4226	0.12	1.54	1.03	5.92	1.82
(S.E.)	(0.0559)	(0.0349)	(0.0633)			[0.215]	[0.310]	[0.052]	[0.177]
(t-Stat)	(1.8197)	(-2.5909)	(4.3836)						
ΔLR	0.0110	0.0100	0.3708**	0.4083	0.16	0.00	0.12	0.49	0.00
(S.E.)	(0.0763)	(0.0476)	(0.0863)			[0.961]	[0.733]	[0.782]	[0.966]
(t-Stat)	(0.1441)	(0.2107)	(4.2957)						

Notes: (1) to (4) see notes for Table 2-A.

Table 4-B

$$\Delta IR_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Subsample One: June-85 Quarter to Dec-87 Quarter, 11 observations
Subsample Two: March-88 Quarter to Dec-92 Quarter, 20 observations

	Sample	Constant	Exp. Inf.	Inf. News	R^2-Adj.	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]	$F_{(3,25)}$[5]
ΔSR	One	0.1025	-0.1087	0.4083*	0.3964	0.1225	1.55	1.01	7.24*	0.19	0.59
(S.E.)		0.2021	0.0988	0.1557			[0.214]	[0.314]	[0.027]	[0.660]	[0.624]
(t-Stat)		(0.5071)	(-1.1003)	(2.6222)							
	Two	0.0671	-0.0528	0.2721**							
		0.0650	0.0471	0.0736							
		(1.0314)	(-1.1224)	(3.6988)							
ΔLR	One	0.1836	-0.0508	0.6030**	0.5095	0.1489	0.80	0.72	1.13	0.02	2.93
		0.2455	0.1200	0.1892			[0.371]	[0.398]	[0.569]	[0.891]	[0.053]
		(0.7476)	(-0.4237)	(3.1873)							
	Two	0.0227	-0.0372	0.3164**							
		0.0790	0.0572	0.0894							
		(0.2876)	(-0.6506)	(3.5400)							

Notes: (1) to (4) see notes for Table 2-A.
(5) see notes for Table 2-B.

Table 5-A

$$\Delta AFD_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Whole Sample: June-85 Quarter to Dec-92 Quarter, 31 Observations

	Constant	Exp. Inf.	Inf. News	R^2-Adj.	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]
Δ1m$AFD	-.17E-01	.15E-02	.61E-01**	0.2014	0.0416	2.63	1.68	1.94	0.02
	.19E-01	.12E-01	.22E-01			[0.105]	[0.194]	[0.380]	[0.898]
	(-0.8775)	(0.1202)	(2.7959)						
Δ3m$AFD	.23E-01	-.16E-01	.59E-01**	0.2300	0.0340	1.19	1.11	2.00	0.02
	.16E-01	.99E-02	.18E-01			[0.276]	[0.293]	[0.369]	[0.880]
	(1.4366)	(-1.6411)	(3.2888)						
Δ6m$AFD	.25E-01	-.15E+00	.78E-01**	0.3873	0.0323	2.11	0.57	2.85	0.10
	.15E-01	.94E-02	.17E-01			[0.146]	[0.448]	[0.240]	[0.757]
	(1.6659)	(-1.6261)	(4.5749)						
Δ12m$AFD	.22E-01	-.13E-01	.69E-01**	0.3254	0.0323	1.72	0.76	6.01	0.02
	.15E-01	.94E-02	.17E-01			[0.190]	[0.383]	[0.050]	[0.900]
	(1.4783)	(-1.4330)	(4.0552)						

Notes: (1) to (4) see notes for Table 2-A.

Table 5-B

$$\Delta AFD_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Subsample One: June-85 Quarter to Dec-87 Quarter, 11 observations
Subsample Two: March-88 Quarter to Dec-92 Quarter, 20 observations

	Sample	Constant	Exp. Inf.	Inf. News	R^2-Adj.	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]	$F_{(3,25)}$[5]
Δ1m$AFD	One	-.67E-01	.26E-01	.24E-01	0.1652	0.0425	3.26	0.58	4.15	0.02	0.59
		.70E-01	.34E-01	.54E-01			[0.071]	[0.447]	[0.126]	[0.893]	[0.624]
		(-0.9614)	(0.7690)	(0.4452)							
	Two	-.89E-02	-.22E-02	.75E-01**							
		.23E-01	.16E-01	.26E-01							
		(-0.3956)	(-0.1331)	(2.9322)							
Δ3m$AFD	One	.56E-01	-.34E-01	.37E-01	0.1809	0.0351	2.08	1.06	4.47	0.01	0.44
		.58E-01	.28E-01	.45E-01			[0.149]	[0.303]	[0.107]	[0.910]	[0.726]
		(0.9600)	(-1.2041)	(0.0823)							
	Two	.16E-01	-.86E-02	.60E-01**							
		.19E-01	.13E-01	.21E-01							
		(0.8703)	(-0.6390)	(2.8321)							
Δ6m$AFD	One	.73E-01	-.37E-01	.53E-01	0.3391	0.0335	3.00	0.24	4.36	0.07	0.32
		.55E-01	.27E-01	.43E-01			[0.083]	[0.621]	[0.113]	[0.791]	[0.812]
		(1.3285)	(-1.3817)	(1.2503)							
	Two	.22E-01	-.14E-01	.80E-01**							
		.18E-01	.13E-01	.20E-01							
		(1.2640)	(-1.0860)	(3.9543)							
Δ12m$AFD	One	.88E-01	-.43E-01	.39E-01	0.2951	0.0330	3.07	0.22	5.68	0.00	0.60
		.55E-01	.27E-01	.42E-01			[0.080]	[0.639]	[0.059]	[0.961]	[0.622]
		(1.6179)	(-1.6170)	(0.9232)							
	Two	.19E-01	-.13E-01	.71E-01**							
		.18E-01	.13E-01	.20E-01							
		(1.1090)	(-1.0140)	(3.5787)							

Notes: (1) to (4) see notes for Table 2-A.
(5) see notes for Table 2-B.

Table 6-A

$$\Delta AFER_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Whole Sample: June-85 Quarter to Dec-92 Quarter, 31 Observations

	Constant	Expected	News	R^2-Adj.	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]
Δ1m$AFER	.23E-03	-.26E-03	.33E-02	-0.0519	0.0090	0.12	0.72	4.30	0.44
	.42E-02	.26E-02	.48E-02			[0.732]	[0.396]	[0.117]	[0.506]
	(0.0538)	(0.0987)	(0.6962)						
Δ3m$AFER	-.26E-03	.68E-04	.28E-02	-0.0560	0.0092	0.20	0.42	4.09	0.33
	.43E-02	.27E-02	.49E-02			[0.655]	[0.519]	[0.130]	[0.567]
	(0.0598)	(0.0252)	(0.5775)						
Δ6m$AFER	-.78E-03	.33E-03	.16E-02	-0.0652	0.0096	0.23	0.05	4.30	0.04
	.45E-02	.28E-02	.51E-02			[0.628]	[0.816]	[0.117]	[0.837]
	(0.1731)	(0.1172)	(0.3113)						
Δ12m$AFER	-.16E-02	.77E-03	.24E-03	-0.0679	0.0102	0.33	0.39	5.31	1.14
	.48E-02	.30E-02	.54E-02			[0.566]	[0.533]	[0.070]	[0.285]
	(0.3259)	(0.2608)	(0.0447)						

Notes: (1) to (4) see notes for Table 2-A.

Table 6-B

$$\Delta AFER_t = a + b \cdot Expected_t + c \cdot News_t + u_t$$

Subsample One: June-85 Quarter to Dec-87 Quarter, 11 observations
Subsample Two: March-88 Quarter to Dec-92 Quarter, 20 observations

	Sample	Constant	Expected	News	R^2-Adj.	S.E.E.	S.C.[1]	Het[2]	Norm[3]	Reset[4]	$F_{(3,25)}$[5]
Δ1m$AFER	One	-.34E-01**	.16E-01**	-.15E-01	0.4616	0.0065	0.04	0.83	1.03	0.72	9.90
		.11E-01	.52E-02	.82E-02			[0.842]	[0.361]	[0.597]	[0.395]	[0.000]
		(3.1456)	(2.9961)	(1.8684)							
	Two	.40E-02	-.10E-02	.10E-01**							
		.34E-02	.25E-02	.39E-02							
		(1.1737)	(0.4178)	(2.6910)							
Δ3m$AFER	One	-.35E-01**	.17E-01**	-.16E-01	0.4549	0.0066	0.02	0.83	0.80	0.60	9.75
		.11E-01	.53E-02	.84E-02			[0.879]	[0.364]	[0.671]	[0.438]	[0.000]
		(3.2124)	(3.0935)	(1.9182)							
	Two	.38E-02	-.91E-03	.10E-01**							
		.35E-02	.25E-02	.40E-02							
		(1.0756)	(0.3585)	(2.5492)							
Δ6m$AFER	One	-.37E-01**	.17E-01**	-.18E-01	0.4470	0.0069	0.01	0.87	1.00	0.56	9.64
		.11E-01	.56E-02	.88E-02			[0.927]	[0.352]	[0.606]	[0.455]	[0.000]
		(3.2511)	(3.1272)	(2.0300)							
	Two	.34E-02	-.62E-03	.91E-02*							
		.37E-02	.27E-02	.42E-02							
		(0.9143)	(0.2323)	(2.1951)							
Δ12m$AFER	One	-.42E-01**	.20E-01**	-.19E-01	0.4433	0.0074	0.04	0.70	1.11	0.51	9.57
		.12E-01	.59E-02	.94E-02			[0.848]	[0.403]	[0.574]	[0.476]	[0.000]
		(3.4356)	(3.3097)	(2.0176)							
	Two	.28E-02	-.22E-03	.80E-02							
		.39E-02	.28E-02	.44E-02							
		(0.7283)	(0.0790)	(1.8143)							

Notes: (1) to (4) see notes for Table 2-A.
(5) see notes for Table 2-B.

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