Policy Forum

The Effect of Changes in Monetary Policy on Consumer and Business Confidence

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Abstract

This article examines the response of consumer and business confidence to five measures of change in Australian monetary policy. Actual, expected and surprise increases in the official cash rate target and related interest rates are shown to negatively impact consumer sentiment. Business confidence is less affected by increases in the cash rate target, but is negatively affected by an increase in the 90-day bank accepted bill rate. Tests for model stability and asymmetries in the response of sentiment to increases and decreases in interest rates otherwise find only limited evidence for monetary policy having a perverse signalling effect on sentiment.

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1. Introduction

The Reserve Bank of Australia (RBA) lowered its official cash rate target by 25 basis points on 2 October 2019. The Westpac-Melbourne Institute Index of Consumer Sentiment (WMICS) survey conducted between 30 September and 3 October subsequently showed a sharp drop of 5.5 per cent to a four-year low. Consumer sentiment also fell at the time of official interest rate reductions in June and July 2019. By contrast, a steady interest rate decision in November coincided with a rebound in confidence.

In the press release accompanying the October release of the WMICS, Westpac's chief economist Bill Evans questioned whether recent cuts in official interest rates had damaged consumer sentiment (Westpac Institutional Bank, 2019). Similar claims have been made by members of the business community, especially bank executives, whose profit margins are threatened by low interest rates. For example, Westpac chief executive Brian Hartzer told a parliamentary committee that lower interest rates are seen as a 'negative symbol … and a sign something is wrong and there is a weakness in the economy'. According to media reports, concerns about the impact of monetary policy on confidence were a factor in the government's decision to leave its agreement with the RBA on inflation unchanged rather than strengthening the RBA's accountability for meeting its inflation target (Kehoe 2019). The minutes of the RBA's November 2019 board meeting

indicated that board members 'recognised the negative effects of lower interest rates on savers and confidence' (RBA, 2019).

In principle, changes in the stance of monetary policy could lower confidence if they are perceived to reveal previously private information about the RBA's assessment of economic conditions. This new information might offset the otherwise expansionary implications of an interest rate cut for the economy in the assessment of consumers and business. However, given the significant increase in RBA transparency since 2006, it would seem less likely that changes in the official cash rate target would convey significant new information not already in the public domain.

Perverse signalling effects on confidence are also not necessarily an argument against easing monetary policy. If the RBA fails to act on its own assessment of the economy for fear of damaging sentiment, this could lead to tighter monetary conditions than warranted. Since the effectiveness of monetary policy relies heavily on the credibility of the central bank, there is a strong argument for the RBA to closely align its policy actions with its assessment of economic conditions to maintain its credibility. It could also be the case that confidence falls following reductions in the cash rate because the monetary policy response is perceived to be inadequate. The fact that central banks commonly engage in interest rate smoothing to hedge against error is consistent with this suggestion.

The extent to which consumer and business confidence measures have predictive power for the economy independent of otherwise observable economic data has been the subject of investigation in the United States and elsewhere (Ludvigson 2004). In the Australian context, the literature suggests that sentiment measures do have some limited predictive power over and above summarising other available data (Roberts and Simon 2001; Wang and Berger-Thomson 2015; Gillitzer and Prasad 2018). Sentiment surveys may also have advantages in terms of timeliness in identifying turning points in the economy given the speed with which sentiment data can be collected. However, to the extent that sentiment surveys can be noisy and have limited predictive content when controlling for measures of economic activity, this is an argument against overly conditioning monetary policy on consumer and business confidence.

In seeking to identify the role of sentiment as an independent influence on economic activity, researchers have sometimes focused on the determinants of consumer and business confidence. This is mostly with a view to measuring the component of sentiment that is independent of otherwise observable economic activity. In this context, changes in interest rates have been shown to have an important influence on sentiment, although both monetary policy and sentiment can be viewed as endogenous to economic conditions.

For Australia, Roberts and Simon (2001) show that increases in the official cash rate have an economically and statistically significant negative effect on consumer and business sentiment in all of their regressions while controlling for measures of economic and financial conditions. Claus and Nguyen (2019) find that while the responses to monetary policy shocks of consumers' expectations for family finances are influenced by household characteristics and net debtor status, their expectations for macroeconomic variables are consistent with theory, with a generally stronger response to easings in monetary policy than to tightenings.

The literature for the United States finds similar effects for changes in Federal Reserve policy. For example, Lewis et al. (2019, p. 2) find that 'a surprise tightening of 25 basis points leads to an immediate deterioration in the daily economic confidence index equivalent to 1 to 2 points of the Michigan Index of Consumer sentiment. This means that in our sample households interpret a positive target rate surprise on average as negative for the US economy'. At the same time, they find 'no systematic evidence for any immediate statistically significant effects of new information about [quantitative easing] policies on household beliefs'. This likely reflects more limited understanding about 'unconventional' as opposed to 'conventional' monetary policy on the part of the public. Claims that quantitative easing has perverse effects on

consumer sentiment are not consistent with these findings.

This article estimates the response of consumer and business confidence to five measures of change in the stance of Australian monetary policy. Consumer and business confidence are both explained by the same set of macroeconomic and financial variables, with some minor differences in dynamic specification. Actual, expected and surprise increases in the official cash rate target and related interest rates are shown to negatively impact consumer sentiment. Business confidence is less affected by increases in the cash rate target, but is negatively affected by an increase in the 90-day bank accepted bill rate. More recently, model stability tests find some evidence of a structural break in the relationship between interest rates and confidence. But rather than changing sign, the monetary policy-related variables simply become insignificant, possibly due to an extended period in which both actual and expected official interest rates were little changed. Consistent with US and related Australian literature, consumers and business generally interpret reductions in interest rates as expansionary for the economy, if not their own finances.

2. A Model of Consumer Sentiment

The WMICS is modelled in terms of various measures of economic activity and financial conditions. The ANZ-Roy Morgan Consumer Confidence Index is highly correlated with the Westpac-Melbourne Institute measure and yields similar results when used as a dependent variable compared to the results shown here. The WMICS as published is normalised to a historical mean and is used as the dependent variable in log-level terms (*wmics*).

Explanatory variables include the lagged level of *wmics* to capture persistence in sentiment; the log first-difference of the ASX200 share price index (Δasx) lagged one month; the log first-difference of the contemporaneous Australian dollar–US dollar exchange rate (Δaud); the log first-difference of US industrial production ($\Delta usip$) lagged one month to control for the (assumed exogenous) global business cycle; the

log-level of the contemporaneous Australian Economic Policy Uncertainty Index (*aepu*); the contemporaneous change in the unemployment rate divided by 100 (Δur); and the log-first difference in the CoreLogic seasonally adjusted dwelling value index for Australia (Δdv) lagged two months.

Roberts and Simon (2001) use lags to ensure that only explanatory variables officially released before the monthly sentiment survey is conducted are included in their estimation, although they use contemporaneous values for financial variables. Claus and Nguyen (2019) adopt a still more restrictive approach to identification. I take a less restrictive approach on a number of grounds. Although sentiment is influenced by news related to the release of economic data, it is also likely to be influenced by expectations for those data (survey questions are partly forward-looking), as well as observation or experience of related economic conditions. It is unlikely, for example, that Australian consumers or even businesses pay close attention to changes in US industrial production, but this variable correlates with other economic news, observation and experience. Also, subsequent revisions to data mean that the series used for estimation may differ from those available at the time of the sentiment survey. Changes in the timing of the survey period relative to release dates may also be of concern. The dynamic specification employed here instead reflects a general-to-specific modelling procedure, where insignificant lags are removed from the estimated model.

The main role of the explanatory variables in the model is to control for influences other than monetary policy. The economic motivation for each of these variables should be self-explanatory. The Australian Economic Policy Uncertainty Index is included partly to account for the effect federal elections and political uncertainty might have on confidence, as well as offshore uncertainty, which is highly correlated with domestic policy uncertainty (Kirchner 2019).

Changes in monetary policy variables can be viewed as capturing both an announcement effect and a change in the effective stance of monetary

policy. If changes in the cash rate target are viewed as signalling new information about the state of the economy, they may have an effect on sentiment that is not strictly proportional to the change in the target rate or the effective stance of monetary policy. Since the survey period generally overlaps with the monthly RBA board meeting, measures of monetary policy can enter the model contemporaneously, particularly given the high level of media coverage given to expectations for the monthly interest rate decision. Claus and Dungey (2015) find that RBA policy changes are well anticipated by financial markets at least, if not consumers and business.

I consider five measures of monetary policy: (1) the change in the official cash rate target (ΔOCR); (2) the spread between the 3-month overnight index swap (OIS) rate and the official cash rate (OCROIS) as a measure of the expected future change in monetary policy; (3) the spread between the 6-month and 1-month overnight index swap rate (OISCURVE), also as a measure of expected future change in monetary policy; (4) the spread between the previous month's 1-month OIS rate and the cash rate target (SURPRISE) as a measure of month-to-month monetary policy surprises; and (5) the change in the 90-day bank-accepted bill rate (ΔBAB90) as a measure of the influence of short-term interest rates in general, which are strongly influenced by actual and expected changes in the cash rate target. All interest rate variables are divided by 100.

Note that none of these monetary policy variables measures the effective stance of monetary policy in a strict sense. Actual, expected or surprise changes in the cash rate and related measures in basis points may have different implications for economic activity over time due to changes in the (unobservable) equilibrium real interest rate and other factors. As noted earlier, any announcement effect on sentiment may be somewhat independent of the change in the effective stance of monetary policy, while consumers and business may conflate the two. It is unlikely consumers or business have a sophisticated understanding of the effective stance of monetary policy other than through simple heuristics around the change or level of the cash rate. It should be noted that economists

also disagree on how to measure the effective stance of monetary policy. This uncertainty on the part of economists might also feed into consumer and business sentiment.

The estimated model of *wmics* for different measures of monetary policy are shown in Table 1.

Consumer sentiment is quite persistent, with a large coefficient on the lagged dependent variable. Consistent with Roberts and Simon (2001), sentiment responds positively to increases in share prices and the exchange rate. Sentiment is also quite sensitive to the US business cycle. Sentiment has a surprisingly low elasticity with respect to the Australian Economic Policy Uncertainty Index, although a statistically significant relationship. This likely reflects a recent uptick in measured uncertainty on global concerns that may not have resonated strongly with consumers (Kirchner 2019). Dwelling values as a measure of housing wealth also have a strong influence on sentiment.

Increases in the official cash rate target (model 1) have a large and statistically significant impact on sentiment, with a long-run elasticity to 100 basis points of tightening of $-4.80/(1-0.73) = 17.3$ per cent. The OCR-OIS spread and OIS curve (models 2 and 3) have smaller and statistically insignificant elasticities, reflecting a lower salience of these measures with consumers. However, surprise rate hikes (model 4) have a very large effect on sentiment, with a long-run elasticity of -28.6 per cent, implying consumers experience a larger adjustment in expectations when policy decisions are relatively unexpected. Three-month bank accepted bill yields (model 5) show that consumer sentiment is sensitive to changes in short-term interest rates in general. The lower elasticity likely reflects the monthly averaging of the 90-day yield, as well as a much larger number of observations on this variable, including months in which policy was not changed.

The Quandt-Andrews tests show that the model and the role of the monetary policy measures in those models are stable across all possible endogenous breakpoints after applying a 15 per cent trim to the sample. The

Table 1 Model of Log-Level of Westpac-Melbourne Institute Index of Consumer Sentiment

Exp. variable	Monetary policy measure				
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Constant	1.34***	1.32***	1.33***	1.342***	1.36***
	(0.21)	(0.25)	(0.26)	(0.24)	(0.22)
$wmics_{t-1}$	0.72***	0.73***	0.73***	0.72***	0.72***
	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)
Δasx_{t-1}	0.38***	0.36***	0.34***	0.36***	0.38***
	(0.06)	(0.07)	(0.07)	(0.06)	(0.06)
Δaud_t	0.18**	0.13*	0.13*	0.17**	0.20***
	(0.07)	(0.08)	(0.08)	(0.08)	(0.07)
$\Delta usip_{t-1}$	1.08***	0.97**	0.94**	1.12***	1.01***
	(0.39)	(0.42)	(0.41)	(0.41)	(0.36)
$aepu_t$	−0.01***	−0.01**	−0.01**	−0.01***	−0.01***
	(0.00)	(0.0)	(0.00)	(0.00)	(0.00)
Δdv_{t-2}	0.95***	0.91***	0.90***	0.92***	0.99***
	(0.31)	(0.32)	(0.33)	(0.31)	(0.31)
ΔUR_t	−4.47***	−4.92***	−4.89***	−4.87***	−4.03***
	(1.59)	(1.86)	(1.85)	(1.81)	(1.54)
ΔOCR_t	−4.80**				
	(2.09)				
$OCROIS_t$		−1.35			
		(1.69)			
$OISCURVE_t$			−1.44		
			(2.39)		
$SURPRISE_t$				−8.02**	
				(3.60)	
$\Delta BAB90_t$					−3.33**
					(1.67)
Quandt-Andrews LR *F*-stat					
Max. all variables	2.19	2.13	2.15	3.12	2.22
Month	Dec. 2013	Dec. 2013	Dec. 2013	Apr. 2008	Jan. 2014
Max. mon. pol. var.	5.55	3.43	3.73	19.09***	2.27
Month	Jun. 2016	Jan. 2009	Feb. 2009	Apr. 2008	Jun. 2016
Adj. sample period	Apr. 98–Oct. 19	Jul. 01–Oct. 19	Jul. 01–Oct. 19	Aug. 01–Oct. 19	Apr. 98–Oct. 19
Adj. R^2	0.75	0.76	0.77	0.77	0.75
S.E.	0.04	0.04	0.04	0.04	0.04

Notes: Numbers in parentheses are HAC robust standard errors. ***, **, and * denote 1, 5, and 10 per cent significance levels, respectively. The Quandt-Andrews test is performed with 15 per cent trim and significance levels based on Hansen *p*-values. Sample periods are determined by availability of the Australian Economic Policy Uncertainty Index and OIS rates.

exception is model 4, for which we reject the null of no breakpoints for the SURPRISE measure, with a maximum test statistic in April 2008, which coincides with the end of the pre-financial crisis monetary policy tightening cycle. Re-estimating the model across pre- and post-April 2008 samples (not reported) shows that monetary policy surprises are not a statistically significant influence on sentiment in the latter sample. However, there is no evidence of a change in sign on the SURPRISE variable and so this does not imply that rate cuts harm sentiment. The surprise variable shows little variation in the latter sample due to the extended period in which the RBA was expected to do nothing and delivered on that expectation. In that context, monetary policy would not be expected to have a large effect on sentiment. Re-estimating the other models across pre- and post-April 2008 samples delivers the same result.

Table 2 Model of Percentage-Point Deviation from Average of NAB Survey of Business Conditions

Exp. Variable	Monetary policy measure				
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Constant	0.05**	0.06***	0.06***	0.07***	0.07***
	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
nab_{t-1}	0.58***	0.58***	0.59***	0.59***	0.57***
	(0.07)	(0.06)	(0.06)	(0.05)	(0.07)
nab_{t-2}	0.23***	0.20***	0.20***	0.20***	0.24***
	(0.04)	(0.04)	(0.04)	(0.05)	(0.06)
Δasx_t	0.18***	0.18**	0.18**	0.17**	0.17***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)
Δaud_t	0.02	−0.08	−0.07	−0.07	0.03
	(0.08)	(0.07)	(0.07)	(0.0)	(0.07)
$\Delta usip_{t-2}$	0.75***	0.57**	0.64*	0.64**	0.80***
	(0.28)	(0.40)	(0.39)	(0.32)	(0.29)
$aepu_t$	−0.01**	−0.01***	−0.01***	−0.01***	−0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Δdv_{t-2}	0.79***	0.78***	0.79***	0.80***	0.75***
	(0.23)	(0.23)	(0.23)	(0.24)	(0.21)
ΔUR_t	−4.70***	−4.12***	−4.18***	−4.23***	−4.88***
	(1.42)	(1.56)	(1.56)	(1.56)	(1.39)
ΔOCR_t	0.73				
	(1.39)				
$OCROIS_t$		1.48			
		(0.98)			
$OISCURVE_t$			1.41		
			(1.20)		
$SURPRISE_t$				3.23*	
				(1.77)	
$\Delta BAB90_t$					−0.26**
					(0.12)
Quandt-Andrews					
LR *F*-stat					
Max. all variables	1.68	2.72**	2.73**	2.16	2.57*
Month	Jul. 2014	Jul. 2014	Jul. 2014	Jul. 2014	Jul. 2001
Max. mon. pol. var.	1.45	2.08	2.04	3.82	4.89
Month	Oct. 2008	Apr. 2012	Apr. 2012	Jul. 2007	Apr. 2012
Adj. sample period	Apr. 98–Oct. 19	Jul. 01–Oct. 19	Jul. 01–Oct. 19	Aug. 01–Oct. 19	Apr. 98–Oct. 19
Adj. R^2	0.84	0.86	0.86	0.86	0.84
S.E.	0.03	0.03	0.03	0.03	0.03

Notes: Numbers in parentheses are HAC robust standard errors. ***, **, and * denote 1, 5 and 10 per cent significance levels, respectively. The Quandt-Andrews test is performed with 15 per cent trim and significance levels based on Hansen *p*-values. Sample periods are determined by availability of the Australian Economic Policy Uncertainty Index and OIS rates.

Interacting the monetary policy measures with dummy variables for months in which the cash rate target was raised and when it was lowered to test for asymmetries finds that tightenings have large and statistically significant negative effects on sentiment, while easings have smaller, positive, but statistically insignificant effects. There is no evidence to suggest a perverse sign on easings compared to tightenings. This asymmetry is the opposite to that found by Claus and Nguyen (2019) using a slightly earlier sample up until May 2015, in which easings have the larger effect.

An obvious question for model 1 to answer is the counter-factual of no change in the OCR target in October 2019, holding the other variables to the same values. Model 1 predicts no change in sentiment in October, with or

without a reduction in the official cash rate, highlighting the extent to which the reported 5.5 per cent decline was an outlier, well outside the standard error of the model. Sentiment rebounded in November.

3. A Model of Business Sentiment

Business sentiment can be modelled based on the same set of variables, showing that business and consumer sentiment have largely the same determinants. The dependent variable is the percentage-point deviation from the average of the National Australia Bank survey of business conditions, as published by the RBA. Other variables are the same as the model for consumer sentiment, although share prices are included contemporaneously and US industrial production is lagged an additional month. Monetary policy measures are the same as before. The results are shown in Table 2.

The non-monetary policy explanatory variables have remarkably similar coefficients to the model for consumer sentiment. The obvious exception is the exchange rate, which is quantitatively and statistically insignificant, consistent with Roberts and Simon (2001). This likely reflects the fact that the change in the exchange rate will affect different businesses differently, with their responses cancelling each other out. The elasticity with respect to the Australian Economic Policy Uncertainty Index is again surprisingly low, which likely reflects an uptick in offshore uncertainty in recent years that has not flowed through to domestic sentiment.

Only one of the monetary policy-related variables, the 90-day bill rate, is statistically significant at conventional levels. The long-run elasticity to a 100 basis-point tightening (assuming this was fully reflected in bill yields) is −1.4 percentage points in measured business conditions (−0.25/(1−0.57−0.24)).

At the 10 per cent significance level, sentiment in relation to business conditions shows a large, positive long-run response of 15.4 percentage points to a surprise (model 4) 100 basis-point tightening. Testing for asymmetries by interacting the monetary policy variables with a dummy variable for months in which the cash rate target was raised and another dummy variable for when lowered, shows a statistically significant and perverse negative sign on the SURPRISE measure interacted with the cash rate reduction dummy. This is consistent with a negative signalling effect outweighing the expansionary policy effect from surprise rate cuts.

The Quandt-Andrews tests do not suggest a significant structural break in the effect of monetary policy on sentiment that would provide an obvious candidate for splitting the sample, although for the model as a whole, the *F*-statistic maximum obtains for July 2014 in four of the five models and is statistically significant for two of them. Splitting the sample at July 2014 and re-estimating model 4 shows that SURPRISE tightenings are still perversely positive for sentiment and statistically significant in the earlier sample, but negative and insignificant in the latter sample period. Re-estimation for the other models does not yield statistically significant changes in coefficient estimates for the monetary policy variables.

4. Conclusion

Recent reductions in the official cash rate coinciding with sharp declines in consumer sentiment have raised the question whether rate cuts lower consumer and business sentiment. Actual, expected and surprise changes in the official cash rate target might signal previously private information held by the RBA in relation to its assessment of economic conditions. This signalling effect could in principle offset the implications of expansionary monetary policy in the assessment of consumers and business.

The evidence presented here shows that, consistent with related US and Australian literature, consumers correctly interpret a tightening in monetary policy as a net negative for the economic outlook, with surprise changes in the official cash rate target relative to market expectations in the previous month having a particularly pronounced effect. The response of the business community is more mixed, with increases in 90-day bill rates negatively affecting sentiment in

relation to business conditions, although there is some evidence for a positive effect in the case of surprise rate increases, which could be interpreted as signalling an improvement in economic conditions that offsets the implications of monetary tightening.

However, it should be noted that these results have limited implications for policy. Even if the signalling effect were dominant, this would not be an argument for policy inaction. That would imply that the central bank should not act on its assessment of the economy, which is likely to be self-defeating and damage policy credibility. Given that central banks engage in interest rate smoothing to hedge against policy error, a negative response of sentiment to an easing in policy could also reflect perceptions that the policy response is inadequate. More generally, the limited predictive power of measures of consumer and business sentiment after controlling for otherwise observable economic data is an argument against overly conditioning monetary policy on sentiment surveys. The suggestion in the minutes of the RBA Board's November 2019 meeting that policy was being conditioned in part on supposedly perverse effects of interest rate cuts on consumer sentiment is disturbing given these results and those found in related literature.

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