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30-Day Interbank futures: Investigating the process of price discovery following RBA cash target rate announcements

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ABSTRACT

The article examines microstructure issues in the Australian Interbank futures market by analyzing the price adjustment process following scheduled cash target rate announcements by the Reserve Bank of Australia. In characterizing the market response, three distinct stages of price formation and liquidity provision are identified. Market expectations around the RBA decision are derived explicitly from 30-Day Interbank futures. The first trade following the RBA decision occurs after 220 s on average, and after 234 s (1.73 trades) the market has adjusted to the theoretical settlement price. Deviations from theoretical prices post-announcement are common, particularly when a large amount of uncertainty exists around the RBA decision. The potentially costly issue of stale price quotes is also addressed.

1. Introduction

This article explores the process that 30-Day Interbank Cash Rate Futures (Interbank futures) follow in adjusting to scheduled cash target rate announcements by the Reserve Bank of Australia (RBA). Various works (Crain and Lee, 1995; Ederington and Lee, 1993, 1995; Frino and Hill, 2001; Kim and Sheen, 2001; Zou and Zhang, 2005) have considered the effect of macroeconomic announcements on asset price volatility. The general finding is that news releases result in a rapid increase in return volatility; while the majority of the effects are relatively short-lived and subside within the first minute, there is varying degrees of volatility persistence for periods ranging from 15 min to several hours – even when a market is acting efficiently. This may be explained by an increase in trading activity

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as market participants re-balance their portfolios in light of the news, information traders enter the market, and liquidity traders benefit from the elevated interest.

Cook and Hahn (1989) were among the first to study the reaction of fixed income markets to monetary policy action; demonstrating that changes in the Fed Funds target rate produced large movements in short-term rates, and smaller but significant movements in intermediate- and long-term rates. A number of studies (Kuttner, 2001; Fatum and Scholnick, 2008) have found that fixed-income asset returns and volatilities respond only to the surprise component in monetary policy announcements. In the Australian context, Kim and Nguyen (2008) and Smales (2011) find similar results on an inter-day basis. Fleming and Remolona (1999) utilize methods similar to that employed in this article, in analyzing the price formation process in the US Treasury Market, and detect a two-stage adjustment process around macro-economic announcements; they do not investigate monetary policy announcements, and the nature of that paper does not allow for an examination of potential deviations from the theoretical price futures price following the data release.

The use of 30-Day Interbank futures allows this study to address several issues that previous studies have not. Firstly, since the Interbank Overnight Cash Rate published by the RBA is not dependent on liquidity factors, as in the US, or reserve requirements, as in Europe, the fixing rarely deviates from target. As such, the front-contract Interbank futures provide an explicit reading of market expectations on RBA Monetary Policy. Secondly, as the outcome of the policy announcement is in effect binary – the RBA decision to change the target rate or not is simultaneously revealed to all market participants at the scheduled time – it is possible to gain an insight into trades that occur away from the theoretical price. Lastly, despite their importance in reflecting market expectations, the front-contract Interbank future is often overlooked in the literature, on the basis that volatility disappears once the RBA target rate announcement is made early in the month; this study provides an opportunity to rectify this slight and examine the shortest part of the yield curve.

The article examines microstructure issues in the Australian Interbank futures market by analyzing the price adjustment process following RBA target rate announcements. In characterizing the market response, three distinct stages of price formation and liquidity provision are identified.

The first stage, leading up to the RBA announcement, is characterized by low volume and above average spreads as market participants exhibit uncertainty over the rate decision. During this stage, the possibility of asymmetric information makes market participants unwilling to trade. Immediately prior to the announcement bid-ask spreads widen considerably as market-makers adjust their quotes in response to the inventory risks of sharp price changes. A brief second stage is marked by a sharp response to the announcement; a rapid price change together with a substantial increase in trading volume is evidenced as market participants swiftly adjust their portfolios in the light of the RBA rate decision. The high level of trading volume persists for some time, driven by inventory positioning rather than disagreement on the implications of RBA policy since the decision effectively fixes the settlement price of the front contract Interbank future. The final stage sees volume subside to lower levels, while bid-ask spreads revert to normality more quickly than trading volume. Second-month 30-Day Interbank and Federal Funds futures exhibit lower volume, wider bid-ask spreads, and slower trading reactions relative to the front-month 30-Day Interbank futures contract.

The first trade following the RBA decision occurs after 220 s, and after 234 s (1.73 trades) the market has adjusted to the theoretical settlement price. Deviations from theoretical prices post-announcement are common, particularly when a large amount of uncertainty exists around the RBA decision. The potentially costly issue of stale price quotes remaining in the exchange over the data release is also examined with 48% of first trades post-announcement occurring on a stale quote.

The paper is organized as follows: In Section 1, I describe the RBA cash target rate announcement, the nature of the 30-Day Interbank future market, and the data used in the analysis. I also explain how market expectations surrounding RBA target rate announcements can be derived from Interbank futures. In Section 2, the three-stage adjustment process of the front-contract Interbank future to RBA target rate announcements is detailed, and the implications for price formation and liquidity provision are discussed. This section also discusses the impact of the 2007–2008 Global Financial Crisis (GFC) on the adjustment process. Section 3 investigates the determinants of trade volume and the bid-ask spread. In Section 4, the possibility of market participants erroneously trading at prices that deviate