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Journal of Policy Modeling 28 (2006) 491–510

Journal of Policy Modeling

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Excess reserves and the implementation of monetary policy of the ECB

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Received 1 June 2005; received in revised form 30 August 2005; accepted 28 February 2006

Abstract

This paper explains how excess reserves are relevant for today's central banks in the implementation of monetary policy, focusing on the specific case of the policy framework of the European Central Bank (ECB). In particular, this paper studies the impact that changes to the operational framework for monetary policy implementation have on the level and volatility of excess reserves. A transaction cost model that replicates the intra-reserve maintenance period pattern of excess reserves is developed. Simulation results presented show that both the level and volatility of excess reserves may increase considerably under some changes to the operational framework. This is important as errors in forecasting excess reserves weaken the central bank's control of short-term interest rates.
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JEL classification: E52; E58

Keywords: Excess reserves; Monetary policy implementation; Liquidity management

1. Introduction

Excess reserves refer to the current account holdings of banks with their central bank beyond required reserves. In the past, excess reserves were regarded as playing the key role in the transmission of monetary policy. Banks were perceived as being more inclined to provide loans to corporates or households when the volumes of excess reserves were high. Open market opera-

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doi:10.1016/j.jpolmod.2006.02.006

tions were therefore – at least in theory – conducted with the main objective of steering the level of excess reserves. This view on monetary policy implementation was referred to as ‘Reserve Position Doctrine’ (RPD).[1] While it plays less of a role in current academic debate, it still populates monetary policy textbooks in the form of the money multiplier concept, which, although justifiable only in a RPD context, seems still to be considered as a useful pedagogical tool.

The role of excess reserves was redefined at the beginning of the 1990s when central banks returned to more explicit interest rate targeting. Although they are no longer seen to play a role in the *transmission* of monetary policy, excess reserves still represent a significant challenge to the *implementation* of monetary policy. A central bank’s objective of steering interest rates is achieved by managing the conditions that equilibrate supply and demand in the market for bank reserves. So when assessing the liquidity needs of the banking system, it is necessary to take into account the expected value of excess reserves. Even very small errors in the forecast can have an immediate impact on the overnight rate. Systematic errors could have an effect on the rest of the short-term yield curve. It is therefore a precondition of effective monetary policy implementation to understand the logic which drives the level of excess reserves.

This paper therefore explains what is behind excess reserves and explains how they are relevant for monetary policy implementation in the Eurosystem. It also studies the impact that changes to the operational framework for monetary policy implementation have on the level and volatility of excess reserves. A simple ‘transaction costs’ model of excess reserves is developed to address these issues. Starting from the observation that in the euro area excess reserves can in principle always be avoided by recourse to the remunerated deposit facility, transaction costs are modelled as the costs to remain in the office until the last payments have been settled. The results show not only that excess reserves may increase considerably under some changes of the framework for monetary policy implementation, but also that such changes could lead to higher volatility and unpredictability. This would cause an increase of the volatility of the overnight rate if not addressed through further policy measures, such as an increase of the frequency of open market operations.

The model developed in this paper follows the precautionary demand models of Orr and Mellon (1961) and Poole (1968) that suggested that the demand for excess reserves should be negatively correlated with the level of interest rates and positively correlated with the magnitude of payment shocks. This result was also confirmed for the US by Dow (2001).

Section 2 provides a general short review of the role of excess reserves in monetary policy. Section 3 presents the relevant aspects of the liquidity policy of the Eurosystem and highlights the importance of understanding the dynamics of excess reserves in this context. Section 4 develops a simple economic model of the daily pattern of excess reserves within the maintenance period in the euro area. Section 5 reports a number of simulation experiments that illustrate how changes in the operational framework of monetary policy and changes in the level of short-term interest rates could potentially impact on excess reserves and on the conduct of monetary policy. Section 6 concludes.

2. The perceived role of excess reserves in the theory of monetary policy

In the 19th century and until around 1920, central bank policy implementation was perceived as short-term interest rate policy in the form of ‘bank rate’ (i.e. discount rate) policy. This perception

[1] The term ‘Reserve Position Doctrine’ is due to Meigs (1962, pp. 7–22).

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