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Liquidity provision in the overnight foreign exchange market

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Abstract

We present evidence that non-financial customers are the main liquidity providers in the overnight foreign exchange market using a unique daily data set covering almost all transactions in the SEK/EUR market over almost 10 years. Two main findings support this: (i) the net position of non-financial customers is negatively correlated with the exchange rate, opposed to the positive correlation found for financial customers and (ii) changes in net position of non-financial customers are forecasted by changes in net position of financial customers, indicating that non-financial customers take a passive role consistent with liquidity provision.

JEL classification: F31; F41; G15

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1. Introduction

The provision of liquidity is important for well-functioning asset markets. Liquid markets match counterparties well (immediacy), have low transaction costs (tight spreads), and are less volatile (O'Hara, 1995).

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In this paper, we study liquidity provision in the foreign exchange market. A central question raised is the following: who is providing liquidity? The conventional wisdom is that market making banks are the main liquidity providers in floating exchange rate regimes. However, from the studies by Lyons (1995) and Bjønnes and Rime (in press) we know that dealers of market making banks have only limited overnight positions and cannot be expected to take lasting open positions. Hence, market making banks provide liquidity intraday, but are less likely to provide liquidity on longer horizons. In this paper, we empirically investigate whether there is a particular group of market participants that act as liquidity providers overnight. To address this question, we use a unique data set from the Swedish krona (SEK) market that contains observations of 90–95% of all transactions in five different instruments on a day-to-day basis from the beginning of 1993 up to the summer of 2002.

The study of liquidity in the foreign exchange market is particularly interesting for at least two reasons. First, our understanding of the movements of floating exchange rates is rather poor, and better knowledge of how the market works may improve our understanding. Second, as a largely unregulated market, patterns of liquidity provision have evolved endogenously. This is in contrast to several equity markets where, e.g., market makers have obligations to provide liquidity. Daníelsson and Payne (2002) study intraday liquidity in an electronic FX order book. The present paper is to the best of our knowledge the first to study liquidity in a longer perspective for the foreign exchange market.

Our data allow us to distinguish between four distinct groups of market participants: (i) Market making banks; (ii) Financial customers; (iii) Non-Financial customers; and (iv) the Central Bank (Sveriges Riksbank). Currently there is no other data set on the foreign exchange market that gives such broad overview of the trading of a single currency. A notable feature of our data is that the flows of different customers (Financial, Non-Financial, and the Central Bank) will equal the flow of Market making banks.[1] If flows of one group of participants are positively correlated with changes in the foreign exchange rate, we will see a negative correlation for another group, or groups, of participants.

How can we identify the liquidity provider? The theory of market making predicts that a positive demand shock (i.e., a purchase by the aggressive part in the trade) will lead the market maker to revise prices upwards, hence a positive contemporaneous correlation between the trading decision of the aggressive part and the change of the exchange rate.[2] The supplier of the asset, e.g., a market maker, will fill the role of liquidity provider. There are in particular two characteristics of liquidity providers: (a) the net flow of liquidity providers will be negatively correlated with the change in the value of the currency and (b) liquidity providers match others' demand and supply passively.

[1] We use the term "flow" for changes in position.

[2] Using the terminology of microstructure, a purchase by the aggressive part in the trade is a positive *order flow*, while a sale is negative. We use the phrase "aggressive part" instead of "initiator"or "aggressor" which is more common in microstructure, because a non-market making liquidity provider may also "initiate" trades. Strictly speaking, only market makers do not initiate trades.