Available online at www.sciencedirect.com
ScienceDirect
Pacific-Basin Finance Journal 15 (2007) 173 – 194
PACIFIC-BASIN FINANCE JOURNAL
www.elsevier.com/locate/pacfin

Herding and the information content of trades in the Australian dollar market ☆

Andrew Carpenter [a], Jianxin Wang [b,*]

[a] *UBS Warburg, Sydney, Australia*
[b] *School of Banking and Finance, University of New South Wales, Sydney, 2052 Australia*

Received 22 November 2005; accepted 16 June 2006
Available online 17 October 2006

Abstract

This study shows that the information content of FX transactions depends on the identity of market participants. Using spot FX transactions of a major Australian bank, we find that central banks have the greatest price impact, followed by non-bank financial institutions (NBFIs) such as hedge funds and mutual funds. Trades by non-financial corporations have the least impact on dealer pricing. In the interbank market, dealers with greater private information tend to choose direct trading which has lower post-trade transparency. Indirect trading via brokers is partially revealed to the market and has little price impact. The price impact largely comes from institutions in the top quartile of the trading volume. Furthermore, NBFIs have the greatest propensity for herding, followed by interbank dealers. Non-financial corporations do not herd in their trades. Except for central banks, the differential impact of market participants can largely be explained by their propensity for herding.

JEL classification: F31; F33; G14; G15
Keywords: Microstructure; Foreign exchange markets; Price impact; Asymmetric information; Transparency; Trading volume; Herding

☆ We thank Geir Bjønnes, Doug Foster, Julia Henker, Anthony Richards, an anonymous referee, and seminar participants at the Reserve Bank of Australia and the annual meeting of the European Finance Association for their comments. We also thank PriceWaterhouseCoopers and SIRCA for their help in obtaining the data. Andrew Carpenter is grateful to SIRCA who provided financial support during his honours study. All errors are our own.
* Corresponding author. Tel.: +61 2 9385 5863; fax: +61 2 9385 6347.
E-mail address: jx.wang@unsw.edu.au (J. Wang).

0927-538X/$ - see front matter.
doi:10.1016/j.pacfin.2006.06.002

1. Introduction

A fundamental difference between the foreign exchange (FX) market and equity markets is the nature and the distribution of private information. In equity markets, private information is primarily on the future cash flow of the company. It is well-known that corporate insiders and institutional investors have better information than individual investors. Such an information structure is critical to the standard models of price discovery where market makers are assumed to be uninformed and extract information from order flows. It also motivates the study of the behavior of differentially informed investors such as insiders and institutional investors.

In the FX market, trading is decentralized and opaque. Private information includes signals on macro fundamentals as well as customer-dealer trades which determine the imbalance of demand and supply in the interbank market. Although some important progress has been made recently, we still know very little of the nature of private information in the FX market. Unlike equity markets, the FX market is overwhelmingly dominated by institutional participants. A study of heterogeneous information across market participants will shed light on the sources of information for FX dealers, and in turn, the nature of private information in the FX market.

This paper is an empirical examination of the price impact from different participants in the FX market. The price impact reflects the information content of trades from different investor groups thus revealing the sources of private information in FX trading. Although one would not expect the equivalent of corporate insiders in the FX market, market participants have different price impact. First, order flows from different market participants may have different information content regarding macro fundamentals. For example, financial institutions often hold interest-rate sensitive assets in different currency denominations and have speculative views on future changes in interest rates and inflation in different countries. These views in turn affect their reactions to macroeconomic announcements (Evans and Lyons, 2003). By differentiating investor groups, FX dealers are able to extract and aggregate these speculative views through trading. Second, order flows may affect exchange rates through the portfolio balancing effect (see Lyons, 2001, chapter 2, and Evans and Lyons, 2005). By itself, each trade affects portfolio balancing by its size, not its origin. However, if some order flows convey more information about their own future flows or market-wide order flows, then these orders may have greater price impact than others.

The importance of differentiating investors has long been recognized in studies of financial markets. There is a large body of literature on the behavior and market impact of corporate insiders, large institutions, and individuals. However, due to data limitation, we are not aware of any study of equity trading that jointly estimates the price impact of different investor groups in real time. Recent studies of FX microstructure also examine heterogeneous groups in the FX market. Wei and Kim (1997) find trades by "big players" are a major source of FX volatility but do not have significant information content. However Froot and Ramadorai (2005) find institutional order flows carry information on future excess currency returns. Lyons (2001, chapter 9) reports that leveraged and unleveraged financial institutions have different market impact in different currency markets. Bjønnes and Rime (2001, 2002) show customer trading has greater price impact than interbank trading.

Our estimation of price impact is in the same spirit as Lyons (2001) and Bjønnes and Rime (2001, 2002), with several distinct features. Lyons uses monthly data and demonstrates differential price impact from three customer groups: leveraged and unleveraged financial institutions, and non-financial corporations. We use tick-by-tick data and examine the relationship between the dealer's pricing and his current and previous trades. The results show a direct link between transactions by different market participants and subsequent price changes, and add