Available online at www.sciencedirect.com
SCIENCE DIRECT®
ELSEVIER
Journal of International Money and Finance 25 (2006) 199–219
Journal of International Money and Finance
www.elsevier.com/locate/econbase

Effectiveness of official daily foreign exchange market intervention operations in Japan

Rasmus Fatum [a,1], Michael Hutchison [b,*]

[a] *Department of Marketing, Business Economics and Law, University of Alberta School of Business, Edmonton, Alberta, Canada T6G 2R6*
[b] *Department of Economics, University of California, Santa Cruz, CA 95064, USA*

Abstract

This paper investigates the effectiveness of intervention in the JPY/USD exchange rate market using recently published official daily data on Bank of Japan intervention and an event study methodology. We identify separate intervention "episodes" and analyze the subsequent effect on the exchange rate. Using the non-parametric sign test and matched-sample test, we find strong evidence that sterilized intervention systemically affects the exchange rate in the *short-run* (less than one month). This result holds even when intervention is not associated with (simultaneous) interest rate changes, whether or not intervention is "secret" (in the sense of no official reports or rumors of intervention reported over the newswires), and against other robustness checks.

JEL classification: F31; F33; F42; G15

Keywords: Central bank intervention; Bank of Japan; Exchange rates

1. Introduction

The effectiveness of sterilized foreign exchange intervention has been the focus of an ongoing and unresolved controversy since the Jurgensen (1983) report was published by G-10

* Corresponding author. Fax: +1 831 459 5077.
E-mail addresses: rasmus.fatum@ualberta.ca (R. Fatum), hutch@cats.ucsc.edu (M. Hutchison).
[1] Fax: +1 780 492 3325.

0261-5606/$ - see front matter
doi:10.1016/j.jimonfin.2005.11.007

central banks almost 20 years ago. In theory, sterilized intervention may be effective, working through portfolio balance, signaling and noise trading channels. However, empirical support for the effectiveness of intervention, usually based on Bundesbank and Fed interventions, is mixed (see Dominguez and Frankel, 1993; Sarno and Taylor, 2001, for a recent survey of the literature). Nonetheless, policy makers – judging from their actions – view sterilized intervention as an instrument for policy. Reviewing the empirical evidence, Obstfeld and Rogoff (1996, p. 595) conclude: "In any event, governments plainly believe that sterilized intervention has its uses, for they continue to practice it despite the lack of any hard evidence that it is consistently and predictably effective".

Empirical studies to date, however, have not analyzed Japanese *official* intervention data since the Ministry of Finance (MoF) did not make this publicly available until July 2001. The MoF now discloses, with a 1–3 month delay, the day of intervention, the amount of yen intervention (bought and sold by its agent, the Bank of Japan (BoJ)) and the currency of intervention. Whether or not sterilized intervention is effective in Japan is particularly important at the present juncture since, in the current zero-interest rate environment, there is seemingly no room for additional monetary policy stimulus to support foreign exchange operations.

More broadly, this is an important omission in our understanding over the effectiveness of intervention since Japan is by far the largest participant among governments in the foreign exchange market. As Table 1 shows, over the April 1991–December 2000 period, the BoJ bought (sold) US dollars on 168 (33) occasions for a cumulative amount of \$304 billion (\$38 billion). This dwarfs all other official intervention in the foreign exchange market. For example, Japanese intervention was greater than US intervention over the same period by a factor of more than 30 and is also much greater than the Bundesbank intervention operations (when Bundesbank was responsible for exchange rate policy in Germany).

Previous studies of Japanese intervention have relied on monthly/quarterly changes in foreign exchange reserves and data on foreign exchange transactions from the supply and demand for funds in Japanese money markets (e.g. Glick and Hutchison, 1994, 2000; Watanabe, 1994) or, for daily data, newspaper reports of intervention activity (Ito and Roley, 1987; Galati and Melick, 1999; Ramaswamy and Samiei, 2000). As is well known, however, changes in reserves and newspaper reports are unreliable measures and therefore poor proxies for official intervention operations. Another early paper using the newly available Japanese intervention data is a study by Ito (2002). He investigates the profitability of intervention, the authorities reaction function, and intervention effectiveness within the context of a GARCH time-series model.

The objective of this paper is to explore the effectiveness of official Japanese intervention operations in moving the exchange rate and whether intervention might be viewed as a useful policy instrument, especially in a period of interest rate inflexibility (e.g. zero-interest rates). In order to address the issue of effectiveness, the methodological starting point of this paper follows Fatum and Hutchison (2003) by recognizing that standard time-series techniques are not well suited to the analysis of intervention vis-à-vis the behavior of exchange rates. Exchange rates are typically highly volatile on a day-to-day basis while, on the other hand, intervention tends to come in sporadic clusters – viewed in this light it is perhaps not surprising that time-series based studies tend not to find strong evidence for a systematic link between exchange rate movements and intervention operations. Although standard time-series techniques are somewhat problematic when dealing with data on exchange rates and intervention, the event study approach used in the finance literature fits very well. Specifically, a cluster of intervention