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# Foreign exchange market intervention: implications of publicly announced and secret intervention for the euro exchange rate and its volatility

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## Abstract

This paper explores the effects of foreign exchange market intervention by the European Central Bank and the Bank of Japan upon the conditional mean and variance of the euro–dollar and euro–yen exchange rates. To investigate whether the secrecy of intervention matters, we consider GARCH specifications revealing significant differences between publicly announced and secret interventions. While little evidence is found for the effectiveness of ECB intervention, the motivation is more clear for the Bank of Japan. Moreover Granger causality tests support a significant relationship between the bid–ask spread and conditional volatility only in the case of the JPY/EUR exchange rate indicating that intervention operations by the BoJ increased the uncertainty in the market.

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## 1. Introduction

Three years after the launch of the euro (January 1, 1999) economists and policy makers still lack conclusive evidence on the effects of central bank intervention in the euro market. Concerns over the possible effects of the euro's weakening have prompted the European Central Bank (ECB) to intervene in the foreign exchange market in support of the euro. The Bank of Japan (BoJ)<sup>1</sup> also intervened on several occasions using the euro as the intervention currency.

A sizeable literature has developed over recent years on estimating the effects of central bank intervention on the behaviour of exchange rates. The empirical work, which mainly examines US dollar bilateral rates, has tried to assess whether intervention can influence the mean and the variance of the exchange rate. The final outcome depends on the efficiency of the foreign exchange market, the secrecy of the operation and, finally, on whether or not the intervention is combined with domestic money supply targeting. Taken together, the results from both the theoretical and empirical analysis (for a review see [Sarno and Taylor, 2001](#)) suggest that, while the evidence as regards the effects of intervention on the conditional or unconditional volatility of the exchange rate is unambiguous, the effects on the mean are still debatable.

Despite extensive empirical work using US dollar exchange rates, empirical tests of hypotheses regarding euro exchange rates are still lacking. In this paper we try to fill this gap by focusing on euro bilateral exchange rates, and in particular on the euro–dollar (USD/EUR) and euro–yen (JPY/EUR) exchange rates. During the period under examination (January 4, 1999–June 30, 2001), interventions were undertaken by the ECB to support the euro against the dollar, and by the BoJ to moderate the yen's strength against the euro. The reading of these central banks' past minutes and/or official announcements reveals their belief that intervention operations can be an effective policy tool capable of influencing exchange rates.

The interventions undertaken by the ECB were made public. On the other hand, the BoJ operated secretly and in order to identify the intervention days we had to go through the financial news in the *Financial Times*. It is of particular interest to investigate the response of the euro exchange rate to both types of central bank intervention and examine whether the distinction between secret and publicly announced intervention matters.

The remainder of this paper is organised as follows. [Section 2](#) examines the theoretical foundations of intervention and reviews the empirical work. [Section 3](#) tests for the effects of intervention operations undertaken by the ECB and the BoJ on the euro exchange rate. [Section 4](#) investigates the relationship between conditional volatility measures and the bid-ask spread. Finally, [Section 5](#) summarises the results and concludes.

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<sup>1</sup> The expression “Bank of Japan intervention,” often used, might be misleading since the Bank of Japan, as the agent of the Ministry of Finance, executes foreign exchange intervention operations in accordance with the directions of the Ministry of Finance.

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