

# Reported and Secret Interventions in the Foreign Exchange Markets\*

by

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## Abstract

*Using a new approach relying on news wire reports, we estimate the proportion of secret interventions (i.e., unreported official interventions) in the foreign exchange markets that have been conducted by the three major central banks since 1985. We therefore revisit the estimation of conditional probabilities of secret operations and compute them by both central bank and operation type. The proportion of secret interventions is found to be lower for concerted operations and to display a great deal of variability over time as well as across the three major central banks.*

*JEL Classification:* E58, F31, G15

**Keywords:** Foreign exchange market; central bank interventions; secret operations

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\* This paper has benefited from useful comments from G. Janssen. We also thank P. Buchanan for editorial assistance. Of course, the usual disclaimer applies.

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## 1. Introduction

Direct purchases or sales of foreign currency are one of the stabilization tools in the hands of central banks. Some of the major central banks have used this instrument recently, for example, the European Central Bank (ECB) on several occasions in 2000, and especially the Bank of Japan (BoJ) in 2000, 2002, and 2003. This is despite the fact that such operations have been shown to be ineffective, as documented in the empirical literature (Dominguez 1998; Beine et al. 2002). The main body of the literature reveals that these operations do not move the exchange rate very successfully in the desired direction except in the very short run (Dominguez 2003a; Payne and Vitale 2003). Furthermore, such interventions generally increase foreign exchange volatility (Beine et al. 2003).

The empirical literature has shown that the *type* of operation conducted in the foreign exchange (FX) market is important. Several operation types have been put forward. One category differentiates unilateral interventions—those conducted by a single central bank—from coordinated interventions that are conducted jointly by the two central banks toward the same objective. Catte et al. (1992) show that coordinated interventions have a larger impact, a result confirmed by subsequent studies. Another category assesses the prevailing state of the market at the time the operations are conducted. Beine et al. (2003) show that coordinated interventions, depending on the prevailing level of volatility, may increase or lower market uncertainty. Dominguez (2003b) finds that interventions have larger price effects in the very short run when the flow of macroeconomic news is relatively strong. Finally, another crucial category separates secret interventions, i.e., official interventions that are unknown to market participants, from “public” interventions reported in the press. This paper revisits the last category.

Most recent operations conducted by the major central banks are reported (by the central bank themselves) to have been sterilized. This rules out any monetary channel as the main channel of influence. Sterilized exchange rate interventions are said to exert different impacts depending whether they are unknown or known to the market. Referring to the well-known signalling channel for these interventions<sup>1</sup> (through which), it might be difficult to justify the use of secret rather than “public” interventions. This has led to the so-called secret

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<sup>1</sup> The signaling channel basically states that central banks convey some information to market participants when they intervene.

intervention puzzle (Sarno and Taylor 2001).<sup>2</sup> Quite recently, however, relying on the microstructure approach to exchange rates, some authors like Evans and Lyons (2001) found a certain amount of support for an effective portfolio channel in the presence of asymmetric information. Significantly, their analysis assumes that the central bank trades are anonymous, i.e., that traders are not able to identify the origin of the order flow involved by the operation.<sup>3</sup> The distinction between secret and reported interventions is therefore of overwhelming importance to measure the price impacts of these interventions and to identify the operative transmission channel.

This paper re-examines the procedure used to isolate secret interventions from the reported ones. We employ a new identification scheme that overcomes most of the limitations that result from using financial newspapers. Our analysis is conducted over the longest period for which data are available for the two major FX markets, i.e., the Euro (deutsche mark or DEM before 1999) against the U.S. dollar (USD), and the Japanese yen against the USD. This paper makes an interesting contribution to the literature by estimating conditional probabilities of reported and secret interventions, not only by central bank (as proposed in the previous literature) but also by the type of operation (coordinated vs. unilateral). We show that the latter distinction further explains these probabilities. Finally, our analysis allows us to document the evolution of the proportion of the secret interventions over time. While most researchers have recently concluded that secret interventions were outdated and not used anymore by the major central banks, we show that such operations have recently been favored by the BoJ, which is by far the most active central bank on the FX markets.

The paper is organized as follows: Section 2 discusses our identification procedure; Section 3 analyzes our results and compares our estimations with the ones proposed in previous studies; Section 4 addresses the question of the evolution over time of secret interventions; and Section 5 concludes.

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<sup>2</sup> This puzzle is also clearly identified by Neely (2000) in his survey of practices of central bank intervention. In this respect, the disagreement among central banks on the perceived impact of secret interventions is significant: some authorities mention to rely on secret interventions to maximise the market impact while other clearly think that these practices tend to minimise the market impact.

<sup>3</sup> Another rationale of the secret interventions has been proposed in the theoretical literature. For example, see Vitale (1999).

## 2. Identification procedure

Before looking at our identification method for secret operations, we will clarify how the term “secret interventions” is used in this paper.<sup>4</sup> An intervention is considered secret if, and only if, it has not been reported to market participants on the day the intervention was carried out by the one or two involved central bank(s).

While this definition is a usual one in the literature, such a choice has some implications and should be explained. First, the secret (vs. the reported) interventions are separate from the official interventions data transmitted by the three central banks. Our analysis excludes the numerous false rumors (interventions spuriously reported to the market) that exist, for example, on the YEN-USD market. Such a choice also significantly eliminates any confusion between those interventions conducted to affect exchange rates and the treasury operations carried out to provide needed amounts of foreign currencies to, for instance, the government. Second, we consider a particular intervention secret if an official intervention was not reported by the press the same day of the operation even if it was reported the next day(s).<sup>5</sup> This choice originates from the fact that secret interventions play an important role in explaining the impact of central bank trades in the very short run, as supported by the microstructure approach to exchange rates (Lyons 2001).

By definition, secret interventions are not directly observable. Therefore, the distinction between reported and secret operations necessitates some procedure to identify whether market participants were informed that the central bank was in the market. Previous studies used reports from financial newspapers to identify these reported (or perceived) interventions but did not assess the accuracy of the reports. Bonser-Neal and Tanner (1996) used reports in the *Wall Street Journal* over the 1985–1991 period and estimated conditional probabilities of reported interventions for the Fed and the Bundesbank. Dominguez (1998) applied basically the same approach over an extended sample period, but used several different newspapers

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<sup>4</sup> In practice, central banks could keep their intervention operations secret for different reasons. See Lecourt and Raymond-Feingold (2003) for a description of these motives.

<sup>5</sup> Such a case was encountered very often in the YEN-USD market in the recent period. Indeed, while there seems to be a deliberate strategy of secrecy adopted by the BoJ in its recent intervention policy, the Japanese authorities usually admitted the interventions a few days later. The same applies to the operations on the DEM-USD market in the first part of our investigation period (1985–1991).

rather than just one.<sup>6</sup> While interesting, this procedure appears to identify a small number of reported interventions, for two main reasons. First, if only one or a few information sources are used, it is likely that some news press reports were transmitted to the market without these newspapers being aware of the fact, even if traders reported the information.<sup>7</sup> Second, some informed traders might be willing to take advantage of the information and not release the information right away. News wire reports, however, *are* likely to report the intervention, provided that at least one trader releases the information.<sup>8</sup> It is therefore likely that the previous approaches underestimated the number of reported interventions. Using perceived interventions of the BoJ on the YEN-USD market reported by the Reuters news wire service, Galati and Melick (1999) indeed found, by cross-checking with the Bonser-Neal and Tanner (1996) data set, that the news wire reports captured many more intervention episodes.<sup>9</sup>

Our identification procedure collects news wire reports of Reuters and Bloomberg. These reports are assembled using an online database, Factiva, which offers a wide choice of search tools and interesting search features. For example, one can set search parameters such as the source, date of the report, type of report, keywords in the report, and location of keywords (title, headline, or whole text).<sup>10</sup> Furthermore, the database covers the beginning of our sample of official interventions (1985 for the DEM-USD) and includes the most recent reports, which are useful for the BoJ operations. The search engine allows the same search procedure to be conducted for the whole period, ensuring a meaningful investigation of the evolution of the secret operations over time.

Our search procedure uses the same set of keywords for the entire period.<sup>11</sup> We search for one of these keywords in the whole text of the report transmitted to market participants the day of

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<sup>6</sup> Beine et al. (2002) also followed the same approach to extract the secret and the reported interventions.

<sup>7</sup> Comparing the data of actual BoJ interventions with press reports of BoJ interventions published in the financial press during the period 1995–1999, Frenkel et al. (2002) find that press reports are a relatively inaccurate indicator for the actual interventions behavior of the BoJ.

<sup>8</sup> Dominguez (2003a) finds that some traders know that the Fed is intervening at least one hour prior to the public release of the information by the news wire reports. As Dominguez points out, central banks have generally developed relationships with commercial banks in a such a way that allows them to inform the market of their presence within minutes of the intervention operations or to keep them secret.

<sup>9</sup> Nevertheless, since they do not rely on official data (which was impossible at that time for the BoJ operations), their data include false rumors, i.e., episodes when traders spuriously think that the central bank was conducting some intervention.

<sup>10</sup> Other options, such as language, can also be specified in the search.

<sup>11</sup> For the DEM-USD, the keywords are the following : interventions, Federal Reserve, Bundesbank. For the YEN-USD, the keywords are interventions, Federal Reserve, Bank of Japan, and Ministry of Finance. The last keyword was added because the Japanese Ministry of Finance is the authority that decides whether or not to intervene.

the official intervention.<sup>12</sup> The intervention is considered “reported” if the news clearly states that the bank or banks were seen to have intervened. We restrict our sources to the Bloomberg and Reuters reports, which are considered the main information providers to the traders.

### 3. Conditional probabilities of secret interventions

#### 3.1 Results by central bank

Tables 1 and 2 show the number of official and reported interventions in two FX markets as well as the conditional probabilities of secret interventions, calculated by central banks. The statistics cover the whole period (which depends on the availability of official interventions data) and as well as specific sub-periods corresponding to different intervention policies identified in previous literature. For the DEM, we single out a pre-Louvre period (early 1985–February 1987) including the Plaza Agreement of September 1985; a post-Louvre period (1987–1991) characterized by some intense activity in the FX market; the period 1985–1995 that was characterized by relatively frequent operations by both banks. This last sub-period contrasts with the period after 1995 during which both the Bundesbank (the ECB) and the Fed were fairly reluctant to intervene. These sub-periods were also chosen for comparison with previous estimations of the conditional probabilities of secret interventions that were proposed, for instance, by Bonser-Neal and Tanner (1996) and Beine et al. (2002).

For the yen, we consider three separate sub-periods: a pre-Sakakibara period (1991–June 1995) during which the Fed conducted a significant number of coordinated interventions with the BoJ; a post-Sakakibara period (1995–2002) characterized by very few interventions of the Fed and a new BoJ intervention policy of less frequent but much more massive operations (see Ito 2002);<sup>13</sup> and a very recent period (2003) characterized by a lower degree of transparency in the FX operations.

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<sup>12</sup> Due to the different market opening times, we also investigate the occurrence of reports the day *before* the occurrence of the BoJ official interventions. Indeed, given that the timing of the reports is expressed in American Eastern times, it might be that such intervention takes place at day (t-1) American time if it occurs just after the opening of the Tokyo market.

<sup>13</sup> Dr. Sakakibara was the new Director General of the International Finance Bureau of the Japanese Ministry of Finance in charge of the conduct of FX interventions starting in June 1995. Under his jurisdiction, the BoJ intervention policy became less frequent and predictable, whereas the intervention amounts increased.

Sample period	Federal Reserve			Bundesbank		
	Official*	Reported**	Secret (%)***	Official*	Reported**	Secret (%)***
1985–1987	22	2	90.91	62	10	83.87
1987–1991	176	135	23.29	188	146	22.34
1985–1991	198	136	31.31	250	155	38
1985–1995	215	151	29.77	264	164	37.88
1985–2003	216	152	29.63	268	168	37.31

\* Number of days the central bank intervened  
\*\* Number of days there was a report of interventions on the day of an official intervention  
\*\*\* Number of secret interventions divided by the number of official interventions

**Table 1. Number of intervention days on the DEM**

When comparing our estimations with those of Bonser-Neal and Tanner (1996) and Beine et al. (2002) for the DEM-USD,<sup>14</sup> a few comments are in order. First, we obtain results that are both similar to and divergent from those of the previous estimations. For the period 1985–1995, our estimates of the proportion of secret interventions are very similar to Beine et al. (2002) for both central banks.<sup>15</sup> Nevertheless, two important differences emerge. First, we obtain many more secret interventions for the pre-Louvre period. This discrepancy can be partly explained by our definition of secret interventions that is more oriented toward a “microstructure” interpretation. Indeed, over this period, many interventions were confirmed either by traders or by central banks the day(s) following the intervention. While reported in the press, the market participants were nevertheless unaware of these operations on the actual day they occurred.<sup>16</sup> Second, after the Louvre Agreement, we found the Bundesbank much more transparent, i.e., using fewer secret interventions than suggested by Bonser-Neal (1996).<sup>17</sup> Such a finding might be explained by an additional factor—the downward bias of reports on non-Fed operations because U.S. newspapers such as the *Wall Street Journal* were used. In contrast, using worldwide news wire services allows us to minimize such a bias.

<sup>14</sup> The comparison applies especially to the DEM-USD market. For the YEN, the previous studies could not assess the proportion of the secret interventions of the BoJ since the official data were unavailable.

<sup>15</sup> For the 1985–1995 period, Beine et al. (2002) found 31.6% and 43.5% of secret interventions respectively for the Fed and the Bundesbank.

<sup>16</sup> Another consistent explanation may lie in the efficiency of wire reports at that time but the size of the discrepancies obviously cannot be explained entirely by this factor.

<sup>17</sup> Bonser-Neal and Tanner (1996), over the 1985–1991 period, obtain 15.07% and 47.5% secret interventions respectively for the Fed and Bundesbank.

Sample period	Federal Reserve			Bank of Japan		
	Official*	Reported**	Secret (%)***	Official*	Reported**	Secret (%)***
1991–1995	18	16	11.11	158	126	20.25
1995–2002	6	5	16.67	48	28	41.67
1991–2002	24	21	12.50	206	154	25.24
2002–2003	0	0	0.00	35	13	62.86
1991–2003	24	21	12.5	241	167	30.71

\* Number of days the central bank intervened  
\*\* Number of days there was a report of interventions on the day of an official intervention  
\*\*\* Number of secret interventions divided by the number of official interventions

**Table 2. Number of intervention days on the YEN**

Tables 1 and 2 reveal interesting features on interventions. On average, the Fed is found to be more transparent than the two other central banks. This might be explained partly by the fact that the Fed relies more on coordinated interventions that are easily detected on the markets. Nevertheless, other factors suggest that the Fed has always been more eager to promote greater transparency than have the other central banks. For instance, the Fed was the first major central bank in the early nineties to release data on official interventions.<sup>18</sup> While the Bundesbank followed the Fed's example, the new ECB has up to now refused to release the size of its operations to external researchers. The BoJ made the data available only in 2000.

Over the full period, the Bundesbank and the BoJ seem to use a similar proportion of secret operations. Nevertheless, Table 1 suggests that the bulk of secret interventions of the Bundesbank was concentrated before the Louvre Agreement while the BoJ recently relied on such a policy.

### ***3.2 Results by type of operation***

Unlike the previous literature, we also estimated conditional probabilities by type of operation rather than by central bank. An intervention is said to be coordinated if both banks intervened the same day and in the same direction on the same market. In contrast, a particular intervention is said to be unilateral when the operation is carried by a single central bank. In Table 3, a coordinated operation is considered reported if at least one central bank was detected by market participants.<sup>19</sup>

<sup>18</sup> This transparency policy was led by the secretaries of the treasury, Rubin between 1995 and 1999, and Summers between 1999 and 2001.

<sup>19</sup> Alternatively, one could make the distinction between banks and consider a coordinated intervention as reported only if the two central banks were detected by market participants. Using this definition, we obtain similar results (albeit of course higher proportions of secret interventions). The results are available upon request.



Sample period	Deutschemark			Sample period	Yen		
	Coordinated*	Unilateral Fed**	Unilateral Buba**		Coordinated*	Unilateral Fed**	Unilateral BOJ**
1985–1987	86.67	100	70.21	1991–1995	0	0	21.43
1987–1991	6.00	36.84	34.09	1995–2002	16.67	0	45.24
1985–1991	17.39	42.17	49.63	1991–2002	4.17	0	26.92
1985–1995	16.8	40.00	51.08	2002–2003	0	0	62.86
1985–2003	16.67	40.00	50.00	1991–2003	4.17	0	32.72

\* Number of secret coordinated interventions divided by the number of official coordinated interventions  
\*\* Number of secret unilateral interventions of the bank in the respective currency divided by the number of official unilateral interventions of this bank in this market

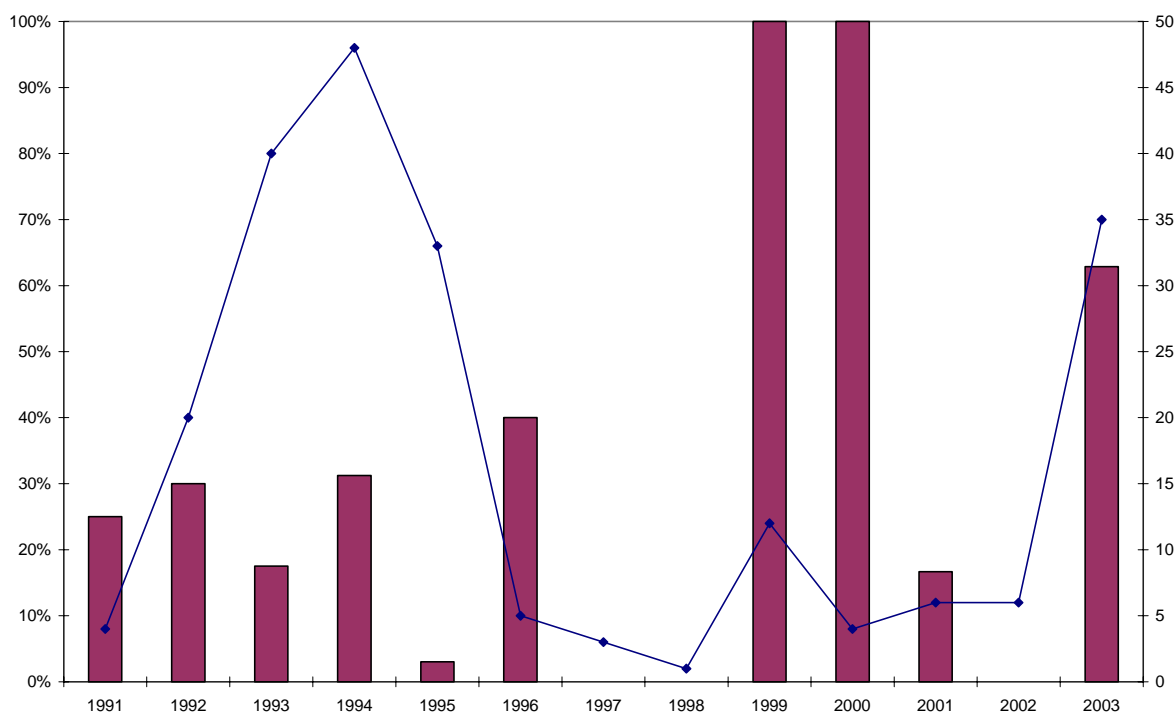
**Table 3. Proportions of secret interventions by type (in percentages)**

A striking result in Table 3 is that the proportion of secret interventions is much lower for coordinated operations than for unilateral. It should be emphasized that this is not entirely due to the magnitude of the sales or purchases as modest coordinated operations after 1987 were systematically detected by market participants. This result has strong implications for the strategies of central banks. By choosing to coordinate with another central bank, monetary authorities implicitly reject hiding their operations from market participants. The choice to coordinate interventions could also mean that the central banks are implicitly choosing to use the signalling channel as the main vector of influence on the FX rates. This conclusion is similar to one reached by Chiu (2003) regarding the main determinants of transparency in FX operations conducted by central banks.

### **3.3 Evolution over time**

Tables 1 to 3 also suggest that the policy regarding secret operations has evolved significantly over time for all central banks. Nevertheless, there seems to be a significant degree of heterogeneity across central banks with respect to the pattern of the proportion of secret operations.

For the Fed and the Bundesbank, after a first period of intense secret operations, there was an obvious shift toward more transparent operations, even for unilateral interventions. While the central banks still used secret operations after 1991, the majority of their operations were reported by market participants. On the whole, this picture is more or less consistent with the view of several authors on more transparent exchange rate policies over time



**Figure 1. Conditional probabilities over secret unilateral intervention of the BoJ**

For the BoJ, however, our estimations reveal quite a different story. Figure 1 reports the proportion of unilateral secret interventions of the BoJ (bars – left axis) along with the total number of official interventions over time (line – right axis). The BoJ obviously decided to increase its transparency during several sub-periods. For instance, by using large amounts of sales and purchases after June 1995, Dr. Sakakibara adopted a clearly transparent exchange rate policy. This was also the case in the years 2001 and 2002. Nevertheless, quite recently, a shift took place in favor of secret operations in the FX market. While there may be several reasons for this shift, one possible explanation lies in the disagreement between the Japanese authorities and other central banks (especially the Fed) about the opportunity to manage the exchange rate. Whatever the reason, the recent Japanese FX policy shows that secret operations are occurring in the present day and that there is room for a possible portfolio channel along the lines proposed by Evans and Lyons (2001).

#### **4. Conclusion**

This paper revisits the identification of secret and reported interventions carried out by the major central banks in the FX market. Using news wire reports of major news providers that have been collected in a new database, we have estimated the proportion of secret interventions over the longest possible periods. Several new findings emerge from this

exercise. First, the proportion of secret interventions turns out to be much lower for coordinated operations than for unilateral interventions. Second, there is a recent tendency to bring back a policy of secret operations in the FX market, at least on the YEN-USD market . This opens the door to new investigations assessing the presence of a portfolio channel for these interventions.

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