INFORMATION ASYMMETRY IN THE FOREIGN EXCHANGE MARKET: THE CASE OF THE BANK OF JAPAN INTERVENTION

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Abstract

This paper examines information asymmetry in the foreign exchange market, with a focus on intervention by the Bank of Japan in the Yen/USD market. Intraday frequency exchange rate and headline news that appeared in the Reuters screen are used. The responses of different types of banks to intervention are examined.

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I. Introduction

Standard macroeconomic models of exchange rate have had difficulty to explain many empirical regularities of exchange rate movements, such as its excessive volatility and huge daily turnover. In recent year, the "market microstructure" approach to exchange rate has received a great deal of attention. This approach is a radical departure from the traditional models. Much of the work in this literature analyses how trading takes place, and how information is disseminated by heterogenous agents in the market.

In the Asian currency crisis two years ago, the speed with which the crisis spread from one currency to another, even to those currency that did not seem to have serious fundamental problems (such as the Korean Won and the Taiwanese Dollar), was astonishing.
This crisis has stimulated a lot of theoretical and empirical research on currency crisis.

Some explanations of currency crisis, such as herd behaviour, implicitly rely on the existence of private information. If all information are public, then it would be less likely for some traders to follow the actions of other traders. For example, Krugman (1998) suggests that bandwagon effect can arise when some traders are aware that there are more well-informed traders around and choose to follow their action. The existence of private information is a relatively new research topic in international finance. Covrig and Melvin (1998) find that Japanese traders did have superior information than non-Japanese traders in the Tokyo market. In a similar study, Ito, Lyons, and Melvin (1997) find pervasive evidence of private information in the Tokyo FX market from studying the impact of the introduction of trading in Tokyo over lunch hours in 1994.

The nature of such information and how it is transmitted from one trader to another, or from one FX market to another if the traders operate in different locations, can provide yet an additional perspective to understand the dynamic forces that drive the exchange rate and trading activities, especially during period of high uncertainty as in a currency crisis.

The source of private information can arise from customer order flows. Since large domestic banks tend to capture more business from domestic corporation customers, they may have an information advantage over their foreign competitors. Another source of information advantage is the connection to government agency. This connection may give those banks early knowledge of government data releases. This paper study for the existence of price leadership due to the second source of information advantage. The kind of government announcement is central bank intervention in the foreign exchange market.

Peiers (1997) uses DM/$ exchange rate from the same data set to study the interactions among banks during the Bundesbank interventions. She finds evidence of price leadership from the Deutsche Bank up to 60 minutes before the intervention news appeared on Reuters screen. However, her results actually rely on the indirect effect of Bundesbank interventions on the DM/$ market since those interventions were actually conducted in the Deutsche mark against French franc or Spanish pesetas markets.[1]

The next section describes the data used in this study. Section 3 discussed the methodological issue of conducting Granger-Causality test using irregularly spaced data. Section 4 presents the some preliminary results.

2. Data Description

We use the High Frequency Data in Finance (HFDF93) collected by the Olsen and Associates Research Institute. The HFDF93 data set consists of the following tick by tick information that appeared in the Reuters screen from Oct. 1, 1992 to Sept. 30, 1993: (1) the bid and ask quotes of the JPY/USD and DM/USD spot exchange rate, and (2) headline news. Each data record includes the year, month, date, and GMT time (to the nearest second) that the record appeared on the Reuters screen. For the spot exchange rate records, the location of the city and the country of origination as well as the name of the quoting bank are provided. The fact that such detailed information is available allows us to test for interaction of bank quotes from different trading centres and between Japanese banks and non-Japanese banks.

News of the BOJ intervention activities in the JPY/USD market was obtained from the headline news data set. Following Chang and Taylor (1998), BOJ interventions in the JPY/USD market were identified in news reports with expressions such as "Bank of Japan (or BOJ) buy/check/intervene Dollar (or DLR) Yen". A sample of these reports is provided in Appendix 1. Reports that speculate about interventions or appear to be further elaboration of the same intervention episode are excluded from the study.

Reports of the BOJ interventions started to appear in the Reuters' headline news screen in April of 1993 when the yen/dollar exchange rate approached 100. During our sample period the Japanese yen was on an upward trend against the dollar, reports of BOJ interventions appeared in the headline news screen from April 1993 to Sept. 1993. A total of 137 intervention events were reported in 70 trading days. In order to isolate the impact of intervention from other macroeconomic news, we also identify 99 macroeconomic news that appeared in 63 trading days during the same period. Appendix 2 shows the list of keywords used to search for the macroeconomic news and Appendix 3 provides a sample of the selected news.

3. Methodological

This paper essentially follows the methodology of Peiers (1997). However, there are two major differences. First, in Peiers' study, the currencies of intervention (DM/FF, DM/Pesetas) were not the currency she analyzed (DM/$). This problem does not exist in our paper as both the currency of intervention and the exchange rate we examine are JPY/USD. Second, as will be discussed in detail below, the return quotations are constructed differently in this paper. Third, Peiers (1997) did not control for the effects of other macroeconomic announcements that might appeared close to the intervention report time.

Selection of Intervention Events

An event study approach is used in this study. First, we set a window around each of the 137 intervention events identified. It is reasonable to assume that there is a time lag between the time the intervention takes place and the time the story is reported in the Reuters' screen. Also, some traders in the FX market may be better informed about intervention than others. Hence, some of the impact of intervention will occur before the story is actually reported in the Reuters screen. The empirical estimate of this time lag varies from 15 to 30 minutes (Goodhart and

Hesse, 1993) to 60 minutes (Peiers, 1997) and two hours (Chang and Taylor, 1998). In this study, we set a "two hours before and one hour after" window around each intervention event's Reuters report announcement time, which is set as time zero.

Next, we delete the intervention events with a -2/+1 hour window that either (i) overlaps with the preceding event's window, or (b) contain macroeconomic news reports. There are 70 events left after this screening process. Then we further divide each window into three subwindows, the -2 hours to - one hour, - one hour to time zero, and time zero to + one hour. The causality relationship among the quote revisions of different banks within each subwindow will be examined. One would expect one-way causality from the more informed banks to the less informed banks in the -2/-1 subwindow. Then a feedback relationship during the -1/0 window. Finally, no causal relationship is expected to exist in the 0/+1 hour window when the effects of the intervention event are fully absorbed by the market.[2] Due to limited data, we only conduct pair-wise Granger-causality test in this study.

Selection of Bank for Analysis

The next step is to select the banks that to be studied. As a practical matter, one must examine the data set to check data availability. Table 1 below shows the top 10 most frequent banks in the 70 selected event windows. However, frequent appearance in the Reuters screen is not necessarily an indication that a bank is a market leader. This is particularly true for the yen/dollar market as most major Japanese banks also submitted their quotations to Minex, a dealing system set up by Japanese banks and brokers and a few US banks. Information from the Minex system is not available to the authors. For this reason, the HFDF93 data set used in this study suffers some limitation as it does not fully reflect the trading activity in the Japanese banks dominated Minex system. This may explain why Japanese banks are under-represented in the top 10 list.

Table 1 Top 10 Banks in quote frequency[1]

Bank Name	Frequency	Relative Frequency
1. Credit Suisse	2823	9.73%
2. Morgan Guaranty	2076	7.15%
3. Amsterdam-Rotterdam	1555	5.36%
4. Dai-Ichi Kangyo	1388	4.78%
5. Bank of New York	1275	4.39%
6. Tokai Bank	1171	4.03%
7. Industrial Bank of Japan	1093	3.77%
8. Bank of Tokyo	1019	3.51%
9. First Nat'l Bank Chicago	972	3.35%
10. Citibank[2]	936	3.22%
	Total	49.3%

1. The sample period is the -2/+1 hour windows from the 70 selected intervention events.
2. Chemical Bank in fact follows closely behind Citibank, with a frequency of 934.

A better idea of the importance of a bank in the yen/USD market can be obtained from the annual FX ranking conducted by the *Euromoney* magazine[3]. Table 2 shows the 1993 and 1994 rankings in the categories of "Best FX banks in the Tokyo market" and "Best FX banks in the yen/USD market according to bank customers and interbank participants. Note that although Amsterdam-Rotterdam, Bank of New York, and First National Bank of Chicago are "active" in the our data set, they are not perceived by market participants as important players either in the Tokyo FX market or in the yen/USD market.

Table 2 Euromoney annual FX ranking in 1993 and 1994

Panel I. "Best FX banks in the Tokyo market"

May 1993 FX Ranking:	*May 1994 FX Ranking:*
1. Dai-Ichi Kangyo (5)	1. Bank of Tokyo
2. Bank of Tokyo (1)	2. Sumitomo
3. Citibank (2)	3. Fuji
4. Chase Manhattan (8)	4. Chemical
5. Fuji Bank (10)	5. HSBC/Midland
6. Sumitomo (7)	6. Industrial Bank of Jap/Mitsubishi/Tokai

Panel II. "Best FX bank in Yen/USD"

May 1993 FX Ranking:

	Customer's Vote	*Interbank Vote*
1.	Citibank (2)	1. Bankers Trust
2.	BOA (9)	2. Citibank
3.	Chemical (3)	3. Chemical
4.	Sumitomo (10)	4. Fuji
5.	Chase (-)	5. Bank of Tokyo
6.	Bank of Tokyo (1)	
7.	Fuji (5)	
8.	Mitsubishi (7)	

May 1994 FX Ranking:

	Customer's Vote	*Interbank Vote*
1.	Citibank	1. Chemical
2.	Chase Manhattan	2. Bank of Tokyo
3.	Chemical	3. Swiss Bank Corporation
4.	HSBC/Midland	4. HSBC/Midland
5.	Fuji	
6.	JP Morgan	
7.	Bankers Trust/UBS	
8.	BOA	
9.	Bank of Tokyo	

Note: The figures in parenthesis refers to the ranking last year, 1992.

The selection of banks for analysis in this paper depends primarily on the purpose behind the analysis. In this paper, we investigate two sources of private information in the FX market: (1) geographical proximity to the source of information; and (2) business connection arise from customers order flows and networks. Hence, we have two questions in mind. With respect to information regarding central bank intervention by the BOJ:

(H1): Everything else constant, does geographical proximity provides an information advantage to banks operating in Japan over those operate outside Japan?

(H2): Everything else constant, does a Japan-based bank have an information advantage over a foreign-based bank operating in Japan?

Given our questions, the selection of banks would depend on the availability of data in our HFDF93 data set and the information from the annual Euromoney FX ranking. Another consideration is how sensitive the sample size is to which of the two banks is used as the dependent variable bank in the Granger-causality regression. This is because the heterogenous quote frequency across banks would introduce a bias in favour of banks with higher quotation frequency. Hence, everything else constant, we try to select a pair of banks which gives smallest difference in sample size.

To answer question H1, we define a bank with a close proximity to Japan as one that (i) is on the Euromoney's list of "Best FX Banks in Tokyo Market" in the 1993 or 1994 surveys, and (ii) has over 90% of its quotations originated from Japan in our HDFD93 data set. Bank of Tokyo (BOT) and Dai-Ichi Kangyo (DIK) are the two best candidates to meet these two criteria. Both had over 90% of their quotations originated from Japan and were on the Euromoney list. Other banks that are on the Euromoney list are not suitable either due to insufficient data (e.g. Sumitomo and Fuji) or insufficient representation in Japan (e.g. over 60% of Citibank's and Chemical Bank's originated outside Japan.)

For banks that do not have a close proximity to Japan, there are a few candidates. Table 3 presents the country distribution of their quotes. Citibank and Chemical Bank are not good candidate since close to 1/3 of their quotes originated from Japan and they are on the "Best FX Banks in the Tokyo Market" list. We also drop Credit Suisse (CS) since its quotation frequency is extremely high. This would make it very easy for CS to Granger-cause other banks. Hence, we can choose Morgan Guaranty (MG), Amsterdam Rotterdam (AR), or First National Bank of Chicago (FNC) as the banks that do not have close proximity to Japan.

Table 3. Country of Origination of Select Foreign Banks

	% from% Hong Kong	% from Singapore	% from Switzerland	Australia	Others Total
Credit Suisse	3.7%	0%	93.7%	0%	2.6%
Morgan Guaranty	0%	95.1%	0%	4.9%	0%
Chemical	5%	68%	0%	0%	29%[1]
Citibank	63%	8.5%	0%	0%	28.5%[1]
Amsterdam Rotterdam	0.4%	99.6%	0%	0%	0%
First Nat'l Chicago	9%	0%	0%	83%[2]	8%[1]

Note: 1. Mostly in Japan.
2. All from Syndey.

As for our second question H2, we can focus on Japanese banks and foreign banks that have a strong presence in the Tokyo market. For the Japanese banks, those with decent number of observations are BOT and DIK. As for foreign banks, the Bank of New York seems to be the only good candidates. BNY had almost all of its 1275 quotations originated from Japan.

Granger-causality in a time-varying environment

The exchange rate data in this study is not regularly spaced in time. Banks submitted their quotations to Reuters at irregular intervals, depending on the level of market activity and whether traders have time to input their quotations. Unfortunately, traditional time-series analysis requires equal time interval between observations. Following Peiers (1997), we transformed the data in the following way. First, we standardize the return of a bank i's quote by the time elapsed between the quote revision.

Let us define the following symbols:

τ = an index of the location of a bank's quotation (e.g. τ=3 is the third quote)
t = clock time (in second)
$t(j,\tau)$ = clock time of the τth observation of bank i
m = midpoint of the log of bid and ask quotes of a bank

Let $m(i,\tau)$ = midpoint quote of bank i's τth quotation. The standardised per-minute return of bank i's return (SR) between $t_{i,\tau}$ and $t_{i,\tau-1}$ is given by:

$$SR^i(\tau_i) = [m(i,\tau) - m(i,\tau-1)]x60/(t_{i,\tau} \text{ and } t_{i,\tau-1})$$

The issue of irregular time interval appears again in the Granger causality regression. The time gaps between the dependent variable bank's and independent variable bank's returns vary observation by observation. However, one would expect that the more recent quote revisions to have a greater impact on the dependent variable bank's quote revisions than "older" quote revisions.

To account for this effect, Peiers (1997) introduces the following time varying model for the Granger-causality regression. Let us define two additional expressions:

$SRj(\tau_i-q)$ = the *q*th preceding observation of bank j's SR before the clock time of the τth observation of bank i

$t_{j,\tau i-q}$ = the clock time of $SR^j(\tau_i-q)$

The time varying model is:

$$(1) \qquad SR^i(\tau_i) = \alpha + \sum^{LY}_{q=1} \sum^{n-1}_{j=1} \beta_{j,q} SR^j(\tau_i-q) + \sum^{LX}_{q=1} \beta_{i,q} SR^i(\tau_i-q)$$

$$(2) \qquad \beta_{j,q} = a_j + b_{j,q}/[(t_{i,\tau}-t_{j,\tau i-q})/60]$$

$$(3) \qquad \beta_{i,q} = c_j + d_{i,q}/[(t_{i,\tau}-t_{i,\tau-q})/60]$$

where i = dependent variable bank
j = independent variable bank
LY = number of lags for the lag dependent variable bank
LX = number of lags for the independent variable bank
n = number of right hand side variable banks (in this paper n=2)
α = constant term
$\beta_{j,q}$ = beta coefficient of the qth lag of bank j
$\beta_{i,q}$ = beta coefficient of the qth lag of bank i

If the time varying gap between the time stamps of the left hand side and right hand side variables are ignored, we set $b_{j,q}$ and $d_{i,q}$ to zero. In the time varying case, we divide the SR of the right hand side variable by the time elapsed between its clock time and the dependent variable's clock time, i.e. the $(t_{i,\tau}-t_{j,\tau i-q})/60$ and $(t_{i,\tau}-t_{i,\tau-q})/60$ terms.

In this paper, we propose to construct the right hand side variables standardized returns in a different way. Suppose the time lag LX is set to one. Then the right hand side variables SR^j should capture the quote revision between two consecutive sample observations of the left hand side variable, not merely the first preceding observation before τ. An example can clarify the difference in methodology.

Suppose the observations of the SR of bank X and Y are given by:

Time	SR_x	SR_y
1	x1	
2	x2	
3	x3	y1
4	x4	y2
5	x5	
6	x6	y3
7	x7	
8	x8	y4
9	x9	
10		y5
11	x10	y6
12	x11	y7

where time = 1, 2, ... indicate observations within the chosen sample period.
Note that time = 1, 2, 3, ... do not necessarily corresponding to regular time intervals. To simplify the exposition, we assume the x's and y' are aligned in the way that is consistent with the choice of the LHS variable. Suppose Y and the LHS variable and X is the RHS variable with lag one. Then at time = 3, y1 is Y at time = 3, and x3 is the value of X just observed before time = 3. Under Peiers' method, the sample for this regression is

Peiers(1997)		**Our method**	
SR(X)	SR(Y)	S(X)	S(Y)
x3	y1	x1+x2+x3	y1
x4	y2	x4	y2
x6	y3	x5+x6	y3
x8	y4	x7+x8	y4
x9	y5	x9	y5
x10	y6	x10	y6
x11	y7	x11	y7

The idea is the RHS variable should capture the quote revision between two sample observations (NOT two observations in time). For instance consider the case we use x3 to explain y1.

4. Empirical Results

The following two pairs of banks are chosen for H1:

(1) Dai-Ichi Kangyo's quotations from Japan only (DIK)
Morgan Guaranty's quotations from Singapore only (MG)

(2) Bank of Tokyo's quotations from Japan only (BOT)
First National Bank of Chicago's quotations from Syndey only (FNB)

For H2, we tested:

(3) Dai-Ichi Kangyo's quotations from Japan only (DIK)
Bank of New York's quotations from Japan only (BNY)

The results are summarized in Table 4,5, and 6.

Table 4 Dai-Ichi Kangyo/Morgan Guaranty Model

a. Non-time varying case

	Indep var bank (-120/-60 window)		(-60/0 window)		(0/+60 window)	
	DIK	**MG**	**DIK**	**MG**	**DIY**	**MG**
Dep var bank						
DIK	*	Y(1)[a]	*	Y(1)[a]	*	N
MG	N	*	Y(1)[b]	*	Y(2)[b]	*

b. Time-varying case

	Indep var bank (-120/-60 window)		(-60/0 window)		(0/+60 window)	
	DIK	**MG**	**DIK**	**MG**	**DIY**	**MG**
Dep var bank						
DIK	*	Y(1)[a]	*	Y(2)[b]	*	N
MG	N	*	N	*	Y(1)[b]	*

a - 5% significant , b - 1% significant

Note: "Y" and "N" stand for "yes" and "no". This refers to whether the independent variable bank's quotes Granger-cause those of the dependent variable's. The number in the parenthesis is the lag which is significant. The optimal lag is set at 2 for two right hand side variables (i.e. the lag dependent variable and the independent variable bank). The t-statistics are adjusted by the Newey-West (1987) procedure to account for the heteroscedasticity in the return data. In the time-varying case, we only report the time varying estimates.

Table 5 Bank of Tokyo/First National Bank of Chicago Model

a. Non-time varying case

	Indep var bank					
	(-120/-60 window)		(-60/0 window)		(0/+60 window)	
	BOT	**FNB**	**BOT**	**FNB**	**BOT**	**FNB**
Dep var bank						
BOT	*	N	*	N	*	N
FNB	Y(1[b] 2[a])	*	N	*	Y(1)[b]	*

b. Time-varying case

	Indep var bank					
	(-120/-60 window)		(-60/0 window)		(0/+60 window)	
	BOT	**FNB**	**BOT**	**FNB**	**BOT**	**FNB**
Dep var bank						
BOT	*	N	*	N	*	N
FNB	N	*	N	*	N	*

Note: See Table 4

Table 6 Dai-Ichi Kangyo and Bank of New York Model

a. Non-time varying model

	Indep var bank					
	(-120/-60 window)		(-60/0 window)		(0/+60 window)	
	DIK	**BNY**	**DIK**	**BNY**	**DIY**	**BNY**
Dep var bank						
DIK	*	N	*	N	*	N
BNY	Y(1, 2)[b]	*	Y(2)[a]	*	N	*

b. Time-varying model

	Indep var bank					
	(-120/-60 window)		(-60/0 window)		(0/+60 window)	
	DIK	**BNY**	**DIK**	**BNY**	**DIY**	**BNY**
Dep var bank						
DIK	*	Y(1,2)[b]	*	N	*	Y(1,2)[b]
BNY	N	*	N	*	N	*

Note: See Table 4

The DIK-MG model gives puzzling results. The causality is only from MG to DIK in the -120/-60 minute window, indicating that MG might have better information. In the -60/0 minute window, the causality is two-way in the non-time varying case but one way from MG to DIK in the time-varying case. But in the 0/+60 minute window, DIY is the Granger-causing bank.

The support for our hypothesis H1 is stronger in the BOT and FNB model (Table 5). BOT Granger-causes FNB but not the other way around. However, no significant relationship exists during the -60/0 minute window.

Finally, the result of the DIK and BNY model reported in Table 6 test our hypothesis H2. However, the non-time varying and time-varying models give different results. DIK Granger-causes BNY as expected. However, the time-varying model suggests the reverse causation.

Plan for further work

We plan to include the intervention events with macroeconomic news in the analysis using dummy variables to capture the effects of the macroeconomic news. This would significantly increase the sample size and some of the ambiguous results reported in this paper might disappear.

Endnotes:

1. See also Sapp (1998) and Wang (1997) for similar studies.

2. Ideally, more finely divided windows, at least down to the 30 minute level should be used. However, there is not enough data to do so.

3. The methodology of Euromoney is to send a questionnaire to over 1000 corporations, banks, insurance companies, fund management companies, and state agencies whose FX turnover exceeded $500 million annually.

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Appendix 1. Sample of BOJ intervention events (for June 1993)

"BOJ SEEN BUYING DOLLARS AT 107.15-20 YEN IN TOKYO"
"BOJ BUYS DOLLARS AT 107.05 YEN IN TOKYO AFTERNOON"
"BOJ SEEN BUYING DOLLARS BELOW 107 YEN IN TOKYO"
"BOJ BUYS DLRS AT 107.00-05 YEN IN TOKYO AFTERNOON"
"BOJ BUYS DOLLARS AT 106.15-20 YEN IN TOKYO MORNING"
"BOJ BUYS DOLLARS AT 105.70 YEN IN TOKYO MORNING"
"BOJ SEEN BUYING DOLLARS BELOW 105.50 YEN IN TOKYO"
"BOJ BUYS DLRS AROUND 105.40 YEN IN TOKYO AFTERNOON"
"BOJ BUYS DOLLARS AT 105.00 YEN IN TOKYO MORNING"
"BANK OF JAPAN SEEN BUYING DOLLARS AT 105.55-60 YEN"
"BOJ SEEN BUYING DLRS AROUND 106.80 YEN IN TOKYO"

Appendix 2. Keywords for Japanese macroeconomic news

1	WPI	2	WHOLESALE
3	CPI	4	CONSUMER
5	PRICE	6	GNP
7	GDP	8	GROSS
9	GROWTH	10	ECONOMY
11	ECONOMIC	12	CAPITAL
13	CAP	14	TRADE
15	CA	16	BOP
17	BALANCE OF PAYMENT	18	EXTERNAL
19	C/A	20	CURRENT
21	DIFFUSION	22	MONEY
23	DISCOUNT	24	TANKAN
25	INDUSTRIAL	26	DEBT
27	RESERVES	28	CONSTRUCTION
29	UNEMPLOYMENT	30	HOUSEHOLD
31	BANK LOAN	32	FOREIGN
33	LEADING	34	MACHINERY
35	ORDER	36	ORDERS
37	SPENDING		

Appendix 3. Sample Japanese macroeconomic news (for June 1993)

"JAPAN MARCH INDEX OF LEADING INDICATORS AT 79.2"
"JAPAN MAY EXTERNAL RESERVES RISE $2.53 BILLION"
"JAPAN MAY 2ND 10-DAY DOMESTIC WPI UNCHANGED""""
"JAPAN MAY 1ST 20-DAY TRADE SURPLUS $1.81 BILLION"
"JAPAN APRIL CURRENT ACCOUNT $11.27 BILLION SURPLUS"
"JAPAN MAY DIFFUSION INDEX IS UNCHANGED--BOJ SURVEY"
"JAPAN MAY BANKRUPTCY DEBT UP 5.4 PCT YR/YR--SURVEY"
"JAPAN MAY TRADE SURPLUS NARROWS TO $7.72 BILLION"
"JAPAN MAY DOMESTIC WHOLESALE PRICES DOWN 0.2 PCT"
"JAPAN APRIL INDUSTRIAL OUTPUT DOWN REVISED 2.5 PCT"
"JAPAN JAN/MARCH GNP UP 0.6 PCT, ANNUALISED 2.3 PCT"
"JAPAN APRIL HOUSEHOLD SPENDING RISES 1.6 PCT"
"JAPAN APRIL INDEX OF LEADING INDICATORS AT 70.0"
"JAPAN UNEMPLOYMENT CLIMBS TO 2.5 PCT IN MAY"
"JAPAN FIRMS' 93/94 CAPITAL SPENDING SEEN LOWER"
"JAPAN FIRMS REVISE DOWN FORECAST FOR 93/94 GNP"
"JAPAN CONSTRUCTION ORDERS FALL 17.3 PCT IN MAY"