BIS ECONOMIC PAPERS
No. 26 - January 1990

JAPAN'S EXPERIENCE OF FINANCIAL DEREGULATION SINCE 1984 IN AN INTERNATIONAL PERSPECTIVE

by
K. Osugi

BANK FOR INTERNATIONAL SETTLEMENTS
Monetary and Economic Department
BASLE

Table of contents

I. Introduction 7

II. Financial deregulation since 1984 10
1. Liberalisation of international banking business 10
2. Liberalisation of international bond issues 11
3. Relaxation of the restrictions on foreign exchange transactions 15
4. Relaxation of the restrictions on the purchase of foreign bonds by Japanese residents 17
5. Widening of foreign financial institutions' access to the Japanese financial markets 22
6. Establishment of the Japan Offshore Market 26
7. Deregulation of the domestic markets 29
(1) Liberalisation of interest rate ceilings 29
(a) Interest rates on large deposits 29
(b) Interest rates on small deposits 30
(2) Creation of new open markets (short-term money markets) 35
(3) Diversification of the interbank market 37
(4) Diversification of market operations by the Bank of Japan 39
(5) Removal of barriers between banking and securities business 41

III. The impact of financial deregulation 45
1. International use of the yen 45
2. Changes in the investment and financing behaviour of the corporate sector 52
3. Changes in the investment and funding behaviour of the banking sector 54
(1) Changes in balance-sheet structures 54
(2) Changes in loan rate determination 58
4. Arbitrage between financial markets 59

IV. Concluding remarks – repercussions on the Bank of Japan's policy 64
1. Expansion of the Euro-yen market and shrinkage of the domestic interbank market 64
2. Expansion of the Euro-yen market and decreased role of window guidance 66

Tables

1 Structure of balance of payments in Japan 8

2 Yen bond issues by non-residents 13

3 Corporate bond issues by Japanese residents 15

4 Institutional investors' foreign securities investments . . . 18

5 Deregulation of foreign securities purchases by institutional investors 19

6 Turnover of foreign bonds by Japanese investors 19

7 Foreign banks' trust subsidiaries in Japan 23

8 New establishments of foreign securities companies in Japan 25

9 Comparison of Japanese financial institutions abroad and foreign financial institutions in Japan 25

10 Development of the Japan Offshore Market 27

11 Structure of the Japan Offshore Market 28

12 Deregulation in the deposit markets 31

13 Deposit breakdown by types 32

14 Share of individual deposits 33

15 Major short-term open markets in Japan 38

16 Developments of the call-money market 39

17 Japan's direct investment abroad 44

18 Share of yen invoicing in exports and imports of Japan . . 46

19 Structure of exports and imports of Japan 49

20 Currency breakdown of foreign exchange reserves 50

21 I. Currency breakdown of Euro-bonds 51
II. Currency composition of BIS reporting banks' cross-border asset positions 51

22 Financial investment structure of corporate sector 53

23 Financing structure of corporate sector 55

24 Investment structure of banking sector 55

25 Financing structure of banking sector 56

26 International transactions of banks 57

27 Domestic interbank market and Euro-yen market 66

28 Domestic loan growth and Euro-yen lending 67

Graphs

1 Dollar rates against the yen
Interest rate differentials between the US and Japan
Foreign bond purchases by Japan (net) 21

2 Bill rates and CD rates 42

3 Movements in exchange rates and export unit values 47

4 CD rates and Euro-yen rates 60

5 Euro-yen rates and Euro-dollar rates 61

6 Bill rates and CD rates 63

Illustrative example I 69

Illustrative example II 70

JAPAN'S EXPERIENCE OF FINANCIAL DEREGULATION SINCE 1984 IN AN INTERNATIONAL PERSPECTIVE*

I.
Introduction

One of the characteristics of the international financial markets over the last few years has been the growing prominence of Japanese financial institutions. During this period Japan has experienced both huge current-account surpluses and enormous long-term capital outflows (see Table 1). Japanese financial institutions have played a key role in the recycling of this capital, and financial deregulation in Japan since 1984 has greatly facilitated their doing so.

1984 was an epoch-making year for the Japanese financial markets. In that year the United States and Japan reached an agreement on a wide range of liberalisation measures *(US-Japan accord),* and financial deregulation has advanced rapidly since then. It is true that financial deregulation in Japan actually started before 1984, and may be traced back to at least the mid-1970s. But it was in 1984 that this issue became truly urgent in the sense that the Japanese authorities committed themselves for the first time to a specific time schedule. As a result, financial deregulation since 1984 can be viewed as being quite different in terms of its pace of progress from that in the pre-1984 period, when the authorities had followed a "gradualist approach".

In bilateral talks between the Japanese Finance Minister and the US Treasury Secretary in 1983, Japan had agreed to take further action in order, firstly, to promote the internationalisation of the

* The author is grateful to Dr. H.W. Mayer, Dr. H. Bockelmann and Mr. M.G. Dealtry for their extensive comments and also wishes to thank Dr. J.S. Alworth and other colleagues at the Bank for International Settlements for their help in discussing earlier drafts.

Table 1
Structure of balance of payments in Japan
(in billions of US dollars)

Item	1984	1985	1986	1987	1988
Japanese capital	−56.8*	− 81.8	− 132.1	− 132.8	− 149.9
Stocks and shares . . .	−	− 1.0	− 7.0	− 16.9	− 3.0
(Acquisition)	(− 1.6)	(− 5.5)	(− 20.9)	(− 70.9)	(− 76.6)
(Disposal)	(1.5)	(4.5)	(13.9)	(54.1)	(73.6)
Bonds	−26.8	− 53.5	− 93.0	− 72.9	− 85.8
(Acquisition)	(−56.3)	(−291.3)	(−1,347.0)	(−1,273.8)	(−1,364.1)
(Disposal)	(29.6)	(237.9)	(1,254.0)	(1,200.9)	(1,278.2)
Foreign capital	7.1	17.3	0.6	− 3.7	19.0
Long-term capital (net)	−49.7	− 64.5	− 131.5	− 136.5	− 130.9
Short-term capital (net)	− 4.3	− 0.9	− 1.6	23.9	19.5
Current account	35.0	49.2	85.8	87.0	79.6
Overall balance	−15.2	− 12.3	− 44.8	− 29.5	− 29.0

* A minus sign shows capital outflows from Japan.

Source: Balance of Payments Monthly, Bank of Japan.

yen, secondly, to deregulate the Japanese capital and financial markets, and, thirdly, to help strengthen the yen. The two countries also agreed to set up a special committee *(the Yen/Dollar Committee)* with the aim of following up the joint undertakings and investigating the possibility of additional deregulation measures. In this Committee's discussions, Japan showed reluctance to overhaul its traditional financial system completely, but the United States pressed very hard for comprehensive deregulation. The findings of this Committee were published in May 1984 in a paper entitled "Report on yen/dollar exchange issues" and formed the basis for the aforementioned agreement between Japan and the United States.

As indicated by the title of this Committee's report, exchange rate considerations were the most important among a number of issues. Admittedly, what had so hardened the attitude of the United States was irritation regarding the alleged "insularity" of the Japanese financial markets, which the United States rightly or wrongly considered to be a major factor behind the continued appreciation of the dollar vis-à-vis the Japanese yen. At the same time the

deterioration of the US current-account balance was already obvious enough to foster protectionist sentiment in the US Congress. Given these factors on the US side of the argument, the various deregulation measures agreed on in the US-Japan accord can be viewed as being US-instigated. It is true that the Japanese financial authorities at that time had already realised the necessity of liberalising the financial markets in accordance with the worldwide trend towards financial deregulation and had actually taken various measures towards that end. However, it is clear that the pace of financial deregulation in Japan would have been considerably slower had it not been for US pressure and the resultant US-Japan accord.[1]

It may be noted that, while the original intention of the US-Japan accord had been to support the yen against the dollar by encouraging the international use of the yen, in the event it had a very different impact. After the dollar had turned around in 1985 the Japanese deregulation measures helped to sustain capital flows to the United States and to curb any excessive weakness of the dollar.

The main objective of this paper is to survey the financial deregulation that has taken place in Japan since 1984 and at the same time to highlight some basic features of Japan's traditional financial system. The first part of this paper describes the various deregulation measures which have been implemented since 1984, covering not only what was promised or intended in the US-Japan accord but also steps which have been taken independently of the accord. The main emphasis is on measures affecting the international role of the Japanese financial system, but domestic aspects of deregulation are also covered to the extent that they have major international implications. The second part of the paper analyses the impact of deregulation on the development of Japanese financial markets and examines the consequences for the Bank of Japan's conduct of monetary policy.

[1] After a continuous period of discussion and follow-up surveillance, the United States and Japan agreed to dissolve the Yen/Dollar Committee in April 1988, realising that the original goal of the Committee had been largely attained.

II.
Financial deregulation since 1984

1. Liberalisation of international banking business

The internationalisation of the yen, which was expected by the United States to result in an appreciation of the currency, was one of the main goals of the US-Japan accord in 1984. The United States argued that, in order to achieve this goal, Japan should aim in particular at enlarging the Euro-yen markets by lifting various restrictions. In response to this, a considerable number of measures were adopted to this end.

Firstly, *Euro-yen CDs* were introduced in December 1984. Eligible issuers are non-resident banks including banking affiliates of Japanese financial institutions and foreign branches of Japanese banks. These CDs may not be sold to Japanese residents. In addition to CDs, *a Euro-yen CP market* was launched in November 1987 in parallel with the opening of a domestic CP market. Eligible issuers are only non-residents, with sales to Japanese residents being prohibited within the first two weeks of issue. In the case of Euro-yen commercial paper issued by subsidiaries of Japanese corporations, its sale to Japanese residents is completely banned.

Secondly, *Euro-yen lending*[2] has been deregulated. As for *short-term loans,* those to non-residents had already been liberalised before the US-Japan accord was finalised. In June 1984 the Ministry of Finance also lifted the ban on yen lending by banks outside Japan to Japanese residents. As regards *long-term lending* (over one year), there was one major obstacle to liberalisation, viz. the separation between long-term and short-term banking in the domestic market. It is a characteristic feature of the Japanese domestic market that long-term credit banks and trust banks mainly engage in long-term business, whereas other banks focus on short-term lending, although this separation has become blurred over time. Long-term Euro-yen

[2] Euro-yen lending falls into two distinct categories: yen lending to Japanese residents by non-residents and yen lending to non-residents by non-residents.

loans, especially those to Japanese residents by Japanese banks' foreign affiliates, were considered to conflict with this principle. Nevertheless, having deregulated *long-term Euro-yen lending to non-residents* in April 1985, the Ministry of Finance freed *that to residents* in May 1989, thus completing the liberalisation of Euro-yen lending.

It is noteworthy that the liberalisation of Euro-yen lending to residents has created another loophole in the "window guidance" policy of the Bank of Japan. Since window guidance applies only to yen lending by domestic offices, Euro-yen loans to Japanese residents by Japanese banks' foreign offices are not subject to this guideline.[3] This loophole, coupled with foreign currency lending by domestic bank offices to residents (which is also exempted from this guideline) has significant implications for the Bank of Japan's monetary policy.

Thirdly, in parallel with Euro-yen lending, *external yen lending by banks in Japan to non-residents* has been liberalised. Ceilings on medium and long-term yen lending to non-residents were abolished in April 1984. (Short-term lending had already been deregulated before the accord was finalised.)

2. Liberalisation of international bond issues

Restrictions on *Euro-yen bond issues* have been relaxed considerably. With regard to *issues by non-residents,* eligibility had been confined to international organisations and national governments with top credit ratings. However, in December 1984 eligibility was extended to foreign private corporations which, firstly, had a credit rating of at least "A" and, secondly, met certain standards regarding their financial position. These requirements have gradually been eased. Following the deregulation measure taken in April 1986, the only remaining eligibility requirement has been a

[3] Japanese banks' foreign branches usually finance their yen lending to residents through yen borrowings from their headquarters. The huge increase in the yen-denominated external asset positions of Japan vis-à-vis non-residents since 1987 can be partly accounted for by this type of transaction.

credit rating of "A" or above. Moreover, in April 1985 three Japanese institutions[4] became approved credit rating agencies (Moody's and Standard & Poor's had previously been the only approved agencies).

The deregulation of non-resident Euro-yen bond issues has acted as a catalyst in the liberalisation of *yen-denominated bonds issued in Japan by non-residents.*[5] The Japanese authorities have long been convinced that yen borrowing by non-residents should be closely monitored in order to avoid any possible impact on domestic monetary policy and exchange rate management. Yen bonds issued by non-residents had therefore been strictly controlled before the opening-up of the Euro-yen bond market. However, in the face of the rapid growth of the Euro-yen bond market, this control lost its importance to some extent and was thus relaxed in accordance with the deregulation of Euro-yen bond issues. The current requirement for publicly placed bonds (Samurai bonds) is a credit rating of "A" or above, which is basically in line with the requirement for Euro-yen bond issues by non-residents.

However, despite the similar regulatory treatment of Euro-yen bonds and non-residents' domestically placed yen bonds, the actual growth performance of the two markets has been quite different. As shown in Table 2, issues of yen bonds placed in Japan by non-residents declined sharply in 1986 and have remained stagnant since then, while Euro-yen bonds issued by non-residents have been growing steadily in the last few years.

Various drawbacks of the domestic yen bond market for non-residents are usually cited in explanation of this strong preference of issuers for the Euro-yen market. Firstly, the secondary market for this type of domestic bond is considered to be

[4] Nippon Investors Service (NIS), Japan Bond Research Institute (JBRI) and Japan Credit Rating Agency (JCR). In July 1987 another American rating agency, Fitch, was added to the list of approved agencies.

[5] Publicly placed yen-denominated bonds issued in Japan by non-residents are commonly referred to as *Samurai bonds.*

Table 2
Yen bond issues by non-residents
(in billions of yen)

Year	Euro-yen bonds		Yen bonds issued in Japan by non-residents		
	By non-residents	By residents	Total	Publicly placed	Privately placed
1980	55	–	261	261	–
1984	227	–	1,114	915	199
1985	1,341	140	1,272	1,115	157
1986	2,487	442	785	590	195
1987	2,954	555	498	420	78
1988	1,815	127	797	635	162

Sources: Zaikaikansoku, Nomura Research Institute; Annual Report, International Finance Bureau, Ministry of Finance.

underdeveloped. Secondly, there is the complexity of the issuing procedure, which involves, for example, advance notification to the Ministry of Finance and a protracted decision-making process for underwriters' issuing terms. In particular, issuers complain about obstacles hindering the quick use of currency swaps and interest rate swaps in conjunction with yen bond issues. Faced with this criticism, Japanese underwriters introduced a "bought deal system"[6] in June 1986 in an attempt to promote speedier finalisation of issuing terms, but so far this has had no significant effect. Thirdly, privately placed non-resident yen bond issues are still strictly controlled. According to the Ministry's guideline, the amount of privately placed bonds is limited to one-third of publicly placed issues.

In addition to Samurai bonds, *Shogun bonds (publicly placed foreign currency denominated bonds issued in Japan by non-residents)* began to be issued in August 1985. This development can be characterised as another step towards the internationalisation of

[6] Under this system a lead manager can decide all issuing terms alone without seeking the agreement of other underwriters. In return for this a lead manager has an obligation to support the market price if, on a selling date, the market price is below the issuing price.

the Japanese bond market. The same requirements are applied to Shogun bonds as for Samurai bond issues. However, the size of the market still appears to be quite insignificant (US$ 848 and 100 million of new issues in 1987 and 1988 respectively).

In parallel with the liberalisation of bond issues by non-residents, *Euro-yen bond issues by residents* have also been deregulated. These had been prohibited de facto before 1984, largely on account of the *collateral principle* applied to the domestic issue market. The Japanese financial authorities thought that if Euro-yen bonds, which are basically issued without collateral, were allowed to be issued by residents, the collateral principle applying to the domestic market would inevitably be undermined.

Despite its reluctance, the Ministry of Finance lifted the ban and set eligibility requirements in April 1984. But it was only in April 1985, when the withholding tax on non-residents' interest earnings on Euro-yen bonds issued by Japanese residents was abolished, that the resident-issue Euro-yen bond market began to come to life. The eligibility requirements were gradually relaxed, and finally in July 1987 a credit rating system was introduced to replace the complicated eligibility rule. Nevertheless, the requirements are still quite strict compared with those applying to Euro-yen bond issues by non-residents.

Just as the liberalisation of non-resident Euro-yen bond issues triggered the deregulation of the Samurai bond market, the freeing of Euro-yen bond issues by Japanese residents has led to the liberalisation of *non-collateralised bond issues* in the domestic market. Japanese residents' ability to borrow in the Euro-yen bond market, which does not require collateral, meant that they could easily circumvent the collateral requirement in force in the domestic market. As a result of various deregulation measures taken since 1984, the number of corporations eligible for domestic non-collateralised bond issuance has increased substantially.

However, notwithstanding these measures, domestic issues of straight bonds and warrant bonds have remained stagnant since 1984 compared with foreign issues (see Table 3). This stagnation is partly

Table 3
Corporate bond issues by Japanese residents
(in billions of yen)

Year	Straight bonds		Warrant bonds		Convertible bonds		Total	
	Domestic issues	Foreign issues	Dom-estic	Foreign	Dom-estic	Foreign	Dom-estic	Foreign
1981	1,259	73	20	–	364	829	1,642	902
1984	812	615	13	449	1,209	1,332	2,034	2,396
1985	790	1,672	10	685	1,904	1,188	2,704	3,545
1986	976	1,632	116	2,026	2,744	430	3,836	4,087
1987	943	1,397	33	3,202	5,256	994	6,232	5,593
1988	910	1,430	–	3,723	6,640	922	7,550	6,074

Source: Zaikaikansoku, Nomura Research Institute.

accounted for by the shift of investors' preference from straight bonds to convertible bonds, the domestic issuance of which has expanded dramatically in recent years, reflecting the strong performance of the Tokyo stock market.[7] At the same time there can be little doubt that the qualification requirements, particularly those applying to domestic straight bonds and warrant bonds, are still felt by issuers to be too stringent, even after liberalisation.

With regard to the Euro-yen markets, the United States asked not only for market enlargement, but also for equal treatment of domestic and foreign underwriters of Euro-yen bond issues. In line with the commitments made in the accord, the Ministry of Finance in December 1984 granted foreign underwriters the right to become lead managers in the underwriting of Euro-yen bonds.

3. Relaxation of the restrictions on foreign exchange transactions

Another objective of the US-Japan accord for internationalising the yen was the deregulation of foreign exchange transactions by Japanese financial institutions and corporations.

[7] Convertible bond issues by Japanese banks in consideration of the new capital adequacy requirements also boosted the domestic convertible bond market in 1988, having reportedly amounted to Yen 1,665 billion, equivalent to 25% of the total domestic issues (according to data from the Nomura Research Institute).

The first measure promised in the accord was the abolition of the *"real demand principle" applied to forward foreign exchange transactions.* Until March 1984 forward exchange trading in Japan, under the administrative guidance policy, had been confined to transactions related to actual trade flows, for example hedging transactions associated with export contracts. The objective of this guideline had been to safeguard the stability of yen exchange rates by prohibiting purely speculative foreign exchange transactions. The removal of this rule in April 1984 resulted in a considerable widening of the scope for active foreign exchange management by the non-bank sector.

The next measure involved dismantling the "swap limit rule" imposed on banks. Banks were subject to limits on *open short positions in foreign currencies* in the spot market (conversion of foreign currencies into yen). This rule was meant to restrict the amounts of yen obtained through sales of foreign currency funds borrowed in markets abroad in order to insulate domestic monetary policy from external disturbances. Foreign banks in Japan without a local deposit base had always complained that this rule limited their capacity to do business in Japan. This regulation was abolished in June 1984. At the same time *Euro-yen transactions through inter-office accounts,* which had been subject to ceilings, were also liberalised.

As a matter of fact, it was foreign banks in Japan that had benefited most from the swap limit rule. The financial authorities had usually set the ceilings for foreign banks higher than those for Japanese banks, so that the foreign banks were in general not constrained by these ceilings. In this way the financial authorities took account of the fact that foreign banks' access to deposit markets in Japan was limited. The abolition of this rule, ironically enough, meant that foreign banks lost some of their comparative advantage in relation to Japanese banks.

In conjunction with the abolition of the "swap limit", a relaxation of regulations on banks' *overall foreign exchange positions* also had important implications for banks' foreign exchange transactions.

The Ministry of Finance has raised the ceilings limiting banks' overall (spot plus forward) open foreign exchange positions considerably.[8]

Certain types of foreign exchange transaction have also been deregulated. *Direct foreign exchange dealings between banks* bypassing foreign exchange brokers were authorised in July 1984 except for yen/dollar transactions, and permission for direct dealings was extended to yen/dollar exchanges in February 1985.

4. Relaxation of the restrictions on the purchase of foreign bonds by Japanese residents

The relaxation of the restrictions on purchases of foreign securities by Japanese institutional investors was another noteworthy step towards deregulation. As is well known, Japanese institutional investors have played a prominent role as investors in the foreign securities markets over the last few years (see Table 4), a development which has to be viewed in the context of the huge Japanese current-account surpluses. Without these deregulation measures (which were taken independently of the US-Japan accord), these large-scale acquisitions of foreign securities by Japanese institutional investors could simply not have taken place.

Until 1985 the purchase of foreign securities by non-bank institutional investors, such as insurance companies, pension funds, loan funds and investment trusts, had been heavily restricted by Ministry of Finance guidelines. The object of these regulations was to avoid unpredictable capital outflows and to maintain a strong yen. However, in 1986, faced with a continued increase in the current-account surplus, the Ministry gradually relaxed these regulations with the aim of encouraging capital outflows, particularly to the United States (see Table 5).

[8] The difference between this rule and the swap limit rule is that it sets a ceiling on *overall (spot plus forward) open positions* regardless of whether a bank has an oversold position in yen or another currency, whereas the swap limit was used to set a ceiling only on *open short spot positions in foreign currencies* (net amount of yen raised by selling foreign currencies on the spot market).

Table 4
Institutional investors' foreign securities investments
(end of year, percentage share of foreign securities in total securities)

Year	Life insurance	Non-life insurance	Trust banks (excluding investment trusts)	Securities investment trusts
1981	12.4	8.0	4.1	3.5
1984	24.9	17.2	7.5	5.4
1985	26.4	19.4	14.0	9.4
1986	28.9	21.5	17.0	14.9
1987	31.4	21.5	16.7	12.3
1988	31.1	22.3	15.3	12.6
Average annual percentage increases in foreign securities since 1984	34.9	29.0	54.0	82.2

Source: Economic Statistics Monthly, Bank of Japan.

It is not only these non-bank institutional investors but also commercial banks that have strongly expanded their foreign securities holdings. Although there is no specific regulation governing banks' holdings of foreign securities, unlike in the case of other institutional investors, they are subject to the ceiling described above on overall open foreign exchange positions. In October 1986 the Ministry of Finance allowed banks to have additional open positions specifically for foreign securities purchases, up to a proportion of 0.5% of total assets.

Supported by these liberalisation measures, both gross transactions in foreign securities by Japanese residents and net purchases of such securities have increased remarkably (see Table 6 and Graph 1). However, the question remains as to why investors continued to invest in foreign securities, especially in dollar-denominated securities,[9] during the phase of dollar weakness in 1986 and 1987. Deregulation alone does not seem to be able to explain this phenomenon.

[9] It is reported that, in foreign bond transactions via securities houses in 1988, dollar-denominated bonds accounted for 91.2% of total turnover (Japan Securities Companies Association).

Table 5
Deregulation of foreign securities purchases
by institutional investors

	Types of regulation	Deregulation measures
Life and non-life insurance companies	foreign securities/ total assets	10→25% (March 1986) 25→30% (August 1986)
	increase in foreign securities/total assests	20→40% (February 1986) no regulation (August 1986)
Trust banks (loan funds) . . .	foreign securities/ total assets	0→1% (February 1986) 1→3% (July 1986)
Trust banks (pension funds) .	foreign currency denominated assets/total assets	10→25% (April 1986) 25→30% (August 1986)
Securities investment trusts .	foreign currency denominated assets/total assets	30→50% (July 1986)
Credit co-operatives	foreign securities/net assets	0→30% (August 1986)
Agricultural co-operatives . .	foreign securities/ total deposits	0→2% (March 1986) the number of authorised institutions increased from 17 to 47 in August 1986
Kanpo*	increase in foreign securities/ annual increase in funds	10→20% (April 1986) no regulation (Sept. 1986)

* Life insurance scheme run by the Government.

Table 6
Turnover of foreign bonds by Japanese investors
(in billions of US dollars)

Year	Acquisition (A)	Disposition (B)	Net acquisition (C) = (A)-(B)	Turnover; times (A) + (B)/(C)
1980	14	11	2	8.6
1984	56	29	26	3.2
1985	291	237	53	9.9
1986	1,346	1,253	93	28.0
1987	1,273	1,200	72	34.0
1988	1,364	1,278	85	30.8

Source: Balance of Payments Monthly, Bank of Japan.

As can be seen from Graph 1, the US dollar declined practically continuously from early 1985 to the end of 1987. Interest rate differentials between the United States and Japan tended to narrow from early 1984 to late 1986. Although these differentials widened substantially in the first half of 1987, they then remained virtually stable until the first quarter of 1989, when they began to narrow sharply again. In spite of dollar weakness and the decline in interest rate differentials, net purchases of foreign securities by Japanese residents increased steadily until the third quarter of 1986 and, except for a sharp dip in the second half of 1987, remained at a high level thereafter. This remarkable resilience of foreign securities purchases by Japanese residents seems to reflect a number of factors besides the aforementioned financial deregulation.

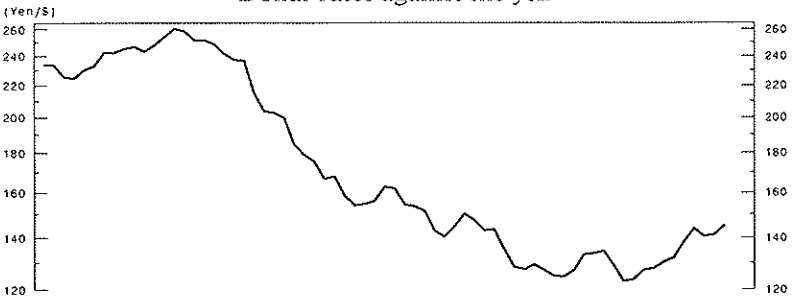
Firstly, a substantial proportion of these purchases has been financed by foreign currency borrowing. As shown by the bar chart in Graph 1, foreign securities purchases financed by foreign currency borrowing (for the sake of simplicity referred to as "dollar/dollar investment" in this paper), and not by yen sales ("yen/dollar investment"), have accounted for a considerable portion of total purchases.[10] It is widely perceived that banks, including banking accounts of trust banks, are dollar/dollar-type investors, whereas other institutional investors, such as life insurance companies, pension funds and investment trusts are basically yen/dollar-type investors.

It goes without saying that exchange rate expectations are not a relevant determinant of foreign securities purchases for dollar/dollar investors. Their goal is to make capital gains and/or to speculate on the slope of the yield curve. It is not surprising that these investors continued to purchase US bonds almost regardless of exchange rate movements. Yen/dollar-type investors, by contrast, are significantly influenced by exchange rate expectations. Graph 1 reveals that, given

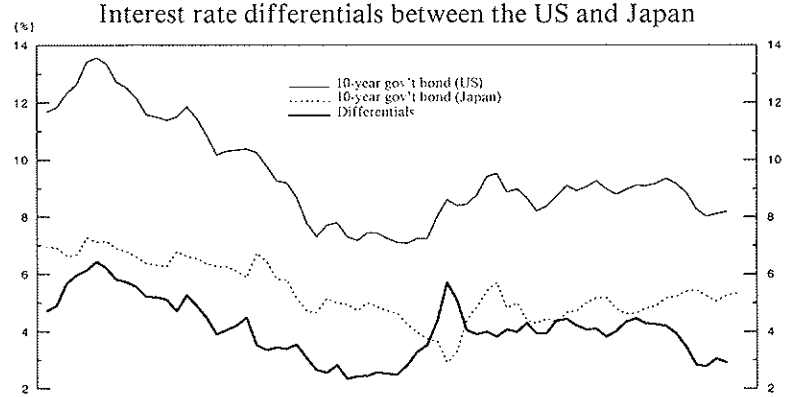
[10] In Graph 1 insurance companies, trusts (excluding banking accounts) and investment trusts are treated as yen/dollar investors and the remainder are treated as dollar/dollar investors.

Graph 1

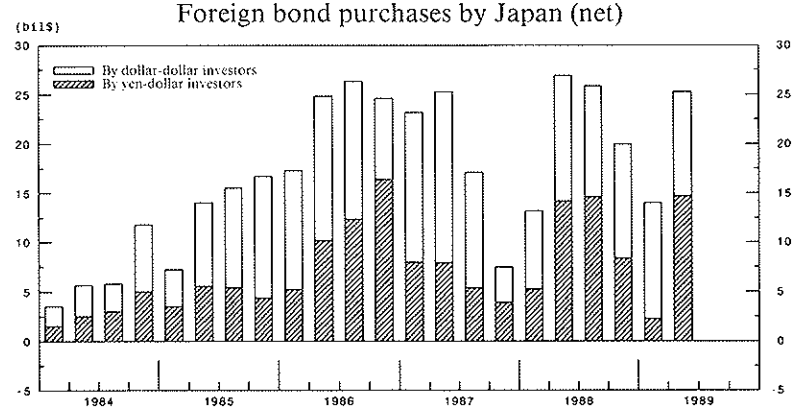
Dollar rates against the yen



Interest rate differentials between the US and Japan



Foreign bond purchases by Japan (net)



the dollar's continued depreciation, these investors had already begun to scale down their foreign bond purchases in the first quarter of 1987 and kept their investments low until the first quarter of 1988.

Secondly, insurance companies are as conscious of coupon rates as of actual yields. This is because they are in principle prohibited by law from the inclusion of capital gains in the profits that are used as a basis for refunds to insurance holders. Therefore, as long as coupon rates of US bonds are higher than those of Japanese ones, they have an incentive to buy US bonds, without having to be much concerned about short-term exchange rate movements.[11]

Thirdly, it is not uncommon for the Japanese authorities to resort to so-called moral suasion. For example, there was a time in 1987 when the Ministry of Finance reportedly tried to persuade institutional investors to bid when US Treasury bills were issued. The motive for such intervention is sometimes a macro-economic one – on that occasion to limit the appreciation of the yen – and may conflict with the micro-economic interest of the individual institutional investors. It is therefore doubtful how long the authorities can keep up this moral suasion. Nevertheless, in Japan the effectiveness of this kind of informal pressure, at least in the short run, should not be underestimated.

5. Widening of foreign financial institutions' access to the Japanese financial markets

There was another important issue in the Yen/Dollar Committee's discussions. The United States, in the interests of reciprocity, argued that US institutions should be offered the same opportunities to do business in Japan as Japanese institutions were given in the United States. Japan made three major commitments in this connection: (i) to permit foreign banks to engage in trust business in Japan; (ii) to allow foreign banks to deal in government securities;

[11] Should they suffer capital losses on these bonds (realised or unrealised), they can offset those losses by selling part of the stocks from their portfolio.

(iii) to study ways of extending membership of the Tokyo Stock Exchange to foreign firms.

The *separation between banking and trust business,* together with the separation between long-term and short-term banking and between banking and securities business, is a salient feature of the Japanese financial system. This principle, which was established in the 1950s with the aim of protecting trust banks from competition with commercial banks, has barred all other banks from engaging in trust business. However, in view of the fact that Japanese banks had been undertaking trust business in the United States, it was viewed as unfair by the US authorities that Japan did not provide the same scope for trust business to the affiliates of American banks in Japan. Complying with the commitment expressed in the US-Japan accord, the Ministry of Finance announced in June 1985 that foreign banks would be given approval to set up trust banking subsidiaries in Japan. Nine subsidiaries of foreign banks have begun operations since then (see Table 7).

As regards the *authorisation of dealings in government securities,* foreign banks were granted membership of the government bond underwriting syndicate for the first time in April 1984, and in October of that year they were allowed to deal in public bonds. In a

Table 7
Foreign banks' trust subsidiaries in Japan
(as at the end of 1988)

Parent bank	Nationality	Start of business	Japanese partnership trust bank
Morgan Guaranty	United States	10/85	Mitsui Trust
Bankers' Trust	United States	10/85	Sumitomo Trust
Chase Manhattan	United States	11/85	Daiwa
Citicorp	United States	3/86	Yasuda Trust
Manufacturers Hanover ...	United States	4/86	Daiwa
Chemical Bank	United States	4/86	Mitsui Trust
UBS	Switzerland	5/86	Mitsubishi Trust
Crédit Suisse	Switzerland	5/86	Mitsui Trust
Barclays Bank	United Kingdom	5/86	Toyo Trust

Source: Annual Report, International Finance Bureau, Ministry of Finance.

further move, in August 1987, the requirement that foreign banks had to operate in Japan for at least five years before becoming eligible for membership of the syndicate was abolished. The share of foreign financial institutions among syndicate members in the underwriting of ten-year government bonds was raised from 2.5% to 8% in October 1988.[12]

With regard to *qualification for membership of the Tokyo Stock Exchange,* the number of members was raised from 83 to 93 in February 1986, with six out of the ten new seats being allocated to foreign financial institutions. In May 1988 the number of members was increased once more, from 93 to 115, with 16 of the new seats being assigned to foreign institutions.

In addition to these three liberalisation measures specified in the US-Japan accord, another significant step was taken to give foreign financial institutions easier access to the Japanese market. Because of the separation between banking and securities business stipulated by the Japanese version of the Glass-Steagall Act (Securities and Exchange Law, Article 65), securities subsidiaries of foreign banks were not allowed to open branches in Japan. However, in view of the eagerness of American and European banks to conduct securities business in Japan, the Ministry relaxed this rule. In the interests of reciprocity, *permission to set up Japanese branches of securities subsidiaries* was first granted in December 1985 to European banks which under the universal banking system are allowed to conduct securities business at home. In June 1987 this permission was also extended to US banks. As a result, the number of foreign securities firms in Japan more than doubled during 1986 and 1987 (see Table 8).

In order to assess the extent to which the opening-up of Japanese financial markets carried out in the interests of reciprocity has benefited foreign financial institutions, it might be of some interest to compare the number of foreign financial institutions operating in

[12] Under the current underwriting system, 40% of the total amount issued in a month is auctioned by syndicate members and the remaining 60% is distributed among the members on the basis of predetermined shares.

Table 8
New establishments of foreign securities companies in Japan

	1980	1983	1984	1985	1986	1987	1988	Total number as at the end of 1988
Branch	0	2	2	11	14	11	4	47
Representative office	5	13	15	30	31	12	18	129

Source: Annual Report, International Finance Bureau, Ministry of Finance.

Table 9
Comparison of Japanese financial institutions abroad and foreign financial institutions in Japan
(as at the end of 1988)

BANKS

	Japanese banks abroad	Foreign banks in Japan
Branch offices	254	119
Affiliate offices	236	9
Representative offices . . .	423	126
Total	913	254

SECURITIES HOUSES

	Japanese companies abroad*	Foreign companies in Japan*
Total	115	47
(vis-à-vis United States) .	(19)	(n.a.)
(vis-à-vis United Kingdom)	(27)	(n.a.)

* Branches and affiliates.

Source: Annual Report, International Finance Bureau, Ministry of Finance.

Japan with the number of Japanese banks operating abroad. As can be seen from Table 9, despite the recent rapid increase in the number of foreign financial institutions in Japan, the current situation still seems to be biased in favour of Japanese banks. However, this is not due to a failure of the Japanese authorities to fulfil their

commitments to facilitate foreign financial institutions' access to the Japanese market. It rather reflects the fact that Japanese financial institutions have been more aggressive than their foreign counterparts in their efforts to expand their presence in international markets. The main driving force behind this strategy has been a heightened degree of competition at home and relatively limited scope for expanding business in the domestic financial markets, which are still subject to various kinds of regulation.

6. Establishment of the Japan Offshore Market

The establishment of the Japan Offshore Market (JOM) in December 1986 was another important development, promoting not only Japanese banks' international activities but also foreign financial institutions' access to Japan. The establishment of the offshore market was promised in the report entitled "Outlook for financial deregulation and the internationalisation of the yen", which was published by the Ministry of Finance simultaneously with the US-Japan accord.

The JOM has grown rapidly since it was launched. Its volume reached nearly US$ 400 billion by the end of December 1988 (see Table 10), which puts it on a par with the neighbouring offshore markets of Hong Kong and Singapore. There are various salient features in the development of the market. Firstly, as regards types of currency, positions in foreign currencies, reportedly nearly all in US dollars, still outweigh those in yen, although the weight of the yen has been growing steadily (see Table 10). Secondly, as regards types of transaction, inter-office transactions and interbank transactions account for more than 97 and 99% of total assets and liabilities respectively (see Table 11). While the predominance of interbank transactions is a feature common to other offshore centres, the JOM is an extreme case. It is no exaggeration to say that the JOM has been functioning virtually exclusively as an outright interbank market.

A number of special features have been introduced in the JOM. It enjoys preferential treatment insofar as transactions are exempt from

Table 10
Development of the Japan Offshore Market
(end of year, asset amount in billions of US dollars; figures in brackets: percentage share)

Item	1986		1987		1988	
Positions vis-à-vis non-residents	88.7	(100.0)	191.9	(100.0)	307.8	(100.0)
Yen	19.2	(21.6)	69.0	(36.0)	123.9	(40.3)
Foreign currencies	69.5	(78.4)	122.9	(64.0)	183.9	(59.7)
Positions vis-à-vis residents	5.0	(100.0)	46.9	(100.0)	86.1	(100.0)
Yen	n.a.	(n.a.)	31.3	(66.7)	56.0	(65.1)
Foreign currencies	n.a.	(n.a.)	15.6	(33.3)	30.0	(34.9)
Total	93.7	(100.0)	238.8	(100.0)	393.9	(100.0)
Yen	n.a.	(-)	100.3	(42.0)	179.9	(45.7)
Foreign currencies	n.a.	(-)	138.5	(58.0)	213.9	(54.3)

Source: Bank of Japan.

interest rate regulations, deposit insurance and reserve requirements. Moreover, with regard to non-residents, interest payments are exempt from withholding taxes, whereas Japanese residents (JOM accounts of banks in Japan) are not entitled to this treatment.

On the other hand, there are also quite a few regulatory restrictions. For example, eligible counterparties in this market are non-residents only, except for offshore accounts of resident banks. Furthermore, individuals are not allowed to participate in the market, and securities transactions are prohibited. Local tax and stamp duty still apply.

On top of that, flows of funds from offshore to onshore accounts are restricted to such an extent that, in practice, no funds can be channelled to onshore accounts from offshore accounts (for the details of this rule, see illustrative example I on page 69). However, banks can circumvent this rule by remitting funds raised in the JOM to one of their foreign branches through *offshore* inter-office accounts and by reborrowing these funds through *onshore* inter-office accounts (see illustrative example II on page 70). In this way banks can extend loans to domestic borrowers using the funds collected in the JOM.

Table 11
Structure of the Japan Offshore Market
(as at the end of December 1988, in billions of US dollars;
figures in brackets: percentage share)

Vis-à-vis	Assets	Liabilities
Related offices abroad	212.6 (54.0)	100.0 (25.5)
domestic currency	87.0	49.8
foreign currency	125.6	50.1
Unelated banks abroad	83.6 (21.2)	204.5 (52.2)
domestic currency	29.7	64.4
foreign currency	53.9	140.1
Non-banks abroad	11.6 (2.9)	0.9 (0.2)
domestic currency	7.2	0.3
foreign currency	4.4	0.6
Non-residents	307.8 (78.1)	305.3 (77.9)
domestic currency	123.9	114.5
foreign currency	183.9	190.9
Residents*	86.1 (21.9)	86.6 (22.1)
domestic currency	56.0	56.3
foreign currency	30.0	30.1
Total	393.9 (100.0)	391.9 (100.0)
domestic currency	179.9 (45.7)	170.8 (43.6)
foreign currency	213.9 (54.3)	221.0 (56.4)

* Offshore accounts of banks in Japan.

Source: Bank of Japan.

Transactions of this type help to explain the aforementioned preponderance of inter-office business in the JOM. The Hong Kong and Singapore offshore centres have reportedly been playing a key role as relay stations for these transactions. It is well-known that Japanese banks' external assets and liabilities have grown dramatically since 1987, but it should be noted that this outwardly remarkable expansion is somewhat overstated by the existence of these "loophole" transactions. At the same time, this phenomenon shows how domestic regulatory constraints can boost the growth of the Euro-market.[13]

[13] Window guidance is another example of domestic constraints promoting the growth of the Euro-market (see footnote 3 on page 11).

7. Deregulation of the domestic markets

Deregulation of the domestic financial markets has occurred above all in the following five areas: (1) the liberalisation of interest rate ceilings on deposits, (2) the creation of short-term money markets, (3) the diversification of interbank markets, (4) the diversification of market operations by the Bank of Japan and (5) the elimination of barriers between traditional banking and securities business.

(1) Liberalisation of interest rate ceilings

(a) *Interest rates on large deposits*

There was already a clear trend towards the liberalisation of interest rates in 1984, and this would have progressed further even without the US-Japan accord. A major impetus behind this trend was the emergence of the *Gensaki market* (a short-term market for transactions in securities with repurchase agreements) in 1976[14] in response to the rapid increase in outstanding government bonds. The Gensaki market offered the corporate sector an investment vehicle with unregulated interest rate yields. This resulted in a dis-intermediation of banks, which were therefore forced to look for new fund-raising instruments. Against this background, CDs were introduced in May 1979 and proved to be the first major step towards the liberalisation of interest rates.

The various measures agreed on in the US-Japan accord regarding the liberalisation of interest rates can be viewed as having strengthened these trends. In this accord Japan promised first of all to allow banks to accept new types of deposits bearing money market interest rates. In accordance with this commitment *money market certificates* (MMCs) were introduced in March 1985. Although there were various restrictions concerning these MMC issues in the initial stage, such as minimum denomination, length of maturity, and a

[14] The origin of this market can be traced back about forty years, but the market did not become significant until 1976, when it was legalised by the Ministry of Finance (The Japanese Financial System, 1986).

limit on amounts issued by each bank, these requirements have been gradually relaxed (see Table 12). Interest rates on MMCs can be set freely by issuing banks up to a limit not exceeding the CD rate minus 0.75% (deposits with a maturity of one year or less) or the CD rate minus 0.5% (deposits with a maturity of over one year).

The second commitment in the US-Japan accord was to *relax interest rate ceilings on large time deposits,* with the final goal being to remove them completely. In October 1985 interest rates on time deposits with a minimum denomination of one billion yen and with a maturity of three months to two years were deregulated. Since then the coverage of time deposits eligible for deregulated interest rates has been widened significantly in terms of minimum denomination and length of maturity (see Table 12).

The third measure was to *relax various restrictions imposed on the issuance of CDs,* which had been introduced in 1979. Just as in the case of MMCs, the minimum denomination and length of maturity requirement, as well as the issuance limit, have been gradually deregulated (see Table 12).

(b) *Interest rates on small deposits*

With these three measures implemented, the deregulation of interest rates on large deposits is considered to have been completed. The next step towards interest rate deregulation is the liberalisation of interest rates on small deposits. Although Japan gave no undertaking with regard to this issue in the US-Japan accord, the Ministry of Finance announced its intention to proceed with this deregulation in the Action Programme for Market-Opening Measures announced in July 1985.

Compared with the deregulation of interest rates on large deposits, the impact of the deregulation of those on small deposits is expected to be considerable. As shown in Table 13, smaller-sized institutions, such as mutual loan and savings banks and credit associations, whose liability structures have changed relatively more slowly than those of city banks in response to interest rate deregulation, will be influenced disproportionately. Reflecting this

Table 12
Deregulation in the deposit markets

	MMCs			Large-unit time deposits		CDs		
	Minimum denomination (Yen)	Length of maturity	Issuance limit relative to capital (%)	Minimum denomination (Yen)	Length of maturity	Minimum denomination (Yen)	Length of maturity	Issuance limit relative to capital (%)
1984 January						300 million		
1985 March	50 million	1 to 6 months	75					
April						100 million	1 to 6 months	100
October			150	1 billion	3 months to 2 years			150
1986 April		1 month to 1 year	200	500 million			1 month to 1 year	200
September	30 million		250	300 million				250
1987 April	20 million	1 month to 2 years	300 (abolished for foreign banks)	100 million				300 (abolished for foreign banks)
October	10 million		abolished		1 month to 2 years			provisionally abolished
1988 April				50 million		50 million	2 weeks to 2 years	
November				30 million				
1989 April				20 million				
October				10 million				

Table 13
Deposit breakdown by types
(as at the end of March 1989, percentage share)

	City banks	Regional banks	Mutual loan and savings banks	Credit associations
Deposits with regulated interest rates	*55.3*	*68.5*	*68.6*	*83.8*
of which:				
less than Yen 3 million	22.4	36.7	40.2	58.3
equal or above Yen 3 million	32.9	31.8	28.4	25.5
Deposits with deregulated interest rates	*44.7*	*31.5*	*31.4*	*16.2*
of which:				
CDs	5.8	0.7	2.9	0.7
MMCs	6.9	6.0	7.4	5.0
large-unit time deposits	25.6	16.3	14.6	8.1
foreign currency deposits	5.4	8.6	6.4	2.4
others	0.9	–	–	–
Total	100.0	100.0	100.0	100.0

Source: Economic Statistics Monthly, Bank of Japan.

situation, not all types of banks welcome the liberalisation of interest rates on small deposits.

More importantly, what makes even city banks somewhat hesitant about this deregulation is the existence of the Postal Saving system, which is owned by the government. Postal Saving accounts have various advantages over bank deposits, such as high liquidity,[15] a long maximum maturity of ten years and half-yearly compounded interest rates. As a result, Postal Saving accounts have grown markedly over time and now account for about one-third of total deposits by individuals (see Table 14).

Moreover, the way in which interest rates on Postal Saving accounts are set adds to banks' uneasiness. Unlike interest rates on

[15] Funds held on Postal Saving accounts can be withdrawn at any time after six months. Interest rates applied depend on how long the account has been kept. The maximum amount of each account is currently set at Yen 5 million.

Table 14
Share of individual deposits
(as at the end of March, in percentages)

Year	Postal savings	Banks	Mutual loan and savings banks	Credit associations	Credit co-operatives	Agriculture & fishery co-operatives	Others
1965	16.0	41.6	9.9	13.0	3.0	14.2	2.3
1975	23.1	35.8	8.5	13.0	3.6	14.9	1.1
1985	32.0	31.7	7.4	11.8	3.1	12.6	1.5
1988*	31.8	32.9	6.7	11.7	3.0	12.3	1.5

* End-year.

Source: Economic Statistics Monthly, Bank of Japan.

bank deposits, which are fixed by the Ministry of Finance and the Bank of Japan,[16] the interest rates on Postal Saving accounts are decided virtually autonomously by the Ministry of Posts and Telecommunications. Under the current legal framework these two decision-making processes are independent of each other. It is true that interest rates on Postal Saving accounts have so far been fixed more or less at the same level as those on bank deposits, but this is simply because the Ministry of Finance, before reaching a decision to change interest rates on bank deposits, has always had off-stage negotiations with the Ministry of Posts and Telecommunications in order to make sure that interest rates on Postal Saving accounts will be changed as well. However, there have been cases where decisions as to whether to change interest rates on bank deposits have been significantly delayed because of strong resistance from the Ministry of Posts and Telecommunications. It is widely known that the

[16] The procedure for fixing interest rates on bank deposits is as follows: (i) the Minister of Finance proposes a change in interest rates to the Policy Board of the Bank of Japan; (ii) the Policy Board consults the Interest Rate Adjustment Council; (iii) the Policy Board, based on the report of the Council, fixes new maximum deposit rates; (iv) the Minister of Finance makes an official announcement on the rates so established; (v) the Bank of Japan establishes and announces more detailed deposit rates in the form of a guideline.

Ministry of Posts and Telecommunications is always reluctant to lower interest rates for fear of weakening the attractiveness of the Postal Saving system.[17]

In the light of this situation banks have contended that if interest rates on small deposits are to be liberalised, there will cease to be such a de facto mechanism (negotiations between the two Ministries) to guarantee that interest rates on bank deposits and on Postal Saving accounts move in parallel. Under these circumstances banks have long claimed that a precondition for the further liberalisation of interest rates is to establish a "level playing-field" between bank deposits and Postal Saving accounts in terms of both the attributes of deposits and the process of interest rate determination.

The Ministry of Finance and the Ministry of Posts and Telecommunications reached an agreement in December 1988 that both banks and the Postal Saving system would introduce small-unit MMCs with a minimum denomination of Yen 3 million as from spring 1989 and thus took a step towards the liberalisation of interest rates on small deposits.[18] According to the agreement, interest rates on these MMCs would be linked to market rates,[19] thus far ensuring that interest rates on MMCs offered by banks and those offered by the Postal Saving system would be determined in the same way. Small-unit MMCs of six-month and one-year maturities began to be

[17] This reflects a lack of cost-consciousness due to the fact that Postal Saving is a government body, not a profit maximiser.

[18] These small-unit MMCs differ from the MMCs mentioned earlier (see page 29) in that the minimum denomination of the latter is Yen 10 million (see Table 12), which means that the Postal Saving system cannot market the latter (the maximum amount allowed for Postal Saving accounts is currently set at Yen 5 million).

[19] Interest rates are fixed in principle as follows:

Maturity	*Interest rate*
3 months	CD rate - 1.75%
6 months	CD rate - 1.25%
1 year	CD rate - 0.75%
2 years	CD rate - 0.5%
3 years	coupon rate of long-term government bonds - 0.7%

issued in June 1989, and other maturities were introduced in October 1989.

One of the reasons for the agreement of the two Ministries in spite of their different viewpoints is that both the banks and the Postal Saving system have been faced with the necessity of providing a new financial instrument for individuals in order to compensate for the weakened competitiveness of their traditional deposits, caused by the abolition of the "MARUYU system" (tax exemption of small deposits) in March 1988. Although there are still a number of obstacles in the way of achieving full liberalisation of interest rates on small deposits, it is widely held that the introduction of small-unit MMCs has paved the way for it.

(2) Creation of new open markets (short-term money markets)

One of the traditional features of the Japanese financial system is a clear distinction between the *"interbank market"* and the *"open market"*. In Japan, especially in publications and statements issued by the Bank of Japan, the "interbank market" is usually defined very narrowly as a market in which only financial institutions participate. There are only two markets which fall under this category, viz. the call-money market and the bill market. All other short-term money markets are "open markets" in the sense that participation is open also to the non-bank sector.

It is true that interbank transactions can be carried out in the open markets such as the CD market or the Gensaki market, but there is a very important difference between *transactions in the interbank markets* and *interbank transactions in the open markets,* viz. the existence of *money brokers* as an intermediary in the interbank markets. Virtually all transactions in the interbank markets pass through one of the six money brokers, which are strongly influenced by the Bank of Japan. The call-money and bill markets have been playing a pivotal role as a major channel for the Bank of Japan's monetary policy conduct. By comparison, the degree of influence the Bank of Japan exerts on the other markets used to be quite limited, mainly because of the lack of tools for open market operations. The

importance of distinguishing between the interbank market and the open market can be ascribed to the difference in leverage which the Bank of Japan has over these two markets. This paper, in what follows, adheres to the traditional definition of these two markets.

It is believed that the Bank of Japan has always sought to foster the development of short-term money markets, conducive to open market operations, in order to strengthen the transmission mechanisms of monetary policy. For that purpose the setting-up of a Treasury bill market has long been considered as highly desirable because of the Treasury bill's characteristics of low risk, homogeneity and high marketability.[20] Although it is not entirely correct to say that a Treasury bill market does not exist in Japan, the bills have so far been underwritten almost exclusively by the Bank of Japan at predetermined rates which are always lower than the discount rates.[21] Despite the fact that the United States asked at the Yen/Dollar Committee meetings for the creation of a genuine Treasury bill market in Japan, this issue was not spelled out in definite terms in the US-Japan accord because the Ministry of Finance, being afraid of an increase in its funding costs, voiced very strong opposition to the creation of such a market.

Although there is still no genuine Treasury bill market, three other markets have been created since 1984. Firstly, *short-term government bonds* with a maturity of six months were introduced in February 1986 for the purpose of facilitating the redemption of outstanding long-term government bonds. (It should be noted that a rapid increase in issues of ten-year government bonds in Japan began in the

[20] "The recent developments in short-term money markets" (Bank of Japan, 1986).

[21] Under the current system, Treasury bills (with a maturity of about sixty days) are in theory placed publicly. However, if subscriptions fall short of the volume to be issued, the Bank of Japan has a responsibility to underwrite the rest, and, in practice, the Bank of Japan usually buys almost all of the bills. As a result, at the end of December 1988 the Bank of Japan held Yen 15.3 trillion of such bills out of a total amount outstanding of Yen 21.2 trillion. The difference between the two figures is mostly accounted for by the Bank's sales of such paper.

1975 fiscal year, which means that there will be a huge amount of redemptions falling due in the next few years.) Furthermore, bonds with a three-month maturity began to be issued in September 1989. These bonds, unlike Treasury bills, cannot, by law, be underwritten by the Bank of Japan and are placed at market rates.

Secondly, a *yen-denominated bankers' acceptance* (BA) market was launched in June 1985. The objective of the establishment of this market was to promote yen invoicing in export and import contracts and thus to facilitate the use of the yen in international transactions. However, this market has not yet grown and remains quite negligible. This lack of success seems to be attributable to the structural features of Japanese exports and imports, as will be examined later.

Thirdly, a *commercial paper* (CP) market was opened in November 1987. This instrument, which allows corporations direct access to short-term borrowing (one to six months) other than from banks, has entailed a further diversification of short-term markets. The CP market has grown very rapidly, its size having reached no less than $50 billion within one year and, as will be examined later, has already begun to change the financing structure of the corporate sector.

As can be seen from Table 15, the open market, supported by these various innovations, has shown a striking expansion and remarkable diversification in the last few years.

(3) Diversification of the interbank market

There has been a diversification of instruments in the interbank market as well. One of the most significant developments was the introduction of a *non-collateralised call-money market*. The principle of collateralisation is one of the striking characteristics of both the interbank market and the bond market in Japan. It had long been argued by foreign banks in Japan that in the interbank market the collateral principle was restricting their financing possibilities. On the other hand, the Bank of Japan had advocated the retention of this principle in the belief that it had played an important role in ensuring the soundness of the banking system by preventing a chain reaction in

Table 15
Major short-term open markets in Japan
(end of year, in billions of yen)

	1980	1985	1986	1987	1988
Gensaki	4.5	4.6	7.1	6.9	7.4
CDs*	2.1	8.9	9.8	10.7	15.8
MMCs*	–	6.3	9.5	18.5	29.5
Large-unit time deposits with deregulated interest rates*	–	4.9	17.9	49.8	85.5
Short-term government notes	–	–	2.0	2.7	2.0
CPs	–	–	–	1.7	9.3
Total	6.6	24.7	46.3	90.3	149.5

* Those which are issued by or deposited with city banks, regional banks, trust banks, long-term credit banks, Sogo banks (mutual loan and savings banks) and Shinkins (credit associations).

Source: Monthly Statistics, Bank of Japan.

the event of a bank default and by imposing a degree of discipline on borrowers.

However, giving banks broader access to the international financial markets for the purpose of borrowing yen, a move which was facilitated in particular by the aforementioned elimination of the swap limit and by the deregulation of the Euro-yen markets, undermined the effectiveness of the collateral principle. Under these circumstances a non-collateralised call-money market was introduced in July 1985. This market has expanded steadily since its inception to become one of the major sources of finance for foreign banks (see Table 16).

Another significant development is *the renewed access of securities houses to the interbank market.* After having been excluded in the wake of the financial crisis of the securities industry in 1966, securities houses were readmitted to the call-money market in 1980, albeit for limited amounts of borrowing only. Since securities houses are exempt from reserve requirements, their participation in the interbank market is considered to be entirely for arbitrage purposes. In order to provide more scope for arbitrage operations and to strengthen the influence of interbank rates on other market interest

Table 16
Development of the call-money market
(end of year, in billions of yen and percentage share)

Item	1985		1986		1987		1988	
Collateralised . .	4,289	(83.9)	8,602	(84.1)	13,096	(81.7)	9,638	(61.5)
Non-collateralised	822	(16.1)	1,624	(15.9)	2,942	(18.3)	6,036	(38.5)
Total	5,111	(100.0)	10,226	(100.0)	16,038	(100.0)	15,674	(100.0)

rates, the involvement of securities houses in the interbank markets has been increased. Securities houses were given the right to invest in the bill market in May 1985, and the ceiling on their borrowing from the call-money market was raised in November 1985.

(4) **Diversification of market operations by the Bank of Japan**

Another noteworthy development in the field of short-term financial markets is the diversification of the tools used by the Bank of Japan for *open market operations.* The Bank of Japan began to execute *open market operations by using CDs* in March 1986. To be precise, this did not entail direct purchases of CDs from the market, but the Bank made loans to money brokers which could be used to buy CDs, whereas hitherto money brokers had not been allowed to use loans from the Bank of Japan for any other purpose than making placements in the call-money market.

As a matter of fact, before the introduction of CD operations the Bank's means of carrying out "buying" operations and hence of lowering open market interest rates had been relatively limited.[22] The introduction of CD operations seems to be very relevant for the Bank's conduct of monetary policy since it has given the Bank of Japan another tool through which to exert downward pressure on

[22] As mentioned before (see footnote 21 on page 36), Treasury bills can hardly be used for the Bank's buying operations, since almost all of these bills are underwritten by the Bank of Japan and, accordingly, banks do not hold sufficient amounts to be able to assure sales to the Bank of Japan.

market interest rates. However, the scale of CD operations has remained limited, reflecting the Bank's concern that its CD purchases might be interpreted as central bank deposits with an issuing bank.

In addition to the CD operations, in December 1987 the Bank of Japan started *purchasing long-term government bonds under repurchase agreements* in order to adjust the liquidity level in the market for bank reserves. Prior to December 1987 the Bank of Japan's purchases of long-term government bonds had been confined to outright purchases made for the purpose of meeting an increase in money demand in line with long-run economic growth, and not for the purpose of fine-tuning the money market in the short run.

Furthermore, in May 1989 the Bank of Japan *added commercial paper to the list of instruments eligible for open market operations.* This operation is carried out in the following manner: on the announcement of a CP operation money brokers collect CP from banks and securities houses under repurchase agreements and the Bank of Japan buys it through the money brokers with their endorsements. Supported by these developments, the effectiveness of the way in which the Bank of Japan supplies funds to the market has been greatly enhanced.

It is not only in the open market but also in the interbank market that the diversification of market operations has progressed. In November 1988 the Bank of Japan began to operate in *bills with a maturity of less than one month.*[23]

The Bank of Japan had traditionally intervened in the bill market by selling or purchasing bills with a maturity of *one to three months.*

[23] At the same time, the maturities of instruments in the interbank market were changed as follows:

	Before November 1988	*November 1988 onwards*
Bill market	1 month to 6 months	*1 week* to 6 months
Call-money market (collateralised)	Overnight to 3 weeks	Overnight to *6 days*
Call-money market (non-collateralised)	Overnight to 3 weeks	Overnight to *6 months*

As a result, market participants came to believe that the interest rates on these bills reflected the policy stance of the Bank of Japan. In fact, since these interest rates were viewed as being heavily manipulated by the Bank of Japan, they were looked upon by market participants as a kind of discount rate. As is shown in Graph 2, two-month bill rates were markedly sticky in 1987 and 1988 compared with CD rates, resulting in some lack of linkage between the bill market and the CD market, or between the interbank market and the open market. This divergence between the two types of interest rates seems to imply that the Bank of Japan probably was not able to change these rates freely lest this be interpreted as a major policy change.

It was against this background that operations in bills with a maturity of less than one month were introduced. It is thought that the chief aim of the new measure was to change the main tool used by the Bank of Japan for its market operations from one to two-month bills to *one to two-week* bills, thus freeing the one to two-month bill rates from manipulation. A strengthening of the linkage between the bill market and the other open markets is expected as a result.

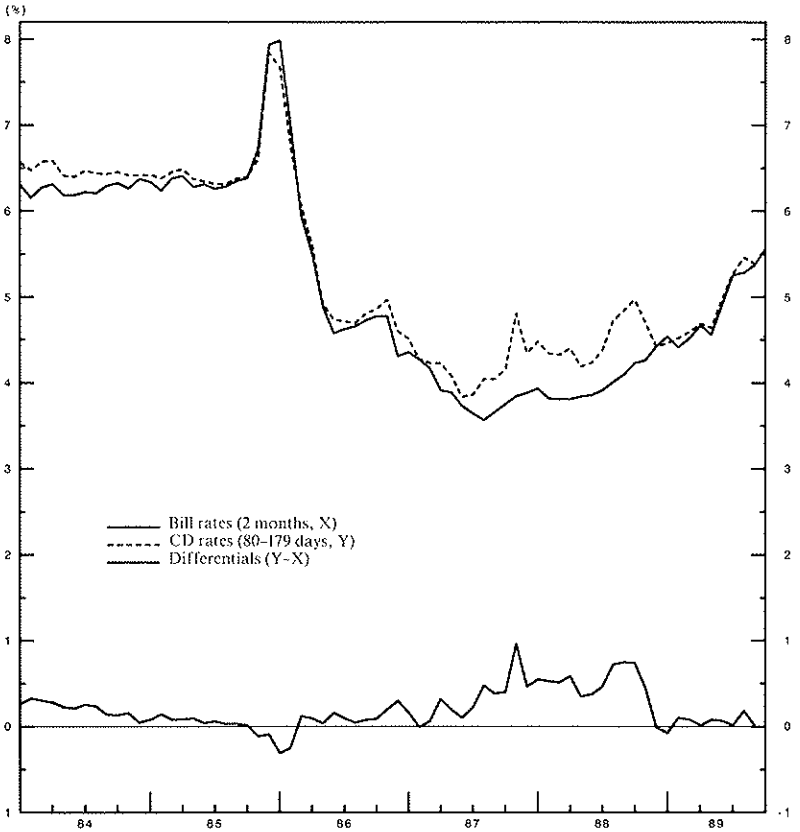
(5) Removal of barriers between banking and securities business

Article 65 of the Securities and Exchange Law, which is sometimes referred to as the Japanese equivalent of the Glass-Steagall Act, stipulates the separation of banking and securities activities.[24] As in the United States, however, this principle has been eroded over time, and the overlapping of the two lines of business has now become one of the main features of the Japanese financial markets.

The first major breakthrough occurred with the introduction of "CHUKOKU Funds" (medium-term government bond funds) in

[24] The restrictions imposed by this law on banks' securities business are in some respects less stringent than those imposed by the Glass-Steagall Act. For example, Glass-Steagall in principle prohibits banks' holdings of shares, whereas the Securities and Exchange Law does not, on condition that the shares are held as an investment in their own right. The high percentage of stock holdings in total balance-sheet assets is a characteristic feature of Japanese banks.

Graph 2
Bill rates and CD rates



1980. Sales of certificates of these funds by securities houses were considered to be quite similar to the taking of liquid deposits, because this instrument had a high liquidity and bore fixed interest rates. Moreover, in June 1985, securities houses were permitted to extend loans against the collateral of public bonds. These loans are meant to

be for general use and thus are not different from bank credits. Securities houses were also allowed to take part in the secondary markets for CDs (June 1985) and BAs (April 1986), in which previously only banks and money brokers had been allowed to act as dealers.

On the banking side, the new Banking Law enacted in 1982 created a means for banks to engage in securities business. In 1983, banks were authorised to conduct over-the-counter sales of public bonds and subsequently, in June 1984, were permitted to deal in these bonds.

This phenomenon of intensified competition between banks and securities houses has been most conspicuous in the *international field.* Banks have been finding ways to circumvent the separation rule by setting up securities subsidiaries abroad, in particular in the United Kingdom and Switzerland. Their main function is to underwrite Euro-bonds, although underwriting of corporate bonds is prohibited in the domestic market. Reflecting the recent rapid growth of the Euro-yen markets, the security subsidiaries set up by Japanese banks have been playing an increasingly dominant role in the Euro-markets.[25]

Furthermore, Japanese banks are also targeting the United States as a field for securities business. In November 1986 Sumitomo Bank obtained approval from the Federal Reserve Board to hold shares of Goldman Sachs, albeit to a limited extent, and in December 1986 the Industrial Bank of Japan bought out a primary dealer, Aubrey G. Lanston, through its affiliate in the United States. Sanwa Bank and Nippon Long-term Credit Bank were allowed by the US authorities to buy out primary dealers in June 1988.

[25] With respect to the underwriting of Euro-bonds, the Ministry of Finance has restrained this activity somewhat in order to maintain consistency with the domestic separation rule. Under the so-called *"Three Bureaux Agreement"* (three departments in the Ministry: Banking Bureau, Securities Bureau and International Finance Bureau), banks' securities subsidiaries are not allowed to *lead manage* bond issues of Japanese corporations.

On the other hand, securities houses have also enthusiastically expanded the banking side of their business abroad. The London subsidiaries of the four largest Japanese securities companies acquired banking licences in 1986 and 1987 (Nomura, September 1986; Daiwa, January 1987; Yamaichi, December 1987; Nikko, December 1987). The subsidiaries of Nomura Securities Company and Yamaichi Securities Company in Switzerland also obtained a Swiss banking licence in July 1988 and September 1988 respectively.

This tendency of Japanese banks and securities houses to expand business abroad in order to circumvent domestic restrictions has contributed to the recent remarkable increase in Japan's foreign direct investment (see Table 17). It is well-known that Japanese manufacturing industry, faced with the continued appreciation of the yen, has recently been seeking ways to expand by shifting its production base abroad. However, the increase in direct investment by the financial industry has far exceeded that of manufacturing industry since 1986.

In May 1989 sub-committee II of the Financial Systems Research Council, an advisory body to the Minister of Finance, published a

Table 17
Japan's direct investment abroad
(in millions of US dollars; figures in brackets: percentage increase over year)

Item	1985*	1986*		1987*		1988*	
Manufacturing	2,352	3,806	(61.8)	7,832	(105.8)	13,805	(76.3)
Electronics	513	987	(92.4)	2,421	(145.3)	3,041	(25.6)
Transportation	627	828	(32.1)	1,473	(77.9)	1,281	(-13.0)
Machinery	352	626	(77.8)	687	(9.7)	1,432	(108.4)
Non-manufacturing . . .	9,536	17,949	(88.2)	25,080	(39.7)	32,634	(30.1)
Banks and insurance companies	3,805	7,240	(90.3)	10,673	(47.4)	13,104	(22.8)
Real estate	1,207	3,997	(230.2)	5,428	(35.8)	8,641	(59.2)
Commerce	1,550	1,861	(20.1)	2,269	(21.9)	3,204	(41.2)
Total	12,217	22,320	(82.7)	33,364	(49.5)	47,022	(40.9)

* Fiscal year basis (e.g. fiscal 1988: April 1988–March 1989).

Source: Survey on Japanese foreign direct investments, Ministry of Finance.

report entitled "On the new financial system" which focuses on the issue of how various spheres of business should be modified and rearranged within the financial system. One of the main questions addressed in this report is how the "Chinese Wall" between the banking industry and the securities industry could be dismantled in line with similar trends in other countries. In this respect the report proposed two new approaches: (i) a system in which banks (securities houses) are allowed to set up securities (banking) subsidiaries to carry out the existing securities (banking) business encompassing both retail and wholesale areas, and (ii) a system in which banks and securities houses are allowed to set up investment bank subsidiaries to carry out new investment banking business only in the wholesale area. It will probably take time to put either of those proposals into practice, as conflicting interests between the two industries will have to be reconciled. However, there is little doubt that the report has strengthened the momentum towards the restructuring of the two lines of business in the domestic market.

III
The impact of financial deregulation

This section examines the influence of deregulation with regard to (1) the international use of the yen, (2) changes in the investment and financing behaviour of the corporate sector, (3) changes in the investment and funding behaviour of the banking sector and (4) arbitrage among financial markets.

1. International use of the yen

To what extent have the various deregulation measures promoted the international use of the yen? The yen is used as an international currency in the following three ways: (1) as an invoicing currency, (2) as an official reserve currency, and (3) as an outlet for private investments.

As regards the *role of the yen as an invoicing currency,* it may be concluded that this has not yet become as significant as with other major international currencies. As is shown in Table 18, the proportion of yen invoicing in Japanese exports is only about one-third, which contrasts sharply with the case of Germany, where invoicing in Deutsche Mark is said to be used for roughly 80% of its exports. There are various factors – geographical, historical, institutional as well as economic – behind the limited use of the yen for invoicing purposes. It is beyond the scope of this paper to examine them in detail; suffice it, therefore, to focus on one micro-economic aspect.

The choice of the invoicing currency seems to have much to do with the pricing policy of exporters. The fact that Japanese exports are, to a large extent, invoiced in foreign currencies means that Japanese firms will incur corresponding exchange rate losses if the yen appreciates, unless they raise their prices to a level that can fully offset the yen's appreciation. On the other hand, by having their exports invoiced in foreign currencies, Japanese firms avoid unpredictable losses in sales volume, which they might have suffered in the event of yen appreciation if export prices had been denominated in yen. As shown in Graph 3, during the latest period of dollar depreciation from early 1985 until the end of 1987, the dollar weakened by 50%, while the unit value of Japanese exports expressed in yen declined only by 25%. To put it another way, Japanese firms raised their sales prices in dollar equivalent terms by only about 50% of the yen's overall appreciation (of 100%) over the period.

Table 18
Share of yen invoicing in exports and imports of Japan
(in percentages)

Item	1975	1980	1983	1984	1985	1986	1987
Exports	17.0	28.9	42.0	39.5	39.3	36.5	33.4
Imports	0.9	2.4	n.a.	n.a.	7.3*	9.7*	11.6*

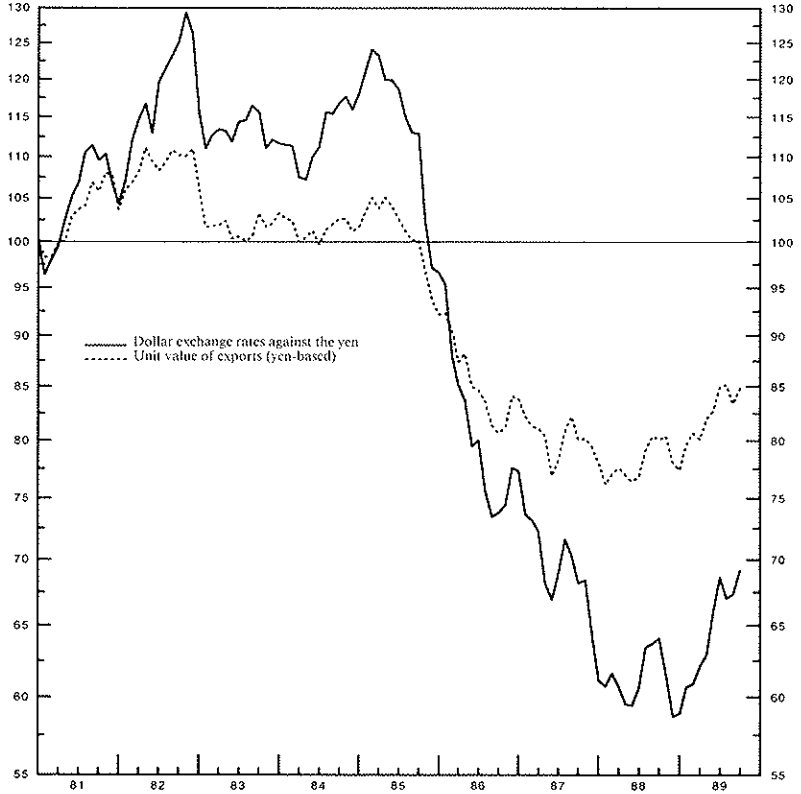
* Fiscal year basis (April to March).

Source: Various statistics of the MITI (Ministry of International Trade and Industry).

Graph 3

Movements in exchange rates and export unit values

(Monthly averages, December 1980 = 100)



In aggregate terms this pricing policy seems to be inconsistent with the goal of profit maximisation in the light of the fact that the price elasticity of Japanese exports is estimated at less than one.[26] This fact implies that Japanese firms have tried to maintain their market share

[26] Bank of Japan: Monthly Economic Review, May 1987.

at the expense of short-term profits. It might be the view of Japanese exporters that foreign currency invoicing is more suitable for their long-term corporate strategies since it enables them to absorb internally the initial shock of the yen's appreciation, while keeping the sales price, and hence demand, unchanged for a while. If their exports had been invoiced in yen, Japanese firms would have had to reduce prices very frequently to achieve the same result. It goes without saying that this pricing policy has delayed the effect of the yen's appreciation on the redressing of the trade imbalance in volume terms.

On the import side the limited use of the yen is even more conspicuous, with the share of yen invoicing amounting to only 10% (see Table 18). This has largely to do with the commodity composition of Japanese imports, i.e. the dominance of raw materials (see Table 19). Many of the prices of such goods are fixed, at least in the short run, in dollar terms (a typical example being crude oil), and dollar invoicing is therefore customary.

As long as the limited use of the yen as an invoicing currency is closely related to the structural features of Japanese external trade, the effect of the deregulation measures aimed at enhancing the use of the yen for commercial purposes will be limited. For example, the yen-denominated BA (bankers' acceptance) market which was launched in June 1985 (see page 37) with the specific goal of promoting yen invoicing in external trade contracts has not grown significantly.

As regards the *role of the yen as a reserve currency,* the yen is also apparently failing to fulfil its potential. As shown in Table 20, the yen's share in official holdings of foreign exchange reserves is still less than half that of the Deutsche Mark and only about 10% of that of the US dollar, although it has grown markedly in the last decade.

However, it should be taken into consideration that Japan's share of world exports is about 10% (Table 20) and that, as examined earlier, only 35% of its exports are invoiced in yen. These facts imply that yen held for purposes of transaction balances may be estimated to account for at most about 4% of total world reserves

Table 19
Structure of exports and imports of Japan
(percentage share based on dollar figures)

Year	Exports: By country				Imports						
					By country				By commodity		
	USA	Western Europe	South-East Asia	Middle East	USA	Western Europe	South-East Asia	Middle East	Raw materials and mineral fuel	Foodstuffs	Finished goods
1980	24.2	16.6	23.8	11.1	17.3	7.4	22.6	31.7	66.7	10.4	22.8
1984	35.2	14.1	21.6	8.4	19.7	9.6	23.4	24.2	58.5	11.7	29.8
1985	37.2	14.3	18.9	6.9	19.9	9.5	23.4	23.1	57.0	12.0	31.0
1986	38.5	17.9	20.0	4.7	23.0	14.3	23.3	14.6	43.1	15.2	41.8
1987	36.5	19.9	23.1	4.0	21.1	15.2	25.8	13.5	40.9	15.0	44.1
1988	33.8	21.1	25.3	3.6	22.4	16.3	25.5	10.5	35.4	15.5	49.0

Source: Balance of Payments Monthly, Bank of Japan.

Table 20
Currency breakdown of foreign exchange reserves
(end of year, in percentages)

Item	1975	1980	1984	1985	1986	1987
US dollar	79.4	68.6	69.4	64.2	66.0	67.1
Japanese yen	0.5	4.3	5.7	7.8	7.6	7.0
Deutsche Mark	6.3	14.9	12.3	14.9	14.9	14.7
Pound sterling	3.9	2.9	3.0	3.1	2.8	2.6
Swiss franc	1.6	3.2	2.1	2.3	1.9	1.6
Japan's share of world exports	6.9	6.9	9.5	9.9	10.6	9.8

Source: IMF Annual Report, 1988.

(10% × 35%). The difference between the actual percentage figure (for example, 7% in 1987) and this estimated figure (3–4%) may be interpreted as yen holdings based on portfolio considerations or for foreign exchange management. It is noteworthy that yen holdings for these purposes, calculated in the aforementioned way, while still quite small, are showing continuous growth (1975: 0.7%, 1980: 2.4%, 1985: 3.9%, 1987: 3.7%), which suggests that the yen might come to play a significant role as a reserve currency in the not too distant future.[27]

Lastly, *the volume of transactions on the Euro-market* is thought to be another barometer of the international use of a currency. As can be seen from Table 21-I, the yen share of the Euro-bond market on a flow basis has recorded a marked expansion since 1984, although it experienced a sharp contraction in 1988 owing to low yields and limited swap opportunities.

In tandem with its increased role in the bond market, the yen has also been of growing importance in the Euro-deposit market (Table

[27] It is true that this inference is somewhat simplistic. Horii (1986) examines the currency diversification of reserves from the early 1970s onwards in a more sophisticated way and concludes that diversification out of the dollar into the yen and the Deutsche Mark occurred during the period and that this diversification is not merely a reflection of the change in the international trade pattern, but has largely to do with portfolio and/or foreign exchange management.

Table 21

I. Currency breakdown of Euro-bonds
(percentage share of amounts issued)

Currency	1984	1985	1986	1987	1988
US dollar	80.2	70.9	62.9	40.4	42.6
Japanese yen	1.5	4.8	9.9	16.4	8.9
Deutsche Mark . . .	5.3	7.0	9.1	11.0	13.4
Pound sterling	4.9	4.5	5.6	10.7	12.2
ECU	3.6	5.1	3.8	5.3	6.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Financial Market Trends, Feb. 1989, OECD.

II. Currency composition of BIS reporting banks' cross-border asset positions

Currency	Valuation-adjusted flows[1] (in billions of dollars)		Percentage shares of amounts outstanding as at the end of the year			
	1984–88		1983		1988	
US dollar	640	(542)[2]	71.8	(73.5)	52.5	(59.0)
Japanese yen	325	(93)	3.0	(1.7)	14.5	(7.1)
Deutsche Mark	151	(87)	10.4	(11.9)	12.7	(13.0)
Pound sterling	79	(46)	2.4	(1.2)	4.2	(3.1)
Swiss franc	30	(20)	5.5	(5.7)	4.9	(5.1)
Other[3]	192	(165)	6.9	(6.0)	11.2	(12.7)
Total	1,417	(953)	100.0	(100.0)	100.0	(100.0)

[1] Positions of banks in industrial reporting countries only. [2] Figures in brackets show Euro-currency positions of each currency. [3] "Other" includes amounts whose currency is unspecified.

Source: BIS Annual Report.

21-II). During the five years from 1984 to 1988 the yen was second to the dollar in terms of absolute increases in BIS reporting banks' cross-border asset positions and in their Euro-currency positions. As a result, on a stock basis the yen's share in cross-border asset positions increased from 3% at the end of 1983 to 14.5% at the end of 1988, thereby exceeding that of the Deutsche Mark.

As stated above, it is not likely that the role of the yen as an invoicing currency will expand substantially in the near future. Therefore, it may be argued that the only way to promote further

international use of the yen is to improve its attractiveness as *an investment currency for private and official holders.* From this point of view, it can be concluded that the deregulation measures of the last few years, most of which were adopted in compliance with Japan's commitments under the US-Japan accord, were in the right direction. They have facilitated foreign investors' access to the yen asset markets and, through higher interest rates made possible by interest rate deregulation, they have improved the attractiveness of these assets.

2. Changes in the investment and financing behaviour of the corporate sector

As regards the corporate sector's investment and financing behaviour, quite a few noteworthy changes have occurred in conjunction with the recent financial deregulation. The following analysis is based essentially on a comparison of the *most recent period of accommodative monetary policy,* lasting from August 1980 to May 1989 and characterised by a succession of cuts in the discount rate (this period is referred to as the "recent period" for the sake of simplicity), with the *previous analogous period* from May 1975 to February 1979 ("previous period").

To begin with the assets side of corporate balance sheets (see Table 22), the first point to be observed is the marked decline in the share of cash and deposits with regulated interest rates. By contrast, the share of deposits with deregulated interest rates has expanded dramatically. From 1985 onwards, in particular, when MMCs were introduced and interest rates on large time deposits were freed, deposits with deregulated interest rates accounted for 40 to 70% of the total increase in financial assets, whereas the share of old-fashioned time deposits declined sharply.

A second striking feature of the recent period is a much higher share of purchases of foreign securities in the asset growth, which expanded from only 9.3% in the previous period to 24.8%. It is also notable that, reflecting the buoyancy in the stock market in 1986 and

Table 22
Financial investment structure of corporate sector
(percentage share of increase in total assets)

Item	Previous period (May 1975–Feb 1979)	Recent period (Aug 1980–May 1989)	1985	1986	1987	1988
Cash and demand deposits	32.6	8.9	4.5	13.4	- 4.0	9.4
Time deposits with regulated interest rates . . .	40.4	- 0.3	1.1	- 6.4	-20.6	-27.7
Deposits with deregulated interest rates (including CDs and MMCs)	-	42.6	41.1	35.5	71.4	71.4
Trust funds (including securities investment trust) . .	5.5	18.0	9.4	32.5	33.7	17.5
Domestic securities	12.2	6.2	7.8	- 0.4	- 3.4	8.1
Foreign securities and others	9.3	24.8	36.1	25.4	22.9	21.3
Memorandum item:						
Investments in instruments with regulated interest rates	78.3	24.3	14.8	32.5	7.5	- 3.0
Investments in instruments with deregulated interest rates	21.7	75.7	85.2	67.5	92.5	103.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Flow of Funds Accounts, Economic Statistics Monthly, Bank of Japan.

1987, the share of securities investment trust holdings in new assets increased sharply in the recent period.

As a result of these developments, the share of investment in instruments with deregulated interest rates in total asset growth rose to 75.7% in the recent period from 21.7% in the previous period.

On the liabilities side (see Table 23), the changes which occurred in the recent period look modest in comparison with the assets side. One noteworthy feature is a switch from bank borrowing to stock and CP issues since 1987. While the increase in stock issues is considered to be a reflection of the recent stock market boom, and may therefore be a temporary phenomenon, the increasing dominance of CP seems to be of a more permanent nature, judging by the rapid expansion of the

market since its inception in November 1987. Another noticeable development is that financing by means of foreign bond issues has become increasingly significant, accounting for about 8% of total financing in the 1985-88 period.

These developments, i.e. more attractive investment possibilities and more diversified financing channels, are considered to play a substantial role in maintaining corporate profits. According to an analysis conducted by the Bank of Japan,[28] net interest revenue of the corporate sector improved substantially in the recent period owing mainly to the change in investment and financing structures.

3. Changes in the investment and funding behaviour of the banking sector

(1) Changes in balance-sheet structures

The banking sector also is experiencing striking changes in its balance-sheet structure. On the assets side (see Table 24), the most significant difference between the recent period and the previous period is the substantial decline in the share of securities in new financial intermediation. This phenomenon may seem odd in view of the worldwide trend towards securitisation. However, it should be noted that the decline in the share of securities in banks' asset growth is largely due to the rapid shrinkage of the share of government bonds. The reason for this is that government bonds began to be issued on a large scale in 1975, which coincides with the "previous period", and that, by contrast, the "recent period" coincides with a phase of budgetary consolidation in which the government has scaled down its bond issues. If government bonds are excluded, the share of domestic security holdings in banks' asset growth actually expanded to 10.4% in the recent period from 7.4% in the previous period.

On the liabilities side (see Table 25) of the banks' balance sheets, the overall structural change is far more profound than on the assets side. One of the most salient features is the huge increase in funding

[28] Bank of Japan: "Further relaxation of financial conditions and structural change in corporate finance", Special Paper No. 145, October 1986.

Table 23
Financing structure of corporate sector
(percentage share of increase in total liabilities)

Item	Previous period (May 1975–Feb 1979)	Recent period (Aug 1980–May 1989)	1985	1986	1987	1988
Bank borrowing	84.7	76.3	80.6	80.3	65.0	62.7
Securities issues	14.8	22.2	16.9	19.1	28.0	34.5
(Domestic bonds) . .	(5.6)	(3.5)	(2.3)	(4.7)	(5.5)	(3.0)
(Foreign bonds) . . .	(1.6)	(6.6)	(7.9)	(7.7)	(8.8)	(7.9)
(Stocks)	(7.6)	(8.5)	(6.8)	(6.6)	(9.7)	(9.6)
(CP)	(–)	(3.6)	(–)	(–)	(4.0)	(14.0)
Others*	0.5	1.5	2.5	0.6	7.0	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Loans extended by non-residents are included here.

Source: Flow of Funds Accounts, Bank of Japan.

Table 24
Investment structure of banking sector
(percentage share of increase in total assets)

Assets	Previous period (May 1975–Feb 1979)	Recent period (Aug 1980–May 1989)	1985	1986	1987	1988
Cash and deposits with other banks	0.8	8.6	4.6	2.1	15.7	11.0
Call loans	–0.3	4.3	8.9	7.7	–2.3	–2.2
Bills bought	–0.6	0.1	2.1	–2.1	–	1.2
Securities	32.4	18.3	17.8	22.5	18.2	27.3
(Domestic securities).	(32.0)	(14.9)	(10.5)	(17.5)	(15.5)	(22.3)
[Government bonds].	[24.6]	[4.5]	[3.5]	[6.9]	[5.7]	[8.8]
(Commercial paper).	(–)	(0.7)	(–)	(–)	(0.5)	(4.1)
(Foreign securities) .	(0.4)	(3.4)	(7.3)	(5.0)	(2.2)	(0.9)
Loans	67.8	68.7	66.6	69.7	68.4	62.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Economic Statistics Monthly, Bank of Japan.

through instruments with deregulated interest rates (memorandum item in Table 25). Such instruments had accounted for only 8.7% of new funds in the previous period, but their share has grown markedly

Table 25
Financing structure of banking sector
(percentage share of increase in total liabilities)

Item	Previous period (May 1975–Feb 1979)	Recent period (Aug 1980–May 1989)	1985	1986	1987	1988
Deposits	81.6	69.8	57.9	61.0	89.0	66.2
(Non-resident yen deposits)	} (4.7)	} (6.7)	(1.3)	(-1.9)	(0.6)	(0.2)
(Foreign currency denominated deposits)			(12.1)	(2.2)	(10.8)	- 0.7
(MMCs)	(-)	(9.6)	(15.1)	(9.0)	(18.5)	(19.5)
(Interest-free large denomination time deposits)	(-)	(31.0)	(13.6)	(35.8)	(71.1)	(76.8)
(Other deposits)	(76.9)	(22.5)	(15.8)	(15.9)	-12.0	(-29.6)
CDs	-	4.9	2.3	1.4	1.8	12.0
Bonds	13.0	9.4	6.1	13.9	5.7	8.4
Call money	0.4	9.2	10.1	20.0	5.0	0.3
Bills sold	3.6	4.4	20.2	- 3.4	- 1.9	11.7
Borrowed money	1.4	2.2	3.5	7.1	0.3	1.5
(from the Bank of Japan)	(1.2)	(0.6)	(3.2)	(6.8)	(0.2)	1.4
Memorandum Item:						
Instruments with regulated interest rates	91.3	34.1	25.3	36.9	- 5.9	-19.7
Instruments with deregulated interest rates	8.7	65.9	74.7	63.1	105.9	119.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Economic Statistics Monthly, Bank of Japan.

to 65.9% in the recent period. As a result, in 1985 and 1986 the share of instruments with deregulated interest rates in balance-sheet growth far exceeded that of instruments with regulated interest rates, and in 1987 and 1988 total liability growth was more than accounted for by instruments with deregulated interest rates.

The combination of drastic structural changes on the liabilities side with much less pronounced changes on the assets side seems to imply that financial deregulation has negatively affected the profits

Table 26
International transactions of banks
(end of year, percentage increase over year)

Item	Assets				Liabilities			
	1984–88 average	1986	1987	1988	1984–88 average	1986	1987	1988
Foreign currency positions vis-à-vis non-residents[1] . . .	37.8	71.6	39.0	35.0	40.3	96.1	44.7	36.8
Foreign currency positions vis-à-vis residents[1]	31.5	86.5	45.2	8.0	29.1	60.5	39.5	3.9
Yen positions vis-à-vis non-residents[1] . . .	43.4	49.3	59.4	23.2	59.6	47.4	86.4	23.9
Memorandum item: Total assets/liabilities including domestic accounts[2] . . .	12.8	12.0	12.8	10.7				

[1] BIS reporting banks (all banks authorised to deal in foreign currencies). [2] All banks (city banks, regional banks, trust banks, long-term credit banks).

Sources: International Banking and Financial Market Developments, BIS; Economic Statistics Monthly, Bank of Japan.

of banks. A cross-section analysis of banks' profits undertaken by the Bank of Japan[29] shows that profit margins of individual banks are negatively correlated with the degree of use of deregulated instruments, but that deposit growth is positively correlated. All in all, the overall impact of the recent deregulation on individual banks' profit performance is, therefore, uncertain.

The internationalisation of banks' activities is another angle from which changes in their balance sheets may be analysed. Table 26 shows a spectacular increase in banks' international positions during the last few years. By contrast, the modest growth in total assets and liabilities implies that domestic positions have expanded relatively slowly.

[29] Bank of Japan: Monthly Economic Review, May 1987.

(2) **Changes in loan rate determination**

The aforementioned drastic changes in banks' funding structures have changed the way in which banks determine their loan rates. Japanese banks have traditionally used a "prime rate system" as a way of setting loan rates in the domestic markets. Under this system, a short-term prime rate (a minimum lending rate applied to blue-chip companies) is announced by the bank which chairs the Federation of the Bankers' Association, and all other banks abide by this decision, which usually coincides with changes in the discount rate. As a result of this procedure, the fluctuations of loan rates have been much more moderate than those of other market rates, and "stickiness" has been one of the salient features of the loan market in Japan. This stickiness has acted as a monetary policy transmission mechanism in that an abrupt increase in interest rates in short-term money markets narrows the margin between the banks' funding costs and their stickier loan rates, thus inducing them to hold down their lending.[30]

However, faced on their liabilities side with the increased role of instruments with deregulated and therefore flexible interest rates, banks have been inclined to make their lending rates more flexible so as to avoid mismatches with their funding costs. Against this background, so-called "spread rate lending", where the rates are determined by adding a certain margin to short-term market rates, has gradually been expanding. This tendency, while marginal so far, is expected to become more pronounced over time. The recent increases in impact loans (foreign currency denominated loans) and short-term Euro-yen lending to residents have accelerated this tendency, since the interest rates charged on these loans are basically determined by the spread method.

Furthermore, major city banks decided in January 1989 to adopt a new "prime rate system". Under this scheme, a prime rate is determined by adding a certain spread to a base rate that is a weighted average of various types of interest rates such as: (1) regulated deposit rates (interest rates on normal deposits and time deposits, etc.), (2)

[30] See Y. Suzuki (1984).

open market rates (CD rates, etc.) and (3) interbank market rates (bill rates, etc.). The new prime rate is reportedly to be changed each time the base rate moves more than a certain number of basis points. If this new system becomes widely established, loan rates as a whole will become considerably more flexible and thus more responsive to the Bank of Japan's policy conduct than before.

4. Arbitrage between financial markets

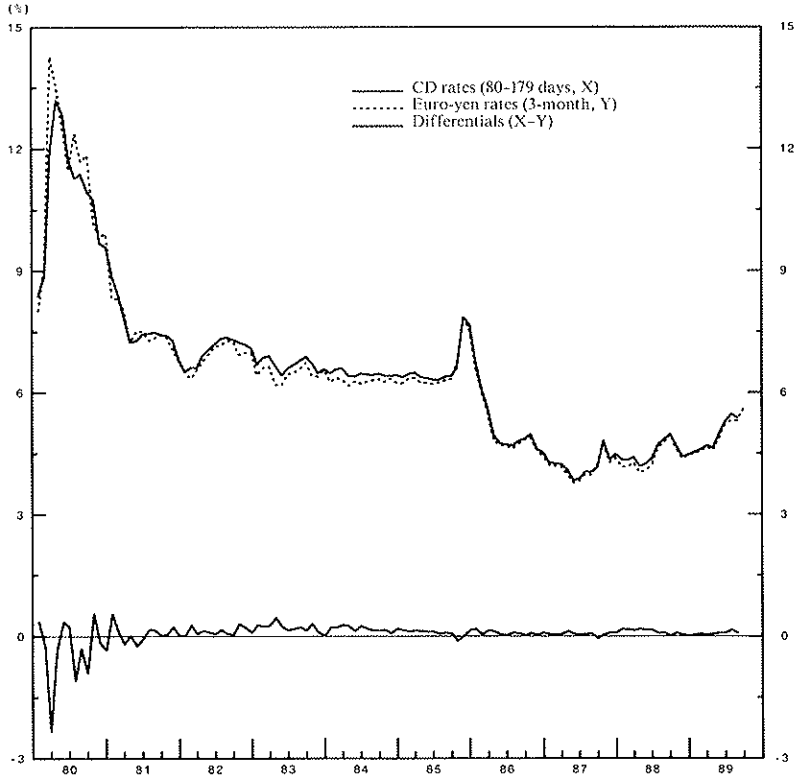
As regards the interest rate relationship between the *domestic markets* and the *overseas markets,* the linkage has been tightened considerably by the abolition of swap limits. As discussed earlier (see page 16), this measure has removed the ceilings (1) on amounts of foreign currency funds converted into yen, and (2) on the amount of Euro-yen obtained by domestic offices through inter-office accounts. It has thereby brought about a further integration of the domestic short-term market with the Euro-yen market and the Euro-dollar market. Graph 4 demonstrates the improved arbitrage between *domestic CD rates* and *Euro-yen rates.*

Similarly, Graph 5 demonstrates a convergence between *Euro-yen rates* and *Euro-dollar rates.* As can be seen from the graph, the differentials between Euro-yen rates and adjusted Euro-dollar rates (Euro-dollar rates plus dollar forward premium/discount rates expressed as an annual percentage) have narrowed since 1984 to such an extent as to have become almost negligible.

Secondly, with respect to the linkage between the *domestic interbank market* (the call-money market and the bill market) and the *domestic open market,*[31] the introduction of MMCs and CP, the liberalisation of interest rates on large time deposits and the relaxation of CD issuance rules have contributed towards deepening and diversifying the short-term money market. Consequently, the banks' potential arbitrage opportunities between those open markets and the interbank markets should have been enhanced.

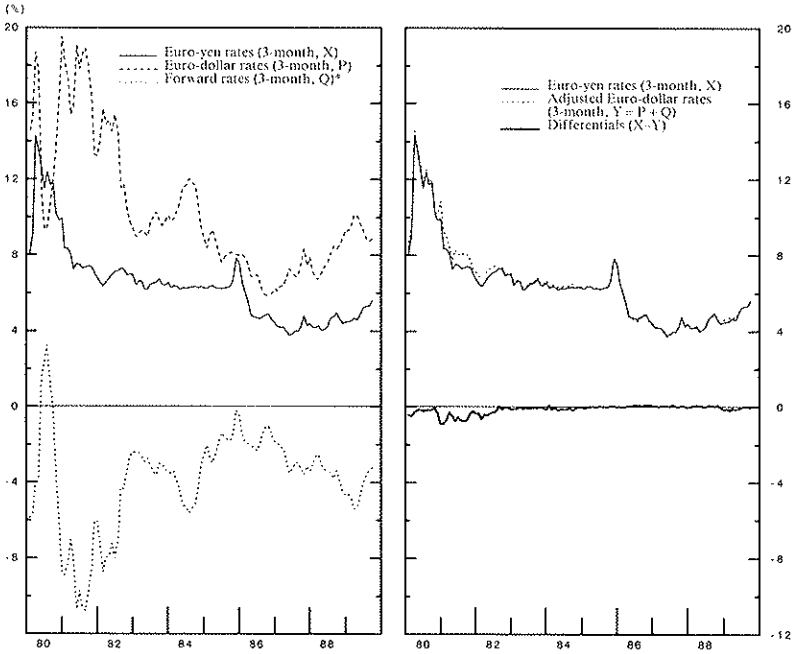
[31] See page 35 for the difference in the definitions of the two markets.

Graph 4
CD rates and Euro-yen rates



Item	1980-83	1984-88
Average of absolute value of the differentials ($\Sigma\|D\|/n$) .	0.2699	0.1065
Variance of the differentials	0.2047	0.0053
Correlation coefficient between X and Y	0.9822	0.9980

Graph 5
Euro-yen rates and Euro-dollar rates



* Forward rates are expressed as an annual percentage premium/discount of the dollar against the yen.

Item	1980–83	1984–88
Average of absolute value of the differentials ($\Sigma\|D\|/n$) .	0.2995	0.0511
Variance of the differentials	0.0654	0.0042
Correlation coefficient between X and Y	0.9929	0.9988

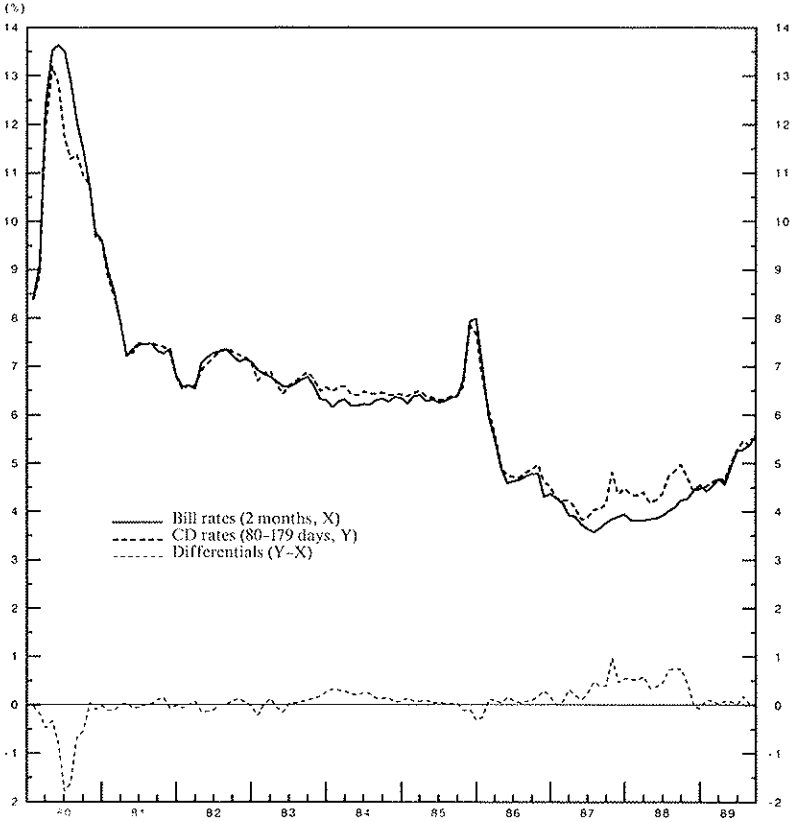
However, contrary to this expectation, Graph 6 reveals that the linkage between the two markets has rather weakened in the latest period compared with the preceding period. Comparing the two sub-periods within the latest period, the two-year period of 1987-88 and the preceding three years (1984-86), the mean differentials have increased to 43 basis points from 14 basis points and correlation coefficients have declined significantly to 0.6070 from 0.9895.

From these observations it may be concluded that the linkages between the *Euro-yen market,* the *Euro-dollar market* and the *domestic open market* are nearly perfect, whereas the linkage between the *domestic open market* and the *domestic interbank market* was very loose until 1988. To put it another way, among various types of market, only the domestic interbank market was behaving quite differently from others until recently.

The question arises as to why the divergence of interbank market rates became so pronounced during the 1987-88 period. One conceivable explanation is the internationally co-ordinated exchange rate policy in the face of an upsurge of potential inflationary pressure. From late 1986 onwards, in particular after the Louvre Accord in February 1987, Japan was almost always under pressure to keep domestic interest rates low for exchange rate reasons. In some instances this policy was viewed as being part of commitments undertaken in the framework of international policy co-ordination. Given these constraints, it is thought that the Bank of Japan intervened in the interbank market in a relatively accommodative way. On the other hand, there were times in 1987 and 1988 when domestic open market rates, which are less subject to control by the Bank of Japan, showed spontaneous rises as a result of aggravated inflationary expectations in the domestic market, or in response to monetary tightening in the United States. As is shown in Graph 6, differentials between CD rates and interbank rates widened remarkably in the autumn of 1987 and the summer of 1988.

As mentioned before (see page 41), against the background of the insufficient linkage between the interbank market and the open markets the Bank of Japan initiated new types of operation in

Graph 6
Bill rates and CD rates



Item	1980–83	1984–88	1984–86	1987–88
Average of absolute value of the differentials ($\Sigma\|D\|/n$)	0.1943	0.2467	0.1386	0.4322
Variance of the differentials . .	0.1470	0.0594	0.0189	0.0582
Correlation coefficients between X and Y	0.9916	0.9860	0.9895	0.6070

November 1988. The purpose of the new measure was to give leeway for bill rates to fluctuate more freely in response to market forces. Judging from the marked convergence between CD rates and bill rates from late 1988 onwards, which is also shown in Graph 6, it appears that the new measure has so far been successful in achieving its goal.

IV
Concluding remarks – repercussions on the Bank of Japan's policy

In the last few years Japanese financial markets have undergone a dramatic change stimulated by financial deregulation and an opening-up to the international markets. Of course, this is an ongoing process that is far from complete. Nevertheless, it is likely that in retrospect the last few years will be seen as a key period from the point of view of the evolution of the Japanese financial system.

This paper concludes by attempting to shed some light on how domestic monetary policy has been influenced by financial deregulation, and notably the rapid expansion of the Euro-yen market. This issue is discussed from two perspectives, i.e. the Euro-yen market as a substitute for a *domestic interbank market* and as a substitute for a *domestic loan market*.

1. Expansion of the Euro-yen market and shrinkage of the domestic interbank market

Japanese banks' cross-border business in yen, in particular interbank transactions, has grown remarkably in the last few years. According to BIS statistics, yen-denominated cross-border interbank assets and liabilities of banks in Japan have registered an average annual growth rate of no less than 60% in the five years since 1984. At the end of December 1988, those assets and liabilities were both eleven times as large as at the end of 1983. This rapid growth, which has benefited greatly from the opening of the Japan Offshore

Market, has brought about a remarkable diversification of Japanese banks' ways of funding their activities.

There is, from the Bank of Japan's point of view, one negative aspect associated with these developments, viz. the possibility of banks in Japan becoming less dependent for their funding requirements on the domestic interbank markets - the call-money market and the bill market. Although, as mentioned earlier, the Bank's tools for open market operations have recently broadened, it is still true that, in comparison with the interbank markets, the degree of controllability of the open markets is somewhat limited. Therefore, if the expansion of the Euro-yen market is accompanied by a loss of importance of the domestic interbank markets, this might somewhat weaken the transmission channels of monetary policy.

As can be seen from Table 27, the domestic interbank market showed vigorous growth until 1987. However, around mid-1988 the domestic interbank market contracted temporarily, whereas the Euro-yen market continued to expand at a very rapid pace. As a result, the size of the Euro-yen market began to exceed that of the domestic interbank markets. The Bank of Japan seems to have been greatly concerned about this development.

This shift of activity to the international market is in a sense the natural outcome of the asymmetry between the domestic interbank market and the Euro-yen market in terms of the degree of interest rate control by the Bank of Japan. It has already been explained that the movement of domestic *interbank rates* diverged in a downward direction from *Euro-yen rates* and domestic *open market rates* (see page 62). This was a reflection of the control exerted by the Bank of Japan in order to keep domestic interbank rates down in view of exchange rate considerations and the need for international policy co-ordination. With domestic interbank rates no longer accurately reflecting actual demand and supply conditions, activity tended to shift to the higher-yielding international market, which resulted in a hollowing-out of the domestic interbank market.

One lesson which must be drawn from this experience is that once the Euro-yen market has developed to a substantial degree, an

Table 27

Domestic interbank market and Euro-yen market

(amounts outstanding as at the end of period, in billions of yen; figures in brackets: percentage increase over year)

Year		Domestic interbank market[1] (A)		Euro-yen market[2] (B)		(A) / (A) + (B) (percentages)
1984		13.0	(16.2)	5.4	(83.5)	70.7
1985		19.8	(51.6)	9.1	(70.4)	68.5
1986		23.8	(20.3)	14.1	(54.3)	62.8
1987		29.1	(22.6)	26.7	(90.2)	52.2
1988	I	31.5	(8.8)	27.0	(49.4)	53.8
	II	27.1	(-10.8)	29.4	(55.3)	48.0
	III	28.6	(- 9.2)	38.2	(55.0)	42.8
	IV	33.7	(-15.7)	33.2	(24.0)	50.4
1989	I	39.1	(24.4)	33.0	(22.1)	54.2

[1] Call-money market plus bill market. [2] Cross-border interbank yen liabilities of Japan vis-à-vis all countries.

Sources: Economic Statistics Monthly, Bank of Japan; International Banking and Financial Market Developments, BIS.

arbitrary interest control applied only to the domestic market segments loses its practicability. It has already been stated that, in order to cope with this situation, the Bank of Japan adopted a new approach to market operations in the interbank market in November 1988. There is little doubt that one of the motives behind this was to induce a repatriation of interbank transactions from abroad. In response to this measure and to the resultant convergence between Euro-yen rates and domestic interbank market rates since late 1988, the domestic interbank market seems to be beginning to recoup its losses.

2. Expansion of the Euro-yen market and decreased role of window guidance

Another type of Euro-yen activity which has shown a remarkable increase in the last few years is cross-border yen lending to the Japanese non-bank sector. The rapid growth of this lending has had a considerable impact on domestic monetary policy by diluting the

Table 28
Domestic loan growth and Euro-yen lending
(increase in billions of yen)

Year		Bank borrowing by corporate sector (A)	Euro-yen* lending (B)	(B)/(A) (percentages)
1986	I	3,575	-55	-
	II	2,198	357	16.2
	III	8,725	493	5.7
	IV	11,788	-38	-
1987	I	3,906	491	12.6
	II	4,783	559	11.7
	III	8,802	884	10.0
	IV	8,281	630	7.6
1988	I	5,150	-29	-
	II	4,453	401	9.0
	III	9,587	1,050	11.0
	IV	10,922	-425	-

* Cross-border yen claims of all reporting countries on the Japanese non-bank sector.

Source: Flow of Funds Account, Bank of Japan; International Banking and Financial Market Developments, BIS.

effectiveness of window guidance, which in the past played a considerable role in Japan as an instrument of informal credit control.

Table 28 draws a quantitative comparison between Euro-yen lending and domestic lending in yen. It reveals that Euro-yen lending has recorded a remarkable expansion since the opening of the Japan Offshore Market in December 1986. It also shows that Euro-yen loans can amount to as much as 15% of domestic lending to the corporate sector, implying that the coverage of loans subject to window guidance has narrowed to a not insignificant extent.[32]

Apart from its role as a means of credit control, window guidance has had another role to play, viz. to avoid excessive competition in the domestic markets. One of the reasons why it has been so well

[32] The other side of the coin, however, is that the existence of window guidance promoted the rapid growth of the Euro-yen market and of the Japan Offshore Market.

observed by banks is that they themselves have been protected by this policy in a number of ways.

Firstly, lending limits have always been set in such a manner that each bank's market share would not be changed. To put it another way, window guidance has not only restrained the supply of bank lending but has also frozen individual banks' market shares. Secondly, Japanese banks have traditionally competed with each other as regards the size of deposits of their *domestic* offices (published semi-annually) as well as those of all branches. The amount of deposits collected at domestic branches seems to have a special significance for them. Under such circumstances, window guidance, by limiting the amount of domestic yen lending, has contributed to avoiding overheated competition for domestic deposits.

However, it is questionable to what extent it is still meaningful to restrict competition for lending only in the domestic market when Japanese banks can easily extend yen-denominated loans to Japanese residents via their foreign branches. Furthermore, it is certain that the size of domestic yen business no longer has the same importance as a yardstick for gauging the size of a bank as a whole, in the light of the fact that Japanese banks' international business has been growing much faster (see Table 26). By the same token, there seems to be no denying that window guidance has lost some of its importance also in respect of restraining competition.

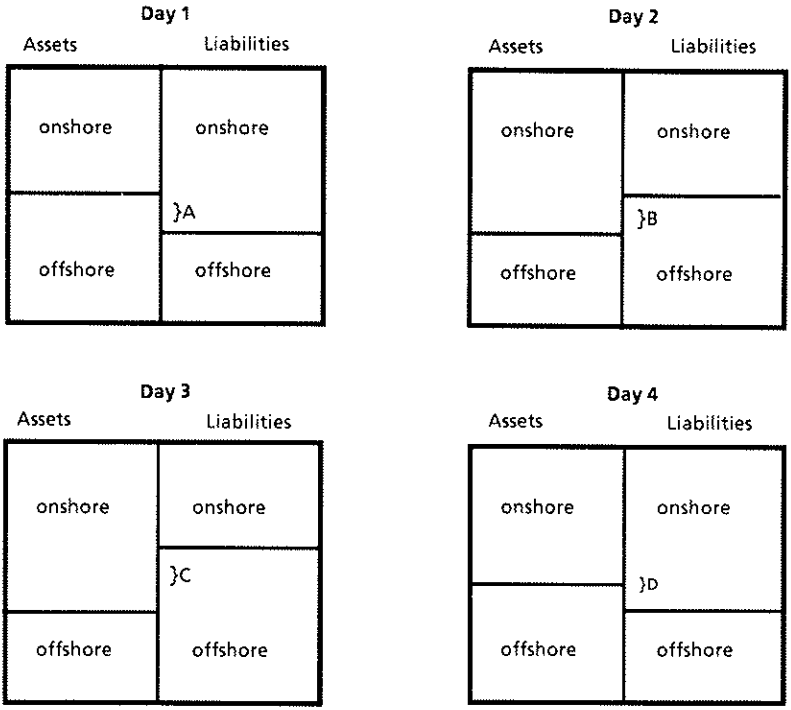
The Japanese financial system has experienced a prolonged period of accommodative monetary policy since the mid-1980s. It can be said, therefore, that the effectiveness of window guidance, whose impact might have been changed by financial deregulation, has not been tested yet. It will be of great interest to see to what extent it can still be effective in a period of credit tightness and what role it will continue to play in the Bank of Japan's monetary policy conduct.

Illustrative example I

Guideline concerning funds flow between onshore accounts and offshore accounts

1. Net asset positions of offshore accounts as at the end of each operating day (B or C) must not exceed *10%* of the average amount of assets vis-à-vis non-residents in the offshore account of the preceding month.
2. The monthly sum of the daily net asset positions of offshore accounts vis-à-vis onshore accounts (B + C + ...) must not exceed the monthly sum of the daily net liability positions (A + D + ...). To put it another way, net asset positions of offshore accounts vis-à-vis onshore accounts must be zero (or less) on a monthly basis.

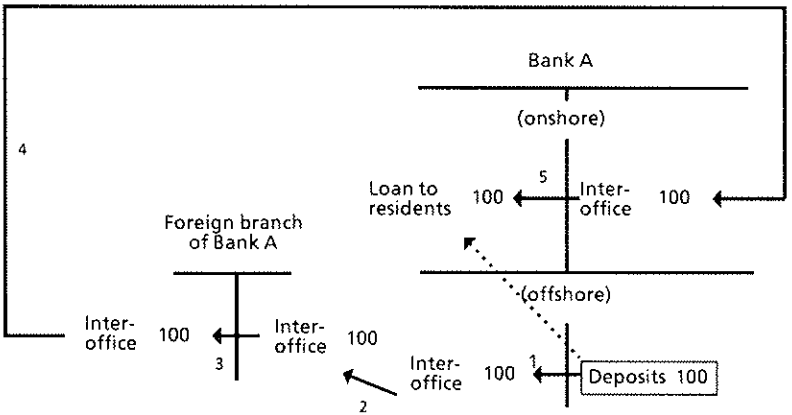
Balance sheet of Bank A (onshore and offshore accounts)



A.D.: Funds flow from onshore accounts into offshore accounts (net liability position of offshore accounts vis-à-vis onshore accounts).
B.C.: Funds flow from offshore accounts into onshore accounts (net asset position of offshore accounts vis-à-vis onshore accounts).

Illustrative example II

Assumption: Bank A extends a loan to a Japanese borrower on onshore account by using funds colleted in the JOM (flow of funds, offshore → onshore).



Flow of funds that actually occurs in order to circumvent the regulation.

Flow of funds that would occur if it were not for the regulation.

References

Bank of Japan (1985). *Characteristics of interest rate fluctuations amidst deregulation and internationalization of financing.* Tokyo: Bank of Japan. (Special paper No. 126). October.

_____ (1986). *Recent developments in short-term money markets,* unpublished. (Special paper No. 139).

_____ (1986). *Further relaxation of financial conditions and structural changes in corporate finance.* Tokyo: Bank of Japan. (Special paper No. 145). October.

_____ (1988). *Annual review of monetary and economic developments in fiscal 1987.* Tokyo: Bank of Japan. June.

_____ (1988). *Balance of payments adjustment processes in Japan and the United States.* Tokyo: Bank of Japan. (Special paper No. 162). March.

_____. Monthly Economic Review (Japanese), various issues.

Cargill, T.F. (1985). "A US perspective on Japanese financial liberalization." *Bank of Japan Monetary and Economic Studies,* Tokyo, May, pp. 115-161.

Corbett, J. (1987). "International perspectives on financing: evidence from Japan." *Oxford Review of Economic Policy,* Oxford, Winter, pp. 30-55.

Frankel, J.A. (1984). *The yen/dollar agreement: liberalizing Japanese capital markets.* Washington: Institute for International Economics. (Policy analysis in international economics, 9). December.

Fukui, T. (1986). *Recent developments of the short-term money market in Japan and changes in monetary control techniques and the procedures by the Bank of Japan.* Tokyo: Bank of Japan. (Special paper No. 130). January.

Horii, A. (1984). *The US-Japanese agreement on Japanese financial deregulation and its implications for exchange rates and financial markets,* unpublished paper. September.

_____ (1986). *The evolution of reserve currency diversification.* Basle: BIS. (BIS economic paper No. 18). December.

International Finance Bureau (1988). *Annual Report on International Finance 1988* (Japanese). Tokyo: Ministry of Finance.

Koo, R.C. (1987). "On foreign bond investments by Japanese investors" (Japanese). *Zaikaikansoku.* Tokyo: Nomura Research Institute. May.

Sargen, N. and Khadjavi, L. (1986). "Changing patterns of Japanese purchases of foreign securities." *Bond Market Research,* New York, Salomon Brothers Inc. March.

Suzuki, Y. (1984). "Financial innovation and monetary policy in Japan." *Bank of Japan Monetary and Economic Studies,* Tokyo, June, pp. 1-47.

_____ (ed.) (1987). *The Japanese financial system.* Oxford: Clarendon Press.

_____, Kuroda, A. and Shirakawa, H. (1988). *Monetary control mechanism in Japan,* a paper presented at the Conference on "Monetary aggregates and financial sector behaviour in interdependent economies", sponsored by the Board of Governors of the Federal Reserve System, May.

Walton, R.J. and Trimble, D. (1987). "Japanese banks in London." *Bank of England Quarterly Bulletin,* London, November, pp. 518-526.

Yasuda, T. (1981). *Theoretical interpretation of the window guidance,* (Discussion paper No. 004). Tokyo: Bank of Japan. November.

BIS ECONOMIC PAPERS

No. 1 Credit and liquidity creation in the international banking sector, by Helmut Mayer, November 1979.

No. 2 US monetary aggregates, income velocity and the Euro-dollar market, by W.D. McClam, April 1980.

No. 3* "Rules versus discretion": an essay on monetary policy in an inflationary environment, by Alexandre Lamfalussy, April 1981.

No. 4 Theories of the growth of the Euro-currency market: a review of the Euro-currency deposit multiplier, by R.B. Johnston, May 1981.

No. 5 The theory and practice of floating exchange rates and the rôle of official exchange-market intervention, by Helmut Mayer, February 1982.

No. 6 Official intervention in the exchange markets: stabilising or destabilising?, by Helmut Mayer and Hiroo Taguchi, March 1983.

No. 7 Monetary aggregates and economic activity: evidence from five industrial countries, by Geoffrey E.J. Dennis, June 1983.

No. 8* The international interbank market: a descriptive study, July 1983.

No. 9 Financial innovations and their implications for monetary policy: an international perspective, by M.A. Akhtar, December 1983.

No. 10 Adjustment performance of open economies: some international comparisons, by W.D. McClam and P.S. Andersen, December 1983.

No. 11 Inflation, recession and recovery: a nominal income analysis of the process of global disinflation, by J.A. Bispham, February 1984.

No. 12 Interest rate futures: an innovation in financial techniques for the management of risk, by A.B. Frankel, September 1984.

No. 13 International interest rate relationships: policy choices and constraints, by J.T. Kneeshaw and P. Van den Bergh, January 1985.

No. 14 The stability of money demand functions: an alternative approach, by Palle S. Andersen, April 1985.

No. 15 Interaction between the Euro-currency markets and the exchange markets, by Helmut W. Mayer, May 1985.

No. 16 Private ECUs potential macro-economic policy dimensions, by Helmut W. Mayer, April 1986.

No. 17 Portfolio behaviour of the non-financial private sectors in the major economies, by E.P. Davis, September 1986.

No. 18 The evolution of reserve currency diversification, by Akinari Horii, December 1986.

No. 19 Financial market supervision: some conceptual issues, by Jeffrey C. Marquardt, April 1987.

No. 20 Rising sectoral debt/income ratios: a cause for concern?, by E.P. Davis, June 1987.

No. 21 Financial market activity of life insurance companies and pension funds, by E.P. Davis, January 1988.

No. 22 Reserves and international liquidity, June 1988.

No. 23 Changes in central bank money market operating procedures in the 1980s, by J.T. Kneeshaw and P. Van den Bergh, January 1989.

No. 24 Inflation and output: a review of the wage-price mechanism, by Palle S. Andersen, January 1989.

No. 25 The US external deficit and associated shifts in international portfolios, by M.G. Dealtry and J. Van't dack, September 1989.

* Also available in French