

1991-19

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Serie Research Memoranda

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A Descriptive Review

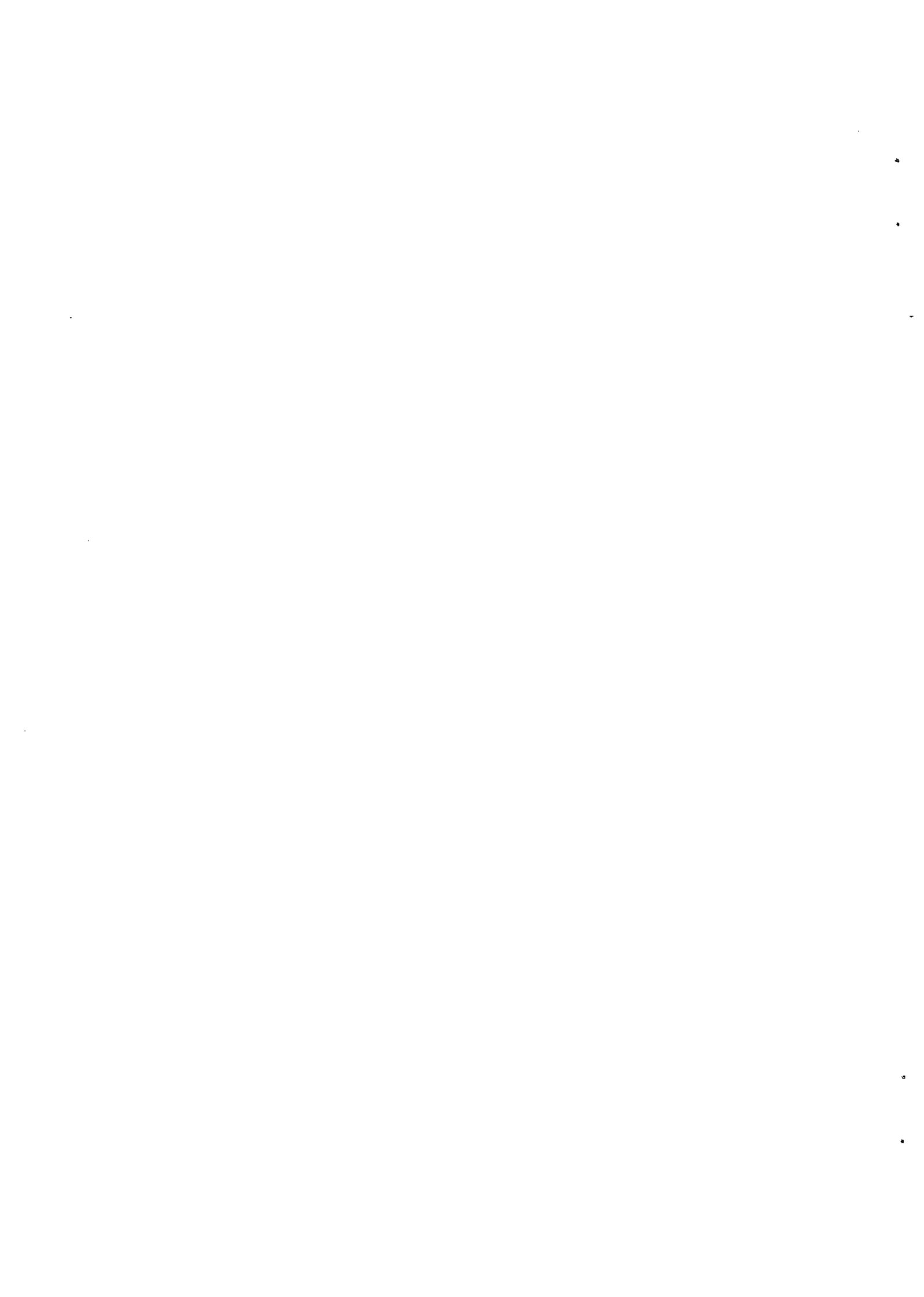
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**Research Memorandum 1991 - 19
February 1991**

vrije Universiteit

amsterdam





**THE JAPANESE FINANCIAL SYSTEM AND MONETARY POLICY:
A DESCRIPTIVE REVIEW**

**Sylvester Eijffinger
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The Japanese Financial System and Monetary Policy: A Descriptive Review

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INTRODUCTION

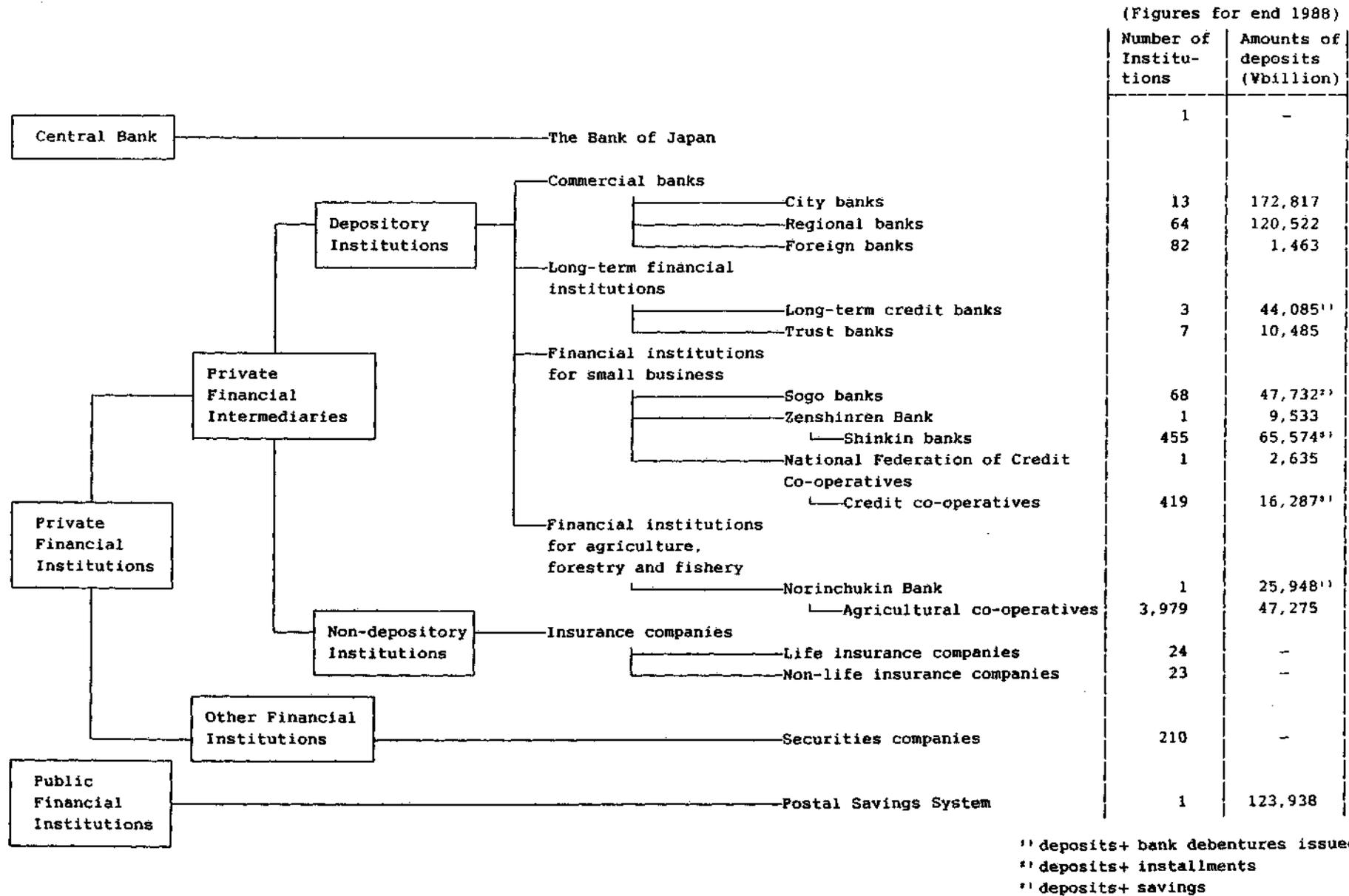
Until the eighties Japan was mainly concerned with high economic growth promoted by considerable exports to the United States and Western Europe. The Japanese companies and financial institutions could finance the required investments from the voluminous household savings and could also accumulate substantial reserves. These reserves enabled Japanese companies to extend strongly their direct foreign investments during the eighties. Furthermore, after the rise of Japanese industry, the second half of the eighties were characterized by the advance of Japanese banking and securities business. The financial institutions were primarily focused on domestic developments, but during the recent years they became more conscious of their dominance in the global financial system. Measured by the size of assets, no less than nine of the ten biggest banks in the world are Japanese¹⁾. Furthermore, the big four Japanese securities companies all belong to the world top 10. Moreover, the monetary policy by the Bank of Japan increasingly affects the international monetary system. On the one side the domestic credit expansion in Japan influences the global money supply, on the other side Japanese exchange and money market management plays a prominent part in the process of international monetary coordination within the Group of Seven (G7).

In this article we will discuss the evolution of the financial system in Japan and its consequences for the monetary policy implemented by the Bank of Japan. Firstly, the Japanese financial institutions and markets are set out with emphasis on depository institutions and on interbank and open money markets because of their relevance for monetary policy.

Secondly, we describe the progress of financial innovation and liberalization in Japan which took off in the late seventies and early eighties.

Thirdly, the objectives, indicators and instruments of monetary policy by the Bank are analysed with special reference to the transmission mechanism of monetary policy. A distinction is made between the traditional, new and modern monetary policy.

FIGURE 1 A classification of Japanese financial institutions



Source: The Bank of Japan

The financial institutions for small businesses comprise three groups: the sogo banks, the shinkin banks and the credit cooperatives. The sogo banks used to be mutual non-profit organizations, but were converted in 1951 into profit-oriented corporations. The shinkin banks are mutual associations of small businesses and provide ordinary banking services and installment businesses to their members. The credit cooperatives are cooperative financial institutions on a mutual base for small businesses and accept deposits and installment savings from their members to lend or discount bills to them.

The Zenshinren Bank and the National Federation of Credit Cooperatives act as the central bank for respectively the shinkin banks and credit cooperatives.

The financial institutions for agriculture, forestry and fishery are organized on national, prefectorial and municipal level. They provide financial services to farmers, foresters and fishermen on a mutual base. The Norinchukin Bank acts as the central bank for these institutions. This bank is the seventh largest of the world and holds the biggest private portfolio of Japanese governments bonds.

The main non-depository institutions are the insurance companies, which are legally divided in two groups: the life insurance companies and non-life insurance companies (fire and marine insurance companies). The insurance companies use their premiums to lend to industrial corporations and, recently, to invest in securities. They hold the largest portfolio of Japanese stocks. The securities companies belong to the other financial institutions. They dominate the primary and secondary markets for domestic stocks and bonds, but also play a role in the open money markets. The "big four" securities companies are Nomura, Daiwa, Nikko and Yamaichi and conduct about 70% of the total underwriting and half of all trades on the Tokyo Stock Exchange.

The most important public financial institution is the Postal Savings System with a network of approximately 24,000 local post offices and 30% of all deposits by Japanese households. This institution is under the supervision of the Ministry of Posts and Telecommunications.

FINANCIAL MARKETS

The Japanese financial markets are to be divided into the money markets for (very) short-term finance and the capital markets for

medium -and long- term finance. The money markets with assets of less than one year maturity can be subdivided in the interbank and open money markets. The capital markets with assets of more than one year maturity may be split up into the primary and secondary markets for stocks and bonds and other markets based on these markets, such as the bond futures market . Hence, we shall concentrate on the money markets because of their importance for monetary policy making in Japan. The heart of the money market are the interbank markets where only financial institutions borrow and lend short-term funds. The main borrowers in the interbank markets are the city banks and large regional banks, e.g. the Bank of Yokohama, and the most important lenders are the Zenshinren Bank and the Norinchukin Bank.

The interbank markets comprise three parts: the call (money) market, the (commercial) bills market and the dollar call (money) market.

Since 1927 the call market requires as collateral government bonds or bills emitted by corporations. However, in 1985 an uncollateralized call market was created which became attractive for foreign banks for the lack of collateral.

Both on the collateralized and uncollateralized call market funds were traded with a very short maturity, from overnight till three weeks.

The bills market began in 1971 as a market for discounting commercial bills with a maturity from 1 to 6 months. The Bank of Japan is the main buyer in the bills market and uses this market for its money market operations.

The dollar call market was created in 1972 to borrow and lend foreign currency funds -mostly US dollars- with a (very) short maturity in Tokyo. Only domestic and foreign banks have access to this market.

Besides the interbank money markets, there are also the open money markets in which both financial and non-financial institutions can participate. The open markets include eight different submarkets: the gensaki market, the certificate of deposit (CD) market, the Euro-yen market, the banker's acceptance (BA) market, the financial bills (FB) market, the treasury bills (TB) market, the Japan Off-shore market (JOM) and the commercial paper (CP) market. The gensaki market was established in 1949 as a market to sell/buy temporarily securities. These securities will be repurchased/resold at a predetermined time and price within 6 months after the sale/purchase. In 1979 CDs were introduced by depository institutions, especially city banks. Because

the CD rates are unregulated and negotiable, the CD market became an important open market in successive years. On the Euro-yen market offshore transactions can be conducted without collateral and withholding tax. This market may be considered as one of the most liberalized open markets and thus functions as an substitute for domestic open markets.

The BA market was created in 1985 for trading BAs, i.e. a fixed-term bill of exchange issued by an exporter or importer to settle a trade transaction and then underwritten by a bank. Because of the progressive stamp tax on the issue of BAs, the volume of this market has shrunk since its establishment.

On the FB market temporary shortages of government funds are covered by discount bills with a maturity of mostly 60 days. The FB rates are below the level of the discount rate and market rates and therefore all issued FBs are subscribed by the Bank of Japan. The volume of this market is relatively limited until now.

The TB market is also intended to finance temporary government shortages, but the discount bills have a maturity of 60 or 90 days and are only issued for refunding. This market reached a volume of Yen 5.5 trillion by end-March 1990.

The JOM, which was established in December 1986, is a relatively non-regulated market for transactions between non-residents. The JOM is separated from the domestic financial markets and has become one of the leading offshore centers of the world.

In November 1987 the CP market was established and its volume has grown considerably since then. CPs are short-term assets issued by non-financial institutions to replace bank loans. They allow more flexible funding to corporations at lower costs. The CP market is often called a quasi-interbank market, because CPs are mainly traded among banks.

FINANCIAL INNOVATION AND LIBERALIZATION

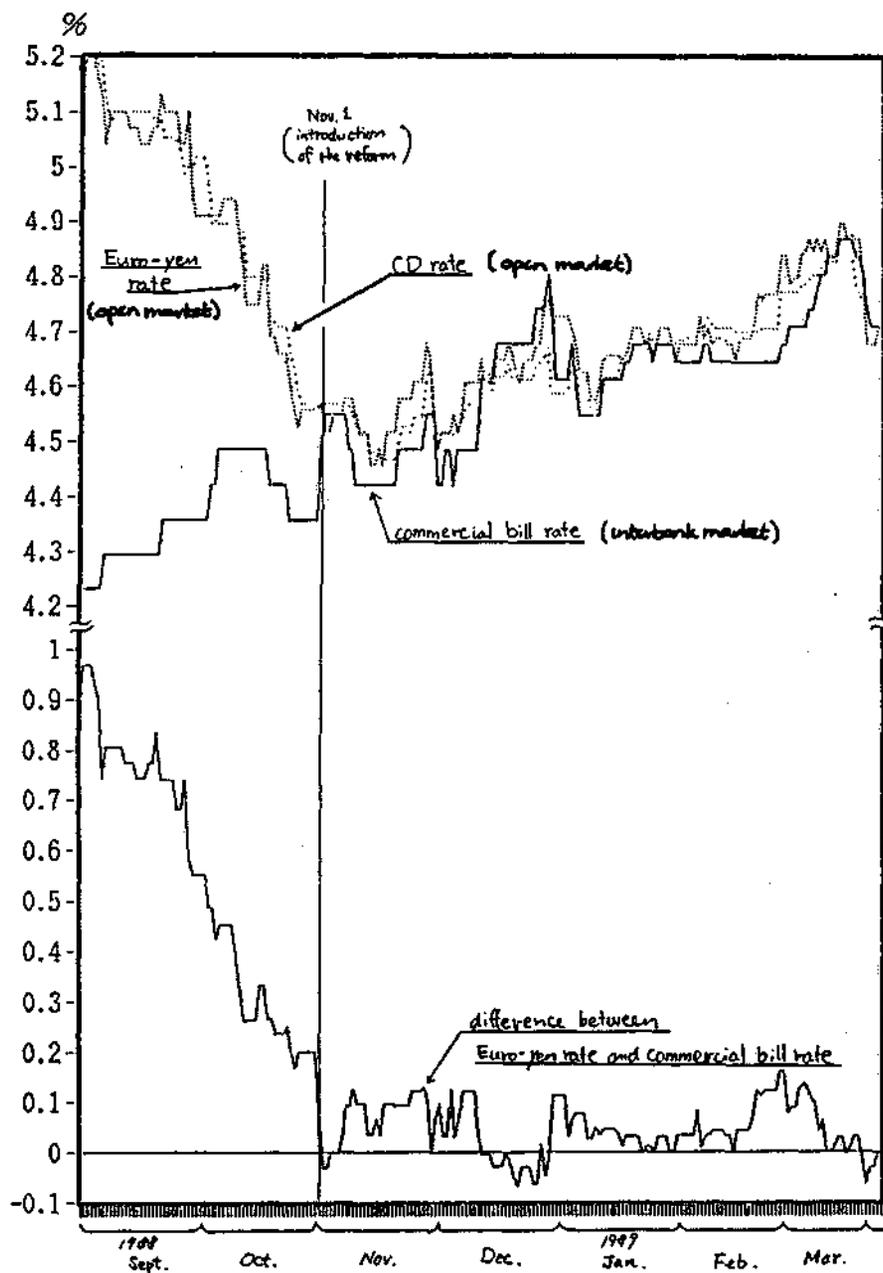
Till the end of the sixties the pace of financial innovation was slow in Japan. From 1973 this changed by the transition to floating exchange rates and the rise of inflation rates throughout the world. Furthermore, the first oil crisis resulted in large issues of Japanese government bonds to finance public debt. In addition, there was a

development towards open money and capital markets, in particular Euro-currency markets. Finally, the rapid progress of computer and information technology resulted in lower costs of financial innovations and higher profit opportunities for financial institutions. The most important financial innovations were the introduction of CDs in May 1979 and money market certificates (MMCs) in March 1985 by banks and the creation of so-called chukoku funds -i.e. portfolios containing medium-term government bonds- in January 1980 by securities companies⁴). The processes of financial innovations and financial liberalization had their impact on the Japanese financial system. At first this meant a gradual relaxation and abolishment of interest rate regulations - i.c. interest rate ceilings - for large bank deposits. As a result, interest rates for deposits of three months to two years maturity with a minimum amount of one billion yen were fully liberalized in October 1985. Furthermore, this minimum for large time deposits was gradually reduced to 20 million yen. However, a complete liberalization of interest rates for small time deposits is hampered by the existence of a non-profit-oriented Postal Savings System which can not be enforced to determine its interest rates by market rates. Another aspect of liberalization was the reduction of the minimum amount for CDs to 100 million yen and for MMCs to 10 million yen and the abolishment of the maximum volume for issues of CDs and MMCs. The process of liberalization resulted, as might be expected, in a rise of the open money market volume and a decline of the interbank money market volume from 1984. As a consequence, the Bank of Japan influenced the money market interest rate not only by transactions in the interbank market (mainly call and bills market), but also conducted operations in the open market (in particular gensaki and CD market). This development continued until the Autumn of 1988 when the volume of the interbank market, especially the bills market, shranked as a result of increasing open market rates, compared with relatively stable interest rates in the interbank market. The decreasing volume of the interbank market reduced the influence of the Bank of Japan on the money market rate and compelled the Bank to deregulate the interbank market as from November 1988.

Firstly, the Bank liberalized the interest rate of (commercial) bills which was regulated till then.

Secondly, the range of maturities for the call and bills market was

FIGURE 2 The interbank and open market rates before and after the reform of the Japanese money market



Source: The Bank of Japan

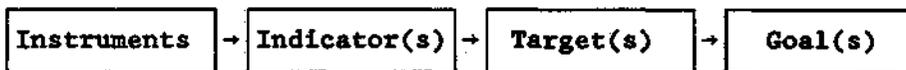
cally change.

MONETARY POLICY

In this section, attention will be paid to the channels of transmission in the monetary policy process.

In the transmission mechanism of monetary policy a number of monetary variables play an important role. These variables provide the central bank with the necessary information about the orientation and effectiveness of its monetary policy. Figure 3 shows the transmission mechanism.

FIGURE 3 The transmission mechanism of monetary policy



Based on Eijffinger (1986)

The indicator is the starting point of the monetary policy process. This monetary variable is close to the central bank and is directly affected by the policy instruments. The relationship of the indicator with the goals of monetary policy, i.e. the final policy objectives, is according to Suzuki (1987) somewhat unstable. Therefore, the target is used as an intermediate objective. The target is farther from the control of the central bank and is not directly affected by the policy instruments, but its relationship with the goals of monetary policy is relatively stable.

In the following subsections, a brief analysis of the monetary policy transmission mechanism in Japan is presented for three subsequent periods. A distinction will be made between the traditional, new and modern monetary policy.

THE TRADITIONAL MONETARY POLICY 1953-1975

The traditional monetary policy coincided with the so called High Growth Period, the period of excessive economic growth which started in 1953. During this period the main source of corporate finance was bank credit. The heavy dependence of the corporate sector on credit from money creating financial institutions, i.e. the situation of overborrowing and the predominance of indirect finance, was mainly

caused by the underdevelopment of the capital markets and the existence of the main bank system and the so called Keiretsu. Most companies had a very close relationship with one or more main banks. These banks operated as a kind of lender of last resort and supported their client banks in many ways. The Keiretsu are conglomerates of cooperating financial and non-financial enterprises organized on an informal basis. The participating enterprises could borrow on favourable terms from the financial institutions in the Keiretsu. The main bank structure and Keiretsu still exist today and contribute to credit based corporate financial structures in Japan.

Another important characteristic of the Japanese financial system, or more specifically of the Japanese banking system, during the period 1953-1975 was the so called situation of overloan. Suzuki describes overloan as "... the existence of loans and investments funded from sources other than deposits and equity capital, so that reserve assets (taken as the sum of central bank money plus second-line reserve assets minus borrowed funds) are consistently negative" (Suzuki (1980), p.5). Borrowed funds include loans from the central bank and borrowing from the money market. It is important to stress that in the case of Japan overloan not only existed at a micro level, i.e. a situation of overloan of individual banks, but also at a macro level. The macro based situation of overloan implied that the banking system as a whole was in debt to the Bank of Japan and depended very much for its funding on central bank credit.

It will become clear from the following analysis that the heavy dependence of the corporate sector on bank credit and the situation of overloan were of great importance for the implementation of the traditional monetary policy. On the basis of figure 1 we will present a brief review of Japanese monetary policy during the period 1953-1975.

The starting point of the traditional monetary policy was formed by the interbank (money) markets. The Bank of Japan used the interbank interest rates, i.e. the call rate and after 1971 the bill discount rate, as indicators. The call market is the market for borrowing and lending of short term funds by financial institutions. The bill discount market is the market for discounting of bills and was established in 1971.

The Bank of Japan exerted great influence on the interbank (money)

markets through its lending policy. Of great importance in this policy was the reserve system of the Bank, which is still effective today. The commercial financial institutions are under the reserve system required to hold non-interest bearing deposits at the Bank of Japan against their private deposits. In May 1986, the Bank introduced a progressive schedule of reserve ratios.

The financial institutions are free to decide the daily amount of these deposits, if at the end of the reserve period the compulsory amount of reserve deposits is attained. The reserve deposits consist mainly of credit of the Bank of Japan, so the lending policy of the Bank has a great impact on the reserve position of financial institutions. It is important to stress the focus of the lending policy of the Bank of Japan at the so called reserve progress ratio, i.e. the ratio of the actual amount of reserve deposits to the compulsory amount of reserve deposits. By changing the amount of its credit, the Bank of Japan exerts great influence on the amount of reserve deposits at financial institutions and so on the interbank interest rates. For example, rationing of credit by the Bank of Japan decreases the sum of the individual reserve progress ratios of the various financial institutions. When the end of the reserve period comes nearer, financial institutions with an insufficient amount of reserve deposits (i.e. below the compulsory level at the end of the reserve period concerned) are forced to borrow in the interbank markets. As a result, interbank interest rates will rise.

The lending policy of the Bank of Japan was very effective during the period 1953-1975, mainly as a result of the macro situation of over-loan. This situation implied that banks were heavily dependent on central bank credit and therefore changes in the amount of credit of the Bank of Japan did have great consequences for the reserve and funding positions of banks and consequently for the interbank interest rates.

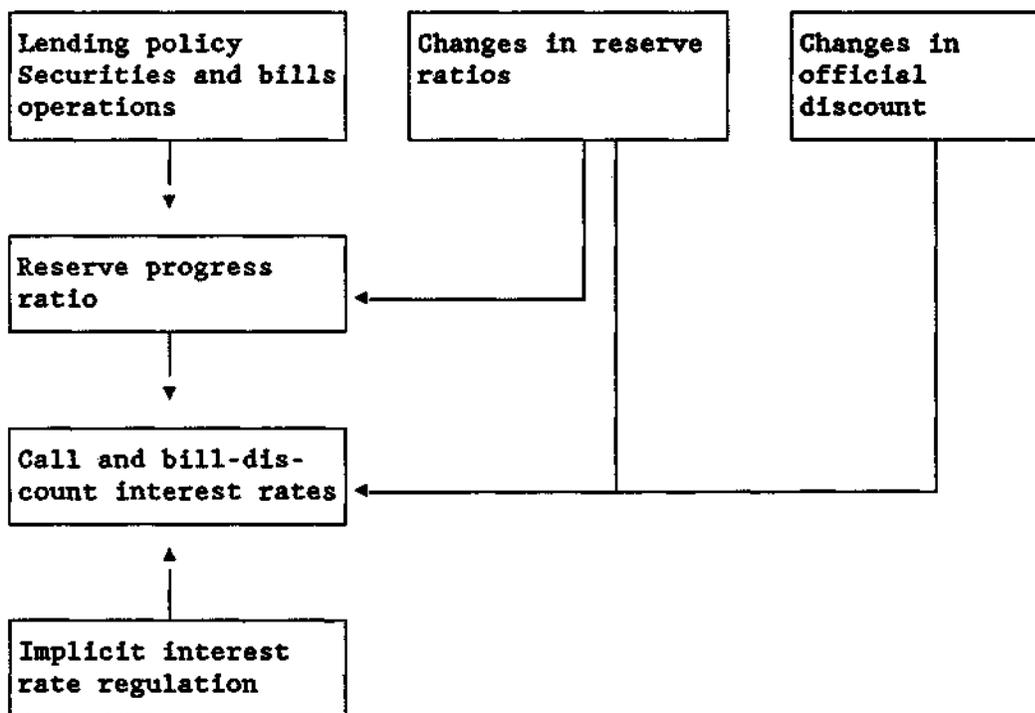
Besides the lending policy the Bank of Japan did have other policy instruments to control interbank interest rates. The various instruments are presented in figure 4.

The main instrument was the lending policy of the Bank of Japan. The securities and bills operations, i.e. the buying and selling of securities and bills by the Bank of Japan, were focused on neutralizing money market surpluses and shortages. Changes in the official

discount rate were intended to give signals about the policy intentions of the Bank of Japan (announcement effect). Changes in the reserve ratios, which determine the amount of reserves banks have to deposit at the Bank of Japan in relation to their deposits and other liabilities, only had a modest effect on interbank interest rates.

The implicit interest rate regulation was an informal instrument of the Bank of Japan to regulate interbank interest rates. The interbank interest rates were fixed after close consultations between the Bank of Japan, the Tanshi institutions (money market dealers which are according to Suzuki (1987) active as specialized transaction intermediaries in the short-term money markets) and the Sanmeikai, the representative body of the city banks. The Bank of Japan did have a great influence in these consultations, so that the interbank interest rates could be fixed according to the policy objectives of the Bank.

FIGURE 4 The control of interbank interest rates



Partly based on Fukui (1986)

The target of the traditional monetary policy was the broadly based lending by banks, mainly to the corporate sector. Broadly based corporate credit included ordinary bank credit to the corporate sector and the absorption of corporate bills and securities by banks. The

main argument in favour of this specific target was the situation of overborrowing and predominance of indirect finance. Because of these situations broadly based corporate credit was a good proxy for the volume of business investments and the level of economic growth.

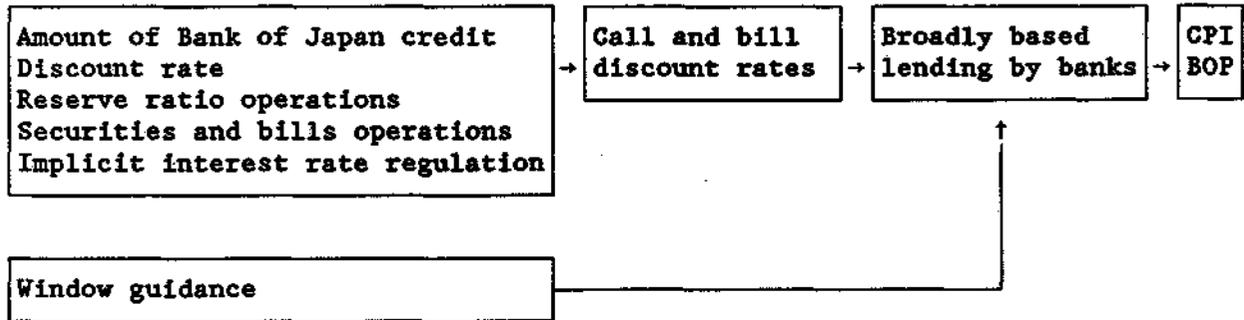
The process by which the interbank interest rates (the indicators) affected the direction of the broadly based lending by banks was very clear and stable and can be presented as follows. Interest rates on broadly based bank credit were, mainly as a result of legal regulations, informal agreements and cultural customs, inflexible compared with interbank interest rates. The rigid structure of credit interest rates resulted in substitution effects between (on the one hand) activities of banks in the interbank (money) markets and (on the other hand) the amount of broadly based lending by banks. For example, when interbank interest rates rose (as a result of monetary policy actions by the Bank of Japan), the inflexibility of credit interest rates caused a shift out of bank credit towards investments in the interbank (money) markets.

The end of the monetary policy process is the link between the target(s) and the goal(s). The main goals of the traditional monetary policy were the achievement of price stability (i.e. the consumer price index (CPI) and equilibrium in the balance of payments (BOP). Through regulation of the broadly based lending by banks the Bank of Japan was able to control the level of business investments, i.e. the main impetus of the high economic growth, and therefore aggregate demand, inflation and the balance of payments.

An additional instrument to control the broadly based lending by banks was the so called window guidance, in the words of Suzuki (1987) "... guidance to the financial institutions to keep the increase in their lending to clients within limits that the Bank of Japan feels to be appropriate". The window guidance is a kind of moral suasion, but as a result of the situation of overloan, this form of monetary policy can be very effective.

Figure 5 shows a review of the traditional monetary policy.

FIGURE 5 The traditional monetary policy



THE NEW MONETARY POLICY 1975-1981

During the first part of the seventies the collapse of the Bretton Woods system and the oil crisis had a great impact on the world economy. Economic growth in Japan slowed down and the government was forced to introduce an accommodating Keynesian oriented monetary and economic policy. As a result of these developments the rate of inflation increased rapidly.

The crisis in the Japanese economy had great consequences for the economic and financial structures. The shift to lower growth reduced the corporate demand for credit and resulted in a sharp decline in the situation of overborrowing. The large-scale issues of government bonds, necessary to finance the accommodating monetary and economic policies, stimulated the development of the securities market and decreased the predominance of indirect finance, i.e. increased direct finance in Japan. The decline in the situations of overborrowing and indirect finance decreased the importance of credit in the monetary policy process.

The process of financial liberalisation, which started in the first half of the seventies, increased the flexibility of interest rates. This development decreased the effectiveness of the channel between interbank interest rates and broadly based lending by banks of the traditional monetary policy.

Another problem for the effectiveness of the traditional monetary policy was caused by the large-scale issues of government bonds. The main part of these issues was absorbed by banks, i.e. money creating financial institutions. As a result the money supply increased rapidly.

It will be clear from the above that the target of the traditional

monetary policy, i.e. the broadly based lending of banks to the corporate sector, neglected the money creating effect of the government bond issues.

It was mostly for this reason that the Bank of Japan introduced in 1978 a new target, namely the money supply: from July 1978 to the third quarter of 1979 the broad based money supply M_2 and from the third quarter of 1979 the monetary aggregate M_2+CDs . CDs are certificates of deposit and can be described as "... short-term deposits with free interest rates that may be sold to third parties" (Suzuki (1987), p.80).

It has already been mentioned that the process of financial liberalisation decreased the effectiveness of the effects of interbank (money market) interest rates changes on broadly based lending of banks and therefore also decreased the impact of changes in interbank interest rates on the money supply. Financial liberalisation caused the creation of more open, relatively non-regulated financial markets with more flexible interest rates. As a result of this development two additional channels of transmission between interbank interest rates and money supply were established.

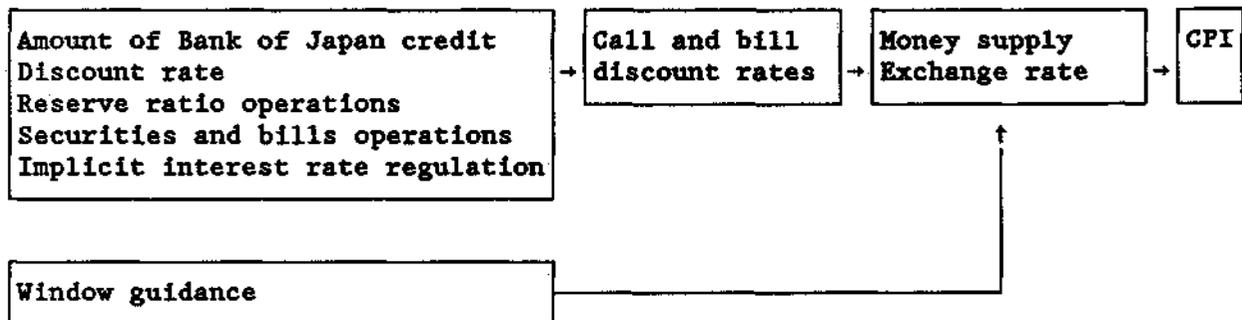
The first was the channel of financial disintermediation. Because open market interest rates were more flexible than bank deposit interest rates, which were still regulated, changes in interbank interest rates had a greater impact (through interest rate arbitrage) on open market interest rates. Depositholders were more inclined to invest funds on the open markets when a rise in interbank interest rates caused open market interest rates to rise. As a result the funding position and consequently the amount of lending of banks deteriorated.

The second channel included the effects of changes in interest rates on private expenditure. Interbank (money market) interest rate changes caused open market interest rates to change and eventually even interest rates of broadly based lending by banks. As a result the opportunity costs of expenditures by surplus sectors (i.e. the yields on open market investments) and the costs of financing of expenditures by deficit sectors changed. These changes influenced the amount of private expenditures and eventually the level of national income, money demand and money supply.

The transmission process of the new monetary policy is presented in figure 6. Seen against the background of the inflationary experiences

in the first part of the seventies, the main goal of the new monetary policy became the achievement of price stability. The yen/U.S.dollar exchange rate was introduced as a secondary target to stress the importance of preventing import inflation.

FIGURE 6 The new monetary policy



THE MODERN MONETARY POLICY 1981-

The year 1981 was the turning point towards a new type of monetary policy, the so called modern monetary policy. In May of that year the Bank of Japan started to sell financing bills on the open market to absorb liquidity surpluses. According to Suzuki (1987) "... This was the first time since the end of the Second World War that the Bank of Japan had engaged in an open-market operation in the true sense of the term" (Suzuki (1987), p.322), i.e. the buying and selling of securities by the central bank on the open market to increase respectively decrease directly the size of the money supply.

The already mentioned securities and bills operations are engaged between the Bank of Japan and money creating financial institutions. Therefore, these operations do not have a direct effect on the money supply. The Bank of Japan uses the securities and bills operations as an instrument to provide the Japanese economy with additional base money without directly disrupting the growth of the money supply. However, the securities and bills operations do have indirect effects on the money supply.

Firstly, buying or selling by the Bank of Japan of securities and bills in possession of money creating financial institutions increases or decreases the amount of reserves of these institutions. The money creating financial institutions will try to compensate the changes in their reserves on the interbank markets. As a result, changing inter-

bank (money market) interest rates will induce portfolio adjustments by these financial institutions and will consequently change the amount of their lending and eventually the the size of the money supply. However, the process of liberalisation of interest rates will make this channel less important.

Secondly, the above mentioned changing of interbank (money market) interest rates will influence interest rates on the open markets and in the end the level of private investments, money demand and money supply.

The main reason to introduce open market operations by the Bank of Japan was the development of open, less regulated financial markets in Japan. The processes of financial liberalisation and financial internationalisation induced the introduction and development of new financial markets, such as for example the market for certificates of deposit (1979) and the Euroyenmarket and later on the introduction of markets for bankers acceptances (1985), money market certificates (1985) and commercial paper (1987) and the Tokyo offshore market (1986). The interest rates on these markets are relatively free. As a result the share of the open markets in the total money market increased rapidly.

The Bank of Japan could influence to a certain extent the interest rates on the open markets through the mechanism of interest rate arbitrage between the interbank and open markets. To keep the channel of interest rate arbitrage effective, the Bank has introduced in the past decade a great number of measures to improve the interest rate arbitrage between the interbank and the open markets, the most recent in November 1988. However, the mechanism of interest rate arbitrage alone is not sufficient to control the interest rates on the open markets. Other factors, including differences in market expectations and different characteristics of various segments of the open markets, determine also open market interest rates. Furthermore, the declining share of the interbank markets in the total money market made it more difficult for the Bank of Japan to influence the interest rates on the open markets only by use of interest arbitrage. Therefore, the last decade saw the introduction of the open market policy as an instrument to exert direct influence on the open markets by the Bank of Japan. The Bank has used in its open market policy various instruments, such as treasury bills (first in May 1981), certificates of

deposit and commercial paper (May 1989). The Bank of Japan intends to extend the use of treasury bills as an open market instrument. For this purpose the market for treasury bills, which is still relatively small and underdeveloped, will have to expand and gain in importance. To facilitate the open market policy of the Bank of Japan, the Ministry of Finance has introduced in August 1989 three month treasury bills and considers, according to The Asian Wall Street Journal (1989), to expand the issues of treasury bills in 1990.

The open market operations of the Bank of Japan have great consequences for the money supply. The money supply is influenced through three channels by these operations.

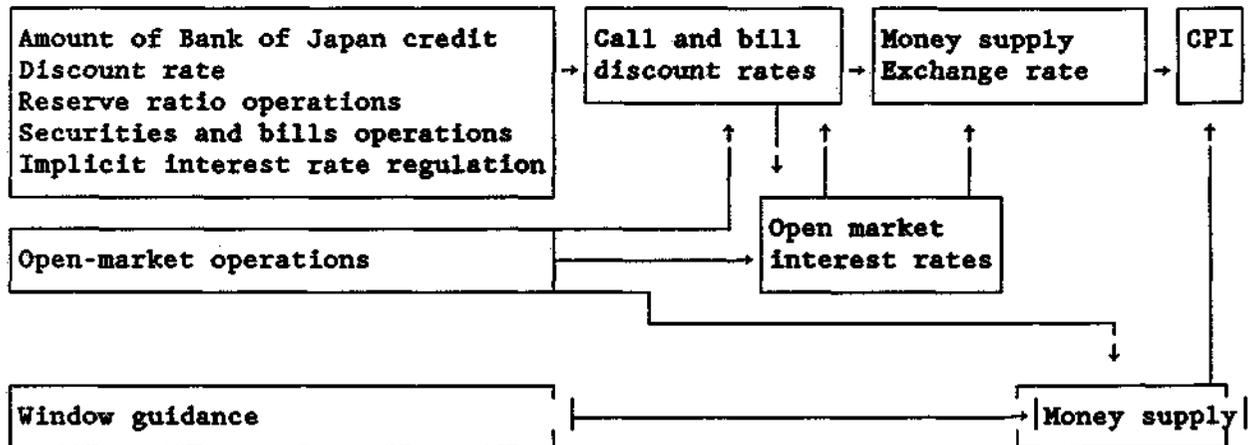
In the first place, the existence of a direct mechanism has to be mentioned. For example, when the Bank of Japan sells treasury bills directly to the non-financial sector the money supply will decrease. When the Bank of Japan sells treasury bills to money creating financial institutions, which received permission from the Bank to resell the bills to the non-financial sector, the money supply will also decrease. The consequence of this operation is a deteriorating reserve position of the financial institutions concerned (decrease of deposit at Bank of Japan). As a result, these financial institutions will borrow funds on the interbank (money) market to make up their deficits. The resulting increase in interbank (money market) interest rates will lead through the mechanism of interest rate arbitrage to rising open market interest rates, i.e. rising costs of private expenditures. It will be clear that in the end the level of national income, money demand and money supply will tend to decrease. This indirect mechanism is the second channel between the open market operations and the money supply. In the third place the open market operations have great consequences for the supply and demand relations on the secondary market of treasury bills, certificates of deposit or commercial paper and consequently for the interest rates on these markets. Through the channel of interest rate arbitrage the other open

market interest rates will be influenced and finally (the familiar effects of interest rate fluctuations on private expenditures) the money supply.

The above mentioned channels are presented in figure 7. It is also shown that both the money supply and the U.S.dollar/yen exchange rate are used as targets by the Bank of Japan. The Japanese central bank wants to achieve the goal of price stability on the one hand by controlling the growth of the money supply (the internal track) and on the other by keeping the yen on a sufficiently high level against the U.S.dollar to prevent import inflation (the external track). It seems for example, according to Hutchison (1986), that in the most recent years the Bank of Japan focuses more on the external track, but it is difficult to judge precisely to what extent.

Finally, besides the open market operations two additional new instruments have to be mentioned: the points system and the lending plan. The points system was introduced in January 1988 to stop the diminishing share of the interbank (money) markets in the total money market. In this system the amount of credit of the Bank of Japan individual banks are entitled to is inversely proportional to the amount they borrow in the open markets. The less banks borrow in the open markets, the more points and consequently the more Bank of Japan credit they are allowed to receive. The lending plan is an informal agreement between the Bank of Japan and the banking sector regarding the seasonal adjusted quarterly growth of gross short and long term banking credit.

FIGURE 7 The modern monetary policy



References

- The Banker (1989), Top 1000 world banks, July 1989, p.38-105.
- Eijffinger, S.C.W.(1986), Over de beheersbaarheid van de geldhoeveelheid (On the controllability of the money supply), VU uitgeverij, Amsterdam.
- Eijffinger, S.C.W.(1989), Financiële deregulering en monetair beleid in Japan, Bank- en Effectenbedrijf, October 1989.
- Fukui, T. (1986), Recent Developments of the Short-term Money Market in Japan and Changes in Monetary Control Techniques and Procedures by the Bank of Japan, Special Paper No.130, The Bank of Japan Research and Statistics Department, Tokyo.
- Hutchison, M.M.(1986), Monetary Control, Interest Rates and Exchange Rates: The Case of Japan, 1973-1986, Working Paper 145, University of California at Santa Cruz.
- Suzuki, Y.(1980), Money and Banking in Contemporary Japan, Yale University Press, New Haven/London.
- Suzuki, Y. and H. Yomo (ed.) (1986), Financial Innovation and Monetary Policy: Asia and the West, Tokyo, 1986, p.45-78.

Suzuki, Y.(ed.)(1987), *The Japanese Financial System*, Clarendon Press, Oxford.

The Asian Wall Street Journal(1989), Japan Plans New Treasury-Bill Operations, december 15, 1989.

FOOTNOTES

1) However, measured by the strength of capital only six Japanese banks are placed in the world top 10. See: 'Top 1000 world banks', *The Banker*, July 1989, pp. 38-105.

2) This group includes the Bank of Tokyo which is really a foreign exchange bank to finance international trade. See: Y. Suzuki (ed.), *The Japanese Financial System*, Oxford, 1987, pp. 163-304.

3) It should be noted that financial innovations blur the distinction between short-, medium- and long-term. See for an extensive discussion of Japanese financial markets: Y. Suzuki (ed.), *The Japanese Financial System*, Oxford, 1987, pp. 108-162.

4) These financial innovations and their effects on monetary policy are extensively discussed in: Y. Suzuki & H. Yomo (ed.), *Financial Innovation and Monetary Policy: Asia and the West*, Tokyo, 1986, pp. 45-78.

5) The maturity for calls was changed from overnight to 3 weeks into

overnights to 6 days and for bills from 1-6 months into 1 week-6 months. Thus the overlap in maturity between calls and bills was eliminated. In April 1989 the maturity for bills was even extended to 1 year.

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