Japan's Economic Crisis and Monetary-Policy Options

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INTRODUCTION

During the last decade Japan has seen low growth, and most recently the country has been plunged back into recession. This reflects both cyclical and structural factors, which it has been sought to counteract by pursuing a very active economic policy. The Bank of Japan eased monetary policy up through the 1990s, culminating in the zero-interest-rate policy in 1999-2000, when the Bank of Japan's operational target, the short-term money-market interest rate, was de facto set at zero. A situation where the interest rate stands at zero and monetary-policy options are apparently exhausted is known in traditional economic theory as a liquidity trap. This article examines whether Japan is in a liquidity trap, or to phrase it more broadly: what role can monetary policy play in the Japanese economic crisis when the short-term money-market interest rate stands at zero and the economy is faced with structural challenges?

To answer that question it is important to know the macroeconomic background, as well as the framework for monetary policy. These issues are reviewed in the next two sections. Thereafter the concept of liquidity trap is investigated, and the monetary-policy measures proposed by some commentators are presented, followed by brief outlines of the recommendations of the OECD and IMF.

One conclusion is that Japan is in a liquidity trap, but this is not to say that monetary policy has no impact. However, the monetary-policy options lie beyond the conventional framework, and the side effects are uncertain. Structural reforms in the banking sector are a necessary condition for solving the economic crisis.

MACROECONOMIC BACKGROUND: A DECADE OF LOW GROWTH[1]

At the end of 2001 Japan was in recession, completing a full decade of economic crisis with low or negative growth. The seeds of the crisis were sown in the high-growth period of the 1980s when the financial markets were characterised by speculatively driven price increases – a bubble. From peaking in around 1990 stock and land prices halved in the course of 2-3 years, cf. Chart 1. The plummeting prices led to negative wealth effects on both consumption and investments, and growth was low in 1992-94. In reaction to the decline, expansive monetary-policy and fiscal-policy measures were introduced, and the economy then seemed to be back on the right track in 1995-96. However, a number of negative shocks led to a new slowdown in 1997-98: the financial crisis in Asia braked the growth of many of Japan's trading partners. Fiscal policy was tightened with a view to consolidating public finances. Finally – against the background of a banking crisis – a credit crunch arose, i.e. credit extension by the banking sector declined. Since then, the Japanese economy has not recovered fully.

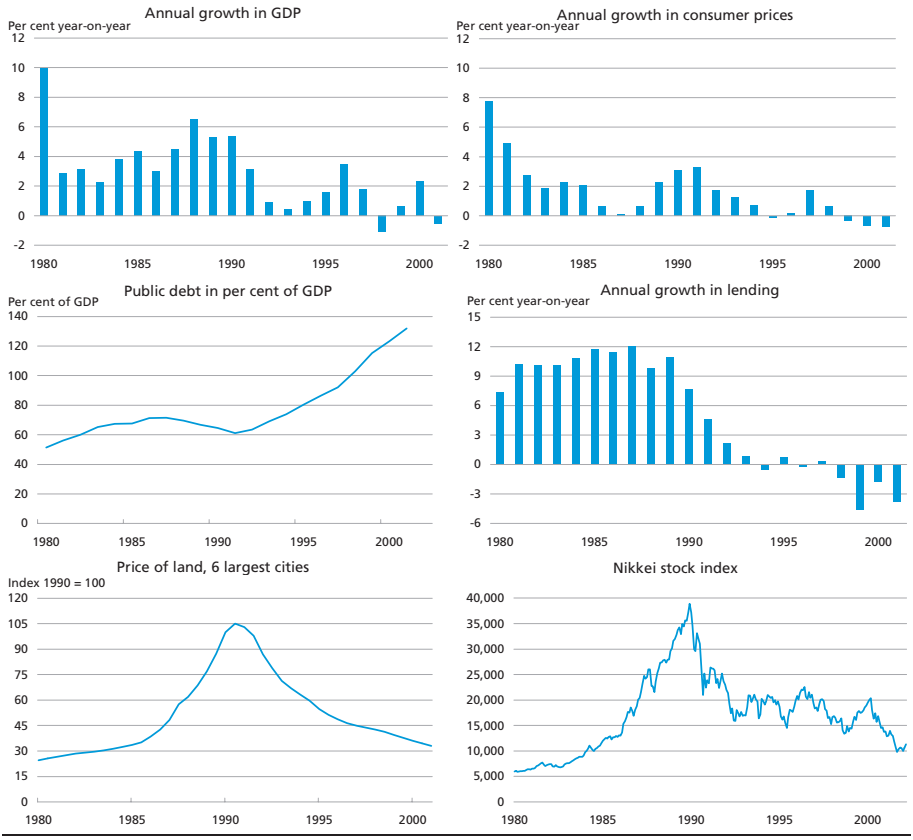
Inflation was low and declining throughout the 1990s, and the last few years have seen deflation, i.e. a sustained decline in the general price level, which indicates that the Japanese economy has been operating below its long-term potential. This has been counteracted by demand-stimulating economic-policy measures. Fiscal policy was eased significantly, resulting in a current public debt of approximately 130 per cent of GDP, leading to fears of explosive and unsustainable growth in public debt.[2] The public debt has become a structural problem; the need for consolidation in the long term is not compatible with the requirement to stabilise demand in the short term. Monetary policy has also been eased. The benchmark official interest rate was gradually lowered to 0.5 per cent in 1995, and in 1999-2000 a zero-interest-rate policy was applied. The short-term money-market interest rate is currently 0.001-0.003 per cent. In view of the public debt problem the Bank of Japan has been under intense political pressure to ease its policy further, despite the low level of interest rates.

In addition to the cyclical decline in demand Japan faces a series of structural problems not related to monetary policy. One example is the banking sector, which is suffering the consequences of the financial bubble

[1] For detailed descriptions of the economic background reference is made to the analyses of the Japanese economy in the OECD's Economic Surveys and the IMF's Country Reports, as well as the contributions in Bayoumi and Collyns (2000).

[2] There is some disagreement as to how expansive fiscal policy has actually been. Some argue that the dramatic increase in the public debt is primarily due to a cyclical decline in tax revenues as a consequence of the low growth. See e.g. Kuttner and Posen (2001, 2002) and Mühleisen (2000).

MACROVARIABLES Chart 1



Source: EcoWin and OECD.

that burst.[1] The banks have experienced losses on their large portfolios of shares and on bad loans, i.e. loans subject to a major risk of the borrower defaulting, imposing a loss on the bank. The bad loans have arisen because low growth and deflation have reduced the borrowers' ability to service the loans, while the value of the collateral – often land – has been undermined as a consequence of the bursting financial bubble. In 1997 this led to a banking crisis including bankruptcies, and the government had to step in to provide capital. The crisis as such was triggered by the banks' attempts to consolidate their capital base in reaction to the losses. The attempt to comply with the capital-adequacy requirements reduced the banks' lending activities – a credit crunch – which still affects the banks. Estimates vary as to the scale of the bad loans. Officially, they are assessed at 6-7 per cent of GDP, while market

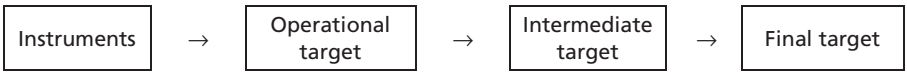
[1] See Cargill *et al.* (2000) for a chronological review of the development in the financial sector.

participants consider the volume to be much larger.[1] The banking sector plays a unique role in a modern economy as a credit provider. If its lending activities are curtailed, this will have a direct impact on overall demand. For instance, many Japanese companies are financed by banks. This sector also plays an important role in the impact of monetary policy on the real economy, cf. below. Other structural problems[2] e.g. relate to changes in real-economic structures, of which only few have been realised. A common feature of the necessary reforms is that they can entail economic costs in the short term. This article focuses solely on monetary policy.

The immediate prospects for the Japanese economy are bleak. There is a recession, prices are falling, the large public debt is increasing, the banking sector is weak, and other structural challenges must be tackled. Notwithstanding this pessimistic outlook, Japan is still among the richest countries in the world. For instance, output per capita is approximately 7 per cent higher than for the euro area.[3] On the other hand, Japan has missed out on even greater affluence, and a collapse in the banking sector or explosive growth in public debt constitute risks not only to Japan, but also on a global scale. In other words, the crisis needs to be solved soon.

MONETARY-POLICY FRAMEWORK 1998-2002

It is necessary to understand the monetary-policy framework in order to grasp the initiatives already taken by the Bank of Japan to counteract the economic slowdown, but also to understand the further monetary-policy actions suggested. The framework can be presented as follows:



Instruments and the operational target are the tactical level of monetary policy and describe how the monetary policy is implemented. The intermediate and final targets constitute the strategic level and relate to the medium and long term. For an in-depth review of these concepts, reference is made to Danmarks Nationalbank (1999). The specific Japanese

[1] See Financial Services Agency's home page for an official review of the volume and classification of bad loans: http://www.fsa.go.jp/indexe.html. OECD (2001) reviews assessments by the various market participants.

[2] Such problems include an ageing population, a declining workforce, productivity in protected sectors including government enterprises, the tax system, the health sector, etc. See various issues of the OECD's Economic Surveys and the IMF's Country Reports, and the Japanese Government's 7-point plan of 26 June 2001, which can be found on the Government's home page: http://www.kantei.go.jp/foreign/index-e.html.

[3] Purchasing-Power-Parity adjusted GDP per capita in 2001. OECD and own calculations.

monetary-policy framework is described in detail in BIS (2001) and Miyanoya (2000).

The strategic level: final target and intermediate target

The Bank of Japan's final target is stated in the Bank of Japan Law[1]. The objectives (cf. articles 1 and 2) are:

- to issue banknotes and to carry out currency and monetary control,
- to ensure smooth settlement of funds among banks and other financial institutions, thereby contributing to the maintenance of an orderly financial system,
- to conduct currency and monetary control aimed at, through the pursuit of price stability, contributing to the sound development of the national economy.

It is noteworthy that no explicit intermediate target is stated. No inflation target has been defined as is the case for e.g. the UK and Sweden, nor has a target for the development in the money supply.

The tactical level: operational target and monetary-policy instruments

The monetary-policy counterparties in Japan, typically banking institutions[2], have Current Account Balances with the Bank of Japan. The central bank acts as settlement bank to the banking institutions, i.e. banking institutions settle their inter-bank transactions via their central-bank accounts. At a given point in time, some counterparties will be short of liquidity, while others will have surplus liquidity. Deposits at the central bank do not bear interest, so the counterparties have an incentive to keep deposits as low as possible. Banking institutions with surplus liquidity lend to other banking institutions on an overnight basis in the money market. For such transactions the short-term money-market interest rate[3] applies. Up to and including mid-March 2001 the Bank of Japan's monetary policy was aimed at managing this short-term money-market interest rate. Since then, the Bank's operational target has shifted from the short-term money-market interest rate to counterparty deposits with the central bank, Current Account Balances.

The key monetary-policy instrument to achieve the operational target is the Bank of Japan's market operations, which primarily cover transactions whereby the central bank absorbs or provides liquidity at its own initiative with a view to managing short-term liquidity. These operations

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1 The Bank of Japan Law can be viewed on the Bank of Japan's home page at http://www.boj.or.jp/en/index.htm.

2 Counterparties in Japan comprise a wide range of financial institutions, some of which are not subject to reserve requirements. Counterparties also include investment banks and similar.

3 More specifically, the uncollaterised overnight call rate.

are carried out using a number of instruments, and often include short-term government securities. The central bank may buy or sell directly or alternatively enter into agreements for repurchase at a later time. Without the market operations, Current Account Balances would fluctuate significantly. This is primarily related to two factors: government payments and receipts via accounts at the Bank of Japan, and seasonal fluctuations in banknotes and coins in circulation. Government cash flow may include pension disbursements or corporate-tax receipts, while the seasonal fluctuations in the cash in circulation may reflect a high demand for cash in connection with national holidays.

Historically, the need for banknotes and coins has typically increased in Japan. This is the result of a long-term increase in the value of economic transactions. The Bank of Japan accommodates this long-term requirement by buying government bonds directly in the secondary market.[1]

In addition to the market operations, the central bank has two other monetary-policy instruments at its disposal: a reserve requirement and a standing facility.

Japanese banking institutions are subject to a reserve requirement. A banking institution must deposit liquidity with the Bank of Japan. The requirement is calculated as a percentage of its deposits and is phrased in such a way that it must be met on average over a month. On some days the balance may thus be below the daily average, provided that it is offset by above-average balances on other days. In recent years, the reserve requirement has been approximately 4,000 billion yen.

The last instrument is a standing facility[2] whereby the banks may borrow liquidity at their own initiative against collateral. Loans bear interest at the official discount rate, currently 0.1 per cent. The official discount rate thus provides a ceiling for the fluctuations in the short-term money-market interest rate, since the banking institutions can always borrow at the central bank.

Monetary-policy measures 1998-2002: new operational target in 2001

Following the financial crisis in Asia, and as the economy deteriorated, the Bank of Japan gradually lowered the interest rate. At the beginning of 1999 the easing measures culminated with the introduction of the "zero-interest-rate policy". The aim was to force the short-term money-market interest rate as far down as possible, in effect to 0 per cent.

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1 Japanese Government Bonds have a maturity of 2-30 years. The market operations to manage the short-term liquidity often involve short-term government securities, i.e. with a maturity of less than 2 years; see BIS (2001).

2 Introduced in February 2001 with effect from March 2001.

MAJOR MONETARY-POLICY INITIATIVES 1998-02 Table 1

Time	Operational target
September 1998	Interest rate: 0.25 per cent
February 1999	Interest rate: As low as possible (zero-interest-rate policy)
August 2000	Interest rate: 0.25 per cent
February 2001	Interest rate: 0.15 per cent
March 2001	Current Account Balances: 5,000 billion yen
August 2001	Current Account Balances: 6,000 billion yen
September 2001	Current Account Balances: over 6,000 billion yen
December 2001	Current Account Balances: 10-15,000 billion yen

Note: In February 2002 the monetary-policy committee decided that if there were signs of financial instability in connection with the close of the financial year (31 March), liquidity should be provided independently of the target.

In view of a tentative economic upswing the central bank decided to raise the interest rate to 0.25 per cent in the summer of 2000. Shortly afterwards the economy weakened again as a result of the global economic slowdown. In early 2001, the interest rate was lowered to 0.15 per cent, and in March of the same year the central bank introduced a new operational target. It is sometimes referred to as a quantitative target and is a target for counterparty deposits at the central bank. Since its introduction, the quantitative target has been raised gradually, most recently in December 2001[1], cf. Table 1.

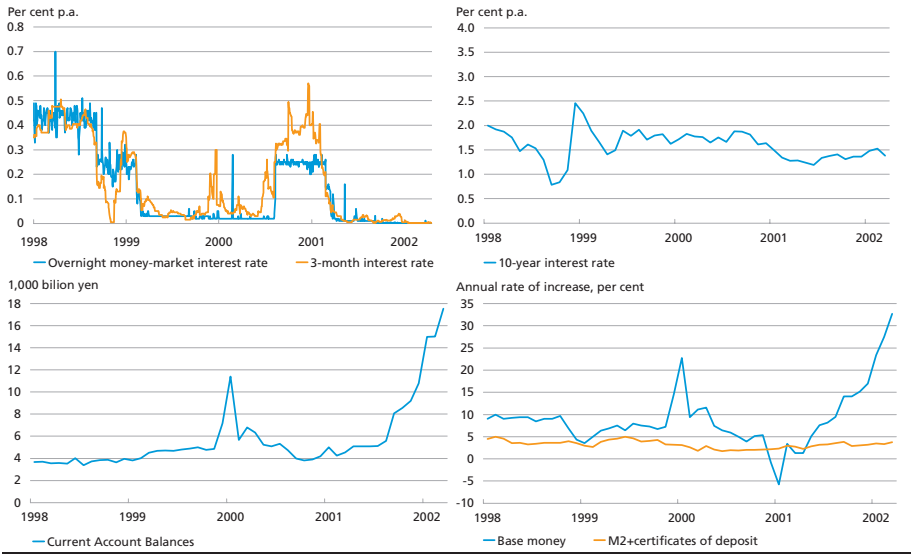
While the zero-interest-rate policy was in effect, the short-term money-market interest rate fell to 0.02-0.03 per cent. As the banking institutions' deposits with the central bank do not bear interest, they are kept at a minimum in a situation where the overnight money-market interest rate is positive. Prior to the zero-interest-rate policy, the banking institutions only deposited the required reserves of approximately 4,000 billion yen. When the interest rate was *de facto* lowered to zero, the banking institutions' deposits rose to approximately 5,000 billion yen, cf. Chart 2. The first quantitative target in March 2001 was actually set at 5,000 billion yen, and not surprisingly the short-term money-market interest rate fell to the level seen under the zero-interest-rate policy. Since then, the quantitative target has been raised to between 10,000 and 15,000 billion yen, and the interest rate has fallen to 0.001-0.003 per cent.[2]

As the Bank of Japan has eased monetary policy, the banking institutions have gained ample liquidity. At times the banking institutions'

[1] The easing in December 2001 was based not only on macroeconomic considerations, but was also designed to ensure financial stability.

[2] In relation to the zero-interest-rate-policy period, the short-term interest rate has fallen from approximately 0.01 per cent to approximately 0.001 per cent. This decline should be seen in the light of the Bank of Japan's lowering of the unit for bids in market operations from 1/100 per cent to 1/1,000 per cent.

INTEREST RATES, MONEY SUPPLY AND COUNTERPARTY DEPOSITS 1998-02 Chart 2



Note: The fluctuations in Current Account Balances and base money in 1999-2000 relate to extraordinary provision of liquidity in connection with the millennium rollover. The overnight money-market interest rate is the uncollateralised overnight call rate.
Source: EcoWin.

demand for liquidity has fallen short of the Bank of Japan's supply via the money-market operations. In response to the counterparties' low demand the central bank has regularly expanded its market operations, e.g. by increasing the array of short-term government securities used in the market operations, and by permitting the use of a wider range of securities as collateral. More counterparties have also been involved. Direct purchases of government bonds in the secondary market have likewise gradually been stepped up. When the quantitative target was introduced, the level was 400 billion yen per month, while most recently the monthly purchases have been raised to 1,000 billion yen per month. Usually direct purchases of government bonds serve a long-term purpose, cf. above, but at present the volume has been raised to achieve the short-term operational targets.

When the short-term money-market interest rate hits its lower limit of zero, it can fall no further. The change of operational target may be seen as a method to ease monetary policy within the conventional framework in a situation when the short-term money-market interest rate is zero, and thereby to accommodate the intense political pressure for monetary-policy action. The quantitative easing serves a twofold purpose. Firstly, it ensures that a shortage of liquidity does not impede the banks' lending, and secondly, higher growth in the money supply

will – according to the quantity theory – sooner or later be reflected in inflation. Members of the Bank of Japan's monetary-policy committee have, however, expressed the view that a quantitative easing will not affect the real economy, since Japan is in a liquidity trap.[1]

CAN MONETARY POLICY IMPACT THE ECONOMY? IS JAPAN IN A LIQUIDITY TRAP?

Monetary policy impacts the economy via e.g. an interest-rate channel. When the central bank lowers the interest rate, it is often assumed that the real interest rate – i.e. the nominal interest rate less (expected) inflation – also falls due to short-term price rigidities. Since the real interest rate is the relevant interest rate in relation to real-economic decisions, monetary policy thus has an impact on economic activity, e.g. investments. In a situation where the rate of interest is zero, as in Japan's case, the central bank can no longer exert direct downward pressure on the real interest rate by lowering the nominal interest rate, even though this might be desirable, e.g. due to deflation expectations. Monetary policy thereby appears to have lost its effect on overall demand.

In traditional economic theory, a situation where monetary policy has no impact is referred to as a liquidity trap. This concept occurs in a situation with a low interest rate where the private sector is willing to hold arbitrary increases in the money supply, possibly because the opportunity cost of holding money (interest) is small. The trap consists in the central bank being able to supply large stocks of money, liquidity, without having any impact on the rate of interest and thereby the economy.[2]

In economic theory it is often assumed that there is only one rate of interest. In practice there are numerous rates that e.g. vary with maturity. Practical monetary policy is often aimed at managing one particular short-term money-market interest rate, cf. the Bank of Japan's operational target before March 2001 and the Federal Reserve's operational target: the fed funds rate. The impact of monetary policy on the real economy, the monetary-policy transmission, is thus more complex, since long-term interest rates often play a more important role in terms of the real economy than short-term interest rates, and the impact from changes in short-term rates to long-term rates is uncertain. Monetary policy conducted via market operations primarily involving the purchase

[1] See e.g. Fujiwara's speech of 25 July 2001, which can be found on the Bank of Japan's home page. See also OECD (2001).

[2] A situation where monetary policy has no impact was first described by Keynes (1936). He argued that when the rate of interest is low, the private sector wishes to hold money rather than bonds because it is afraid of suffering capital losses on bonds when the rate of interest rises again (bond prices fall).

and sale of short-term government securities with a view to influencing a short-term money-market rate can be termed conventional monetary policy. Basically, the liquidity concept in traditional economic theory does not take into account the distinction between conventional monetary policy and measures of a more unconventional nature. Therefore Japan is not in a liquidity trap in that sense, since there are still monetary-policy instruments available to influence the economy, e.g. massive purchases of long-term government bonds, cf. below.

In his definition of a liquidity trap, the American economist Krugman (1998) does take into account the practical implementation of monetary policy. The trap is activated if conventional monetary policy has become ineffective because nominal interest rates are (close to) zero, so that injections of base money[1] have no impact, as base money and short-term bonds are seen by the private sector as perfect substitutes.

As Krugman defines it, Japan is in a liquidity trap. In normal circumstances – a positive short-term money-market interest rate – monetary policy has an effect, in simplified terms, because the liquidity that the central bank makes available to the counterparties is an imperfect substitute for the securities received by the central bank in return. The counterparties have portfolios of assets: shares, short-term bonds, long-term bonds, loans, liquidity, etc. The counterparties optimise the returns on their portfolios. After a market operation where the central bank purchases short-term government securities from counterparties against liquidity, the counterparties' portfolios will have changed. They have received non-interest-bearing securities, liquidity, and sold interest-bearing short-term government securities. The market operation creates an imbalance in the counterparties' financial portfolios, and the counterparties reoptimise the portfolio structure. As a result, the counterparties normally increase their lending and purchase other securities, thereby stimulating the economy. In the specific Japanese situation where the interest on short-term government securities is *de facto* zero, cf. Chart 2, there is no real change in the counterparties' financial portfolio when the Bank of Japan conducts market operations. The counterparties merely replace one non-interest-bearing risk-free paper with another. In other words, there is no incentive to reoptimise the portfolio composition, and there is no expansion of lending, nor are prices for other securities affected. Conventional monetary policy has no direct impacts.[2]

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[1] Base money is defined as the monetary-policy counterparties' Current Account Balances with the central bank, plus banknotes and coins.

[2] On the other hand, it can be argued that the Bank of Japan influences the yield on government bonds via its monthly purchases, cf. above.

In a Krugman-defined liquidity trap, increases in base money will not lead to equivalent increases in the money supply. This has not been the case in Japan either, cf. Chart 2. The rationale behind the present quantitative target is that a quantitative increase in the money supply will sooner or later be reflected in the price level. The problem is, however, that increases in base money will not necessarily be reflected in broader measures of the money supply using conventional monetary policy.

In addition to the interest channel, monetary policy influences the economy through a credit channel. The mechanism operates thus: after a monetary-policy expansion the counterparties will – when the economy is not in a liquidity trap – normally increase their credit extension to the private sector. This illustrates the importance of a well-functioning banking sector in relation to monetary policy, for with a weak banking sector as in Japan the credit channel will not work, and any monetary-policy impact will be less pronounced.

The traditional perception of a liquidity trap emphasises a fiscal-policy solution, since monetary policy is by definition ineffective. Japan has also pursued an expansive fiscal policy, but that has not been sufficient. One reason could be that the private sector has increased its savings in reaction to the increasing public debt. In his definition of a liquidity trap, Krugman points out that monetary policy is only ineffective as far as conventional operations are concerned. Krugman and other commentators have in fact proposed various unconventional monetary-policy measures to tackle the specific Japanese situation.

CAN MONETARY POLICY SOLVE JAPAN'S ECONOMIC CRISIS?

Japan is experiencing deflation, and the short-term money-market interest rate is zero. In other words, the real interest rate is positive. The obvious solution would be to create credible (expected) inflation in order to push the real interest rate down and thereby stimulate the economy, cf. Krugman (1998, 2000). The following outlines the most frequent proposals made for how monetary-policy measures can reverse Japan's current deflationary course; see e.g. Bernanke (2000), Krugman (1998, 2000), McCallum (2001), Meltzer (2001) and Svensson (2001a,b).

Inflation target

It has been suggested by several parties that the Bank of Japan should adopt an inflation target similar to those of e.g. the UK and Sweden. That would help to create inflation expectations. An inflation target is an intermediate target, with a medium-term perspective, and this is indeed an option. One could, however, ask whether it can be credibly

implemented in the short term – i.e. are the necessary instruments available? Credibility is a necessary precondition if the policy is to stimulate formation of expectations.

The Bank of Japan's policy has shown certain similarities with an inflation-target regime. Under the zero-interest-rate policy it was announced that this policy would be sustained until the deflationary pressure lifted. The duration of the current policy is more specific, since it will be upheld until the year-on-year rate of increase in the consumer price index excluding fresh food is zero or positive. The relevant question in the short term is still: which monetary-policy instrument can bring about inflation?

Further expansion of the present operational target

At present, the quantitative target is 10-15,000 billion yen. Since Japan is in a liquidity trap, an increase will not have any major impact if conducted via the usual market operations. Short-term government securities and liquidity are close substitutes, and counterparty portfolios do not change when short-term securities are traded for liquidity. Both the current and a possible higher level for the quantitative target will require the Bank of Japan to continue to expand its market operations to solve the problem of the counterparties' low demand for liquidity, cf. above.

An increase in the quantitative target may serve two purposes, however. While the financial sector is weak, it can be necessary to provide large volumes of liquidity in order to avoid financial problems. Monetary policy influences expectations, and increases may have a signal value in that the Bank of Japan indicates willingness to tackle the deflationary tendencies.

Massive purchases of government bonds – monetary financing of government deficit

Several commentators have suggested that the Bank of Japan steps up its purchases of long-term government bonds for which the yield is not zero, cf. Chart 2. It has already done so, but primarily with a view to achieving the quantitative target, not as a broader aim in itself.

A massive increase in purchases in the secondary market would in the short term push yields down as a result of the increased demand for bonds. This would stimulate the economy.

The Bank of Japan also has the option of purchasing government bonds directly on issue (in the primary market) and not from the counterparties.[1] Such an operation, where the government deficit is financed

[1] Currently the Bank of Japan does not purchase on issue.

directly via the central bank's bond purchases, or by the government drawing directly on its account with the central bank, is known as monetary financing of the government deficit.[1] In popular terms, the deficit is financed by "churning out banknotes"; the government buys goods and services for liquidity. History shows that monetary financing of government deficits leads to high inflation.[2]

Bond prices fluctuate with (expected) inflation, and this has led to fears that the long-term interest rate may rise if purchases are increased strongly.[3] The argument is that scaling-up can be perceived as a step in the direction of monetary financing and thereby inflation. This will influence the risk premium. A wish to keep the long-term interest rate at a low level in connection with monetary financing may entail that the central bank has to buy vast amounts of government bonds, since inflation expectations will influence their price. On the other hand, the central bank and the vulnerable private banking sector will suffer losses on their bond portfolios if bond prices fall.

Since 1998 Japanese banking institutions have increased their portfolios of government bonds significantly in reaction to the bad loans and in an attempt to comply with the capital-adequacy rules (IMF, 2001a; OECD, 2001). If prices in the bond markets plummet, banking institutions can therefore suffer considerable losses, which can be a threat to financial stability, not only in Japan, but globally too.

Massive purchases will create inflation, but there is a whole series of unknown factors: How large should they be? How great a loss is the central bank willing to suffer on its bond portfolio? Which exit strategy should be chosen if inflation increases more than expected? How is market psychology affected? How will it impact the ailing banking sector? What are the costs to the central bank's credibility? By this is meant not only loss of credibility as a result of any operating losses, but also doubts as to its political independence.

Intervention in the currency markets

A weakening of the yen has also been mentioned as a possibility. This would make exporting companies more competitive and imported goods more expensive. Japan is a large and relatively closed country, so that these two effects are not likely to be sufficient to resurrect the Japanese

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1 When the government overdraws its account with the central bank this can be seen as a loan from the central bank. It is stated as an asset on the central bank's balance sheet. The corresponding entry under liabilities will be an increase in banknotes and coins, or in counterparty deposits with the central bank.

2 The Maastricht Treaty prohibits monetary financing in the EU member states.

3 Several members of the monetary-policy committee have expressed such views; see e.g. the speeches by Ueda and Suda on 27 December 2001 and 25 February 2002, respectively. See also Fujiki *et al* (2001) and Shirakawa (2001, 2002).

economy. A third theoretical impact may be visualised if the yen depreciates so strongly that the new level for both the real and nominal exchange rate is below the long-term level. In due course the real exchange rate will return to its long-term value; real appreciation will be expected. Expected real appreciation must be offset – via an interest-rate parity argument – by a decrease in the real interest rates vis-à-vis abroad. The real appreciation may then either be achieved via nominal exchange-rate appreciation or via an increase in the Japanese price level. If the Bank of Japan temporarily keeps the nominal exchange rate fixed at the low level, the adjustment will – according to the argument – take place via inflation in Japan.[1]

The exchange-rate policy is the responsibility of the Japanese Ministry of Finance and is therefore a political decision. The intervention solution thus implies internal Japanese cooperation between the Ministry of Finance and the central bank. External cooperation is also necessary. Due to Japan's size and economic influence, a significant weakening of the yen requires the acceptance of other major industrial countries, as well as Japan's Asian neighbours. It is also questionable whether the financial markets can be manipulated to the degree envisaged in the proposal. Expectations of possible implementation will also affect the financial markets.

Are there monetary-policy options under a zero-interest-rate policy?[2]

In summary, it can be concluded that there are monetary-policy options in Japan, even when the short-term money-market interest rate stands at zero. These options lie beyond the scope of conventional, well-tried monetary-policy measures. The primary factor of uncertainty relates especially to the ability to manipulate the financial markets systematically.[3]

INTERNATIONAL ORGANISATIONS: OECD AND IMF

While some commentators emphasise that monetary policy can solve Japan's economic crisis, cf. the previous section, the international eco-

[1] See Svensson (2001a,b) for details of a potential strategy involving such a temporary fixed-exchange-rate regime.

[2] This general question is not only relevant to Japan. Clouse *et al* (2000) have looked into the options in the US case, should the fed funds rate be lowered to 0. The Federal Open Market Committee also discussed the options at their meeting in January 2002, cf. the minutes. See also Fujiki *et al.* (2001).

[3] A wide range of other unconventional suggestions have been made. For the sake of completeness, four will be listed here: (i) if the Bank of Japan purchases land, this will push up the price of land and thereby stimulate the economy; (ii) "money rain". The practical version of the theoretical expansion of the money supply. Income transfer from the government to households financed by government drawing on the central bank; (iii) taxation of money, e.g. via a tax on bank deposits that will lead to increased demand; (iv) the Bank of Japan acquires the banking sector's bad loans in order to stimulate lending and thereby aggregate demand.

nomic organisations, IMF and OECD, focus more on structural reforms, particularly in the banking sector.

OECD

The OECD (2001) believes that a key priority in Japan is a reform of the banking sector to ensure that the monetary-policy credit channel is re-established. Until such a reform takes place, the impact of monetary policy will be reduced, since any easing will not be reflected in increased lending to the private sector. When bad loans are not written off, low-productivity sectors are kept alive while high-productivity sectors may lack financing. The reforms should be implemented immediately notwithstanding contractionary effects in the short term, e.g. bankruptcies.[1]

The OECD does not believe that Japan should ease its monetary policy drastically unless a deflationary spiral emerges, e.g. a more dramatic decline in prices combined with a more dramatic decline in private demand. The risks are assessed to be too high. On the other hand, the OECD puts great emphasis on the role of monetary policy in e.g. supporting the weak financial sector and recommends easing monetary policy within the present framework. Given the high quantitative target and the counterparties' low demand in connection with market operations, it is recommended that the Bank of Japan includes a wider range of securities in the market operations, so that financial price formation is not unduly affected. Purchases should then solely serve the purpose of reaching the operational target and should not as such affect the price of certain financial assets.

IMF

The IMF (2001a, 2001b, 2002) believes that Japan's economic crisis is chiefly related to its inability to tackle the consequences of the bursting financial bubble and to adapt to globalisation. The IMF also advocates structural reforms – primarily in the banking sector – although this will have negative short-term effects on the economy. A wide range of other reforms are also recommended, including a stabilisation programme for public finances. The IMF recommends aggressive use of monetary policy to combat deflation. If the deflationary pressure does not ease soon, further relaxation should be effected. However, the IMF (2002) does not go into detail as to whether this should be exclusively within the present framework.

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[1] Other structural reforms are also recommended, see the relevant Policy Brief, which can be downloaded from the OECD's home page at http://www.oecd.org/pdf/M00022000/M00022664.pdf.

SUMMARY

The short-term money-market interest rate stands at zero. Japan is in an appropriately defined liquidity trap, but this does not mean that monetary policy cannot influence the economy. The monetary-policy measures available are, however, beyond the scope of conventional – "business as usual" – monetary policy, and the side effects are uncertain. The OECD recommends that drastic measures to ease monetary policy are only initiated in the event of a serious deflationary spiral. Monetary policy alone cannot solve Japan's economic crisis.

In a modern market economy the financial sector is an important mechanism to ensure that economic transactions can take place smoothly. A sound financial sector is prerequisite to a sound economy – in Japan as elsewhere. Monetary policy is not a substitute for structural reforms.

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