4 MONEY AND ASSET PRICES IN THE AMERICAN GREAT DEPRESSION AND CONTEMPORARY JAPAN

The linkages between money and asset prices in the UK's cycles in the second half of the twentieth century can be easily traced, partly because of the abundance of data and the continuity of the institutional framework. What about other well-known examples of marked asset price volatility and associated macroeconomic instability? Can the same sort of analytical approach be harnessed and put to work? Because of their prominence in debates between economists, this chapter will look at two episodes – the Great Depression in the USA between 1929 and 1993, and the asset bubble and subsequent prolonged macroeconomic malaise in Japan from the mid-1980s to today.

Money and asset prices in the USA, 1929–33

The Great Depression in the USA in the four years from 1929 was the most cataclysmic economic event in US history. Share prices collapsed and industrial production halved, causing millions of people to lose their jobs and inflicting hardship on many of those who remained in employment. The severity and apparently arbitrary character of this disaster blighted the reputation of market capitalism for at least a generation. Much has already been written about the Great Depression, although no agreement has been reached on the pattern of cause and effect. A classic analysis

was provided by Friedman and Schwartz in their 1963 study, *A Monetary History of the United States, 1867–1960*. Their argument was that the dominant causal influence on 'the Great Contraction' (as they termed it) was the fall in the money supply. On their favoured measure of money (currency held by the public plus all deposits in commercial banks) this fall – on a peak to trough basis – was of almost 40 per cent, from $48.2 billion in October 1929 to $29.7 billion in April 1933. They blamed the ineptitude of Federal Reserve policy in these years, with 'the financial collapse' resulting 'from the shift of power [within the Federal Reserve system] from New York to the other Federal Reserve banks'.[1]

An academic debate has developed about the relative importance of the money supply decline and the stock market collapse in the economic downturn. Friedman and Schwartz's assessment was nuanced. They saw the stock market crash as 'a symptom of the underlying forces making for a severe contraction in economic activity', but also accorded it a causal role in making consumers and business enterprises more cautious. One effect was on 'desired balance sheets', with shifts 'away from stocks and toward bonds' and 'away from securities of all kinds and toward money holdings'. As a result the velocity of money fell and 'the stock market crash made the decline in income sharper than it would otherwise have been'.[2] Nevertheless, their emphasis was on the money supply, not share prices, as having the primary role in the USA's economic trauma in the early 1930s.

Other strongly stated positions in the debate are represented by Galbraith and Kindleberger, on the one hand, and Meltzer,

1 Milton Friedman and Anna Schwartz, *A Monetary History of the United States, 1867–1960* (Princeton, NJ: Princeton University Press, 1963), p. 419.

2 Ibid., pp. 306–7.

on the other. Galbraith's celebrated *The Great Crash* and Kindleberger's *The World in Depression 1929–39* both argued that the slump in share prices was an independent causal influence on business activity. In Kindleberger's words, 'It is hard to avoid [the conclusion] that there is something to the conventional wisdom that characterised the crash as the start of the process.'[3] Against this, Meltzer affirmed in his *A History of the Federal Reserve* that the actions of the Federal Reserve – and in particular, its failure to expand the monetary base sufficiently – were to blame for the slump. Like Friedman and Schwartz, he put money at the centre of the story.

The contrast between a money-supply and a share-price explanation may be misleading, however. It might be better to see share prices as among the asset prices that are determined, to a large extent, by monetary forces. The stock market crash then becomes not an alternative explanation of the Great Depression, but part of an expanded monetary account of events. This shift of interpretation becomes convincing if the monetary aggregate under consideration is not narrow money (as in Meltzer's work), but a wider money measure which includes time deposits (as in Friedman and Schwartz's *Monetary History*). The advantages of a wider money measure ought to be clear in the context of portfolio decisions. Wealth-holders in the USA in the 1920s and the 1930s – just like wealth-holders in Britain in the second half of the twentieth century – had a choice between any of the following assets:

3 Charles Kindleberger, *The World in Depression, 1929–39* (Berkeley: University of California Press, revised edn, 1986), p. 116, and quoted on p. 255 of Allan Meltzer, *A History of the Federal Reserve* (Chicago and London: University of Chicago Press, 2003), vol. I.

- cash, in the sense of notes and coin;
- demand deposits;
- time deposits;
- financial securities; and
- tangible assets.

Bluntly, time deposits cannot be deleted from the list of assets. For monetary economists to concentrate only on cash and demand deposits (i.e. the M1 money measure, more or less), or even on cash itself, is bizarre. It is true that in the 1920s and 1930s US citizens held a far higher ratio of currency to time deposits than today. Indeed, the money holdings of poor people, without bank accounts, would have been dominated by currency. But these would not have been the people whose behaviour influenced asset prices or was most critical in the determination of economic activity. Significant wealth-holders – then, as now – would have been balancing at the margin their holdings of money *in the form of time deposits* against their holdings of non-monetary assets, including all financial securities. (In the portfolios of the very wealthy – the top 5 per cent of the population who owned the bulk of the US stock market – currency was a tiny proportion of total wealth.) Logically, the level of time deposits – not the level of currency and demand deposits – was the monetary variable most relevant to the stock market. To exclude time deposits from a causal position in the analysis – as in Meltzer's work – is to overlook the leading actor in the drama; it is the equivalent in monetary history of playing Hamlet without the Prince.[4]

4 Friedman and Schwartz are much friendlier towards the broad money aggregates than Meltzer. On p. 630 of *A Monetary History* they say 'currency held by the public plus demand *and time deposits* ... in commercial banks' (author's italics) is 'our

Fortunately, a large body of data is available to throw light on the points at issue. The main difficulty with supporters of narrow money measures is that the monetary base did *not* contract in the Great Depression. Embarrassingly for their position, the public's holdings of currency were much higher in March 1933 (at the nadir of the depression) than in October 1929 (when the stock market had its first big tumble). (In figures the public's currency holdings were $3,832 million in October 1929 and $5,509 million in March 1933.)[5] The rise in note holdings was a response to the insecurity of bank deposits, as thousands of banks failed and were unable to repay creditors (including their depositors) in full. Although the Federal Reserve could undoubtedly have done more to counter the deflationary pressures, it did print more notes and expand its balance sheet. The expansion of its operations – which occurred through very large purchases of securities – was in accordance with the textbook

concept of money'. This appears to be a clear-cut endorsement of broad money. A footnote discussion on pp. 649–50, however, is more equivocal. 'The ... criterion for choosing the total [i.e. the money aggregate] to which to apply the term "money" is by no means clearly appropriate ... It must depend on the purpose and on the empirical relevance of a particular distinction for that purpose under specific circumstances, which is to say, on the empirical stability and regularity of relationships between the chosen total and other variables.' Friedman and Schwartz are therefore inclined to favour broad money measures, but are flexible in their attitude. (Keynes's views on this question were close to those of Friedman and Schwartz. After defining 'the rate of interest' as 'what can be obtained for parting with control over ... money in exchange for a debt' on p. 267 of the main text of *The General Theory*, Keynes added a footnote to the effect that 'Without disturbance to this definition, we can draw the line between "money" and "debt" at whatever point is most convenient for handling a particular problem ... It is often convenient in practice to include in *money* time-deposits with banks and, occasionally, even such instruments as (*e.g.*) treasury bills. As a rule, I shall, as in my *Treatise on Money*, assume that money is co-extensive with deposits.')

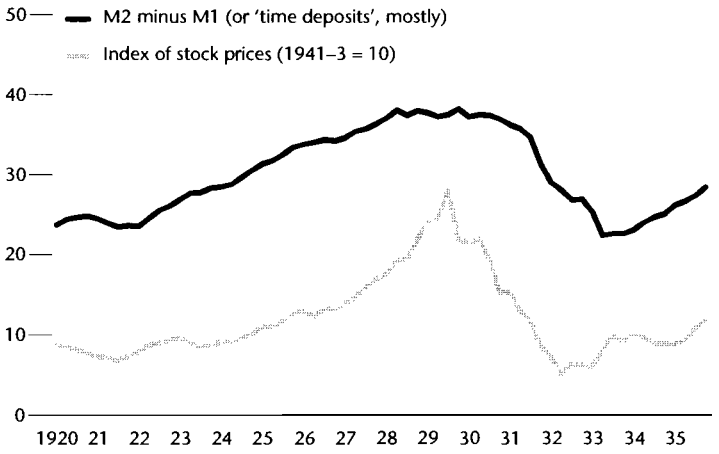
5 Friedman and Schwartz, *Monetary History*, pp. 712–13.

maxims of central banking, even though it was on an insufficient scale.[6]

The trouble lay rather in the commercial banking system and particularly in the decline in bank deposits, as banks suffered losses and called in loans because of the depletion of their capital. As they called in loans, both their assets and deposit liabilities decreased. With interest rates falling and their profits disappearing, the banks were unable to keep paying interest on time deposits. (They had been paying such interest extensively in the prosperous late 1920s.) Time deposits therefore became less attractive and fell more steeply than demand deposits. But, as has been mentioned, wealthy individuals, the kind of individuals who would have held large securities portfolios, were balancing time deposits against common stocks in their overall asset holdings. As their holdings of time deposits went down, their money balances became too small relative to their other assets. (They suffered from 'an excess demand for money', in the terminology of Chapter 2.) As individuals they sold other assets (especially common stocks), believing that thereby they might rebuild an equilibrium money holding. But, as explained in Chapter 2, sales of securities

6 This is not to deny that yet greater expansion of the Federal Reserve's balance sheet, and still further enlargement of the monetary base, would have helped economic activity. But the Federal Reserve had to worry about the quality of the assets it would purchase if it embarked on headlong expansion. Keynes saw the point in a visit to Chicago in 1931. At a conference organised by the Harris Foundation Institute, he remarked that 'When the Federal Reserve System buys governments, it means the public has increased deposits, and they can't afford to accumulate non-interest-bearing assets beyond a certain point. But it does mean the scale of operations may be *rather uncomfortably large* in order to produce consequences' (Johnson and Moggridge [eds], *Collected Writings of Keynes*, vol. XX, *Activities 1929–31: Rethinking Employment and Unemployment Policies* [London and Basingstoke: Macmillan Press for the Royal Economic Society, 1981], p. 533, author's italics).

Figure 8 **Stock prices and time deposits in the USA, 1920–35**
Quarterly data, levels, index values and $bn

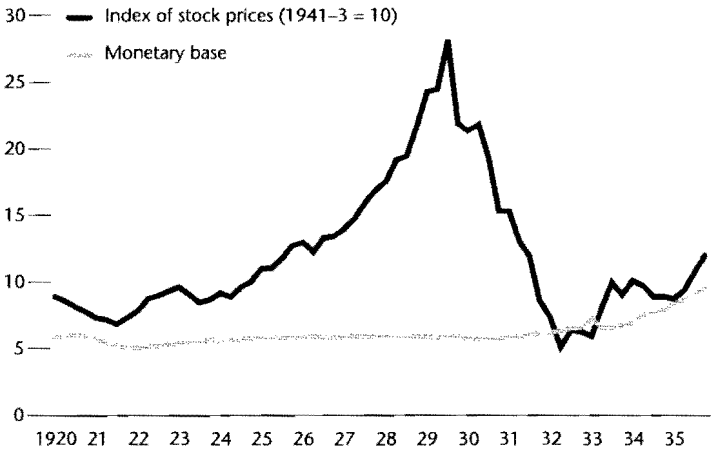


Source: Nathan Balke and Robert J. Gordon, 'Appendix B: Historical Data', especially pp. 803–4, in R. J. Gordon (ed.), *The American Business Cycle: Continuity and Change* (Chicago and London: University of Chicago Press, 1986)

by any one agent do not increase the aggregate amount of money. Instead they reduce the money balances held by the counterpart buyers of the securities and leave the aggregate amount of money unchanged.

Since, in fact, the aggregate amount of money was contracting in the early 1930s because of the crisis in the banking system, virtually all wealth-holders wanted to sell common stocks. But – within a closed circuit of traders – they could sell only to each other. Plainly, equilibrium required that stock prices go down. As the wider macroeconomic environment was hostile to profits, stocks fell far more than either national income or the money supply

Figure 9 **Stock prices and the monetary base in the USA, 1920–35**
Quarterly data, levels, index values and $bn



Source: Nathan Balke and Robert J. Gordon, 'Appendix B: Historical Data', especially pp. 803–4, in R. J. Gordon (ed.), *The American Business Cycle: Continuity and Change* (Chicago and London: University of Chicago Press, 1986)

(however measured). Nevertheless, the stock market crash was part of a general weakness in asset prices which was attributable to the decline in the money supply. The accompanying Figures 8 and 9 compare the level of the stock market, first, with that of time deposits (where there is a clear correlation) and, second, with the monetary base (where there is no correlation whatsoever).

Asset prices – and of course the egregious behaviour of the stock market – must be integrated into a convincing analysis of the Great Depression. To suggest that asset price movements of the 1930s need to be set within a monetary context is hardly radical, since that was the thrust of the leading innovations in economic

theory during the decade. Quite apart from Keynes's insistence in *The General Theory* on what he termed 'the speculative demand for money' (i.e. the demand to hold money in order to improve the timing of bond purchases), Hicks proposed in his well-known essay of 1935 on 'A suggestion for simplifying the theory of money' that 'What has to be explained is the decision to hold assets in the form of barren money, rather than of interest- or profit-yielding securities.'[7] Asset price developments must be related not just to a sub-set of monetary assets, such as the monetary base or narrow money, but to an all-inclusive money measure including time deposits. This study does not have the space to elaborate the precise connections – month by month, institution by institution, and stock market operator by stock market operator – between the total amount of bank deposits and the behaviour of the US stock market between 1929 and 1933. Nevertheless, the message of the charts is striking. The asset price collapses in the USA in the Great Depression can be interpreted as a by-product of the fall in time deposits and have no clear connection with the monetary base, while the monetary aggregate with the greatest power to explain events must be a broadly defined one (i.e. M2 rather than M1 or the base).

Money and asset prices in the Japanese bubble and later malaise 1985–2003

The late 1980s were years of great speculative excitement in Japan. After almost forty years of exceptionally rapid economic growth, Japan's economy had become the second largest in the world.

7 Sir John Hicks, *Critical Essays in Monetary Theory* (Oxford: Oxford University Press), p. 66.

Indeed, books were written about the possibility that its output might overtake the USA's within the next twenty years and that the 21st century would be characterised by Japanese leadership of the world economy. Amid this euphoria, stock market and real estate prices rose relentlessly. At the end of 1989 the Nikkei stock index was six times higher than it had been a decade earlier. The second half of the decade was the most extreme, with the Nikkei index showing a compound annual rate of increase of over 31 per cent in the four years from the end of 1985. Corporate equity became exceptionally overvalued. In the mid-1970s the price/earnings ratio of equities in the Tokyo Stock Exchange's first section had been in line with the typical long-run average in most countries of about 15; in the late 1980s the comparable figure was 60 or 70. As in the USA in the late 1920s, the upward rush in share prices was not accompanied by marked macroeconomic imbalance. The current account of the balance of payments was in continual surplus, while the wholesale price index was at much the same level in 1990 as it had been five years earlier.

Policy-makers were concerned, however, that equity market overvaluation was leading to resource misallocation and corruption in the financial system, and decided that asset prices had to be brought down. Their determination to tighten policy was reinforced in the summer of 1990 by Iraq's invasion of Kuwait, which prompted a sharp rise in oil prices and threatened Japan's price stability. The Bank of Japan's discount rate – which had been only 2.5 per cent in 1987 and 1988 – was raised in a sequence of steps to reach 6 per cent in the autumn of 1990. The Nikkei index slithered from a peak of almost 40,000 in late 1989 to less than half that level in 1992 and continued to fall in later years. With asset prices in retreat, both consumer confidence and corporate

spending became chronically weak. The Japanese economy entered a prolonged malaise of semi-stagnation which lasted until the opening years of the 21st century.

So much is well known and familiar. As usual, it has been possible to tell the story in terms of central bank actions and interest rates, and without any reference to the quantity of money. Indeed, economists at the Bank of Japan – like their counterparts at the Bank of England – have described 'the transmission mechanism of monetary policy' as pivoting on the interest rate set by the central bank in the money markets.[8] However, the behaviour of the money aggregates illuminates the passage of events and identifies key causal influences in asset price determination. To restrict the discussion to interest rates, and the presumed effects of interest rates on expenditure, is to provide an incomplete and unsatisfactory account of events. The implicit view is that the economy consists only of monetary base assets and the goods and services that comprise national expenditure. This is simply wrong. The economy also includes sight and time deposits, and a wide

8 A paper on 'One year under "quantitative easing"' by Masaaki Shirakawa was published by the Bank of Japan's Institute for Monetary and Economic Studies in 2002 (IMES Discussion Paper Series 2002-E-3, April 2002). On p. 35 it presented a figure on 'The standard transmission mechanism of monetary policy'. Arrows connect a box. 'Change in reserves', to another box, 'Change in short-term interest rates', to yet another, 'Changes in the prices of financial assets (i.e., medium- and long-term interest rates, foreign exchange rates, stock prices, etc.)', and then, both directly and via another box, 'Change in the behaviour of financial institutions', to the final box, 'Change in the behaviour of domestic private economic agents, such as firms and households and also overseas economic agents'. The approach was similar to that of the paper prepared in 1999 by the Monetary Policy Committee of the Bank of England for the attention of the Treasury Committee of the House of Commons. A vital attribute of macroeconomic equilibrium – that the quantity of money be willingly held at the prevailing levels of asset prices and national income – was ignored by both the Bank of Japan and the Bank of England.

variety of financial and tangible assets, while wealth-holders had at all times to seek the most favourable balance between monetary and non-monetary assets in their portfolios.

For most of the post-war period Japan's banks had been highly profitable and were able, even after paying dividends, to expand their capital and balance sheets at annual rates of up to 20 per cent or more. Annual rates of money supply growth in the 1960s and 1970s were typically around 15 to 25 per cent. (The concept of money here and later is the 'M2 plus certificates of deposit' measure, unless otherwise specified.) More moderate rates of under 10 per cent were recorded in the early 1980s. This could be attributed to a wider slowdown in the trend rate of output growth and a narrowing of profit margins throughout the economy, including the banking system. As Japan had caught up with Western technologies, it could not achieve rapid output growth merely by imitation. But in 1986, partly under pressure from American policy-makers worried about the weakness of the dollar, the Japanese government agreed to ease monetary policy. The Bank of Japan's discount rate of 2.5 per cent in 1987 and 1988 stimulated the demand for bank credit, and was accompanied by annual rates of money supply growth in the low double digits.

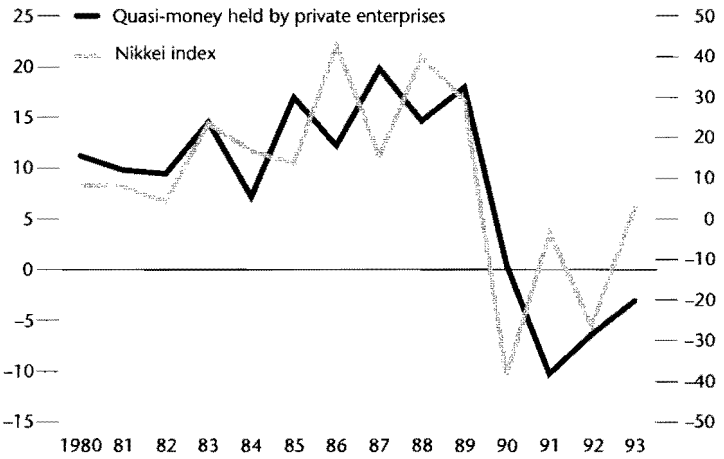
In the year to end-1989 the money supply increased by 12.0 per cent, plainly excessive relative to the economy's trend rate of output growth. In 1990 higher interest rates deterred bank credit and the growth of money slowed to 7.4 per cent. The decline in money growth in 1991 was even more pronounced, and in the three years to end-1991, end-1992 and end-1993, the rates of change in the money supply were 2.3 per cent, −0.2 per cent and 2.2 per cent. The fall in the annual rate of money growth – from a double-digit figure in 1989 to virtual stagnation less than three years later

– was one of the sharpest changes in the pace of monetary expansion in Japan's post-1945 experience.

Of course, these were also the years in which the stock market bubble burst and the long malaise of asset price weakness began. The stock market gyrations in Japan in the late 1980s and early 1990s seem as amenable to explanation in terms of the quantity of money as they are to explanation in terms of central bank action on interest rates. Is it possible to say more about the types of agent most involved in asset price determination, echoing the discussion in the previous chapter of the role of financial institutions and companies in the UK? Japanese statistics on money and banking are detailed and extensive, but not surprisingly they are prepared differently from those in other industrial countries. Data are, however, published in the Bank of Japan's *Economic Statistics Annual* on the M1 and quasi-money holdings of 'private enterprises' and 'individuals'. The category 'private enterprises' includes financial institutions, although money held by industrial and commercial companies would have predominated in the 1980s. As it happens, companies' purchases of equity in other companies were a particularly important feature of the Japanese financial scene in those years. The purpose was to establish share 'cross-holdings' which would hinder takeover activity and entrench existing managements. (The author has not been able to obtain statistics that further differentiate money held by non-bank financial institutions *as a whole* from the money held by private enterprises, although abundant balance-sheet information is available for various categories of financial institution.)

Figure 10 compares annual changes in the Nikkei index with annual changes in private enterprises' quasi-money between 1980 and 1993. 'Quasi-money' consists of all deposits minus demand

Figure 10 **Money, and the boom and bust in the Japanese stock market, 1980–93**
Annual % changes in Nikkei index, against right-hand axis, and quasi-money (i.e., time deposits) held by private enterprises, against left-hand axis



Source: Bank of Japan

deposits, and corresponds more or less to time deposits in the definitions of North American and European countries. The two series did not match up exactly every year from 1980 to 1993, but the rough parallelism of their movement is obvious. Broadly speaking, when companies' holdings of time deposits were rising, so also were share prices; when companies' holdings of time deposits were falling, so also were share prices. Changes in share prices were generally twice as large as changes in companies' time deposits. A fair comment is that – as in the USA in

the 1930s, and as in the UK during the boom–bust cycles – the behaviour of money, particularly in the form of time deposits in corporate hands, was a crucial influence on the vicissitudes of the stock market. Further, an attempt to explain asset prices by means of narrow money measures is untenable.[9] In Japan, as in every other major industrial economy, significant wealth-holders have to balance *all* their money holdings (i.e an all-inclusive money measure) against non-monetary assets in portfolios where notes and coin often do not figure at all. The notion that the monetary base has any direct relevance to asset markets is as thorough a misunderstanding of the institutional realities of modern Japan as it is of the institutional realities of modern Britain.

In the mid- and late 1990s Japan was unable to shake off the macroeconomic malaise that had begun with the bursting of the bubble. Asset price weakness caused a high incidence of bad loans and loan write-offs in the banking system. With the banks short of capital, they were unable to expand their balance sheets. Money supply growth – which had routinely been over 20 per cent a year in the 1960s – fell to very low rates of 2 or 3 per cent a year. In the five years to 1998 the average annual increase in M2 plus CDs was 3.1 per cent; in the five years to 2003 it was only 2.7 per cent. Asset prices remained weak, with land prices (crucial to banks' loan collateral) falling every year in the decade to 2003. The economy

9 The author carried out econometric tests on the relationship between changes in different money aggregates and changes in share prices in Japan from 1980 to 1993 (the period of the Japanese share price boom and bust). The equation tested took the form *Change in Nikkei index, % p.a.* = $\alpha + \beta$ *(Change in 'money', % p.a.)* for various definitions of money. There was a reasonable link between broader definitions of money and share prices and no link between narrow definitions of money and share prices. The detailed results can be obtained from the author.

had only brief and fitful recoveries, and the price level fell slightly in the early years of the 21st century.

This period is of considerable interest to economic theory as it provided a laboratory experiment on the relative importance of narrow and broad measures of money, and of money and credit. A standard prescription of visiting US economists in the late 1990s was that the Bank of Japan should expand the monetary base (typically by large purchases of government bonds, but sometimes by purchases of foreign exchange), in the expectation that the banks would respond to their excess base holdings by increasing their earning assets. Some economists thought that a faster rate of increase in the monetary base *by itself* or in the M1 narrow money measure would be sufficient to secure recovery;[10] others believed that the purpose of the exercise was to stimulate the banks to make more loans and that extra bank credit, again *by itself*, would be the vital new development.[11] In 2001, 2002 and 2003 the Bank

10 Belief in the therapeutic powers of basing policy on the monetary base is associated with the American economist Ben McCallum. See his 'Specification and analysis of monetary policy rule for Japan', *Monetary and Economic Studies* (Bank of Japan, November 1993), vol. 11, pp. 1–45. As in his *History of the Federal Reserve*, an account of monetary policy-making in the USA in the first half of the twentieth century, Meltzer favours tracking the monetary base and the M1 measure of money when analysing macroeconomic developments in modern Japan. He believes that the central bank should operate on the monetary base to influence M1. In some of his papers he equates 'monetary expansion' with 'expansion of the monetary base'. See, for example, the note 'Comment on Japan and the Asian financial crisis' on his research website, www.gsia.cmu.edu/afs/andrew/gsia/meltzer.

11 References to a supposed link between bank lending and 'spending' proliferate in newspapers and business magazines. The lack of a rigorous theoretical basis for such a link is discussed in Chapter 5 of this study. For a more heavyweight contribution suffering from the same misunderstanding, see Glenn Hoggarth and Joe Thomas, 'Will bank recapitalisation boost domestic demand in Japan?', *Financial Stability Review* (London: Bank of England), June 1999 issue. In the opening paragraph 'a cut-back in lending' is bracketed with 'reducing spending by the household and corporate sectors'.

of Japan responded to these calls by a conscious policy of 'quantitative easing', making enormous purchases of not only governments bonds but also Treasury and Financing bills (short-dated instruments issued by the Ministry of Finance). Banks' reserve balances jumped from 5.5 trillion yen at the end of 2000 to 27.8 trillion yen at the end of 2003. The impact on the monetary base and M1 money measures was palpable. Indeed, in 2002 M1 soared by 27.6 per cent, more than in any year in the 1980s or 1990s. But the broader measures of money were little affected. They continued to plod forward at the 2–3 per cent annual rates seen for most of the 1990s.

Table 5 summarises the behaviour of the main money measures in the five years to end-2003, and compares them with the rate of increase in real domestic demand. (Nominal domestic demand often fell, with the domestic demand deflator being negative on average by about 1.5 per cent a year.) The macroeconomic ineffectiveness of the surges in the monetary base and M1 is obvious.[12]

12 This is not to deny that increases in the monetary base would have worked in Japan *if they had been on a sufficiently large scale to raise the growth rate of an all-inclusive measure of money*. In the extreme the central bank could have made asset purchases (of bonds, equities or whatever) from non-bank agents equal to 10, 20 or 30 per cent of GDP and paid for them with notes. If the notes had then been deposited with the commercial banks, the monetary effect would be the same as if the banks had purchased the assets from non-banks. But the location of risk in the banking system would be different in the two cases. If the central bank purchased the assets and issued notes to pay for them, the commercial banks would receive the notes as the asset matching the deposits and these extra assets would be claims on the central bank. The risk that the bonds, equities and so on might fall in value would therefore lie with the central bank. On the other hand, if the commercial banks bought assets from non-banks and paid for them by crediting sums to deposits, the risk of falling asset values would lie with the commercial banks. The possibility of severe losses on the assets it acquires can be a constraint on large-scale expansionary open market operations by a central bank. Whether this risk of loss ought to constrain the central bank is a matter of debate. The

Excess base and excess holdings of sight deposits did *not* help asset prices or stimulate economic activity; instead they led to shifts in the relative sizes of the components of a broad money measure (i.e. because of transfers of money between different types of deposit), but such shifts were of no significance to the wider economy. By contrast, the changes in the money supply (on the standard M2 plus CDs definition) and broadly defined liquidity were in the same ballpark as the changes in private domestic demand. No one knows what would have happened if official action had instead been focused on raising the growth rates of broad money, but it is plain that the persisting low growth rates of broad money were accompanied by further asset price disappointment and negligible increases in nominal GDP.[13]

What about bank credit? In the early and mid-1990s Japan's banks took a lenient attitude towards borrowers who could not repay, or even service, their loans, hoping that with the return of better times the quality of the loans would improve. They added interest to loan principals, even if there was little likelihood of the

author is grateful to Milton Friedman and Allan Meltzer for an exchange of e-mails that helped to clarify his thinking on the topic.

13 As noted earlier in Chapter 2, Krugman claimed in *The Return of Depression Economics* that Japan was in a liquidity trap in the late 1990s (pp. 70–77). Since the central bank discount rate was already at zero, it was obviously true that the central bank could not drive interest rates lower by expansionary open market purchases. But Krugman was writing about only one kind of trap (which might be termed 'the narrow trap'), that which arises when *the short-term interest rate in the money markets cannot be reduced by increases in the monetary base*. Keynes's own trap was different. It arose when *increases in the broadly defined quantity of money could not reduce the yield on government bonds* and might be called 'the broad trap'. Since the rates of growth of broad money stayed very low in Japan throughout the prolonged malaise, no one knows whether it suffered from Keynes's liquidity trap. (The author distinguished between the narrow and broad liquidity traps in two research papers in the March 2003 and April 2003 issues of Lombard Street Research's *Monthly Economic Review*.)

Table 5 **Growth rates of different money concepts and private domestic demand in Japan, 1999–2003, % p.a.**

	Banks' cash reserves	*Monetary base*	*M1*	*M2 plus CDs*	*Broadly defined liquidity*	*Private domestic demand*
1999	23.6	44.5	10.5	3.6	3.3	0.8
2000	–5.9	–19.9	8.2	2.1	3.1	2.8
2001	36.8	19.4	8.5	2.8	2.5	–0.6
2002	155.2	11.8	27.6	3.3	0.5	0.4
2003	51.4	12.0	8.2	1.7	0.6	2.4

Note: Figures for cash reserves are average of year. Otherwise data relate to year-end, except those for domestic demand, which are for whole year.

borrowers' early financial rehabilitation. The loan assets of Japan's domestically licensed banks therefore rose from 435.7 trillion yen at end-1991 to 475.7 trillion yen at end-1997, with a compound annual rate of increase of 1.5 per cent. But after the announcement of a 'Big Bang' of financial reform by Prime Minister Hashimoto in November 1996 the banks took a more robust line and began to write off bad loans. From the end of 1997 to the end of 2003 the loan assets of Japan's domestically licensed banks fell from 475.7 trillion yen to 407.1 trillion yen, with a compound annual rate of decline of 2.6 per cent. If bank credit *by itself* were critical to the behaviour of the economy, a fair expectation would be that these six years would be significantly worse for asset prices and domestic demand than the previous six.

In fact, Japanese macroeconomic conditions in the six years to end-2003 were much the same as in the six years to end-1997. Share prices had their ups and downs, but their average rate of decline in the later six-year period was less than in the earlier. The rate of growth in private domestic demand was a shade higher in the earlier period (0.8 per cent a year) than in the later period (0.2

per cent a year), but the difference was trifling. Non-residential investment – which some economists might expect to be particularly sensitive to 'credit conditions' – was slightly stronger in the later period than in the earlier. In short, the change in the trend of bank credit after Hashimoto's Big Bang had minimal effect on key economic variables.

The Japanese economy's ability to shrug off the bank credit contraction from 1997 stemmed from the relative stability of monetary growth. As in the USA during and after the Great Depression, the critical financial variable for the economy was neither the behaviour of bank credit alone nor the composition of banks' assets, but the quantity of money. Banks compensated for the decline in their loan assets by increasing their holdings of securities, particularly government bonds. Japan's domestically licensed banks' holdings of government bonds more than trebled from under 30 trillion yen at the end of 1996 to over 90 trillion yen at the end of 2003. The expansion in their government bond holdings was roughly similar in size to the contraction in their loan assets. As a result the shrinkage of loan portfolios did not lead to a decline in total assets or, on the other side of the balance sheet, to a fall in deposit liabilities. In fact, the money supply still grew in these years, even if only slowly. Arguably, policy-makers could have been more deliberate and aggressive in offering government bond issues that would have been attractive to the banks, and so encouraging them to expand their balance sheets and deposit liabilities more rapidly.[14]

14 The author advocated large-scale purchases of *long-dated* government bonds *from non-banks by the government itself* in order directly to increase the quantity of *broad* money in an article in *Central Banking* in 2002 (see Tim Congdon, 'What is to be done about Japan's financial crisis?', *Central Banking*, vol. 12, no. 4, May 2002, pp. 67–72).

The larger lesson of the Japanese malaise is that traditional monetary theory provides correct insights into the determination of both asset prices and national income. As that theory recognises, full macroeconomic equilibrium requires that the quantity of money – broadly defined to include all money balances – be willingly held at prevailing levels of asset prices and national income. So the behaviour of the quantity of money must be monitored, both to help businessmen and investors in the interpretation of the economic scene, and to guide policy-makers towards the right decisions. Neither a sub-set of monetary assets (i.e. the monetary base or M1) nor bank credit alone has given reliable signals to the cyclical fluctuations and asset price instabilities experienced by the Japanese economy since the mid-1980s.