

Financial Crises in Japan during the 20th Century

by

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1. Introduction

I have two aims with this paper. Firstly, I would like to extract lessons for theory and policy from Japan's experience with banking crises. As such, this paper falls into the body of research on banking crises, recent works within which include Caprio and Klingebiel (1996), Caprio et al. (2005), Demirgüç-Kunt and Detragiache (2005), Werner (2005), Beck et al. (2006), and Reinhart and Rogoff (2008). Secondly, I aim to gain insights into the link between the banking sector and the economy (which are again of importance for both theory and policy). This is an important topic that has slowly but steadily grown to a substantial body of literature. Many authors recognise that banks are 'special' in some way (Fama, 1985, Bossone, 1999, James and Smith, 2000, Ashcraft, 2005), and that the link between the banking sector and the economy is of great importance (King and Levine, 1996, Levine, 1997). However, the precise details of just what makes banks special, as well as the precise nature of their link to the economy have remained unclear or at least disputed. Analysing crises may help elucidate these issues.

Japan experienced a number of substantial financial crises during the 20th century. Among them were banking crises that centred on the banking sector but that engulfed the entire financial sector and either threatened to or did in fact have an adverse impact on the economy. The most gregarious ones are the crises of 1920, of 1927, of 1945 and the most recent crisis, which began in about 1992 and lasted for over a decade, until at least 2003.

There were further, less far-reaching financial crises, of which particularly the first (1965) and second (1997) Yamaichi crises deserve mentioning. However, these two crises, centred on the threatened or actual insolvency of major securities firm Yamaichi Securities and could be said to have been limited in their impact: the first remained relatively contained, hardly affecting the banking sector or the economy, and the second, while more substantial, merely exacerbated an already ongoing major banking and economic crisis.

In what follows I thus focus more narrowly on banking crises, excluding crises that are localised and contained primarily in the non-bank financial sector, such as securities and insurance company crises, or crises that primarily took the form of a stock market crash, without a major independent impact on or from the banking sector. Thus I will focus initially on the four banking crises named above, and even within those settle on a comparative analysis of the two most diverse, and hence most interesting crises. Meanwhile, I will confine a discussion of the two Yamaichi crises to a brief comment in the final section of the paper, when the findings are summarised (as they offer support for one of the conclusions, namely that the role and type of central bank intervention is crucial in times of crises).

It is useful to place the four banking crises within their historical context. The 1920 crisis was triggered by the economic slowdown after the economic boom of the First World War (Japan benefited from the global demand expansion, while hardly being involved in hostilities). It coincided with a sharp fall in equity prices (the 'panic of March 1920', Goldsmith, 1983). In the eyes of some observers the 1927 crisis was a continuation of the 1920 crisis, as the banking sector had remained under pressure since 1920 and its balance sheet continued to deteriorate gradually; the Great Kanto Earthquake of 1923 indeed led to a further rise in bad debts, culminating in the 1927

banking crisis.¹ While the economy initially remained resilient, producing strong growth even in 1928, the impact was felt in the subsequent years, especially in 1930 and 1931 (Goldsmith, 1983).

The banking sector was again thrown into a state of crisis in 1945, when the vast programme of compulsory war-time credit expansion to the munitions industry on the one hand and the government on the other came to an abrupt halt, without the military success that provided the ex ante justification. With Japan's defeat a sober accounting of the state of the banking system revealed a virtually total failure of assets and hence strictly speaking a state of insolvency.

Finally, the most recent crisis occurred again after a major economic boom – the 'bubble economy' of the 1980s. While this crisis began in slow-motion in about 1992 and culminated in a final climactic spasm in 2003, in certain respects the negative impact on the economy continues to be felt today, as bank lending continues to grow at a historically slow pace. Thus it could be argued that this banking and economic crisis has become fused with the global financial crisis that began in 2007 and may not be over after almost two decades.

As already indicated, I am in this paper also concerned by a second topic, namely the link between banking and the economy. It is during times of crisis in the banking sector that this link becomes more apparent, and the study of banking crises is thus important for extracting insights concerning its features, role and influence. In the case of the above Japanese banking crises of the twentieth century, the developments in the banking sector indeed appear to have been of significance for the performance of the economy.

Especially the two most recent banking crises posed an unprecedented number of major challenges to mainstream macroeconomic and monetary economic theory. In particular, theory has found it difficult to pinpoint the mechanism that links banking crises and economic performance. It is the extent of the recent crisis and the striking number of analytical 'anomalies' that cannot be explained by standard theories that make it so interesting and worthwhile to consider at length.

A study of Japan's banking crises and the link between banking and the economy that emerges from this, including the various policy lessons, could easily fill several learned books. Space limitations of a single research paper preclude such detailed treatment. However, I would like to turn the space limitations into an advantage by proposing to focus presently on a comparative study of two Japanese banking crises that have been selected for the purpose of being most effective in yielding lessons and policy implications.

Since it is a goal of this study to extract information specifically about the link between banking and the economy, it is useful to focus on those banking crises that seemed to have a different impact on the economy and contrast the differences. The

¹ Some argue that the post-WWI crisis lingered for three years, until the 1923 earthquake led to a further exacerbation of the same crisis. For our purposes, however, we define the 1927 crisis as the second crisis, as it has distinct features, an identifiable beginning and what can be considered an end. Ultimately, however, this issue remains of secondary or tertiary importance for this paper, where the focus remains on two particular banking crises, which also happen to be fairly unambiguously defined.

study of such episodes is likely to help in identifying crucial aspects of the mechanism by which banks affect the economy. It is argued that the greatest contrasts can be seen when comparing the protracted banking crisis of the 1990s, which was associated with an economic slump lasting more than a decade, and the fundamentally deeper and more wide-ranging banking crisis of 1945, which was however not associated with any significant downturn in the economy.

This paper is structured as follows: first, we discuss different stylised features of the Japanese banking crises, and in particular the ways in which the two selected crises and their circumstances differ. The key contrasting features include the depth of the banking crisis, the length of the associated economic downturn, the structure of corporate finance, and the regulatory environment. On all these counts, the two crises differ widely – indeed seem on the opposite end of the spectrum from each other. This suggests that the focus on a comparison of these two crises is likely to identify key questions that require an answer, and hopefully will yield interesting insights.

We then move to the main section, which is the discussion of the two selected banking crises. I begin with the banking crisis of the early 1990s, including how the literature concerning the link between banking and the economy has handled it. It is seen that the most recent Japanese crisis has posed profound challenges to mainstream macroeconomic models. Thus I next introduce the reader to an alternative approach to the mainstream approaches, which I found has been able to solve all the ‘puzzles’ and ‘anomalies’ that traditional approaches could not explain. This approach also produces different policy recommendations.

Any analysis of economic history involves hypothesis testing of implicit joint hypotheses: we are testing hypotheses about the specific events at the time, jointly with our hypotheses about our understanding of how economies function (our underlying economic model). I thus make my theoretical model explicit, discussing it sandwiched between the first and the second crisis case studies. It is the framework that has performed well in explaining – indeed predicting – the banking crisis of the 1990s and the economic downturn connected to it, which will also be deployed in analysing the events of the immediate post-war era.

After this, I present an analysis of the situation of the banking system and its link to the economy in the immediate post-war era. It is hoped that in this way the surprising outcome of the 1945 crisis can be explained fairly exhaustively.

2. Selecting two contrasting banking crises

A comparative study of two identical crises will not yield additional insights. The marginal productivity of adding one more crisis case study to any given body of crisis studies will be low, if the additional crisis has similar features to previous crises. Indeed, economic history is littered with examples of banking crises, many of which took surprisingly similar turns. Thus I see it as my first task to identify two Japanese crises that seem to maximise the number of diverse features. Ideally, they put essential features into such stark relief that they are likely to yield insights with ease.

There are a number of criteria for classifying banking crises. We focus on severity, length of associated economic downturn, the corporate reliance on bank finance, and, finally, the regulatory regime concerning the extent of regulation, or the degree to which market forces could operate freely.

(a) The severity of banking crises:

This can be considered to be a linear function of the degree of impairment of the banking sector's balance sheet. In concrete terms, this means the extent of non-performing assets. Thus an index of severity can be constructed by estimating the ratio of non-performing assets (NPA) as percentage of total assets. There are numerous legal, accounting, analytical and statistical problems with identifying non-performing assets, which will remain outside the scope of this study. Here, the view is taken that the precise figures are less important than a broad ordinal ranking of ranges. We thus propose a severity index from 1 to 5 in discrete numbers, with each integer corresponding to about 20% of assets being non-performing. Thus an index reading of 1 implies an estimate of non-performing assets of up to 20%. An index reading of 2 implies an estimate of non-performing assets of between 20% to 40%, and so on, until an index reading of 5, which implies that between 80% and 100% of bank assets should be considered non-performing.

Table 1: Index of severity of banking crises:

Severity Index	% non-performing assets	Verbal description
1	Up to 20%	Mild
2	21 – 40%	Moderately severe
3	41 – 60%	Severe
4	61 – 80%	Highly severe
5	81 – 100%	Most severe

(b) The length of the subsequent economic downturn:

This can simply be measured in years. While this should not directly be considered a measure of the extent of the crisis itself, it is a stylised indicator of the impact the crisis may have had on the economy (although of course at this early stage no direct causation can be implied by prior timing; such causal analysis depends on a more detailed model of the link between banks and the economy, as discussed later in this paper).

There are two further features, which concern the importance of the banking sector in the economy, and the regulatory environment:

(c) Corporate reliance on bank finance:

The dependence on bank finance can be measured by the percentage of external corporate finance derived from banks, as opposed to funding from capital markets. Ministry of Finance data, largely survey-based, can be used for this purpose.

Information about corporate finance serves to indicate the importance of the banking sector: A banking crisis that happens at a time when bank finance is the major – or even only – source of external finance should be expected to have a different impact

on the economy from banking crises that happen in an environment where external finance from banks is less important and access to capital markets are readily available.

(d) Degree of regulation:

This criterion measures the regulatory environment. Banking crises and their impact on the economy potentially play out differently in an environment where government regulation and intervention is pervasive, as compared to an environment where markets are allowed to adjust freely and market forces can contribute more towards restructuring and revival of the economy. In principle, a regulatory indicator is also a linear function of the extent of regulatory direction and government intervention. Unlike with non-performing assets or the percentage of bank finance, there is not one obvious measure of the degree of government intervention. While one may be constructed, for our – basic – purposes we rely on an institutional analysis to crudely classify the regulatory environment into five classes of unregulated, deregulated, regulated, controlled (pervasive regulation, while maintaining a private sector and other features of market economies, i.e. not a planned economy) and planned (direction of most economic activity, as in Soviet-style economies). This classification, described in Table 2, has the advantage that it does not require further detailed statistical evaluation of the degrees of regulation. These may be of interest in future research, but would be fraught with a variety of problems.

Meanwhile, our classification enables us to readily identify economies with little room for disagreement or interpretation (except perhaps between index reading 2 and 3). By way of example, the Soviet Union would have had a regulation index of 5. Most of today’s mixed economies, such as the UK, Germany or the US, would have a regulation index reading of 2 or 3. Hong Kong in its colonial heyday would obtain a reading of 1. Nazi Germany and wartime Japan would obtain a reading of 4.

Table 2: Index of the degree of regulation of the economy

Regulation Index	Classification	Verbal description
1	Unregulated	free markets, law & order intervention only
2	Deregulated	more than law & order intervention, but deregulated (post-deregulation)
3	Regulated	more than law & order intervention, not deregulated
4	Controlled	pervasive regulation and intervention, while maintaining market incentives
5	Planned	proscription of economic activity; little use of private property and market mechanism

We can now utilise these four criteria to attempt to classify and compare the 4 main Japanese banking crises of the 20th century. The result is shown in Table 3.

Table 3: Banking crises in 20th century Japan

Banking crisis	Severity of banking crisis	Severity of downturn	Dependence on bank finance	Regulatory environment
1920	2 (mod. severe)	1 year	< 50%	3 (regulated)
1927	3 (severe)	3 years	< 50%	2 (deregulated)
1945	5 (most severe)	1 year	100%	4 (controlled)
1992-2003	2 (mod. severe)	11+ years	< 50%	2 (deregulated)

While some classifications remain stylised estimates at this stage, one conclusion is likely to stand up well to further research: the crises with the most diverse features are the 1945 crisis and the most recent crisis. The former was most severe, with virtually 100% of the aggregate bank balance sheet impaired, while the latter was only of modest severity: The post-1991 crisis, while featuring a severe deterioration in bank balance sheets, was less severe than many banking crises in Japan during the 20th century: The aggregate total amount of incipient bad debts was estimated at Y80-100 trn by Werner (1995b), approximately up to 20% of outstanding loans (an estimate that proved to be correct with the hindsight of another decade, having been controversial during much of its life).

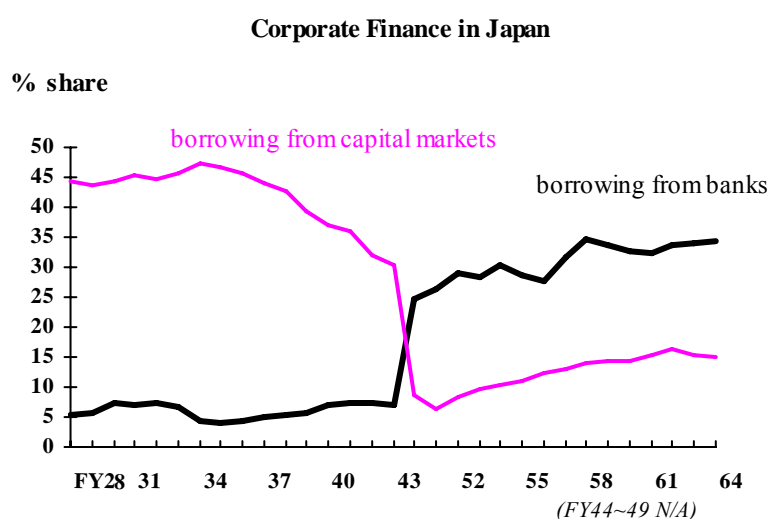
At the same time, the 1945 crisis was associated with the shortest economic downturn, while the 1990s' crisis was followed by the longest. This is a surprising contrast: *ceteris paribus*, a more severe banking crisis can be expected to be associated with a longer economic downturn. However, on a *mutatis mutandis* basis this does not have to be the case: a key variable factor that we will consider in the main section is the government response to crises.

These two crises also differ most, when considering the importance of the banking sector for corporate finance. In the 1920s and until the early 1940s, Japanese companies raised external funds to a large extent from the capital markets. Thus the banking crises of 1919-21 and 1927 occurred at a time when banks were not yet the core source of funding for firms (see Figure 1 below). During the 1940s, due to restrictive wartime legislation, direct finance in capital markets had been virtually abolished (Goldsmith, 1983; Tsutsui, 1988).² As many relevant laws and ordinances were re-instated after 1945 as part of emergency measures, this situation persisted in the first few years after the end of the war. Hence at the time of the 1945 banking crisis, bank funding accounted for virtually 100% of all external fund-raising. One would expect the reverberations of the problems in the banking sector to have a severe impact on corporate fund raising and aggregate demand and hence the impact of the banking crisis to be large and persistent in the economy. This fact makes the above two features of the 1945 crisis the more intriguing: the banking system was most impaired in 1945, and virtually the only source for external finance by firms. Yet, the impact on the economy of this most severe impairment of the banking sector was the smallest of all the banking crises in the 20th century.

² "By the last years of the war, with retained earnings dwindling and the 'direct' finance option effectively closed, industrial enterprises were forced into an unprecedented, virtually complete dependence on the banking system for all commercial and investment funding" (Tsutsui, 1988, p. 14).

Meanwhile, the crisis of 1992-2003 happened when banks were only modestly impaired, bank funding had become – especially by the second half of the 1990s – far less important than at any time since the 1930s and there was free access to alternative funding mechanisms – ranging from healthy foreign financial institutions that had increasingly become active in Japan to non-bank financial institutions and deregulated and effective capital markets. Consequently, as various observers have commented (e.g. Meltzer, 1999), a priori one might have expected that the recent crisis should have had a far less severe impact on the economy – yet it turned out to be the most prolonged and damaging crisis for the economy of all 20th century crises.³

Figure 1: Bank finance versus capital market finance in the 20th century



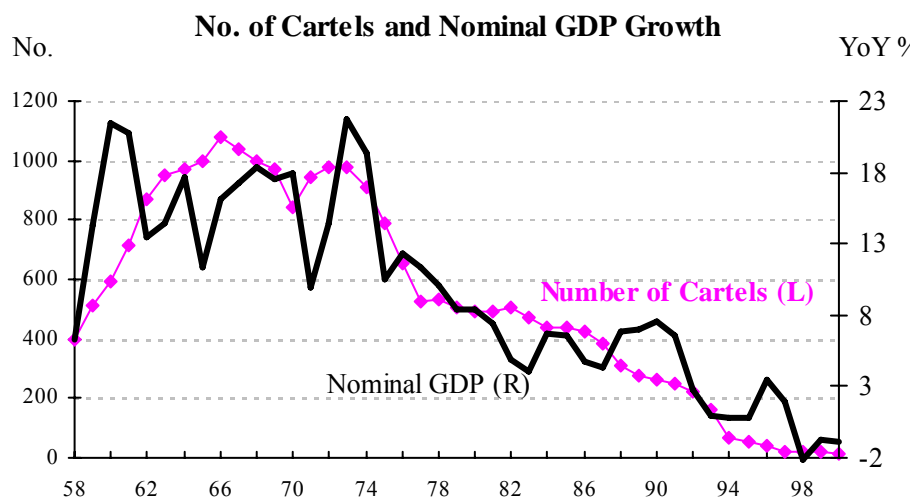
Finally, there is the another aspect of this comparison that is of interest: the economic system of the immediate post-war years (until the end of the 1960s) was characterised by the persistence of war-time economic controls in the form of a ‘controlled economy’ or, more precisely, a ‘guided market economy’, whereby bureaucratic administrative guidance and controls were used to intervene in an otherwise market and private property-based economic structure. The system of centralised government guidance established in 1942 and the following years relied on the control and allocation of bank credit as its central feature (Takahashi, 1967; Tsutsui, 1988; Werner, 2003). By the mid-1990s, Japan’s economy had become largely deregulated and market oriented, with few, if any forms of direct government controls and explicit ‘guidance’.

This structural reform can be illustrated by the number of official cartels (official exemptions from the anti-monopoly laws). Figure 2 shows this number over time. It peaked at over 1,000 in the 1960s, then declined and reached zero in the late 1990s. As the anti-monopoly law did not exist in 1945, the data series starts later, but for the

³ This is not to say that some observers did not correctly predict the severity of the pending Japanese crisis. Werner (1991) predicted that, without suitable central bank policy reaction, Japanese banks were on track to experience severe distress akin to bankruptcy and the economy was headed for the worst recession since the Great Depression.

immediate post-war years, the number of cartels can be considered to be at least as high as in the 1950s.

Figure 2: The number of official cartels in Japan during the post-war era



Again, an a priori expectation might be that the more controlled economy of 1945 should perform less well, including in times of stress, while the market mechanism should have held the economy in good stead during the difficult periods that began in the 1990s. However, the controlled and ‘guided’ economy of the early post-war years proved remarkably robust when faced with the most severe types of shocks, while the market economy appeared much more fragile, and as we will see there is some indication that the very lack of direct government intervention may have been a reason for the prolonged slump of the 1990s. (It has been noted elsewhere that Japan seems to provide little evidence for the hypothesis that a move towards markets and away from regulations and cartels is positive for economic performance; Werner, 2004a).

In conclusion, it is apparent that the marginal benefit of a comparative study is maximised by examining the two crises that maximise diversity in features, and indeed seem to offer a case study in stark and surprising contrasts: the 1992-2003 banking crisis and the 1945 banking crisis.

Before moving on to the analysis of these two crises, a comment is justified on the 1927 banking crisis, which tends to be emphasised in economic histories of Japan (while the 1945 crisis tends to get neglected), if only to be sure that there are few new insights likely to be gleaned from it. There can be no doubt that it was a severe banking crisis. However, little about it is surprising: the prevailing banking legislation was the 1890 Bank Act and its 1895 revision. These set no minimum capitalisation for financial institutions. They put no restrictions on the outside business activities of banks. They established no statutory limits on advances to a single customer. “Loan practices were often patently unsound as banks engaged in speculative advances, made extensive loans to directors and frequently concentrated their lending on one customer” (Tsutsui, 1988, p. 3). Furthermore, the government or central bank imposed

no reserve requirements. The establishment of banks was not subject to a license. Branching and mergers did not require official authorisation. There was no obligation to submit financial reports to a bank supervisor and no banking regulator engaged in bank examinations.⁴

After the economic boom of the second half of World War I, Japan's economy slumped. This put pressure on the fragile banking system. The Great Kanto earthquake created further losses, bankruptcies and non-performing loans. Thus by 1927, the situation of the banking sector had become so shaky that bank runs were not uncommon. Given the virtually complete lack of bank regulation and prudential supervision, none of this could be a surprise. To the contrary, today it may be more surprising that the Japanese banking sector weathered almost 4 decades without a major banking crisis as happened in 1927. Given that the 1927 crisis was characterised by weak banking practice and regulation (or lack thereof) far removed from today's practice, it seems clear that there would be little mileage in including the 1927 banking crisis in our comparative study.

3. The Japanese banking crisis of the 1990s and the challenge to economic theory

Details of the 1990s banking crisis are discussed elsewhere (see Werner, 1992, 1997b, 1999b, 2003b, 2004b, 2005). In brief: Banks had extended credit irresponsibly in the 1980s and from about 1992 onwards began to realise that their loan portfolios were likely to be worth less than they had anticipated. Non-performing loans (NPL) began to rise, although for almost a decade official NPL figures remained an underestimate of the true extent of the problem. Banks reacted predictably: they became more risk-averse and reduced their extension of new credit. Bank credit growth declined significantly from about 1991 onwards. From about 1997 onwards, the growth rate became negative. Bank credit only staged a modest recovery in late 2005 (see Figure 3).

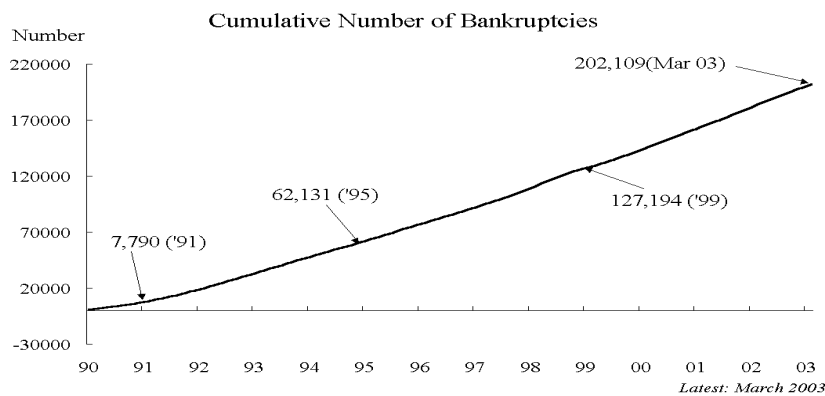
Figure 3: Growth of bank credit extended by Japanese banks

⁴ Many – though by no means all – of these weaknesses were addressed in the 1928 reforms. The 1928 reforms gave extensive supervisory powers to the Ministry of Finance, required the submission of financial reports and gave the government authority to inspect banks. But even after the 1928 reforms, banks did not have to set any legal standards for the concentration of loans to a single client, minimum cash reserves, maximum terms for commercial bank advances or the determination of suitable collateral (Tsutsui, 1988).



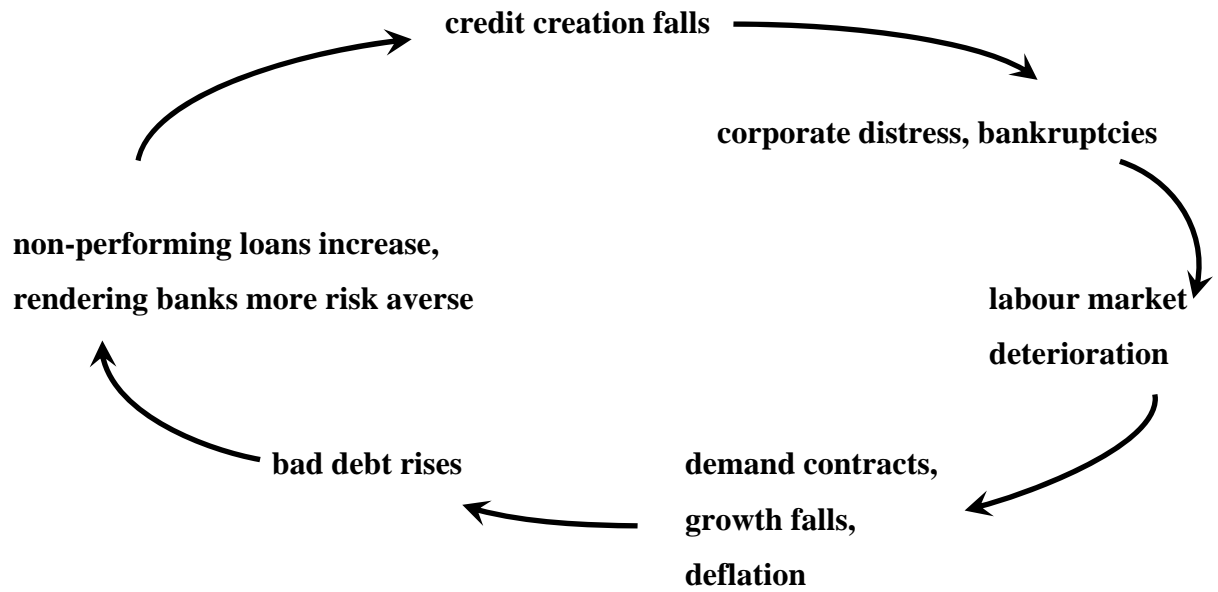
While the state of the banking sector continued to deteriorate steadily during the 1990s, the central bank and the government were reluctant to take any decisive measure to address the problem. However, the banking sector on its own found it impossible to escape from the vicious cycle that had evolved: non-performing loans made banks reluctant to extend credit. Lack of credit was cited by a large number of companies, especially small and medium-sized firms, as the reason for their own problems. As these credit-rationed firms cut back operations, including employment, demand weakened. This increased bankruptcies (Figure 4).

Figure 4:



The increased number of bankruptcies raised the amount of non-performing loans. That rendered banks even more risk-averse. The downward spiral continued (Figure 5). Annual bankruptcy numbers rose from less than 10,000 in 1991 to over 30,000 per annum by the end of the decade. There were many other features of utmost financial distress, including the worrying rise of suicides to record highs. According to the Metropolitan Police Agency, the majority of their increase during the 1990s was due to recession-related – and, specifically, debt-related – problems.

Figure 5: The vicious cycle



Meanwhile, overall economic growth fell sharply, and inflation receded, yielding to deflation (Figures 6 and 7).

Figure 6:

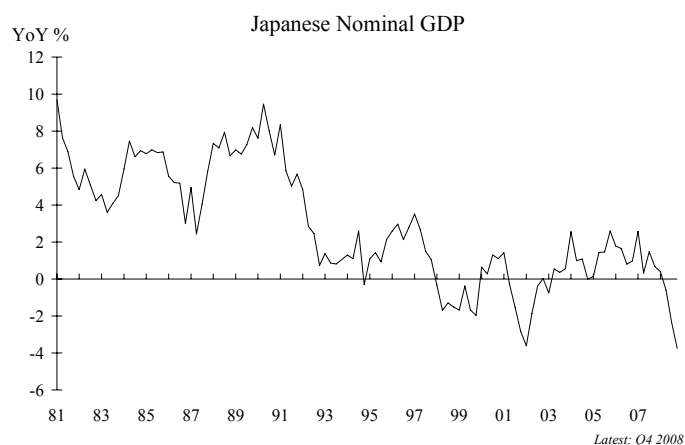
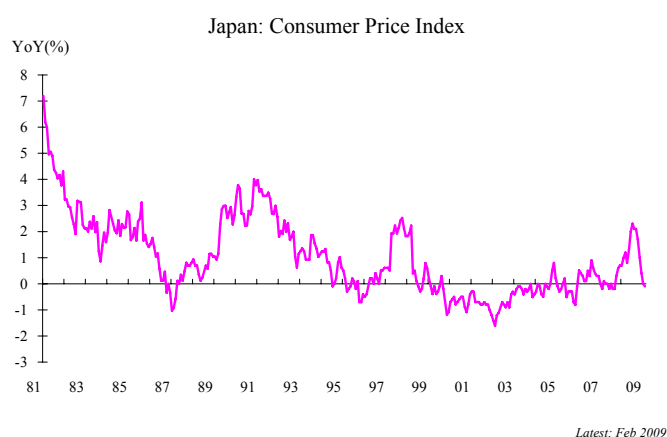


Figure 7:



As some voices had warned in good time (Werner, 1991, 1992, 1994, 1995, 1996), the banking sector was unable to extricate itself from the vicious downward spiral without suitable help from the central bank and the government. Central bank and government were not entirely inactive. They adopted orthodox policy prescriptions: The central bank began a series of interest rate reductions, starting with a reduction when short-term interest rates were 7% in 1991, and ending with short-term interest rates at 0.001 more than ten years later. The government implemented a series of fiscal expenditure packages, beginning in 1992. In aggregate, these amounted to what then was the largest peace-time fiscal expenditure programme in the post-war era. As had been predicted early on, neither of these policies would have the desired result (Werner, 1991, 1992, 1994, 1995, 1996). From about 1995 onwards, the government therefore took the view that demand management policies having failed, supply-side reforms were required: it adopted a far-reaching structural reform programme, which was implemented from 1996 onwards. However, as critics had warned (Werner, 1996), structural reforms to raise the potential growth rate were likely to exacerbate the deflation problem: if successful, the output gap between potential and actual growth

would be widened. Indeed, from 1997 onwards, Japan witnessed deflation – and holds the world record for the longest number of consecutive years of deflation. By late 2009, Japan was back in deflation.

Meanwhile, the Japanese macroeconomic experience posed a profound challenge to macroeconomic orthodoxy. In brief, all of the mainstream theories – neo-classical (including supply-side), Keynesian, post-Keynesian and monetarist – had been refuted by the Japanese empirical record (see Werner, 2003b, 2005, 2007 for a detailed discussion).

These puzzles remain unexplained by orthodox theory. The monetarist prescription to increase high-powered money (or their subset, bank reserves) had been predicted to fail (Werner, 1995a,b,c) and did fail to deliver, when the Bank of Japan adopted it in 2001 (under the mis-appropriated label ‘quantitative easing’; this concept had earlier been proposed and correctly defined by Werner, 1995c). The Keynesian and post-Keynesian prescription of fiscal expansion had been predicted to fail (Werner, 1995a,b,c) and did fail to stimulate the economy – each package underperforming the ever more modest expectations of government and private-sector economists – and merely left it saddled with record debt. The so-called ‘credit view’ approach (consisting of the credit rationing argument a la Stiglitz and Weiss, 1981; the bank lending channel, a la Bernanke and Blinder, 1988, and the balance sheet channel – see Bernanke and Gertler, 1995) failed, as interest rate policy failed to have an additional positive impact via the bank lending channel, and as it remained inexplicable why impaired banks should be a problem in an economy with a thriving non-bank sector, healthy and hungry foreign banks and foreign lenders, and capital markets that were more deregulated than ever before. As noted above, the supply-side prescription to deregulate, liberalise and privatise in order to stimulate the economy also failed (as predicted by Werner, 1995a,b,c; 1996a,b; see also Werner, 2004a). Finally, the almost universal prescription to lower interest rates had been predicted to fail (Werner, 1995a,b,c) and did fail to stimulate the economy despite a record number of consecutive interest rate reductions and record-low interest rates.

The last point deserves further elaboration. It is often argued that the ‘liquidity trap’ argument, as advanced by Krugman (1998) and Ito (2000) had solved the puzzle of ineffective interest rate policy. The facts could not be further from the truth. The liquidity trap argument, as propounded in the aftermath of the Japanese crisis, defines a liquidity trap as the situation whereby interest rates have fallen to the lowest level they can fall – so that no further falls are possible. It is then argued that monetary policy stimulation becomes ineffective, since it is defined as interest rate reductions, and fiscal stimulation will be effective to escape from the liquidity trap.

There are a number of problems with this argument. Firstly, fiscal stimulation was singularly ineffective in triggering a recovery in the Japanese economy. Secondly, the liquidity trap argument fails to explain why a liquidity trap occurs in the first place. Thirdly, the liquidity trap argument, by its own definition, only applies to the Japan of March 2003, when both long and short term interest rates hit the lowest levels on record. It thus says nothing at all about the period in question, namely from 1992 to 2003. Fourthly, the interesting puzzle is why interest rate *reductions* have failed to have the desired effect. The liquidity trap argument is silent on this issue, as it is not concerned with it: it only discusses the moment in time when short-term interest rates

have reached their lowest point (2003) and asserts that at this point interest rate reductions will not work; which is true by definition, hence rendering the argument a tautology without insights. It remains altogether silent on why more than a decade of interest rate *reductions* have been ineffective.

4. A model linking banks and the economy

While the orthodox approaches had failed spectacularly when confronted with the challenge of the Japanese macroeconomic performance, an alternative framework had been proposed as early as 1991 and 1992 (Werner, see also 1997, 1998, various publications), which renders explicit the link between the banking sector and the economy, explains and predicts banking crises and identifies successful policy responses and policies to prevent banking crises.

This model can also account for a number of additional ‘anomalies’ or ‘puzzles’ that the mainstream approaches have had difficulties with, such as the puzzle of the ‘velocity’ decline and ‘breakdown in the money demand function’, the issue of recurring banking crises, of recurring asset price bubbles and collapses, of Japanese net long-term capital outflows (rising to record levels in the 1980s and collapsing in the early 1990s), and, on a fundamental level, the issue of what makes banks special, and how they are linked to economic performance. It is the latter we will start with.

Fama (1985), as well as others (e.g. Ashcraft, 2005), have found that empirically there appears to be something special about banks. However, standard theories, including in banking and finance, consider banks to be merely one particular type of financial intermediary. Werner (1991, 1992, 1997b, 2001, 2003b, 2005, 2007) has emphasised that what makes banks special both theoretically and empirically is the ability of each individual bank to create money out of nothing – a process called ‘credit creation’. This is illustrated in Figure 8.

Figure 8: An accurate representation of credit creation

Balance Sheet of Bank A

Step 1 Deposit of \$100 by customer at Bank A

Assets	Liabilities
	\$100

Step 2 \$100 used to increase the reserve of Bank A

Assets	Liabilities
\$100	\$100

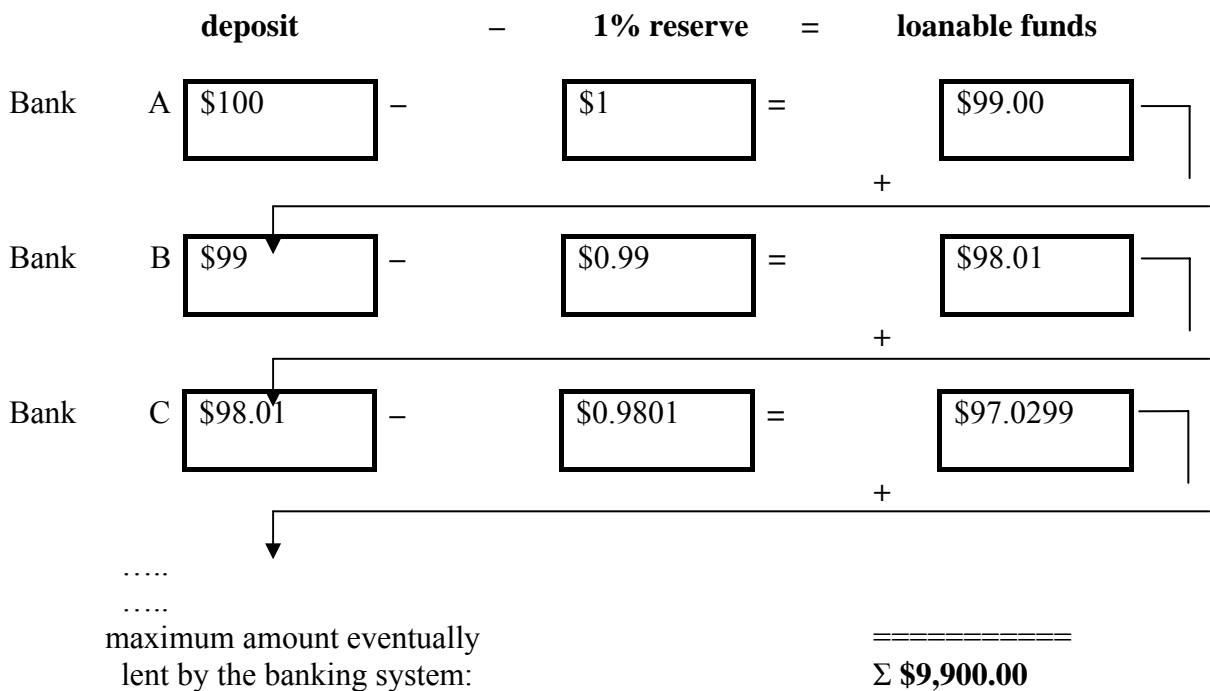
Step 3 Loan of \$9,900 granted, by crediting borrower’s bank account with deposit

Assets	Liabilities
\$100	\$100
+	+
\$9,900	\$9,900

Source: Werner (2005).

While earlier writers, such as Macleod (1855), Wicksell (1898), Schumpeter (1912) and others recognised the ability of each individual bank to create credit, authors in the post-war era (see Tobin, 1963) merely referred to the ability of the banking system in total to create credit by a mechanical process of successive financial intermediation that seemed to render each bank a mere financial intermediary (Figure 9).

Figure 9 The Textbook Representation of Money Multiplication (RR=1%)



Source: Werner (2005)

Since each bank in this view is but a financial intermediary, and a mechanical link is assumed to exist between a measure of cash and bank reserves (high powered money) and broader monetary aggregates (consisting largely of bank deposits), it may appear reasonable to neglect the concept of bank credit creation altogether. In the textbooks that are today considered most 'advanced' in monetary economics, such as Walsh (2003) and Woodford (2003), neither credit creation nor the credit or deposit multiplier deserve a mentioning.

However, Werner (as cited above) has argued that disaggregated credit creation is the answer to a range of ‘puzzles’ and ‘anomalies’, including the phenomenon observed from the 1980s onwards, when all macroeconomic theories could not deal adequately with the fact that there did not seem to be a reliable relationship between monetary aggregates (whether narrow or broad) and nominal GDP. This ‘breakdown of the money demand function’, ‘velocity decline’ or ‘mystery of the missing money’ was the reason why not only monetarist analysis, but also monetary-based macroeconomics entered a period of almost terminal decline.

This ‘puzzle’ has been solved. The quantity equation had originally referred to the value of transactions on the one side, and a measure of the money used to pay for these transactions on the other. It was the Cambridge simplification that relied on nominal GDP as a substitute for the value of all transactions – which is only accurate when, in growth terms, non-GDP transactions do not grow faster than nominal GDP. All asset and financial transactions are non-GDP transactions. Thus in periods of increased financial and real estate transactions, the traditional quantity equation must record a decline in velocity, as a rising part of the money supply is used for non-GDP transactions (Werner, 1992, 1997).

Meanwhile, much literature has lamented the fact that traditional measures of the money supply give us no indication of where to draw the line between different types of private sector assets (see also Friedman, 1956). Thus textbooks admit that it is hard to identify how to measure the money supply (e.g. Miller and VanHoose, 1993). The Federal Reserve conceded in one of its publications that ‘there is still no answer to the question... “what is money?”’.

Originally, the quantity equation was developed by classical economists for a pure gold standard economy. In this case, M was the stock of gold. When economists attempted to introduce banking systems, they recognised that the deposit of gold with goldsmiths and the issuance of deposit receipts was an important financial innovation. They believed its implications could be accurately reflected by counting the deposit receipts (i.e. measuring bank deposits). This is the origin of the definition of the ‘money supply’ as deposits. However, a study of the institutional features of early (and later) banking reveals that banking was born, when banks extended new credit by issuing deposit receipts – without any deposit having taken place. This is the process of credit creation as described above. Thus the accurate representation of banks’ activities, and the measure of the ‘money supply’ in a largely non-cash based economy, is the quantity of credit creation.

In addition, deposit aggregates were never suitable as measures of M in the quantity equation, since it measures money used for transactions. Deposits, however, are money out of circulation and not used for transactions. Substituting credit C into the quantity equation instead of M not only measures money used for transactions, but also solves the problem of the definition of the money supply: credit creation can be uniquely defined and measured. Finally, the idea to split credit into transactions used for GDP and non-GDP (financial) transactions, as uttered by Fisher, Keynes and Friedman (but ultimately dismissed due to the impossibility of thus dividing deposit aggregates, as Friedman, 1956, admitted), can be implemented when considering credit creation, since credit can be identified by its use.

The key equations of the disaggregated credit theorem are:

$$(1) \quad CV = C_R V_R + C_F V_F$$

$$(2) \quad C_R V_R = P_R Y$$

$$(3) \quad C_F V_F = P_F Q_F$$

$$(4) \quad \Delta(P_R Y) = V_R \Delta C_R$$

$$(5) \quad \Delta(P_F Q_F) = V_F \Delta C_F$$

Equation (1) disaggregates the value of credit transactions (credit stock C times velocity V) into those credit transactions that are part of GDP ('real circulation credit' C_R) and those credit transactions not part of GDP ('financial circulation credit' C_F). Equations (2) and (3) substitute credit C , though disaggregated, into the standard quantity equation, thus obtaining two equations, depending on the use of credit. When these are expressed in growth terms, they become equations (4) and (5). Equation (4) says that nominal GDP growth $\Delta(P_R Y)$ is proportional to credit creation used for GDP transactions. Equation (5) identifies the cause of aggregate asset price movements: credit creation used for non-GDP (i.e. asset) transactions.

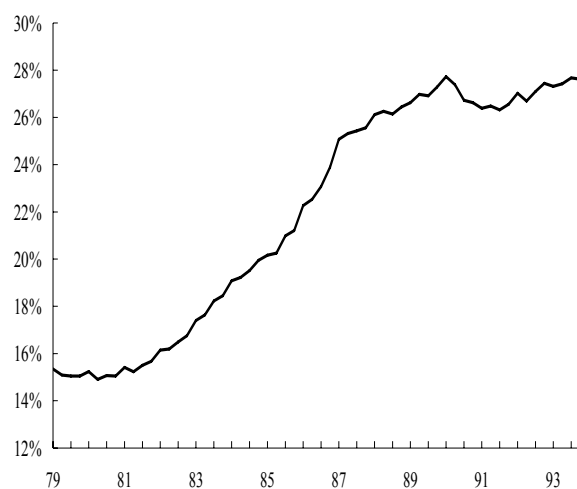
With the disaggregated credit model, the anomalies and puzzles in macroeconomics, including those pertaining to the Japanese economy, can be solved. Specifically, velocity, correctly defined, is found to be stable. Nominal GDP growth and credit in 'real circulation' are in a stable relationship. Real estate prices and capital flows can be explained. The ineffectiveness of fiscal policy – which is not backed by credit creation – is explained (see Werner, 2005, 2007, for evidence and a discussion). The model also was able to predict the pending Japanese banking crisis in 1991, the temporary recovery of 1996, and correctly predicted that interest, fiscal, structural and reserve expansion policy would be unsuccessful, as the necessary and sufficient condition for an economic recovery is the expansion in credit creation used for GDP transactions, which is not addressed by these policies.

The model distinguishes between *productive credit creation*, which is credit creation used for the creation of new goods and services, and which is non-inflationary, and *unproductive credit creation*, which leads to one of two types of inflation. Unproductive credit creation can take the form of 'consumptive credit', which is the extension of credit for the consumption (but not creation) of goods and services – consumer price inflation must follow. Unproductive credit creation can also take the form of non-GDP credit, which is credit created for the use in asset or financial transactions. This results in asset price inflation.

Unproductive credit creation is unsustainable in the medium to long run. Especially credit for financial transactions, if rising persistently so that the ratio C_F/C rises, will lead to banking crises: only productive credit creation can be serviced and repaid reliably; there is no sustainable income stream – apart from the fleeting capital gains and expectations of capital gains during times of boom, which are unsustainable – to service and repay financial credit.

Banking crises can thus be avoided by monitoring and restricting – through direct intervention in the credit market by way of regulation – the quantity of credit extended for non-GDP transactions. The ratio C_F/C is a key variable to monitor. In the Japanese case it almost doubled in the decade of the 1980s, when the great Japanese asset bubble was created (see Figure 10; it is here defined as bank credit to the real estate, construction and non-bank financial industries as a proportion of total credit).

Figure 10: The rising financial credit ratio C_F/C – precursor to banking crises



Source: Bank of Japan

Fundamentally, the problem behind most banking crises is the fact that the creation of the money supply has been privatised and is delegated to the commercial banking sector. At the same time, these profit-oriented firms are not asked to consider the macroeconomic or social welfare aspects of their activity. Thus often they find it expedient to increase the financial credit ratio C_F/C , as this seems to maximise short-term profits from their (short-term) perspective.

Concerning policy prescriptions to end banking crises and produce a sustainable recovery, the framework recommends an expansion in productive credit creation, while banning credit creation for non-GDP transactions. This can be achieved without additional costs to the tax payer in a number of ways, as elaborated by Werner since the early 1990s (see Werner, 2007, for references and a summary), such as:

1. Expanding central bank credit to firms for investment (not financial speculation)
2. Expanding central bank credit to the government (to fund the public sector borrowing requirement)
3. Expanding commercial bank credit by
 - (a) halting government bond issuance and instead raising the public sector borrowing requirement entirely from the banking sector (Werner, 1996, 1998).

- (b) providing government guarantees for bank loans to firms.
 - (c) engaging in ‘credit guidance’ direct controls of bank credit (or public-private ‘coordination’ of bank credit), using the well established and successful methods of this tool (see Werner, 1998, 2007). This is the method China used to be the first major economy to emerge from the current financial crisis (Japanese-style ‘window guidance’) (see Chen and Werner, 2009).
 - (d) relieving pressure on banks to tighten credit by suspending or loosening capital adequacy regulations, and having the central bank purchase NPLs at face value (in order to keep them on its balance sheet – any transfer to the government will result in crowding out and a negative impact on the economy).
4. Expanding credit creation through the issuance of government money (e.g. United States Notes; in Japan: *dasatsu*).

Only when the Bank of Japan, under Governor Fukui, re-deployed informal ‘guidance’ of bank credit did it stage a recovery from late 2005. Previous recoveries in bank credit, such as in 1996, were aborted prematurely for policy reasons (see Werner, 2001, 2003).

4. The Japanese banking crisis of 1945

The problem

When the war ended in 1945, Japanese bank balance sheets were almost entirely impaired: During the last, desperate years of the war, the banks had been ordered to extend ever-increasing amounts of credit to the munitions industries, on the one hand, and to the government on the other; the latter largely in the form of war bonds or other government IOUs. In 1945, two thirds of loans outstanding were to munitions firms, many of which suddenly found themselves located outside Japan (in territories that had previously been part of Japan) or insolvent. In 1945, with Japan defeated, the value of Japan’s war bonds was thought to be close to zero, and the bloated forced loans to the war industries were largely non-performing. If traded, these assets would fetch only a fraction of their face value. While most bank assets were thus of little value, bank liabilities still existed. Assets being smaller than liabilities, and equity being insufficient to make up for the difference, the banking system was technically bankrupt.

The problems are illustrated by a concerned cable from the Supreme Commander for the Allied Powers (SCAP) in Japan to the Joint Chiefs of Staff in October 1945: “these concerns may be insolvent and loans uncollectible. Banks also own investment in companies located in non-Japanese area which will have to be written off. If these losses taken probable that banks capital and surplus quickly wiped out”.

Tsutsui (1988) found that in 1945 the banks “were all virtually insolvent, holding only worthless government bonds and debts from companies in no position to repay. A nationwide financial crisis, with mass bankruptcies, runs on the banks and the resulting social upheaval, seemed a real threat in the first months, and even years, after the surrender” (p. 23).

In addition, the commercial banks were weakened by the initial moves toward *zaibatsu* dissolution: The U.S. authorities removed the securities of major *zaibatsu*

group companies from the banks' vaults for sales to the public. These were both valuable assets and collateral for the banks (Tsutsui, 1988, Davis and Roberts, 1996).

While the cause of this banking crisis lay with the wartime government policy, it remains within the framework outlined above, namely the excessive creation of credit for unproductive purposes (munitions manufacture being one of the least productive uses). However, the study of this banking crisis shows that an impaired balance sheet – even under such extreme circumstances – does not need to incapacitate a banking system or an economy.

There can be little doubt that the asset problems of the banks were sufficiently large to create a major credit crunch and deflationary downturn of the economy. To counteract that possibility, credit needed to be created. In the early post-war years there were many experts who understood this (the leading bureaucrats at the Cabinet Planning Board, Ministry of Finance, the Bank of Japan and the Ministry of Commerce/Munitions Ministry – MITI's predecessor – had not been educated at US universities in neoclassical economics, but instead had studied economics in Germany) and – quite unlike the 1990s – acted speedily to achieve a recovery.

The wartime planning and credit allocation programme operated by the government was re-instated soon after 1945. The Cabinet Planning Board was revived in the form of the powerful but short-lived (1946–52) Economic Stabilization Board (ESB or *Keizai Antei Honbu*), established in August 1946 (Calder, 1993).

Initial attempts at solving this crisis were however thwarted by the US occupation. Later policy initiatives were not fully supported by the Bank of Japan. Thus policy-makers struggled with political obstacles.

Government policies

We first consider the issue of impaired bank balance sheets. In the most recent Japanese banking crisis, borrowers unable to service their loans were eventually foreclosed on by the banks. This raised bankruptcies, unemployment, non-performing loans of the banks and thus was a costly process. By contrast, the post-1945 planners in Japan decided to avoid this sequence of events by injecting government money to help borrowers repay their loans, in the form of granting government indemnities to those companies that had losses on government orders that were cancelled due to the end of the war. The total amount of all indemnity claims stood at Y70bn, a sum in excess of the total war damage to national wealth and three times the central government revenues of 1945 (Nanto, 1976).

In other words, the Japanese government planned to inject tax money and give it to the borrowers – thus keeping them alive – and enabling them to service and repay their bank loans – thus helping improve the NPL figures and hence balance sheets of the banking system. This way, the same amount of public money injection would support the entire financial 'food-chain' from consumer to company employee to company balance sheet to bank lender balance sheet. The modern equivalent of this policy would be for the Federal Reserve to provide several trillion dollars worth of money not to banks, but solely to the sub-prime borrowers, to enable them to repay their loans and stay in their homes (with the justification that the Fed had created the incentive structure for both borrowers and lenders to embark on a credit spree). By

contrast, in the 1990s' Japan government money was – eventually – injected into the banking sector, but the borrowers were foreclosed on. The same applies to most bank bail-out packages in response to the so-called global financial crisis of 2008. Unfortunately, the innovative Japanese policy initiative of 1945 was vetoed by the US occupation, which insisted on taxing away any such payments to the private sector again.

Due to the US veto, this experiment could thus not be carried through. All but Y18bn worth of indemnities were cancelled in 1946, creating the threat of “a total financial collapse” (Tsutsui, 1988, p. 29) due to the negative impact on financial institutions. “The effective cancellation of the war indemnity payments forced much of industry into insolvency, which in turn rendered virtually all financial institutions bankrupt.” (Tsutsui, 1988, p. 29).

As a result, the Japanese government bureaucrats moved to ‘plan B’. This centred on an expansion of credit creation via government-owned banks, monetised fiscal policy (funded by direct borrowing from banks and the central bank), and measures to dispose of non-performing assets.

Concerning the latter item, the goal was to establish ‘growth consistent’ banking reform and ensure that economic recovery is not hampered (see Werner, 2002c). For this purpose, another innovative scheme was designed – and fully implemented – in record time. Instead of the present-day model to establish ‘bad banks’ and separate them from ‘good banks’, Japanese bureaucrats ordered all bank loans and deposits to be divided into ‘old accounts’ and ‘new accounts’. Initially, all ‘old accounts’ were frozen, while business could proceed in new accounts. The banks had to follow a specific sequence for writing off loans to firms bankrupted by the war indemnities cancellation and on investments made in colonial and wartime enterprises (first by using retained profits and reserves, then by the shareholders – up to 90% of capital – and then by the creditors – first old depositors, then new depositors). In the end, Y25 bn special losses were written off. 56 banks had to write off 90% of their capital; four could not meet their obligations at all (Tsutsui, 1988).

Thanks to the provision for ‘new accounts’ “the bulk of the economy was not seriously affected by the banks’ internal re-orderings.” (Tsutsui, 1988, p. 31). Meanwhile, 260 wartime financial institutions (such as the Wartime Finance Bank etc.) with total assets of Y450 bn were liquidated by SCAP. “By 1948, the banks had been restored to a solid financial basis and prepared for a constructive role in Japan’s postwar revival.” (Tsutsui, 1988, p. 35). The government was freed from crippling wartime debts through cancellation of debts. “The liquidation of wartime banks and the financial reorganisation were essentially complicated exercises in accounting which, in effect, merely enabled the wartime financial system to function under peaceful conditions. (Tsutsui, 1988, p. 35).

The second thrust of policy initiatives centred on the recognition that credit creation had to be expanded, even though impaired bank balance sheets were rendering banks more risk-averse. Initially, the Ministry of Finance took the initiative, until such moves were thwarted by the Bank of Japan and the occupation authorities, who favoured a greater role for and monopoly of control over credit creation by the Bank of Japan.

The Economic Stabilisation Board initially used the Reconstruction Finance Department inside the Industrial Bank of Japan (IBJ, then still a government-owned bank) to supply the economy with funding. In January 1947, this was separated and established as the publicly owned Reconstruction Finance Bank (Fukkō Kinyū Kinko), whose job was to provide preferential funding to strategic industries (Okazaki and Okuno-Fujiwara, 1999).⁵ This government bank was in turn funded by government bills that the central bank had to discount (at the time, the wartime Bank of Japan law remained in place, relegating the Bank of Japan to the status of subordinated agency that had to receive orders from the Ministry of Finance; the law and this status were changed only in 1997, when the Bank of Japan became legally independent).

Second, the government planners took the initiative to re-establish the priority production system from the wartime era with the 1947 Regulations on the Provision of Funds by Financial Institutions (Kinyū Kikan Shikin Yūzū Junsoku), announced by the Ministry of Finance.⁶ The priority classification was simply switched from war objectives to peacetime goals. Based on a “priority listing for lending industrial funds,” limits were set on the maximum amount of loans each financial institution could extend. A ranking was established of equipment and operating funds for 460 types of business in four categories, A1, A2, B, and C, “in almost exactly the same way as the financing arrangements based on the wartime Emergency Funds Adjustment Law” (Okazaki and Okuno-Fujiwara, 1999). The latter wartime law was replaced by the Ministry of Finance with the equivalent Emergency Financial Order (Kinyū Kinkyū Sochi Rei).

In accordance with the current Bank of Japan Law (promulgated in 1942), The Ministry of Finance expected the central bank to act merely as its agent by faithfully enforcing the Ministry of Finance’s instructions. The central bank resented this, as well as the activities of the Reconstruction Finance Bank, an institution that challenged its monopoly on the control of the creation and allocation of credit (Yoshino, 1962).

Bank of Japan policies

Bank of Japan governor Ichimada, who had been an apprentice with Hjalmar Schacht in the 1920s in Berlin (Werner, 2003), thus established a rival credit allocation system at the central bank, which would direct funds to the priority industries high on the list (Okazaki and Okuno-Fujiwara, 1999). Meanwhile, the implementation of the Ministry of Finance’s priority lending categories was largely incapacitated: Ichimada achieved this by assigning only a small section of eight to ten staff to this complex task (Ministry guidelines had become quite detailed, running to twenty pages), a group whose other job was the equally complex task of administering frozen bank accounts from the wartime period (Tsutsui, 1988).

The Bank of Japan’s control over bank credit had already been asserted, when the director of the Banking Department had issued instructions that “in principle” banks were not allowed to increase their outstanding loan balance beyond the balance of 20 March 1946 without a permit from the Bank of Japan, as well as the government. This

⁵ The Reconstruction Finance Bank served a similar function as the Wartime Finance Bank. See Okazaki and Okuno-Fujiwara (1999).

⁶ On the priority production system, *keisha seisan hoshiki*, see Nakamura (1995), p. 35.

prevented low-priority industries and consumers from laying claims to scarce resources. Yoshino (1962) explicitly compares these measures with Schacht's credit control policies in the 1920s.

The Bank of Japan under Ichimada now adopted a two-pronged reflation policy. First, while the banks were damaged by bad debts, Ichimada turned the Bank of Japan itself into the banker to the nation. Schacht had used active discounting of certain types of bills issued by official organizations (such as Mefo) to selectively direct credit to priority industries or projects. Ichimada did the same in the early post-war years with his "stamped bill system," under which companies in specific sectors were invited to apply for funding directly, or via their banks, to the Bank of Japan's Banking department. The Bank of Japan discounted or rediscounted bills of exchange from selected firms in the coal industry, fertilizer manufacturing sector, textile fabrication industry, and certain regional industries and exporters (which competed for export trade bills to purchase necessary raw material imports) (Calder, 1993). Retail, agriculture, education, and construction were then considered to be of lower priority. Most domestic consumption-related industries fell into the low-priority category. Sectors such as real estate, department stores, hotels, restaurants, entertainment, publishing, and alcoholic beverages—not to mention consumers themselves—were without much hope of obtaining funds. Ichimada felt that Japan could ill afford such luxuries (Ichimada, 1986). All this took place in the Loan Coordination Division (Yūshi Assenbu) of the Bank of Japan's Banking Department.⁷

Banks were brought back into the process through help in restoring their balance sheets and through Bank of Japan "guidance" of their discounting of bills. Restoring banks' balance sheets was partly achieved through the system of old and new accounts. In principle, the most effective method to achieve this, however, was through the special powers of the central bank.

Ichimada merely needed to order the Bank of Japan to buy the banks' worthless wartime bonds at face value – or at least significantly above a potential (they were not traded) market price. In its own currency, a central bank does not have to worry about bad debts. By purchasing them and keeping them on its balance sheet, the central bank can neutralise the negative impact of non-performing assets.⁸ This made the banks dependent on the goodwill of the central bank, and willing to cooperate with its informal guidance.⁹ If the central bank so wished, it could extend unlimited funding to them. In the end, Ichimada had reinstated full control over both the quantity of new bank loans and their sectoral allocation in a mechanism that later became known as "window guidance" (Yoshino, 1962).

⁷ Personal interview, March 1993, with a member of the Yūshi Assenbu, who had previously been posted in Berlin until 1945.

⁸ The balance sheet of a central bank is unlike that of a company. Applying the same principles as used with companies or banks to the central bank's accounts misses the main point of its function: a central bank's liabilities are legal tender. They cannot therefore be considered liabilities in the true sense, since they do not carry any servicing costs and do not need to be redeemed. A central bank will always make a profit on its asset purchases, since it obtains valuable assets for free. From this it is also clear that the purpose of a central bank is never to make profits—making money is something it can literally do. Its purpose is monetary policy: the creation and allocation of purchasing power.

⁹ "An additional factor strengthening the leverage of the BoJ during the immediate postwar period was the large holdings of wartime government bonds by the city banks. Lacking a market for such obligations, the city banks were at the mercy of the BoJ to redeem them." Calder (1993), p. 79.

In summary, the Bank of Japan bought war bonds/gov't bonds from banks at a price significantly above market value. It engaged in direct lending to companies and loan syndication (*shikin assen*), whereby it would bring borrowers and several lenders together. Further, it regulated the quantity and allocation of bank credit creation (credit controls), purchased financing bills issued by gov't banks, notably the Reconstruction Finance Bank, thus backing its activities with credit creation. Finally, it lent directly to the government in order to monetise fiscal policy

Result

The post-1945 policies were spectacularly successful. A credit crunch, deflation or even a recession were avoided. Banks were considered healthy by late 1948. The central bank was not the only institution deserving credit for this. The ESB's activities, including the lending by the Reconstruction Finance Bank, had played a major role. Government deficit spending, as well as the Reconstruction Finance Bank, were funded through the issuance of short-term financing bills or bonds that the central bank had to discount. Demand accelerated as a result of the expanded credit creation by the central bank and banks. There was no deflation. Given the impairment of productive capacity due to the war, however, inflationary pressures built up quickly. Further, the government and central bank may not have coordinated their credit creation policies; in aggregate they appear to have erred on the expansionary side, producing inflation. This, however, was considered acceptable by policy-makers at the time.

5. Evaluation of the comparative study and lessons for theory and policy

By all counts, the banking crisis of 1945 should have turned into a major economic recession, if not worse. Meanwhile, the banking crisis of 1992 onwards was far milder, and thus by comparison it should have produced a briefer period of economic recession. These expectations are heightened by the fact that companies were virtually solely dependent on banks for their external funding in 1945 and the early post-war years, while during the 1990s many other options were open to them, including funding from capital markets.

Meanwhile, the freer market system of the 1990s should, by the standards of orthodox neoclassical economics, have helped return the economy to full employment, while the pervasive government intervention of the war and early post-war years should have resulted in a vast misallocation of resources.

In this paper it is found that the difference between the outcomes of the two banking crises is the policy response by the authorities. It was the very interventionist approach of the early post-war era that made the difference. However, it was intervention of a specific kind, namely in the credit markets to create and allocate credit, and by making full use of the central bank's ability to create credit.

A model that successfully links the banking sector and the economy demonstrates that an expansion of credit creation is the necessary and sufficient condition for producing a speedy recovery. Governments and central banks have ample tools available to do this, even when banks are most severely impaired (as they were in 1945). After 1945,

these tools were utilised. After 1992 they were not. Meanwhile, even if banks are not badly impaired, and even if fiscal and interest rate stimulation of historic proportions are lavished on the economy, all of this will come to nothing, if it fails to expand credit creation – as happened in the 1990s. Funding from capital markets, as transpired in the 1990s, also cannot help. The reason is that capital markets, unlike the banking system, do not create credit and money. This implies that financial deregulation towards less reliance on banks may be entirely misguided.

It is in this context that I would like to briefly comment on the two Yamaichi crises – as promised in the introduction. The first, unlike the second, remained contained and had virtually no negative impact on the economy, because the finance ministry used its legal powers over the central bank to order it to create credit and supply sufficient amounts to the troubled institution. As indicated above, unlike most of the government-orchestrated bailouts introduced since 2008, this method has no costs to society or the economy, as tax payers are not forced to foot the bill. Thus the way the government or central bank reacted in the case of the two Yamaichi crises is, on a much smaller scale, a mirror image of the differing policy responses to the 1945 and post-1992 crises.

This study has also highlighted the inadequacy of traditional approaches in explaining these events. The link between banks and the economy remains neglected. This link can be found in the role of banks as creators of the bulk of the money supply (credit creation). The disaggregation of the ‘money supply’ as envisaged by Keynes and Friedman can be implemented and is indeed fruitful. The quantity equations of disaggregated credit solve many of the most challenging ‘anomalies’ in modern macroeconomics. This model is based on fewer assumptions – perfect information, complete markets, etc. are not required for it to work – and hence has the attractive feature of simplicity and robustness.

Finally, policy implications for the prevention of banking crises have been highlighted: authorities, especially central banks, merely need to monitor and, when necessary, suppress, the creation of credit used for non-GDP transactions (called C_F in the model shown). More fundamentally, if the right incentive structure and regulatory environment is created so that banks create credit mainly for productive purposes, it can be confidently expected that banking will remain sustainable and boom/bust cycles can be avoided.

Some of these results seem to have been known to policy-makers in the 1940s. This knowledge had apparently been lost by the 1990s, when the lack of coordination of Bank of Japan policies with the government, excessive independence of the central bank and a lack of understanding of the role of credit creation exacerbated the situation.

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