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A Japanese Experience, 1998–2013*

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Abstract

Japan experienced falling asset prices, reform of the financial market and massive reduction of non-performing loans from the late 1990s to the 2000s. This paper reflects non-performing loan reduction from 1998 to 2013 under the new regulatory regime and examines whether it was necessary to guide the banking sector to aggressive write-offs of non-performing loans in the early 2000s under the shadow of structural reform. Our results indicate that non-performing loan accumulation could have been cyclically reduced only by further extension of mortgage loans and, for Japan to avoid a housing-price bubble, the structural disposal in the early 2000s was justified.

Keywords: Non-performing loan reduction; structural reform; regulatory reform; mortgage loan; Japan.

JEL Classification: G18; G28.

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Introduction

Drastic deregulation of the financial market was first inaugurated by the UK and the US in the 1980s, and was followed by Japan and continental Europe, as such reforms visibly expanded the financial industry and apparently augmented the function of the financial industry. More or less, heavyweight regulations in developed countries had been established as a response to the great failure of the financial market in the 1930s. At that time, while diversity in regulations was considerable, ranging from the increased transparency of the US regulation to the strict entry regulation in Japan, they shared the aim of containing the moral hazard of market participants and of avoiding another Great Depression. A half-century later, when deregulation was spreading, such memories had abated, and as a natural result, deregulation was implemented literally as *de*-regulation, and was not accompanied by another device to curb the moral hazard of market participants, such as enhanced *ex post* inspection, which is expected to complement relaxed entry restriction. In particular, the commercial banking sector continued to enjoy heavyweight protection by state governments, which was intended to prevent destabilization of the real economy and to protect households, while their businesses were largely deregulated. Naturally, countries where deregulation was implemented, from the US to Japan, often experienced asset or housing bubbles and their bursts in the late 1980s and the early 1990s. The Japanese experience was significant in terms of the scale of non-performing loans (bad loans) after the bubble burst.

From 1996, the administration of Ryūtarō Hashimoto, the prime minister then, recognized the need for thorough structural reform toward even further deregulation of entry to the market and for an accompanying empowered and independent monitoring authority. The structural reform planned by the Hashimoto administration removed entry restriction, transferred inspection authority from the Ministry of Finance to the Financial Supervisory Agency (FSA, now the Financial Services Agency). "The FSA is committed to achieving transparent and fair financial administration in every respect under clear rules based on market discipline and the principle of self-responsibility."[1] In addition, the reform allowed liquidation of failing banks under the transparent and strict control by the agency, even if they were "too big to fail" according to the pre-reform standard. The government aimed at creating financial markets that could offer both companies and households a wider variety of investment strategies, not only that of bank deposits and borrowing but also that of holding and issuance of shares and bonds. As we will see later, "restructuring of indirect financing through banks on the one hand, and shift toward direct financing in the securities market on the other, [were] important policies which the Financial Services Agency must commit."[2] Financial system with multiple channels for supplying capital implied that the economy can avoid risk concentration and accommodate a drastic change in industry.

Meanwhile, the structural reform was implemented at a time when non-performing loans piled up at major banks. In order to accomplish the goal of the reform thoroughly, however, it was necessary to reduce the non-performing loan ratio, the ratio of non-performing loans to total lending. The newly established independent authority thus imposed transparent and

[1] http://www.fsa.go.jp/en/announce/state/20000703-1e.html
[2] Financial Services Agency (2002), p. 75.

unnegotiable measures to reduce non-performing loans. Both the restructuring of the traditional direct finance system and the decrease in non-performing loans progressed rapidly, which reached a peak at the beginning of this century.

Under the leadership of the ministers in charge, Hakuo Yanagisawa and Heizō Takenaka, the Financial Services Agency set a bold and ambitious numerical goal to reduce non-performing loans held by major banks, which virtually implied a massive loan write-off from 2002 to 2004. The agency, at the same time, recognized the still critical role of regional banks in corporate financing to small- and medium-sized companies in local economies and its working of the relational-banking basis. Thus, the agency imposed a very modest goal on regional banks such that they were able to lend, continuously and relationally, to players in local real economies.

This experience – simultaneous progress both in the sweep of piled-up non-performing loans and in the structural reform toward free and direct corporate financing, while preserving the key role of the network of relational banking managed by regional banks to sustain local economies and support small startups – is exactly the same challenge that is facing continental Europe. We believe that detailed documentation of the Japanese experience would be helpful for European regulators. Also, we add a policy implication from our description in the last section. That implication sheds light on whether the stringent goal to write off non-performing loans from 2002 to 2004 was inevitable along with the ongoing structural reform, or whether non-performing loans could have been cyclically reduced just by waiting for an upturn in the economy. Our tentative evaluation is that the latter is not correct.

In this paper, we discuss the fifteen-year history of the Financial Services Agency of Japan. The FSA is an agency for financial administration, inspection and supervision, and was established during the Japanese banking crisis at the end of the 1990s. This agency was assigned many roles, but important among them was to deal with the problem of non-performing loans held by Japanese banks, which was a severe problem in the 1990s and early 2000s. We will analyze the history of the FSA with respect to this non-performing loan problem. In the first section, we will examine the history of the FSA in a descriptive manner. It will be shown that the "Program for Financial Revival" from 2002 to 2005 contributed to the reduction of major banks' non-performing loans. We will then move on to the next section, in which we will show the developments in non-performing loans of Japanese banks and introduce basic hypotheses about bank behavior from the literature. After that, in the third section, we will attempt a quantitative analysis of the Japanese banking sector in 1997–2011. Panel estimations will show that the process of non-performing loan disposal paralleled the bank portfolio shift – from capital supply for corporate finance to either purchase of sovereign bonds or supply of housing mortgages. In the final section, we will discuss the estimation results under a broader context including foreign securities issuance by domestic corporations, and suggest some policy implication.

Before we go into the detailed contents, however, we will briefly summarize the long-term history of the Japanese financial sector.[3] In the late nineteenth century, under the newly-born Japanese nation state, modern firms in the growing industrial sector tried to develop. Needing capital, they mainly relied on bond financing, not bank borrowing. The

[3] Hoshi and Kashyap (2001), pp. 1–14.

importance of the banking sector was relatively low throughout the first few decades of Japanese industrialization. Securities markets, at the same time, were dominant for many corporations, including *zaibatsu* companies (which would later play a great role in the banking sector). It was not until the 1930s that this condition changed, with the emergence of a capital market that is heavily regulated and based on indirect financing. This shift towards bank financing is deeply related to the militarization policy in the days of World War II. The government assigned some banks the role of financing important firms in the military sector. This wartime policy was the origin of strong ties between firms and banks, which became an important practice of Japanese economy in the 1940s and the 1950s, even after the war had ended. This indirect financing system worked effectively and became most influential in the growth decades of the 1950s and the 1960s, because it successfully attracted public money and supplied it to large manufacturing companies. This condition was accompanied by the strict regulation on the capital market by the government. Bond issuance, for example was restricted, and even interest rates on bank deposits were intentionally kept at low levels. Changing macroeconomic conditions in the 1970s nevertheless led to an exit from this regulation-based capital market. The government commenced a deregulation process in the early 1980s; restriction on corporate debt issuance was, although slowly, relaxed, and international capital flow was liberalized in 1980. Bond issuance deregulation ended up with the result that the major corporations changed their financial strategy from bank borrowing to bond issuance, which caused severe damage to the banking sector. In addition, banking sector deregulation implied that the banks were now faced with the need to take a new strategy if they wanted to survive. To make matters worse, the late 1980s asset-price bubble finally burst and created a huge amount of non-performing loans in the early 1990s. It was in such a situation that the FSA was born in 1998.

1 Fifteen Years of the Financial Services Agency: Descriptive Retrospect

1.1 The Transformation of Regulation, 1998–2000

The Financial Supervisory Agency was created on June 22, 1998, under the Prime Minister's Office (which later became the Cabinet Office).[4] It was based on the administrative structural reform program in the late 1990s (especially under the Hashimoto administration). The FSA inherited the function of inspection and supervision from the Ministry of Finance. The reform aimed at the drastic transformation of the Japanese financial sector into an internationally competitive one – in which players would be able actively to transact with each other in the market and, at the same time, would have to be regulated under strict monitoring and fair rules. In this context, it was necessary to create an independent agency for financial administration, especially for inspection and supervision of financial institutions.

[4]Financial Supervisory Agency (2000), p. 1. Please note that the contents of the Financial Supervisory Agency (2000) cover the events in the "Program Year 1999" (which is the subtitle of this report), which started in July 1999 and ended in June 2000.

Governance and monitoring of financial institutions and financial markets are crucial for every modern economy which seeks economic development and prosperity. There are two ways to achieve this objective: *ex ante* restriction on the entry of new institutions on one hand, and *ex post* monitoring of market players on the other. Governments use a combination of these strategies to create a stronger financial market, based on formal and transparent rules. Ceaseless effort to achieve this goal contributes to realizing the stable and powerful backup of industries not only of individual countries but also all over the world. It encourages funding for local entrepreneurs and, at the same time, the connecting of many financial institutions of diverse nations.

Initially, the main role of the FSA was to inspect and supervise financial institutions (companies such as banks, securities corporations and insurance corporations) in Japan. The FSA Inspection Bureau inspected each financial institution every few years (or more frequently, if necessary) in order to check whether its asset management process was beneficial for depositors. "The inspectors of the FSA visit the branches and offices of financial institutions, investigate the ledgers and other documents and check whether the soundness of their management is maintained."[5] They conducted inspections under the procedures of the inspection manuals, which had been revised from time to time.[6] Supervisory Bureau monitored the business of domestic financial institutions and took the initiative in the prompt collective action and other administrative action.

Immediately after the creation of the FSA, another related organization was also founded in December of the same year: Financial Reconstruction Commission. The main goal of this committee, which consisted of a few outside experts under whom dozens of public servants worked, was to take leadership in the resolution of financial institutions, early strengthening of financial intermediary functions through capital injection and assurance of the soundness of the financial positions of financial institutions.[7] The FSA was administratively subordinated to the Financial Reconstruction Commission (until the end of the year 2000 when the latter ceased its assigned function), but they worked cooperatively to achieve their shared goal: reorganization of the Japanese financial market.

One of the tasks which were assigned to this newly-born FSA was the inspection of major banks (there were, in those days, 18) from July 1998; the results of which were reported to the banks before the end of the year. This was based on the "Total Plan for Financial Reconstruction" in July. Major banks, in early 1999, discussed with the Financial Reconstruction Commission to prepare for the capital injection process. They submitted the plan regarding how to improve their business performance, and the Commission checked them.[8]

The government meanwhile made an announcement about the "Emergency Economic Measure" in November 1998, which aimed at "restructuring the services of financial institutions" and "sophistication of the method of inspection and supervision through

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[5] www.fsa.go.jp/en/faq/banks/banks_f.html

[6] The inspection manuals are available from www.fsa.go.jp/en/refer/manual/index.html.

[7] www.fsa.go.jp/frc/newse/ne001.html

[8] Financial Supervisory Agency (1999), pp. 63–66, 131–135.

publishing inspection manuals."[9] At the same time, the FSA held interviews with domestic banks about their lending plan. It is notable here that, in those days, they were mainly concerned that financial institutions did not supply enough money to firms, especially small and medium enterprises.

Two important acts were implemented in October 1998. One was the Financial Reconstruction Act (Act No. 132 of 1998). It defines an arrangement for dealing with the bankruptcy of financial institutions. Banks, under this arrangement, have to submit an evaluation of their assets. It also defines how financial administrators manage bankrupt institutions, how bridge banks are established and how failed banks are nationalized. The other important statute was the Early Strengthening Act (Act No. 143 of 1998), which defined, in order to swiftly solve the problem of non-performing loans, how the Resolution and Collection Corporation buys the stocks of failed banks and helps their reconstruction. These two acts were the scheme under which two of the three long-term credit banks were nationalized at the end of the year. The Long-Term Credit Bank of Japan, whose stock price rapidly fell in June 1998 but whose plan for a merger with another major bank ended up in failure, could not regain its market reputation on its own; at last, it was temporarily nationalized in October 1998 (immediately after the enactment of these acts). In addition, the Nippon Credit Bank, which was also in a severe financial condition and could not find its way out, was temporarily nationalized in December.[10]

The following year, on March 4, as many as 14 banks, including major banks, requested the injection of public funds from the government, which amounted to JPY 7.5 trillion. The Financial Reconstruction Commission accepted their requests and, as a result, at the end of the month, the banks obtained capitalization of JPY 9.1 trillion. Four other regional banks also received capital injection. These banks had to submit documents called "follow-up," in which they described how they would try to reconstruct their business under the scheme of the Financial Reconstruction Act. The first version of the inspection manual was published, and the inspections by the FSA started to be based on the manual in 1999.

In July 2000, the Financial Supervisory Agency merged with the Financial Planning Bureau of the Ministry of Finance, and changed its name to the Financial Services Agency. The abbreviated name of FSA was retained. The FSA had been under the control of the Financial Reconstruction Commission until the beginning of 2001, when the Central Government Reform came into effect and the FSA became directly subordinated by the Cabinet Office (at the same time as the cessation of the Financial Reconstruction Commission).[11] As a result, the role of the FSA was largely expanded; it was now not only an agency for inspection and supervision of domestic financial institutions, but also became responsible for (i) the systematic planning for the rules in financial sectors and (ii) the bankruptcy process of financial institutions.

From late year 2000 to 2001, the government announced two economic policies: a "Policy Package for New Economic Development toward the Rebirth of Japan" (also known as the "New Development Policy") and the "Emergency Economic Package." In regard to the

[9] Financial Supervisory Agency (1999), p. 538.
[10] Financial Supervisory Agency (1999), pp. 70–74.
[11] Financial Services Agency (2001), pp. 1, 213

program of the FSA, the former package, which was issued in October 2000, aimed at (i) strengthening FSA's function of inspection and supervision of financial institutions and (ii) stabilizing the financial system. Released in April 2001, the latter statement maintained that (i) they commit to the problem of non-performing loans (both from the side of financial institutions and from that of firms) and that (ii) banks should manage their assets based on proper risk evaluation system.[12]

We should note here that in the "New Development Policy," the government admitted that the gradual recovery of the Japanese economy had already begun from early 1999: "As a result of the swift and large-scale economic stimulus measures implemented by the Japanese government since 1998, the Japanese economy has averted the peril of falling into a deflationary spiral and is now gradually improving, after bottoming-out around the spring of 1999." At the same time, however, the government pointed out some concerns, such as "sluggish" domestic consumption, a "severe mismatch" in the labor market and high land prices and "the number of corporate bankruptcies and the outstanding amount of debts remain[ing] at high levels."[13] The role of the government under such market conditions, as a result, is to make "one more push to direct the economy to the rail of self-sustained recovery."[14] We can clearly see that this "self-sustained recovery path" is one of the important keywords of this policy. It connotes the cautious attitude to avoid over-subsidization (money injection) of financial institutions; the government preferred self-recovery.

This policy assigned the FSA the missions of "strengthening inspection and supervision" and "stabilizing the financial system." In order to reinforce the inspection/supervision program, it must "utilize the expertise of the private sector"; at the same time, financial institutions should, as soon as possible, make use of public measures for strengthening their balance sheets, such as the Early Strengthening Act and capital injection, because the measures would be terminated in a short time.[15]

The pace of the recovery in the Japanese economy began to slacken in 2001. Although the quantitative easing policy, which had begun just before the publication of the "Emergency Economic Package," was welcomed by the market, "balance sheet adjustments" both in the financial and corporate sectors were delayed, hindering overall economic recovery. To remove this obstacle, "integrated resolution of the problems of non-performing loans of banks and excessive debt of corporations" was called for, by means of "drastic removal of non-performing loans from the banks' balance sheets."[16] The government promoted the removal of non-performing loans from banks' balance sheets through write-off (such as bankruptcy or liquidation of debtors).[17] "[T]he major banks will take measures to remove

[12] Financial Services Agency (2001), pp. 83–85, 320–326.

[13] www5.cao.go.jp/2000/b/1019b-taisaku-e.html

[14] Financial Services Agency (2001), p. 83.

[15] Financial Services Agency (2001), p. 320.

[16] www5.cao.go.jp/keizai1/2001/0406taisaku-e.html

[17] This process including write-off is called, in Japanese, "off-balance-sheet treatment" (or literally "measures which 'leads to' the off-balance-sheet"), because non-performing loans will be "removed" from the balance sheets of institutions. In some sense, this is an enhanced usage of the idiom "off-balance-sheet exchange" – usually used, in a strict sense, in the context of strategic asset management – and we have to be careful for

non-performing loans already classified as 'in danger of bankruptcy' and below from the banks' balance sheets within the next two fiscal years. They will also take measures to remove non-performing loans newly classified as such within the next three fiscal years."[18] This principle is called the "Commitment of Two Years and Three Years." When major banks' actual profits fall below the plans, which were in advance submitted to the FSA, by 30 percent, administrative measures must be taken (the "Commitment of 30 Percent").

1.2 Structural Reform and the "Program for Financial Revival," 2001–2004

From 2001 to 2002, the government released several important programs that declared the start of the structural reform. They aimed at strengthening Japanese society through radical restructuring of the Japanese economy by way of administrative reform. In regard to this goal, "restructuring of indirect financing through banks on the one hand, and shift toward direct financing in the securities market on the other, are important policies which the Financial Services Agency must commit" and "the FSA has incessantly and unfailingly put into practice the programs which are assigned in the national economic policy."[19]

Since 2001, the government – namely the Council on Economic and Fiscal Policy of the Cabinet Office – has released, basically every year, the "Basic Policies for Economic and Fiscal Management and Structural Reform." The 2001 version of these policies declared that the non-performing loan problem must be solved within two or three years. They "allow a low-growth period for a short time, but envisage the demand-pulling economic growth after making up the weak points of the economy."[20] The "Basic Policies" expected the Resolution and Collection Corporation to take the initiative for the non-performing loan problem and the business sector recovery. At the same time, they maintained that newly-born non-performing loans are also problematic because they were the product of the recession of the Japanese economy, including the manufacturing industry.

Statements of the "Basic Policies" were developed, in a more detailed way, into the "Front-Loaded Reform Program" in October and other statements.[21] In this Program, the government stressed that loan evaluation and allowance by financial institutions must keep up with rapid changes in the financial market. It implied that the FSA was going to start special inspections of major Japanese banks (which we will discuss later under the context of the "Program for Financial Revival").[22]

Coupled with "Basic Policies 2001," the government published the "Structural Reform and Medium-Term Economic and Fiscal Perspectives" in January 2002. This was an economic plan for the period between fiscal year 2002 and fiscal year 2006. The document

the difference between these two usages. English documents of the Government usually avoid this misleading expression and use, for example, words such as "removal from the balance sheets."

[18] Financial Services Agency (2001), p. 321.

[19] Financial Services Agency (2002), p. 75.

[20] Financial Services Agency (2002), p. 75.

[21] www.fsa.go.jp/news/newsj/13/kinyu/f-20011026-3.pdf

[22] Financial Services Agency (2002), p. 77.

described the first two years (fiscal years 2002 and 2003) as an "intensive adjustment period," in which the non-performing loan problem must be drastically solved through "strong and comprehensive measures" for the objective of "[r]ecovering the financial intermediary function, [and] reducing excess debt, [which lead] to an expansion of consumption and investment."[23]

Under the context of this "Structural Reform," the FSA published the "Measures for Developing Stronger Financial System" in April 2002 – under the direction of Prime Minister Junichirō Koizumi and the Minister of Financial Services Hakuo Yanagisawa. Up until this point, the FSA had already started the special inspections of major banks. Based on the results of these inspections,[24] they declared that financial institutions "are further requested to take specific measures to dispose, in principle, one half of such [non-performing] loans within a year and a major part (around 80 percent) of them within two years as concrete targets." This is the so-called "Commitment of 50 Percent and 80 Percent." Two statements of commitment – the "Commitment of Two Years and Three Years" and the "Commitment of 50 Percent and 80 Percent" – became important slogans for the next few years. The Measures furthermore suggested continuous, year-round inspections of major banks by the FSA. At the same time, if banks required capital injection, the FSA would order them to submit a business reconstruction plan, with which it checked how they achieved more efficient management through asset sales and reduction of fixed cost – too many branches, for example – and variable cost. In post-war Japan, bank borrowing had been dominant in corporate finance for a long time, which led to the condition of chronic over-banking; many companies, however, changed their strategies and moved on to the corporate bond market in the 1980s. Banks, as a result, fell short of capital demand from (high performance) business sectors and were now required to reduce their excessive cost expenditure.

One of the reasons why the government, in those days, felt urged to take measures to reconstruct the financial system was that in 2001, scores of financial institutions – as many as 56 – had gone bankrupt.[25] Most of them were small regional institutions, but one-after-another bankruptcies gave people the idea that the government should change the way of administering the banking sector so that the Japanese economy could recover.

Major banks, at the same time, in order to sophisticate their management and achieve higher performance, started to merge. There were about a dozen major banks at the end of the last century, but they were reorganized into three major bank groups.

Dai-ichi Kangyo Bank, Fuji Bank and the Industrial Bank of Japan established Mizuho Holdings in September 2000. The banks merged and formed two banks, Mizuho Bank and Mizuho Corporate Bank, in April 2002. Mizuho Financial Group exchanged shares with Mizuho Holdings and became a new holding company in March 2003.

Sakura Bank and Sumitomo Bank merged to form Sumitomo Mitsui Banking Corporation in April 2001. In December 2002, Sumitomo Mitsui Banking Corporation established the Sumitomo Mitsui Financial Group.

In April 2001, Sanwa Bank, Tokai Bank and Toyo Trust & Banking established UFJ

[23] www.kantei.go.jp/foreign/policy/2002/0118tenbou_e.html

[24] The result was published at the same time as the Measures was revealed.

[25] www.fsa.go.jp/frtc/kenkyu/event/20080404-1/05e.pdf

Holdings, and the Bank of Tokyo-Mitsubishi, Mitsubishi Trust & Banking and Nippon Trust Bank established Mitsubishi Tokyo Financial Group. Mitsubishi Trust & Banking, Nippon Trust Bank and Tokyo Trust Bank merged and established the Mitsubishi Trust & Banking under the Mitsubishi Tokyo Financial Group in October 2001. In January 2002, Sanwa Bank and Tokai Bank, both under the UFJ Holdings, merged and created the UFJ Bank. Toyo Trust & Banking, at the same time, changed its name to UFJ Trust Bank. In October 2005, Mitsubishi Tokyo Financial Group and UFJ Holdings established Mitsubishi UFJ Financial Group. At the same time, UFJ Trust Bank and Mitsubishi Trust & Banking merged to form Mitsubishi UFJ & Banking. The Bank of Tokyo-Mitsubishi and the UFJ Bank merged and established the Bank of Tokyo-Mitsubishi UFJ in January 2006.[26]

"Program for Financial Revival" In October 2002, the FSA announced the start of the "Program for Financial Revival." It was published with the subtitle of: "Revival of the Japanese Economy through Resolving Non-Performing Loans [*sic*] Problems of Major Banks." The goal of this Program was to "normalize the non-performing loans problems in the fiscal year 2004 [namely by the end of March 2005] by reducing major banks' non-performing loan ratio to about half," which was thought to be necessary to "create a stronger financial system that can support the structural reform."[27] Both the resolution of the non-performing loan problem and the promotion of structural reform were to be simultaneously accomplished because they are the "two wheels of the same cart" or, in other words, they are inseparable for strengthening the resilience of the financial system.[28] Doing so was in line with the Cabinet Office's "Program to Accelerate Reforms."

This FSA-led scheme for banking sector reform was important for the FSA itself. In an interview in November 2002, Minister Heizō Takenaka said that the "Program for Financial Revival" should work as a "guideline" and that financial institutions should "make great effort by themselves in order to solve the problem, up until the fiscal year 2004, through immediate procedure and with a sense of responsibility."[29] At the same time, the FSA started to issue "Access FSA," a monthly newsletter which briefly explains its activity, which reflects their commitment to this Program.

Several topics are stated in this Financial Revival Program. First, the FSA made a statement, including the following points, about the creation of a new framework for the financial system. Specifically, (a) the FSA would set up the Task Force on Financial Issues, and it would take the initiative to solve the problem of non-performing loans with its own "appropriate measures" and the "last resort financing" of the Bank of Japan; (b) with respect to the Special Support Financial Institutions (institutions with a serious problem regarding their financial function), the FSA would require them to accomplish "managerial reform" and the Task Force would "strictly check [their] business plan"; (c) it would establish a new public funding scheme; and (d) the loan problem of small and medium enterprises must be dealt with under special care. The Act on Special Measures for Strengthening Financial

[26]Financial Services Agency (2001), p. 109; Financial Services Agency (2002), pp. 98, 108–109, 492; Financial Services Agency (2003), p. 104; Financial Services Agency (2006), p. 103.

[27]www.fsa.go.jp/news/newse/e20021030.pdf

[28]www.fsa.go.jp/kouhou/kouhou_03/026_1410_1.pdf

[29]www.fsa.go.jp/gaiyou/gaiyouj/daijin004/20021101-1.html

Functions (Act No. 128 of 2004) was part of financial administration which was discussed under the context of this Program.[30] This Act, which was announced in June 2004, defined a new scheme for public capital injection into financial institutions, so that they would be able to conduct more efficient, powerful business and support transactions in regional economies. Financial institutions can, under this scheme, acquire capital injection (through the Deposit Insurance Corporation of Japan, which purchases stocks from the banks) if their business reconstruction plan, which is submitted to the minister, is highly rational. In its business reconstruction plan, a bank must clarify what the goal of business efficiency improvement is, how it will achieve it and how it will contribute to the revival of the local economy.[31]

Second, financial reform would be proceeded under a new scheme of financial regulation. In regard to the non-performing loan problem, it was important to change the asset assessment method to the discounted cash flow method in order to evaluate how much allowance would be appropriate for major, risky debtors. In Japan, when banks tried to decide the amount of allowance for possible loan losses, they usually used past data – how much of the extended credit became non-profitable – as well as the condition of collateral. In this new discounted cash flow method, on the other hand, asset evaluation would be the summation of (the net present discounted value of) the cash flow of profit the assets will produce in the future. Major banks had to use it to evaluate their balance sheets, reflecting immediate and swift changes of market conditions.

Thirdly, these changes above must be coupled with strengthening of the corporate revival function. Through banking reform, the Japanese government in those days aimed not only at the better functioning of the banking sector itself, but also at the reform of the industrial sectors that major banks supplied with capital. Banks could sell non-performing assets (namely in-danger-of-bankruptcy assets or below) to the Resolution and Collection Corporation so that they could improve the condition of their balance sheets. The Resolution and Collection Corporation, at the same time, was also responsible for the creation of loan markets – which, in Japan, had not been fully developed. It is noteworthy here that this scheme was coupled with such objectives as developing a favorable environment for supporting corporate revival or solving the problems of excess supply of capital and debt overhang of firms. In other words, banking reform was put at the center of the general economic policy so that various industrial sectors in Japan would start out on a new path and achieve better performance.

The FSA, in November 2002, released a work schedule with more detail and deadlines. It started the creation of new legislation and the revision of supervisory guidelines around the end of 2002, and since then, it has periodically made reports about how this "Program for Financial Revival" was put into effect (they released at least four reports until the program finished in fiscal year 2004). The Financial Problem Task Force, which was established in December 2002 and consisted of a few outside experts, watched the progress of the program throughout the period.

It must be noted here that special inspections, which began as a part of the "Front-Loaded Reform Program" in 2001, also played an important role in the "Program for Financial

[30]Financial Services Agency (2004), p. 24.

[31]Financial Services Agency (2004), p. 268.

Revival." "Towards the settlement of account[s] at the end of March 2003, the FSA will in practice conduct another round of special inspections, in the form of continuing rigorous examination of accuracy of borrowers' classification on a real-time basis."[32] The public capital injection system had to be accompanied by information transparency in the banking sector, which was attained through strict inspections, because the expectation for capital injection under asymmetric information might induce excessive risk-taking behavior of banks.

The FSA commenced special inspections of major banks (city banks) in autumn 2001. "The aim of the special inspections is to ensure an appropriate classification of borrowers as well as sufficient level of write-offs and provisioning on a timely basis, reflecting the borrowers' business conditions and market signals against them."[33] "Classification of borrowers" here means the FSA's version of asset risk rating system. It categorized borrowers into four groups: "bankrupt," "de facto bankrupt," "in danger of bankruptcy," "needs attention," and "normal." Given this classification, banks with a great amount of in-danger-of-bankruptcy-or-below assets were struggling with the non-performing loan problem.

We should note here that this re-classification of assets was actually implemented with the intention of examining the reconstruction plans of large borrowers whose stock prices and other indicators had been experiencing significant changes.[34] The Japanese main bank system mattered here; borrowers were inspected by the main banks or, in other words, banks playing a leading role in extending credit to borrowers. Large business firms in those days borrowed capital from several major banks; there were correspondences between one firm and several banks. If major banks classified the same borrower differently, it possibly meant that some of the lender banks did not share the information of that borrower, because their self-assessment of assets did not reflect the information. Such situation was problematic for the FSA, who tried to reduce the non-performing loans of major banks most accurately and most rapidly. The FSA, therefore, tried to lessen such differences in asset evaluation between banks so that the banks would assess them with enough information; and it also made an announcement about "the gap between major banks' self-assessment and the result[s] of the FSA's inspections."[35]

In order to achieve the goals of the "Program for Financial Revival" – among which "reducing major banks' non-performing loan ratio to about half" was the most important – major Japanese banks started to announce the management reform plans in 2002 and 2003. They included disposal of non-performing loans, capital increase by themselves (in other words, without public capital injection) and organizational divisions or mergers.

We have so far focused on the policy regarding major banks; but the FSA, at the same time, took measures for regional banks. On March 28, 2003, it made an announcement of the "Action Program concerning Enhancement of Relationship Banking Functions." We can see in the "Action Program" that the FSA recognized the importance of "sustainability of relationship banking" and "soundness of both lenders and borrowers through cooperative

[32] www.fsa.go.jp/news/newse/e20021030.pdf

[33] www.fsa.go.jp/news/newse/e20020412-1.html

[34] www.fsa.go.jp/news/newse/e20030425-1.html

[35] www.fsa.go.jp/news/newse/e20020821-1.html

management of risks and cost sharing with regional Small- and Medium-sized Enterprises." It also stated that the non-performing loan disposal in the regional banks must be accompanied by "various measures and efforts to revitalize SMEs [small to medium-sized enterprises] and activate regional economies."[36] It is important that, while the FSA set a definite goal for the non-performing loan reduction by major banks ("about half"), it did not set such specific target in regard to the regional banks. The Minister for Financial Services said that what it required the regional banks is "their contributions to their local communities by strengthening relationship banking functions and their growth into more profitable enterprises firmly rooted in those communities." For the FSA, "even if the amounts of their [regional banks'] NPLs [non-performing loans] are not reduced to the same extent as the major banks' amounts of NPLs," it was more important to revitalize the relationship banking system.[37]

How did the drastic measures of the "Program for Financial Revival" result in the reduction of non-performing loans? Non-performing loan ratios of major banks – based on the Financial Restoration Act – evolved as follows: 8.4 percent (March 2002), 8.1 percent (September 2002), 7.2 percent (March 2003), 6.5 percent (September 2003), 5.2 percent (March 2004), 4.7 percent (September 2004), 2.9 percent (March 2005).[38] The FSA and major banks achieved the goal of reducing major banks' non-performing loan ratio to about half, which means that they rapidly and successfully improved their asset structure in no more than three years.

"Structural Reform and Medium-Term Economic and Fiscal Perspectives: FY2004 Revised Version," a document issued at the end of January 2005, stated as follows:

> With regard to structural reform, there has been a steady progress toward normalizing the problem of non-performing loans as exemplified by the steady decline in the major banks' non-performing loans ratio in accordance with the target of halving the ratio as set by the "Program for Financial Revival." With the corporate and industrial revival and financial revival in an integral manner, the activation of creating new businesses and the progress of deregulation, economic resources have been shifting from stagnant industries to new industries and growth industries have been showing strong business expansion. All these indicate that the dynamism of the Japanese economy is now being regenerated.[39]

1.3 "Program for Further Financial Reform," 2005–2013

The "Program for Financial Revival" finished, just as we have seen, with the achievement of the goal. Two official objectives concerning of write-off at major banks, the "Commitment of Two Years and Three Years" and the "Commitment of 50 Percent and 80 Percent," were later substituted by a statement that the FSA "will focus on the early recognition of non-performing

[36] http://www.fsa.go.jp/news/newse/e20030328-1a.pdf

[37] http://www.fsa.go.jp/en/conference/gaiyoue/daijin/e20030328-2.html

[38] Financial Services Agency (2005), p. 431. See Figure 1.

[39] Financial Services Agency (2005), p. 83. See www5.cao.go.jp/keizai2/2005/0121reform_and_perspectives.pdf.

loans" in order to "prevent the non-performing loan problem from happening once more"; for, since the mid-2000s, the level of the non-performing loan ratio has remained relatively low.[40]

From around 2005 on, therefore, the FSA started to shift its focus from revival to reform, from stability to vitality. Their policy, in other words, should now change from one under emergency to one with a forward-thinking attitude. In December 2004, it announced the "Program for Further Financial Reform" with the subtitle of "Japan's Challenge: Moving toward a Financial Services Nation."[41]

The Program stated that the desirable financial system can be achieved by the effort of the private sector, not led by the public sector. The FSA, under this Program, would (i) enable the consumers in the financial market to act with sufficient rights protection, (ii) utilize information technology, (iii) put the Japanese financial services and administration into a global context, (iv) contribute to regional economies and (v) create a reliable system of financial administration. It is notable that it clarifies here its roles as follows under what it termed the "financial services nation": (i) The FSA, as the center of financial administration, plays the role of a judge who complements market discipline but does no more than that; (ii) it will reassess the performance of the existing system in order to eliminate unnecessary regulations and to construct the "code of conduct"; and (iii) it will administer the principle of consumer protection.[42]

The non-performing loan ratio of all domestic banks has been around 2.5 percent since 2006 (if we confine the scope to major banks, the ratio is less than 2 percent). "Just as major banks have successfully reduced their non-performing loans, three forms of excess (namely excessive employment, capital investment and loans) have also disappeared. This led to strengthening business performance; the Japanese economy has escaped from long stagnation and started to follow the track of enduring recovery led by private-sector demand."[43] The non-performing loan problem is now no longer regarded as an urgent problem, but the FSA has always carefully checked and inspected the asset investment behavior of financial institutions. It has regularly revised its supervision and inspection policy, so that it will be suitable for the changing world economic condition.

One of the major events for the FSA in these years was the financial crisis of 2008–2009. This immense shock in the capital market severely affected the macroeconomy, and the slight increase in the non-performing loan ratio of banks in 2009 might have had something to do with this.[44] The level of such non-performing loans, however, has never exceeded that of, for example, 2006.[45] This implicitly suggests that the financial reform, which the FSA conducted in the early 2000s, instilled so strong a discipline to the business traits of banks that it prevented them from an increase in non-performing loans – even under a drastic change in the world economy such as the financial crisis in the late 2000s. It was nevertheless

[40] Financial Services Agency (2010), p. 104.

[41] www.fsa.go.jp/news/newse/e20041224.pdf

[42] Financial Services Agency (2005), pp. 4–5.

[43] Financial Services Agency (2006), p. 74.

[44] The non-performing loan ratio of two long-term credit banks had risen exceptionally in Spring 2008; banks of other classes (major banks, regional banks), however, experienced just a modest increase in the non-performing loan ratio.

[45] Financial Services Agency (2012), p. 667.

reasonable to assume that some financial institutions might meet difficulties in supplying capital to local industries and require public financial support. In December 2008, the government therefore decided to continue the Act on Special Measures for Strengthening Financial Functions, which had expired in early 2008, and revised it so that more banks would make use of this scheme. The government prepared an extra budget for implementing this scheme. Several financial institutions have applied for this extended injection scheme and improved their business performance.[46]

2 Toward a Quantitative Retrospect

2.1 Overview

In this section, we will first look at the developments in non-performing loans retrospectively; it will be shown that different categories of banks took different tracks of non-performing loan disposal in the past decade.[47] After introducing theoretical hypotheses about bank behavior, we will go on to the statistical estimation of the determinants of non-performing loans in each bank. We will discuss two kinds of determinants: macroeconomic indices and bank-specific performance. We statistically analyze the relationship between the developments in non-performing loans and that of other possible determinants which we can observe on the balance sheets of Japanese banks, such as the return on equity (ROE), loan-deposit ratio and mortgage-loan ratio. We will also focus on how other macroeconomic conditions, such as gross production of prefectures and regional land prices, affect the policies of non-performing loan disposal by financial institutions.

How did the non-performing loans of the Japanese banks evolve from the late 1990s to the 2000s? Transitions of the non-performing loan ratio based on the Financial Reconstruction Act are shown in Figures 1 and 2.[48] As can easily be seen, in all categories of banks, the non-performing loans ratio increased from 2001 to 2002 and dramatically decreased from 2002 to 2005. Since then, they have maintained lower levels than those at the end of the 1990s, except in March 2009, after the Financial Crisis in late 2008 caused a huge shock to the Japanese economy. The increase in the beginning of the 2000s reflected (i) the ever-worsening macroeconomic condition and (ii) stricter self-assessment of non-performing loans in order to obey the inspection policy by the FSA.[49] We must be aware that the sharp increase in the former long-term credit banks' non-performing loan ratio in September 2002 might be a result of the emergence of Mizuho Bank; the Industrial Bank of Japan was formally one of the long-term credit banks, but merged with two city banks in April that year to establish Mizuho. Subsequently, only two banks remained to compose the data of the former long-term credit banks. At that point came the downward slope, which corresponds to the period of the

[46] Financial Services Agency (2009), pp. 77, 112, 381, 600.

[47] See www.fsa.go.jp/en/regulated/npl/ for summary information on non-performing loans in each year.

[48] Figures are all based on Financial Services Agency (2007), pp. 505–507 and Financial Services Agency (2012), pp. 482–484.

[49] The Cabinet Office in those days made similar interpretation. See, for example, Footnote 6 of www5.cao.go.jp/j-j/wp/wp-je01/wp-je01-00201.html.

"Program for Financial Revival," which aimed at halving the non-performing loans ratio in major banks. It is interesting that not only such large banks but also regional banks lessened their non-performing loans in this period, although at a slower pace.

2.2 Bank Behavior Hypotheses

How can we formulate an economic model of bank behavior to explain the developments in non-performing loans, and how can we estimate it statistically? Louzis, Vouldis and Metaxas (2012) discuss the possible determinants of non-performing loans of the nine largest Greek banks in the 2000s.[50] There are two lines in the literature of empirical research on bank behavior: one which focuses on macroeconomic conditions and one which puts an emphasis on bank-specific variables. Macroeconomic conditions consist of GDP growth, unemployment rate and sovereign debts, while bank-specific variables include ROE, size and management inefficiency of the banks. Louzis et al. (2012) used both categories of variables as regressors and estimated their impact on the change of non-performing loan ratio.[51] They introduce several hypotheses about coefficient signs of the estimation. In regard to GDP, it is reasonable to assume its negative impact on the non-performing loan ratio. This is because, in the expansionary period, the non-performing loan ratio is relatively low because both households and firms are able to service their debts, but excessive lending in the booming period, even to the low-quality debtors, will later lead to an increase in non-performing loans when a recession period arrives. ROEs, on the other hand, may affect the amount of non-performing loans in both positive and negative ways. ROE, as an index of past performance, can be negatively associated with increases in future non-performing loans; at the same time, however, it is possible that a bank may, in order to acquire a good reputation in the short term, try to convince the market of its profitability by inflating current earnings at the expense of future problem loans. We will estimate how these models can explain the behavior of the Japanese banks in the 1990s and the 2000s.

In addition to the hypotheses above, we will also try to estimate the relationship between the change in the banking business strategy and the developments in the non-performing loans. As more and more corporations started to demand capital in the direct financial market (see Figure 7) and as the write-off of low-quality assets proceeded, banks had to reduce their corporate financing business and seek a new source of profit. Some of them increased the amount of sovereign bond (Japanese government bonds, JGBs) holding and others expanded the housing mortgage lending. Thus, the decrease in the non-performing loan ratio throughout the late 1990s and the 2000s was paralleled by the decrease in the loan-deposit ratio and the increase in the government bond holding and the housing mortgage loan. We will test this hypothesis of bank portfolio shift in the following sections.

[50] This paragraph is based on Louzis et al. (2012).

[51] They, in addition, estimated for different types of non-performing loans: consumer loans, mortgages and business loans. In regard to the Japanese banks, such detailed information is not available, so we used the data of non-performing loans for all types of debtors.

2.3 Dataset

We created panel data consisting of bank-specific variables and macroeconomic indices, spanning from fiscal year 1997 to fiscal year 2011 (period denoted by t). Most of the bank-specific series are cited from the dataset of Japan Bankers Association (each year), and we added a few other series from that of Japan Financial News (each year). The dataset of Japan Bankers Association (each year) consists of balance sheet data of city banks, (former) long-term credit banks, trust banks, regional banks I, regional banks II, and other banks (including new types of banks). The cross-section ID for each bank i is the Financial Institution Common Code defined by the Japan Bankers Association; please note here that, in this ID system, if a merger or an acquisition occur, newly-born banks will retain the same number as that of surviving banks.[52] In so doing, we assumed that banks did not change their individual patterns of behavior before or after a merger or an acquisition.

In regard to macroeconomic indices, the gross product of prefectures is based on data reported by Cabinet Office (each year), and the land price is cited from the announcement of the Ministry of Land, Infrastructure, Transport and Tourism (each year). In the end, we created a panel with 1996 observations (number of banks $\times$ years covered).

As a definition of non-performing loans, in this paper we use one which is based on the Financial Reconstruction Act. Loans are, under this system, classified into four categories: (i) bankrupt or de facto bankrupt ("bankrupt or quasi-bankrupt" in another translation), (ii) doubtful, (iii) special attention ("needs attention" or "substandard") and (iv) normal. Bankrupt or de facto bankrupt loans are those extended "to debtors who are legally and formally bankrupt, i.e., in the process of liquidation, reorganization and rehabilitation, or virtually bankrupt with no prospects of resuscitation"; doubtful loans are those extended "to debtors who have not gone bankrupt but are in financial difficulties, and thus whose lenders are unlikely to receive the principal and interest concerned on due dates"; special attention loans are those "whose interest and/or principal payments are in arrears by 3 months or more, and restructured assets with changes in terms and conditions," and the normal loans are "all loans to debtors who have no particular problems with their financial conditions" which are not classified as any of the first three categories.[53] The total amount of non-performing loans is the sum of loans that are categorized as "bankrupt or de facto bankrupt," "doubtful" and "special attention." "Bankrupt or de facto bankrupt" is the most risky category of assets. The non-performing loan ratio of a bank is calculated by dividing the amount of non-performing loans (the total of the three loan categories) by the bank's total credit.

In Japan, aside from the classification above, there are two other ways to categorize assets; one is that which is used for risk management loans and the other is used in self-assessment of assets by banks. The former is almost the same as the Financial Reconstruction Act classification, but is based on a different law. Banks, on the other hand, use the latter to prepare for conducting appropriate write-offs or provisions.[54]

[52] Mizuho Bank, for example, inherited the Common Code 0001 from Dai-Ichi Kangyo Bank.

[53] www.fsa.go.jp/news/newse/e20030207-1/r02.pdf

[54] Different authors use different English words to refer to these non-performing loan classifications. One of the official translations (though provisional) can be found at: www.fsa.go.jp/news/newse/e20030207-1/r01.pdf, www.fsa.go.jp/news/newse/e20030207-1/r02.pdf, www.fsa.go.jp/news/newse/e20030207-1/r03.pdf and www.

3 Panel Estimation of Non-Performing Loan Reduction

3.1 Estimation Model

The explained variable is non-performing loan ratios FRR_{it} (percentage point). A non-performing loan here is as defined in the Financial Restoration Act.

We used two series of macroeconomic determinants: gross prefectural product GPP_{it} and land prices in residential area $\mathrm{LP1}_{it}$, which are good proxies for the regional macroeconomy. They might be negatively correlated with the regressand. In regard to bank-specific variables, aside from the lagged values of regressands, we also controlled the ROEs of the banks ROE_{it}, which we assume is an important indicator of their performance, and thus possibly affect FRR_{it} negatively – according to the hypothesis which we introduced above that the high performance leads to rapid disposal of non-performing loans. The hypothesis of shift in bank portfolios can be expressed as a positive effect of the loan-deposit ratio $(\mathrm{LON}/\mathrm{DPS})_{it}$ and negative effects of Japanese government bond-deposit ratio $(\mathrm{JGB}/\mathrm{DPS})_{it}$ and mortgage-loan ratio $(\mathrm{MRG}/\mathrm{LON})_{it}$ to the regressand – where LON denotes total loans, DPS total deposit, JGB total Japanese government bond holding and MRG total housing mortgage lending.

The regressand in our least square estimation model is actually the first difference of the non-performing loan ratio $\Delta\mathrm{FRR}_{it}$, because we cannot reject the hypothesis that the level series has individual unit roots.[55] In addition, we introduced dummy variables for the time fixed effect and cross-section fixed effect. We, in the end, define the basic form of our model as

$$
\begin{aligned}
\Delta\mathrm{FRR}_{it} = & \left(\beta_0 + \beta_1 \Delta\mathrm{FRR}_{i,t-1} + \sum_{j=0}^{1} \beta_{2j} \Delta\mathrm{ROE}_{i,t-j} + \beta_3 \mathrm{GPP}_{it} + \beta_4 \mathrm{LP1}_{it}\right) + \\
& \beta_5 \Delta X_{it} + \sum_{u=1}^{T} \beta_{6u} \mathrm{FIX}_{tu} + \sum_{j=1}^{N} \beta_{7j} \mathrm{FIX}_{ij} + \varepsilon_{it} \quad (i = 1, \ldots, N; t = 1, \ldots, T),
\end{aligned} \tag{1}
$$

where X_{it} denotes bank-specific variables in each model, FIX_{tu} $(t = 1, \ldots, T)$ stands for time fixed-effect dummy variables which equal 1 if $t = u$ and otherwise 0, and FIX_{ij} $(i = 1, \ldots, N)$ are cross-section fixed-effect dummy variables which equal 1 if $i = j$ and otherwise 0. Terms in parentheses, in other words, are our baseline model, and we substituted X_{it} with bank-specific variables such as $(\mathrm{LON}/\mathrm{DPS})_{it}$, $(\mathrm{JGB}/\mathrm{DPS})_{it}$ and $(\mathrm{MRG}/\mathrm{LON})_{it}$ to formulate different models.

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fsa.go.jp/news/newse/e20030207-1/r04.pdf.

[55] The results of the unit root test (individual intercept) are as follows. For FRR_{it}, the augmented Dickey–Fuller Fisher χ^2 statistic is 348.105 with $p = 0.0035$, and the Phillips–Perron Fisher χ^2 statistic is 289.308 with $p = 0.3383$ (optimal lag length based on the Schwarz information criterion is 0 to 2). For $\Delta\mathrm{FRR}_{it}$, the augmented Dickey–Fuller Fisher χ^2 statistic is 801.567 and the Phillips–Perron Fisher χ^2 statistic is 863.036, both with $p = 0.0000$ (optimal lag length based on the Schwarz information criterion is 0 to 1).

3.2 Results: Time-Invariant Feature

As a benchmark, models 2-1 and 2-2 in Table 1 regress growth in non-performing loans ($\Delta \mathrm{FRR}_{it}$) to its own first-order lag, growth in return on equity ($\Delta \mathrm{ROE}_{it}$) and first-order lag of growth in return on equity. To control the effects of regional exogenous shocks, gross prefectural product (GPP_{it}) and land prices ($\mathrm{LP1}_{it}$) are inserted as regressors. With a period fixed effect, model 2-1 indicates that variances in profitability affected reduction in non-performing loans and that there were some trends with controlling for cyclical effects. With a cross-section fixed effect, model 2-2 shows that that tendency was robust even after controlling for time-invariant factors of individual banks.

3.3 Results: Bank-Specific Factors

Table 2 decomposes growth in non-performing loans ($\Delta \mathrm{FRR}_{it}$) into several factors by fixed effect models. Model 3-1 shows that growth in the ratio of loans over deposits ($\Delta(\mathrm{LON}/\mathrm{DPS})_{it}$) increased non-performing loans. Meanwhile, models 3-2 and 3-3 show that the ratio of mortgage loans over total loans ($\Delta(\mathrm{MRG}/\mathrm{LON})_{it}$) had a negative impact on the growth of non-performing loans or, in other words, contributed to a reduction in non-performing loans.[56]

Discussion

In addressing and managing the non-performing loan problem, always nontrivial is whether it is primarily due to cyclical factors or structural factors. The answer to this question leads to whether the financial regulatory policies should or should not contain structural elements. The ratio of non-performing loans over total amount of credit and other stress resilience indicators must be standardized, consistent and transparent, and must not be discretionary in any sense. However, the exact threshold of “unhealthiness” depends on authorities’ discretionary decisions, and how strict the threshold is inevitably depends on what the authorities understand has caused the accumulation of non-performing loans: structural factors or cyclical factors. If cyclical factors are dominant, considering the diseconomy of financial distress, the authorities can be as soft as possible and wait as long as possible; the threshold is to be set at a higher level. If structural factors such as past vested rent or drastic changes in driving-force industry of the economy are dominant, the earlier the authorities act the better, even if banks that had made structural mistakes are consolidated; the threshold is to be set at a lower level.

[56] We tried other definitions of cross-section identification number i so that we could test for the effect of mergers and acquisitions among banks. In Tables 1 and 2, banks established through a merger or acquisition will retain the same IDs as that of surviving banks. In our new definitions, on the other hand, we assigned new IDs to the banks after merger and acquisition. We created two new versions of definitions, one of which reflects only major M&As and the other includes information of every minor M&A, and we tested the same estimation models with these two ID systems. Neither versions, however, yielded significant results. They suggest that banks possibly did not change their individual patterns of business policy before and after a merger.

Non-performing loans in Japan from the late 1990s were accumulated more or less due to structural factors. Proceeding deregulation on the bond market prompted the manufacturing sector, the very source of growth of the Japanese economy, to move from indirect financing to direct financing, typically bond issuance in international markets. Deregulation of the banking sector and enhanced competition removed vested rents enjoyed by the banking sector.

Subsequently, an issue is whether these structural downward pressures on the banking sector could be offset by other structural upward pressures. Given its own historical path, possible choices for the Japanese banking sector were as follows. First is, backing corporate financing to small and medium-sized enterprises. Heavily regulated during and after the war, corporate financing enabled major banks to hold major manufacturing firms, which could have gone to the bond market, as the best clients. After they were released because of deregulation of the bond market, major banks might have been able to find new business opportunities in firms with lower credit ratings. Indeed, while total credit except for JGB purchases of major banks had been stagnant or even slightly declined throughout the 2000s, that of regional banks slowly but steadily grew during the same period. Financing smaller firms is indeed good business. However, the loan-deposit ratio of regional banks in the period never grew. Thus, corporate financing market for smaller firms is saturated and the new entry of major banks, with much higher employee salaries and much less experience, does not sound feasible.

The second possible choice is finding a new business. If the banking sector can find further upward structural momentum, it could compensate for the downward momentum incurred. Therefore, let us examine the contribution of new loan growth to the non-performing loan growth. Here we focus on consumer loans, given that corporate financing is hardly profitable. Then an obvious result is that mortgage loans strongly reduce non-performing loans, while non-mortgage loans increase non-performing loans. Redistribution from risky corporate financing to risky consumer financing, though it might contribute to profit, does not imply a decrease in non-performing loans. Meanwhile, consumer mortgage loans serve as a powerful vehicle for non-performing loan reduction.

Indirect corporate financing in Japan developed along its unique historical path; this nevertheless does not imply that other parts of the world have not experienced the structural reduction of the role of bank-dominant capital market. The development of information and communication technologies has provided the capital market far greater transparency and resilience than, at least, that it had in the 1920s before the Great Depression. Deregulation from the 1980s thus naturally has urged the banking sector to find new profit sources. It was not a coincidence that the two greatest post-deregulation financial crises in the US, one in the early 1980s and one in the mid-2000s, both had their roots in consumer mortgage loans. As long as it is carefully handled by the banking sector and regulatory authorities, consumer mortgage loans will likely continue to be a profitable alternative in mature industrial economies with a well-established transparent capital market and a sophisticated but relatively down-sized manufacturing sector. Japan was and is not an exception.

It does not mean, however, that consumer mortgage loans can be the last resort for a too-big banking sector. With the working age population in particular rapidly shrinking, consumer mortgages are being saturated too. Therefore, structural transformation of the banking sector toward consumer mortgage loans could not have compensated for the structural reduction of corporate financing to the competitive manufacturing sector.

Sectors other than manufacturing, such as retail or other domestic services, cannot be candidates. Deregulation has been accompanied by trade liberalization in a good sense. A considerable part of the existing service sector has struggled under a protectionist policy, and more liberalization, at least in the short term, would bring another structural reduction of domestic demand for corporate financing.

After all, the banking sector's structural reduction of corporate financing to the manufacturing could not have been compensated for by a structural increase to another channel. Massive bank consolidation was, and potentially is, inevitable. If so, a lower threshold or, in other words, stricter investigation and evaluation of non-performing loans, even if it might have resulted in structural reorganization of the banking sector, should be justified. Strict measures led by Yanagisawa and Takenaka required banks to write off non-performing loans as soon as possible, and it was the best strategy among the feasible choices.

Showing total credit except for Japanese government bond holding, Figure 3 shows that the banking sector as a whole has gradually downsized itself in the last decade. However, Figures 4 and 5 show that this downsizing was in fact driven by major banks and that regional banks have increased credit while reducing non-performing loans. The result can more clearly be seen in Figure 6. The story behind this is that, as Figure 7 depicts, major businesses, on which major banks had relied, are still going away to direct and foreign corporate financing. Further, estimation results in Table 2 reveal that a shift to holding Japanese government bonds did not help to reduce non-performing loans. In short, the implementation of structural non-performing loan disposal between 2002 and 2004 on major banks was more or less inevitable.

On the other hand, it was a necessary and reasonable measure to maintain the relational banking networks which connected regional banks and regional economies; for their function of credit supplying was still important for local industries, entrepreneurs and other consumers. In addition, Figure 6 shows that they relied less on the Japanese government bond holding – and, as a result, more on the credit lending – compared to the major banks including city banks.

Our estimation results in Table 2 suggest that a further increase in personal house mortgage loans could have helped cyclically reduce non-performing loans through improved profitability of the banking sector. Indeed, the US, Spain and Ireland, where structural reform on the financial market had been implemented, experienced a rapid expansion of their deregulated mortgage loan markets, boosting of house prices, and improved profitability of the banking sector in the mid-2000s. The outcome was another pile of non-performing loans. Unless a novel, innovative way of regulating the mortgage loan market were to be found, it would be correct to avoid relaxing mortgage loan regulation. After all, our tentative evaluation of structural disposal of non-performing loans from 2002 to 2004 is justified.

References

Cabinet Office (each year) "Kemmin Keizai Keisan (Annual Reports on Prefectural Accounts)," www.esri.cao.go.jp/jp/sna/sonota/kenmin/kenmin_top.html. Accessed Aug 1, 2013.

Financial Services Agency (2001–2013 each year) "Kin'yū Chō no 1 Nen (The Annual Report of the Financial Services Agency)."

Financial Supervisory Agency (1999 & 2000) "Kin'yū Kantoku Chō no 1 Nen (The Annual Report of the Financial Supervisory Agency)."

Hoshi, Takeo and Anil K. Kashyap (2001) *Corporate Financing and Governance in Japan: The Road to the Future*, Cambridge, Mass.: MIT Press.

Japan Bankers Association (each year) "Zenkoku Ginkō Zaimu Shohyō Bunseki (Anasysis of Financial Statements of All Banks)," www.zenginkyo.or.jp/stats/year2_02/index.html. Accessed August 1, 2013. English version: www.zenginkyo.or.jp/en/stats/year2_01/index.html.

Japan Financial News (each year) *Nikkin Shiryō Nempō (The Japan Financial News Annual Resource Book)*, Tokyo, Japan: The Japan Financial News.

Louzis, Dimitrios P., Angelos T. Vouldis, and Vasilios L. Metaxas (2012) "Macroeconomic and Bank-Specific Determinants of Non-Performing Loans in Greece: A Comparative Study of Mortgage, Business and Consumer Loan Portfolios," *Journal of Banking and Finance*, Vol. 36, pp. 1012–1027.

Ministry of Land, Infrastructure, Transport and Tourism (each year) "Todōfuken Chika Chōsa (Prefectural Land Price Report)," tochi.mlit.go.jp/kakaku/chika-chousa. Accessed August 1, 2013.

Appendix: Chronological Event List of the Financial Services Agency (FSA)

22 Jun 1998	Financial Supervisory Agency (FSA) was created under the Prime Minister's Office
Jul 1998	Govt. announced the Total Plan for Financial Reconstruction
Jul 1998	FSA started the inspection of 18 major banks
Oct 1998	Enactment of the Financial Reconstruction Act and the Early Strengthening Act
Oct 1998	Long-Term Credit Bank of Japan was temporarily nationalized
Nov 1998	Govt. announced the Emergency Economic Measure and required FSA to strengthen the system of inspection and supervision
Dec 1998	Financial Reconstruction Commission was created
Dec 1998	Nippon Credit Bank of Japan was temporarily nationalized
Mar 1999	Public fund injection to 14 banks including major banks. Amounted to 9.1 trillion yen
Jul 2000	Financial Supervisory Agency merged with the Financial Planning Bureau of the Ministry of Finance to create the Financial Services Agency
Oct 2000	Govt. announced a Policy Package for New Economic Development toward the Rebirth of Japan (New Development Policy)
Jan 2001	Financial Reconstruction Commission ended. FSA became directly subordinated by the Cabinet Office
Apr 2001	Govt. announced the Emergency Economic Package (the Commitment of Two Years and Three Years of the non-performing loan disposal)
Jun 2001	Govt. announced the Basic Policies for Economic and Fiscal Management and Structural Reform (to solve the non-performing loan problem and recover economic growth)
Oct 2001	Govt. announced the Front-Loaded Reform Program. Special inspection of the major banks
2002	Major banks merged into "mega banks"
Jan 2002	Govt. announced the Structural Reform and Medium-Term Economic and Fiscal Perspectives
Apr 2002	FSA announced the Measures for Developing Stronger Financial System (the Commitment of Two Years and Three Years, the Commitment of 50% and 80%)
Oct 2002	FSA announced the Program for Financial Revival to halve the non-performing loans of major banks by fiscal year 2004
Nov 2002	FSA released a work schedule for the Program for Financial Revival
Dec 2002	FSA set up the Task Force on Financial Issues
Dec 2002	FSA published the first issue of the *Access FSA*, an online monthly report
Mar 2003	FSA "in practice conduct[ed] another round of special inspections"
Mar 2003	FSA announced the Action Program concerning Enhancement of Relationship Banking Functions
Sept 2003	FSA conduced the special inspection follow-up to major banks
Jun 2004	Enactment of the Act on Special Measures for Strengthening Financial Functions to define a new scheme for public capital injection
Dec 2004	FSA announced the Program for Further Reform
Jan 2005	Govt. announced the Structural Reform and Medium-Term Economic and Fiscal Perspectives: FY2004 Revised Version
Mar 2005	FSA conducted the special inspection special follow-up for part of the large debtors
Mar 2005	Non-performing loan ratio of major banks became 2.9%. Achieved the goal of the Program for Financial Revival
Dec 2008	Govt. continued the Act on Special Measures for Strengthening Financial Functions after the Financial Crisis

Table 1 Trends of bad loan reduction.

	1-1			1-2		
Estimation method	panel least squares			panel least squares		
Dependent variable	Δ FRR_{it}			Δ FRR_{it}		
Cross-section	pooled			fixed		
Period (year)	fixed			pooled		
Independent variables	coefficient	*t* statistic		coefficient	*t* statistic	
c	-0.2310	-2.7382	***	-2.4751	0.0010	***
$\Delta FRR_{i,t-1}$	-0.0529	-2.2743	**	-0.1071	0.0000	***
$\Delta ROE_{i,t}$	-0.0024	-2.8624	***	-0.0032	0.0004	***
$\Delta ROE_{i,t-1}$	-0.0013	-1.9380	*	-0.0015	0.0247	**
GPP	0.0000	-2.0316	**	0.0000	0.0326	**
LP1	0.0000	1.0394		0.0000	0.0000	***
cross-sections included	144			144		
periods included (years)	11 (2000-2010)			11 (2000-2010)		
included observations	1,357			1,357		
adjusted R^2		0.1209			0.0899	
Log likelihood		-2,808.4302			-2,761.0478	
F statistic		13.4309	***		1.9053	***

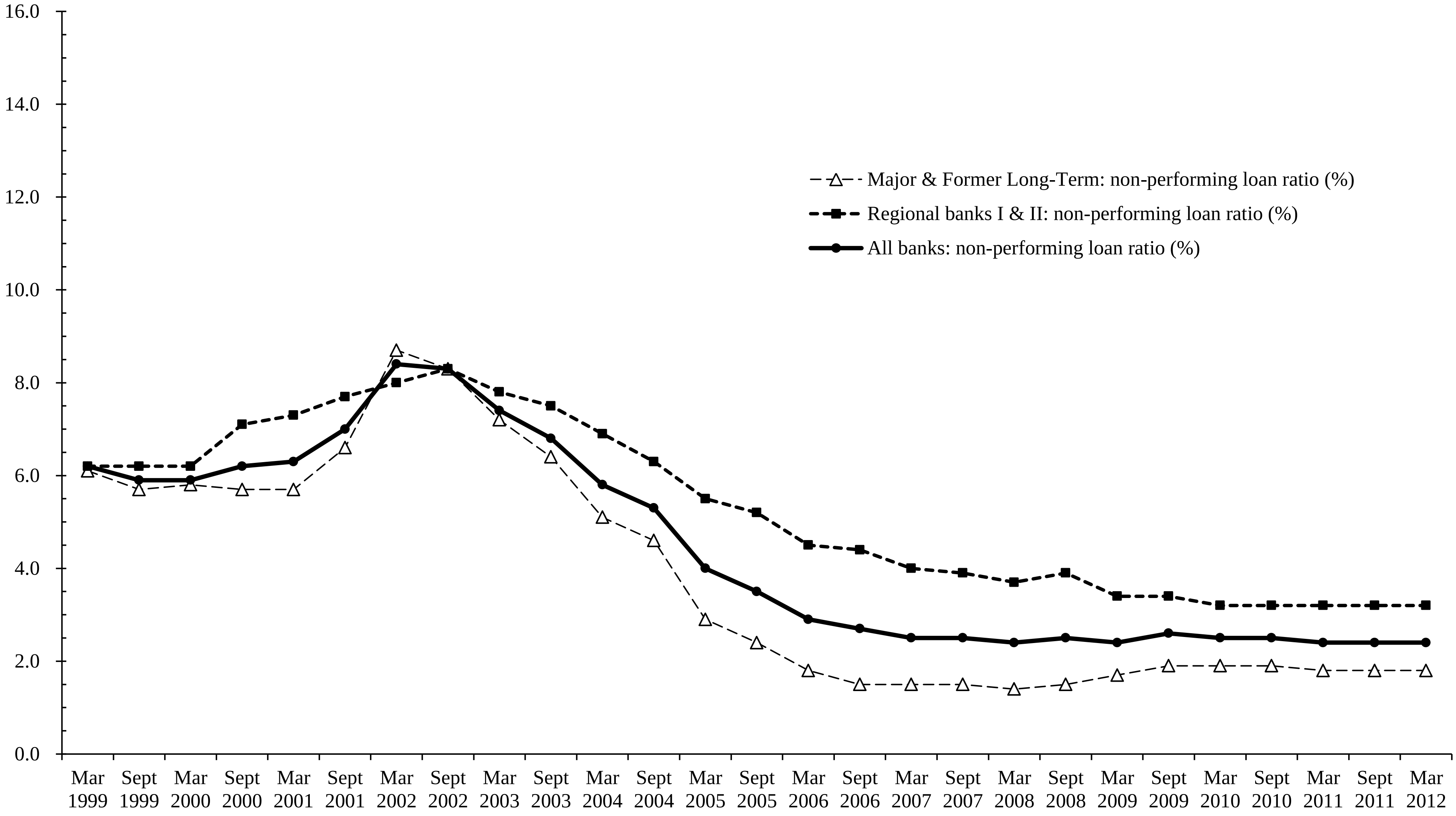
Notes : ***, **, and * respectively denote significance at 1, 5, and 10 percent levels.

Table 2 Factors of bad loan reduction.

	2-1			2-2			2-3		
Estimation method	panel least squares			panel least squares			panel least squares		
Dependent variable	$\Delta\,FRR_{it}$			$\Delta\,FRR_{it}$			$\Delta\,FRR_{it}$		
Cross-section	pooled			pooled			pooled		
Period (year)	fixed			fixed			fixed		
Independent variables	coefficient	*t* statistic		coefficient	*t* statistic		coefficient	*t* statistic	
c	-1.3851	-1.9637	**	-2.4421	-3.9042	***	-2.1487	-3.4376	***
$\Delta FRR_{i,t-1}$	-0.0796	-3.3552	***	-0.0161	-0.7225		-0.0192	-0.8663	
$\Delta ROE_{i,t}$	-0.0038	-4.4731	***	-0.0034	-4.3311	***	-0.0036	-4.5999	***
$\Delta ROE_{i,t-1}$	-0.0018	-2.8048	***	-0.0016	-2.6956	***	-0.0016	-2.8396	***
GPP	0.0000	-4.0771	***	0.0000	-2.0108	**	0.0000	-2.6248	***
LP1	0.0000	8.8464	***	0.0000	8.4418	***	0.0000	8.7710	***
$\Delta(JGB_{i,t}/DPS_{i,t})$	-4.1033	-4.1792	***	-1.3861	-0.8908		-1.4305	-0.9258	
$\Delta(LON_{i,t}/DPS_{i,t})$	10.9751	13.2431	***				4.4412	4.1914	***
$\Delta(MRG_{i,t}/LON_{i,t})$				-3.2725	-2.1592	**	-3.1779	-2.1113	**
cross-sections included	140			140			140		
periods included (years)	11(2000-2010)			11(2000-2010)			11(2000-2010)		
included observations	1,324			1,324			1,324		
adjusted R^2		0.2128			0.1139			0.2463	
Log likelihood		-2,658.4845			-2,478.4664			-2,439.6656	
F statistic		3.4395	***		2.1650	***		25.0218	***

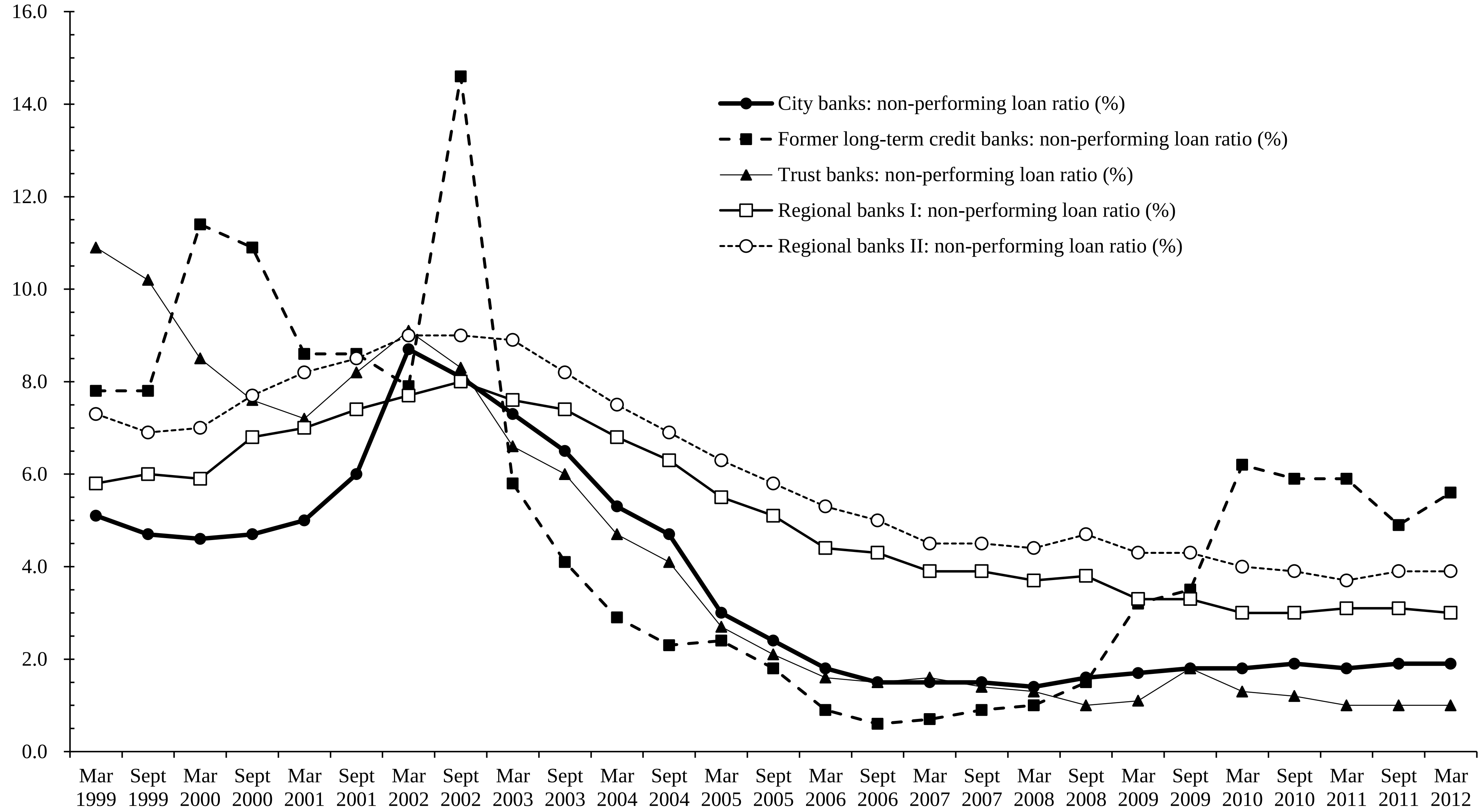
Notes : ***, **, and * respectively denote significance at 1, 5, and 10 percent levels.

Figure 1 Aggregate non-performing loans defined by the Financial Reconstruction Act, 1999–2012.



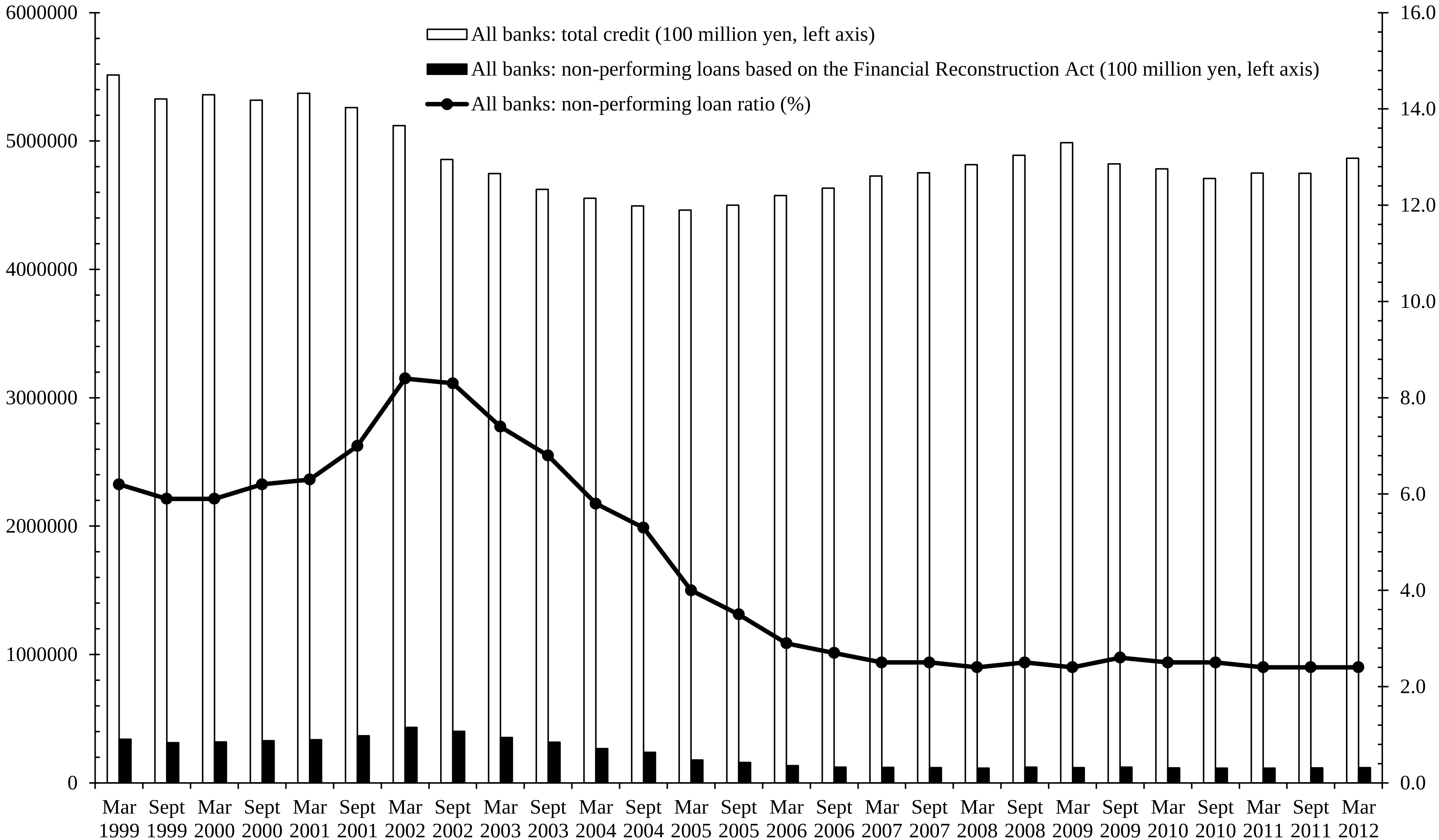
Source: Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2007, pp. 505–507; Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2012, pp. 482–484.

Figure 2 Sectoral non-perfoming loan defined by the Financial Reconstruction Act, 1999–2012.



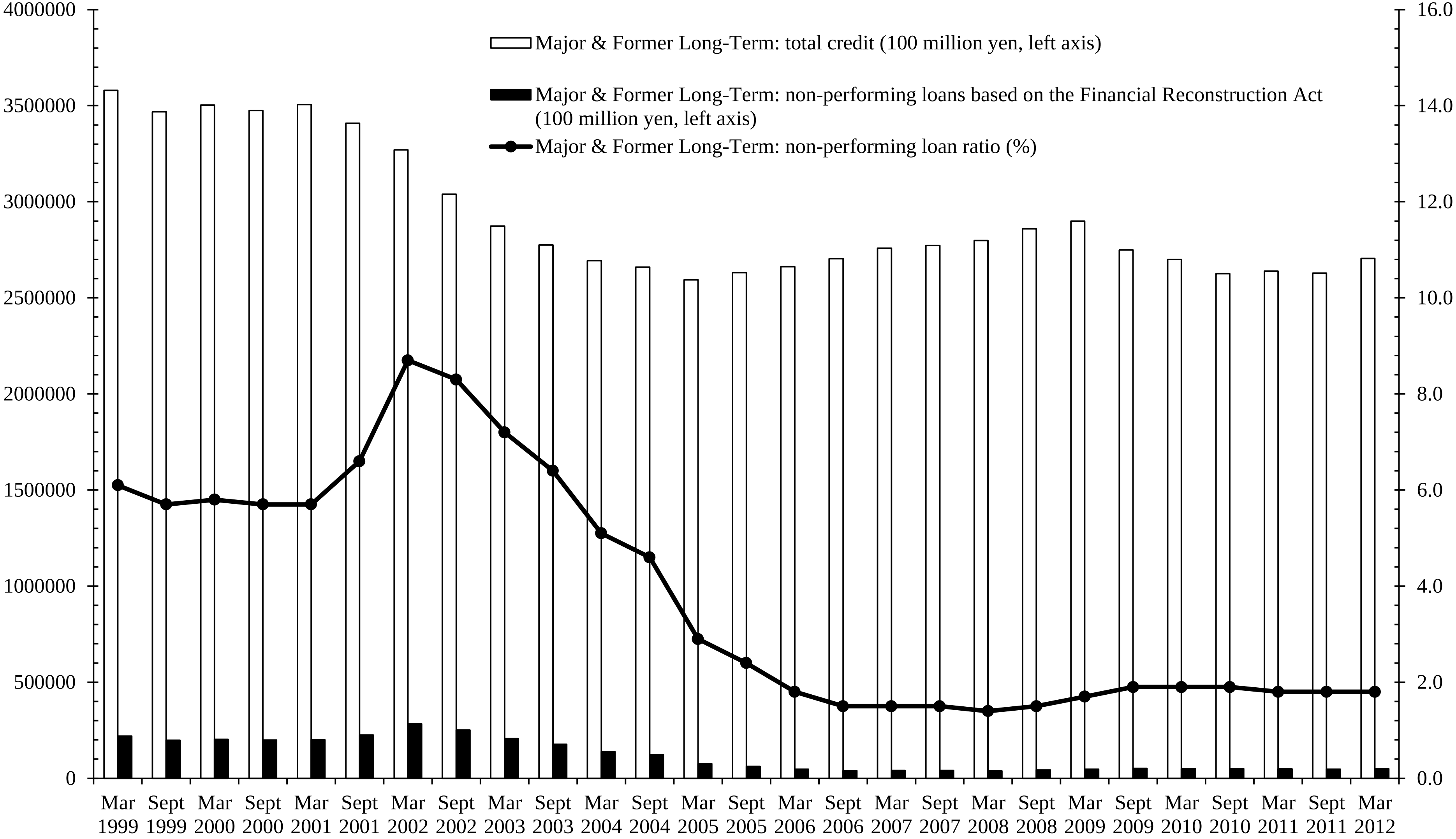
Source: Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2007, pp. 505–507; Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2012, pp. 482–484.

Figure 3 Total credit and non-perfoming loan, 1999–2012



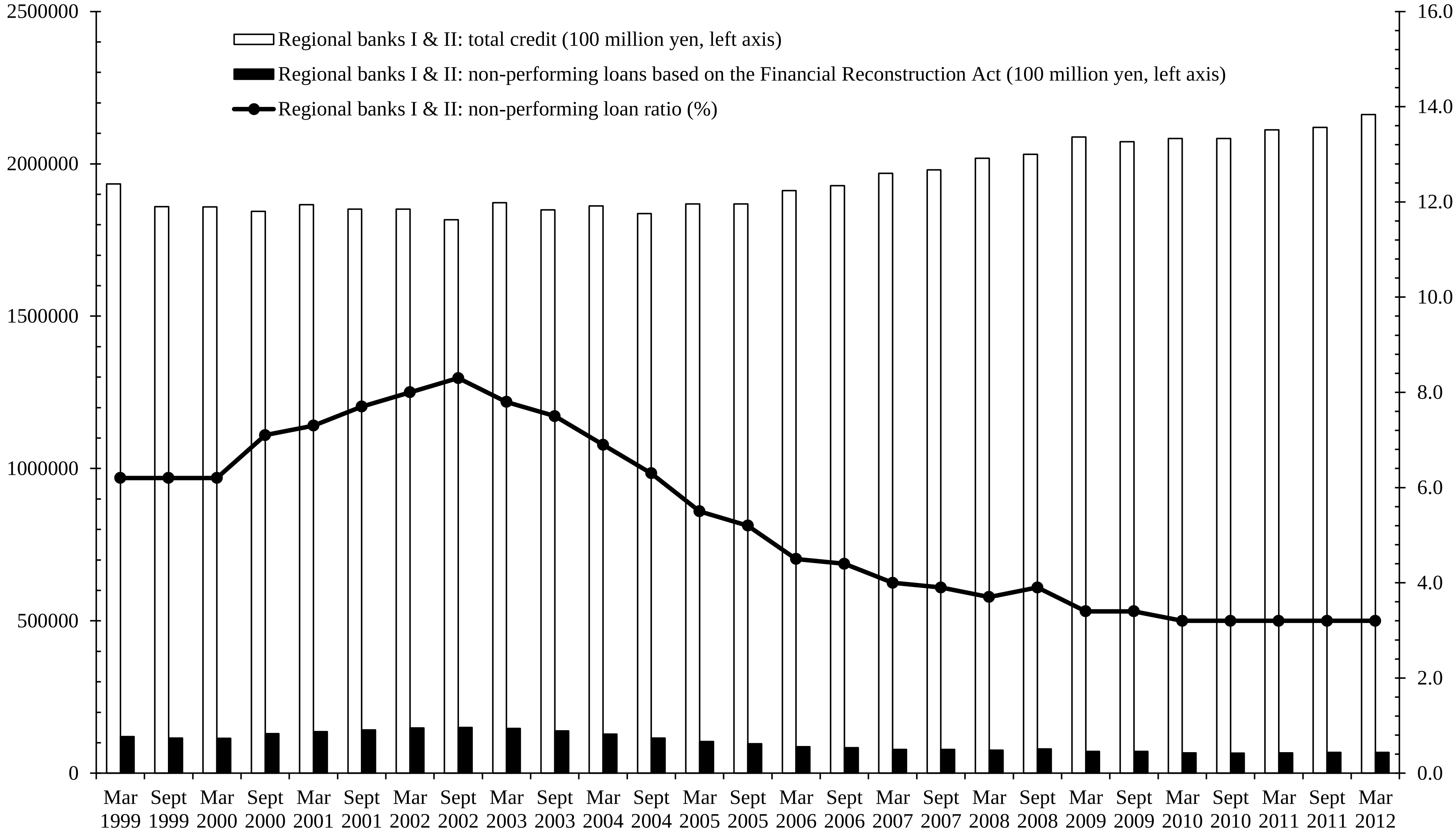
Source: Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2007, pp. 505–507; Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2012, pp. 482–484.

Figure 4 Total credit and non-perfoming loan of major banks, 1999–2012.



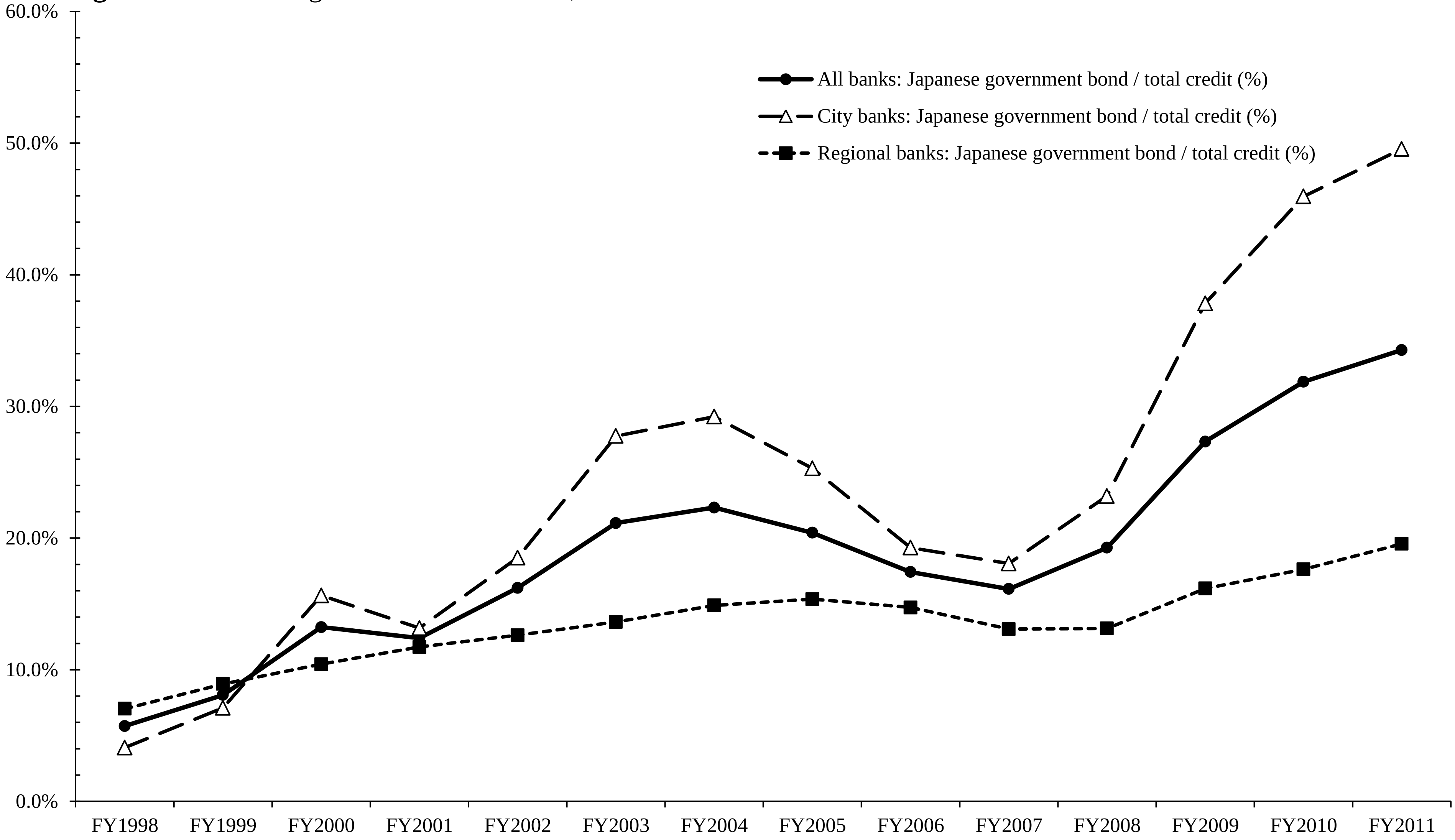
Source: Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency),* 2007, pp. 505–507; Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2012, pp. 482–484.

Figure 5 Total credit and non-perfoming loan of regional banks, 1999–2012



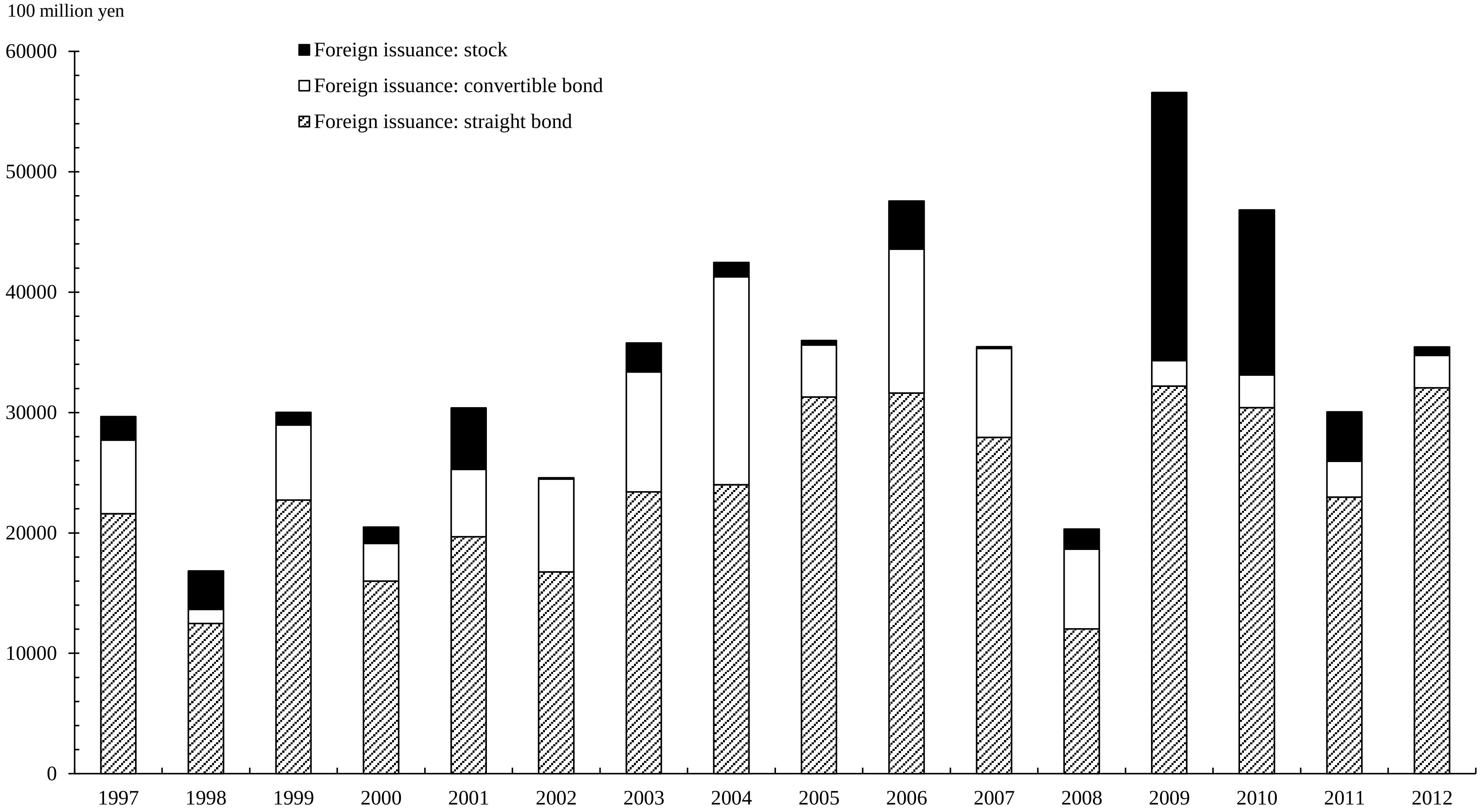
Source: Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2007, pp. 505–507; Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, 2012, pp. 482–484.

Figure 6 JGB holding over total credit ratio, 1998–2011



Source: a) Government bond: Japan Bankers Association, "Zenkoku Ginko Zaimu Shohyo Bunseki (Analysis of Financial Statements of All Banks)," each year. b) Total credit: Financial Services Agency, *Kinyu Cho no 1 Nen (The Annual Report of the Financial Services Agency)*, each year.

Figure 7 Foreign securities issuance, 1997–2012.



Source: Ministry of Finance; the Tokyo Stock Exchange, *Tosho Yoran (Fact Book of the Tokyo Stock Exchange)*; The Japan Securities Dealers Association, *Shokengyo Ho (Security Dealers Report)*.

Notes for Figures 1-5

(a) Figures are rounded to the nearest billion yen. Fiscal years start on April 1 and end on March 31 of the next year.

(b) Figures of the former Long-term Credit Banks of March 2002 include Industrial Bank of Japan, Shinsei Bank, which changed its status to an Ordinary Bank Charter on April 1, 2004, and Aozora Bank, which changed its status to an Ordinary Bank Charter on April 1, 2006.

(c) Major banks consists of city banks and trust banks.

(d) From March 2003 onwards, regional banks includes Saitama Resona Bank.

(e) "All banks" consists of city banks, the former long-term credit banks, trust banks and regional banks (I and II).

See www.fsa.go.jp/en/regulated/npl/20130208/01.pdf for more detail.

Notes for Figure 6

(a) Japanese government bond here does not include trading assets. Fiscal years start on April 1 and end on March 31 of the next year.

(b) Total credit is the sum of securities loaned, foreign exchange, accrued interest, temporary payment and claims to guarantee.

(c) All banks consist of city banks, former long-term credit banks, trust banks, regional banks I and regional banks II.

Regional banks consist of regional banks I and regional banks II.

Notes for Figure 7

(a) Values are converted with the exchange rates on payment date. Unit: 100 million yen.

(b) Years are calendar year from January to December.

(c) Stock here denotes public stock offering. Total amount of all open companies.

(d) Convertible bonds before 2002 include bonds with warrant. Total amount of all open companies.

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