

Banking Systems in Japan and Sweden through 1990's Banking Crisis to the Global Financial Crisis

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INTRODUCTION

As the competition in the financial markets became intense, the banking systems tend to be more vulnerable and face up to high possibility of failures which will cause insolvency of financial institutions and consequent economy contractions. In order to manage the increased risks in the financial system and minimize the negative effect on the banking sector, it's crucial to establish comprehensive regulatory and supervisory framework in a timely manner to resolve the sources of the fragility at the least cost to the economy.

Japan and Sweden are among those countries experienced banking crisis in the 1990s. This paper attempts to highlight the banking systems of Japan and Sweden during their respective local banking crises, analyze the causes of the crises and government actions with respect to each individual crisis in a comparative perspective. The paper will later go on to attempt to compare how each country's individual financial system performed relative to other major developed countries during the post-crisis period and how they performed in the systemic global financial crisis that began in 2007.

The findings of the research showed that the deregulation and liberalization of financial systems caused intense competition and excessive risk-taking behaviour, which caused asset deflation and banking crisis. Unlike Sweden, the delayed resolution of banking crisis and the lack of comprehensive and transparent regulatory regime resulted in a more serious nonperforming loan problem in Japan, leading to deterioration of the Japanese macroeconomic conditions and banking system. Therefore, Japan's financial position underperformed among all the major developed countries while Sweden strengthened its financial positions after the resolutions toward the 1990's banking crisis and also successfully survived from 2008 global financial crisis. As a result, "Swedish model of bank resolution" became popular as can be used as a general template for countries facing financial crisis.

1. MACROECONOMIC AND BANKING SECTOR BACKGROUNDS (PRIOR TO 1990's)

1a. Macroeconomic Background in Japan

The Japanese macroeconomic environment in the second half of the 1980s was characterized by above-trend economic growth and low inflation. The Japanese economy grew at an average annual rate of 5.16% from 1985 to 1989, but undergoing a long period of stagnation in the 1990's (Figure1: Growth Rate of Real GDP). The average annual growth rate of real GDP was 0.8% during 1992-2002 with the stagnation ultimately developing into a local banking crisis in 1997. The rate of inflation during 1989-1991 was low, 2.3% for the GDP deflator and it was far lower during 1992-2002, -0.3% for the GDP deflator (Figure2: Inflation: GDP Deflator).

The Bank of Japan largely adopted an easy monetary policy up until 1989, before shifting to tighter money in the early 1990s as the asset price bubble intensified. The official discount rate was raised five times from 2.5% in 1987 to 6% at the beginning of 1990¹. To some degree, the monetary tightening policy may have led to the collapse of the bubble. After the post-bubble deflationary period began, the Bank of Japan switched to policy easy money, which has largely been maintained thereafter.

Fiscal spending in Japan increased from 32% of GDP in 1991 to 39% in 2000 and the fiscal revenues declined from 34 % of GDP in 1991 to 31% in 2000². During this period, this additional spending was deemed necessary to stimulate the economy, resulting in a budget deficit and hence a proliferation of government debt issuance (Figure 3: Government Budget). The general government gross debt has increased rapidly from 67.5% of current GDP in 1991 to 142.1% of current GDP in 2000 (Figure 4: Government Debt).

¹ An Austrian Challenge to Public Choice Theory: The Case of Japan's Lost Decade, *Jacob Roundtree*

² Public Investment as a Fiscal Stimulus: Evidence from Japan's Regional Spending During the 1990s, *Markus Brückner and Anita Tuladhar*

The positive economic conditions prevailing in the 1980's boosted asset prices and led to rapid credit expansion. Asset prices, mainly tied to the equity markets and land, rose at a considerably faster rate than that of nominal GDP (Figure 5: Asset Price in Japan). Using 1980 as the reference year, the prices of land, including both residential and commercial real estate, continued to rise throughout the 1980s, peaking in 1991 at a level which was three times higher than the prevailing 1980 level two times that of nominal GDP. The stock prices also rose fast in the second half of the 1980s, reaching a peak in 1989 that was close to five times higher than the level of 1980 stock prices and more than three times higher than the level of nominal GDP. However, while the asset price peaked before 1990s, the rate of inflation as measured by CPI remained quite reasonable. This is probably one of the reasons that Japanese government failed to recognize the seriousness of the asset price bubble and may have contributed to the severity of the collapse in asset prices and long period of deflation that followed. After peaking at the end of 1989, equity prices collapsed and fell by over 60% from its peak in December 1989 to the trough in August 1992. While showing some recovery during 1993-1996, the stock prices again declined in 1997-1998. For the real estate prices, after peaking in 1991, land prices fell over 50% by August 1992, losing close to 20% of their value by 1992³.

1b. Banking Sector Conditions in Japan

The Japanese banking sector in the second half of the 1980s experienced a process of financial liberalization and deregulation. Because of the positive stock market, low domestic interest rates, an appreciation of Japanese yen and the deregulation policy, from the late 1980's, Japanese banks expanded aggressively, including greater occupation of foreign financial markets. By 1990, Japanese branches and subsidiaries had increased their commercial and industrial loans in the United States significantly--approximately 18% of total commercial and industrial loans to borrowers located in the United States.⁴ The deregulations also include:

³ Land and Stock prices in Japan, *The Journal of Economic Perspective*, Volume 7, Issue 3 (summer, 1993), 149-165. *Douglas Stone, William T. Ziemba*

⁴ Do Banks Follow Their Customers Abroad, *Daniel E. Nolle and Rama Seth*, 1996

- The relaxation of interest rate controls, starting with the liberalization of term deposits rates; capital market deregulation which including the lifting of the prohibition on short-term euro-yen loans to domestic borrowers beginning in 1984;
- The gradual removal of restrictions on access to the corporate bond markets;
- The establishment of the commercial paper market in 1987.

These developments significantly strengthened the ability of large corporations to borrow directly from the market, increasing the level of bank lending.

Bank lending increased substantially as a result of the expectations of continuous economic growth, easy monetary policy, and the liberalization and deregulation of the banking sector and capital markets. Bank loans were not only concentrated in manufacturing sector but also emerged to be highly concentrated in some non-manufacturing sector with real estate as collateral (Table 1: Bank Loan Concentration (by Sector) in Japan)). Hence, the corporate borrowers in these sectors were more likely to be exposed to risks of declines in the collateral value. In addition, the leverage ratio which was based on the market value of liability and equity for financials and non-financials, both declined throughout the 1980s as stock and land prices increased which is favorable since the default and credit risks in the financial market would be lowered, contributing to more financial flexibilities (Figure 6: Leverage (Market Value) for Japan's Financials and Non-Financials).

1c. Macroeconomic Background in Sweden

The Kingdom of Sweden is a typical country that has been characterized by high welfare and high taxes for over the last 20 years. The GDP annual growth rate achieved 4% in 1982 (Figure 1: Growth Rate of Real GDP). Tax revenue has been rising since 1975, which accounted 40% of GDP and finally achieved 55% of GDP in 1990⁵. Unlike most of the European countries, for instance that France, Spain and Italy establish their economy on financial market, Sweden

⁵ Data source: Sweden Statistics

focused on the real economy-- forestry and auto industry are central industries of the Swedish economy, such as Volvo is a world-famous Swedish brand. Sweden is also an export-oriented country, whose export amount accounted for 30 % GDP in 1990, and kept rising in next 10 years.⁶ Sweden has been a member of the European Union, however it maintains its own currency, the Swedish Krona (SEK).

During the 1980's, Sweden had experienced a decade of higher inflation rates. Sweden's Central Bank, called Riksbank, focused on maintaining price stability with an inflation target of 2%. Sweden's average inflation has been one of the lowest among European countries since the mid-1990s, largely due to the tightened fiscal policy after the crisis (Figure 2: Inflation: GDP Deflator).

Sweden went through a financial market deregulation to stimulate the economy in early 1980s, also Sweden applied expansionary fiscal and monetary policy. The government itself increased its budget deficit since 1980s, pushing up the prices of the government securities (Figure 3: Government Budget). And the 3-month treasury interest rate, 8.2%, dropped to the historical low level since 1980 (Figure 11: Sweden Interest Rate). Due to the expansionary policies, from 1987 to 1990, the asset price boosted: the average residual housing price increased 61.2%, while the average commercial housing price grew 78.4%, and in 1990, the price went up 36% within one year.⁷

1d Banking Sector Conditions in Sweden

The Swedish banking system started to deregulate during the mid-1980's similar to Japan's. Prior to the period of deregulation, Swedish banks and other financial institutions were restricted by "lending ceilings", applied mainly to lending for "low priority" purposes, such as

⁶ Data source: Sweden Statistics

⁷ Data source: Riksbank

real estate. Banks were required to hold at least 50% of the bank assets in government bonds.⁸ Under that circumstance, banks were not liquid enough to operate certain business.

Driven by the global financial liberalization and domestic market demand, Sweden adopted the deregulation policy to the financial market in mid 1980's. During the period from 1983 to 1985, the requirements that forced Swedish banks to buy government bonds along with the "lending ceiling" were abolished. Barriers to entry in the financial markets were reduced and the exchange rate policy and tax policy government used were eased. Interest rates were low at that time, 8.1%. The deregulation mainly aimed to open the market and encourage competition between banks and other financial institutions. Since the market was more open than before, it was much easier and less costly for companies to issues commercial papers.

⁸ *Peter Englund, The Swedish Banking Crisis: Roots and Consequences*

2. CAUSES AND DEVELOPMENTS OF THE 1990's BANKING CRISIS

2a. JAPAN

The most significant cause of the Japanese banking sector crisis during the 1990's in Japan was the collapse of the asset price bubble and the resulting extended period of asset price deflation, which led to an increase in the number of non-performing loans (NPLs) held by Japanese banks. The lack of a comprehensive and sophisticated regulatory and supervisory framework as well as delays in policy action to address the banking problems at an early stage contributed to the later development and elevation of the banking sector crisis.

2a1. Overextension of Bank Loans during the Bubble Period

Financial liberalization in the 1980s allowed small financial institutions to explore in new areas, for example non-financial institutions funding housing finance companies, such as *Jusen* and some real estate investment. This situation as well as the deregulation discussed previously, led to intense competition among financial institutions. The interest rate spread was almost zero in the early 1990s and fluctuated below zero until 1997 (Figure 7: Interest rate Spread). In order to maintain the profitability, Japanese banks put more weights on riskier lending, such as consumer loans and real estate loans, where the regulatory and supervisory framework proved to be inadequate.

Deregulation of the capital markets induced major banks to channel their loans towards those firms, which had limited access to domestic and international capital markets. As a result, the composition of bank clients changed from manufacturing to non-manufacturing firms as shown in the (Table1: Bank Loan Concentration (by Sector) in Japan)). Moreover the banking loans to the non-manufacturing firms tended to be concentrated in the construction, wholesales trade, finance and insurance and real estate sectors. Unlike those in the manufacturing sector, these

banking loans are stimulated by the market competition and hence, they had been riskier, less efficient and less productive.

Lastly as a result of rising asset prices characterized by the asset price bubble, both banks and borrower firms' had expectations of high economic growth, allowing a further extension of credit to of housing finance companies. Additionally, the increasing collateral-based lending, which guaranteed loans in a more secured way, lessened banks' incentives to monitor borrower firms closely.

2a2. Severe Negative Impact of Asset Price Deflation

The bubble burst once the authorities sharply tightened their monetary policy by raising the interest rate from 1987 and introducing credit ceilings on real estate-related bank loans in 1990-1991. The collapse of the asset price bubble created substantial losses to the firms that held equities on hand due to the sudden and sharp drop in stock prices. Land price deflation in particular has eroded the collateral value of bank loans throughout the 1990s. As a result, many construction and real estate companies were virtually or even actually bankrupt since the market value of real estate owned had decreased below the purchase values. The fact that more and more companies began to encounter trouble making interest payments on their bank loans transformed the overextended loans into non-performing loans (NPLs). Japanese bank NPL ratios sharply rose from the spring of 1995 and remained a high level up until the end of 2001.⁹

The failure of Toho Sogo Bank in 1991 (213 billion Yen in assets)¹⁰ was the first bank failure in the stagnation period in Japan. In 1994 and 1995, failures of small financial institutions accelerated. Additionally, commercial banks became more and more reluctant to issue loans to corporate borrowers and even began withdrawing loans from their corporate borrowers.

⁹ Financial Services Agency, Government of Japan, website.

¹⁰ Is the Distance to default a Good Measures in Predicting Bank Failure? A case Study of Japanese Major banks, *Kimie Harada, Takatoshi Ito, shuhej, Takahashi*, 2012

Corporate borrowers had been the smallest group compared to government and households borrowers until 2006, showing this prolonged negative effect from this period of deflation¹¹.

2a3. Delayed Policy Response

The financial regulators did not address the problems in the banking systems in the beginning of the 1992 stagnation. The regulators believed that a resumption of economic growth would restore financial health of banks and other firms, along with the fact that the economic conditions were not expected to be as severe as what was eventually experienced: the growth rate of real GDP slightly recovered during 1992 to 1996, unemployment and inflation were low, and foreign exchange reserves remained high. , Thus, regulators failed to adopt a sophisticated and proactive approach to solve the problems in the banking systems until after they faced up to the 1997-1998 systemic crises.

The absence of adequate safety nets and legal frameworks for dealing with insolvent institutions, and the historical focus on the maintenance of sound bank-firm relationships prevented the financial authorities from quickly resolving the balance sheet problems in commercial banks. The delay and lack of decisive regulatory actions in the mid 1990's transformed the economic stagnation into banking panic and systemic crisis in 1997-1998.

2b. SWEDEN

Similar to Japan, the main factor that drove the boom-bust, which ended in the banking crisis, can be traced to the process of financial liberalization.

2b1. Product of Deregulation: Credit Expansion

¹¹ Loans to Japanese Borrowers, David C. Smith, 2003

After deregulation, competition between banks and other institutions grew more intense. The competition for market share was characterised by an increasing in the offering loans to households and firms. Most non-bank finance companies had an advantage in activities such as leasing, factoring, and credit cards into direct lending. These non-bank finance companies obtained more degrees of freedom from regulation than banks did. After deregulation, banks now entered into higher risk markets, which were previously in the domain of the non-bank finance companies. Unable to receive deposits or to issue bonds, finance companies primarily financed themselves through direct borrowing from banks and issuing “company investment certificates” (another form of commercial paper), which were typically guaranteed by banks. This added an additional layer of credit risk to the banking system.

After over ten years of non-price credit rationing, when the interest rate was below 5%, which was lowest level since 1980s, more and more people and companies were willing to borrow and invest so that the leverage ratio increased. It is obvious that all actors took higher risks than before, making the financial market vulnerable.

Further fuelling the increased tolerance for risk was arising inflation and a tax system that encouraged borrowing. In 1982, Sweden’s tax policy was reformed such that interest expense tax was not to exceed 50% of interest expense. Since the marginal tax rate had been as high as 70%, the policy change meant that the lending costs were reduced by one half. The change in tax policy spurred excessive borrowing and increased investment in real estate.¹²

As a result, bank loans increased 136% from 1986 to 1990. The lending boom that began mid-1980s, started to drive prices in the asset markets, namely housing and commercial real estate, higher. More credit was provided by financial institutions, as opposed to directly between firms, via trade credits, and between households. Loans were also increasingly used for high-leverage financial investments. These effects on financial flows, via their impact on asset prices, sowed the seeds of the banking crisis.

¹² James K. Jackson, US Crisis: Lesson from Sweden, P2

2b2. Asset Price Deflation

Asset price deflation emerged when the value of real assets was reduced by rising real interest rates. (Figure 16: Price Index for Prime Location Stockholm Non-residential Real Estate). This sharp increase in the real interest rate negatively impacted the real estate financial markets. The real estate market contracted rapidly with the prices of residential housing and commercial real estate dropped 20% and 50% respectively in three years. The evaporation of the market value of real estate directly hurt the stock market and the commercial paper market. The Stockholm 30 Index went down 300 points. With commercial real estate occupancy rates falling, the equity prices for both the real estate and construction sector companies fell hard.

3. BANKING CRISIS AND REGULATION IN 1990's

3a. JAPAN

3a1. The Japanese banking crisis from 1991 to 1998

Timeline of the banking crisis developments are as follows:

1991-1997	Lost Decade
1997-1998	Systemic Banking Crises
1998-2001	Decisive Policy Action
2002-2005	Recovery

The economy and financial sectors suffered losses gradually from the economic stagnation in 1991 to 1997: The fall in Japanese stock prices with the index losing 63% of its value in the late 1989 to early 1992 period, caused a dramatic decline in Tier 2 capital of Japanese banks. According to Japanese accounting practices, 45% of unrealized profits on investment securities are counted for Tier 2 capital, given that Japanese banks hold almost 20% of Japanese common stocks. Hence, the value of this portion of Tier 2 capital shrunk as stock prices fell. Similarly, because real estate served as collaterals for most bank loans, the decline in real estate prices increased problematic loans, which put more pressure on banks' capital ratios. In 1990, the total risk-based capital ratios of major Japanese banks fell temporarily below the minimum requirement of 8%. Overall, the aggregate capital ratio declined by almost 1% over one year period from 1994¹³.

The decline in leverage ratios in banking sectors was reversed in the 1990s in response to the collapse in asset prices and to increased bad loan write-offs (reduced equity in the balance sheet). This increase in leverage was unintentional as participants in both financial and non-

¹³ International Monetary fund: Staff Country Report: Japan

financial sectors were still attempting to deleverage. As banks sold their equity holdings in large amounts in late 1990 to 1991 and the period between 1996 and 2006, the resulting sharp increase in leverage for banking sector implied a corresponding decline in capital ratios, which constrained banks' risk taking behavior severely. It had been a very long deleveraging process since the leverage ratio finally started to decrease in the early 2000s for financials.

As an increasing number of companies defaulted on their debts, banks suffered from huge losses from nonperforming loans and therefore forced banks to cut back on lending. The credit crunch in turn caused a contraction in the real economy afterwards. The annual real GDP growth rate became negative from 1992-1993 and fluctuated around zero thereafter, until reached the historical lowest level after 1998 (Figure1: Growth Rate of Real GDP). From 1997 to 1998, the economic stagnation officially transformed to the systemic Banking Crisis. Three large banks—Hokkaido Takushoku (bad debts amounted to 13.4% of total bank lending in March 1997), Long-term Credit¹⁴, and Nippon Credit (debt amounted approximately to 270 billion yen as of 1998) failed, and other banks were also suffering from declining capital. As a result, the economy fell into a long period of deflation ever since the banking crisis in 1997.

Up until the systemic banking crisis caused severe negative effect on Japan's economy and banking sector, government eventually started to take decisive actions such as recognize and dispose nonperforming loans, inject more public fund into banking sector, establish formal and comprehensive government safety net framework and reorganize banking sector, all of which will be discussed in the following sections individually.

3a2. A. 2 Government safety net framework: Deposit Insurance

Japan did not have any formal deposit insurance until 1971, and the Deposit Insurance Corporation (DIC) created then has never been used directly to pay off depositors of a failed

¹⁴ LTCB was purchased by an investment partnership, consisting of a consortium of foreign banks led by Ripplewood Holdings, for 1 billion yen (12,725 million USD) in March 2000

institution. Before 1990s, the Ministry of Finance (MOF) and the Bank of Japan (BOJ), which provided implicit blanket protection of deposits through public confidence in order to avoid major financial instability, constituted the most major safety net in this framework. In the event of a bank faces huge insolvent issues, the MOF encouraged the “good” banks to absorb the “troubled” banks through informal bank purchase and assumption transactions. In this process, the MOF allowed some regulatory forbearance and the BOJ provided emergency liquidity assistance to prevent bank panic. However, the implicit safety net only functioned well in a favorable economic environment. From 1990s economic stagnation and subsequent banking crisis, it was difficult to persuade “good” banks to be involved in bailout operations with the “troubled” bank because even those “good” banks suffered significant losses in their balance sheets. For example, the major shareholders of Hokkaido Takushoku Bank, Yamaichi Securities and Sanyo Securities and other relatively good banks refused to provide assistance at the time of crisis.

A series of policy missteps during the bubble period seriously eroded the credibility of the financial regulators that was so crucial to the operation of the informal safety net. Therefore, the informal safety net was stretched in the early 1990s, leading to a series of deviations from the old regulatory interventions in banking crisis. In the first half of the 1990s, resolution techniques became more highly institutionalized, involving the use of specialized public entities to recover nonperforming loans.

In 1996 legislation was put in place to decrease regulatory discretion with ailing financial firms, increase market discipline and take action in a timely manner. Banks were required to engage in regularly periodic self-assessment of capital and in the external audit. When a bank’s capital ratio declined beyond certain benchmarks, a newly established Financial Supervisory Agency is required to undertake increasingly strict actions to minimize the risk. In addition, authority are required to initiate corporate reorganization or bankruptcy procedures with respect to financial institutions to deal with insolvencies in a more formal and timely manner.

The structure of DIC was further strengthened by amendments to the Deposit Insurance Law in early 1998. DIC now is expected to play a much more central role in resolving financial institutions' failures than in the past. With the creation of a committee to investigate liability in associate with bank failures and a 17 trillion yen (216,326 million USD) appropriation for deposit protection, DIC's capacity to collect and take over the nonperforming loans was enhanced.

Two packages of legislation were introduced in late 1998 that significantly redesigned the governance of bank failure in Japan. Under the first package, a formally independent Financial Revitalization Commission is established to identify insolvent banks based on Financial Supervisory Agency (FSA) examinations and select an appropriate resolution method from regulations and laws. Moreover, procedural improvements were made to recover nonperforming loans and streamline the debt collection, auction, and asset liquidation processes. The second one provides a framework for the recapitalization of distressed banks. The comprehensive deposit insurance systems had been maintained until 2003 and the banking system recovered because of the well-capitalized fund injection to the financial sector through DIC which will be discussed in the next section.

3a3. A. 3 Public Funds Injection and Recapitalization

During the “lost decade”, government action proved indecisive and ineffective at restoring and maintaining financial stability. In 1995–1996, the government injected JPY680 billion to deal with *jusen*, non-financial housing loan companies. The government was heavily criticized for bailing out the non-bank financial institutions because non-bank housing companies, *jusen* were less strictly regulated, and thus more aggressive in their lending to real estate related small businesses than larger commercial banks during the asset price bubble period. This move was the first time public funds were used directly to recapitalize the Japanese financial sector; this proved unpopular politically and from then, the government was hesitant to repeat its actions.

The Japanese stock market and real estate bubbles popped in 1991, yet Japan's financial sector was not meaningfully re-capitalized until after the wave of large financial institution failures in 1997. As a result of these large high profile bank failures, the government declared that Deposit Insurance Corporation would receive up to 30 trillion yen (381,752 million USD)¹⁵ of public money, including 13 trillion yen (165,426 million USD) to bolster bank balance sheets and 17 trillion (216,326 million USD) to reinforce the DIC system as discussed in the prior part. The Financial Supervisory Agency (FSA) and the Financial Reconstruction Commission were created. In March 1998, the government injected additional public resources to recapitalize 21 commercial banks, including all city banks, for a total amount of 1.82 trillion yen (23,160 million USD), and in March 1999, a total of 7.5 trillion yen (95,438 million USD) into 15 major banks, of which all city banks with the exception of the Bank of Tokyo Mitsubishi received 5.4 trillion yen (68,715 million USD) (Table 2: Public Capital Injection into the Banking System of Japan). Banks increased capital by issuing preferred stocks and subordinated debentures, rarely through issue common equity, or they were also encouraged to raise capital privately from markets. Most of the firms were not nationalized in this period since the public funds merely injected into preferred stocks. Consequently, despite the negative impact on bank capital of sizable loan write-offs and loan loss provisions, the risk-based capital ratios of Japanese banks were raised by 1 to 2% by 1999 as a result (Table 3).

In the Recovery period, all city banks began restructuring after they received public funds for recapitalization under the FSA's instructions. In fact the public fund injection has helped to resolve bad loan problems of the bubble period. But as mentioned before the challenge for Japanese banks could be the emerging new NPLs throughout the systemic bank crisis period and the recovery period as a result of the new corporate bankruptcies especially among the small and medium size enterprises.

¹⁵ All Japanese yen are translated into USD at the current exchange rate (Aug 27, 2012): 1 US dollar = 78.585 Japanese yen

3a4. A. 4 Non-Performing Loans problems and government's action

During the period 1992 to 1995, the NPLs problem became worse and the balance sheet of banks and their clients were severely deteriorating.

The regulators and governments avoided to recognize of bank NPLs in the lost decade period because they feared that losses would become apparent and falsely believed that the real estate market would rebound soon. However, the crisis, which developed into 1997-1998 banking sector crises, forced them to examine the soundness of balance sheet of the individual banks. The Ministry of Finance identified the total amount of NPLs for major banks as of March 1998 to be 22 trillion yen (279,952 million USD). The newly established Financial Supervisory Agency, together with the Bank of Japan, recognized the total amount of NPLs for all deposit taking institutions as of March 1999 to be 39 trillion yen (496,278 million USD). However, these inspections were based on self-assessment by banks and the later inspections prove that most banks underreported NPLs and write-offs in this practice.

The Financial Services Agency (FSA) launched special audits of bank loans for the period 2001 to 2002. The inspection was limited to large borrowers whose share prices and credit ratings had been deteriorated rapidly. This process resulted in inspections of loans to 149 companies, and a quarter of the loans examined were reclassified to bad loans. This led to a dramatic change in loan classifications by the banks in 2001, with the value of NPLs rising by more than 29.3% from 32.5 trillion yen (413,565 million USD) in 2000 to 42.0 trillion yen (534,453 million USD) in 2001 (Table 3: Non-performing Loans in the 1990's in Japan).

Commercial banks have been addressing NPL problems from the beginning of the lost decade and have accelerated the pace of disposal in the Decision Policy action period. Banks have disposed of close to 90 trillion yen (1,145,257 million USD), 17% of 2002 GDP, in the last ten years. Because of the crisis had eroded the real economic conditions continuously, new NPLs emerged especially in the second half of the 1990s and in turn slowed down the pace of net

reduction of bank NPLs. Banks were to remove 50% of new NPLs within one year and 80% within two years, with a target of reducing the proportion of major banks' NPLs by half by March 2005 from its level of 8.6% in March 2002. However, no target has been set for regional banks. Nonetheless, the ratio of NPLs to total loans started declining from March 2003 and maintained a relatively low level through the following years (Figure 8: Bank Nonperforming Loans Ratio after the Crisis).

3a5. Banks Consolidation Strategy and Regulatory and Supervisory Framework

Motivated by distress, large Japanese banks have engaged in a series of defensive mergers. In April 1996, the then-largest Bank of Tokyo-Mitsubishi was created through a merger of Mitsubishi Bank and the Bank of Tokyo with the total consolidated asset portfolio of 96 trillion yen as of March 2003. The largest group is Mizuho Financial Group (MHFG) with a consolidated asset portfolio of 134 trillion yen as of March 2003, accounting for close to 20% of the total asset portfolio of all domestically licensed banks. (Table 4: Banking Groups and Consolidation Assets in Japan). The total asset portfolio value of Mizuho Financial Group is 166 trillion yen as of March 31, 2011¹⁶, which held the second largest asset portfolio among the big four Megabanks in Japan (The total asset portfolio as of March 31, 2011 for the other Megabanks: Mitsubishi UFJ Financial Group: 206 trillion yen; Sumitomo Mitsui Financial Group, Inc. and Subsidiaries: 138 trillion yen; Nomura Holdings, Inc. 37 trillion yen)¹⁷.

A system of prudential norms has been strengthened in three ways: loan classification and loan loss provisioning have been tightened, capital adequacy ratio embraces international risks, and strong corrective actions and comprehensive deposit insurance was in place.

The loan classification and loan loss provisioning have been tightened, based on the October 2002 Program for Financial Revival, classify loans to large “special attention” and “in danger of bankruptcy” borrowers. However, these tighter requirements have been imposed only on

¹⁶ Financial Statement for Fiscal 2011 (under US GAAP), Mizuho Financial Group, Inc. (MHFG).

¹⁷ Individual 2011 Financial Statement of individual Megabanks in Japan

major banks, and not on regional banks. On the other hand, upon receiving public capital in May 2003, Resona Holdings adopted greater loan loss provisioning. As a result, there are currently triple standards for loan loss provisioning, for example, very tight standard adopted by Resona, a relatively tight standard adopted by other major banks, and a less stringent standard applied to regional banks. The capital adequacy ratio for domestic banks is 4% compared to the Basel Accord of 8%. According to the report from FSA, it recommended that all banks should achieve 8% capital adequacy ratios and that the inclusion of deferred tax credits in regulatory bank capital should be limited. The comprehensive deposit insurance was put in place in June 1995 and maintained until March 2001.

3b. SWEDEN

3b.1 The Swedish Banking Crisis from 1991 to 1993

Timeline of the banking crisis developments are as follows:

1990	Real estates bubble bust
1991	Banking Crisis
1992	Government bailout
1994	Recovery

In the fall of 1990s, Sweden experienced an economic downturn, which was not expected by the public. The GDP annual growth rate fell to 0%, the inflation rate was as high as 9%. The occupancy rates had fallen, pushing down the price of stocks for both the real estate and construction sectors. The real estate bubbles, driven by a rapid increase in lending, collapsed. From then on, the GDP and the unemployment rate dropped. The financial chain was broken as an increasing number of banks and financial institutions claimed fail. The 1990s Swedish Financial Crisis had formed in 1991.

From 1987 to 1990, the average residual housing price increased 61.2%¹⁸, while the average commercial housing price grew 78.4%, and in 1990, the price went up 36% with one single year. The real estate market shrunk rapidly in the next three years. The prices of residual housing and commercial real estate dropped 20% and 50% respectively in three years. In 1991, the prices of Stockholm downtown real estates fall by 36% on average. The real estate market was in panic. The evaporation of the market value of real estate directly hurt the stock market, the commercial paper market. The Stockholm 30 Index went down 300 points. Inevitably, banks and other financial institutions are harmed. Research showed that between 1990 and 1993 banks lost 17% of loans, 46% of which were related to real estates. The deregulation in 1980s greatly changed the behaviour pattern of financial institutions. For example, the intense competition between banks and other financial companies made banks lost their original household deposit market so that banks had to borrow money from a third part. Under the new situation, the connections of assets and debts among financial institutions were much closer than they were before the deregulation, which means there were more systemic risks in the market.

Nyckeln¹⁹, owned by 2 of 6 largest banks in Sweden, was one of the financial companies that developed rapidly after deregulation. The main business of Nyckeln was commercial real estate financing. Through the issuance a type of commercial paper known as *marknadsbevis* (“company investment certificates”), Nyckeln became a primary agent of the real estate financing chain. Rather than receiving deposits or issuing bonds, Nyckeln partly financed by direct borrowing from banks and partly by issuing *marknadsbevis*, which were normally guaranteed by banks. In 1991, Nyckeln, with heavy exposure to real estate, found itself unable to roll over maturing *marknadsbevis*. This was a sort of ‘run’; rather than actively running to the bank and withdrawing deposits, previous holders of *marknadsbevis*, otherwise routinely reinvesting, now refused renewed funding, in order to secure their investment in the face of an imminent bankruptcy. When the prices of real estate stopped going up, the value of its pledged collateral fell, and Nyckeln was unable to refinance its debt. In October 3, 1990, Nyckeln

¹⁸ Xuefeng Wang, The Swedish Crisis in 1987 to 1993: The Real Estate Bubble and the Unsafety of Finance

¹⁹ Peter Englund, The Swedish Banking Crisis: Roots and Consequences

suspended all its payments due to financial difficulties, which then resulted in the suspension of its shares traded on the Stockholm stock exchange. It was announced that Nyckeln got 45.09 million USD ²⁰ liabilities on the balance sheet. Hence, Nyckeln claimed insolvent and went bankruptcy.

Gota bank, one of the six biggest bank in 1980s, had the highest rate of lending increasing 102% from 1985 to 1988, compared with 77% of the rest 5 major banks on average. Also, Gota got the highest real estate lending rate of 16% in 1990, while the other 5 major banks got 11.4% on average. For Gota Bank, the owner raised new capital in 1992, but still, in September Gota Bank had insolvency problem and claimed bankruptcy. Until then, in 1991, the Swedish government officially treated the bank failures as a crisis.

As previously mentioned before, Sweden's commercial paper market was Europe's third largest after UK and Denmark at the time. The seizure in the commercial paper market quickly spread to the rest of the financial markets. Nyckeln's troubles directly impacted the operations of another 2 major banks of Sweden, Första Sparbanken and Nordbanken as they couldn't fulfill their required capital rate because they take write downs due to the direct exposure to real estates and indirect exposure to commercial paper market. Other non-bank financial companies faced the same insolvency problems. With the commercial paper market frozen, banks became the lenders of last resort for these companies. In 1992, the interest rate was abnormally high, 22%. Those yet survived financial companies soon faced the same insolvency problem. Since the commercial paper market was almost shut down, those financial companies turned to bank for last resort. Now the newest situation was that, banks still lending money to these financial companies, with higher interest rates and higher risk. Therefore, whole banking system was facing higher level of credit risk and further stress on the profitability

This is how the banks eventually get themselves into the crisis. It's like a vicious cycle that banks lent money to financial companies, after that financial companies issued commercial papers.

²⁰ SEK: USD = 1: 0.1503. All SEK are turned into USD with this exchange rate through the thesis.

When the real estate bubble bust, the value of the commercial paper dropped. Consequently, these financial companies that largely exposure to real estate had insolvency problem, and then suspend the payment to the banks. Eventually, bad loans were left to banks. At the end, banks could get the real estate collaterals with very low market value, but no payments cash-inflow.

3b2. Public Funds Injection and Government Takeover

In the early stage of the crisis, the government, the major owner, injected 631 million US dollars to Nordbanken as new equity, and in 1992, issued a new guarantee to Första Sparbanken. The guarantee included all forms of bank debt, not only deposits, meaning that the government took over the bank in this form. As Sweden had no formal deposit insurance at the time of its crisis, the Swedish government was forced to immediately guarantee Gota's obligations, except its equity. Several weeks later, all the other major banks' debt was guaranteed by the government in the same way.

Unlike the ultimate response of the Japanese government to its banking crisis, Sweden's government declined to inject money directly to compensate the shareholders of the failed banks.

3b3. Non-Performing Loans Problems and Government's Action

The central bank realized that the resolution to NPLs problems were the major issues in quickly resolving the banking crisis, hence they made the move to establish two financial companies, Securum and Bankstödsnämnden, which were to manage the non-performing loans of troubled banks.

In 1992, all non-performing loans were stripped out of the original banks, and centralized and managed by Securum, which was owned by the government and exempt of certain regulations.

Over 25% of the Nordbanken's credit stock, value at 10.07 billion USD, was transferred to Securum at its original face value. After separating the bad loans, the Government inject 9.80 billion USD in total as the new equity to the original banks to help the reconstruction of banks. For those impaired banks, the balance sheets had significant changes that the liabilities went down greatly and the equities went up significantly. Table 5 reveals the exact amount of SEK that government paid for ejecting new equities and bailout to each bank.

In 1993, Bankstödsnämnden was established with the main purpose to re-assess the value of the separated non-performing loans. It performed the detailed analysis and evaluations of credit portfolios and the recovery prospects for each individual bank. After negotiation, the specifics of the required capital guarantee were agreed upon with the Swedish government promising to invest in new equity contingent upon of the newly recapitalized bank maintaining a capital ratio below 9%. This was to be combined with an option for other shareholders to repurchase the shares before 1998.

After Bankstödsnämnden completed its re-assessment of the value of non-performing loan portfolios, Securum was charged with disposition and maximizing the recovery effort. Moreover, if a financial company went bankruptcy, Securum took over the collateral assets of other financial companies that went bankrupt thereafter. From 1995 to 1996, Securum repackaged the remaining assets, and sold through various channels including by corporate transactions, individual property transactions, or listing shares on the Stockholm exchange, in order to achieve best prices. All gains from dispositions of this manner were returned to Swedish taxpayers and the crisis was resolved relatively quickly.

3c. Summary of the Two 1990's Banking Crisis

It's worth mentioning that the Sweden government reacted quite quickly and effectively toward the crisis and it never took more than one month from recognizing the problems to actually installing plan. The efficiency can be credited to broad political support for resolving

the crisis that existed. Compared to the Japanese banking crisis, Sweden's crisis was short-lived. It happened and deteriorated from 1991, after the bailout in 1992, the economy and banking systems already showed the sign of recovery in 1994, with the GDP flat-upward increasing and the unemployment dropped for the first time since 1990. For Japan, the economy showed a sign of recovery from 2002 after almost ten-year stagnation. The after-tax return on equity was negative 30% during the 1997 -1998 banking crisis and fluctuate below zero in the following five years after the crisis (Figure 10: ROE(%) for Japanese Major banks)²¹). However, Sweden got the second highest ROA in 1996, after the recovery from the banking crisis, right after UK.

Additionally, the net costs of resolving the crisis to taxpayers of Sweden amounted to approximately 2% of GDP, 35 billion SEK (5.23 US billion dollars), which is limited to the direct impact on the taxpayers. Shareholders benefited as the newly capitalized banks returned to profitability when financial markets ultimately recovered. However, the costs of Japan to resolve the crisis are approximately 60 times of the cost of Sweden. The total public injections into the banking system through DIC system were 47.1 trillion yen (600 billion USD), among which only 25.1 trillion yen (320 billion USD) was recovered as of September 2008.²² The sunk costs to Japanese economy, cumulative losses in three years after the banking crisis, were almost 18% of GDP. The significantly high cost for resolving crisis in Japan was a result of decade long economic stagnation, caused by delays in policy installation and lack of effective regulatory and supervisory framework.

In summary, Sweden's government largely resolved its banking crisis soon after implementing actions and policies with a lower cost to stabilize the financial system, which proved far more effective and efficient than that of the Japanese government.

²¹ "Major banks, etc" include major banks, Norinchukin Bank, Shinsei Bank, Aozora Bank, Citibank Japan, banks of a new type, foreign trust banks, and others.

²² *Luc Laeven and Fabian Valencia* , Systemic Banking Crises: A New Database

3d. Comparative Analysis with Major Developed Countries

Financial crises can be damaging and prolonged, prompting calls for swift policy responses. Due to the various policy responses, some crises turned out into the deep deflation, causing severe credit contraction and economic decline and then losing its ability to compete with its counterparties during a long post-crisis period. However for some other countries, the strong and swift responses eliminated negative effects in a timely manner and even strengthened its banking system and economy among the worldwide.

In order to discuss whether the 1990's banking crisis undermined or strengthened Japan and Sweden's financial position in the worldwide, 19 major developed countries, including Japan and Sweden, are introduced for the comparative analysis: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States, among which Norway and Spain also experienced local banking crisis in 1991 and 1977 respectively.

As indicated in the Table of Comparative Analysis with Major Developed Countries, Sweden showed a strong financial position among the major developed countries referenced in this paper. Over six years after the 1990's banking crisis in Sweden, the bank capital ratio is maintained above or close to the average level of major developed countries. However in contrast the bank capital ratio in Japan is generally lower than the average level of developed countries and far lower than that of Sweden.

A large amount of nonperforming loans, as one of the major issues in 1990's local crisis, largely disappeared from Swedish banks' balance sheets right after the crisis ended and rarely eroding banking capital ever since the post-crisis period. On the contrary, the nonperforming loans to total gross loans ratio in Sweden are merely less than half of the level of developed countries. It's worth mentioning that the initiative measures took by Swedish government towards the nonperforming loans problems turned this problematic situation to its strengths to some degree: Sweden became worldwide known as being one of the countries holding the lowest

bad debts after the 1990's banking crisis.

The market capitalization of listed companies as percentage of GDP in Sweden banking sector remain quite stable and significantly above the equal weighted average level of major developed countries from 2000 to 2005 (data available as of 2005) , while Japan showed a more fluctuated trend Figure 14 (Market capitalization of Listed Companies (US\$) for Developed Countries). It seems that Japanese banking sector was depressed by the 1997-1998 banking crisis for a long post-crisis period since the Japan bank market capitalization in 2000-2001 was approximately half of the average level of major developed countries. However, it has been gradually increasing from 2003 and reached its peak in 2005--outperformed the average level of major developed countries.

From the indicators in the Table next page and Figures 13 - 15, Swedish financial sector relatively outperformed the average level of major developed countries introduced, which implies that the banking system of Sweden seemed to be to be better reinforced after the 1990's banking crisis. Japanese banks were considered to be among the strongest in the worldwide before 1990's banking crisis, however, it lost some of its original comparative advantages, for example, a declining trend of GDP from financial sector and a low interest rate spread, among all of the major developed countries introduced, over years from 2000 to 2011. The statement that the banking sector was deteriorated severely by the 1990's crisis and recovered at a slower rate compared to that of Sweden has been proved again.

COMPARATIVE ANALYSIS WITH MAJOR DEVELOPED COUNTRIES

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bank Capital / Assets (%)												
Sweden/Developed	1.06	1.10	0.88	0.85	0.84	0.83	0.85	0.85	0.92	0.86	-	-
Japan/Developed	0.74	0.66	0.56	0.66	0.73	0.85	0.92	0.80	0.70	0.81	0.82	-
Bank Non Performing Loan / Total Gross Loans (%)												
Sweden/Developed	0.51	0.55	0.45	0.74	0.51	0.47	0.51	0.42	0.49	0.58	-	-
Japan/Developed	1.67	3.08	2.78	2.02	1.35	1.06	0.95	0.98	0.84	0.55	0.44	-
Deposit Interest Rate (%)												
Sweden/Developed	0.70	0.78	1.02	0.93	0.72	0.53	-	-	-	-	-	-
Japan/Developed	0.02	0.02	0.02	0.03	0.06	0.18	0.29	0.27	0.20	0.29	0.35	-
Lending Interest Rate (%)												
Sweden/Developed	0.84	0.85	0.98	1.00	0.90	0.74	-	-	-	-	-	-
Japan/Developed	0.30	0.30	0.33	0.38	0.40	0.37	0.31	0.32	0.34	0.46	0.54	-
Interest Rate Spread (%)												
Sweden/Developed	0.97	0.89	0.92	0.96	1.05	0.98	-	-	-	-	-	-
Japan/Developed	0.52	0.49	0.50	0.52	0.59	0.55	0.41	0.53	0.57	0.73	0.63	-
Market Cap of Listed Companies (% of GDP)												
Sweden/Developed	1.15	1.12	0.99	1.09	1.16	1.15	-	-	-	-	-	-
Japan/Developed	0.58	0.58	0.74	0.83	0.88	1.10	0.95	0.88	1.25	0.87	0.90	-
Domestic Credit Provided by Banking Sector(% of GDP)												
Sweden/Developed	0.39	0.78	0.78	0.76	0.76	0.78	-	-	-	-	-	-
Japan/Developed	2.42	2.18	2.22	2.24	2.16	2.11	1.96	1.80	1.76	1.80	1.76	-
Market Cap of Listed Companies (US\$)												
Sweden/Developed	0.22	0.18	0.17	0.20	0.22	0.22	-	-	-	-	-	-
Japan/Developed	2.09	1.74	1.98	2.11	2.18	2.58	2.17	1.91	2.46	2.00	2.14	-
Domestic Credit Provided by Banking Sector (US\$)												
Sweden/Developed	0.05	0.10	0.11	0.12	0.12	0.13	-	-	-	-	-	-
Japan/Developed	6.05	5.12	4.94	4.78	4.57	4.32	3.74	3.32	3.61	4.15	4.33	-
GDP (US\$)												
Sweden/Developed	0.01	0.01	0.01	0.01	0.01	0.01	-	-	-	-	-	-
Japan/Developed	0.20	0.17	0.16	0.15	0.15	0.14	0.13	0.12	0.12	0.14	0.14	-

Source: The World Bank

4. THE 2007-2008 GLOBAL FINANCIAL CRISIS (2007-2008)

Following the failure of Lehman Brothers, a major systemic global financial crisis ensued, paralyzing the worldwide financial markets and causing a severe global economic recession. As a result of aggressive stimulative governmental and central bank policies in response to the crisis the global economy gradually started to recover at the beginning of 2009 led by U.S. financial institutions significantly improving its capital positions and return to profitability.

4a. JAPAN

Japanese banks were not affected seriously by the global financial turmoil in 2007-2008, compared with that on U.S. and Europe. As seen in the Table 4, the direct credit-related write-off is only 149 billions of US dollars for Japanese banking sectors which are far less than that of U.S. and Sweden. The main reason for this is that Japan was immune from the global financial crisis. After the 1990s local banking crisis, Japanese banks were less willing to take exposure to complex and riskier investments than its global banking peers. Along with the existence of an improved regulatory framework and financial safety net, which did not exist prior to its localized banking crisis in the 1990s, will hopefully allow Japan to avoid experiencing another lost decade.”

Nevertheless, the Japan's banking sector and economy declined as a result 2007-2008 global financial crisis. Japanese banks suffered capital losses from the equity holdings due to the sharply drops of the stock prices in the crisis. The losses from subprime-related assets for Japanese major banks are 143 billion yen and the cumulated realized losses are 399 billion yen as of December 2007²³. For example, Mitsubishi UFJ, one of the big four Megabanks in Japan, held a portfolio of Japanese stocks valued at 6.1 trillion yen as of June 2007. Since then the share market has collapsed by 40% wiping an estimated 2.4 trillion yen off the value of the bank's holdings. As a result, Mitsubishi UFJ was been forced to raise new capital more promptly

²³ <http://www.adbi.org/files/2010.06.29.wp222.ljbc.tab.6.pdf>

than in the 1990's through issuing common stocks, preferred stock and subordinated debts to shore up its financial base.²⁴

4b SWEDEN

In the 10 years following the resolution of its banking crisis the crisis, Sweden's economy was healthy and vibrant as exemplified until 2008. From 2003 to 2007, the GDP annual growth rate was stable at 3-4%, the unemployment rate was less than 5%, and the inflation rate was corresponded the expectation of Riksbank: less than 2%. However, from 2008 to 2010, the GDP annual growth rate was around -5%, the unemployment rate raised from 5% to 9.5%, however the inflation rate dropped in 2008 from 4.2% to -1.6% in 2009. The stock market was frustrated so that the NASDAQ OMX index decreased from 470 points to 200 points, falling more than a half, and the Stockholm Exchange Index got the biggest weekly drop since 1970s that was 21% decrease in one week. The market capital of banking sector dropped dramatically from 262.86% of GDP to 186.55% of GDP in 2008. At the meantime, the SEK was devaluated as the SEK lost its 30% value in approximately 4 months during 2008. To stimulate the economy, the central bank applied the expansionary monetary policy and cut the interest rate, from 4.6% in 2008 to 0.5% in 2009. In the crisis, the high-welfare policy made the country and the financial market more stable than other countries. In 2008, Sweden government guaranteed for the loans and deposits, raised private deposits guarantee to 75,150 USD to strengthen people's faith in the market and launched a 225.45 billion USD guaranteed project to improve the liquidity problem and to help with the decreased solvency.

4c Summary

The banking system of Sweden was less affected by the 2008 global financial crises as the indicated comparisons between two banking systems. This has to be credited to measures took by Swedish government toward both 1990s banking crisis and 2008 global financial crisis.

²⁴ Global economic crisis hits Japanese banks, exporters, *Peter Symonds*, Oct 2008

Swedish banks never took excessive risks since 1990s crisis—even more conservative and cautious than Japan. The leverage that Handelsbanken, one of the largest banks in Sweden, which owned a total asset value of 72.3 billion SEK in the year of 2008, applied was mostly at the range of 22 to 27 ever since the end of the 1990s crisis, which was relatively conservative compared to Japanese banks. In addition, Mitsubishi UFJ had a core Tier 1 capital ratio of 6.8% as of the end of June 2009. While that was the highest of the three large Japanese banks, it was lower than 14.2% at Handelsbanken. In 2008, the bad debt ratio was 0.17%, which was relatively low in around ten years. In summary, Swedish banks were managed more prudently after the 1990s crisis as other 3 largest banks in Sweden practiced the same strategy with Handelsbanken. High standard of risk management was a key reason that the banking system in Sweden wasn't damaged significantly in the global financial crisis.

The historical GDP for Japan outperformed that of Sweden before the banking crisis in the 1990s, however, fell to the historical lowest level in 2008-2009 and hasn't recovered as much as that of Sweden after the global financial crisis. Government budget remained negative ever since the economic stagnation in 1992 and reached the lowest level after the global financial crisis. The reason for those substantial deficits and the uncompetitive GDP growth may trace back to the decade long economic stagnation and high costs of resolving the 1990s banking crisis. The above reasons also impaired Japan's ability to recover from the global financial crisis compared to the ability of Sweden.

Unlike most of the European countries, Sweden cut down the government budget deficit, moved the center of economy into its traditional area--real industry, such as vehicle, iron and woods. In addition, since Swedish governments realized that the deregulation was the main cause for the 1990s banking crisis and also the impulse driver of the global financial crisis, they adopted re-regulation strategy to reinforce the established regulatory and supervisory framework. Furthermore, stress tests for Sweden housing markets have shown that the households have the capacity to deal with weaker economic activity and high interest rates.

Even if house prices were to fall, the household sector would not pose a threat to financial stability, since households can service their loans. That's another reason that Swedish banks could stand in the world-wide crisis.

5. CONCLUSION

As discussed in the prior parts of this paper, in the case of changing macroeconomic conditions and regulatory and supervisory frameworks leading up to excessive risk taking behavior of banking which was not properly assessed and resolved by the government, trapped countries such as Japan and Sweden in the banking crises.

Considered one of the banking sector backgrounds of two banking crises along with 2008 global financial crisis, the deregulation was the stimulating factor. Both in Sweden and Japan, the traditional capital markets which depended merely on banking encountered more competitive pressures when the capital markets were deregulated and alternative finance opportunities emerged for the traditional customers of banks. This situation set off a credit boom that fuelled the sharp increases in asset prices, especially for house prices. The households and financial institutions ended up over-indebted. Financial supervision and regulations were inadequate to prevent the bubble and the emergence of large financial imbalances. At last, bubble turned into collapse, bringing the threat of failures of major financial institutions, pressuring government to take corrective actions to save the banking system.

The Swedish bank resolution policy is commonly regarded as more successful than Japanese bank resolution, although there are no explicit criteria on how to evaluate resolution policies from two banking systems. Reasons for forming this statement are: the banking system of Sweden continued to function during the crisis; there were no bank runs in Sweden, which happened to Japan in 1997; there were no emergence of credit crunch in Sweden which was a big post-crisis problem for Japanese banking system; and the Sweden banking system was quickly to move out of the crisis and became profitable shortly after the crisis.

Non-performing loans problem was the core issues to be solved in both 1990s banking crisis. The Japanese banks have steadily reduced their bad loans and the crisis situation of several years ago has passed. However, the decline in bad loans is due in large part to the fact that the

borrowers' business conditions have improved greatly, not due to the newly improved but not perfectly comprehensive regulatory and supervisory framework. Hence, any changes in the macroeconomics without sophisticated regulatory and supervisory framework will lead to a bad debt problem since borrowers are closely related to the economic situation. Furthermore, although the regional banks' bad loan ratio has indeed declined, it is proceeding at a much slower rate than the major banks. When considered the operating model of the regional banks, they are not able to dispose of their loans as drastically as the major banks since most of the decisive actions, such as public injections, taken by authorities were intended to resolve major banks balance sheet problems, left issues in regional banks. For Sweden, the establishment of two companies Securum and Bankstödsnämnden, not only removed impaired assets from the balance sheet and retained liquidity in banks, but also reduced the net costs to resolve problems through the regained profit when the financial market was better and regulators' close attention of the bad loans and non-performing loans. This is a major reason that the recovery in Sweden was relatively complete and comprehensive.

The Japanese crises was famous for bringing about NPLs problem yet the resolution came too little too late and still far from being completed. On the contrary as the study showed the banking crises occurred in Sweden resolved in relatively shorter period of time. Despite the substantial resolution costs to the economy, the banking crises of Sweden did not affect the real economy to the degree that the Japanese banking crises did. As for the macroeconomic conditions, the long last deflationary asset prices throughout the lost decade year and banking crisis, it extremely hard for banks and the non-bank financial companies to resolve the non-performing assets problems. It causes more future issues in Japan, even after the crisis, such as creating debt overhang for the banking sector. The Japanese banking problems created a big credit crunch problem, which is an impediment to the complete revival of the economy and corporate sector.

In the case of Sweden, authorities maintained the systemic stability by injecting public funds and by taking over the failed banks. The values of assets were tied to market and there was no

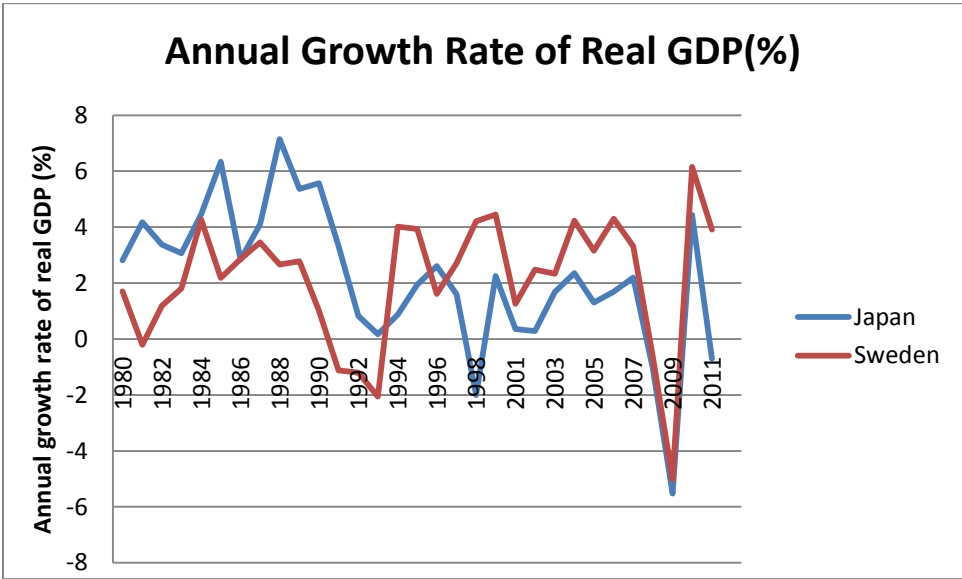
chance for accounting manipulation since the public funds were not directly injected to compensate the shareholders of the failed banks. The shareholders as well as the managerial responsibility in bank failures were observed. In the Swedish case the managers of the banks were required to apply for the public funds under strict requirements. In that respect resolution of bad debt problem were timely and relatively less costly compared to Japan without dragging the economy into credit crunch problem. However in the Japanese case, the first injection to the jusen, nonbank housing company, was a clear example of policy failure because the injection of public funds were on the basis of rescuing fraud management, and thus, it depressed government to recapitalize.

In conclusion, the Japan banking crisis presents a particular lesson for all financial systems because Japanese banks were considered to be among the strongest in the world before the 1990s banking crisis but didn't performed as well as other countries thereafter. Reasons were found to be as follows: a long lasting bad debt problem remained unsolved which led to credit crunch problems, weak corporate governance prevented banks from undertaking effective restructuring which made Japanese banks less profitable and problems unsolved and less transparent accounting standards which resulted in ineffective supervision. All of the above statements deteriorated the macroeconomic environment in Japan and prevented Japanese banking system from revival as successfully as Sweden in 2008 global financial crisis.

There are also lessons one can derive from Sweden financial crisis since Sweden successfully and promptly handled the crisis without draining the resources and turning the economy into a credit crunch. The Sweden banking systems improved in a much shorter period after the crisis leading to the transformation towards a healthy banking system and in turn helped Sweden to successfully survive the global financial crisis.

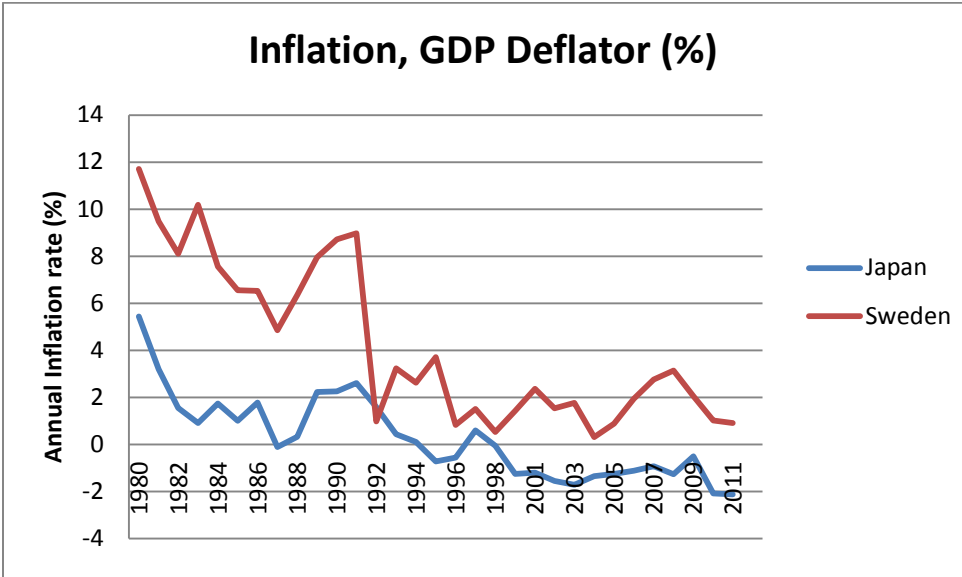
APPENDIX: PART A:

Figure 1: Growth Rate of Real GDP



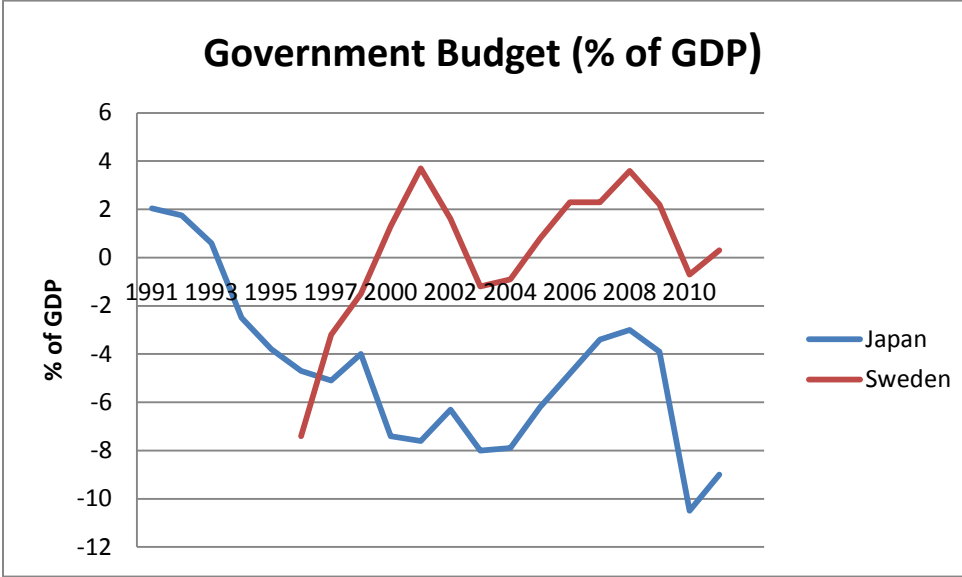
Source: The World Bank

Figure 2: Inflation, GDP Deflator



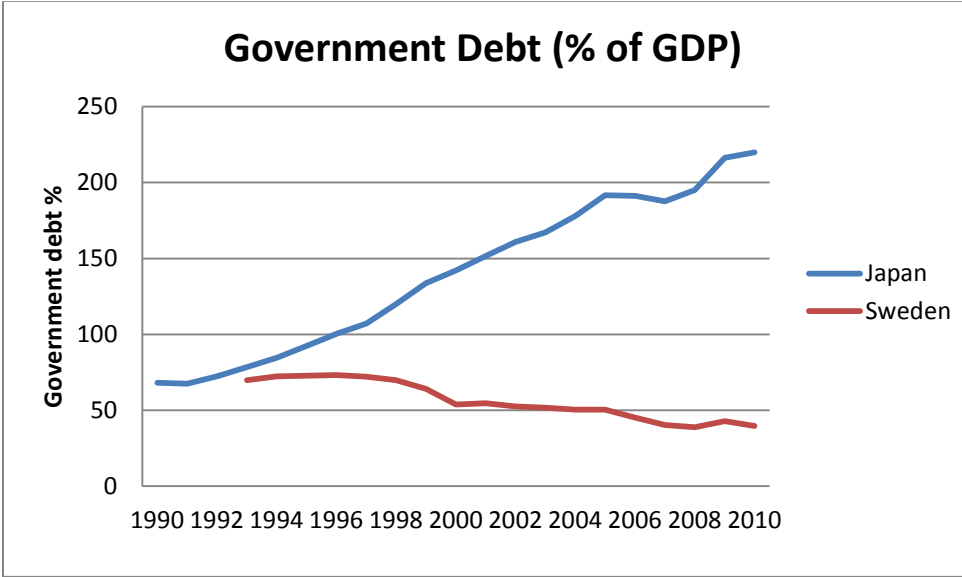
Source: The World Bank

Figure 3: Government Budget



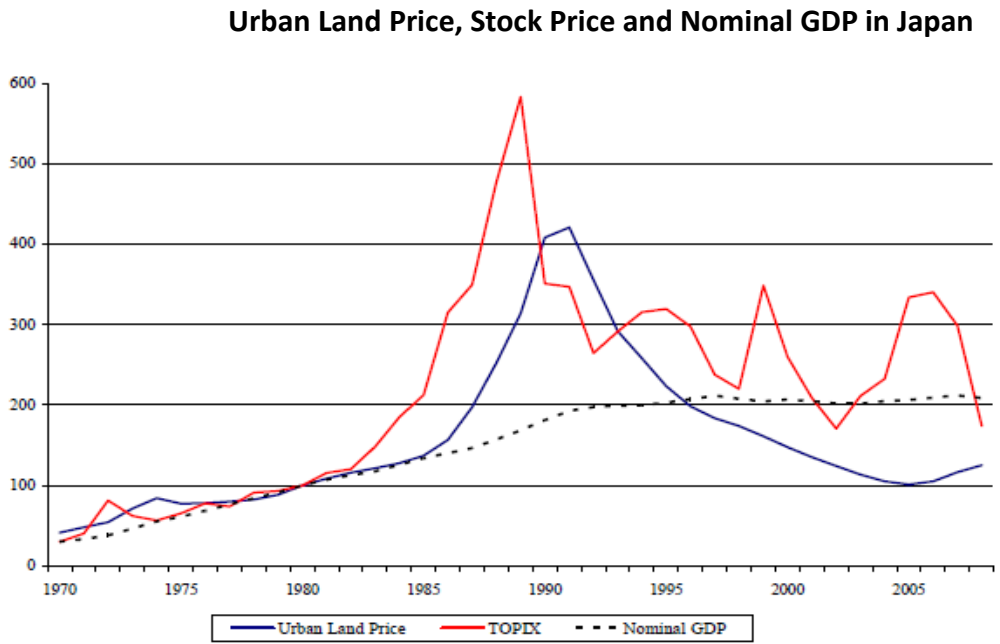
Source: Trading Economics

Figure 4: Government Debt



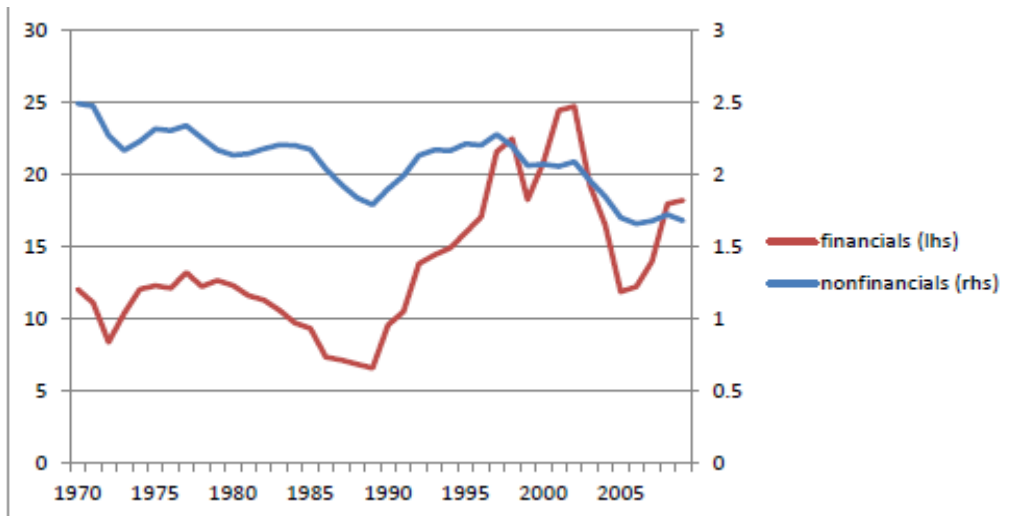
Source: Index Mundi

Figure 5: Asset Price in Japan



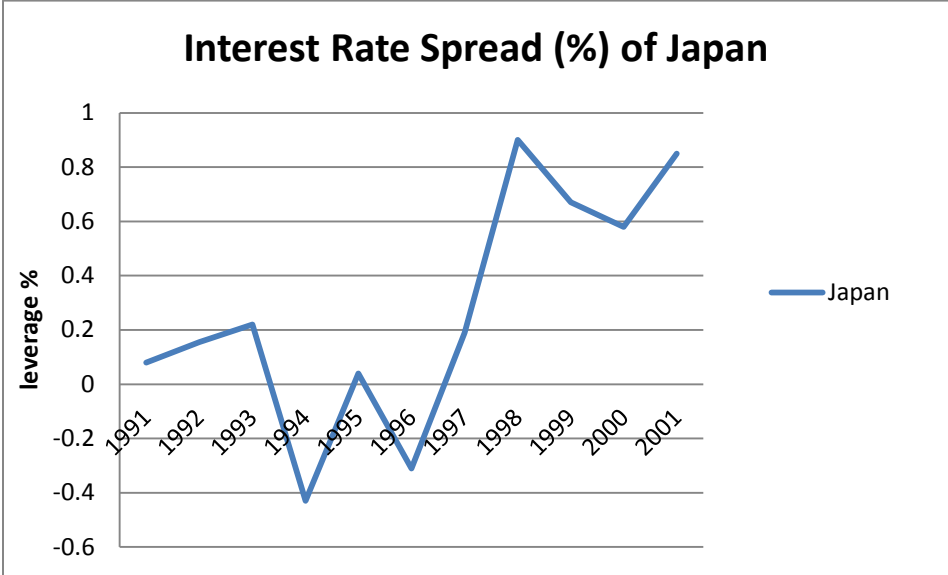
Source: Tokyo Stock Exchange; Real-Estate Research Institute; and Economic and Social Research Institute (ESRI), Cabinet Office, Government of Japan, websites.

Figure 6: Leverage (Market Value) for Japan's Financials and Non-Financials



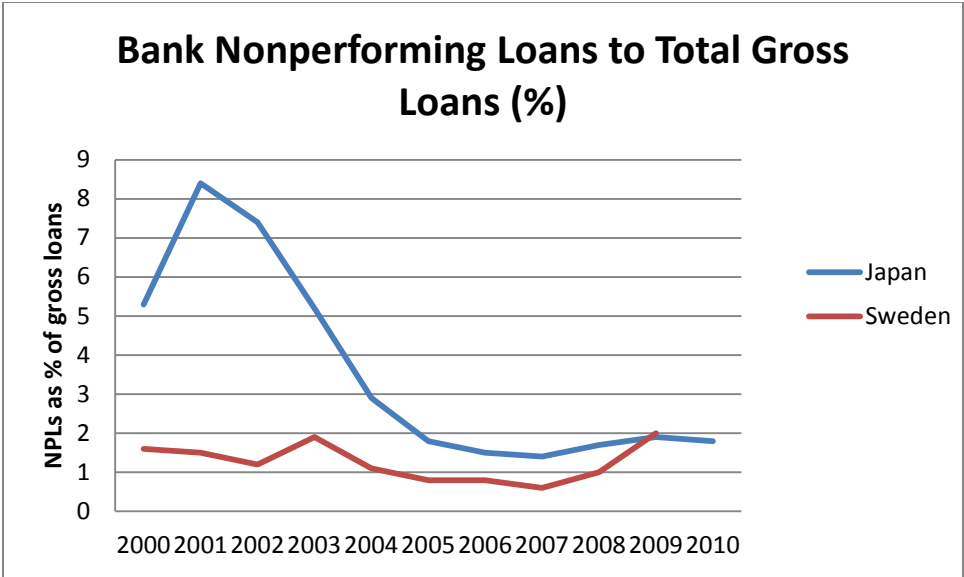
Source: National Income Accounts

Figure 7: Interest Rate Spread



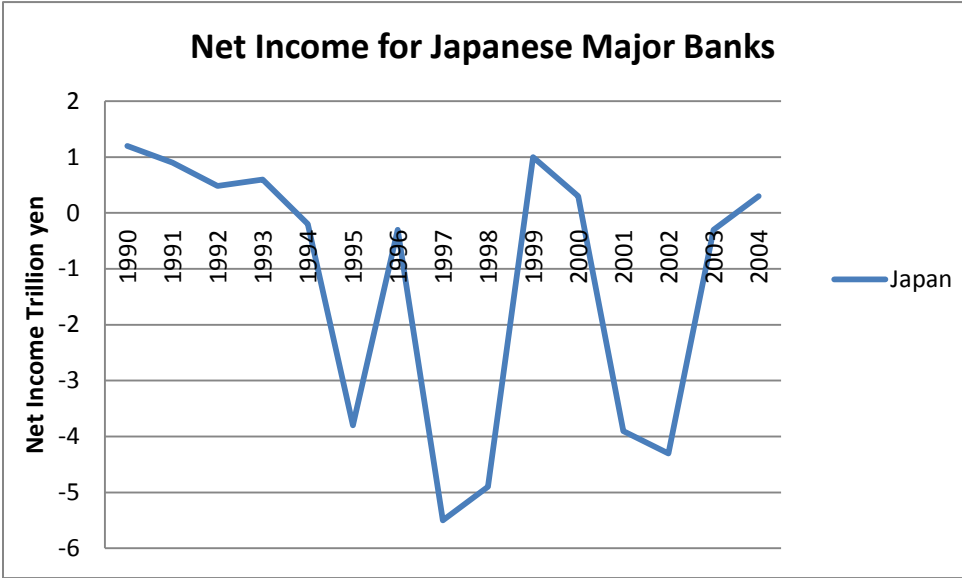
Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly", "Government Bond Statistics".

Figure 8: Bank Nonperforming Loans Ratio after the Crisis



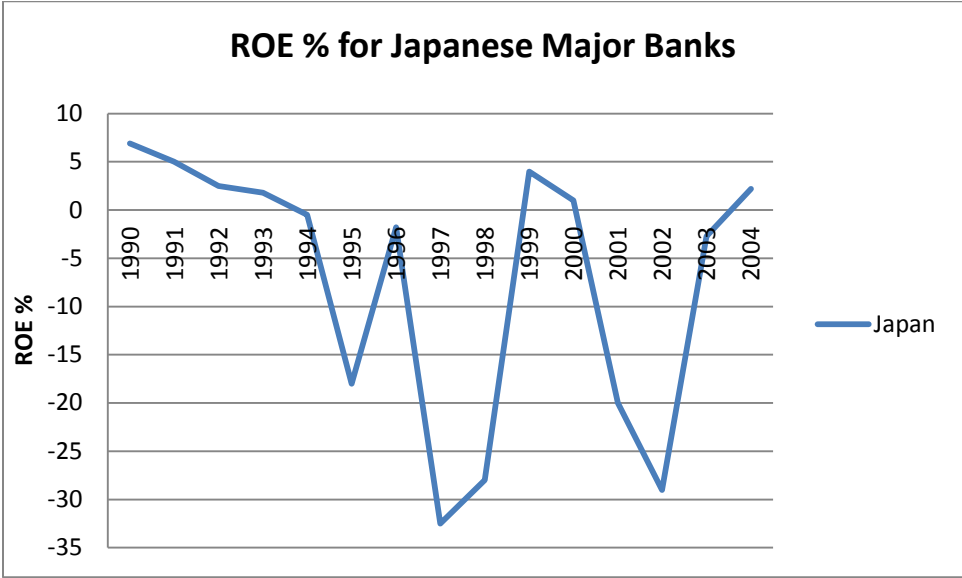
Source: The World Bank

Figure 9: Net Income (in Japanese yen) for Japanese Major Banks



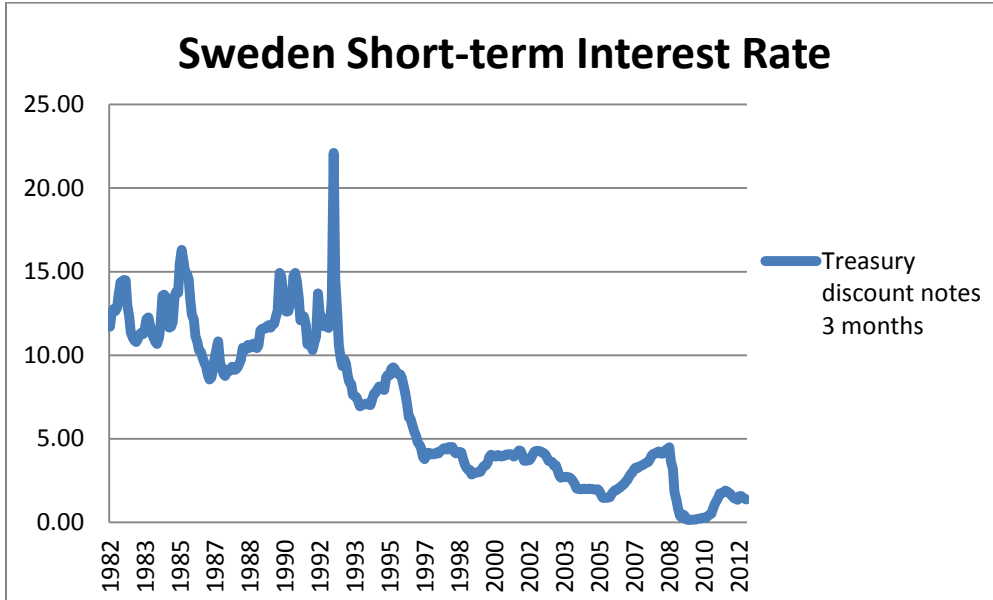
Source: The World Bank

Figure 10: ROE (%) for Japanese Major Banks



Source: The World Bank

Figure 11: Sweden Interest Rate



Source: Sweden Statistics

Figure 12: Price Index for Prime Location Stockholm Non-residential Real Estate

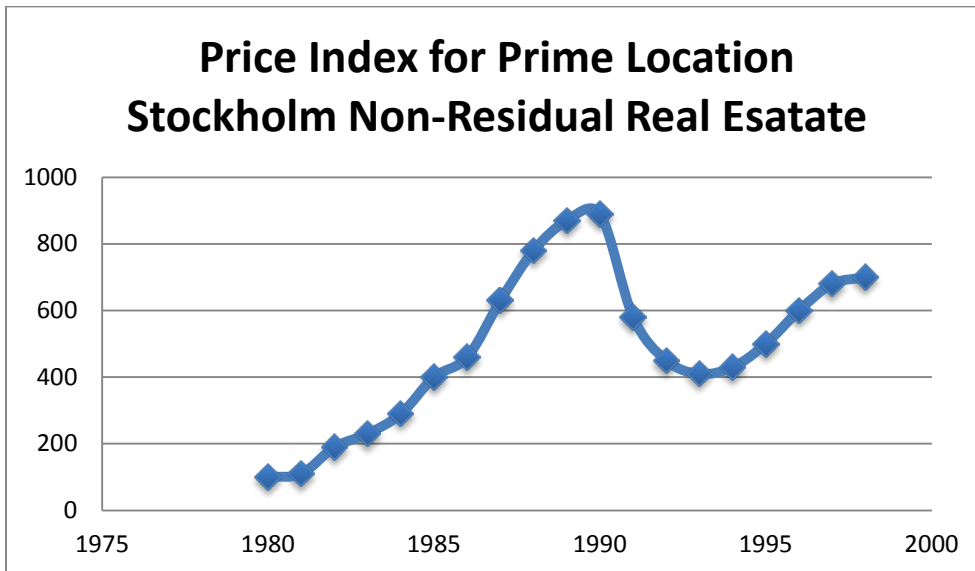
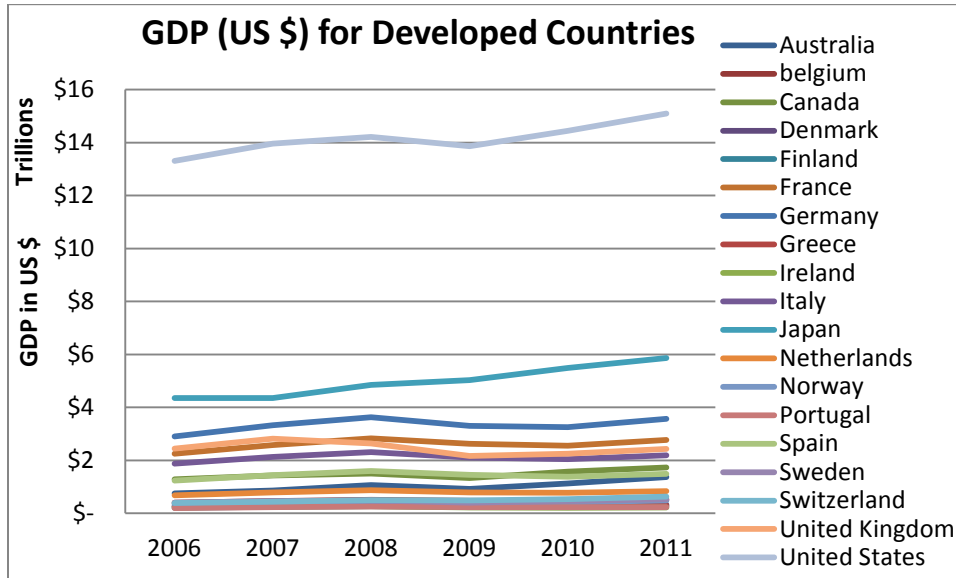
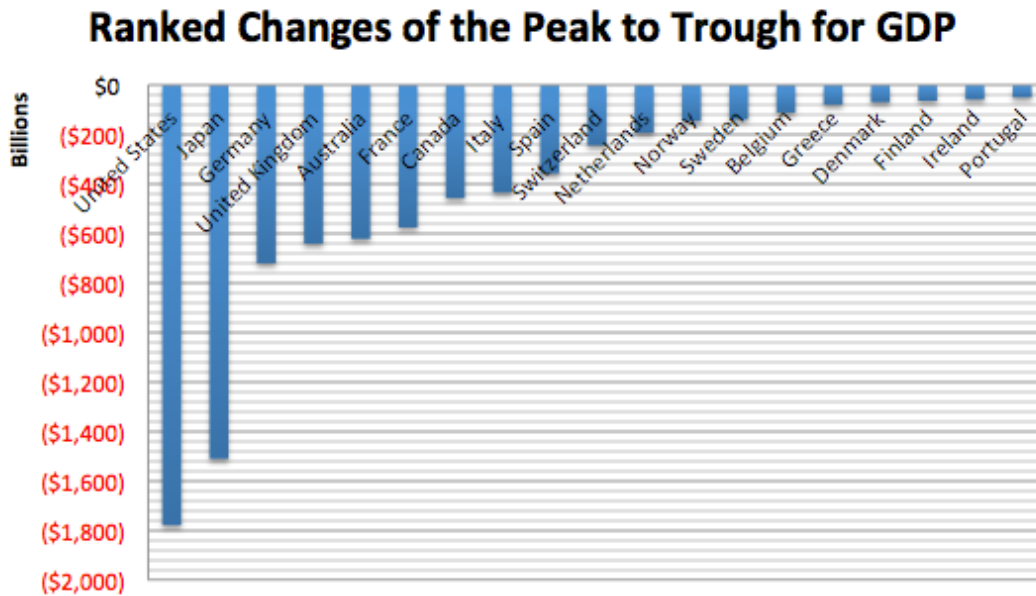


Figure 13: GDP for Developed Countries



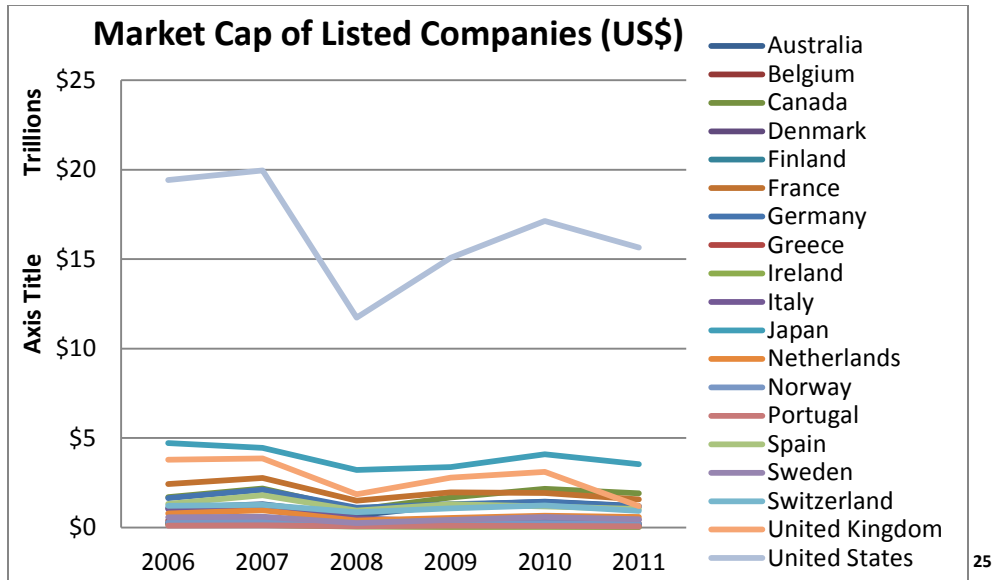
Source: The World Bank

Figure 13.a: Ranked Changes of the Peak to Trough for GDP of Developed Countries



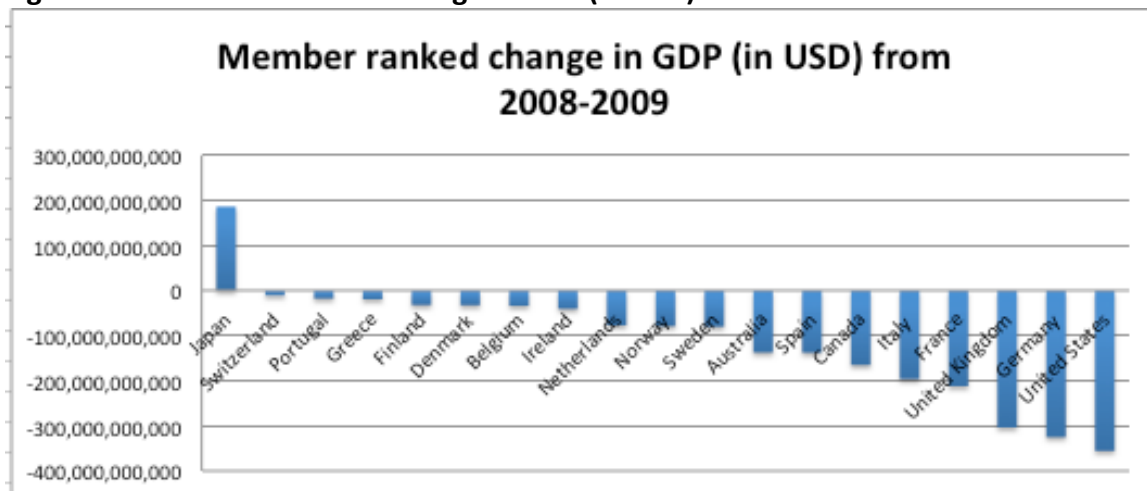
Source: The World Bank

Figure 14: Market Capitalization of Listed Companies (US\$) for Developed Countries



Source: The World Bank

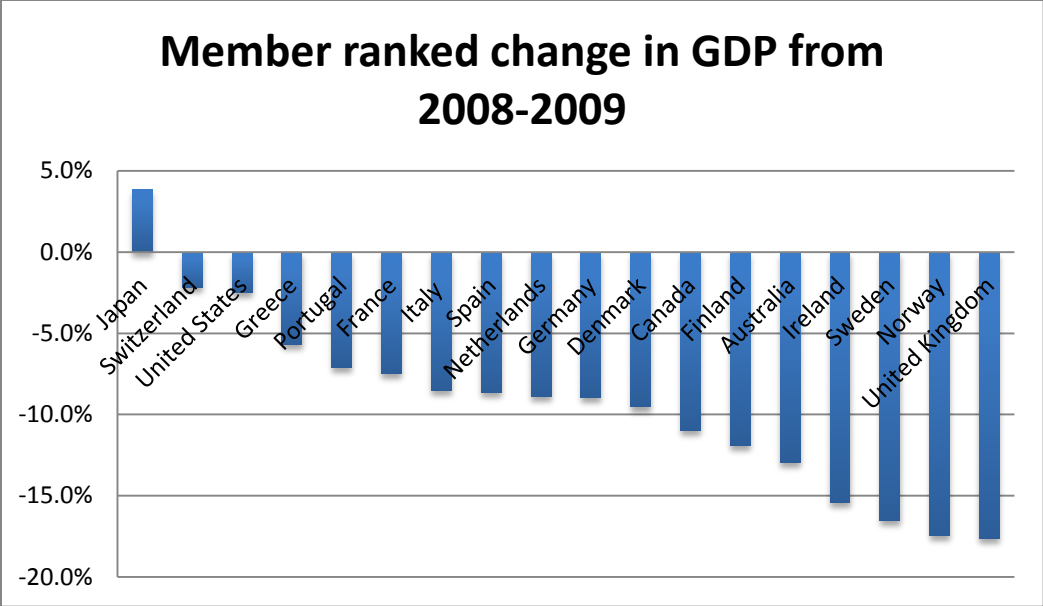
Figure 14.a: Member ranked change in GDP (in USD) from 2008-2009



Source: The World Bank

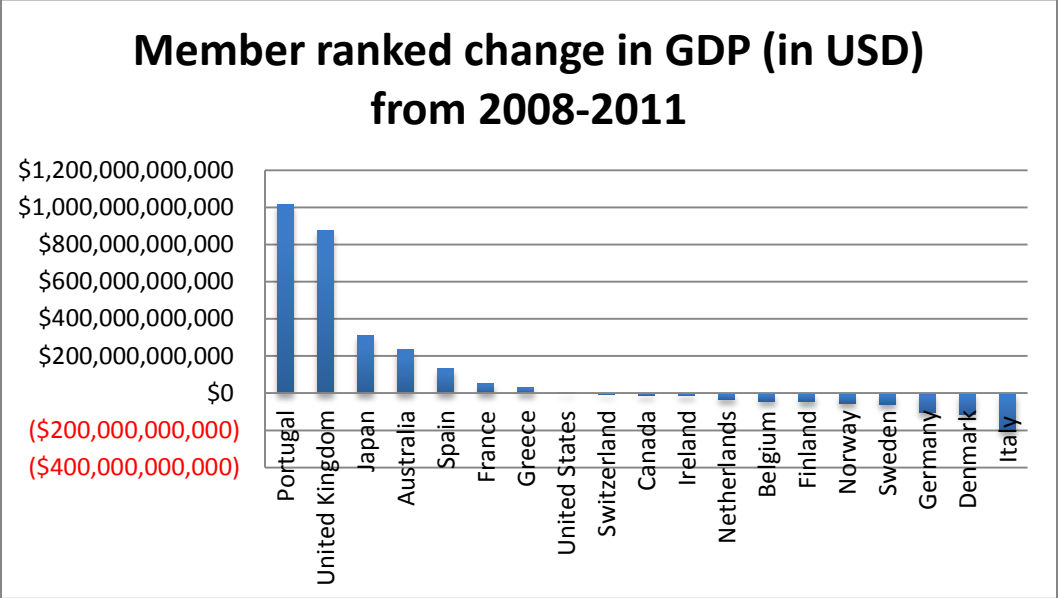
Figure 14.b Member ranked change in GDP from 2008-2009

²⁵ Between 2008 to 2009, the USD/JAP exchange rate was at the peak of recent 5 years, 101.95. The extreme high exchange rate leads to that Japan had the highest GDP change between 2008 to 2009.



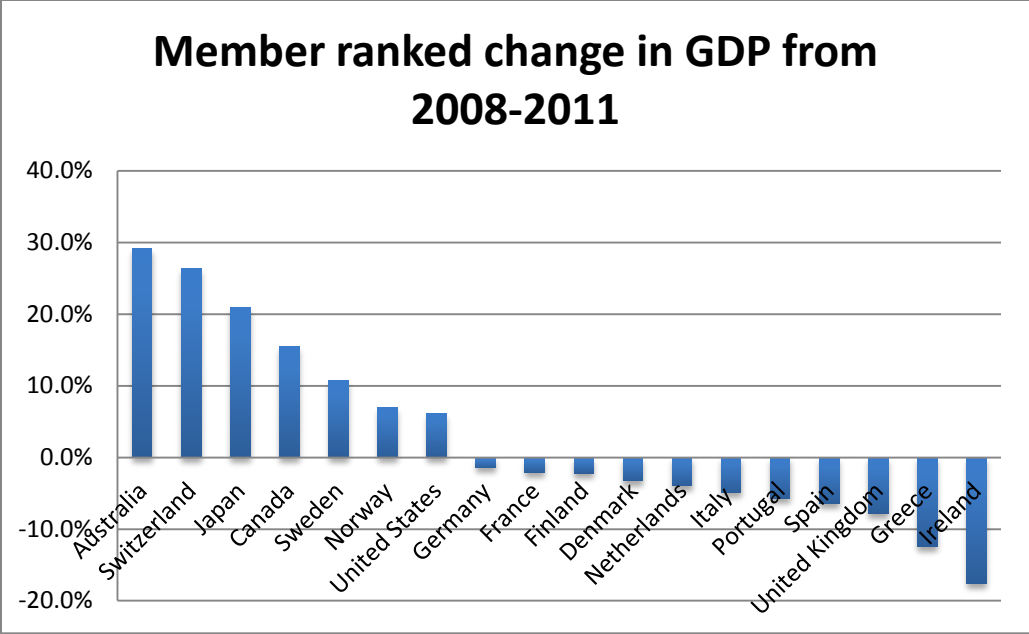
Source: The World Bank

Figure 14.c: Member ranked change in GDP (in USD) from 2008-2011



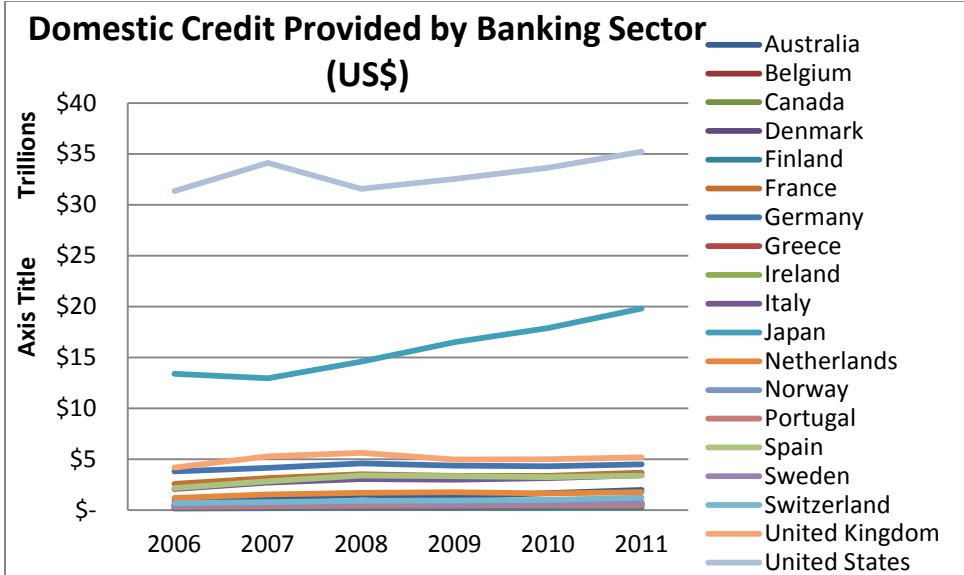
Source: The World Bank

Figure 14.d: Member ranked change in GDP from 2008-2011



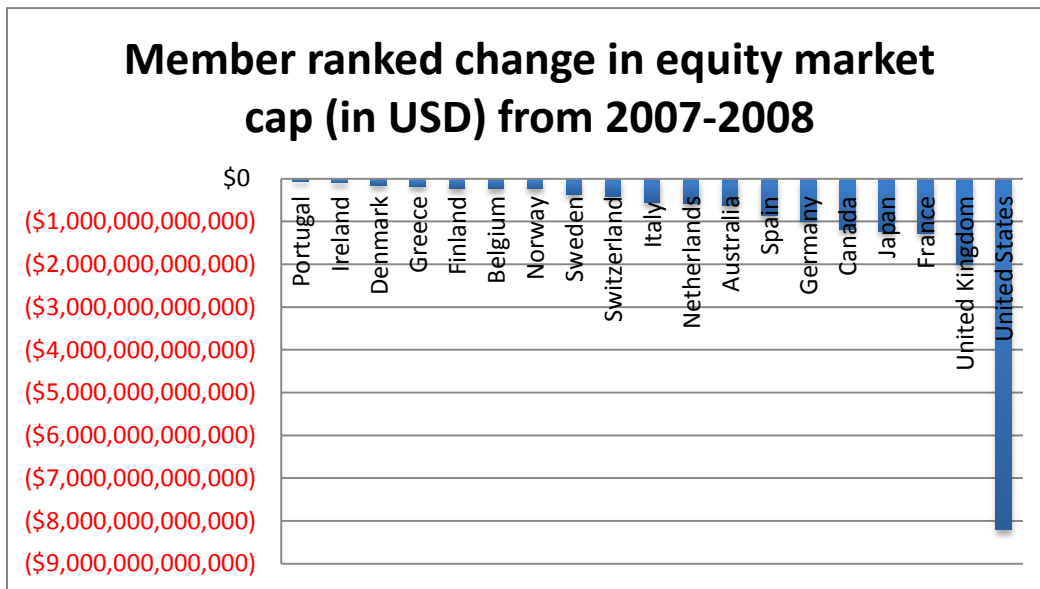
Source: The World Bank

Figure 15: Domestic Credit Provided by Banking Sector (US\$) for Developed Countries



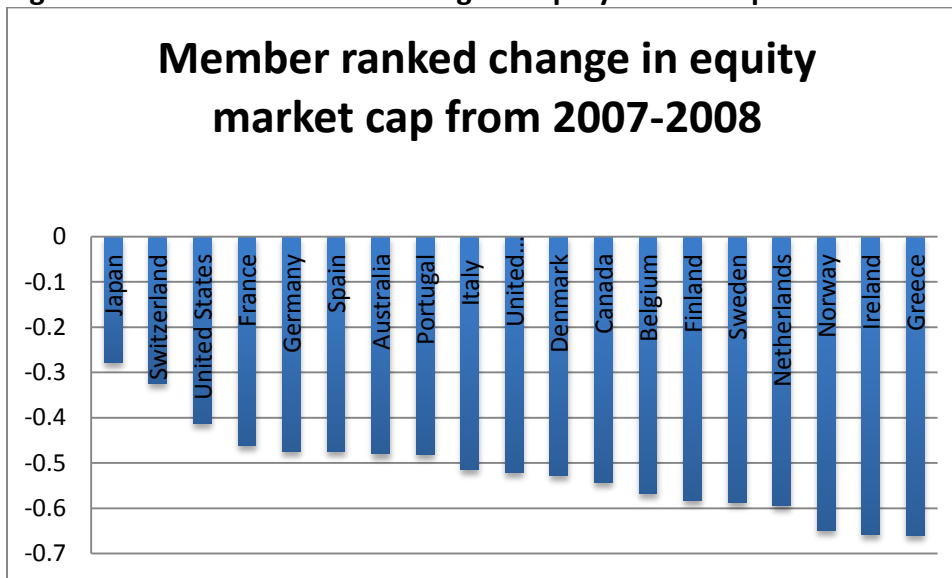
Source: The World Bank

Figure 15.a: Member ranked change in equity market cap (in USD) from 2007-2008



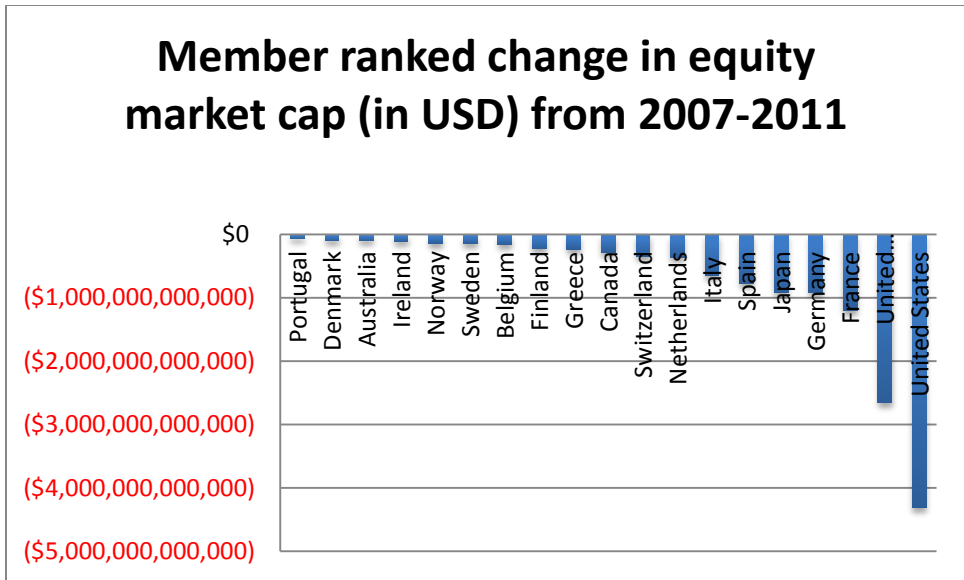
Source: The World Bank

Figure 15.b: Member ranked change in equity market cap from 2007-2008



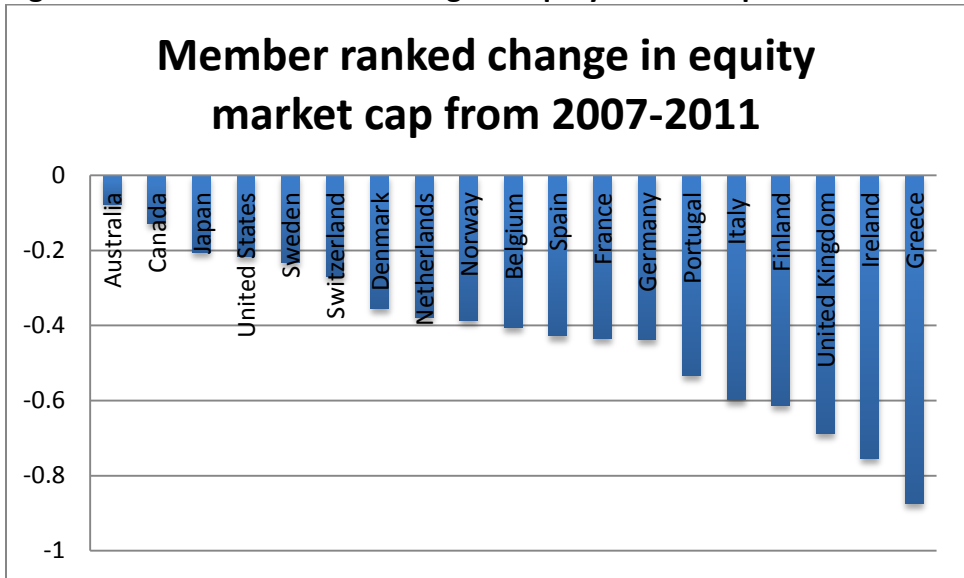
Source: The World Bank

Figure 15.c: Member ranked change in equity market cap (in USD) from 2007-2011



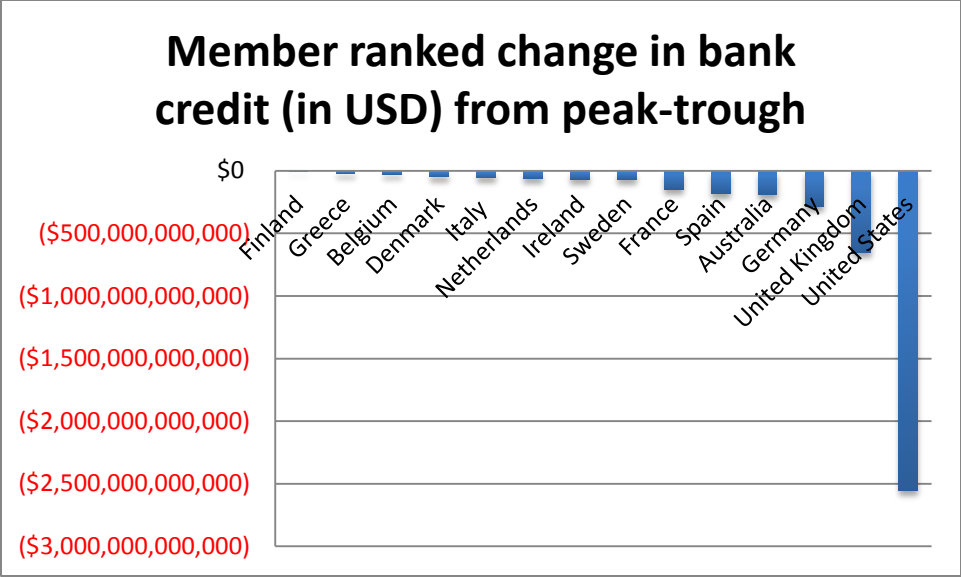
Source: The World Bank

Figure 15.d Member ranked change in equity market cap from 2007-2011



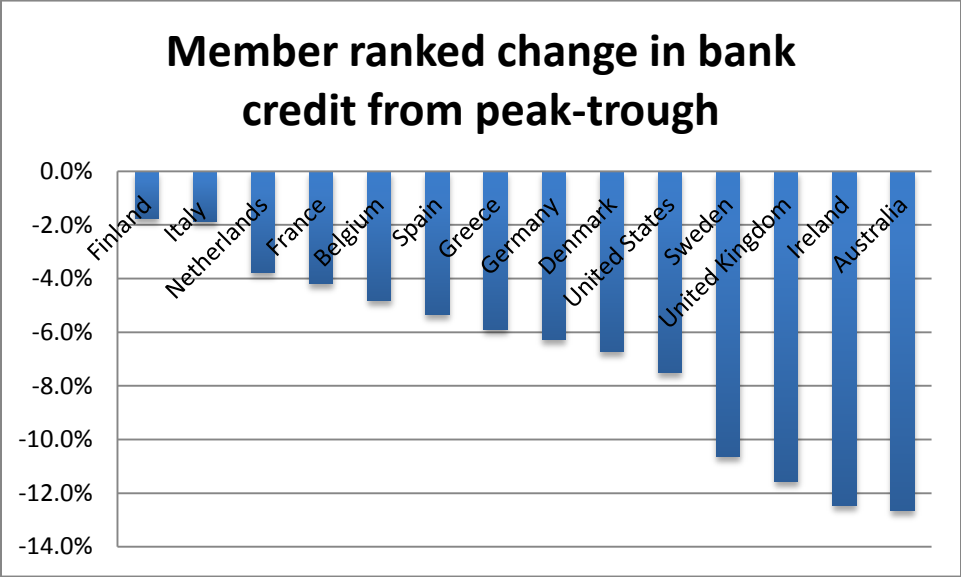
Source: The World Bank

Figure 16.a: Member ranked change in bank credit (in USD) from peak-trough



Source: The World Bank

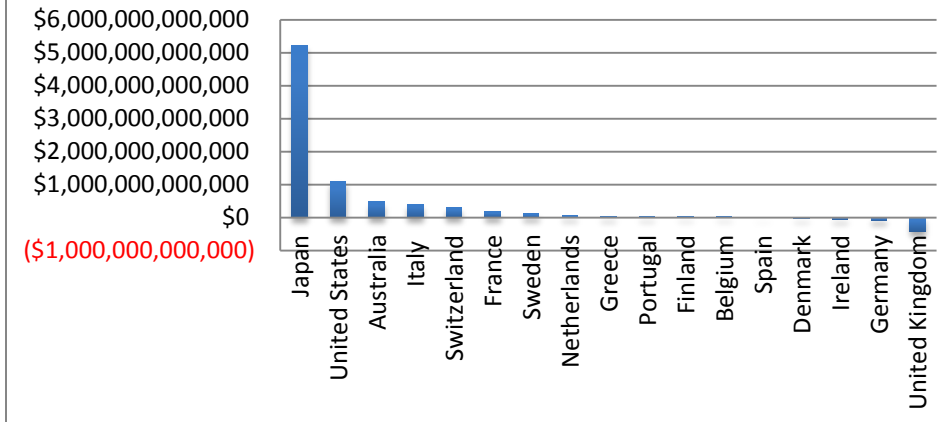
Figure 16.b: Member ranked change in bank credit from peak-trough



Source: The World Bank

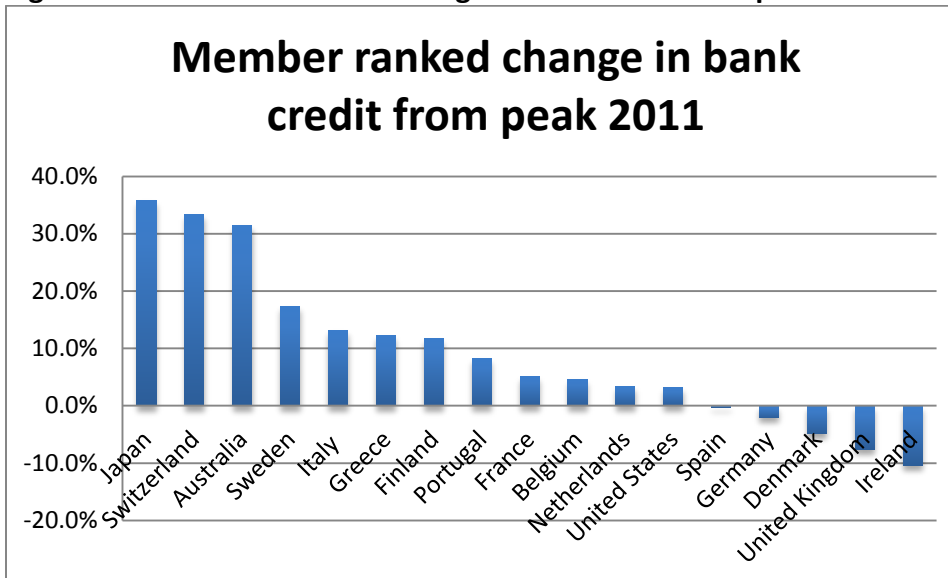
Figure 16.c: Member ranked change in bank credit (in USD) from peak-2011

Member ranked change in bank credit (in USD) from peak-2011



Source: The World Bank

Figure 16.d: Member ranked change in bank credit from peak 2011



Source: The World Bank

APPENDIX: PART B

Table 1: Bank Loan Concentration (By sector) in Japan

Year	Total Loans	Total Manufacturing	Non-Manufacturing (selectd sectors)				Individual
			Construction	Wholesale	Finance	Real estate	
1982	100.0%	28.8%	5.6%	16.3%	4.8%	6.9%	11.5%
1983	100.0%	27.2%	5.8%	15.7%	5.9%	7.3%	11.0%
1984	100.0%	25.8%	5.8%	15.3%	6.9%	7.7%	10.5%
1985	100.0%	24.5%	5.9%	14.4%	7.5%	8.6%	10.4%
1986	100.0%	22.1%	5.7%	13.3%	8.6%	10.4%	10.9%
1987	100.0%	19.3%	5.5%	12.4%	9.9%	11.2%	12.4%
1988	100.0%	17.6%	5.4%	11.5%	10.4%	11.7%	13.6%
1989	100.0%	16.0%	5.2%	10.8%	11.2%	12.2%	15.1%
1990	100.0%	15.0%	5.1%	10.5%	11.1%	11.9%	16.0%
1991	100.0%	14.9%	5.3%	9.9%	10.5%	12.0%	16.5%
1992	100.0%	14.6%	5.7%	9.2%	10.2%	12.4%	15.9%
1993	100.0%	15.6%	6.1%	9.7%	10.6%	11.7%	15.9%
1994	100.0%	15.3%	6.3%	9.5%	10.8%	12.0%	16.7%
1995	100.0%	14.7%	6.3%	9.1%	10.7%	12.1%	17.4%
1996	100.0%	14.3%	6.2%	8.9%	10.1%	12.4%	17.8%
1997	100.0%	13.8%	6.2%	8.8%	10.0%	12.7%	18.5%
1998	100.0%	14.1%	6.4%	8.7%	9.5%	12.9%	19.1%
1999	100.0%	14.8%	6.3%	8.8%	9.1%	12.6%	20.2%
2000	100.0%	14.6%	6.2%	8.7%	8.8%	12.5%	21.6%
2001	100.0%	14.5%	5.9%	8.4%	8.4%	12.5%	23.4%
2002	100.0%	14.1%	5.4%	8.0%	8.7%	12.3%	26.0%
2003	100.0%	13.2%	4.8%	7.7%	8.5%	11.8%	26.6%
2004	100.0%	12.4%	4.6%	7.3%	8.9%	12.9%	27.5%
2005	100.0%	12.1%	4.2%	7.3%	8.7%	13.3%	26.5%
2006	100.0%	12.2%	3.9%	7.1%	9.1%	14.3%	26.8%
2007	100.0%	12.4%	3.8%	7.0%	8.9%	14.5%	26.8%
2008	100.0%	13.2%	3.6%	6.9%	9.5%	13.9%	26.6%
2009	100.0%	13.6%	3.3%	6.5%	8.6%	14.4%	26.9%
2010	100.0%	13.0%	3.1%	6.4%	8.4%	14.4%	27.9%
2011	100.0%	13.0%	2.9%	6.5%	8.0%	14.3%	28.1%

Source: Bank of Japan

Table 2: Public Capital Injection into the Banking System of Japan

Banks (Billions of yen)	March1998				Mar-99		
	Total	Preferred shares	Subord. Debt	Subord. Loans	Total	Preferred Shares	Subord. Debt
City Banks							
Tokyo Mitsubishi	100	0	100	0	-	-	-
Daiichi Kangyo	99	99	0	0	900	700	200
Sakura	100	0	100	0	800	800	0
Sumitomo	100	0	100	0	501	501	0
Fuji	100	0	100	0	1,000	800	200
Sanwa	100	0	100	0	700	600	100
Tokai	100	0	0	100	600	600	0
Daiwa	100	0	0	100	408	408	0
Asahi	100	0	0	100	500	400	100
Long-Term Credit Banks							
Industrial Bank of Ja	100	0	100	0	600	350	250
Long-Term Credit B	176.6	130	0	46.6	-	-	-
Nippon Credit Bank	60	60	0	0	-	-	-
Trust Banks							
Mitsubishi Trust Ban	50	0	50	0	300	200	100
Sumitomo Trust Ban	100	0	100	0	200	100	100
Mitsui Trust Bank	100	0	100	0	400.2	250.2	150
Yasuda Trust Bank	150	0	150	0	-	-	-
Toyo Trust Bank	50	0	50	0	200	200	0
Chuo Trust Bank	60	32	0	28	150	150	0
Regional Banks							
Yokohama Bank	20	0	0	20	200	100	100
Hokuriku Bank	20	0	0	20	-	-	-
Ashikaga Bank	30	0	30		-	-	-
Total	1,815.60	321	1,080	414.6	7,459.20	6,159.20	1,300

Source: Deposit Insurance Corporation and the Financial Reconstruction Commission.

Table 3: Non-performing Loans in the 1990's in Japan

Non-performing Loans, Disposal and Operating Profits in the 1990's	(Billions of Yen)										
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
non-performing loans	-	-	-	28,504	21,789	29,758	29,627	30,336	32,515	42,028	34,849
Total loans	474,783	477,150	477,801	482,701	482,312	477,979	472,610	463,484	456,965	440,610	423,286
NPL/Total Loan(%)	-	-	-	5.91	4.52	6.23	6.27	6.55	7.12	9.54	8.23
NPL Disposals	-	-	-	13,369	7,763	13,258	13,631	6,944	6,108	9,722	6,658
Operating Profits	4,685	4,439	4,484	6,753	6,418	5,503	3,129	4,675	4,768	4,693	4,674

Table 3: Direct Write Downs in Banking Sector (in Billions of US Dollars)

	Credit-related write downs in banking sector
US	2,712
Europe	1,193
Japan	149

Source: international Monetary Fund (2009b), Table 1.3: Bank for International Settlement (2009), Table 1.2

Table 4: Banking Groups and Consolidation Assets in Japan

New Groups (Billions of yen)	Former banks	Consolidated Assets March 2003
1. Mizuho Financial Group(MHFG) Established in January 2003	Industrial Bank of Japan, Daiichi Kangyo, Fuji, Yasuda Trust banks	134,033
2. Sumitomo Mitsui Financial Group(SMFG) Established in December 2002	Sumitomo Bank, Sakura Bank	102,395
3. Mitsubishi Tokyo Financial Group(MTFG) Established in April 2001	Bank of Tokyo-Mitsubishi (BTM), Mitsubishi Trust Bank, Nippon Trust Bank	96,532
4. UFJ Holdings Established in April 2001	Sanwa Bank, Tokai bank, Toyo Trust & Banking	80,207
5. Resona Holdings Established in December 2001	Asahi Bank, Daiwa Bank	42,892

Source: Individual banking websites

Table 5: Sweden Government Bank Support Payment

Date	Event	Value(million USD)
1991	Nordbanken, new equity	628
1992	Nordbanken, bail out old shareholders	314
	Nordbanken, new equity	1494
	Securum, equity	3587
1993	Gota new equity	3752
1994	Första Sparbanken, interest subsidy	149

Source: The Swedish Banking Crisis: Roots and Consequences

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