Center for Economic Institutions

Working Paper Series

CEI Working Paper Series, No. 2001-25

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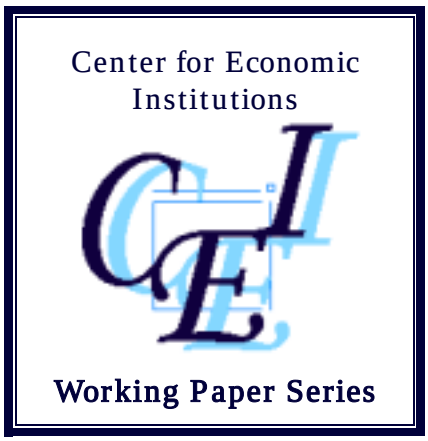

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This paper was presented at the conference on *Designing Financial Systems in East Asia and Japan: Toward a Twenty-First Century Paradigm*. This two-day conference was co-organized by the International Monetary Fund and the CEI. It was held during September 24-25, 2001 at Hitotsubashi Memorial Hall in Tokyo, Japan. A select group of academics, researchers and policy makers from around the world gathered to examine the timely issue of how the financial systems and corporate governance in East Asia and Japan should be redesigned in order to achieve sustainable economic development. The conference included six sessions with 17 papers. All the presented papers were added to the CEI series of working papers. The series, as well as the contents of the conference, can be reached at http://cei.ier.hit-u.ac.jp.

Reflections on New Financial System in Japan:
Participation Costs, Wealth Distribution, and Security Market-Based Intermediation†

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September 12, 2001
6th Revision July 3, 2002

Abstract

This paper deliberates on the re-designing of the financial system in Japan, currently ailing seriously. With four conditions in the background — enhanced capability of risk transfer through financial markets, increased participation costs in the financial markets, increases in probabilities of systemic risks, and the pattern of wealth distribution, we will argue the followings: (i) Risk management would make more use of risk elimination by institutional investors and risk transfers through the financial markets. It is urgently needed to promote efficient system of risk transfer through financial intermediaries. (ii) Financial market transaction is an area for institutional investors; not suited for individual investors. (iii) It is necessary to establish an institutional framework to promote active corporate monitoring by institutional investors, who are also principal shareholders. (iv) Banks will play an important role in financing small and medium size firms, - in particular venture firms, when probabilities of systemic risks are alleviated in the future. In this sense, banking is in a state of evolution rather than outright decline. As a policy conclusion, we will stress the importance of participation by individual investors in the mechanism of risk transfers through *security market-based intermediation*.

Key words: financial intermediary, financial system, banking, participation costs, intermediated ownership, and wealth distribution.
JEL classification: G1, G2, E5, L2, N2

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† This paper was presented at the International Conference organized jointly by the Center for Economic Institutions (Hitotsubashi University, Institute of Economic Research) and the International Monetary Fund, "Designing Financial Systems in East Asia and Japan – Toward a Twenty-First Century Paradigm-" on September 24-25, 2001 in Tokyo, Japan. We are grateful for constructive comments from participants, in particular, Takatoshi Ito and Jenny Corbett. An early version of this paper was presented at a seminar held in the Institute d'Economies Industrielle, University of Toulouse I on September 3, 2001. We are grateful to Jean Tirole, Bruno Biais and other participants for their comments.
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1. Introduction

Ever since Prime Minister Ryutaro Hashimoto introduced new plans for financial sector reform in 1996, the financial system of Japan has undergone dramatic changes. The reform plan known as the *Financial Big Bang in Japan,* covered wide areas in finance. It called for the liberalization of asset management businesses such as trust banks, insurance companies, and investment trust companies. The plan also included reforms for the promotion of capital markets, the reduction of entry barriers in various financial institutions, and new regulations for sound management of the banking system. The Big Bang was intended to promote fair and free financial system based on accepted global standards. It was motivated by the recognition that the prolonged crisis in the financial system was rooted in the inefficiency of the financial markets; more precisely, in the lack of market competition and in the opaque policies of the Ministry of Finance (Horiuchi (2000)).

Despite the broad coverage of the reforms, the Big Bang did not bring forth the concrete blueprint of the Japanese financial system. The plan emphasized the importance of financial markets while at the same time, reiterated the need to equip the banking system with sound policies. It encouraged individual investor participation in the capital markets as it tried to strengthen measures in promoting institutional investment. However, the plan did not provide a clear answer to two key questions: whether the Japanese financial system should reduce its dependence on the banking system and whether the major capital market players should be individual investors.

This paper will attempt to address these questions and to identify the future Japanese financial system architecture. We will follow the functional perspectives (Merton and Bodie (1995)), rather than the institutional perspectives. In designing the architecture of the Japanese financial system, the institution nevertheless matters greatly when we take into consideration factors such as participation costs and state of information technologies. For example, as Allen and Santamero (1998) argues, while the recent development of financial technology has reduced the trading costs of financial transaction significantly, it has increased participation costs considerably. This has meant that many sophisticated financial transactions have become beyond the capacity of ordinary individuals. In this case individuals cannot participate in the financial markets without the help of institutional investors. Moreover, the rapid development of new industrial technologies has caused diversity of opinion among asset holders in regards to various investment opportunities, as emphasized by Allen and Gale (2000). In turn, this renders the market-based financial system more efficient than the one based on intermediaries.

For the sake of simplicity, we will classify financial institutions into two groups: banks and institutional investors. The criterion used to differentiate between the two groups is whether the institutions are themselves risk-bearers such as banks, or if they simply transfer

risk to others i.e. institutional investors. Bear in mind though, that this division is not immune from oversimplification. Although the traditional role played by banks has been to eliminate or to avoid risks, the banking system nowadays actively engages in risk transfer activities. As Boots and Thakor (2000) argues, banks deal with relationship loans as well as transaction loans. Mortgage loans are a good example of the latter. Banks act as originators and servicers through loan securitization. The risks are simply transferred from the banks to the purchaser of the new securities rather than being absorbed by the banks themselves.

For some institutional investors such as life insurance companies, the risks are not unilaterally accepted. Frequently, they are passed onto the consumers in the form of changing rates of return. Similarly, corporate pension funds with fixed interest payments bear risks in principle, although payments vary depending on the earning ability of the firms that hold the funds.

We will accept four phenomena as basic backdrops for new financial system: (i) the enhanced capability of financial market transaction to redistribute and transfer risks, (ii) the sharp increase in participation costs for the financial markets owing to sophisticated financial instruments and technology, (iii) the rise in systemic risks due to structural changes in the industrial structure and related bank lending practices, and (iv) the peculiar features in Japanese wealth distribution, where most of financial assets are held by retired people.

The first two are global phenomena, and they are the major driving forces in converting the world's financial systems from a bank-based or relationship-based system to a market-based or transaction-based system. New methods to transfer risk comprise of bundling and unbundling of risks in financial contracts. Risks are redistributed and adjusted according to the type of risks preferred by the investor. These methods have become available owing to financial innovations and information technology (IT). Nonetheless, sophisticated IT-based financial technologies have significantly raised participation costs in market transactions. Without a certain amount of expertise, participation by the average individual investor is virtually impossible.

The last two are conditions peculiar to Japan and also to some extent, other Asian countries.[1] The 1980s and 1990s have ushered in changes to Japan's industrial structure from heavy and chemical industries to information and knowledge-based industries. Such a large-scale shift in industrial structure is closely related to Japan's economic history. Being behind other Western industrialized countries, the country had to play catch-up without the benefit of learning from an industrialized neighbor or to be engaging in division of labor. Consequently, Japan had to develop all the components of heavy industries and military on its own. Since firms in heavy and chemical industries were endowed with ample amount of

[1] Catching-up and shared growth are common characteristics in many East Asian economies.

real estates, the changes in Japan's industrial structure came with collateral-based bank credits. As Kiyotaki and Moore (1997) opines, a local shock in productivity would lead to a significant spillover in the entire economy. In other words, together with the relation-specific firm behavior, a fall in collateral prices amplified local shocks to systemic and non-diversifiable risks. The banks had no choice but to absorb the risks as they did not have any hedging instruments.

The fourth point is the pattern of wealth distribution. Unlike the case of the U.S. and pre-war Japan, post-war Japan enjoys a remarkably equal distribution of income and wealth. Moreover, it will be shown below that the sizable private financial assets are mostly held by a segment of retired people, who are more or less risk-averse and lack expertise in financial transactions. We will argue that the current state of wealth distribution or its future pattern is a crucial condition in re-designing the financial system. The effects of participation costs and risk redistribution are highly dependent on wealth distribution.

Against these four points, we will deliberate the architecture of the new financial system. Our main conclusion is concerned with the problem of who should be the main player in the risk transfer mechanism of the new financial system. In order to deal with this problem we will consider four scenarios derived from the level of participation costs and the type of wealth distribution. A choice among these scenarios depends on the empirical examination of participation costs as well as the judgment on the adequate degree of wealth distribution in the foreseeable future. (i) When participation costs are low and wealth distribution is unequal, the financial system should be based on markets with active participations by individual investors. (ii) When participation costs are high and wealth distribution is equal, intermediaries should be the main players in the financial markets. (iii) In either case when participation costs is low and wealth distribution is equal or vice versa, financial market transactions should be conducted by means of an adequate mixture of individual investors and intermediaries.

Through an examination of participation costs and judgment on the type of wealth distribution in the near future, we consider that the second scenario is most likely to prevail in the Japanese financial system in the era of security market-based financial system. In other words, we argue that neither bank-centered financial intermediation system, nor security market-based system relying on individual investors, is adequate. The architecture of the new financial system for the Japanese economy should be established on the principle of *security market-based intermediation*.

We consider that a proper division of labor and coordination among various types of intermediaries — banks and institutional investors — are needed in order to conduct transfers of financial risks effectively. The division of labor is indispensable partly because cyclical pattern in the changes of diversifiable and non-diversifiable risks exist and partly because global trend of synchronization of industrial activities tends to enhance the systemic

risks. Furthermore, despite the development of sophisticated technology of financial risk trading, there remains room to avoid and eliminate risks by means of diversified portfolio holding and close monitoring. More solid empirical and theoretical evidences are needed nonetheless, we feel that the following actions are necessary.

First, the capability of Japanese banks to eliminate risks has been reduced. It is urgent to introduce alternative measures to cope with risks. These include elimination, redistribution, and transfers of risks.

Second, with respect to intermediation by institutional investors, we need to establish institutional and legal frameworks in order to implement effective corporate governance. Despite the development of IT, information asymmetry related to the principal-agent problem remains in the financial system and difficulties related to contingent contract cannot be eliminated. Corporate governance has been carried out by relationship banking, but we feel it should be complemented by the "voice" from institutional investors as principal shareholders.

Third, the current plight of the Japanese banking system is partly due to competition from the market-based financial system that reduces the rent in relationship lending. It is also in part due to the current state of risks that has become systemic and non-diversifiable. There exists both cyclical and trend movements in the changing pattern of risks. As a trend, the nature of risk seems to be getting more systemic. Consequently, together with the trend of IT development which makes banking technology more and more obsolete, there is no denying that the role of the banking sector is being diminished.

Yet systemic risk is cyclical as well, as seen from the experience during the 1920s. Hence the importance of banking may arise again when risks become less systemic and more diversifiable. In addition, the banking sector can fulfill its important role in assisting small and medium-size firms, i.e. venture firms, in financing local economic activities.

Section 2 provides a theoretical basis for the proposal of the new architecture through examination of the relationship between key concepts. These concepts are participation costs, wealth distribution, and information asymmetry. We will at first offer some evidence on the rise of participation costs in the recent financial markets, then focus on participation costs and wealth distribution in which alternative scenarios will be discussed.

Section 3 deals with the changing role of the banking sector in Japan. At first, we examine the role of bank deposits as the key instrument in the store of value for the Japanese household. Through an examination of detailed data on the age distribution of financial wealth as well as portfolio selection of different age groups, we will argue why bank deposits have been so important for the Japanese households. We will then discuss whether the risk-taking role of banks has declined. By paying attention to the cyclical nature in the historical pattern of risk, the Japanese banking system is experiencing not only long-term financial technological changes - which tend to replace the traditional banking technologies

with new market-based technologies, but also the cyclical risk fluctuation related to the historical development phases of Japan.

Section 4 is devoted to a detailed examination of the new direction of changes in the Japanese financial system. This section will examine the phenomenon of the declining role of the banking sector, the insufficiency of the development in the securitized assets market, and the difficulties involving individual investors in the security markets. Later, this section will draw attention to the new phenomenon and possibility of corporate governance through *intermediated ownership*. We make a strong claim for the necessity of restructuring the Japanese financial markets to accommodate *securities market-based intermediation*. Finally, Section 5 provides an overview of the desirable financial system in Japan. The Appendix is concerned with risk transfer in historical perspective.

2. Participation Costs and Wealth Distribution

In an insightful review on the state of intermediation theory, Allen and Santamero (1998 and 2001) argue that the existing theory of financial intermediation focuses on functions no longer important to the new financial environments based on new information technology and globalization of the financial markets. Instead of emphasizing the roles of asymmetric information and transaction costs as the raison d'être for banking institutions, the authors point out two new functions of the financial system. First, the major role of the financial intermediaries lies not in the elimination and avoidance of risks, but in the trade and transfer of risks. Second, owing to rapid innovations in financial technology, participation costs in financial transaction have increased significantly. Therefore, the new and critical role of financial intermediations lies in reducing these costs.

Based on these two propositions regarding the functions of financial systems, Allen and Santamero further derive two important observations on the institutional characteristics of financial systems: (i) Financial market transaction is beyond the capacity of individual investors owing to high participation costs. Intermediaries should be the major players in the market. (ii) In economies with weak market competition, the banking sector should be the risk-transferring agent. The Japanese, German, and French banking sectors have historically fulfilled this role by way of intertemporal risk-smoothing; transferring risks from generation to generation.

It is indispensable to pay attention to the state of wealth distribution along with discussions on the concept of participation and transaction costs. We discuss this point and derive alternative scenarios for attracting more participants in the markets. It is especially important to understand differences between the Japanese financial system and its U.S. counterpart.

A case for utilization of intermediaries in financial market transactions seems to be

applicable to Japan in recent years. Wealth, mainly held by retirees, is individually too small to investment in the financial markets directly. Before presenting detailed discussion on alternative scenarios regarding participation costs and wealth distribution, the next section provides some evidence on the magnitude of participation costs.

2.1 How Large are the Participation Costs?

In order to confirm whether participation costs in financial markets have actually risen, we first examine the impact of IT on information costs in the financial markets. We do not believe that IT has reduced monitoring costs or alleviated information asymmetry in the market. Rather, IT has lowered trading costs considerably. Assuming that costs in the financial system are composed of trading costs, monitoring costs and participating costs, we find that there is evidence for a recent, significant rise in participation costs.

While it is true that recent developments of financial technology have reduced transaction costs, the developments do not necessarily imply a reduction in costs of corporate governance or monitoring. This is particularly true with respect to information and communication costs in asset management. There is also a lack of evidence to suggest that the cost of writing contracts and the cost of acquiring information have fallen.

The nature of recent changes in IT and their impact on the financial system are succinctly summarized in Bank of Japan (2001) and Baba and Hisada (2002). Three main points of the IT innovation are: (i) Innovation based on the integration of information processing technology and communication technology. (ii) Significant speeding-up, cost reduction and globalization of processing and transmitting information. (iii) The rapid diffusion of the innovation throughout the world.

These innovations have the following impacts on the financial system.[2] First, IT strengthens the functions of capital markets. It broadens the range of financial instruments tradable on the markets, owing to its exact specification of the risk-return profile of financial assets, and to the bundling and unbundling of risk-return features. Second, through reductions in entry cost, it influences the competitiveness and industrial organization of the banking industry.[3] Third, owing to IT's economies of scale, it can accelerate changes in the industrial structure and organization of the entire financial industry by facilitating merger and acquisition activities across various institutions.

In this regard, enhanced competition in the banking industry either through the pressure from the financial markets or though new competitors in the banking industry may

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[2] The fourth possible impact is on the payment system through the development of electronic money. The Bank of Japan (2001) developed a detailed examination on the impact focusing on the general acceptability and finality of electronic money.

[3] Internet banking is the case in point: two Internet banks were established; Japan Net Bank in October 2000 and Sony Bank in June 2001.

lower the financier-manager agency costs by investing in monitoring capacity by banks. Boot and Thakor (2000) argue that the degree of competition within the banking industry and among different financial markets affects incentives to invest in information processing capacity by the banks. Thus we see the different levels of relationship banking vis-à-vis transaction banking. Nevertheless, the innovation has little to do with improving the efficiency of such investments.

An important part of this kind of investment takes the form of human capital investment. For many companies, IT can reduce costly on-the-job training. However, the effect of IT on the efficiency of such training is quite different and perhaps negligible in comparison with its effects on the asset transaction efficiency in the capital markets.

Allen and Santamero (1998) and Mishkin and Strahan (1999) emphasize that the development of IT has made it easier to "screen out good from bad credit risks or to monitor corporations, thus reducing the adverse selection and moral hazard problem" (Mishkin and Strahan (1999, p.5). But they fail to explain how adverse selection and moral hazard are prevented by the use of the technology. Mishkin and Strahan (1999) refer to credit-scoring models by which loans to small firms are standardized and in some cases securitized. This kind of pooling technique has very little to do with improvement of individual firm monitoring.

Likewise, issuance of asset-backed securities by banks based on the future income on lease contracts, auto credits, consumer credits and mortgage loans does not necessarily reduce the credit risk of the banks. Although it is true that particular risks related to lease credits, moragage and so on are transferable to outside investors, there is a risk of moral hazard in activities which risks could not be securitized. In the case of project financing, banks could be freed from risks related to particular projects. However, firms are not a simple sum of individual projects. Risks related to the remaining coordinating sections, or management parts of the firms, may not be easily transferred via project financing. There is always the possibility of agency costs between firm managers and fund providers to the firms. The monitoring of managers through personal communications is still indispensable. Basic information asymmetry between financiers and corporate managers remains a crucial problem for financial intermediaries.

IT has not eliminated the contract costs. Hart (1995) refers to three kinds of contract costs: costs to think far ahead and to plan all contingencies, costs to negotiate about those plans among contracting parties, and costs to write the plans down for each contingencies. Since IT is not capable of reducing these costs, the difficulties in writing contingent contracts will persist, and the contracts will be left incomplete, leaving the principal-agent problems intact. Information production through continuous communication is of vital importance in realizing good corporate governance.

It must be made clear that it is not our intention to deny all the positive effects of IT

development on monitoring costs. We agree that recent changes in the global financial markets have had some indirect effects on the degree of information asymmetry in corporate management. For example, widely accepted rules in the area of accounting (integrated accounting system and market-price based accounting system) have enhanced transparency and reduced agency costs. Secondly, stockholder sovereignty in the global financial markets has intensified to a certain extent, resulting in the reduction of agency costs between financiers and manager due to disciplinary pressures exerted by stockholders.

Let us move on to the estimation of participation costs. For this purpose it is necessary to conceptualize the cost structure related to financial market activities. The financial market activity consists of the trading of various financial instruments in order to mobilize savings from surplus units to deficit units. Trading of financial instruments requires three kinds of market costs: (a) Costs to present demand schedule for each financial instrument in a way to be effectively contracted and traded. (b) Costs to present supply schedule for each financial instruments in a way to be effectively contracted and traded. (c) Costs to execute the trade and enforce contracts. In a world with only direct securities, cost (a) is incurred by surplus units, and (b) by deficit units. In a world with both direct and indirect securities issued by financial intermediaries, part of costs (a) and (b) are born also by financial institutions. Cost (a) is composed of many things such as expenses incurred in evaluating various financial instruments, costs to get basic expertise in trading, and expenses incurred by consulting and advising services et cetera. Likewise, cost (b) comprises of many things such as expenses in monitoring and information processing, costs information disclosure and signaling, and expenses involved in the negotiation and preparing of contracts, and so on. Cost (c) covers trade execution costs by financial intermediaries, stock exchanges, and regulatory agencies. For simplicity, we will refer to cost (a) participation costs, (b) monitoring costs, and (c) trading costs.

Although we do not have comprehensive evidence on significant reductions in trading cost benefited by improvements in IT, we will conditionally accept this proposition. Evidence is in the decline of brokerage commission for stock transactions. In Japan, trading fee was deregulated on October 1, 1999. Table 1 confirms that after October 1987 regulated trading fee declined steadily reflecting the enhanced efficient of security transaction and in the anticipation of financial liberalization. For each blanket of transaction volume either proportional or fixed, part of handling costs declined. This is particularly evident for large volume transactions. Table 2 shows average handling costs charged on customers based on the survey covering 190 security companies. Percentages declined during the years 2000 to 2001, there were small increases from 2001 to 2002. This seems to imply that trading fee on average, has already reached the equilibrium value from 1999 to 2001. It must be noted however, that the level and formula of charging trading fees have varied considerably among securities companies. Each firm has tried to offer its best price

depending on its technological competitive edge and sales strategy. There is little doubt that on-line e-trading has decreased trading fee considerably for small volume transactions, although we do not have comprehensive data to back up this claim.

As for the costs related to the monitoring of borrowers, it has often been argued that such costs too, have declined. We do not agree with this view completely, although we accept the fact that there is no evidence of increases in such costs.

Let us regard GDP or value-added in the financial service industry as the total costs of financial activities. Table 3 show that the share of the financial service industry (financial institutions and insurance companies) in GDP terms has risen continuously until the end of the bubble economy in the late 1980s. A decade later, a similar trend has been repeated in the U.S. It is interesting to note that the share was higher in Japan until the late 1980s, and then exceeded by the U.S. during the 1990s. We do not have any additional information to explain these differences nevertheless, the message of Table 3 is clear. Though trading costs and monitoring costs have not increased continuously, the increases in the total costs of financial sector activities are evidence for increases in the participation costs.

Table 4, 5 and 6 provide some evidence on increases in the participation costs. Table 4 shows that a percentage share of security analysts in the total employees of security industry has increased rapidly during the 1990s in Japan. A similar trend exists with respect to a percentage share of security analysts in the total employees of total finance and insurance industries. The number of analysts per listed firm (including over-the-counter trading) poses a similar trend. Table 5 confirms a similar trend in the U.S. with respects to the share of analysts in the total finance and insurance industry employees and the number of analysts per public company. While Tables 4 and 5 are related to consulting costs, Table 6 gives data on education costs, namely annual tuition of the top-three U.S. business schools and salary comparisons of the students before entering and after graduating from the schools. Tuition costs for an MBA education can be substantial, and so can the rewards. Post-MBA salary is almost three times greater than pre-MBA salary. The high cost of tuition can be construed as an evidence for high participation costs in the financial markets. Holders of MBA degrees are considered to possess expertise in business administration and in sophisticated financial transaction. In the example of Keio University Business School, annual tuition amounts to $18,950 U.S. dollars (converted by the exchange rate ¥130 yen/U.S. dollar). According to the ongoing pay scale of many Japanese companies, the reward for possessing an MBA degree is considerably less when compared with their American counterparts. Graduates of Japan MBA programs enjoy slightly higher salaries than their college graduate compatriots.

2.2 Wealth Distribution and the Financial System

The state of income and asset distribution has significant influence on the development of the financial system in two respects: risk aversion and participation costs.

As Friedman and Savage (1963), and Arrow (1965) have opined, the level of asset accumulation is closely related to the degree of risk aversion. Other things being equal, people are less risk-averse as they become wealthier. This has important implication in considering the functions of the financial system. For an economy with relatively even wealth distribution, it is not easy to trade risks since the degree of risk aversion is homogeneous, while risk trading and risk redistribution is easier for an economy with unequal income and wealth distribution.

Wealth distribution also has important bearings on the role of participation costs in implementing various functions of the financial system. Allen and Santamero (1998, 2001) emphasize that because of the degree of sophistication and specialization required to undertake complex risk trading and risk management operations, the participation costs in recent years have risen sharply. Participation costs are shared among asset holders or surplus units, financial intermediaries, and related various service industries. However, here we are concerned with participation costs born by assets holders only. When the level of asset accumulation is low and/or when wealth is evenly distributed among individuals, average fixed participation costs would be higher, and makes it more difficult to conduct risk trading by individuals. In such a case it is necessary to promote institutional investors or asset management institutions to share the participation costs through economy of scale in transaction. Conversely, when income and wealth distribution are skewed, the rich can afford to pay the participation costs, partly taking up risk trading among themselves.

The following scheme shows alternative scenarios for the participants in the financial market transaction.

If an economy is located at the north-west cell in Table 7, where participation costs are high and wealth is equally distributed, financial intermediaries should be the major players in the financial markets. This corresponds to contemporary Japan. In the south-east cell where participation costs are low and wealth is distributed unequally, rich individual investors are able to fulfill the central role in transferring financial risks. In either the north-east or the south-west cell, financial market activities are carried out by a mix of financial intermediaries and individual investors. Whether or not the U.S. is located in the south-east cell is an interesting question to be examined empirically. Whenever participation costs are high as is indicated above, the U.S. would actually be, located in the south-west cell along with the active participation of individuals in the financial markets.

Participation costs depend on the development of financial technology, while wealth distribution could be redirected through taxation and education policies. Therefore the choice among cells depends not only on value judgments relating to the socio-economic

system desired, but also political decisions over broad areas of economic and public policies. If Japan were to become a society with less equal *ex post* income and wealth distribution that is partially necessary for the activation of society, we could aim at a financial system with active individual participations. If we consider that the current state of income and wealth distribution should be maintained in the foreseeable future, we might need to establish market system intermediated by institutional investors and banks.

The relationship between participation costs and wealth distribution is important because there seems to be huge set-up or fixed costs included as part of participation costs. Since there is a scale economy in the consulting and learning activities, it is indispensable to consider the relationship between the costs and the levels of wealth. In order to illustrate the relationship of participation costs and wealth distribution, consider the following example. An individual investor with asset A (yen) faces a choice to invest his assets on his own or through the help of institutional investors. Let us assume that it is once and for all portfolio choice[4] and that an institutional investor can arrive at an optimal portfolio choice. We need to solve for his cost if he tries to arrive at the same optimal portfolio choice as that of the institutional investor. Total costs when he delegates the job to an institutional investor is given as

$$a + bA \tag{1}$$

Where b denotes a proportional trading fee and a is a fixed (lumpsome) fee. This implies that total trading fee increases as total assets increase, although average fee declines. The institutional investor faced with a large block of asset must consider new investment opportunities in the environment of relaxed constraints. Consequently, the institutional investors must use more human and data resources to collect information and conduct monitoring.

On the other hand, in the case of an individual investor who chooses portfolio by himself, his participation costs comprise the opportunity costs of labor

$$wT \tag{2}$$

where w denotes his wage level and T the time required to conduct the portfolio selection. This participation costs reflect costs to acquire expertise in participating complex financial transactions. We assume that T is composed of two parts, c and dA, i.e.

$$T = c + dA \tag{3}$$

Where c is a fixed component and d is a proportional component. A proportional component arises because as the size of total assets become larger, an individual investor incurs more information and monitoring costs. With a small A, he may have to obtain

[4] Allen and Santomero (1998) refers to continuous transaction on a day to day basis (op. cit., p.1481). However, as the introduction of dynamic aspects of portfolio selection is beyond the scope of this paper, we confine ourselves only to a once and for all selection.

information about listed firms and mutual funds in the newspapers. With a slightly bigger A, he may want to have information about investment opportunities abroad. With an even larger A, he might need private information about Silicon Valley entrepreneurs. Finally, with a very large A, he would need data about investment strategies of hedge funds. cw shows fixed costs to participate in the financial market transaction. Allen and Santomero (1998, 2001) argues that a rapid increase in cw vis-à-vis a is one of the basic characteristics of the modern financial system.

The investor will delegate the transaction to institutional investors if $a + bA$ is smaller than $w(c + dA)$ or $\frac{a}{A} + b$ is smaller than $\frac{cw}{A} + dw$, and conduct the transaction by himself if $a + bA$ is greater than $w(c + dA)$ or $\frac{a}{A} + b$ is greater than $\frac{cw}{A} + dw$.

In an economy with skewed wealth distribution, the wealth level of representative investor could be large. The comparison between the two terms would be dominated by a comparison between b and dw [5]. In this economy, those not earning wage incomes will certainly choose to implement portfolio choice by themselves. This is the typical case of classical rentier depicted in J. M Keynes' *General Theory*. Retired rich investors also prefer to select their portfolio by themselves. However, Bill Gates, whose w is very high, would delegate the business to institutional investors or professionals as Allen (2001) mentions.

On the other hand in an economy with equal wealth distribution, the comparison will be dominated by the comparison between a and cw. c would be very large for those who lack basic knowledge of financial instruments and IT. Even if w is small, individuals will choose institutional investors when c is sufficiently large as compared with a, owing to the sophistication of financial technology and the transaction economy of scale that is provided by institutional investors. This case corresponds to the current environment in Japan as most of the financial assets are held by a segment of retirees receiving large retirement payments. It must be noted that even for the educated young, the cw is an opportunity cost, i.e. lost employment income from participants in the MBA studies (Table 6).

Mankiew and Zeldes (1991) has clearly pointed out the dependence on fixed participation costs or fixed information costs in regards to the level of wealth. Using the 1984 family survey data, it can be understood that higher-income families were more likely to pay the fixed costs because of their larger portfolios. The fraction of U.S. families that held stock in 1984 increased with the level of average labor income. Noted that in Mankiew and Zeldes (1991), labor income is not treated as opportunity costs of information acquisition activities but a surrogate variable for the level of wealth.

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[5] For simplicity, consider the case where A is infinite.

3. The Banking Sector in Japan

In discussing the new architecture of the financial system, the restructuring of the banking sector is crucial in Japan. Throughout the postwar years, banks have played important roles in providing households with safe storage of value. They have also encouraged relation-specific investments by workers and related-firms.

This section will investigate the state of banking industry from three angles. First, we examine why the share of bank deposits in household portfolios has been so high. This phenomenon is due to wealth equality, skewed wealth distribution among different age groups, and government protection of deposits in the so-called convoy system. Second, we discuss why the non-performing asset problem has become so serious in Japan. In addition to the ramifications of the asset bubble and financial policy muddle, we will also point out significant trend and cyclical factors that explain the current plight of the banking industry.

3.1 Why is the Deposit Ratio so high in Japan?

At first, let us examine how households allocate their savings into different financial and real assets. We will also look at how income and wealth are distributed. Broadly speaking, both household assets and liabilities have increased since 1970, with gross financial assets rising from around 98% of GDP in 1970 to over 252% in 1998. The liabilities have increased from under 40% to around 77%. Net financial wealth, as a result, has risen strongly from 60% of GDP in 1970 to 115% in 1998.

Table 8 provides a comprehensive picture of household portfolio selection in comparative and historical perspective. As a general trend among G7 countries, we can observe the following. (i) The share of deposits has declined over time except for Japan. (ii) The share of equities held by households has declined in the U.K., the U.S., Germany, and Japan while it has increased in Canada, France, and Italy. (iii) The share of claims on institutions has increased in all G7 countries.

Table 9 shows the trend of personal sector (household plus unincorporated businesses)[6] portfolio selection in more detail for Japan and confirms the characteristics mentioned earlier. It can also be understood that although the share of deposits is almost constant since 1970, the share of bank deposits declined during the 1990s, with the offsetting increase in postal savings. We will return to this point in the next section.

Overall, the share of deposits including postal savings is exceptionally high in Japan. Table 10 compares the level of composition of financial assets in Japan with the U.S., the U.K., Germany, and France. The percentage of cash and deposits is 54.0% in Japan. This is

[6] Since Table 9 is based on flow of funds account, the household of Japan in the table is the personal sector.

contrasted with 9.6% in the U.S. The share of claims on institutional investors is highest for the U.K.; 52.2% of insurance and pension funds plus 5.1% of investment funds and unit funds. For the similar claims, the share in Japan is among the lowest along with France and Germany. The share of equities is very high for the U.S. (37.3%) and France (39.7%). For Japan the figure is surprisingly low at 8.1%.

Table 11 shows the portfolio composition of the households by income group based on Family Saving Survey. Regardless of income group, time deposits are the major form of savings in Japan. This trend is constant throughout the sample period 1979-1999. Relatively speaking, the richer households own a higher share of securities - in particular equities, while more insurance is owned by the middle income group. Differences in portfolio composition among different income groups are very small. In 1999, the composition of stocks and shares was 4.72% for the lowest income quartile, 6.06 % for the second, 5.35% for the third, 5.28% for the fourth and 7.86% for the highest fifth quartile.

The difference in the composition of stocks and shares is roughly matched by the difference in the composition of time deposits in the opposite direction — 53.48% for the first, 47.46% for the second, 47.46% for the third, 44.22 % for the fourth and 44.75% for the fifth quartile. Until 1989, the portfolio selection of the four groups from the first to fourth quartile was very similar, and the fifth quartile had a slightly different pattern; relatively high share of stocks and shares, and relatively low share of time deposits and insurance. However, even during this period, there is little difference among income groups.

Why do households in Japan prefer bank deposits? A readily conceivable reason is the implicit protection of deposits by the government. It is true in the past fifty years the government has adopted the convoy policy of protecting inefficient banks from bankruptcy. When some banks went bankrupt in the late 1980s, the government responded with perfect protection on deposits.[7] Although the government protection explains the choice for safety of deposits, this factor is insufficient as an explanation for high deposit shares because it lacks a reason for the preference for safe assets[8]. There are two reasons.

First, wealth distribution is highly equal in Japan, which implies that wealth held by the rich with a lower degree of risk aversion accounts for less. According to Wolff (1996), in Table 12, the share of wealth held by the top five percent of the Japanese population is 25% in 1984. This is less than half of the amount in the U.S. In 1983 the same share of wealth held by the top five percent in the U.S. is 54% in gross assets, or 56% in net assets. In terms

[7] When the government finally adopted the policy of pay off through deposit insurance organization in April 2002, and partly abandoned the deposit protection policy, deposits shifted from small banks to large banks and postal savings. Time deposits were converted into ordinary deposits for which pay off was postponed until April 2003.

[8] Of course, the lack of alternative attractive assets is another explanation for this phenomenon in the past. Until the 1980s, security market instruments were heavily regulated by the financial authority, and were not readily available as a store of value with a reasonable rate of return (Teranishi(1982) and Miller (1998)).

of Gini coefficient, the figure of 0.52 in Japan is significantly lower than 0.77 (gross assets) or 0.79 (net assets) in the U.S. Even when comparing with other developed countries including France, Germany, Canada, and Australia, Japanese asset distribution is the most equal.

Second, private financial assets in Japan are mostly held by retirees who have obtained retirement severance payments and are now aging rapidly. They prefer safe assets because of the increasing uncertainty in lifespan. The speed of population aging in Japan is highest among all developed countries. Moreover, recent theoretical examination has clarified that the share of investment in high risk assets such as stocks depends on wage earning capability, and other things being equal, the degree to afford risk is a decreasing function of age (Bodie, Merton and Samuelson(1992)).[9]

For these two reasons, asset holders in Japan are significantly risk-averse compared with people in other countries. The low degree of utilization of high-tech financial instruments by the Japanese financial companies is not necessarily due to the incapability of developing financial instruments, but due to the lack of investors who are willing to take larger risks. This phenomenon explains why there is a high share of bank deposits in household assets. Incidentally, the reasons for significant equality of wealth distribution could be traced back to the three incidents immediately after the war. First, after the war, a hyper-inflation erupted which finally raised postwar price level 300 times higher compared with the prewar level. This inflation has wiped out considerable part of financial assets with nominally fixed face value. Second was the Zaibatsu dissolution and imposition of wealth tax (zaisan-zei). Owing to these two measures most of the assets owned by wealthy families were confiscated and sold out to the public at low prices by the Security Coordination Liquidation Committee under the Occupation Army. Equity sold out during 1946-47 comprised 57% of total paid-in capital of corporate firms in the country.

Third was the through-going land reform implemented during 1947-50. All the arable land held by "non-resident" landowners were confiscated and sold out to landless farmers at a price less than one percent of the prewar price in real terms. The second and third reasons eliminated almost all of the wealthy class existed in the prewar period (Teranishi, 1993). With this initial condition, wealth distribution of postwar Japan maintained extreme equality, partly owing to income sharing mechanism using internal labor markets and partly owing to high level of inheritance tax.

The fact that significant portion of the assets in Japan is held by retirees is illustrated in Table 13 based on the Family Saving Survey. Important observations follow. First, we look at the accumulation of assets by the age group over 65. From 1979 to 1989, the assets of this group increased from 7,438 to 24,122, by 3.2 times, while average assets increased

[9] Bodies and Crane (1997) examine Bodie, Merton and Samuelson model, using data of 1996 survey of TIAA-CREF participants and have an evidence that supports the hypothesis

only by 2.5 times from 5,212 to 13,110 (Units in thousand yen). Second, although there was the phenomenon of life-cycle saving or hump saving in 1979 for the age group 50 to 60 (group of highest asset accumulation) and dissaving after age 65, this phenomenon disappeared after 1989 and thereafter asset level increases monotomically along with age.

In other words, Table 13 shows that the oldest age group has become the major asset holders in Japan since the mid-1980s. Let us have a close look at the portfolio selection behavior of this age group. By comparing 1979 and 1999, we know that the percentage share of time deposits has increased from 46.03% to 53.05%, while the average share of time deposits decreased form 47.18 to 46.83%[10] Moreover, the share of stocks and shares fell from 12.95% to 7.01%[11]. These facts suggest that retirees with high preference for safe deposits led the aggregate portfolio selection in Japan.

Incidentally, it is worth noting that unlike in the U.S., the baby boomers in Japan could not become the main player in the financial market. Kitamura, Takayama and Arita (2001a) demonstrate that the baby boomers could not save as much as the previous generations in the prime age-income period (i.e. 50-60). This is partly due to the fact that the baby boomers consist of the largest demographic group. Firms and organizations could no longer afford to pay generous seniority wages to the boomer cohort as they did before. Another reason is timing. Unfortunately for the baby boomers, by the time they reach their 50s, they are stuck in the midst of the unprecedented 1990s economic recession.[12]

Let us now discuss the low level of equity holdings. This is especially clear when we compare Japan with the U.S., although Japan is the lowest among G7 countries (Table 8). Allen and Santamero (1998) argue that owing to the rise of participation costs, equity ownership has shifted from individual investors to institutional investors. While we agree with this assertion, we want to draw attention to the fact that even in the year 1998 household in the U.S. held 23% of assets in the form of equity, and only 4% for Japan (Table 8). We consider the difference to be rooted in the difference in wealth distribution (Table 7). In the U.S., despite the rise of participation costs, a considerable number of wealthy individuals can afford to manage their stock investment by themselves, and to warrant the payment of fixed participation costs[13]. In this sense, the financial system of the U.S. is a mixture of

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[10] To be more precise, the share of time deposits fell sharply at the time the bubble burst in 1989 and regained later on.

[11] People in this age group increased stock holding during the bubble period 1984-1989 by 2.5 times from 11.91% to 29.93%. However, a similar behavior occurred with the other age groups. In particular, the age group 55-59 increased the share by 3.3 times from 6.36% to 20.79%.

[12] Some economists argue that the bubble economy had to do with the baby boomers. Social contracts such as lifetime employment, seniority wage system, and generous pay-as-you-go public pension scheme could not be maintained for the baby boomers.

[13] Other researches report that the number of stocks held by the average asset holder is not large even in the U.S. (King and Leap (1984)) and that only a small portion (27.6% in 1984 survey of 2,998 families) of household owns stocks (Mankiew and Zeldes (1991)). However, this fact does not necessarily preclude

intermediation by institutional investors and individual investors, and corresponds to the south-west cell in Table 7. In Japan, high participation costs and concentration of wealth by the retirees seem to imply that *intermediated ownership* in a system of *security market-based intermediation* is the only way to accommodate and adjust to the shift in financial technology.

3. 2 Failure of the Banking Sector in Risk Taking

After the bubble burst, the banking sector of Japan entered into prolonged stagnation and decline. Saddled with huge non-performing loans (NPL), bank lending has continued to shrink in spite of the exceptionally low interest rate policy of the Bank of Japan. Apart from the policy muddle which seems to have aggravated the NPL problem, there are two factors behind this phenomenon: financial technology and the changing nature of risks.

The first factor is related to financial technology development. The banking sector in Japan seriously lags behind other countries in technological progress. Owing to the rapid development of information and communication technologies, the securities markets are equipped with powerful mechanisms of risk management through the bundling, unbundling, and trading of risks. Intense competition in the international bond markets, domestic security industry, and among institutional investors, has led to better financial technology. For example, the deregulation of bond markets in the 1980s ushered by the expansion of Euro-yen bond market gave incentive to traditional bank customers i.e. big businesses, to shift their funding from bank borrowings to bond financing. Medium-term bond funds (chu-koku-funds) issued by security companies, have competed directly and effectively with bank deposits, owing to their liquidity and high yields.

With an increase in net financial wealth in the household sector, households increasingly want a higher share of their assets in the form of long-term, high-return and high-risk products, as their liquidity needs can be reduced to relatively small proportion of the portfolio. Traditional banking services or products while maintaining a strong position in liquidity provision are inadequate for diversification and maximization of long-term investment returns. The associated rise in demand for diversified financial instruments caused an increase of institutional investors, such as trust banks, insurance companies, and investment trust funds. The banks responded to these challenges in three ways.

First, focus was shifted to off-balance-sheet and fee-earning activities. Second, banks engaged in intensified cost-cutting. Third, loans were extended to high-risk borrowers in order to maintain profitability. High risk lending recipients include small and medium-sized firms as well as real estate related activities. In principle, shifts to high risk and unfamiliar markets could be made without major increases to banks' solvency risk if the associated

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the existence of the large number of wealthy stockholders in the country.

credit risk had been priced accurately and loan reserves had been built up accordingly. Institutional competition led to aggressive risk-taking on banks during the late 1980s, as they sought to maintain the profitability of their traditional lending business. The major losses incurred in the 1990s suggest that risk pricing or quantity rationing was inaccurate. Although we do not delve into the issue why banks have failed to shift to new markets, there are two policy issues. (i) Monetary policy did not adequately function to prevent the rise of the asset bubble, partly owing to the constraints related to international policy coordination. (ii) Past history of excessive bureaucratic intervention in the banking sector has deprived the sector of flexibility, and the sector continued the simple-minded strategy of scale expansion.

As to the second factor, it is claimed that the change from diversifiable risks to non-diversifiable risks has decreased the risk-function of the banks. There are trends and cyclical elements in this phenomenon. The globalization of the world economy and the consequent synchronization of the economic activity are two inevitable trends.

There is an important cyclical element in the pattern of risks. Whenever there is basic innovation in industrial technology, systemic industrial risk tends to rise. Japan has experienced a similar systemic risk in the 1920s and in the 1990s[14].

As the industrial structure shifted from light and indigenous industries (based on agriculture) to heavy and chemical industries in the 1920s, the industries tied by the input-output relationships went into difficulty simultaneously. Risks related to each industry became highly correlated. Also, the declining industries (i.e. light and indigenous industries)

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[14] Similarities exist between the financial crisis of the 1920s that lasted until the beginning of World War II, and in the financial crisis of the 1990s. The financial crisis of the 1920s occurred when deflationary policies such as the lifting of the gold embargo were implemented. After World War I, an asset bubble occurred and collapsed in the 1920s. Then, just like now, the banks were burdened with bad loans, which led to the financial crisis in the spring of 1927. To deal with the crisis, the Financial System Research Committee (Kinyu-seido Chosakai) was established to study the Banking Law in 1926. The law was promulgated in 1927. The second asset bubble occurred in the late 1980s and collapsed in the early 1990s. The banking sector was burdened with huge amounts of non-performing loans (NPLs). As a result, many banks and financial institutions went bankrupt in the 1990s. At the same time, the Financial Deregulation Program "Big Bang" was announced in 1996 and implemented in 1999. Under the current recession, the growth rate of bank lending has declined since 1990. The rate has decreased to -4.7% in 1997. During the period of the financial crisis in the Showa era, the degree of credit contraction was more severe and lending by regional banks in 1934 contracted to 49% in 1926. These two recessions resembled each other in terms of credit crunch, although the degree of credit contraction differed. During the 1920s financial crisis, the minimum capital requirement was raised in order to raise the net worth of banks under the Banking Law. Similarly, the government today has tried to do the same by injecting the banks with public funds. In conclusion, the two recessions share an important common point. Both recessions occurred in periods of industrial and economic transitions. The recession of the 1920s occurred during the industrial transition from indigenous and light industries (agriculture and raw silk) to heavy industries. In terms of resource allocation, the era was in transition from a liberal trading system that began during the middle of the Meiji period, to a controlled allocation system. The current recession has occurred in another industrial transition period: from heavy-industry-oriented economy to IT-based economy. Looking at resource allocation, the current economic situation is in a transitional stage from the so-called Japanese economic system to a more market-oriented economic system.

leveraged land as collateral and borrowed large funds from the banks. Due to fear of corporate bankruptcy, the banks did not force the indebted firms to repay. Consequently, banks were unable to fully recover their principle loans. This scenario has been repeated in the 1990s as the Japanese industrial structure once again experienced a substantial shift from heavy industries to knowledge-based industries. [15]

Kiyotaki and Moore (1997) shows that under such conditions, a single shock on an industry has significantly persistent spillover effects over other industries. A temporal and partial shock is turned into a systemic and macro shock, accompanied by a sharp fall of the value of the collateral, followed by a curtailment of bank lending. We will provide detailed explanations in the next section.[16]

When risk is cyclical in nature, the function of the banking sector could also be cyclical. When the nature of risks becomes systemic, the role of the banking sector would be diminished. Conversely, banks can fulfill their risk-eliminating role when risks in the industrial sectors are idiosyncratic and diversifiable. If we accept this as valid assumption, today's loss of competitiveness in the banking sector might be considered to be a temporal phenomenon. This may offer another explanation as to why the Japanese households hold bank deposits in such high proportions.

Nowadays, there seems to be a trend towards weakening the functions of the banking sector. Prudential banking regulation raises the institutional cost of management in the banking sector and weakens its function. In addition, market-oriented and globalized financial markets raise the cost of cross-shareholding.

Let us argue that in both the 1920s and the 1990s, an unfavorable shock on a particular industry worked as a trigger, and spread the shock over the entire economy. The trigger was responsible for the change in industrial structure. It also caused an economy-wide decline in the value of collateral assets (i.e. land), which led to a credit crunch. As a result, the risks faced by the banking sector became systemic and non-diversifiable.

The 1920s was a period of transition. The percentage share in net domestic production valued in current prices declined from 30.2% in 1920 to 17.6% in 1930. The percentage share of food industry in total manufacture production (in current prices) declined from 34.1% in 1910 to 25.0% in 1930.[17] In contrast, the composition of heavy and chemical industries (chemical, machinery, steel, and non-ferrous metals) increased from 20.9% in 1910

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[15] As mentioned earlier, in Japan the period of the 1980s and 1990s witnessed a change in industrial structure from the heavy and chemical industries (based on the revolution in energy and material transformation) to new industries (based on the new technology for processing and transmitting information).

[16] Miller and Stiglitz (1999) give an interesting theoretical explanation for such a systemic risk situation in the case of an unexpected devaluation utilizing Kiyotaki and Moore (1997) model.

[17] Within the light industry, the cotton textile industry was a highly competitive leading industry during the period, and it did not have any significant relationship with the domestic agriculture sector.

to 32.8% in 1930.

What happened to the agricultural and light industries sectors? First, agriculture productivity increase was stunted by the saturation of the high-yield rice production. Then, rice import policy from the colonies depressed the domestic rice price. Lastly, the Great Depression of the 1930s decimated the silk industry.

The shock on the agriculture sector had persistent and amplifying impacts on the whole indigenous and light industries. These industries depended heavily on agriculture as sources of materials, inputs, and for final demand. Bank loans for these industries were highly collaterized on land -- 31.3% in local areas, in contrast to 9.0% in six large city areas[18]. The percentage of lending collaterized on real estate was 16.2% for large banks. For small banks with capital less than one million yen it was 38.3%. Their customers comprised mainly of farmers, indigenous producers, and merchants.

Taking the year 1922 as 100, the land price index[19] went up from 49 in 1913 to 100 in 1922, and fell to 62 in 1932.[20] Kiyotaki and Moore (1997) notes that when bank loans are tied to the collateral value, and when collateral assets are production factors, an unfavorable shock on a credit-constrained sector has persistent effects upon future periods. This also has spillover effects on other sectors through a fall in collateral prices on credit limits.

We saw the same story in the 1990s. Until the bursting of the bubble economy in 1990, the Japanese economy was highly leveraged through the use of real estate as loan collateral. Firms in the heavy and chemical industries used their large urban factory land holdings as collateral and enjoyed automatic expansion of credit as land prices went up. The banks fueled the speculative bubble through lending and raising credit limits in accordance with land price appreciation. The collapse of the bubble precipitated by the fall of land prices caused the severe credit crunch. Since 27% of bank lending was collateralized with land as of 1990, the credit contraction hit the heavy and chemical industries most severely. Land price index in the six largest city areas went up from 10.1 in 1970 to 33.6 in 1985, up to 100 in 1990, and dropped to 44.9 in 1997.

There is no doubt that the Kiyotaki and Moore mechanism worked, making the credit crunch persistent and economy-wide. Moreover, since the heavy and chemical industries tied up relation-specific investments, the spillover effect was exaggerated through the input output relationship. Decline in credit limits of one firm influenced other firms through the depreciating land prices. This in turn affected the input-output relationship through decreases in the demand side. Negative shocks in the 1990s became systemic, and risks faced by the banking sector became more difficult to diversify.

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[18] Tokyo, Osaka, Kobe, Nagoya, Kyoto, and Yokohama.

[19] Paddy fields.

[20] The lending practice of local banks, (whose credit limits were tied to land prices) and the subsequent

4. New Direction of Changes in Japanese Financial Intermediation

So far we have argued that the development of IT has enhanced greatly the risk transferring (trading or redistributing) capability of financial markets. At the same time, it has raised participation costs in the market to a level where average individual market participation is almost impossible. It has also failed to reduce agency costs significantly due to information asymmetry between financiers and borrowing firms.

IT has helped to promote the role of institutional investors. These investors can afford high participation costs and take advantage of sophisticated market-based financial instruments. While these events have caused an outright decline of traditional banking businesses in many countries, this did not happen in Japan. Households still prefer deposit instruments despite the banking sector being saddled with NPLs. We have construed this paradoxical phenomenon by introducing two Japanese characteristics: equal wealth distribution and the retirees as main asset holders.

Nevertheless, it has become increasingly clear that the banking sector in Japan is near its risk-bearing limit. This is evident in the recent shift of deposits from banks to postal savings account. Therefore, it is unavoidable to introduce other measures to cope with non-differentiable risks, to transfer risks more extensively. The bank-based financial intermediation system should be replaced by a more secure market-based financial system. This does not necessarily mean that the security market-based financial system will be of the U.S. type, characterized by corporate controlled markets and dispersed corporate ownership. Instead, we argue that the new security market-based financial system will be characterized by *security market-based intermediation* i.e. intermediated shareholding, and corporate monitoring by institutional investors.

In this section, a detailed account on the limitation of risk bearing capability by banks will be given. Then, we discuss three phenomena emerging in the Japanese financial system, which work towards *security market-based intermediation*. They are characteristics of securitization, increasing share of institutional investors in corporate ownership, and emerging activism by institutional investors.

4.1 Declining Functions of Banking Institutions

As mentioned above, Japanese households prefer safety to return and liquidity in their asset selection. Even at the end of 1999, the share of safety assets in terms of cash and deposits was still exceptionally high compared with other developed countries (Table 10).

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credit crunch throughout the 1920s and 1930s were related to the fall in the price of land (Shindo (1977)).

From a historical viewpoint, traditional financial intermediation in Japan does not seem to have changed since the 1970s, although the size of the personal assets has increased more than 16 times in the past 30 years (Table 9). Time deposits, (including bank deposits and postal savings) have consistently accounted for 40-50% of the personal assets. Regular savings deposit account for around 30%. In the 1980s, there was a temporary decline of both bank deposits and postal savings, but the speed of disintermediation was quite slow in comparison with other developed economies.

Focusing on the 1990s, there are some noteworthy changes in intermediation. First, assets shifted from bank accounts to postal savings accounts. This shift is due to distrust in the banks' non-disclosure of NPLs[21], and due to a change in government regulation raising the upper limit of postal savings deposit per head[22].

Second, in the 1990s, funds managed by institutional investors, which include trust funds, investment trust funds, and insurances, kept increasing. Share of securities dropped sharply. In other words, direct holding of securities by households was replaced by indirect holding of risk-bearing funds. This trend is caused by the aging society, where a large part of insurance and trust funds is related to the growth of the pension funds in the Japanese pension funds scheme.[23]

These facts show that the channel of funds from the personal sector to the corporate sector has partly switched from banking institutions to government and institutional investors.[24]

With regards to the risk-bearing ability of banks, there are two major reasons for its weakness. One is common to banking in general; the other is peculiar to Japan. The common reason is financial globalization and progress of IT. These two events contribute to the linkage of asset markets and the spread of information among investors, which in turn

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21 Hanazaki and Horiuchi(1999) stresses that the Japanese banking crisis resulted from the delay in disclosing non-performing loans and the responses in managing them.

22 The upper limit of postal savings per head was gradually raised from ¥3 million to ¥10 million during the period of 1988-1991.

23 In Japan, institutional investors such as trust banks and insurance companies are trustee bodies of pension funds. The trustee bodies are legal shareholders of the companies they invest in. Their customer pension funds are real shareholders.

24 This is not to say that Japan's bank-based financial system characterized by financial intermediation, was shifting toward the securities market-based financial system supported by corporate control markets and dispersion of corporate ownership, all characteristics of the U.S. financial system. Japan's financial intermediation linked broadly dispersed small funds with corporate investments through banking institutions. Bank-based financial system has not changed in Japan, from a viewpoint of households or individuals, but the channels and catalysts have diversified. Hence, in the 1990s, functions of the Japanese banking institutions in terms of risk-bearing and information production, declined. On the demand side of the funds, large firms that had strong relationships with banks, have dramatically diversified their financing since the 1980s. The gap between the risk-bearing attitude of household and the risk-funding attitude of firms has widened further in the 1990s. The function of banks as intermediaries can no longer respond to the situation sufficiently.

enhance correlated changes in different asset markets internally and externally.

To repeat, increased systemic risks reduce the role of the banking sector in diversifying risks. The progress of IT in globalization has weakened the risk-bearing capability through the following two mechanisms.

The first mechanism is an increase in agency costs for banking institutions, or reduced confidence of depositors in the quality of deposits as a safe asset.[25] As financial globalization and progress of IT continue, it becomes more and more difficult for financial intermediaries to diversify risks within the organization. Financial intermediaries must transfer risks, manage risks utilizing markets, and serve as vehicles for risk trading (Allen and Gale (1997)). However, even if banking institutions implement strategies to transfer risks, they cannot manage risks sufficiently when the financial circumstances are frequently influenced by unexpected macroeconomic shocks. The new vehicles and devices for risk management make monitoring bank management more difficult.

The next mechanism is the increase in institutional costs shouldered by Japanese banks. Difficulty in risk monitoring contributes to banking instability, especially in the field of international business. Measures to strengthen prudential regulations and steps to stabilize bank management produce new institutional costs. There are also other obligations such as the need to strengthen disclosure regulations, to fulfill equity ratio requirements, and to satisfy balance sheet rules.

The risk bearing capability of the banking sector in Japan was further reduced by additional factors in the 1990s. One is the amount of NPLs in the banking sector. The banking institutions chose to cut new lending in order to avoid additional risk rather than to promote disclosure and swift resolution of NPLs. This worsened the banking problem.

Second, the cost of shareholding by the banking sector increased. The cost of cross shareholding within a corporate group or between banks and their corporate customers increased, owing to the stock market and real estate market slump. A certain amount of stock holdings is allowed by the BIS capital adequacy accord to be included in equity. The result was a smaller equity assets ratio due to large losses in shareholdings.

The last factor is the transition from book value criterion to market value accounting system. The transition revealed concealed losses in the book-valued accounts and reduced values of equity assets.

In summary, the weakening risk-bearing ability of Japanese banking institutions in the 1990s meant that the conditions, which have concentrated risks on the banking sector for a long time, were further eroded. It is urgently needed to complement the risk bearing by

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[25] Ross (1989) classifies financial products based on transparency in asset management from a viewpoint of end users of markets. According to his classification, deposits are least transparent, mutual funds are most transparent, and pension funds are in between.

banks with new efficient methods of risk trading.

4.2 Securitization and Redistribution of Risk

Decline in functions of banks in terms of risk bearing and information production actually hampers management of risks in the economy through traditional intermediation. This causes two kinds of change in the financial system. First, in order to avoid increasing costs and risks of traditional intermediation, existing financial intermediaries are inclined to shift their core activities from risk-bearing to risk-transferring. By extending fee-earning businesses such as asset management and financial planning, they pass the risks to their customers.

Second, the need for risk redistribution creates demand for new financial instruments such as derivatives and securitized assets. Securitization of future cash flows, in forms of loan sales and issuance of asset-backed securities (ABS) -- which include mortgage backed securities (MBS) by broad definition, provides new facilities for risk management and risk trading.

From a microeconomic view, securitization provides new risk management measures for lenders, new financing vehicles for firms, and new risk assets for investors. From a macro economic view, securitization has two functions: the redistribution of risks and the unbundling of intermediation through markets. Both improve financial intermediation efficiency. Hence, securitization transforms the traditional financial system into a securities market-based system.

Issuance of ABS of general loans and credits started in 1994, when the government lifted the ban on the issuance of asset-backed securities in the off-shore markets. The development of securitization has accelerated since 1997, when Japanese banks suffered from the Japan premium in international markets, reflecting financial distress and bankruptcies of several financial firms. The poor health of the banking institutions made the government realize the need for securitization legislation. As a consequence, the Special Purpose Company Act in 1998, followed by the Special Services Law in 1999, was passed. They enabled the Japanese financial institutions and non-financial firms to take advantage of the ABS markets. Thereafter, securitization grew rapidly. Sales of loan credit in the domestic market by city banks began in 1998. The first ABS related to housing loans was issued in 1999, and Housing Loan Corporation (government entity) issued ABS in 2001.

According to the money flow data by the Bank of Japan, the securitization of general loans and credit jumped to approximately ¥10 trillion at the end of 1997 fiscal year and to ¥12 trillion at the end of 1998 fiscal year. According to a Credit Suisse First Boston (CSFB) report, the size of ABS issuance at annual base is estimated at having been ¥2.8 trillion in

2000.[26] The size of markets for securitized assets in Japan is the second largest in the world following the U.S. However, the difference between the two countries is considerable, since the size of Japan is less than one-tenth that of the U.S. In 1996, ABS in the U.S. amounted to 17.2 trillion yen and in Japan 0.08 trillion Yen, while those in 2000 are 25.6 and 2.06 respectively (Akai (2001) based on estimation by Morgan Stanley).

In conclusion, securitization did not occur spontaneously, nor did it progress in the private sector in response to demands for the transfer/redistribution of risks. The government provided institutional and legal conditions for the securitization of loans and credits in the late 1990s, with the aim to restructure banks and other distressed financial institutions. In other words, the government initiated securitization from the supply side of assets, not from the demand side.

A large part of ABS issuance is related to lease credits and consumer loans. In 2001, lease and consumer credits respectively share 22.9% and 20.0% of total ABS issuance (Egawa (2001) based on CSFB estimation).[27] It is noteworthy that real estate related loans and housing loans grew in fiscal 2000 to account for more than one-third of the total issues. In March 2001, the Housing Loan Corporation (a government finance company) issued its first ABS and announced it would continue to do so in the future. As the Housing Loan Corporation still holds ¥70 trillion in loans, the potential for securitized assets seems very high. In addition, real estate investment trusts (REITs) based on future cash flows from new development plans were listed on the Tokyo Stock Exchange in September 2001.

On the other hand, the securitization of non-performing loans (NPLs) is still extremely limited. According to Morgan Stanley, the share of NPLs in ABS issuance was only 1% in 2000 and is estimated to be 3% in 2001.[28] NPLs in the banking sector have a close connection with the liquidation of real estate, since a large part of bank loans are collateralized by real estate. Thus, securitization related to real estate is critical for improving Japan's financial system efficiency, and for that purpose liquidation of real estate is a crucial precondition.

In general, development of securitization depends on the following conditions. (i) Proper estimation of risks of future cash flow. (ii) Quality and costs of originators, servicers, and sellers. (iii) Existence of investors who shoulder risks. In the Japanese financial system, ambiguity in price formation of collateralized real estates and insufficient disclosure of NPLs are major reasons that hamper the development of securitization in reference to the first condition. Transparency in price formation of real estate markets

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[26] These figures are almost the same as estimated by Morgan Stanley in Akai (2001).

[27] Other assets included in ABS are CDO (13.9%), housing loans (15.6%), real estate related assets (20.8%) and others (6.7%).

[28] These figures are taken from Akai (2001). ABS issues related to NPLs, all issued outside Japan, totaled ¥20.44 billion in 1999 but ¥31.57 billion in 2000.

would disentangle the close-knit relation between the NPLs and inactive real estate. [29]

With regards to the demand for securitized assets, there are no appropriate channels to link personal assets with risk investments. Households – which hold nearly 1,400 trillion yen in assets -- seem to offer huge potential for shouldering more risky assets. Such a linkage would be desirable in the interest of efficient asset management to support the aging society.

Looking at the recent financial service industry in Japan, some active strategies explore the household retail market. Real estate investment fund that began in 2001 is one example. Regarding real estate-related financial products, the originators are real estate companies, which suffered large capital losses. Servicers and distributors are securities companies and financial institutions, both badly hurt by the sluggish markets. This poses the question whether securitization for individual investors is a desirable development.

In view of the fact that the structure of new financial products is too complex for the general public to comprehend the risks involved, the following factors are necessary for the development of securitization involving individual investors: (i) disclosure of the credit risk attaching to original loans or future cash flows, (ii) sufficient accountability of suppliers for customers, and (iii) objective and appropriate information services which appraise the quality of the products on a continuous basis.[30]

Currently, it is highly questionable that these conditions for the retail market will be sufficiently realized. It seems too simple to believe that financial institutions will be able to mobilize households to directly invest in such unfamiliar risky assets. There are three important reasons why they may not invest: the participation costs of markets, income and wealth distributions, and the rapidly aging households, as already discussed.

First in general, the participation costs of newly developed financial markets has increased significantly, while the transaction costs of traditional banking and securities services have fallen in line with the progress of IT.

Second, income and wealth distributions significantly influence degree of risk aversion. The elderly in general prefer safe assets if other conditions are equal, as examined by Bodies, Merton and Samuelson (1992), and Bodies and Crane (1997). In addition, participation costs to directly access securitized asset and other sophisticated new financial product markets are higher, even if they have large potential to bear risk.

Third, the speed of aging of the population has strengthened the risk-averse nature in Japan, compared with other developed countries. This is reflected in the prolonged economic slump and uncertainty for the future in the 1990s despite concern about return.[31]

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[29] In 2001, the Ministry of Land, Infrastructure, and Transport, embarked on a plan to improve real estate pricing and to create an efficient real estate market.

[30] Suto (2001) discusses problems related to securitization from the viewpoint of consumers.

[31] According to the results of 'Questionnaire on Savings and Consumption in 2000' (*Kinyu Koho Chuo Iinkai*), when considering asset selection, 37% of respondents put top priority on safety, which figure rose

There are convincing reasons to assure the proper development of securitization for professionals or institutional investors, such as banking institutions, pension funds, and others involved in asset management. Creating opportunities for individuals to enter the market indirectly through the intermediaries is important, although the financial reform plan encourages the participation of individual and institutional investors alike. Over emphasis on the direct participation of individuals in newly developed markets, such as derivatives and securitized products, may not promote efficiency in the financial system.[32]

In sum, there are two important points for development of securitization in Japan. One is to provide opportunities for households helped by professionals, to indirectly participate in the market. In other words, the key is to extend *securities market-based intermediation*.[33] Here, institutional investors are major players, as agents of individuals, and would act to mitigate information asymmetry and technology gaps.

The other point concerns consumer protection in financial markets.[34] To complete the Financial Big Bang from the consumer's view, financial services law for function-based systematic consumer protection, and fiduciary responsibility legislation for pension funds and their trustee bodies are needed. The idea of a U.K.-type comprehensive financial services law was partially realized in 2000 with respect to the sale of financial products. Through revision of the Pension Funds Act in 2000, pension funds have to explicitly outline their fund management policy, but the Act is far from sufficient.

Legal reform aiming to protect consumers should be given priority in the future development of securitization. Otherwise, securitization will likely neither contribute to a more efficient financial system nor a more market-oriented system that is competitive externally and efficient internally.

4.3 Corporate Governance and Intermediated Ownership

Another noteworthy change in the late 1990s is observed with respect to the ownership structure of listed companies. Table 14 shows that banking institutions (including commercial banks and long-term credit banks)[35] and business corporations increased shareholdings in the late 1960s to the 1970s. Institutional investors, who are financial institutions running asset management business, kept increasing their shareholdings before the 1990s. These increases stand in close contrast with the significant decrease in individual

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to 54.8% in 2000. However, real asset allocation in the personal sector has slightly recovered since 1997.

32 In order to develop securitization of cash flows, growth of private equity market in the form of limited partnership must be useful. Private capital market is broadly used by pension funds in the U.S. Other institutional investors contribute to help the management of start-up firms. (Prowse(1998))

33 Royama(2001) refers this sort of system as market-based indirect finance.

34 Suto (2000) emphasizes the necessity of incorporating principles for the protection of consumers in Japan's asset management industry.

35 The figures should be slightly discounted because they include trusts accounts before 1986.

shareholdings from 44.1% to 23.2% in 1990.

Shares held by banks have declined sharply from 16.4% in 1990 to 10.1% in March 2001. For business corporations, their percentage of shareholdings remained the same until 1997. Cross-shareholding among corporations has unwound at a rapid pace because neither financial institutions nor corporations could shoulder the cost of long-term shareholdings against the background of declining stock prices[36].

As far as individual shareholding is concerned, the direct shareholding by individuals recovered slightly in the late 1990s but plunged in March 2001, partly due to the rapid expansion of foreign investors' shareholdings and an increase in institutional investments. Diminished confidence in the securities market has made the general public reluctant to hold shares directly. Their preference lies in bank deposits and postal savings. Thus, direct corporate ownership by individuals has been replaced by indirect ownership via institutional investors and foreign investors.

Let us compare these changes in the corporate ownership structure with those of the U.S. and the U.K., both of which have typical securities market-based financial systems. From a long-term perspective, the retreating trend of equity investing by individuals and increase in equity holding by institutional investors is not peculiar to Japan. (Table 15)[37] It is particularly true for the U.K., where share investing by individuals decreased from 54% in 1963 to 15.3% in 1999. In terms of significant differences in the level of ownership by institutional investors, the shareholding of institutional investors in the 1990s accounted for around 50% in the U.K. and the U.S., but less than 30% in Japan. The crucial difference is not in the level of direct share ownership by individuals but in the level of *intermediated ownership*.

Institutional reforms of corporate pension funds started at the beginning of the 1990s. Similarly, the liberalization of the asset management business was almost completed in the late 1990s. As a result, corporate pension funds raised their equity asset allocation dramatically. According to the report by the Pension Funds Association (Kosei Nenkin-kikin Rengokai), corporate pension funds in 1999 invested 36.5% of their assets in domestic equities and 18% in foreign equities. This increase more than doubled the figure during the last 10 years. In 1989, the figures were only 15.1% and 6.8% respectively. Investment in equities or in risky assets as a whole surged since 1997, at the start of the financial reform.

In advance of the reform, some changes were observed following the Financial System Reform Law (effective as of April 1993). This law was designed to promote competition

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[36] According to NLI Research Institute (1999), share of stable ownership in the total ownership by financial institutions and business companies, including cross-shareholding and one-side shareholding, deceased from 41.1% 1n 1990 to 35.7% in 1997, p.47 Table 4.

[37] It should be noted that institutions in Table 15 include securities brokers, for it is difficult to separate securities brokers from institutions based on the data from the U.S. and the UK.

among financial service providers. Trustees of corporate pension funds (trust banks and insurance companies), who are legal shareholders of pension funds, faced fierce competition from newcomers (investment advisers), with regard to performance and accountability of fund management.[38]

Investment advisory companies have extended their market share dramatically in the 1990s. As providers of portfolio management information and of voting rights instructions on the companies they invest in, they have challenged the trust banks and insurance companies, which previously dominated the trustee business. The intensified competition among trustee bodies and careful attention paid to pension funds by the portfolio managers has affected the corporate governance mechanism.

Corporate pension funds and their trustee bodies acting as agents for private investors have become active shareholders in the companies they invest in.[39] A questionnaire regarding the changing attitude of institutional investors made by the Policy Research Institute of the Ministry of Finance[40] published in July 2001, shows that the trustees have begun to actively commit themselves to corporate governance. Among 89 trustees (including trust banks and insurance companies) that have responded to the questionnaire, 68 (77.8%) thought they should exercise voting rights as agents of their customers, and 42 (47.7%) believed legislation concerning the fiduciary responsibility of pension funds was desirable. Pension fund organizations show similar responses but they are less ambitious than the trustees. In facts, 28 (31%) trustees implemented some actions. Twenty trustees (22.4%) executed the actions while voting at the general shareholders' meeting.

In addition, 46 (51.7%) trustees surveyed questioned the monitoring ability of banking institutions. They think institutional investors will likely replace banking institutions in the monitoring or the controlling of corporate management.[41]

Institutional investors have become much more conscious of their fiduciary responsibility in parallel with the liberalization of asset management business. The background to this change has been the restructuring of the asset management regulatory framework since 1996. The restructuring followed the accelerated deregulation of asset allocation by corporate pension funds.[42] In July 1998, the Pension Funds Association (Kosei-nenkin-kikin Rengokai) published a report that explicitly laid down principles

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38 The ban on the entrance of investment advisers into trustee business was lifted in 1990.

39 Regarding development of corporate governance in recent Japan, see Suto (2002).

40 One of the authors organized the project. For details see Omura, Suto and Masuko(2001).

41 The respondents are requested to choose top three or less entities among twelve stakeholders, which might contribute to controlling the corporate management. Among 191 answers of 46 trustee bodies, 150 answers are related to institutional investors.

42 Since then, the asset allocation in corporate pension funds was strictly regulated by the 5-3-3-2 regulation whereby corporate pension funds must invest more than 50% of assets in loans and bonds, less than 30% in stocks, less than 30% in foreign assets, and less than 20% in real estate.

underlying the fiduciary responsibility of pension funds for beneficiaries and contributors. Institutional investors in general and pension fund trustees in particular, have been forced to monitor the market value of financial assets to fulfill their responsibilities.

Judging from this fact, corporate governance system in Japan is shifting from the insider control system toward the outsider control system. While the corporate pension funds are still dependent upon the companies, and that relationships between financial institutions and their corporate customers seem to affect the behavior of institutional investors, the trend towards the outsider control system in Japanese corporate governance is steady. Nonetheless the speed at which the change is occurring is perhaps gradual in comparison with other developed countries[43].

However, it is important to note that such a shift in corporate governance mechanism does not imply a transformation from relationship-oriented system to stylized market-based system, where a corporate-controlled market disciplines corporate management. Unless the equality of income and wealth distribution changes significantly, the Japanese financial system will continue to shift from bank-based financial intermediation, supported by the main bank system to a *securities market-based intermediation,* supported by institutional investors who are the agents of small investors or households. [44]

In *securities market-based intermediation*, intermediaries have to account for their customers as their agents on the markets they participate. Communication with corporate managers to establish mutual confidence is crucial for institutional investors. These investors act as agents for other investors and have the power to cause stock market volatility. Private investors aim to reduce monitoring and participation costs in the asset markets. Therefore institutional investors must fulfill their role as monitors of corporate management. They must be financially sophisticated in handling risk products such as securitized assets for their clients. According to the questionnaire mentioned above, the trustees of pension funds think direct and continuous communication is most effective in enforcing corporate governance.

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[43] This sluggishness is partly due to the serious malfunctioning of the Japanese financial system as a whole and partly due to the dependency on the old system or inertia.

[44] In October 2001, the implementation of a defined contribution pension plan (called Japanese 401k type defined contribution (DC)) was scheduled. It was expected to accelerate the *intermediated ownership* by financial institutions as agents of individuals. When the corporate sector adopts the DC plan, financial intermediation will further shift toward a market-based system. However, the Japanese 401k plan is not fair in terms of the qualification of contributors, the upper limit of contribution, and the ambiguous portability among others. It is partly because the overall of the Japanese pension system is under discussion that the DC plan is grafted onto the old framework.

5. New Architecture

Let us think about the relationships between three types of institutions (individual investors, banks, and institutional investors) and the functions need to be fulfilled by each.

IT has improved risk transfer capabilities of the financial markets and promoted the development of sophisticated financial technologies, IT however has also increased participation costs. Let us assume three things. (i) The Japanese society will keep the relative equality in income and wealth distribution in the future. (ii) Participation costs in the financial market transaction will remain high in the foreseeable future. (iii) When the industrial structural shift is completed, the risks faced by the financial system will be less systemic.

Against these facts, the following picture will emerge for the general direction in designing the new Japanese financial system.

First, households will continue to hold their financial wealth mainly in the form of claims on financial intermediaries. Institutional reforms are indispensable in order to conduct an efficient monitoring of financial intermediaries i.e. banks and institutional investors. For example, corporate pension funds must be more sensitive to the fiduciary responsibility of themselves as well as their trustees. The monitoring role of depositors must be complemented by prudential regulations.

Second, the banking sector is expected to strengthen monitoring capabilities in its relationship loan business and other investments. Retail banking with respect to venture firms and small and medium size firms is the main service for the industry. IT has reduced transaction costs in lending. It has lowered the barrier for market entry into the banking business for other firms from other non-bank related businesses. As a result, market conditions in the banking sector are more competitive, contrary to the prediction by Boot and Thakor (2000). Baba and Hisada (2001) argues that, with increased competition, the Japanese banks will devote more investments in improving their monitoring capabilities in the context of lender-customer relationship.

Third, institutional investors such as trust banks, insurance companies and investment advisory companies, must commit direct monitoring in the firms that they invest. As shareholders, they are expected to exercise their voting rights and communicate with corporate managers. *Intermediated ownership* must play an important role in the future architecture of the Japanese financial system. Owing to the strong relationships among firms, it is difficult for the corporate pension funds to be vocal on the behaviors of firms whose stocks are held by the funds. A conflict of interest may exist between sponsoring companies and the companies in which they invest. It is more realistic and efficient to monitor companies through trustees (institutional investors) rather than direct monitoring by pension fund managers. Of course, it is the top priority for the pension fund managers to fulfill their fiduciary responsibilities. The pension fund managers should monitor their

trustees to make sure fund management policies are observed.

With regards to the direction of policy reform in promoting individual investor participation in the capital markets, the Minister of Financial System, Hakuo Yanagisawa said it well. He emphasized the importance of bringing 1,400 trillion yen held by the households into the capital markets directly as "money that dares to take risk" (July 24, 2001, Nikkei Shimbun). This view comprises the backbone for the recent tax reform on equity transactions. Such an idea has been the basis for the series of capital market reforms advocated by the deliberative council on security transaction since 1998 (Royama, 2001). Unless wealth distribution patterns and changes in participation costs are visible, it may be quite difficult for these arguments to obtain solid support.

Needless to say, it is not our intention to argue that the current state of equal income and wealth distribution should be maintained in the future. Rather, we consider it necessary to allow ex post inequality to a considerate degree in the future. However, such a conversion will involve changes in tax, social security, education, and the social safety networks. Drawing a coherent plan to encompass these related areas is a prerequisite for success in reforming the financial system.

Appendix : Risk Transfer in Historical Perspective

Let us discuss how non-diversifiable risks could be dealt with, taking the 1920s as an example. Part of the risk appears to have been transferred cross-sectionally. During the period, non-diversifiable risks occurred in the indigenous and light industries. Rich landowners, bankers and merchants absorbed a portion of the risks. In order to understand this, we must take into consideration the very high degree of unequal wealth distribution in the prewar Japan.

We have a reliable list of rich asset holders from the year 1902 in Japan. There were 108 persons with personal wealth of more than five million yen (Teranishi (1982) p.188).[45] The total of the assets held by the 108 individuals was 133.6 million yen. In that same year, the total GDP in current price was 253.7 million yen, and total private financial assets were 200.1 million yen (Fujino and Teranishi (2001)). In other words, wealth held by the 108 individuals amounted to 53 percent of the GDP. Assuming that half of the wealth held by them comprised of financial assets, they controlled 33 percent of total financial assets of the economy. Most of the wealthy could afford to offset the loss incurred in non-diversifiable risks within the indigenous sector by the income in the modern sector.

Another part of risk is rooted through inter-generational transfers, as emphasized by Allen and Gale (1997 and 2000). Allen and Gale argue that the banking sector and other long-lived financial institutions in Japan, Germany, and France played the role of transferring non-diversifiable risks inter-temporarily. The banks build up reserves of short-term risk assets when returns are high and run them down when returns are low, transferring risk from generation to generation.[46] In the case of prewar Japan, we have exact data of short-term asset holdings by financial institutions.

In Table A1, the category of banks comprises all ordinary, saving, and special banks. Private financial institutions include financial institutions for the small and medium-size businesses and agriculture, insurance companies, and trust banks. The financial institutions include private and government financial institutions. The treasury finance and investment system comprises of postal savings, postal annuities, the post office, life insurance, and the deposit bureau of the Ministry of Finance. We have examined these three categories as to how non-profit institutions would be able to conduct inter-generational risk transfers as emphasized by Allen and Gale.[47]

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45 Personal wealth includes real estate holdings. Owners of *zaibatsu* are included in the richest strata: Hachirouemon Mitsui, Yanosuke Iwasaki and Hisaya Iwasaki are the richest three with 80 million assets each.

46 As empirical evidences, Allen and Gale suggest two examples; (i)dissaving during the Great Depression and building up during the 1950s, and (ii) dissaving during the oil shock period and building up during the 1980s.

47 The role of the government might be very important in this regard. During the 1950s, for example,

T and P mean trough and peak of business cycles respectively, as identified in Fujino and Igarashi (1973). Table A1 show the percentage ratio of liquid assets (cash, deposits, and gold and foreign exchanges) to total assets. Let us examine the second column, the case of private financial institutions. Two findings emerge. (i) In four out of five cases the ratio in peak (t) is higher than the ratio in trough (t + 1), implying dissaving in bad times. (ii) In three out of six cases, the ratio in peak (+) is larger than that in trough (t – 1), implying building up of reserves.[48] These findings seem to be compatible with the hypothesis put forth by Allen and Gale. With respect to the recession during the 1920s, the ratio of liquid assets accumulated during the WWI period (13.74% at the peak of 1918) was run down during the depression of the 1920s, reached the trough value of 8.55% in 1930, and was built up again during the recovery period, which reached 8.68% in 1938. These facts suggest some sort of intertemporal smoothing of non-diversifiable risks during the 1920s in Japan. Although we have only focused on private financial institutions, such a phenomenon of intertemporal risk transfers could be found to a lesser extent, in the banking sector as well as in the private and government financial institutions.

It is necessary to note that the risk transfer function conducted by the above two measures ― cross sectional and inter-generational transfers ― have had a limited effectiveness in coping with the vast amount of undiversifiable risks by the banking sector. Otherwise, the banking crisis and the resulting economic downturn would have been much milder.

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the Japanese government implemented powerful administrative guidance to increase the retained earnings in banks' balance sheet through an intervention in various operating expenditures and dividend payout.

[48] In construing figures, one must note that there is a declining trend in the figure.

References

Akai, Atsuo.(2001) New Development of Securities Products Market, presentation paper at the 55th Annual Meeting of the Japan Securities Economics Society, 06/17 2001

Allen, Franklin.(2001) "Do Financial Institutions Matter?" *Journal of Finance*, 56(4), pp.1165-1175.

Allen, Franklin and Gale, Douglas. (1997) "Financial Markets, Intermediaries, and Intertemporal Smoothing," *Journal of Political Economy*, vol. 105, no. 3. pp.523-46.

-----, ----- and -----. (2000) *Comparing Financial Systems*, Cambridge: The MIT Press.

Allen, Franklin and Santomero, Anthony M.(1998) "The Theory of Financial Intermediation," *Journal of Banking and Finance*, 21, pp.1461-85.

-----, ----- and -----.(2001) "What Do Financial Intermediaries Do?" *Journal of Banking and Finance*, 25, pp. 271-94.

Arrow, Kenneth, J.(1965) *Aspects of the Theory of Risk-bearing*, Yrjö Johnsson Lecture, Helsinki: Yrjö Johnssoin Sattio.

Baba, Naohiko and Hisada, Takamasa (2002) "Japan's Financial System: Its Perspective and Authorities Roles in Redesigning and Administrating the System", *IMES Discussion Paper Series*, No. 02-E-1, April 2002, Institute of Monetary and Economic Studies, the Bank of Japan.

Bank of Japan. (2001) "Technological Progress and Monetary Policy", *Kinyu-kenkyu*, Vol.20, No.1. (in Japanese).

Bank for International Settlements. (1998) *Sixty Eighth Annual Report, Chapter V: Asset prices and the asset management industry*. Basel: Bank for International Settlements.

Bodie, Zvi and Dwight B.Crane.(1997) Personal Investing Advice, Theory and Evidence, *Financial Analyst Journal*, November/December 1997.

Bodie, Zvi, Robert C. Merton and William F. Samuelson.(1992) "Labor supply flexibility and portfolio choice in a life cycle model", *Journal of Economic Dynamics and Control*, 16, pp.427-449.

Boot, Arnoud, A. and Thakor, Anjan V.. (2000) "Can Relationship Banking Survive Competition?", *Journal of Finance*, 55(2), pp.679-713.

Egawa, Yukio.(2001), Trend and Review of Securitization Market in Japan, *High Grade Credit Research*, 05/10 2001, Credit Suisse First Boston. (in Japanese)

Friedman, Milton and L.J. Savage.(1963) "The Utility Analysis of Choices Involving Risk., *Journal of Political Economy*, Vol. 56, No.4, 1948, Readings in Price theory, pp. 279-304.

Fujino, Shozaburo and Igarashi, Fukuo.(1973) *Business Indicator: 1880-1940*, Statistical Data and Documentation Series 2, Hitotsubashi University, Institute of Economic Research.

---------- and Teranishi, Juro.(2001) *Quantitative Analysis of the Japanese Financial System*, Toyokeizai Sahiopo-sya (in Japanese).

Hanazaki, Masaharu and Akiyoshi Horiuchi.(1999) A Vacuum of Governance in the Japanese Bank Management, *JDP Discussion Paper Series*, No.9901, Research Institute of Capital Formation, the Japanese Development Bank.

---------- and ----------.(2000) "Have Banks Contributed to Efficient Management in Japan's Manufacturing?", University of Tokyo, CIRJE-F-76.

Hart, Oliver. (1995) *Firms, Contracts and Financial Structure*, Oxford: Oxford University Press.

Hellwig, Martin F. (1991) "Banking, Financial Intermediation and Corporate Finance," In *European Financial Integration*, ed. A. Giovannini and C.P. Mayer. Cambridge University Press: Cambridge, U.K.

----------.(2000) "Financial Intermediation with Risk Aversion", *Review of Economic Studies*, 67, pp.719-742.

Horiuchi, Akiyoshi.(2000) "The Big Bang: Idea and Reality", in Hoshi, Takeo and Patrick, Hugh (eds) *Crisis and Change in the Japanese Financial System*, Chapter 9, Boston: Kluwer Academic Publishers.

---------- and Ryoko Okazaki.(1994) "Capital Markets and the Banking Sector: Efficiency of Japanese Banks in Reducing Agency Costs", in Ryuzo Sato, Richard M.Levich , and Rama V. Ramachandran (eds), *Japan, Europe, and International Markets: Analytical and Empirical Markets*, Cambridge: Cambridge University Press, pp.197-219.

King, M.A., and Leape, J.I., (1984) "Wealth and Portfolio Composition: Theory and Evidence", National Bureau of Economic Research (Cambridge, MA). Working paper No. 1468. September.

Kitamura, Yukinobu, Takayama, Noriyuki and Arita, Fumiko.(2001a) "Household Savings in Japan revisited", *Research in Economics*, 55, pp.135-153.

----------, ---------- and ---------.(2001b) "Household Savings and Wealth Distribution in Japan", in Börsh-Supan, Axel (ed) *International Comparisons of Household Saving Behavior: A Study of Life-cycle Savings in Seven Countries*, London: Academic Press .(forthcoming)

Kiyotaki, Nobuhiro and Moore, John.(1997) "Credit Cycles", *Journal of Political Economy*, 105, pp.211-248.

Mankiew, Gregory and Stephen Zeldes. (1991) "The Consumption of Stockholders and Nonstockholders," *Journal of Financial Economics*, 29, pp.97-112.

Merton, Robert. C and Bodie, Zvi.(1995) "A Conceptual Framework for Analyzing the Financial Environment," in Crane, Dwight B. et al (ed.) *The Global Financial System: A Functional Perspective*, Boston: Harvard Business School Press.

Miller, Marcus and Stiglitz, Joseph.(1999) "Bankruptcy protection against macroeconomic

shocks: the case for a 'super Chapter 11' ", The World Bank, mimeo.

Mishkin, Frederic S. and Strahan, Philip E.(1999) "What will technology do to financial structure?", NBER Working Paper, no.6892.

NLI Research Institute(1999) *Nissei Kisoken Shoho*,Vol.10 Summer 1999.(in Japanese)

Omura, Keiichi, Megumi Suto, and Makoto Masuko.(2001) Report of Questionnaire on Corporate Governance by Institutional Investors—Corporate Pension Funds and Trustee Bodies, July 2001, Institute of Policy Research, Ministry of Finance (in Japanese).(http://www.mof.go.jouhou/soken/soken.htm)

Prowse, Stephen D.(1998) "The Economics of the Private Equity Market", *Economic Review*, Federal Reserve Bank of Dallas, Third Quarter 1998, pp.21-34.

Ross, Stephan A.(1989) "Institutional Markets, Financial Marketing, and Financial Innovation", *Journal of Finance*, 44(3), pp.541-556.

Royama, Shoichi.(2001) "Market-based Indirect Finance—Prologue" *Financial Review*, No.56, Institute of Policy Research, Ministry of Finance, pp.1-10.(in Japanese)

Shindo, Hiroshi.(1977) "Showa-shoki ni okeru Chihoginko no fudosan-tanpo-kashidashi (Local Bank Lending with Real Estate Collateral in Early Showa)" *Kinyukeizai*, No.165-166.

Suto, Megumi.(1999) "Structural problems in the Japan's Investment Trust Industry" in Royama Shoichi (ed) *Investment Trusts and Asset Management*, Nihonkeizai –Shinbunsha Publishing, Chapter 3.(in Japanese)

----------(2000) "New Development of Asset Management Industry in Japan", in Suto Megumi (ed), *New Development of Asset Management Industry*, Kinzai Publishing (in Japanese), Chapter 9.

----------.(2001) "Securitization and Selection of Assets by Individual Investors", paper presented at the 55th Annual Meeting of the Japan Securities Economics Society, 06/17 2001 (in Japanese).

---------(2002) "New Development in the Japanese Corporate Governance in the 1990s--The Role of Corporate Pension Funds", in H. Shibuya, M. Maruyama, and M. Yasaka(eds) *Japanese Economy and Society under Pax-Americana*, University of Tokyo Press, Chapter 9, pp.249-274.

Teranishi, Juro.(1982) *Nihon no Keizai-Hatten to Kinyu (Money, Finance and Economic Development in Japan)*, Iwanami-shoten.

---------- (1993) "Emergence and Establishment Financial System in Postwar Japan — Government Intervention, Indirect Financing and Corporate Monitoring System", Paper prepared for the project "Strategies for Rapid Growth: Public Policy and the Asian Miracle" organized by Country Economics Department of the World Bank.

Wolff, E. (1996) "International Comparisons of Inequality," *Review of Income and Wealth*, 42, pp.433-451.

Table 1. Regulated Handling Costs of Stock Transaction before Sept. 1999

Site of Order	Apr. 1, 1977 – Apr. 14, 1985	Apr.15, 1985 – Nov. 24, 1986	Nov. 25, 1986 – Oct. 4, 1987	Oct. 5, 1987 – June 3, 1990	June 4, 1990 – March 31, 1994	Apr. 1, 1994 – March 31, 1998	April. 1, 1998 – Sept. 30, 1999
less than ¥200,000	¥2,500	¥2,500	¥2,500	¥2,500	¥2,500	¥2,500	¥2,500
less than ¥1 mil.	1.25%	1.25%	1.25%	1.20%	1.150%	1.150%	1.150%
over ¥1 mil. to ¥3 mil.	1.05% + ¥2,000	1.05%+ ¥2,000	1.05% + ¥2,000	1.00%+ ¥2,000	0.900% + ¥2,500	0.900% + ¥2,500	0.900% + ¥2,500
over ¥3 mil. to ¥5 mil.	0.95% + ¥5,000	0.95% + ¥5,000	0.95% + ¥5,000	0.90% + ¥5,000			0.700% + ¥12,500
over ¥5 mil. to ¥10 mil.	0.85% + ¥10,000	0.85% + ¥10,000	0.85% + ¥10,000	0.75% + ¥12,500	0.700% + ¥12,500	0.700%+ ¥12,500	0.575%+ ¥25,000
over ¥10 mil. to ¥30 mil.	0.75% + ¥20,000	0.75% + ¥20,000	0.70% + ¥25,000	0.60% + ¥27,500	0.575% + ¥25,000	0.575%+ ¥25,000	0.375% + ¥85,000
over ¥30 mil. to ¥50 mil.	0.65% + ¥50,000	0.65% + ¥50,000	0.50% + ¥85,000	0.40% + ¥87,500	0.375% + ¥85,000	0.375%+ ¥85,000	negotiation at more than ¥272,500
over ¥50 mil. to ¥100 mil	0.60% + ¥75,000	0.55% + ¥100,000	0.30% + ¥185,000	0.25% + ¥162,500	0.225% + ¥160,000	0.225%+ ¥160,000	
over ¥100 mil. to ¥300 mil	0.55% + ¥125,000	0.45% + ¥200,000	0.25% + ¥235,000	0.20% + ¥212,500	0.200% + ¥185,000	0.200% + ¥185,000	
over ¥300 mil. to ¥500 mil.		0.35% + ¥500,000			0.125% + ¥410,000	0.125% + ¥410,000	
over ¥500 mil. to ¥1 billion		0.30% + ¥750,000	0.20%+ ¥485,000		0.100% + ¥535,000	0.100%+ ¥535,000	
over ¥1 billion		0.25% + ¥1,250,000	0.15% +¥985,000	0.15%+ ¥712,500	0.075% + ¥785,000	negotiation at more than ¥1,535,000	

Source: Internal data of Nomura Security Co. Ltd.

Table 2. Average Handling Costs after Oct. 1999 (%)

	2000		2001		2002	
	average	median	average	median	average	median
Transaction volume						
1 million	1.077	1.150	1.094	1.150	1.089	1.150
3 million	0.899	0.950	0.914	0.943	0.913	0.943
5 million	0.855	0.893	0.868	0.890	0.866	0.886
10 million	0.736	0.771	0.744	0.767	0.747	0.761
30 million	0.572	0.593	0.573	0.590	0.580	0.590
50 million	0.447	0.460	0.446	0.453	0.456	0.453
0.1 billion	0.257	0.245	0.253	0.243	0.264	0.244
0.3 billion	0.124	0.091	0.117	0.085	0.130	0.088
0.5 billion	0.096	0.055	0.087	0.053	0.099	0.053
1 billion	0.072	0.027	0.064	0.027	0.076	0.027

Note: (1) Survey data covering about 190 security companies conducted by Japan Security Association.
(2) Average handling costs per transaction volume charged on customers for each size of transaction.

Source: *Syoken gyouho*, No. 589(March, 2000), 601(March, 2001), and 613 (March, 2002).

Table 3. Share of Financial Services Industry in GDP

(%)

	Japan	U.S.
1970	4.25	—
1971	4.67	—
1972	4.93	—
1973	4.94	—
1974	4.49	—
1975	5.22	—
1976	5.01	—
1977	4.88	—
1978	5.04	—
1979	5.15	—
1980	5.18	4.44
1981	4.77	—
1982	5.17	4.25
1983	5.45	4.83
1984	5.27	4.49
1985	5.30	4.80
1986	5.43	5.04
1987	5.79	5.45
1988	6.02	5.65
1989	6.36	5.62
1990	5.94	6.13
1991	5.56	6.59
1992	5.24	6.76
1993	4.86	7.29
1994	5.18	6.80
1995	5.04	7.13
1996	4.72	7.26
1997	4.98	7.83
1998	4.86	8.06
1999	—	8.15

Note: Definition of financial service industry follows standard industry code of both countries, and comprises following sectors belonging to Finance and Insurance. (1) Japanese financial services industry: banks including trust banks and foreign banks; credit agencies other than banks including small and medium financial agencies, agriculture and fishery agencies; financial companies; investment companies, securities and commodities brokers, services, stock exchanges; insurance companies. (Finance and Insurance Industry of Japan' standard industry code). (2) The U.S. financial services industry: banking; credit agencies other than banks; securities and commodity brokers, services; insurance carriers, agents, brokers, and services; holding and other investment companies. (They belong to Finance and Insurance Industry of the US standard industry code).

Sources: U.S. Department of Commerce. *Statistical Abstract of the Unite States*, each edition.
Economic and Social Research Institute, Cabinet of Government of Japan.
National Economic Accounts, each edition

Table 4. Participation Cost related to Securities Analysts in Japan

	Number of Certified Securities Analysts	Number of Public Companies	Number of Employee Securities Industry	Number of Employee of Securities Industry	Number of Analyst in Insurance Industry	Average Number of Analysts Per a Public Company	Share of Analysts in Finance and Insurance Industry	Share of Analysts in Employees of Securities Industry
	A	B	C	D	E	A / B	A / D*100	E / C*100
							(%)	(%)
1980	0		84402					
1981	241	1855	88736	1618000	54	0.130	0.015	0.063
1982	682	1877	88883		154	0.363		0.173
1983	845	1900	91016		191	0.455		0.210
1984	924	1918	98649		209	0.482		0.212
1985	1047	1956	105030		237	0.535		0.225
1986	1129	2006	114191	1700000	255	0.563	0.066	0.223
1987	1196	2063	126465		270	0.580		0.214
1988	1407	2163	138851		318	0.650		0.229
1989	1711	2282	149275		387	0.750		0.259
1990	2268	2413	158601		513	0.940		0.323
1991	3142	2537	156558	1939000	710	1.238	0.162	0.454
1992	4623	2554	145300		1050	1.810		0.723
1993	5815	2632	132646		1297	2.209		0.978
1994	7241	2773	127533		1637	2.611		1.284
1995	8502	2941	118811		1893	2.891		1.593
1996	9433	3096	113028	1865000	2063	3.047	0.506	1.825
1997	10857	3221	108072		2587	3.371		2.394
1998	12177	3272	95193		2814	3.722		2.956
1999	13528	3340	92065	1637000	3009	4.050	0.826	3.268
2000	14561	3447	94717		3234	4.224		3.414

Notes: (1) Securities analysts certification was introduced to Japan in 1981. (2) Public companies include listed companies on the securities exchanges and registered companies to Japan Securities Dealers Association. (3) Financial services industry includes as follows: banks including trust banks and foreign banks; credit agencies other than banks including small and medium financial agencies, agriculture and fishery agencies; financial companies; investment companies, securities and commodities brokers, services, stock exchanges; insurance companies (Japan' standard industry code). (4) A large number of security analysts work with financial institutions other than security industry. Separate numbers of analysts in security industry can be found only after 1992. The figures during the period 1981 – 1991 are estimated based on 1992 – 2000 average share of securities company analysts in the total number of analysts.

Sources: The Securities analyst Association of Japan.
The Japan Securities Dealers Association, *Monthly Report*, each edition.
Tokyo Stock Exchange, *Fact book*, each edition.
Economic Planning Agency of Government of Japan, *Annual Report on National Accounts*, each edition
Ministry of Health, Labor and Welfare, *Handbook of Labor Statistics*, each edition.

Table 5. Participation Cost Related to Securities Analysts in the United States

	Number of Certified Securities Analysts	Number of Public Companies	Number of Employees of Finance and Insurance Industries	Average Number of Analysts Per a Public Company	Share of Analysts in Employees of Finance and Insurance
	A	B	C	A / B	A / C*100
					(%)
1980	6449		4289000	—	0.150
1981	6789		—	—	—
1982	7258	5624	—	1.291	—
1983	7650	6273	—	1.220	—
1984	8306	6432	4732000	1.291	0.176
1985	8879	6460	4859000	1.374	0.183
1986	9515	6788	—	1.402	—
1987	10464	7222	—	1.449	—
1988	11306	7028	5373000	1.609	0.210
1989	12405	6873	5475000	1.805	0.227
1990	13618	6765	5582200	2.013	0.244
1991	14999	6839	5556000	2.193	0.270
1992	16602	7016	5580000	2.366	0.298
1993	18587	7840	5570000	2.371	0.334
1994	20150	8296	5632000	2.429	0.358
1995	21917	8588	—	2.552	—
1996	23990	9214	5772000	2.604	0.416
1997	26891	9305	5949000	2.890	0.452
1998	30488	8952	5770000	3.406	0.528
1999	35343	8623	5965000	4.099	0.593
2000	41105	8361	—	4.916	—

Notes: (1) The number of certified security Analysts is CFA chartered Awards. (2) Public companies include NYSE listed companies, AMEX listed companies and NASDAO registered companies (3) The Financial services industry includes as follows; banking credit agencies other than banks; securities and commodity brokers services; insurance carriers, agents, brokers, and services; holding and other investment companies. (Finance and Insurance Industry for the US standard industry code).

Source: The U.S .Bureau of the Census, C*ountry Business Patterns*, Annual editions.
http://www.aimr.com. Securities Industry Association, *SIA Report*, each edition.
New York Stock Exchange, *Fact Book*, each editions.
Nasdaq Market Data on NASD Web Site, the Nasdaq Stock Market *Fact Book*, each edition.

Table 6. Cost of MBA School (US dollar)

	Annual Tuition	Pre-MBA Medium Pay	Past – MBA Medium Pay
Pennsylvania(Wharton)	27,120	60,000	156,000
Northwestern(Kellogg)	28,677	55,000	142,000
Harvard	28,500	65,000	160,000

Note: Top 3 best business school of the year 2000.

Source: Survey of *Business Week*.

Table 7. Major Players in the Financial Markets

		Participation costs	
		High	Low
Wealth distribution	Equal	Intermediaries (Japan)	
	Unequal	(U.S.)	Individual investors

Table 8. Household Sector Balance Sheets (Proportions of Gross Financial Assets)

		1970	1980	1990	1995	1997	1998	Change 1970-1998
United Kingdom	Deposits	0.34	0.43	0.31	0.22	0.22	0.21	-0.13
	Bonds	0.07	0.07	0.01	0.02	0.01	0.01	-0.06
	Equities	0.24	0.12	0.12	0.15	0.17	0.15	-0.09
	Institutions	0.23	0.30	0.48	0.51	0.53	0.55	0.31
United States	Deposits	0.28	0.33	0.23	0.16	0.14	0.13	-0.15
	Bonds	0.13	0.10	0.11	0.10	0.07	0.06	-0.07
	Equities	0.36	0.21	0.14	0.22	0.24	0.23	-0.12
	Institutions	0.22	0.28	0.39	0.42	0.47	0.50	0.28
Germany	Deposits	0.59	0.59	0.48	0.43	0.40	0.40	-0.19
	Bonds	0.08	0.12	0.16	0.16	0.14	0.13	0.06
	Equities	0.10	0.04	0.07	0.05	0.08	0.09	-0.01
	Institutions	0.15	0.17	0.21	0.29	0.30	0.32	0.17
Japan	Deposits	0.55	0.69	0.60	0.60	0.62	0.60	0.04
	Bonds	0.06	0.09	0.09	0.05	0.03	0.02	-0.03
	Equities	0.12	0.07	0.09	0.06	0.05	0.04	-0.07
	Institutions	0.14	0.13	0.21	0.29	0.31	0.28	0.14
Canada	Deposits	0.31	0.38	0.36	0.32	0.30	0.30	-0.01
	Bonds	0.14	0.08	0.05	0.06	0.05	0.04	-0.09
	Equities	0.27	0.24	0.21	0.25	0.28	0.30	0.03
	Institutions	0.22	0.21	0.28	0.30	0.32	0.34	0.13
France	Deposits	0.49	0.59	0.38	0.35	0.32	0.29	-0.20
	Bonds	0.06	0.09	0.04	0.05	0.03	0.02	-0.03
	Equities	0.26	0.12	0.26	0.23	0.29	0.32	0.07
	Institutions	0.06	0.09	0.26	0.33	0.32	0.31	0.26
Italy	Deposits	0.45	0.58	0.35	0.28	0.23	0.23	-0.22
	Bonds	0.19	0.08	0.19	0.21	0.22	0.18	-0.02
	Equities	0.11	0.10	0.21	0.21	0.25	0.30	0.19
	Institutions	0.08	0.06	0.08	0.10	0.10	0.10	0.02
Average	**Deposits**	**0.43**	**0.52**	**0.39**	**0.34**	**0.32**	**0.31**	**-0.12**
	Bonds	**0.10**	**0.09**	**0.09**	**0.09**	**0.08**	**0.07**	**-0.04**
	Equities	**0.21**	**0.13**	**0.16**	**0.17**	**0.20**	**0.21**	**0.00**
	Institutions	**0.16**	**0.18**	**0.27**	**0.32**	**0.34**	**0.34**	**0.19**

Source: National flow-of-funds balance sheet data. Davis and Steil (2001), Table 1.9.

Table 9. Financial Assets of Personal Sector (1970-1998)

(%: fiscal year)

	1970	1980	1990	1995	1998
Cash and Deposits	57.3	62.8	52.3	55.1	59.6
Cash and Demand Deposits	15.4	11.4	8.8	10.0	12.3
Saving Deposits	41.9	51.4	43.5	45.1	47.3
Banking Time Deposits	32.0	33.9	29.2	27.1	27.1
Postal Savings Deposits	9.9	17.5	14.3	18.0	20.2
Managed Funds	19.3	20.8	31.6	34.7	32.9
Trust Funds	5.2	6.0	6.8	6.6	5.1
Investment Funds	1.6	1.5	3.9	2.7	2.3
Insurance	12.5	13.3	20.9	25.4	25.5
Securities	21.0	15.7	14.7	10.1	7.5
Bonds	5.4	8.3	4.8	3.1	2.1
Stocks 1/	15.6	7.4	9.9	7.0	5.4
Others	2.7	0.8	1.4	0.1	0.0
Total %	100.0	100.0	100.0	100.0	100.0
¥trillion	78.3	353.1	954.5	1183.0	1255.1

Note : (1) Market value.
(2) Data aggregation base was changed in 1999.

Source: Bank of Japan, *Annual Report of Economic Statistics.*

Table 10. Financial Assets of Personal Sector (as of end - 1999)

(%)

	Japan	Germany	France	U.K.	U.S.
Cash and Deposits	54.0	35.2	25.3	20.7	9.6
Insurance/Pension	26.4	26.4	20.6	52.2	30.4
Investment Funds Unit Funds	2.3	10.5	8.7	5.1	10.9
Debt Securities	5.3	10.1	1.8	1.6	9.5
Stocks/Shares	8.1	16.8	39.7	17.7	37.3
Others	3.9	1.1	3.9	2.7	2.2
Total	100.0 \1438tril	100.0 DM7034bil	100.0 FF21tril	100.0 £2915bil	100.0 $35tril

Source: Bank of Japan, International Comparative Statistics.

Table 11. Portfolio Composition of the Households by Yearly Income Quintile Group (All Households)

1979 (thousand Yen)

Item	Average	Yearly income quintile group I	II	III	IV	V
Savings	5,212 (100.00%)	2,564 (100.00%)	3,290 (100.00%)	4,091 (100.00%)	5,372 (100.00%)	10,735 (100.00%)
Demand deposits	598 (11.47%)	372 (14.51%)	408 (12.40%)	474 (11.59%)	623 (11.60%)	1,116 (10.40%)
Time deposits	2,459 (47.18%)	1,277 (49.80%)	1,618 (49.18%)	1,959 (47.89%)	2,490 (46.35%)	4,946 (46.07%)
Life insurance & non-life insurance	1,024 (19.65%)	566 (22.07%)	758 (23.04%)	926 (22.64%)	1,165 (21.69%)	1,707 (15.90%)
Securities	945 (18.13%)	322 (12.56%)	395 (12.01%)	531 (12.98%)	841 (15.66%)	2,636 (24.56%)
Stocks & shares	445 (8.54%)	68 (2.65%)	130 (3.95%)	197 (4.82%)	344 (6.40%)	1,483 (13.81%)
Non-financial institutions	185 (3.55%)	27 (1.05%)	111 (3.37%)	201 (4.91%)	253 (4.71%)	330 (3.07%)

1984 (thousand Yen)

Item	Average	Yearly income quintile group I	II	III	IV	V
Savings	7,697 (100.00%)	4,550 (100.00%)	4,908 (100.00%)	6,360 (100.00%)	8,159 (100.00%)	14,507 (100.00%)
Demand deposits	620 (8.06%)	423 (9.30%)	446 (9.09%)	543 (8.54%)	684 (8.38%)	1,003 (6.91%)
Time deposits	3,706 (48.15%)	2,421 (53.21%)	2,539 (51.73%)	3,129 (49.20%)	3,928 (48.14%)	6,510 (44.87%)
Life insurance & non-life insurance	1,690 (21.96%)	1,030 (22.64%)	1,192 (24.29%)	1,626 (25.57%)	1,847 (22.64%)	2,757 (19.00%)
Securities	1,442 (18.73%)	635 (13.96%)	635 (12.94%)	864 (13.58%)	1,347 (16.51%)	3,728 (25.70%)
Stocks & shares	602 (7.82%)	238 (5.23%)	138 (2.81%)	280 (4.40%)	542 (6.64%)	1,810 (12.48%)
Non-financial institutions	239 (3.11%)	41 (0.90%)	96 (1.96%)	199 (3.13%)	353 (4.33%)	508 (3.50%)

1989 (thousand Yen)

Item	Average	Yearly income quintile group I	II	III	IV	V
Savings	13,110 (100.00%)	7,487 (100.00%)	9,116 (100.00%)	10,223 (100.00%)	12,726 (100.00%)	25,996 (100.00%)
Demand deposits	895 (6.83%)	618 (8.25%)	687 (7.54%)	801 (7.84%)	884 (6.95%)	1,486 (5.72%)
Time deposits	4,999 (38.13%)	3,548 (47.39%)	3,427 (37.59%)	4,204 (41.12%)	5,119 (40.22%)	8,698 (33.46%)
Life insurance & non-life insurance	3,114 (23.75%)	1,900 (25.38%)	2,399 (26.32%)	2,678 (26.20%)	3,422 (26.89%)	5,170 (19.89%)
Securities	3,752 (28.62%)	1,370 (18.30%)	2,399 (26.32%)	2,204 (21.56%)	2,844 (22.35%)	9,942 (38.24%)
Stocks & shares	2,335 (17.81%)	681 (9.10%)	1,056 (11.58%)	1,123 (10.99%)	1,479 (11.62%)	7,336 (28.22%)
Non-financial institutions	350 (2.67%)	51 (0.68%)	205 (2.25%)	336 (3.29%)	457 (3.59%)	700 (2.69%)

1994 (thousand Yen)

Item	Average		Yearly income quintile group I		II		III		IV		V	
Savings	15,921	(100.00%)	11,478	(100.00%)	13,009	(100.00%)	12,760	(100.00%)	15,451	(100.00%)	26,908	(100.00%)
Demand deposits	1,043	(6.55%)	774	(6.74%)	860	(6.61%)	901	(7.06%)	1,051	(6.80%)	1,630	(6.06%)
Time deposits	7,585	(47.64%)	6,041	(52.63%)	6,706	(51.55%)	5,403	(42.34%)	7,259	(46.98%)	12,517	(46.52%)
Life insurance & non-life insurance	4,420	(27.76%)	3,003	(26.16%)	3,649	(28.05%)	4,203	(32.94%)	4,477	(28.98%)	6,770	(25.16%)
Securities	2,376	(14.92%)	1,466	(12.77%)	1,528	(11.75%)	1,752	(13.73%)	2,110	(13.66%)	5,023	(18.67%)
Stocks & shares	1,145	(7.19%)	578	(5.04%)	583	(4.48%)	627	(4.91%)	952	(6.16%)	2,986	(11.10%)
Non-financial institutions	466	(2.93%)	136	(1.18%)	256	(1.97%)	465	(3.64%)	536	(3.47%)	936	(3.48%)

1999 (thousand Yen)

Item	Average		Yearly income quintile group I		II		III		IV		V	
Savings	17,377	(100.00%)	12,787	(100.00%)	13,309	(100.00%)	15,556	(100.00%)	17,281	(100.00%)	27,953	(100.00%)
Demand deposits	1,751	(10.08%)	1,403	(10.97%)	1,214	(9.12%)	1,652	(10.62%)	1,654	(9.57%)	2,832	(10.13%)
Time deposits	8,138	(46.83%)	6,839	(53.48%)	6,316	(47.46%)	7,383	(47.46%)	7,641	(44.22%)	12,510	(44.75%)
Life insurance & non-life insurance	5,026	(28.92%)	3,356	(26.25%)	3,871	(29.09%)	4,836	(31.09%)	5,622	(32.53%)	7,442	(26.62%)
Securities	2,033	(11.70%)	1,131	(8.84%)	1,764	(13.25%)	1,404	(9.03%)	1,789	(10.35%)	4,075	(14.58%)
Stocks & shares	1,071	(6.16%)	604	(4.72%)	806	(6.06%)	833	(5.35%)	912	(5.28%)	2,198	(7.86%)
Non-financial institutions	430	(2.47%)	58	(0.45%)	144	(1.08%)	280	(1.80%)	574	(3.32%)	1,095	(3.92%)

Source: Family Saving Survey (Statistics Bureau), respective years.

Table 12. International Comparisons of Wealth Distribution

		Gini Coefficients	Share of top 5 percent
Japan	1981b	0.58	
	1984b	0.52	25%
US	1983a	0.77	54%
	1983b	0.79	56%
	1988b	0.761	
France	1986a	0.71	43%
W. Germany	1988b	0.694	
Canada	1984b	0.69	38%
Australia	1986b		41%

Source: Wolff (1996).

Table 13. Portfolio Compositions of the Households by Age Group (All Households)

1979 (%)

Item	Average	Age -24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Demand deposits	11.47	15.15	13.33	13.57	11.12	11.17	10.99	10.30	10.96	11.52	13.20
Time deposits	47.18	65.37	49.56	49.38	48.73	47.51	44.84	46.70	47.89	47.01	46.03
Life insurance & non-life insurance	19.65	13.85	22.07	21.87	21.29	24.13	20.36	18.23	18.60	16.76	14.83
Securities	18.13	2.65	8.59	9.33	13.45	13.14	20.08	21.20	20.24	23.61	24.58
Stocks & shares	8.54	0.00	3.70	3.84	5.59	5.32	12.33	10.77	8.39	7.49	12.95
Non-financial institutions	3.55	2.91	6.51	5.78	5.41	4.05	3.75	3.56	2.30	1.10	1.36
Savings	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(thousand Yen)	5,212	1,545	1,921	2,991	3,903	4,269	5,767	7,948	7,899	8,652	7,438

1984 (%)

Item	Average	Age -24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Demand deposits	8.06	15.38	9.27	8.67	8.19	8.54	7.97	7.52	8.03	7.15	8.41
Time deposits	48.15	36.25	50.64	51.26	47.00	43.51	49.96	45.80	48.79	50.42	49.85
Life insurance & non-life insurance	21.96	31.62	23.18	25.03	26.01	27.91	24.75	23.43	18.96	17.35	14.96
Securities	18.73	10.40	8.70	9.37	13.72	15.59	14.55	19.69	21.26	24.06	26.23
Stocks & shares	7.82	0.00	1.56	3.10	5.42	7.19	7.09	10.69	6.36	7.52	11.91
Non-financial institutions	3.11	6.28	8.21	5.70	5.07	4.43	2.77	3.57	2.95	1.03	0.55
Savings	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(thousand Yen)	7,697	1,385	2,826	4,003	5,225	6,022	8,008	9,389	10,891	12,427	11,306

1989 (%)

Item	Average	Age -24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Demand deposits	6.83	14.80	10.07	8.19	7.65	7.64	6.81	7.64	7.61	5.84	5.56
Time deposits	38.13	43.60	40.11	38.50	38.49	37.57	35.93	41.53	35.78	44.98	34.78
Life insurance & non-life insurance	23.75	24.31	25.76	31.45	31.50	30.79	30.97	26.35	22.65	21.94	13.22
Securities	28.62	11.47	19.26	15.79	16.56	20.22	22.80	21.96	30.86	25.81	45.77
Stocks & shares	17.81	10.20	10.25	8.23	9.53	13.05	13.16	14.01	20.79	13.37	29.93
Non-financial institutions	2.67	5.81	4.80	6.04	5.79	3.78	3.50	2.51	3.09	1.43	0.66
Savings	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(thousand Yen)	13,110	1,892	4,518	5,211	7,583	9,210	12,005	13,176	16,997	21,016	24,122

1994 (%)

Item	Average	Age -24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Demand deposits	6.55	13.87	13.13	9.15	7.65	7.66	7.06	6.27	6.79	5.89	5.65
Time deposits	47.64	49.92	37.24	43.36	39.56	43.63	42.57	42.63	47.63	51.75	53.76
Life insurance & non-life insurance	27.76	33.91	26.63	33.37	37.10	35.44	36.01	30.26	28.63	25.32	18.79
Securities	14.92	0.15	14.71	7.89	10.34	8.50	11.66	16.61	13.29	14.38	20.62
Stocks & shares	7.19	0.15	10.43	2.63	5.73	4.73	5.61	8.35	7.81	6.86	8.75
Non-financial institutions	2.93	2.14	7.58	6.22	5.02	4.60	2.57	4.19	3.36	2.29	1.06
Savings	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(thousand Yen)	15,921	1,961	4,630	6,658	8,431	11,047	12,817	16,309	18,808	24,772	25,461

1999 (%)

Item	Average	Age -24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Demand deposits	10.08	40.08	18.42	19.20	12.12	10.84	10.19	9.27	9.72	8.70	9.75
Time deposits	46.83	37.34	44.16	32.70	37.54	35.96	41.35	43.41	46.08	50.00	53.05
Life insurance & non-life insurance	28.92	22.27	31.49	38.08	36.28	41.09	34.69	33.17	31.12	27.92	21.09
Securities	11.70	0.00	3.36	4.71	8.29	7.22	9.80	10.54	9.74	12.17	15.39
Stocks & shares	6.16	0.00	1.54	2.27	4.59	4.84	6.05	5.66	6.14	6.77	7.01
Non-financial institutions	2.47	0.31	2.54	5.30	5.76	4.90	3.98	3.60	3.34	1.21	0.72
Savings	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(thousand Yen)	17,377	1,280	3,897	6,620	8,698	11,375	13,247	18,256	21,227	24,621	25,271

Source: Family Saving Survey (Statistics Bureau), respective years.

Table 14. Ownership Structure of Listed Companies in Japan

(%)

	Banking Institutions	Institutional Investors	(Trust Banks)	(Insurance Companies)	(Investment Funds)	Other Financial Institutions	Business Corporations	Individuals	Foreigners	Total
1966	11.8	16.0	-	12.3	3.7	7.2	18.6	44.1	1.8	100.0
1970	14.0	16.5	-	15.1	1.4	3.2	23.1	39.9	3.2	100.0
1980	17.7	18.9	-	17.4	1.5	3.9	26.0	29.2	4.0	100.0
1990	16.4	27.1	6.2	17.3	3.6	3.5	25.2	23.2	4.2	100.0
1991	16.3	26.9	6.5	17.2	3.2	3.1	24.5	23.2	5.4	100.0
1992	16.2	27.0	6.8	17.0	3.2	2.5	24.4	23.7	5.5	100.0
1993	16.0	26.6	7.1	16.5	3.0	2.5	23.9	23.5	6.7	100.0
1994	15.9	26.6	8.0	16.0	2.6	2.2	23.8	23.6	7.4	100.0
1995	15.4	24.9	8.0	14.8	2.1	2.6	23.6	23.6	9.4	100.0
1996	15.1	25.1	8.8	14.3	2.0	2.1	23.8	23.6	9.8	100.0
1997	14.6	24.6	9.7	13.5	1.4	1.8	24.1	24.6	9.8	100.0
1998	14.0	24.3	10.5	12.6	1.2	1.7	24.1	25.4	10.0	100.0
1999	12.8	22.1	9.3	11.2	1.6	2.1	23.7	26.4	12.4	100.0
2001	10.1	29.9	n.a.	n.a.	n.a.	n.a.	21.8	19.4	18.8	100.0

Notes: Number of units since 1986, number of shares before 1986.

(1) Banking institutions include long-term credit banks and commercial banks since 1990. They include trust accounts before 1986.
(2) Institutional investors include trust banks, insurance companies and investment funds. Other financial institutions include securities companies etc.
(3) Institutional investors of 2001.3 include all expect banking institutions.

Source: Tokyo Stock Exchange, *Fact Book*, 2001.
The figures in March 2001 are from *Nihon Keizai Shinbun* 2001/06/27.

Table 15. Ownership Structure of the US, the UK, and Japan

(%)

	Financial Institutions	Individual Investors
The US		
1970	14.0	82.1
1981	34.3	58.3
1990	40.4	49.9
1998	49.5	40.0
The UK		
1963	29.0	54.0
1969	34.2	47.4
1981	57.6	28.2
1990	60.8	20.3
1999	50.9	15.3
Japan		
1966	23.2	44.1
1970	19.7	39.9
1980	22.8	29.2
1990	30.6	23.2
1999	24.2	26.4

Note: Financial Institutions include all financial institution except banking institutions.

Sources Federal reserve Bank, *Flow of Funds*, the US.
Central Statistical Office, *Share Ownership*, 1999, the UK..
Tokyo Stock Exchange, Fact Book, 2001.

Table A1. The Ratio of Liquid assets to Total Assets of Financial Institutions

Year	Business Cycle	Banks	Private Financial Institutions	Private and Government Financial Institutions
1891	T	12.29	12.24	12.12
1896	P	8.83	9.56	9.03
1902	T	10.57	11.04	10.39
1905	P	12.61	12.98	12.41
1909	T	11.41	11.85	11.94
1911	P	10.16	10.67	10.13
1913	T	9.47	10.13	9.87
1918	P	12.80	13.74	14.96
1921	T	9.20	10.13	10.36
1924	P	8.55	9.94	10.27
1930	T	7.23	8.55	8.65
1938	P	6.83	8.68	7.74

Source: Calculated from the flow of fund estimates in Fujino and Teranishi (2001).