

# **Impediments to Corporate Bond Market Development in Japan**

Jonathan A. Batten  
College of Business Administration  
Seoul National University  
151-742 San 56-1,  
Sillim-Dong, Kwanak-Ku,  
Seoul, Korea  
Fax: ++82-2-882-0547  
Email: [jabatten@snu.ac.kr](mailto:jabatten@snu.ac.kr)

Peter G. Szilagyi  
Budapest University of Economic Sciences and Public Administration  
8 Fővám tér  
Budapest 1093, Hungary  
Ph: ++36 52 421 132  
Email: [pg\\_szilagyi@hotmail.com](mailto:pg_szilagyi@hotmail.com)

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This paper presents an analysis of the current structure of Japan's financial system and argues that further development of the corporate bond market is critical for the allocation of excess liquidity in the financial system. In order to achieve this goal requires (i) the removal of regulation which limits access to the underwriting and trading process; (ii) reducing the concentration of market power in the hands of banks; (iii) encouraging a broader investment choice by Japanese investors including households and institutional investors; (iv) improving infrastructure for the issuing and trading of securities; (v) promoting the issuance of debt securities among potential domestic borrowers; (vi) encouraging non-resident borrowers to tap the pool of Japan's excess domestic savings through domestic bond issues; and finally (vii) encouraging further internationalization of the yen, since there is a lack of yen funding requirements by foreign corporations.

# Impediments to Corporate Bond Market Development in Japan

## 1. INTRODUCTION

Over the last decade there has been considerable reform of the financial system in Japan in response to the banking crisis that followed the bursting of the asset-bubble. Most recently, under the Big Bang initiative of the three principles of “free, fair and global”, the government implemented numerous reform measures to encourage financial market development. Some of these reforms were directed to the encouragement of market-based mechanisms for corporate refinancing. However, despite these efforts, today, Japan’s financial system remains bank-dominated, and Japanese corporations’ reliance on capital markets remains moderate. For example, June 2002 flow of funds data<sup>1</sup> reveals that debt securities currently constitute 21% of non-equity credit market debt held by Japanese non-financial corporations’, which compares with 42% of U.S. corporations. Hence, the Japanese corporate bond market remains smaller in size, and less economically significant than its U.S. counterpart, whereas the Japanese Government Bond (JGB) market is now the largest in the world.

There is considerable evidence that bank-centred financial systems have successfully contributed to the high-economic growth outcomes achieved in many emerging, as well as developed markets such as Japan (eg. Levine, 2002 and Tadesse, 2002). However, the recent credit crunch in Japan has shown that the process of bank intermediation may break down when there is a scarcity of investment opportunities. It is clear that understanding these financial mechanisms is critical for the identification of additional policy options given the quandary facing economic policy in Japan today.

The objectives of this paper are to provide a new insight into the financing mechanisms in Japan, to identify those obstacles that hinder the development of market-based systems and to then establish relevant policy options for undertaking the next step in the financial reform process. To achieve these objectives, this study employs a flow-of-fund analysis and investigates the sources and uses of funds by various sectors of the Japanese economy: households, financial and non-financial corporations, government and foreign institutions. Evidence from this analysis demonstrates only a gradual disintermediation in Japan’s financial system in recent years, while the major channel for the allocation of domestic savings (note that savings are continuing to grow in Japan) to productive assets continues to be bank intermediation. Given these facts, a key concern for government policy relates to developing alternate forms of financing and investment.

In this context, the recent academic literature is also investigated and the role of market-based mechanisms identified. Specifically, the existing theory of financial intermediation is briefly reviewed, the role of bond markets in a market-based financial system is considered and finally the transition from a bank-based to a market-based financial system outlined. The existing literature demonstrates the link between financial system development and real sector growth outcomes. For

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<sup>1</sup> Bank of Japan Flow of Funds Accounts (2002) and Flow of Funds Accounts of the United States, U.S. Federal Reserve (2002).

example, Walter's (1993) view is that financial market infrastructure performs a crucial function in a modern economy, facilitating information, trading and settlement within the system, lowering the cost of risk capital. Seward (1990) also argues that the existence of an intermediated financial contract market improves economic efficiency by reducing the aggregate costs of monitoring. These interpretations are also consistent with the earlier views of Stiglitz (1985) and Fama (1985) who emphasized the roles of financial intermediaries in the modern theory of corporate finance.

In order to better understand the appropriate process of reform and to provide more tangible policy options for Japan it is necessary to understand the reasons behind the lack of development of market-based mechanisms devices. Thus, this study then investigates in the Japanese context those impediments to the development of market-based financing mechanisms that have been identified by a number of studies. For example, Schinasi and Smith (1998) highlight the need for adequate infrastructure and public policy in corporate debt securities markets. Kuratani and Endo (2000) propose that greater use be made of securitization techniques to enable retail investors access to alternate and higher-yielding securities, while Hattori, Koyama and Yonetani (2001) add that there remains room for further development in areas such as market design, market practice and credit analysis. Recognizing the positive externalities of a developed government bond market to the corporate market, Rhee (2001) reviewed key steps for further development of the JGB market in aligning its infrastructure with those of the U.S. and U.K. markets. Rhee also argued that Japan should intensify its effort to assume a leadership role in creating regional bond market infrastructure, and that concerted efforts be made to internationalize the yen, encourage domestic bond issues by non-residents, and promote foreign investment in the Tokyo financial markets.

This study investigates these proposals and also recommends the further development of Japan's corporate bond market, specifically by (i) removing regulation which limits access to the underwriting and trading process; (ii) reducing the concentration of market power in the hands of banks; (iii) encouraging a broader investment choice by Japanese investors including households and institutional investors; (iv) improving infrastructure for the issuing and trading of securities; and (v) promoting the issuance of debt securities among potential domestic borrowers; (vi) encouraging non-resident borrowers to tap the pool of Japan's excess domestic savings through domestic bond issues; and finally (vii) encouraging further internationalization of the yen, since there is a lack of yen funding requirements by foreign corporations.

The paper is set out as follows. In the next section the literature on the role bond markets play in modern financial systems is outlined. Key trends in the sources and uses of funds to Japanese entities are then investigated. A brief review of the structure of the Japanese bond markets is provided with attention then directed towards those impediments that hinder further development of the Japanese financial system. The final section allows for some concluding remarks.

## II. BOND MARKETS AND FINANCIAL INTERMEDIATION

### A. The Theory of Financial Intermediation

The traditional perspective on the theory of financial intermediation concerns the mitigation of transaction costs and the management of asymmetric information, with intermediaries responsible for bridging the gap between buyers and sellers of funds (e.g. Akerlof, 1970; Santomero, 1984; and Bhattacharya and Thakor, 1993). In effect, intermediation develops as a response to the cost of market imperfections, since in a perfect market investors could otherwise undertake these services themselves (e.g. Leland and Pyle, 1977; Campbell and Kracaw, 1980; Dewatripoint and Tirole, 1994; and Freixas and Rochet, 1997). For example, Leland and Pyle (1977) in their signaling model rationalize the existence of intermediaries as solving problems within an imperfect market.

As Stiglitz and Weiss (1981) and later Williamson (1986) observe, the market mechanism fails under imperfect information due to equilibrium credit rationing. Under these circumstances, adverse selection and moral hazard ensure that the probability and expected cost of monitoring a loan increase with the interest rate. Thus, those wishing to borrow cannot bid funds away by offering a higher rate of interest. In the case of Japan, these asymmetries arise from imperfections in the structure of markets, including such factors as relatively undeveloped money markets, liquidity concerns and clearing and settlement inefficiencies. There is also clear evidence of Japanese intermediaries' reluctance to lend to new enterprises due to their aversion to risk and their inability to evaluate projects or business plans, instead preferring to hold government bonds<sup>2</sup>.

Since individual investors are generally not able to discern the profitability of projects, intermediaries pool together deposits and lend them out to finance lucrative ventures. The larger intermediaries have greater incentive to collect information and monitor the actions of the firm, because it has far more at stake than any small individual household. Doing so alleviates the free-rider problem that exists when small household savers leave it to each other to collect information and monitor the actions of the corporations. The unique financial system in Japan, involving financial intermediaries having cross-ownership with industry, has established large self-funding conglomerates (*keiretsu*). These conglomerates have evolved as a mechanism to perform these tasks expeditiously though as the bad loans scandals in Japan have demonstrated, inadequate levels of corporate governance have compromised this process.

In this sense, the financial intermediary is a delegated monitor, appointed to act on the behalf of those with savings (Diamond, 1984; Boyd and Prescott, 1986). However as Diamond (1984) points out, in this view diversification within the intermediary, despite universal risk neutrality, is crucial to the possible net advantage of intermediation, making it feasible to hire an intermediary to monitor the borrower. Thus, market completeness is also attained through the provision of arbitrage trading and the management of risks through portfolio diversification.

The use of financial intermediaries also minimizes the sorts of agency problems identified by Jensen and Meckling (1976). Agency theory assumes that individuals are rational and maximize their utility, implying conflicting interests amongst managers, shareholders and debtholders. Conflicts between management

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<sup>2</sup> The authors thank an anonymous referee for making this observation.

and other stakeholders may arise because the managers place their own interest ahead of the shareholders and debtholders. For this reason, equity financing always poses a problem to management. Therefore, financing through financial intermediaries mitigates agency problems. Greater efficiency is achieved through the opportunity for mutual monitoring by the board of directors and the independent lenders. The Japanese example, however, demonstrates how these mechanisms may be compromised. While bottom-up, consensus based decision-making contributed to the economic miracle that was Japan throughout most of the 20<sup>th</sup> century, the lack of independence arising from the cross-ownerships between the banks and industry has resulted in the non-performing loan problem confronting the banking sector in the 21<sup>st</sup> century. For this problem there is no immediate answer other than improvements in internal control mechanisms and the eventual dismantling of the cross-ownership structures - a solution complicated by the impact that such restructuring would have on an already fragile economy.

More recent theories highlight risk management participation costs, and cite the erosion of the traditional role played by banks in recent years in the financial system. The reduction in transaction costs and the costs associated with managing information have further challenged traditional views. The breakdown of the demarcation between the traditional banking sector and securities trading corporations brought about by improvements in technology and risk-management capability, further illustrates this point. Such convergence may clearly be limited by regulation, as is the case in Japan, at the expense of overall market efficiency. However, as Allen and Santomero (2001) note, while traditional banking activities have shrunk, banking is not fading due to advancement in technology and the development of securitization, which enables banks to more effectively manage asset and liquidity risks. They also propose that while risk management has always been part of banking activities, it is the evolution and sophistication of the techniques now available to counter risks that is relevant.

Also of general concern, is the specific relationship between financial intermediaries and the real economy. Walter's (1993) view is that market infrastructure performs a crucial function in a modern economy, facilitating information, trading and settlement within the system, lowering the cost of risk capital. Seward (1990) also argues that the existence of an intermediated financial contract market improves economic efficiency by reducing the aggregate costs of monitoring. These interpretations are also consistent with the earlier views of Stiglitz (1985) and Fama (1985) who emphasized the roles of financial intermediaries in the modern theory of corporate finance.

According to Walter (1993), there are three alternative and competing modes of financial intermediation, or "contracting" between the parties in financial transactions, which result in different forms of financial system. In the first mode of financial contracting, depositors buy the "secondary" financial claims or liabilities issued by credit institutions, and benefit from liquidity, convenience, and safety through the ability of financial institutions to diversify risk and improve credit quality through professional asset management and the monitoring of their holdings of primary financial claims (debt and equity). Investors can choose among a set of standardized contracts and receive payment services and interest that may, or may not, be subject to varying degrees of government regulation. In the second mode, investors may select their own portfolios of financial assets directly from among the publicly issued debt and equity instruments on offer. This offers a broader range of options for both large and small investors. In the third mode, investors buy large

blocks of privately issued securities. In doing so, they often face a liquidity penalty – due to the absence, or limited availability, of a liquid secondary market – for which they are rewarded by a higher yield. On the other hand, directly placed securities can be specifically “tailored” to more closely match issuer and investor requirements than can publicly issued securities.

The financial system that is dominated by the first system may be characterized as a bank-based financial system. On the other hand, the second and third modes can be seen as non-bank-based or market-based financial systems. Unless prevented from doing so by regulation, the three above alternative channels of financial flows compete vigorously with one another for transaction volume in the financial intermediation process. The winners and losers among institutions competing in this process tend to be relatively consistent across national and international financial markets

## **B. The Role of Bond Markets in a Market-based Financial System**

Allen and Gale (2000) in their comparison of bank versus market-based systems, highlight the critical role of banks in fostering growth during the early stages of economic development, when there is the lack of appropriate financial and legal frameworks. In addition, banks enable the intertemporal smoothing of risk, foster the efficient exploitation of markets, as well as provide the traditional advantageous functions of delegated monitoring (Diamond 1984), and the lowering of transaction costs (Benston and Smith 1976). However, Levine (2000) highlights that banks, as a result of their superior informational levels regarding corporations, may also extract rents and expected future profits from a firm and force corporations to employ low risk, or conservative, strategies.

From a theoretical perspective, Bolton and Freixas (2000) propose a model of segmented financial markets and corporate finance, with asymmetric information and no taxes, where equity issues, bank debt, and bond financing coexist in equilibrium. To avoid the costs of intermediation corporations may turn to bond or equity financing, but bonds imply an inefficient liquidation cost and equity an informational dilution cost. Thus, in equilibrium, riskier corporations prefer bank loans, while the safer ones tap the bond markets, and the ones in between prefer to issue both equity and bonds.

However, while segmentation of financing is broadly consistent with the stylized facts evident in developed financial markets, Davis and Mayer’s (1991) examination of bond and syndicated bank finance in the Euromarkets note that bank and bond markets are not perfect substitutes. In fact, even for large companies, the financing of high-risk projects requires the involvement of banks. Banks therefore retain a central function, and the operation of bank syndicates is crucial to the financing of large corporations. However, more recent empirical evidence suggests these relationships are not so definite. For example, Dinc (2000) investigating the effects of credit market competition, shows that banks will offer loans with commitment to the highest quality borrowers but, when faced with competition from bond markets, they also give these loans to lower quality borrowers as well. Meanwhile, Ongena and Smith’s (2000) investigation of the determinants of multiple-bank relationships finds that corporations also maintain more relationships in countries with unconcentrated but stable banking systems and active public bond markets.

These and other empirical studies lead to the conclusion that a financial system, irrespective of whether it is bank-based or market-based, can serve as a catalyst to growth in the real sector, by providing sound financial services in a regulated environment. The outstanding success of both Japan and Germany over the last forty years, with their predominately bank-based systems, and the alternate more market-based systems evident in the U.S. and the UK, is testament to the success of either of these approaches in tackling the primary concern of financial markets - asymmetric information.

Notwithstanding the success of bank-based systems there are several reasons identified by Takagi (2002), which justify the development of viable capital markets, including bond markets: the lowering of the average cost of external finance by exposing the bank to competition; the building of a more efficient capital structure by managing agency costs; better managing control in the corporation since capital markets exert discipline on management; improving the efficiency of resource allocation by providing price signals for investment decisions; and encouraging the financing of innovation.

### **C. The Transition from a Bank-Based to Market-based Financial System**

Reasons why disintermediation may be desirable in financial systems where bank-intermediated finance makes up the bulk of financial activity have been identified by various recent studies. Schinasi and Smith (1998) argued that effective securities markets are capable of pricing financial risks at least as well as banks, while distributing financial risks and potential losses more widely, if not also more efficiently. Also, securities markets largely avoid the ill-effects of moral hazard imposed by public safety nets. Sharma (2001) added that developed bond markets should reduce maturity mismatches in the corporate sector, occurring as a result of corporations undertaking short-term loans to finance longer-term projects. And, Hakansson (1999) pointed out that a richness of available securities will tend to enhance economic welfare, and “the market forces at work on the wide array of bond prices” are likely to have a spillover effect on the health of the banking system as well.

Literature on the transition from a bank based financial system to the market economy with a viable corporate bond market rightly emphasizes the importance of financial system reform, not only to aid the transition, but also to ensure a strong basis for future economic growth (Beck, Levine and Loayza, 2000). Successful financial sector reform, including the development of market-based forms of financing, will importantly require and encourage the effective development of other policy reforms. However, to be successful, property rights and bankruptcy laws must also be enforced, tax systems revised and state owned enterprise privatized. These views are important for Japan, which must now tackle a broad reform agenda of which financial market reform generally, and corporate bond market development more specifically, is but a part.

In order to better understand the appropriate process of reform necessary to improve market-based financing mechanisms, it is first necessary to understand the reasons behind the lack of development of these devices in developed financial markets. Smith's (1995) survey of markets for corporate debt securities in the major industrial countries and the international markets, provides a basis for understanding these issues by investigating some of the reasons for the underdevelopment of domestic bond markets in the major industrialized economies and the consequences

of corporations shifting debt financing needs from banks to securities markets. Other authors, including Batten and Kim (2001), Sharma (2001) and Cheung and Chan (2002) provide a reform agenda for Asia-Pacific economies in the post-crisis period. The authors all agree that to develop bond markets there is a need to build stronger legal and regulatory frameworks, to improve investor protection, to encourage adequate disclosure of information and to foster best practices by listed companies and financial intermediaries.

It is also insightful to reflect upon the experience of those countries that have recently developed or expanded their domestic securities markets. Thorat (2002) provides a perspective on the experience of India in developing government securities markets from the 1990s. It is important to note that this process was undertaken with regard to the appropriate sequence of infrastructure development, including the enlargement of products and participants to ensure appropriate liquidity, an appropriate regulatory framework for valuation, accounting and disclosure, and risk management and settlement capability.

In Japan's case, the deterioration in the credit quality of many Japanese corporations has eroded public confidence in the security issuing process. We argue later that providing greater access to creditworthy foreign borrowers is the appropriate immediate strategy. In the final stage, there is a proliferation of financial instruments provided by both decentralized intermediaries and centralized markets.

### **III. KEY TRENDS IN THE FLOW OF FUNDS OF JAPAN**

Undertaking a broad flow of funds analysis of the key financial and non-financial sectors may identify the underlying problems of Japan's bank-centric financial system. The summary of the analysis is shown in Table 1. As we will find, the economic stagnation of the past decade has deeply affected Japan's financial system, which has effectively forced the more recent capital market deregulation.

(Insert Table 1)

#### **A. Japanese Households**

(Insert Figure 1)

Chart 1 contains a comparison between the financial asset allocation of Japanese and U.S. households. This comparison highlights the essential differences in how these funds are allocated in bank-based and market-based financial systems. The results demonstrate that Japanese households continue to hold the bulk of their savings (54.9% in March 2002) in currency and deposits, including ¥ 312 trillion in bank deposits, rather than seeking riskier and higher yielding forms of investment. This is despite the fact that there is virtually no interest paid on Japanese bank deposits.

The underlying rationale for such an extreme bias towards "safe" assets on the part of Japanese households has been investigated by various authors, most notably Nagakawa (2000). He found that Japanese households are two or three times as risk averse as their U.S. counterparts, which owes as much to growing uncertainties about their future income as to deteriorating returns on riskier assets, such as securities holdings. And, bank deposits are perceived as the ultimate safe

haven due to the deposit insurance scheme<sup>3</sup>, which initially served policymakers' efforts to encourage bank intermediation (Kuratani and Endo, 2000) very well, but has now resulted in what is a severe liquidity trap in Japan's financial system.

## **B. Japanese Non-financial Corporations**

This liquidity trap in the financial system has arisen as a result of severe demand-related issues. Specifically, Japan's corporate sector has stopped raising funds and become a net source of funds itself. This peculiar trend owes to two main factors: first, major corporations have been trying to unload the huge levels of leverage and excess capacity run up during the bubble period until the late 1980s; and second, less creditworthy corporations are by and large unable to raise funds due to banks' cautious lending policies, a result of huge levels of non-performing loans held<sup>4</sup>, and a lack of access to capital markets.

(Insert Table 2)

The fact that the corporate sector has become a net source of funds has had a profound effect on the equilibrium of Japan's financial markets. This is clearly indicated in Table 2. Since fiscal 1998, the corporate sector's financial surplus has forced enormous fiscal expansion by the Japanese Government, both directly and indirectly, because the other sectors, chiefly foreign borrowers, have failed to absorb the excess liquidity. Overall, as shown in Table 1, the level of the corporate sector's net financial liabilities decreased by a staggering ¥ 170 trillion between March 1998 and March 2002, to ¥ 542.1 trillion, despite funding costs being extremely low for large corporate borrowers.

The shift in the raising of funds towards public entities can also be observed within the corporate sector itself, though to a somewhat lesser extent. Fund-raising by publicly owned corporations, which now hold around 14% of the sector's non-equity liabilities, held up relatively well and remained positive until last year. This trend has also shifted the role of public financial institutions as intermediaries, since these corporations have increasingly relied on loans by institutions such as the Fiscal Loan Fund<sup>5</sup>.

Contrary to those trends observed among public companies, not only have privately owned corporations radically reduced their liabilities, but a notable shift towards disintermediated financing has also emerged in their borrowing patterns. Between March 1998 and March 2002, the share of domestic debt instruments in

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<sup>3</sup> Liquid deposits – mainly current deposits – will be fully covered until at least April 2003. Although authorities intended to reintroduce partial deposit insurance in April 2002, the new framework has still not received the go-ahead due to public opposition.

<sup>4</sup> The Japanese Financial Services Agency (FSA) reports that as of March 2002, banks' non-performing loans (NPLs) exceeded ¥ 43.2 trillion or 6.6% of total loans, despite the disposal of ¥ 78 trillion of NPLs over ten years.

<sup>5</sup> The Fiscal Loan Fund (previously: Trust Fund Bureau) is the single largest domestic provider of loans, accounting for 22.6% of all intermediated lending by financial institutions or ¥ 343.5 trillion. The bulk of the FLF's assets are lent to finance the government's Fiscal Investment and Loan Program (FILP), which undertakes large-scale and long-term projects that the private sector would find difficult to accomplish. Previously funded solely through deposits by the PSS, postal life insurance and social security funds, which were given new discretionary responsibility over their investments in 2001, the FILP now raises funds from the financial markets by issuing FILP bonds (Ministry of Finance, Financial Bureau 2001).

private companies' non-equity liabilities increased from 7.9% to 9.9%. This suggests that those companies that have the ability to issue debt are trying to reduce their dependence on relationship banking and retain more control over their finances. New fund-raising in the domestic market, however, has been broadly limited to the issuance of commercial paper (CP) rather than longer-term bonds, which is in sharp contrast with the U.S. practice, reflecting expectations that borrowing costs will further decline and somewhat undermining the development of the debt market as a whole.

(Insert Table 3 and 4)

The scale of growth seen in the domestic market after fiscal 1997 is clearly emphasized by Bank for International Settlements (BIS) data contained in Tables 3 and 4. In large part, the cheapness of domestic credit also caused Japanese corporate fund-raising to virtually eclipse in foreign debt markets. Table 3, however, also indicates that more recently the market has lost the impetus for growth initially provided by the so-called crunch of domestic bank credit post-1997. This warns that while economic recovery has been further delayed by the events of September 11<sup>th</sup> 2001, on-going bank relationship lending, regulation of politically connected sectors and extremely low interest rates have reduced pressure on corporations to improve governance and restructure their debt.

### **C. Japanese Banks**

The liquidity surplus mounting with Japanese banks is attributable to the supply- and demand-related trends previously identified: Japanese households continue to accommodate their financial assets with banks; however the corporate sector, now a net source of funds, offers little scope for new lending by banks in their traditional field.

(Insert Table 5)

It is only natural that these developments have put great pressure on banks profitability in recent years in that they have had to reduce their fund-raising from alternate sources of credit, while finding alternate channels to drain excess liquidity. The first remark can be easily followed up in Table 1. Tables 3, 4 and 5 provide further evidence that debt issuance as well as foreign borrowing by Japanese banks has been steadily declining.

The task of accommodating banks' excess liquidity - including the ¥ 32 trillion by which lending to the corporate sector declined between March 1998 and March 2002 - has been greatly impeded by the fact that the sector's risk-taking ability has been very limited. All the more so because banks have simultaneously withdrawn from, rather than turned to, overseas lending as a result of the Asian and Russian crises of 1997-98. Japanese bank lending to foreign borrowers, chiefly emerging economies, declined by ¥ 21 trillion over this period.

Ultimately, the banking sector has ended up channelling surplus liquidity into government debt. Banks' holdings of Japanese Government Securities (JGS) increased from ¥ 58 trillion in March 1998 to ¥ 110 trillion in March 2002, despite warnings that the sector's profitability (the average return on assets (ROA) is now estimated at 0.5%) would further deteriorate. The International Monetary Fund (IMF,

2001) also warned that banks are becoming so exposed JGB yields that a 100-basis-point increase would reduce the capital of the major banks by around ¥ 1 trillion. Meanwhile, although banks have taken steps to also take on somewhat riskier positions, these attempts have been rather timid. For example, holdings of non-government debt, including local government and corporate as well as international securities, only increased from ¥ 84 trillion to ¥ 88 trillion over this period. Most of these securities are rated A and above.

It is noteworthy that the investment behaviour of insurance and pension funds has been fairly similar to that of banks in recent years. These institutions have also faced deteriorating revenues and asset quality, and consequently reduced their lending and directed excess capital into JGSs and local government securities. Nevertheless, the growth of insurance and pension funds is essential to lay the foundations of a viable institutional investor base for corporate bonds in Japan, since they tend to have a longer-term focus and, as opposed to banks, employ little or no leverage (Hakansson, 1999).

Finally, it is imperative to note that banks' holdings of shares declined from ¥ 47 trillion to ¥ 32 trillion between March 1998 and March 2002. This decline, however, owes much to the revaluation effects of a decline in the Nikkei index, and only to a limited extent does it reflect banks' unwinding of their cross-shareholdings, pivotal to reduce bank relationship lending<sup>6</sup>.

#### **D. Japanese Government**

The massive budget deficits<sup>7</sup>, which consequently arose from declining tax revenues as well as costly efforts to stimulate the economy and strengthen the banking system, have left the public sector extremely leveraged. Today, Japan's government debt is by far the highest among G7 countries at more than 130% of GDP, and is expected to increase further, by 5-10% points per year, in the near to medium term.

Such extreme leverage has naturally caused explosive growth in Japan's public debt market. Between March 1998 and March 2002, the total outstanding volume of JGBs, Treasury bills and financing bills grew from ¥ 335 trillion to ¥ 472 trillion, which is more than nine times the worth of yearly tax revenues. As a result, the JGB market has recently replaced the U.S. Treasury bond market as the largest government bond market in the world.

Banks have been very active buyers of these instruments, accounting for well over one third of purchases over the past four fiscal years. Demand has been so great that a considerable part of outstanding JGSs has in fact been issued for this very purpose. In a very peculiar fashion, some of these issues have been effectively subsidizing bailouts within the banking sector itself. However, it is not the banks

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<sup>6</sup> In recent years, it has been customary for banks to generate income through realizing hidden capital gains on long-held shareholdings through sale-and-buybacks. Evidently, these transactions barely contributed to the reduction of cross-shareholdings. Due to an on-going decline in share prices, these gains have now virtually evaporated. With the introduction of mark-to-market accounting in fiscal 2001, with a one-year transitional period, any such losses will now have to be disclosed, thus directly affecting bank capital, which may well inhibit banks' ability to carry out such transactions on a large scale in the future.

<sup>7</sup> These deficits reflect spending under the following major economic packages: The Emergency Economic Package introduced in November 1998; The Policy Measures for Economic Rebirth introduced in November 1999; and The Policy Package for New Economic Development towards the Rebirth of Japan.

that hold the largest share of Government securities, but the public sector itself: the Fiscal Loan Fund and other public financial institutions, and the Bank of Japan hold more than 50% between them. This is in sharp contrast with international investors' cautious attitude to government securities: the Ministry of Finance (2002) estimates that foreign investors hold a mere 3.6% of the JGBs, which compares with as much as 35% of Treasuries in the US. Such low holdings reflect a reluctance by foreign investors to acquire yen-denominated securities, and in the event that currency risk is not a concern, preference is normally given to higher-yielding Euroyen securities issued by foreign corporations and sovereigns.

## **E. International Borrowers**

Due to a large current account surplus and a decrease in the value of foreign-held Japanese equities (as a result of stock market losses) Japan has held the largest net financial asset position overseas of OECD countries for more than decade. Nonetheless, this has been largely insufficient to absorb excess liquidity in Japan's financial system, while capital outflows have been more recently hindered by concerns over the creditworthiness of emerging economies after the Asian and Russian crises.

Overall, Japanese entities' overseas financial assets have remained level in recent years; however, their composition has changed quite dramatically. While the level of loans outstanding to foreign borrowers decreased from ¥ 117 trillion to ¥ 85 trillion between March 1998 and March 2002, the total amount of Japanese-held debt securities issued by non-Japanese entities rose from ¥ 117 trillion to ¥ 207 trillion. These figures clearly indicate the extent to which emerging market borrowers have lost favour with Japanese creditors, since the bulk of securities purchased are made up by highly rated North American and Western European issuers.

Of these foreign-issued debt instruments, those denominated in yen bear unique significance for Japanese institutional investors, since there is no need to hedge foreign exchange risk, and the rates of interest paid are generally higher than those paid by Japanese issuers. Due to these attributes, we regard these instruments, along with those yen-denominated securities issued offshore by Japanese residents, as potentially key instruments in draining excess capital from Japan's financial system.

(Insert Table 6)

Table 6 provides data on yen-denominated securities classified by their place of issue. Euroyen bonds are those issued outside of Japan, whether or not the issuer is Japanese, while Samurai bonds are those issued by non-residents in Japan's domestic market. Euroyen bonds, issued in European countries such as the United Kingdom, Holland and Sweden, have become particularly popular among Japan's risk-averse investors, since the bulk of these securities are virtually JGB substitutes issued by supranationals such as the World Bank and the European Investment Bank. Euroyen issues have surpassed the ¥ 10 trillion mark each year since fiscal 1994, and totaled ¥ 18 trillion in fiscal 2001.

Issuance in the Samurai market, on the other hand, remains a fraction of that in the Euroyen market, reaching barely ¥ 2 trillion in fiscal 2001. This is all the more bothersome, because Samurai issues are particularly convenient for Japanese

investors as they are issued in the domestic market and sold under domestic regulations. Thus, while the merits of Euroyen bonds are on the whole undisputed, we argue that non-resident issuers must be attracted to the Samurai market in order to accommodate Japan's excess liquidity with overseas borrowers. As discussed in Section 5, a substantial broadening of this market is indispensable altogether, as it is expected to greatly contribute to bond market development in Japan, encourage market investors to be less risk averse in their portfolio choices, and eventually ease the liquidity trap in the financial system.

## **IV. THE JAPANESE BOND MARKETS**

### **A. Introduction**

The Japanese bond market includes JGBs, bank debentures, corporate bonds, semi-government bonds, local government bonds and foreign bonds. The major regulators in the bond markets are Japan's central bank, the Bank of Japan, which assumes the key task of monetary policy management, and the Ministry of Finance, which takes on the operational aspects of debt and fiscal policy management. Japanese securities are also regulated by the Shoken Torihiki Ho (or Securities and Exchange Law) with rules and guidelines for actual trading set by two supervisory authorities: The Tokyo Stock Exchange and the Japan Securities Dealers Association. The Tokyo Stock Exchange was established under the Shoken Torihiki Ho, and regulates exchange trading of securities, while The Japan Securities Dealers Association, which is a self-regulatory organisation officially approved under the Shoken Torihiki Ho, supervises over-the-counter trading.

### **B. Government Securities**

A key feature of the Japanese bond market is the dominance of Government Securities, which accounts for approximately 70% of the total market. These securities comprise Treasury bonds (about 62% of the total domestic debt market) and Treasury bills (about 8% of the total domestic debt market). Typically bills are issued with either a 2, 3, 6 or 12 month maturity. There are four classes of JGBs:

- (i) Medium-term bonds include 2, 4, and 5-year interest-bearing government notes known as Chukoku. The auction for 5-year interest-bearing government notes began on the 1st February 2000;
- (ii) 5-year discount notes, called Warikoku (or 5-year discount notes) carry zero coupons and were first issued in 1977. Unlike other JGBs, these notes are underwritten by JGB syndicate members without an auction, on an irregular basis;
- (iii) Long-Term bonds include 6-year bonds, Chokoku (or 10-year bonds), Chochokoku (or 20-year bonds), and 30-year bonds. All of these instruments carry fixed rate coupons. Six-year bonds are sold by bimonthly competitive auction, 20 year bonds by quarterly competitive auction and 10 year bonds by both the syndicate and competitive auction method. Thirty year bonds are sold by the Dutch auction method; and
- (iv) JGBs converted from Japanese National Railways (JNR) Settlement Corp. These bonds were originally issued as government-guaranteed bonds by the JNR Settlement Corp, a special-purpose company established under

Japanese law to sell assets and eliminate debt worth nearly JPY 25.5 trillion. JNR Settlement Corp was liquidated on 22 October 1998. The government assumed the majority of the outstanding debt while Japan Railway Construction Public Corp assumed JPY 4.3 trillion.

Concerns over the crowding-out effect due to the high level of issues by the government sector appear unwarranted given the ongoing household surpluses, which must be continually channelled into financial assets. The corporate bond market, composed mostly of industrial and utility issuers comprises 24% of the market. It is important to note that a key concern for investors across all risk classes is that debt is usually issued with a maturity of less than 10 years: about 25.6% of outstanding debt has a maturity of less than 1 year; 34% of outstanding debt has a maturity of between 1 to 5 years; while 35.1% has a maturity of between 5.1 and 10 years. The remainder (5.5%) has a maturity of greater than 10 years (Batten and Fetherston, 2002).

### **C. Semi-Government and Corporate Bonds**

There are a number of bonds issued by the corporate and semi-government sectors. Semi-Government and local or municipal bonds range up to 10 years in maturity and typically are fixed rate. Japanese corporate bonds range from one to 30 years and there have also been a number of perpetual issues. These instruments are typically fixed rate though some are priced as a floating rate spread over the Tokyo Interbank Offer Rate (TIBOR) or other benchmarks. As noted previously, the growth market of late has been for foreign bonds, principally Samurai bonds. These instruments have a maturity from 2 to 20 years and may be either fixed or floating rate instruments.

There are two main classes of semi-government bonds, those issued by public corporations and those issues by special-purpose companies established under Japanese law. The Japanese government usually guarantees the principal and interest payments of these organisations which are typically involved in public activities such as infrastructure construction. These bonds are called *Seiho-sai* (or government-guaranteed bonds). Bonds are known as *Zaito* Institution bonds if they are issued without the guarantee of the Japanese Government, and *Zaito* Bonds if there is a Japanese Government guarantee.

While it is well known that bank financing remains the primary source of funds for Japanese corporations, what is generally not known is the extent that utilities dominate the corporate bond sector. For example, Batten and Fetherston (2002) report that nine electric power companies are the biggest issuers in this category, accounting for about 50 percent of the total amount outstanding.

### **D. The Euroyen Market**

The Euroyen market is the offshore market for yen-denominated, floating rate debt instruments. An interesting feature of this market is that daily prices for yen floating rate loans are fixed in two markets: the Asian markets typically priced as an interest rate spread to TIBOR (Tokyo Interbank Offer Rate) and later in London at LIBOR (London Interbank Offer Rate). In the case of Japanese issuers, this rate has increased, relative to other borrowers, due to the deterioration of the average credit quality of Japanese issuers. This phenomenon has been termed the “Japan premium” by Ito and Harada (2000) and Peek and Rosengren (2001), and has returned in recent

years owing to the well-documented problems in the Japanese banking system (Spiegel, 2001).

The size of the lending, or issuing spread, varies with credit quality, with LIBOR being equivalent to the rate paid by an A-grade borrower. To date there has been a preference for foreigners interested in obtaining floating rate yen, from issuing in the Euroyen market, rather than to try to tap the domestic Japanese market. There are a number of reasons for this is the case:

- The Costs related to issuance in the Samurai market are substantially higher due to higher underwriting fees, because the Japanese domestic market is dominated by the Big Three securities houses, while competition in the Euroyen market is intense. In the Samurai market, issues must have a Commissioned Company participation, whereby interest and principal payment commission and other specific fees are payable. These fees are usually not charged in the Euroyen market. Also, in the Samurai market, out-of-pocket expenses are much higher.
- In the Samurai market, various procedural problems remain such as the need to file registration forms in Japanese.
- The time-length of issuance in the Samurai market may take several weeks, compared with a few days in the Euroyen market. For example, registration in the Samurai market becomes effective only as many as 15 calendar days after filing by an issuer.
- Clearing and settlement is much more straightforward in the Euroyen market, where the centralized depositories Euroclear and Clearstream are readily available, while the Japanese domestic market does not have a centralized depository.
- Non-resident investors in the Samurai market are subject to withholding tax.
- Listings in the Euroyen market are in much larger denominations, because the investor bases are different in the two markets. The Euroyen market is dominated exclusively by institutional investors, while the Samurai market has a large retail investor base. This latter fact owes to Samurai bonds being listed in Japan and having to conform with local securities regulations, which tends to make the retail investor comfortable about the legal status of these bonds. Bonds listed in the Euroyen format conform to SEC regulations.

## **V. IMPEDIMENTS TO CORPORATE BOND MARKET DEVELOPMENT**

After a decade of economic stagnation, the ability of Japanese banks to act as financial intermediaries has significantly eroded. Yoshitomi and Shirai (2001) warned that when capital becomes abundant relative to investment needs, banks may find it difficult to engage in effective information processing and monitoring functions and may consequently end up concentrating capital on specific borrowers, sectors and projects, imposing moral hazard. Indeed, the bad loan problem faced by Japanese banks and the corporate sector's excess capacity cast serious doubt on how effectively banks monitored corporate borrowers.

Recent policy attempts at reducing relationship banking through the disentangling of cross-ownerships have also had limited success. Therefore, the problem for government policy continues to relate to developing alternate forms of

investment. Although it has taken some time to form the necessary consensus to proceed with the far-reaching Big Bang reforms, it is now widely acknowledged that in order to prevent further deterioration of the financial system and to deal with moral hazard, parallel credit channels must be developed (Kuratani and Endo, 2000).

In the case of Japan, a more developed debt market would facilitate the allocation of national funds and help less creditworthy borrowers gain access to additional finance. In addition, a developed Samurai market would help channel excess liquidity overseas through non-resident borrowers tapping local capital. And, disintermediated financing would enhance corporate and bank restructuring altogether, particularly with regard to the streamlining of the oversized banking sector.

Nonetheless, of the major non-government securities markets, the yen market is the only one not to have experienced a period of rapid growth in recent years. For example, the amount outstanding of Japanese corporate bonds was US\$ 680 billion in March 2002, which compared with US\$ 2.4 trillion in the United States. These figures, obtained from the BIS, are shown in Tables 3 and 4.

Based upon those factors identified by Schinasi and Smith (1998), Kuratani and Endo (2000), Hattori, Koyama and Yonetani (2001) and Rhee (2001), the following are a series of factors that impede the development of Japan's corporate bond market. These factors are investigated in the light of more recent regulatory developments, and represent challenges which cannot be remedied immediately but require careful planning and strategic policy efforts.

#### **A. Regulatory Policies**

Government regulatory policy has been an important influence in inhibiting the development of Japan's corporate bond market. The motive behind the repressive regulatory pressure was the government's aim to contain competition within the financial sector, thus facilitating the development of a closed economy that concentrated on manufacturing. As a result, the financing patterns of Japanese corporations were defined by close and interlocking links between the government, banks and the corporate sector.

The government hindered market development by excessive regulation and tax policy. Transaction taxes and withholding taxes as well as collateral requirements drove bond issuance and trading offshore, primarily to London. Regulatory interference with the terms of issues also raised the perceived cost of issuing securities. Largely owing to these factors, only after 1992 did the issuance of corporate bonds become greater in the domestic market than in offshore markets.

Since 1996, the government's Big Bang program has implemented numerous reform measures to improve the primary and secondary market infrastructure. These include (i) the abolition of eligibility standards for bond issuance; (ii) abolition of securities transaction tax; (iii) deregulation of trustee, underwriting and brokerage commissions; (iv) deregulation of off-exchange trading; (v) deregulation of cross-border transactions and foreign exchange business; (vi) entry by banks, securities companies and insurance companies in each other's business; (vii) replacement of the merit-based licensing system with a disclosure-based registration system for securities companies; and (viii) preparation of legal framework for loan/asset securitization.

Nonetheless, much more has yet to be done, which is reflected in the guidelines recently released by the Council on Economic and Fiscal Policy. For

example, the outdated bond registration law must be fully revised. Market surveillance and enforcement capacity must be enhanced, and rules prohibiting fraudulent activities such as insider trading and market manipulation must be further clarified. Accounting standards and practices must also be improved. And, a further redesign of the taxation system is needed. As the Nomura Research Institute (NRI, 2001) proposed, the redesign should, for example, include a dual income tax system to separate financial income from wages and impose upon it a proportional tax at a flat rate, rather than applying a progressive income tax.

## **B. Market Power Concentration in the Financial Industry**

Market power concentration in the hands of banks continues to deter corporations from tapping the bond market. Banks' large equity stakes, coupled with strategically set loan and deposit rates has ensured a close relationship with corporate borrowers. The issuance criteria established by banks, which effectively set the conditions for bond issues, has also been unfavourable for many borrowers, while some of the largest securities companies are also bank subsidiaries. Banks have also exercised control through, for example, distribution networks and access to the payment system.

More recently, the deregulation of capital markets and the dismantling of capital controls have reduced the direct control banks have had over corporate fund-raising. Competition is intensifying as foreign banks are expanding their operations in Japan, and the Big Bang reforms are ending divisions that kept companies specializing in specific types of lending or securities trading. Meanwhile, a decline in the production cost of credit risk information has eroded the benefits of relationship banking for corporate borrowers.

In spite of these developments, however, the banking sector continues to hold a grip on Japan's financial market, not least owing to its sheer size<sup>8</sup> but also due to cross-shareholdings with non-financial corporations<sup>9</sup>. Nonetheless they will be forced to do so from 2004 onwards, when banks' equity holdings are to be limited to 100% of capital. This is expected to accelerate balance sheet restructuring on the part of both banks and corporations, and should have a positive effect on bond market development.

## **C. Risk-averse Investor Base**

The flow of funds analysis in Section 3 showed that Japanese investors are very conservative in their portfolio choices. Nakagawa and Shimizu (2000) found that Japanese households appreciate safety and liquidity over profitability, and even admit to not understanding the contents of financial products.

Institutional investors are similarly averse to risk. Miyanoya (1998) explained that many institutional investors use single-A credit ratings and above as an internal criteria for investment, rather than the BBB recommendation of Standard and Poor's. Given that credit downgrades have hugely outnumbered upgrades in

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<sup>8</sup> Hoshi and Kashyap (1999) found that a 20% reduction in bank lending would require a complete exit of the lowest rated 45 banks of a total of 142 banks, including some of those nationalized or put into receivership, and some of those which have received a government capital injection.

<sup>9</sup> The Economist March 22, 2003, page 58, claims that long-term cross-shareholdings as percent of all listed shares was about 43% with crossholdings of 15% in 1988. Due to the stated reforms long-term shareholdings are now 31% and crossholdings 9% in 2003.

Japan in recent years, this is a major problem for lower rated corporations that consider tapping the domestic bond market. In this environment, securities investment trusts have been slow to develop, which also owes to the fact that the concept of these institutions is not deeply rooted in Japan's legal system. Some impetus for growth of these trusts has now been provided by over-the-counter sales by banks and other financial institutions, and the full liberalization of dealings in securities derivatives.

In light of such a risk-averse attitude, Japanese investors have no appetite for evaluating and trading in credit risk, which hinders growth in the corporate bond market. This matter is further exacerbated by the fact that most foreign investors remain uncomfortable holding large positions in Japanese debt due to the rapidly growing supply of JGBs and the potential capital losses associated with either the depreciation of the yen, or an increase in yields associated a large volume of new JGBs issued to fund the rising government budget deficits.

To stimulate domestic appetite for corporate bonds, investor confidence must be instilled. This can be achieved in part through fostering market integrity, investor protection and an effective market infrastructure. The provision of tax incentives for retail investors should also be considered. Nomura Research Institute (2001) addressed this problem and advised on a number of changes to the tax system necessary to encourage securities investment by individuals.

#### **D. Market Structure**

##### *(1) Underdevelopment of the money market*

A critical first step in bond market development is the creation of a well-functioning money market. Money market instruments facilitate cash and risk management as well as position financing for both corporations and, more importantly, for banks, brokers, dealers and institutional investors. The money market prices liquidity, which is a benchmark for pricing any fixed-income instrument, and assists the development of markets for forward as well as spot interest rates. Forward rate liquidity is essential for the arbitrage-free pricing of a host of over-the-counter (OTC) derivative instruments including forward rate agreements (FRAs) and interest rate swaps, and exchange traded interest rate futures and options contracts.

The Japanese money market is still at a developing stage. Ueda (2001) notes that until recently, there were restrictions on money management funds and a stamp duty was payable on commercial paper (CP) issues. Since regulatory obstacles were lifted, the market has grown at a rapid pace, facilitating its transformation from simply being a cash management tool to an efficient market, and from a market exclusively for financial institutions to a market also available to non-financial corporations. Factors behind the growth are deregulation and the diversification of transactions - specifically, the deregulation of maturities on CP and certificates of deposits (CD), and the appearance of new types of transactions such as asset-backed CP and repos. Market transparency and fairness has also greatly improved, while transaction costs are low, and the terms and amounts of financing are readily negotiable. As a result, large corporations now raise short-term funds using CP, and actively engage in money management in the open market. The market, however, is not open for small companies, which have little appetite for assuming credit risk on money market positions given the nature of money market activity. The repo market, discussed later in this section, also remains undeveloped.

(2) *Difficulties in pricing*

Campbell and Hamao, 1995<sup>10</sup> argue that in the post-war era, pricing in Japan's corporate bond market was only loosely related to issuer credit risk. There was little need to distinguish credit risk: when bonds went into default, the trustee bank, often the borrower's main bank that held shares of the company and was represented on the board, almost always bought up the losses despite having no legal obligation to do so. Accordingly, domestic credit rating agencies gave considerably higher ratings than international agencies such as Moody's or Standard & Poor's.

More recently, the pricing of new issues has improved significantly. The implicit trustee guarantee has weakened substantially, and a series of bond defaults have prompted investors to pay greater attention to credit quality. Meanwhile, complementing domestic rating agencies with ratings from international agencies has enhanced credibility of the credit rating process. Nevertheless, there is still plenty to do in this area.

A more practical impediment to price discovery has been the lack of a reliable liquid benchmark yield curve from which to price new issues. In Japan, most dealers use interest rate swaps for the pricing of less creditworthy issues (rated below A) and JGBs for highly rated ones (above AA). Given that the latter account for the bulk of total issues, a shortage in the maturity-matched JGB market limits borrowers' ability to customize bonds.

(3) *Insufficient secondary market liquidity and market practices*

In order for investors to feel confident that they can liquidate their holdings in reasonable time, and trade without significantly affecting prices, there must be a well functioning secondary market. Despite a significant improvement recently, liquidity in Japan's secondary market for corporate bonds is very low compared with the U.S. Japanese Securities Dealers Association (JSDA) data show that in fiscal 2001, trading in corporate bonds amounted to ¥ 54 trillion, which is a fraction of that in the U.S.

One reason cited for this is the relative illiquidity of JGBs across maturities. According to the BIS (1999), liquidity in the JGB market is the lowest among major countries in that bid-ask spreads are the widest and the turnover ratio is among the lowest among the G7 countries<sup>11</sup>. In large part, this owes to the immaturity of the repo market. As seen in the US, a developed repo market results in greater competition, lower transaction costs and improved liquidity, and also facilitates clearing and settlement transactions. The Japanese repo market was launched as recently as 1996. Although there has been a localized financing method utilizing securities, termed *gensaki*, these transactions have lacked the appropriate means of risk management against price fluctuation and default (Baba and Inarnura, 2002). The outstanding balance of the repo market stood at about ¥ 42 trillion as of September 2001, less than one fourth the size of the U.S. market.

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<sup>10</sup> The trustee banks are traditionally involved in the formative stages of bond deals, offering financial advice to the issuers and negotiating indenture terms. This is in sharp contrast with the U.S. practice, where a trustee's function is limited to managing the ownership records and acting as paying agent, and credit risk is effectively born by investors who are paid a premium coupon for taking such an obligation.

<sup>11</sup> The illiquidity of the JGB market is explained by the fact that buy-and-hold investors of the public sector hold the bulk of JGBs. Financial institutions which hold a large volume of JGBs for prudential reasons, also keep them to maturity (Yoshitomi and Shirai, 2001).

The development of Japan's derivatives markets (such as futures as well as currency and interest rate swaps) was similarly hindered by stringent regulatory policies including margin requirements and circuit breakers. Further development of the futures market would be particularly pivotal, since it would foster liquidity and efficient price discovery in the secondary cash-based market for interest rate instruments, and facilitate hedging against interest rate risk. Other infrastructural shortcomings of the JGB market include the prohibition of when-issued trading and Separate Trading of Registered Interest and Principal of Securities (STRIPS). Active trading on a when-issued basis would assist in minimizing the underwriting risk by reducing price and quantity uncertainties. STRIPS or coupon stripped bonds are to be finally introduced in 2003, and will provide the market with highly liquid bonds and facilitate hedging of the reinvestment risk in bond portfolios. Collectively, the presence of improved risk management capability and liquidity would be expected to encourage investors to become involved in the markets.

Nonetheless, improving the liquidity of Japanese corporate bonds will be a troublesome task altogether. The bulk of these instruments are held by buy-and-hold investors such as insurance and pension funds that rarely instigate trading. Also, downgrades of many investment-grade issues have reduced the relative supply of investment-grade bonds, which may increase implicit transaction costs<sup>12</sup>. In order to promote liquidity, some of the major issuers have now started to include foreign institutions in underwriting syndicates, mirroring the structure of syndicates in the Euromarket, on the condition that they become market-makers in the newly issued bonds.

It is notable that the new technologies offer significant cost advantages for market participants and also provide added liquidity to trading activities. Nevertheless, electronic trading in Japan has not yet captured a large volume of transactions in either JGBs or corporate bonds. Bank of Japan (2001) argues that this calls for progress in the standardization of trade confirmation, settlement and data management processes, and ensuring the contestability of electronic trading services needs to be addressed to obtain the full benefits. Recently, the first fully electronic inter-dealer broker for trading Japanese Government bonds has been launched-MTS Japan Securities KK (JMTS)- and is based upon the successful MTS technology used in Europe. The key feature of this product is that allows participants to electronically trade fixed income products in different continents/ time zones. Overall, the adoption of this technology is expected to add to the liquidity of JGBs.

#### (4) *Underdeveloped clearing and settlement system*

It is essential for the prevention of systemic risk and to improve the soundness and safety of a financial system that there is an efficient clearing and settlement system. However, little significance was attributed to this matter in Japan until recently. Only after 1997 did financial system instability awaken the market to the danger of settlement risks.

The main problem of Japan's clearing and settlement system is that separate institutions exist for different types of securities, and these operate according to different rules and procedures. To deal with this problem, there have been calls for establishment of a unified securities settlement framework for JGBs, corporate bonds and CP. To create such a framework, regulators must implement the

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<sup>12</sup> This is due to longer time to obtain enough securities to fill customers' orders, and a greater price-impact on trade executions.

respective standards issued by the International Society of Securities Administrators (ISSA) and the Group of Thirty. These recommendations have been agreed by most countries with developed securities markets, and include (i) the introduction of a delivery versus payment (DVP) mechanism and (ii) the establishment of an impartial centralized depository system for securities operating on a book-entry system. DVP for non-JGB bond transactions was achieved in 1998. A centralized depository has not yet been created, although discussions are now under way. The new law on the book-entry transfer of corporate debt securities will finally come into effect in January 2003, providing for the full dematerialization of corporate bonds and other securities.

Other measures aimed at reducing settlement risk include the Real Time Gross Settlement (RTGS) system and shortened settlement date for transactions. RTGS was finally introduced in 2001, bringing Japan's practices in line with U.S. and U.K. systems. By definition, the RTGS system does not allow unsettled orders since trades are settled promptly with cash. The practice of "failure" was introduced simultaneously. With the new practice, a failure to deliver securities on the scheduled settlement date is not referred to as a default, and settlement is allowed to be delayed until the end of the following day or in some cases later, thus providing a safety relief valve for dealers.

The lag between contract and settlement in Japan is still on a T+3 basis (three business days after the trade day). This is hoped to be shortened to T+1 by fiscal 2003, although efforts to prepare the necessary infrastructure appear to be lagging behind schedule.

(5) *Undeveloped investment banking*

The creation of an efficient corporate bond market requires the expertise of investment banks, which play a key role as intermediaries. They design the terms and timing of the offering, underwrite the issue and disseminate information to public investors, thereby smoothing operations and the efficiency of the market (Yoshitomi and Shirai, 2001). To develop such expertise is time consuming, and to purchase it from outside a company, or country, is very expensive.

Historically, investment banking in Japan has been dominated by the "Big Three" securities companies, which are members of a conglomerate of related companies with significant cross-ownerships (*keiretsu*)<sup>13</sup>. In the primary market, the bulk of the publicly offered bond issues are still placed through syndicates set up by these institutions as lead managers. Competition, however, has been growing in recent years. A disclosure-based registration system for securities companies has now replaced the old merit-based system, while the ban for banks, securities companies and insurance funds to enter each other's business has been lifted. As a result, 32 securities companies, including various foreign ones were newly registered between December 1998 and January 2000. Despite this changes there is still need to further increase the role of foreign investment banks. The main advantage of foreign banks is that they can offer decades of expertise gained in other

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<sup>13</sup> Businessweek magazine, April 7, 2003 Asia Edition, claims that in 2002, Nomura, Daiwa SMBC and Mizuho had 33.9%, 16.0% and 14.2% (64.1% total) respectively of merger advice business, worth in total US\$48.4 billion; Nomura, Daiwa SMBC and Nikko Salomon Smith Barney had 35.4%, 19.7%, and 17.4% (72.5% total) respectively of new equity offerings business worth in total US\$13.3 billion; and Nomura, Daiwa SMBC and Nikko Salomon Smith Barney had 26.4%, 24.9% and 14.0% (65.3% total) of new public offerings business worth in total US\$4.31 billion.

securities markets, which would add to the diversity and experience already existing in Japan's domestic market.

#### **E. Lack of Domestic Non-Government Bond Supply**

The future financing pattern of domestic corporations ultimately hinges upon the successful growth of Japan's corporate bond market. Initially, the fragility of the banking system and the reluctance by many banks to extend new credit encouraged corporations to tap the bond market. However issuance slowed after 1998 due to low funding needs. In fiscal 2001, the value of corporate bonds issued rose for the first time in four years, by ¥ 587 billion to ¥ 8.8 trillion. To date, there is simply not enough corporate paper in the market and nor is there likely to be in the near future. As a result, domestic investors with an appetite for non-government debt must continue to diversify into foreign securities.

Issuance in the Japanese market remains very homogeneous relative to that in the U.S. AAA-rated and especially AA-rated borrowers continue to account for over half of new issuance, compared with less than 30% in the U.S. While the U.S. bond markets have long held an appetite for high-yield non-investment grade securities, the high-yield market has failed to develop in Japan. More recently, single A-rated borrowers have become more active. Also, whereas issuance in the past tended to be concentrated in medium-term maturities, longer-dated issues are picking up to some extent, which facilitates the maturity matching of corporate financing needs.

Overall, there appears to be little competition among borrowers to offer potentially liquid securities. Market growth is particularly hindered by the fact that issuance for lower rated corporations continues to be costly, driven by a lack of institutional demand. Based on OTC quotations, Hattori, Koyama and Yonetani (2001) observed that as of June 2000, the spread of mature Japanese BBB bonds was 1.3 times the yield on JGBs, compared with 0.47 times for comparable U.S. bonds. Also, small and medium-sized corporations often do not have the financial muscle to earn a credit rating. It is not surprising, therefore, that in Japan there is a virtual lack of junk bond issues, which are very popular in the US. Also, much investment is limited to specific companies and sectors (transport equipment, wholesale, land transport and retail), and unless there is greater diversification in the types of issuers, it will be difficult to expect a large increase in exposure to the BBB- and lower rated sector by investors.

#### **F. Lack of International Issuers in the Domestic Bond Market**

In recent years there has been a withdrawal of banking intermediation and foreign exchange trading from both Hong Kong and Singapore, while other regional centres, notably Sydney have benefited. Despite significant domestic infrastructure Japan has failed to promote itself as a global and regional financial centre. Consequently foreign borrowers have tended to stay away from its domestic market for non-resident issues, termed *Gaisai* market, though recently there has been some activity observed in the *Samurai* market (the yen-denominated segment of the Gaisai), while bonds denominated in foreign currency (known as *Shogun* bonds), have not been issued at all since 1994 (see Table 6).

Non-Japanese borrowers may choose to issue yen-denominated debt for various reasons. One is the hedging of currency risk, which has become widespread as a result of growing foreign direct investment (FDI) inflows. Demand for hedging has come mainly from U.S. corporations, because the FAS 133 accounting rule

encourages them to minimize their foreign exchange exposure by currency-matching their assets and liabilities<sup>14</sup>. Europe is now also considering its own version of FAS 133, therefore European companies are expected to follow their U.S. counterparts in issuing new debt in the Japanese markets.

Regrettably, the bulk of these corporations satisfy their yen requirements through the Euroyen market. Table 6 shows that in fiscal 2001, only about 12% of non-resident debt denominated in yen was issued in the Samurai market. Rhee (2001) found that the difference between Samurai bonds and Euroyen bonds in terms of both cost and time-length required for issuance is significant. Many corporations prefer the Euroyen market due to withholding tax and custodial problems, while some procedural problems also remain in the Samurai market, such as the need to prepare related documents in Japanese. Clearing and settlement is also much more straightforward in the Euroyen market, where the centralized depositories Euroclear and Clearstream are readily available. Therefore the main task for regulators relates to attracting some of the Euroyen issuers into Japan's domestic bond market by increasing its international competitiveness. The Euroyen market also carries the perception of being more efficient and transparent than the domestic market, because many borrowers are not as familiar to local investors as some of the Japanese issuers, and are actually forced to conduct a thorough credit risk evaluation. And, borrowers in the Samurai market tend to pay more than domestic borrowers of similar credit risk due to the absence of the implicit trustee guarantees traditionally provided for domestic issues (Packer and Reynolds, 1997)

#### **G. Lack of Internationalization of the Yen**

Encouraging foreign borrowers to tap Japan's savings through its domestic bond market may also be endorsed through promoting the use of the yen internationally. The fact that the U.S. dollar is a reserve currency is undoubtedly an important factor behind the internationalization of the U.S. bond market. The yen, however, is not used extensively, which limits yen requirements and demand for domestic Japanese funds.

In its report of April 1999 entitled "Internationalization of the Yen for the 21<sup>st</sup> Century," the Council on Foreign Exchange and Other Transactions identified a number of reasons why there has been no progress in the internationalization of the yen. These include (i) a lack of confidence in the Japanese economy; (ii) Japan's limited weight in East Asian economies despite very strong ties with the region; and (iii) established practices of currency choice in international transactions such as trade and investment.

Indeed, there appears to be little appetite among non-Japanese-affiliated companies and traders to deal in yen as opposed to the U.S. dollar or the euro. Even many Japanese businesses choose to conduct their foreign transactions in U.S. dollar rather than yen, because transaction costs are significantly lower. Aside from trade, the use of the yen in international capital markets has also plunged in recent years. As mentioned earlier, yen lending to Asia has fallen and countries in Southeast Asia have reduced their yen debt exposure since the financial crisis of 1997. Therefore,

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<sup>14</sup> FAS 133 requires companies to report the fair market value of their holdings in derivative instruments on their balance sheets and mark the currency exchange rates for their swaps to market. This has the effect of increasing balance sheet volatility, and has resulted in a number of companies that need yen funding opting to issue directly in yen, rather than doing so in dollars and converting the proceeds.

unless there is internationalization of Japan's economy to a much higher extent than is currently or likely to be the case in the future, internationalization of the yen will be a difficult task<sup>15</sup>.

Another critical prerequisite for the internationalization of the yen is the boosting of liquidity in Japan's capital market. It is particularly vital to improve the JGB market, which plays a central role in the holding and management of yen funds by non-residents. To encourage foreign purchases of JGBs, the withholding tax on redemption gains and interest income from JGSs were exempted for non-residents and foreign corporations in September 1999. However, exemption is not done at source, which implies that foreigners first must pay the withholding tax and then apply for reimbursement. Foreign investors are also concerned with JGBs' low liquidity, large bid-ask spread and structural problems such as the non-performing loan problem.

For the promotion of cross-border transactions, a legal framework is now in place with the revision of the Foreign Exchange Law in 1998. Yet much more has to be done for the harmonization of cross-border listing, trading, clearing and settlement, securities borrowing and lending, repo markets etc. Rhee (2001) suggested that it would also be desirable to create a regional clearing network to link the Tokyo clearing system with the region's financial centres such as Hong Kong, Singapore and Sydney. Rhee also argued that a single regional central securities depository (CSD) should perform the safekeeping, clearing and settlement functions for all securities available in the Asia-Pacific region.

In light of these recommendations, it cannot be sufficiently emphasized that the internationalization of the yen must be pursued from a long-term perspective and with a commitment to persistent and unflinching efforts. But first and foremost, confidence in the Japanese economy must be restored. Crucial to this task is the stabilization of the financial system by disposing of non-performing loans and the further development, as advocated by this study, of the Japanese domestic bond market.

## VI. CONCLUSION

This paper provides a perspective on Japan's bank-centric financial system by undertaking a flow of funds analysis of the key financial and non-financial sectors in the economy. These results demonstrate that households continue to hold the bulk of their savings in bank deposits (and postal savings accounts) rather than seeking riskier and higher yielding forms of investment. The corporate sector is looking to unload debt and offers little scope for new lending by banks, while the banking sector have increased their holdings of government bonds rather than make new loans to new enterprises. As a consequence of these factors, we argue that developing a viable domestic bond market, with improved access by foreign borrowers, is critical for the allocation of excess liquidity within the Japanese economy.

This flow-of-funds approach considers the major sectors' source and use of key financial instruments (bank loans and deposits, domestic and international bonds and other debt instruments, and equity). On the liability side (source of funds) the

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<sup>15</sup> The authors thank an anonymous referee for making this observation.

major provider of financing for non-financial corporations remain banks, even though corporate borrowing from banks has declined to pre-1990 levels. Banks' dominance of the Japanese financial system has been further enhanced by the fact that they continue to absorb the bulk of household savings, which have consistently risen over the last decade. On the other hand, disintermediated forms of non-financial corporate borrowing by way of debt securities issues have increased only slightly as a share of total credit market debt in the last decade despite a decade of deregulation - which should have encouraged further disintermediation. This suggests that the costs of disintermediated finance remain too high, and that recent policy attempts at disentangling the cross-ownerships that exist between banks and corporations have had limited success.

Also, after a decade of economic stagnation the deceleration of business fixed investment and the increasing burden of debt overhang has not only reduced demand for abundant domestic funds, but also for international sources of funds by non-financial corporations. Accordingly, international bank lending, as reported by the BIS, to Japanese corporations and international securities issues by Japanese corporations, have declined significantly.

On the asset side (use of funds), the lack of corporate demand and Japanese banks' cautious lending attitude to non-Japanese corporations has resulted in a significant reduction of bank lending over the past decade. For example, following the Asian crisis of 1997-98, Japanese banks have also reduced their lending to - chiefly Asian-based - foreign banks. Broadly, the bulk of excess liquidity is now invested in various forms of government securities, which are paying very low rates of interest. This is in line with an aversion to risk on the part of households, and the limited risk-taking ability of banks given their large holdings of non-performing loans, and an increasing reluctance on the part of the Japanese government, already excessively leveraged, to bail them out. In the meantime, uniquely among G7 countries, the non-financial corporate sector has itself become a source of funds through debt repayments, use of internal funds and investment in financial assets. Notably, corporate holdings of debt securities have more than doubled since fiscal 1997.

Despite these trends, which warrant a definitive policy response by government, the focus of recent government policy has largely been directed towards fiscal stimulatory measures. Monetary measures have been directed towards maintaining a zero interest environment, despite the substantial increase in JGB issues, which recently made this market the largest of its kind in the world. Recognizing the factors responsible for the 1997 credit crunch, and burdened heavily by the costs of bank bailouts, the government has demonstrated its commitment to financial system deregulation with the Big Bang initiative starting in 1996. However, further deregulation, in particular with improved access by foreign investment banks is necessary. More investment banks will improve competition, pricing, risk management and secondary market trading in domestic bond markets. They will also facilitate access by international issuers (Samurai and Shogun issues), a necessary precondition given the limited number of quality domestic issuers. On the demand side, Japanese investors still favour quality issues, which limits the development of the extensive high-yield markets that exist in the U.S. and are now developing in Europe.

The key impediments to Japanese financial market development identified by Schinasi and Smith (1998), Kuratani and Endo (2000), Hattori, Koyama and Yonetani (2001) and Rhee (2001), which include further development of the

Japanese corporate bond market, are then investigated. Specifically this study recommends the further development of Japan's bond market by (i) removing regulation which limits access to the underwriting and trading process; (ii) reducing the concentration of market power in the hands of banks; (iii) encouraging a broader investment choice by Japanese investors including households and institutional investors; (iv) improving infrastructure for the issuing and trading of securities; and (v) promoting the issuance of debt securities among potential domestic borrowers; (vi) encouraging non-resident borrowers to tap the pool of Japan's excess domestic savings through domestic bond issues; and finally (vii) encouraging further internationalization of the yen, since there is a lack of yen funding requirements by foreign corporations.

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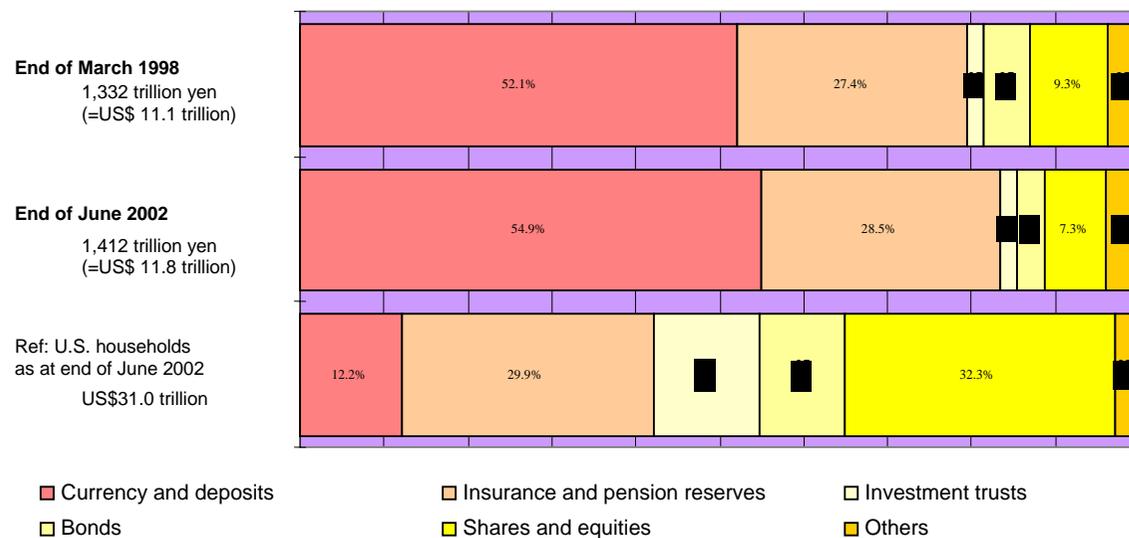
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**Figure 1 Financial Assets held by Japanese Households**



Source: Flow of Funds (2<sup>nd</sup> Quarter 2002) – Japan and U.S. Overview. Bank of Japan, Research and Statistics Department, 17 September 2002.  
Flow of Funds Accounts (Financial Year 1997). Bank of Japan, Research and Statistics Department.

Notes: (i) Households, by definition of the Bank of Japan, include business-like elements such as own-account workers.  
(ii) Exchange rate used is 1US\$=120 yen.

**Table 1 Sources and Uses of Financial Funds in Japan** (in percent, trillion yen)

As at March 31 <sup>st</sup>	Banks				Non-bank financial institutions			
	Sources		Uses		Sources		Uses	
	1997	2001	1997	2001	1997	2001	1997	2001
Currency and deposits	68.0%	72.9%	12.2%	13.7%	16.8%	19.3%	2.1%	1.8%
Loans	15.8%	14.4%	63.9%	58.5%	23.5%	20.8%	47.9%	45.1%
Securities other than shares	5.7%	4.7%	12.2%	17.1%	10.6%	12.5%	23.3%	28.1%
Equities	4.4%	3.9%	4.3%	3.8%	2.0%	2.4%	4.7%	5.6%
Outward foreign direct investment	n/a	n/a	0.5%	0.8%	n/a	n/a	-	-
Outward foreign portfolio investment	n/a	n/a	1.5%	2.5%	n/a	n/a	3.3%	4.3%
Insurance and pension reserves	n/a	n/a	n/a	n/a	20.1%	22.0%	n/a	n/a
Deposits with the Fiscal Loan Fund	n/a	n/a	-	-	23.0%	20.3%	14.0%	11.8%
Others	6.1%	4.1%	5.4%	3.6%	4.2%	2.6%	4.6%	3.3%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
TOTAL in trillion yen	1,188.9	1,185.5	1,171.7	1,163.9	1,815.9	1,824.0	1,834.3	1,832.0
% change 1997-2001		-0.3%		-0.7%		0.4%		-0.1%
Financial surplus (deficit) in trillion yen			-17.2	-21.6			18.4	18.0

As at March 31 <sup>st</sup>	Non-financial corporations				Households			
	Sources		Uses		Sources		Uses	
	1997	2001	1997	2001	1997	2001	1997	2001
Currency and deposits	n/a	n/a	22.8%	26.4%	n/a	n/a	52.1%	54.5%
Loans	42.7%	38.7%	5.7%	5.1%	83.9%	85.2%	n/a	n/a
Securities other than shares	10.0%	9.7%	3.3%	6.1%	n/a	n/a	7.5%	5.6%
Equities	28.1%	31.1%	19.1%	15.0%	n/a	n/a	9.3%	7.5%
Outward foreign direct investment	n/a	n/a	3.5%	3.5%	n/a	n/a	-	-
Outward foreign portfolio investment	n/a	n/a	4.1%	5.7%	n/a	n/a	0.3%	0.6%
Insurance and pension reserves	n/a	n/a	n/a	n/a	n/a	n/a	27.4%	28.6%
Deposits with the Fiscal Loan Fund	n/a	n/a	-	-	n/a	n/a	-	-
Others	19.2%	20.5%	41.5%	38.3%	16.1%	14.8%	3.4%	3.4%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
TOTAL in trillion yen	1,461.6	1,258.4	749.5	716.3	397.7	394.5	1,331.6	1,405.2
% change 1997-2001		-13.9%		-4.4%		-0.8%		5.5%
Financial surplus (deficit) in trillion yen			-712.1	-542.1			933.9	1,010.7

As at March 31 <sup>st</sup>	General government				Overseas entities in relation to Japan			
	Sources		Uses		Sources		Uses	
	1997	2001	1997	2001	1997	2001	1997	2001
Currency and deposits	n/a	n/a	9.1%	11.0%	3.7%	2.5%	7.7%	4.2%
Loans	21.0%	24.6%	9.6%	7.7%	31.1%	22.6%	44.3%	38.8%
Securities other than shares	73.6%	70.2%	9.7%	12.0%	n/a	n/a	13.7%	14.5%
Equities	1.8%	1.7%	15.7%	16.7%	n/a	n/a	17.0%	29.3%
Outward foreign direct investment	n/a	n/a	-	-	8.6%	9.1%	n/a	n/a
Outward foreign portfolio investment	n/a	n/a	1.1%	11.1%	31.0%	55.3%	n/a	n/a
Insurance and pension reserves	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Deposits with the Fiscal Loan Fund	n/a	n/a	40.1%	34.1%	n/a	n/a	-	-
Others	3.6%	3.5%	14.7%	6.3%	25.6%	10.4%	17.3%	13.2%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
TOTAL in trillion yen	519.7	756.8	400.8	455.2	375.8	373.7	248.2	197.7
% change 1997-2001		45.6%		13.6%		-0.6%		-20.3%
Financial surplus (deficit) in trillion yen			-118.9	-301.6			-127.6	-175.0

Source: Flow of Funds Accounts (various issues). Bank of Japan, Research and Statistics Department.

Note: Households, by definition of the Bank of Japan, include business-like elements such as own-account workers.

**Table 2 Financial Surplus or Deficit of Individual Sectors of the Japanese Economy**  
(in percent of nominal GDP)

			(As at March 31 <sup>st</sup> )	1998	1999	2000	2001	2002
Financial institutions				1.5	1.1	-0.7	1.1	3.3
Domestic non-financial sector	Non-financial corporations	Private		-1.1	1.3	6.3	4.6	3.7
		Public		-1.6	4.2	-0.9	-1.3	0.9
		Total		-2.7	5.4	5.4	3.3	4.6
	General government	Central government		-2.5	-10.3	-8.6	-5.5	-7.1
		Local governments		-2.1	-2.0	-1.1	-0.4	-1.6
		Social security funds		1.9	1.2	0.8	0.5	0.2
		Total		-2.7	-11.1	-9.0	-5.5	-8.4
	Households			5.8	7.6	6.0	3.9	2.2
	Total			0.9	1.4	3.0	1.2	-1.0
	Overseas entities in relation to Japan				-2.4	-2.5	-2.3	-2.3

Source: Financial Transactions (various issues). Bank of Japan, Research and Statistics Department.

Note: Households, by definition of the Bank of Japan, include business-like elements such as own-account workers.

**Table 3 Domestic Debt Securities by Country of Issuer and Sector**  
(in billion U.S. dollars)

As at March 31st	Japan			United States		
	Public sector	Financial institutions	Corporate issuers	Public sector	Financial institutions	Corporate issuers
1998	3112.1	786.8	511.9	7355.2	3095.7	1971.8
2000	4690.6	924	742.1	8095.1	3867.4	2304.1
2002	4572.9	599.4	679.7	8706.6	4463.6	2447.1
Change 1998-2002	1460.8	-187.4	167.8	1351.4	1367.9	475.3
% Change 1998-2002	47%	-24%	33%	18%	44%	24%

Source: Tables 16A and 16B, Securities Markets Statistics (various issues). Bank for International Settlements.

**Table 4 International Debt Securities by Nationality of Issuer and Sector**  
(in billion U.S. dollars)

As at March 31st	Japan			United States		
	Public sector	Financial institutions	Corporate issuers	Public sector	Financial institutions	Corporate issuers
1998	23.8	174.3	111.4	61	455.1	92.8
2000	22.2	220.9	76.1	327.7	885.4	183.2
2002	16.4	185.6	48.1	785.2	1366.6	319.5
Change 1998-2002	-7.4	11.3	-63.3	724.2	911.5	226.7
% Change 1998-2002	-31%	6%	-57%	1187%	200%	244%

Source: Tables 12B, 12C and 12D, Securities Markets Statistics (various issues). Bank for International Settlements.

**Table 5 Foreign Assets and Liabilities of BIS Reporting Japanese Banks**  
(in billion U.S. dollars)

As at March 31 <sup>st</sup>	Vis-à-vis all sectors					
	Total		Vis-à-vis the bank sector		Vis-à-vis the non-bank sectors	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
1997	1,100.00	654.2	727.3	628.8	372.7	25.4
2001	1,080.40	488.9	578	444.1	502.4	44.8
<i>Change</i>	-19.6	-165.3	-149.3	-184.7	129.7	19.4
<i>% Change</i>	-1.8%	-25.3%	-20.5%	-29.4%	34.8%	76.3%

Source: Tables 2A and 2B, Locational International Banking Statistics (various issues). Bank for International Settlements.

**Table 6 Samurai and Euroyen Bond Issues**  
(in billion yen)

Fiscal year, begins April 1st	Samurai bond issues			Euroyen bond issues			Ref: Foreign- currency- denominated bonds issued by Japanese residents
	Total	Yen- denominated	Dual- currency- denominated	Total	Issued by non- Japanese residents	Issued by Japanese residents	
1992	1,575.5	1,540.5	35.0	7,175.7	4,338.7	2,837.0	3,687.9
1993	1,249.2	1,221.9	27.3	6,791.6	4,869.1	1,922.5	3,948.8
1994	1,265.9	1,167.9	98.0	11,441.3	10,976.0	465.3	1,347.5
1995	2,108.5	1,087.5	1,021.0	12,059.9	11,583.7	476.2	1,622.4
1996	3,819.7	1,103.2	2,716.5	16,005.0	14,937.4	1,067.6	1,847.3
1997	1,671.5	622.0	1,049.5	17,728.4	16,952.2	776.2	2,047.4
1998	477.0	428.0	49.0	11,828.9	10,930.4	898.5	612.3
1999	1,259.5	1,245.0	14.5	16,955.0	15,625.6	1,329.4	1,307.7
2000	2,829.4	2,747.4	82.0	17,159.1	15,992.2	1,166.9	587.7
2001	2,114.3	1,683.8	430.6	17,711.1	15,923.8	1,787.3	910.9

Source: Financial Statistics, Japanese Ministry of Finance.