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A Reassessment of Japan's Big Bang Financial Regulatory Reform

Bruce E. Aronson*

Abstract

This paper reassesses the results of Japan's financial deregulation over the last two decades. Japan's Big Bang sought to transform a highly regulated bank-centered financial system to a transparent, market-centered financial system to revitalize Japan's economy and aging society. Prior assessments generally view this reform effort as a failure due to Japan's low economic growth rate.

This paper finds, contrary to conventional wisdom, that government-led deregulatory and administrative reform was largely successful in removing legal and administrative obstacles to the development of a market-centered financial system. However, the persistence of past practices by market participants and strong headwinds such as low macroeconomic growth and poor financial market performance prevented achievement of the Big Bang's ambitious goals. This illustrates both the limits of what can be accomplished through deregulation of financial markets and the problem inherent in using a results-oriented standard in evaluating Japan's reform efforts.

Keywords: Big Bang; Financial Deregulation; Financial Reform; Corporate Bond Market; Venture Capital; Financial Center

JEL classification: G18, G21, G24, K22

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I. Introduction

The "lost decade" of the 1990s in Japan has now become two decades, with the latter decade being marked by persistent deflationary pressure. A number of factors contributed to this long period of low economic growth, including: (1) significantly larger real estate and stock bubbles than experienced by the United States in 2007 (Katz [2009] and Ito [1992] p. 408), (2) monetary and fiscal policy mistakes (in 1989-90 and 1997, respectively) as, at least in hindsight, the government removed economic stimulus too early, (3) a banking crisis beginning in 1997 which exacerbated long-term growth and productivity issues and which preoccupied governmental policy-making and actions, (4) an aging society with a declining number of productive workers that constrained economic growth, (5) pork barrel politics which supported ongoing subsidies for inefficient industries, particularly in rural areas, that exacerbated budget deficits and the national debt and (6) bad luck, as the Asian financial crisis in 1997 and the U.S.-initiated financial crisis in 2008 set back what might have otherwise been sustained economic recovery in Japan.

The Japanese responded with both short-term fiscal and monetary policies to stimulate the economy and long-term "structural reform." Two core elements of the wide-ranging reform efforts were substantive financial deregulation under the "Big Bang" program initiated in 1996 and reform of Japan's regulatory style from one of administrative guidance to a transparent system more clearly based on legal rules and their interpretation. Such changes would help transform a highly regulated bank-centered financial system into a transparent, market-centered financial system (i.e., the often-cited Big Bang slogan of a "free, fair and global" financial system). A newly efficient capital market would, in turn, lead to a sustained economic recovery and, ultimately, to a new post-industrial economic model.

Both popular opinion and academic literature outside Japan view Japanese reform efforts as a failure. Many cite the substantive outcome--Japan's continuing low economic growth, particularly in contrast to the perceived success of financial and technological innovation in the United States in the 1990s and strong economic growth in China over the past decade. Economic stagnation is seen as strong evidence that Japan did not, in fact, implement the promised reforms to change its system. However,

this view is too broad and results-oriented to be used as a standard for evaluating Japanese reform efforts.

Scholars have focused on the possibility that international competition among economic and legal systems would lead to global convergence, presumably towards a U.S.-based "global" or "standard" model (Hansmann and Kraakman [2001]). Law specialists looked for a transformation in Japanese corporate governance from a stakeholder-based system to a shareholder-based system (Milhaupt [2006]). Business school faculty speculated in the "varieties of capitalism" literature whether a Japanese "government-coordinated economy" could transform into a "liberal market economy" (Deeg and Jackson [2007]).

Scholars in these and other fields (e.g., Haley [2005]) noted the lack of a clear, systemic transformation in Japan. They generally concluded, or at least implied, that reform efforts were insufficient to effect "real change" in Japan and therefore not significant. However, systemic transformation is rare and makes a crude standard for measuring the significance of reform. Indeed, recent research efforts have begun to reconsider "all or nothing" transformational standards for evaluating change (Deeg and Jackson [2007] and Aronson [2009]) and to look instead at the significance of incremental system evolution (see, e.g., Nottage, Wolff and Anderson [2008]).

Both popular and academic views are based on the questionable assumption that financial deregulation and administrative reform will naturally lead to sustained economic growth under a new post-industrial economic model. This understanding presumably arose from the perceived successes of the U.S. post-industrial economic model and the prior "Big Bang" deregulatory programs in New York and London. If deregulation and the U.S. model were successful, Japan merely had to "get serious" about carrying out reform along similar lines.

The Japanese themselves appeared to share this belief. They presumed that financial deregulation and an accompanying shift to a market-based financial system would address the fundamental demographic and productivity problems facing an aging society and mature economy, as follows: (1) a higher return on private financial assets would ameliorate the problem of increasing social welfare payments in a rapidly aging

society, (2) capital markets would more efficiently allocate funds to emerging growth industries and lead to higher economic growth rates, and (3) Tokyo would compete successfully in global financial competition and become a leading financial center (Ministry of Finance ("MOF") [1997] and Toya [2006]).

Furthermore, it was anticipated that not only would a newly efficient market-based financial system lead to the creation of a strong and efficient financial services industry, but that it would also pressure both the banking system and nonfinancial corporations to restructure and become more efficient and competitive. The ultimate result would be a shift from a manufacturing-based, export-oriented economic model to a new service-oriented, post-industrial economic model for Japan.

The failure to achieve these ambitious goals has led to disappointment with reform efforts within Japan. Although some progress was made, large problems were left unresolved. This Japanese view reflects concerns with process as well as substantive outcomes. It includes a broad suspicion that continuing governmental regulatory involvement with financial institutions may have hindered the development of competitive financial markets over the last two decades and achievement of the broad goals of reform.

Definitional uncertainties concerning basic issues related to the Big Bang program, such as its length and goals, complicate attempts at evaluating its results. For example, the announced length of the Big Bang was 1996-2001 (already a long period for a "bang"), but many important reform efforts began only under the Koizumi administration after 2001. The immediate focus of the Big Bang was financial deregulation, and a question remains whether the three broad societal goals of deregulation noted above should be included within its scope. These goals were cited by government planners (MOF [1997]) but may have been exaggerated for political purposes. In addition, by the time the Japanese government went beyond the 1996 announcement of the Big Bang into planning and implementing concrete measures in 1997-98, it was necessarily reacting to a full-blown banking crisis (Cargill, Hutchinson and Ito [2000]) and already focusing as much effort on financial system stability as on financial system reform (MOF [1998] and Hoshi and Patrick [2000] p. 16).

In seeking to re-evaluate the results of the Big Bang, this paper adopts an expansive view of its length and its goals, i.e., the Big Bang planners conceived a fundamental approach and long-term framework for ongoing financial and administrative reform that should include post-2001 reform efforts and the cited broad societal goals, even if these goals were not immediately or actively pursued.

The overall Japanese approach suggests acceptance of, or at least hope in, the power of deregulation and administrative reform to bring about far-reaching positive effects from the efficient functioning of free markets. The main thrust of deregulation would be aided by related reforms in numerous areas such as the legal profession (more and better lawyers to support businesses operating within a regulatory style based on legal rules), corporate governance (greater shareholder orientation by corporate management to increase investor returns and stock market attractiveness), privatization of public corporations, labor flexibility, and pension system reform.

The thesis of this paper is that despite the inability to achieve these ambitious societal goals, and contrary to conventional wisdom, Japan's reform efforts were "serious" and were not a failure. The Japanese government did undertake significant reform and made substantial progress in transforming its administrative processes and financial regulatory system. The Japanese were largely successful in changing from a closed financial regulatory system based on an important role for government, administrative guidance and administrative discretion to a more open system based largely on markets, legal rules, and information disclosure/transparency. However, this change was insufficient to achieve large societal changes. Although financial deregulation could remove legal and administrative obstacles and thereby encourage growth and investment, other more important factors must operate successfully in order to achieve greater return on investment, gains in productivity, and a higher rate of economic growth.

It is necessary to evaluate Japan's efforts without resorting to crude, transformational standards arguably based on an idealized U.S. model. To accomplish this, we must consider the process by which financial deregulation and administrative reform could achieve the three broad societal goals noted above, and evaluate the efforts and results for each step of the process. This process was not clearly articulated at the

time reform efforts were initiated. In retrospect, we can envision a roadmap for achieving the cited societal goals. The first step would be government-led financial deregulation and administrative reform. The intermediate step would be financial institutions, corporate borrowers, and other market participants utilizing new competitive opportunities to gradually transform Japan's bank-centered financial system to a market-centered financial system. The final step would be a more efficient financial system, combining with a number of other factors and broad societal participation, leading over time to achievement of the three broad societal goals and ultimately to a new post-industrial economic model for Japan (see Figure 1).

The ongoing re-examination of assumptions and changing perceptions in the United States following the 2008 financial crisis provide a good opportunity to reassess Japanese efforts to achieve market reforms and a sustained economic recovery. Japan's experience of extraordinary policy measures yielding very modest economic results is no longer unique. In the wake of the 2008 financial crisis, the U.S. and other countries were forced to take extraordinary "Japan-like" measures in both fiscal and monetary policy, including large budget deficits and quantitative easing to increase the money supply. There has recently been serious discussion in the U.S. concerning the possibility that America will repeat Japan's experience of slow growth and a lingering deflationary environment (Bullard [2010]).

The 2008 financial crisis also challenged the assumptions of the wide-ranging positive effects of deregulation and the superiority of the U.S. post-industrial economic model. It now appears that a portion of the gains of the financial services industry in the U.S. was due to a bubble or financial engineering unrelated to the real economy. The lack of regulation in areas such as over-the-counter derivatives is no longer solely praised as a key to financial innovation; the risks involved in such a course have also become readily apparent.

This paper is a broad survey that examines the appropriate standard for evaluation of financial system change in Japan, relevant data as available, and the results of reform for each step of the process outlined above: (1) financial deregulation and administrative reform, (2) transformation to a market-centered financial system, and (3) achievement of the three broad societal goals. It seeks to initiate a new discussion of

Japan's reform efforts freed of the strong implicit assumptions and perceptions of the last two decades.

Section 2 discusses whether Japan was successful in achieving government-led financial deregulation and related administrative reform, and, in particular, whether regulatory style actually changed in practice. It concludes that, contrary to conventional wisdom, Japanese reform efforts achieved substantial success in the first step of financial deregulation and administrative reform.

Section 3 considers whether there was a transformation to a market-centered financial system. It concludes that despite a gradual increase over time in direct finance over indirect finance, reform efforts had a limited effect on market participants and did not accelerate the slow and gradual progress toward a market-centered financial system. Japan essentially remains a bank-centered financial system, and has not developed a direct alternative to bank lending in the capital markets, i.e., a robust corporate bond market.

Section 4 examines the three broad societal goals that the planners of the Big Bang hoped to ultimately achieve through financial deregulation and administrative reform. It finds that none of the three goals was achieved, and suggests some other factors that might be more important than financial deregulation in achieving these goals.

Section 5 concludes that the Big Bang substantially achieved its immediate government-led goals of financial deregulation and administrative reform, but that the reform process was not generally successful beyond that initial stage. This illustrates the limits of what can be accomplished through deregulation of financial markets in the face of the persistence of past practices by market participants and strong headwinds such as low economic growth and poor stock market performance. To achieve the societal goals cited at the time of the Big Bang, the Japanese government has now turned to a broader set of measures involving trade, tax, social welfare, and regulatory policies. At the same time, continuing reform efforts in the financial services industry should be aided by changes in Japan's regulatory style in that sector.

II. Financial Deregulation under the Big Bang

The Big Bang reform program carried out wide-ranging substantive reform of financial laws covering banking, securities, and insurance. These reforms covered a much broader area and were more comprehensive than the prior "Big Bangs" in New York and London that focused primarily on the deregulation of brokerage commissions (Fuchita [2007]). Financial regulatory reform under the Big Bang represented a dramatic acceleration of ongoing reform efforts. There was substantial new legislation enacted beginning in 1997 (see, e.g., Shirai [2009] p. 7). Japan's efforts were also in step with an international trend in bank regulatory reform in the late 1990s which saw independence of the Bank of England and the creation of the Financial Services Authority in the U.K. and abolition of the Glass-Steagall Act in the U.S. At the same time, the Japanese also recognized that financial system reform would require a fairly long-term and gradual process.

There is little disagreement that the Japanese carried out significant deregulatory reform of financial laws "on the books." Rather, the debate centers on whether Japan's changes in formal law and regulatory institutions also resulted in significant changes in actual regulatory practices. The conventional wisdom holds that, judging partially by the lack of positive economic results, these reforms did not greatly affect regulatory practices. In addition, there are no statistical data available to demonstrate that Japan has substantially changed its regulatory style in the financial services area.

However, there is persuasive indirect evidence of significant change. Legislative changes broke up the powerful MOF and replaced it in the financial services regulatory area with the new Financial Services Agency ("FSA") and a newly independent Bank of Japan ("BOJ"). An important practice in maintaining administrative guidance, the use of "informal" administrative directives not subject to legal challenge (tsutatsu), was discontinued in 2000 and replaced by a system of guidelines (kantoku shishin) that are issued following a public consultation process. In addition, a new system of "American-style" no-action letters was introduced in 2001 (FSA [2011]), although it is not widely utilized.

Even prior to the formal breakup of the MOF, the position of "MOF-tan" at Japanese banks, which was a crucial role through the mid-1990s in maintaining close informal relations between banks and the MOF, was abolished. Today much of the "give and take" between the banking industry and financial regulators occurs at the industry level through the chairman's office at the Japan Bankers Association, while at the individual bank level compliance officers have gained substantially in importance. Ultimately, financial deregulation and administrative reform greatly affected virtually every element of Japan's postwar banking system (e.g., industry segmentation and noncompetition, administrative guidance, the "convoy" system of bank bailouts, the role of main banks, etc.).

Apart from these structural and institutional changes, the movement from administrative discretion towards transparent legal rules is reflected most clearly in a corresponding rise in the role of Japanese lawyers over the last decade. There has been significant new domestic demand in Japan for corporate legal services in areas including new financial products, compliance and corporate governance. Japanese corporate law firms have grown very rapidly in the past decade to meet this demand and have essentially switched their primary role from one of advising on cross-border transactions to one of focusing on domestic work. This transformation of the role of the legal profession supports the view that there has been a real change in the Japanese style of administration, as businesses now consult with lawyers on legal rules and procedures rather than meet informally with government bureaucrats (Aronson [2007]).

Financial regulators have also significantly increased their involvement with lawyers. There was little, if any, consulting with lawyers by government agencies at the beginning of the Big Bang process in the mid-1990s. Today, not only do financial regulatory agencies consult regularly with outside attorneys, it has become very common for young lawyers at the leading corporate law firms to work temporarily inside regulatory agencies for a few years on "secondment." The FSA is the largest temporary employer of such lawyers, and other financial regulatory agencies also use them (Aronson [2009] p. 231). Although this trend is significant, its limits are indicated by a general lack of permanent lawyer positions at these agencies and by the lack of an enforcement division staffed by lawyers.

The prevailing viewpoint, argued most vigorously by foreign bankers in Japan and their attorneys, is that the Japanese regulatory system has not really changed. According to this view, the structure of regulatory agencies and the substance of regulations may look different, but the heavy hand of regulation is still present and it does not welcome foreign participants in Tokyo's financial market. In other words, formal legal controls have been replaced by the use of informal controls, such as bank examinations, to achieve largely similar results. This is an important point since it directly relates to whether market participants were, in fact, free to compete fully in areas such as the provision of new financial products and services. However, this is a difficult argument to evaluate in a comparative context both because it is often anecdotal and because in every advanced economy banks and financial services present significant risks and attract the highest level of regulatory interest of any industry.

The faults ascribed to Japanese regulatory agencies are also often vague, and can include phrases like "need to build trust" and "lack of communication." It is worth noting that such concerns would also be consistent with a financial regulatory system that had moved substantially from an informal administrative model to a model based on transparent legal rules. In such case, the old informal means of communication would necessarily need to be replaced with the enforcement of new rules. Such rules include FSA-published guidance and bank examination policies that could appear to be more one-sided and less interactive than the traditional approach, and which might also raise new issues of trust and communication.

The standard for achieving significant reform should not require Japanese regulation moving from a system of "heavy" rules-based regulation to a system of "light" principles-based regulation, as advocated by foreign financial institutions (International Bankers Association [2007] p. 12), despite FSA rhetoric in the mid-2000s that it would change its regulatory style in that direction. Rather, the key issue is one of regulatory style—i.e., whether Japan has moved to a more open, rules-based system rather than relying on closed, informal interactions with government agencies. By this measure, Japan has arguably achieved substantial regulatory reform.

Transparency is related to clear rules, but it also depends on the public disclosure of information. Beginning with the Administrative Procedures Act of 1993, Japan has

gradually moved to a system with public comments for proposed regulations, disclosure of discussions of deliberation councils that debate proposed legislation and regulations, and disclosure of enforcement actions. The website of any major government agency in Japan now contains a significant amount of information on relevant laws, policies, and activities disclosed in a timely manner. Ongoing corporate law reform has also resulted in the 2000s in increased information disclosure by public corporations (Financial Instruments and Exchange Act of 2006 or so-called "J-SOX") that would help support stronger capital markets and a requirement for broad internal control systems that go beyond financial accounting and cover risk management policies (Companies Act of 2005).

The process of regulatory and administrative reform has continued following the enactment of this legislation. In 2007, at the height of concern about international stock market competition and consolidation, the FSA launched a "Better Market Initiative" (FSA [2007]). One of the four pillars of this effort was improving the regulatory environment through an "optimal combination" of rules-based and principles-based regulatory approaches, greater dialogue with the financial industry, and "increasing transparency and predictability of regulation and supervision" (FSA [2007]). Examples of recent reform measures implemented through legislative amendment and administrative action include relaxation of firewalls separating the banking, securities, and insurance industries, agreement between the FSA and the financial industry on 14 shared general principles to form the basis of partial principles-based regulation, and the expanded use of no-action letters.

Judging the extent of change in Japan's regulation and regulatory style in the financial services area is also complicated by governmental reaction to changed circumstances over time—it is not a unidirectional process. It is widely acknowledged that the initial Big Bang deregulation in 1998 increased competition in Japan's financial services industry, chiefly through the increased sales of mutual funds by banks. However, increased securities sales also revealed weaknesses in information disclosure and advice on suitability provided to customers, and that resulted in a degree of "reregulation" for investor protection under the Financial Instruments and Exchange Act of 2006.

Similarly, as noted previously, the initial 1998 reforms occurred at a time of an ongoing banking crisis that necessitated continuing close governmental supervision of the weak Japanese banking system. As this situation gradually improved over time, the FSA announced that it would move toward principles-based regulation, but has made only limited progress in that direction as compared to the UK.

In sum, although regulatory issues remain and calls for more user-friendly regulation continue, the changes over time have been significant. Government-led deregulatory and administrative reform was likely sufficient to remove legal and administrative obstacles and thereby permit the development of a market-centered financial system.

III. Transformation to a Market-Centered Financial System

This section considers whether government-led financial deregulation and administrative reform affected the behavior of market participants and led to a shift from a bank-centered system of indirect finance to a market-centered system of direct finance. Progress towards this goal can be measured generally through flow of funds data from the BOJ (excerpted in Table 1). Data show the total of all forms of corporate finance increasing in the 1980s, leveling in the 1990s, and gradually decreasing during the past decade. The substantial decrease between 1995 and 2005 was caused by a decline in loan volume, as equity issuance increased modestly during that time period. The ratio of loans to equity ("shares and other equities") for nonfinancial corporations was roughly 6 times (6x) in 1980, 5x in 1990, 3x in 2000 and 2x in 2009. In essence, the data indicate a very slow, but substantial movement in the direction of a greater role for equity finance.

The question is whether this gradual shift to direct finance has made a real difference in the efficiency of Japan's financial system. The data are somewhat ambiguous. Stock issuance has increased relative to loan volume over the past decade primarily because of a decline in loan volume on corporate balance sheets beginning in 1996. However, the annual flow of funds data do not indicate that financial deregulation and other reform measures had any clear impact on the longstanding, gradual trend of moving from bank loans to equity financing. The gradual reduction in

the volume of bank loans might also be substantially accounted for by banks writing down nonperforming loans in response to tougher, post-banking crisis, regulation and by an overall absence of corporate demand for funding in a weak economy.

Some academic commentators that closely follow the Japanese banking system have concluded that Japan has substantially transformed to a market-centered financial system (Hoshi and Patrick [2000]). The reasons cited are a loss of governmental protection of banks from capital markets, data on the long-term trend of direct finance gradually replacing indirect finance, and the greater financing choices for large corporate borrowers. However, from the broader perspective of the financial system as a whole, most commentators still broadly characterize Japan as having a bank-dominated financial system that is relatively inefficient.

This majority view focuses more on the comparison between bank loans and the weak corporate bond market. Commentators have long pointed to Japan's weak bond markets as the biggest difference between financial systems in Japan and the U.S. following the beginning of Japan's deregulation efforts in the 1980s (Ito [1992] p. 105). Despite the substantial relative increase in direct equity finance, Japan's financial system continues to have an overreliance on intermediated bank lending in its debt market and to exhibit the problems typically related to such overreliance: nonperforming loans, excess liquidity, and insufficient investment choices (see, e.g., Batten and Szilagyi [2003]). And even within the field of corporate lending, banks dominate such lending in Japan while nonbank financial institutions play the primary role in the U.S. (BOJ [2010b]). Japanese government studies continue to recognize this overreliance on bank lending and call for greater diversification of financing sources (Council on Economic and Fiscal Policy [2005] pp. 30-31).

Financial deregulation did not affect one of the long-standing problems of Japan's financial system—the lack of a corporate bond market commensurate with the size and maturity of Japan's economy and industry. Generally speaking, a capital market system is presumably better than a bank–centered financial system for a large economy as the higher costs of disclosure, regulation and enforcement that accompany a market-centered financial system are outweighed by the benefits of providing a large volume of cheap capital (Kanda [2005]). The same tradeoff is also generally true for individual

corporations, as large businesses in the U.S. often favor bonds over bank loans due to lower cost and greater flexibility (although the growth of syndicated bank loans and securitization of bank loans has somewhat muddied this traditional distinction).

Of even greater importance than providing low-cost funds is the potential for capital markets to allocate resources more efficiently to their greatest productive use. A robust Japanese corporate bond market may therefore be essential to provide a true alternative to bank lending and to obtain the full anticipated benefits of capital market efficiency.

From a comparative perspective, offerings in the U.S. the corporate bond market are some 17.5 times larger than the value of stock underwritings (as of 2003), while in Japan the corporate bond market is less than half the size of the stock market. In fairness, the U.S. was historically the only country which had a fully developed corporate bond market, as European countries such as Germany also relied heavily on bank lending. However, European corporate bond issuance has risen over the past decade with the creation of a Euromarket in corporate bonds and an increased desire by European companies for diversification of financing methods. Japan's corporate bond market is now strikingly small compared to both the U.S. and the EU, as measured, for example, by the size of the corporate bond market in relation to the economy (Japan Securities Dealers Association [2010] p. 1).

The effects of Japan's missed opportunity to develop a substantial corporate bond market are not only domestic. Japan is the only economy in Asia with the capability of developing a large corporate bond market, and it is in a position to make a significant contribution to the functioning and integration of financial markets in Asia. This would also act to strengthen Japan's domestic financial services industry and its economy, as closer economic and financial ties with Asia are frequently cited as an important measure for the revitalization of Japan's economy.

However, the corporate bond market in Japan remains quite small. Historically, legal and administrative obstacles hindered the development of a corporate bond market. Deregulation measures were undertaken (in particular, removal of issuer limitations in 1996) and resulted in the creation of a bond market infrastructure which is "reasonably well developed" to support market growth (Ichiue [2006] p. 92). However, significant

corporate bond market growth has not occurred. As of 2008 corporate bonds constituted only 5.8% of the Japanese bond market (Japan Securities Dealers Association [2009]).

This pattern—the removal of legal obstacles not leading to the development of a robust market—is by no means limited to corporate bonds. It also applies to a variety of new financial products such as exchange traded funds (ETFs), securitizations, and REITs (although many consider the J-REIT market to be a relative or partial success) and the slow growth of liberalized markets such as over-the-counter foreign exchange and derivatives (Shirai [2009]). The failure of new financial products is often generally attributed to risk-averse Japanese investors and a corresponding lack of demand. However, the corporate bond market stands out prominently because bonds represent a relatively low-risk investment, and there is persuasive anecdotal evidence of a healthy potential demand for domestic corporate bonds and bond funds from both institutional and individual investors in Japan.

We must therefore look to the supply side, i.e. corporate issuers, for an explanation why a robust Japanese corporate bond market has failed to develop. The most often-cited factor is corporations' easy accessibility to bank loans due to the persistence of traditional relationship lending practices by Japanese banks, combined with the existing weak corporate bond market that fails to provide a fully viable alternative. Even weak corporate borrowers can readily obtain bank loans, and banks have continued to provide forbearance lending to "zombie" corporations (Caballero, Hoshi, and Kashyap [2006]). On the other hand, there is nearly a complete lack of high-yield bond issuance by non-investment grade corporations in Japan, although that particular market is also hampered by restrictions limiting many institutional investors to investment grade bonds.

Big Bang reforms have significantly affected the banking industry. The roles of the main bank and keiretsu have weakened and the banking industry has undergone a dramatic consolidation across traditional group lines. However, the primary result of regulatory changes designed to increase competition has been banks reducing interest rates on loans to compete with each other. They have not been required to become more efficient profit-oriented lenders to compete with a corporate bond market.

Japanese banks, like Japanese corporations generally, have traditionally emphasized market share over profitability and remain consistently less profitable than U.S. banks. Over the last decade, Japanese banks had lower profitability in terms of both net interest rate spread (1% lower) and return on assets (1.2% lower) (Igata, Taki and Yoshikawa [2009] p. 22). Thus, the hope that increased competition from more efficient capital markets would also lead to a more efficient bank-led finance market has not been realized. Although the appeal of corporate bonds is generally thought to be their low cost compared to bank loans, the opposite is said to be true in Japan (Japan Securities Dealers Association [2010] p. 4).

The tendency of Japanese banks to engage in low-margin relationship lending is exacerbated by excess funds from deposits and the need to utilize such funds. Low interest rates paid on deposits means that banks can still obtain a small spread on low interest loans to corporate borrowers. Furthermore, bank loans in Japan may already contain relatively weak covenants and be relatively easy to restructure as necessary with friendly banks—two other factors that would generally lead large corporations to favor bonds over bank loans in the United States.

Finally, there may be ingrained habits and existing images which discourage a corporate bond market. Many large Japanese companies have issued convertible bonds (which are essentially equity), but not straight corporate bonds and corporations seem to conflate the two. In addition, most Japanese investors' exposure to corporate bonds is limited to the small number of historically top-rated issuers and does not extend to the typical investment grade issuers that are common in the United States.

As a result, although there has been a substantial, if very gradual, increase in direct finance in Japan over time, there has probably not been a sufficient transformation of the financial system to obtain the benefits from market efficiency envisioned at the time of the Big Bang. The persistence of traditional bank lending and the failure of market participants to develop a corporate bond market despite financial deregulation is arguably the largest stumbling block in the process of governmental deregulation leading to achievement of broad societal goals. Ironically, one hope for the development of a corporate bond market may lie in strengthening bank regulation rather than in deregulation, i.e., the possibility of tougher international capital adequacy

requirements for banks under the Basel III accord that would pressure all large Japanese banks to exit from low interest, unprofitable loans.

IV. Failure to Achieve Broad Societal Goals

Despite substantial completion of the first step of government-led financial deregulation and administrative reform, the Big Bang failed to achieve the broad society goals that were announced at the time of its inception. In this section, the paper provides the available evidence on the lack of progress in achieving these goals. It also suggests some additional significant factors, beyond deregulation and market efficiency, that may be necessary to achieve such goals.

A. Higher Return on Private Financial Assets

One of the highly conspicuous arguments at the time of the Big Bang was the need and opportunity to invest some of the 1,200 trillion yen in private savings and obtain a higher market return than provided by bank savings accounts (MOF [1997]). Achieving this goal would help provide ample assets for private retirement and for governmental social welfare payments, and would enable Japan to regain an important role in the international community.

The Big Bang was expected to produce private investment by increasing competition among financial service providers which, in turn, would produce a wider range of attractive financial products and investor-friendly services. However, the trend of household savings and investment has gone in the other direction—the percentage of bank savings ("cash and deposits") within all household financial assets has been increasing and now occupies nearly 55% (see Table 2). This contrasts with about 14% in the U.S. (Japan Securities Dealers Association [2010] Appendix 8 p.3). Conversely, Japanese households hold 6.4% of financial assets in shares and equities, while this percentage reaches 31.4% in the U.S. (BOJ [2010b]).

The widely-cited necessity of investing household savings and earning a higher return is as strong today as it was 15 years ago. In the interim, the total amount of private savings has increased from 1,200 trillion yen to over 1,500 trillion yen. Why has no progress been made?

There was, in fact, significant deregulation and encouragement of the asset management industry in Japan beginning in the mid-1990s. The number of financial services providers and products has increased, and today individuals can easily purchase stock investment trusts (the Japanese equivalent of stock mutual funds) and other investment securities at bank counters (although corporate bond funds are very limited). However, other more important factors were not present or had a negative impact (MOF [2001]).

First is market performance. Individual investors (and the mutual funds which must attract such investors) tend to chase performance and invest during rising markets. The stock market in Japan, at least as measured by the Nikkei index, lost approximately 3/4 of its value when the bubble collapsed in the early 1990s and has been essentially flat for the past 20 years. Japanese investment in stocks has also been flat. In the United States as well, poor stock market returns following the tech stock market crash in 2000 reversed the trend of increased stock and bond ownership which had persisted from 1989-2001 (Investment Company Institute and the Securities Industry and Financial Markets Association [2008] p. 7). In both countries, stock ownership declined significantly following the 2008 financial crisis and stock market crash, and began to rise (end of 2010-early 2011) well after the stock market had staged a dramatic recovery from its 2009 low.

Second, employment instability, relatively high unemployment rates (for Japan), and low wage increases endured during much of the past two decades. Beginning around 1997, there has been a widespread trend for Japanese companies to rely extensively on part-time and temporary labor. New job openings and the percentage of graduating college seniors able to find full-time employment have plummeted over the past few years. This trend, together with an aging society, resulted in lower savings rates and has encouraged risk-averse behavior with financial assets.

Third is the lack of any necessity for many Japanese to invest in risk assets. In the U.S., the trend of increasing household ownership of equities and bonds during the 1990s coincided with a decrease in traditional pensions in the form of defined benefit plans and an increase in 401(k) and other defined contribution plans (Investment Company Institute and the Securities Industry and Financial Markets Association [2008]

p. 1). This left many individuals with essentially no choice—employers stopped being responsible for investment of employee funds (and guaranteeing a fixed level of return) and the responsibility was shifted to individuals. During the long bull market from the early 1980s to 2000, it was easy to persuade individuals to invest in risk assets through defined contribution plans.

In Japan, on the other hand, there has been no general shift to individual responsibility for investment returns following the introduction of defined contribution retirement plans in 2001. Most large employers still manage retirement funds for employees and provide a lump-sum benefit upon retirement. This benefit, supplemented by government social welfare payments and private sources such as insurance, is still sufficient for many Japanese to achieve a satisfactory retirement. There is therefore little necessity for many individuals in Japan to accept market risk in order to achieve higher returns on assets to be utilized for retirement (MOF [2001]). One continuing area of proposed reform is to shift investment responsibility to individuals and provide tax incentives for individual investment accounts (International Bankers Association [2010]).

Finally, government policies have worked at cross-purposes for fiscal and political reasons, and have encouraged low-return investments. One of the most significant issues remaining on the deregulatory agenda is the fate of Japan Post Bank, the former government post office which remains the largest deposit-taker in Japan. In addition, large fiscal deficits and outstanding amounts of government debt have led the Japanese government to strongly encourage individual investors to invest in low-yielding government bonds. Both Japan Post Bank deposits and government bonds had increased appeal to households as a safe haven following the 2008 financial crisis, and both were heavily advertised in media campaigns.

One potential bright spot in this otherwise bleak picture is the recent asset increase by Japanese mutual funds and the continuing substantial share of personal assets held by institutional investors (see Table 2). Pension funds, in particular, are held out as the hope for professional management of Japanese private assets, including the utilization of asset allocation strategies with significant exposure to equities and other risk assets. This trend includes professional management of government funds, as under a

significant 2001 reform deposits from the postal bank are now professionally invested by the Government Pension Investment Fund (GPIF) rather than being controlled and invested in pet programs by the MOF under the Fiscal Investment and Loan Program (FILP). However, Japanese institutional investors remain more conservative in investments than their American counterparts (BOJ [2010b]).

B. Market Allocation of Capital to Emerging Growth Industries

It is difficult to identify or define "emerging growth companies" and therefore it is equally difficult to measure progress toward this goal. There are data on the amount of bank loans going to small companies, and this number has been declining during the past decade. However, although the term "start-up" creates an image that links innovation and small companies, the realty is less clear. In Japan, it is, in fact, likely that the bulk of small businesses are companies that are in traditional, low-growth industries rather than in emerging growth industries.

However, to the extent that the "market" was going to allocate capital to emerging growth industries more efficiently than the traditional system of administrative guidance and risk-averse banks, a starting point might be to consider what market would perform this function. In the United States, the venture capital market is an important source for financing of emerging growth companies. However, despite Japan's early postwar history of entrepreneurs founding companies like Sony and Honda, in Japan today there is no robust market in venture capital or in private equity generally. In 2009, venture firms invested some 88 billion yen in Japan, compared with the equivalent amount of 532 billion yen in Europe and 1,592 billion yen in the U.S. (Venture Enterprise Center [2010] English figure 6).

For evidence that markets have been unable to efficiently allocate capital to emerging growth industries, one need only look to recent government initiatives by the BOJ to provide special low-interest loans to banks for lending to emerging companies (BOJ [2010a]). More generally, in 2010 the Japanese government proposed a national growth strategy of 10% across-the-board cuts in ministry budgets in order to create a new government-led growth fund, again evidencing frustration with the results of market activities.

A number of explanations for Japan's failure to develop an active venture capital market have been given. Scholars in the U.S. have historically linked Japan's weak venture capital market to its bank-centered financial system and weak stock market (Black and Gilson [1998] and Milhaupt [1997]). Black and Gilson emphasized the importance of venture capitalists' ability to exit from an investment through a stock IPO, and cited Japan's lack of a liquid IPO market in the 1990s as the primary cause of Japan's failure. The stated reasons were that an IPO provides the greatest return to venture capitalists, thus encouraging them to invest and provide technology and expertise to early-stage companies, and also provides a method for the entrepreneur to temporarily cede control of the company to the venture capitalist and then regain control following the IPO.

However, during the last decade a number of competing emerging company markets have developed in Japan, including the "Mothers" market of the Tokyo Stock Exchange, the "Hercules" market of the Osaka Stock Exchange (formerly Nasdaq-Japan) and the Jasdaq Securities Exchange. In addition, changes in Japanese corporate law, including liberalization of options and preferred shares, now provide Japanese entrepreneurs and venture capitalists the ability to make essentially the same deals as do Americans in Silicon Valley. The necessary legal infrastructure for a venture capital market now "looks to be in place" (Shishido [2009] p. 2). And in fact, IPOs constitute the chief exit strategy for investors in the small Japanese venture capital market (Venture Enterprise Center [2010] Japanese p. 1).

If, like in the corporate bond market, there appears to be potential investor demand for venture capital-supported IPOs, we must again look elsewhere for an explanation for the lack of success in Japan's emerging company markets. The most persuasive answer appears to lie, once again, with the providers of capital and the persistence of traditional "bank-like" financing patterns. Debt plays a large role in Japanese venture capital and venture funds often lack an equity focus and act like main banks. Indeed, most venture funds in Japan are not independent, but rather are sponsored by banks and other financial institutions. They are staffed by "salarymen," dispatched from the parent organization, who have no economic incentive to assume risk. Despite advances in the Japanese venture capital market over the past decade, the basic differences between

suppliers of venture capital in Japan and the U.S., as described by Milhaupt in 1997, continue to persist today.

This phenomenon largely accounts for the main factors cited for the lack of development of a Japanese venture capital market, i.e., a lack of risk capital and overly conservative investment strategies. These factors result in the following: (1) investment capital firms generally investing in late stage, rather than early stage, startups, (2) such firms also preferring to hold a diverse portfolio of small investments to limit risk, and (3) entrepreneurs also being risk-averse and fearful of failure.

It should be noted that risk-averse attitudes of entrepreneurs in Japan may be rational since the consequences of failure may be greater in Japan than in the U.S. In the U.S., bankruptcy filings by failed young companies are common and it is not unusual for an entrepreneur to experience several failures before ultimately achieving success. In Japan, bankruptcy is frowned upon and an entrepreneur might be pressured to utilize personal assets in the case of a corporate failure or have a contractual obligation with the venture capitalist to do so (Shishido [2009] p. 20); he would also be unlikely to receive a second chance.

As evidence of risk aversion, we can look at the only study that ranks venture capital environments on a comparative basis through annual surveys. The latest survey by Global Entrepreneurship Monitor (GEM) continues to show that Japan ranks lowest among 20 advanced countries surveyed in terms of entrepreneurial attitudes and perceptions (see Table 3). However, Japan surprisingly has a relatively high score in the category of media attention for entrepreneurship. The authors of the study note the anomaly that despite the media attention, perceived opportunities for starting a business are low and fear of failure is high (Bosma and Levie [2009] p. 18). These findings were recently confirmed by a new survey employing a different methodology, the Global Entrepreneurship and Development Index, which also ranked Japan last among advanced countries (Acs and Szerb [2010]).

The U.S. is the country with the most thriving venture capital market, and this could lead to questions about the use of the U.S. venture capital market as a standard in a bilateral comparison with Japan. However, as with the corporate bond market, Japan

also substantially trails Europe (Venture Enterprise Center [2010] English figure 6), and entrepreneurial attitudes in Japan rank last among a large cross-section of advanced economies. Despite legal reform and the rise of liquid IPO markets, market participants have also failed to develop a robust venture capital market. The carryover of risk-averse banking practices to the nascent venture capital market appears to be an important factor hindering Japan's financial system from supporting emerging growth industries.

C. Tokyo as a Leading Financial Center

Although Tokyo was widely regarded as a leading global financial center around 1990, the bursting of the bubble caused a dramatic decline from which Tokyo's financial market never truly recovered. The Nikkei 225 Average lost roughly 75% of its value and was unable to mount a sustained recovery during the following 20 years. The market capitalization of the Tokyo Stock Exchange was larger than the New York Stock Exchange in 1990, but by 2009 it constituted less than one-third of the value of the New York Stock Exchange (see Table 4). Tokyo had attracted stock listings from 127 foreign companies in 1990, but this number continually declined to a low of 17 companies by 2009.

Accordingly, one explicit goal of the Big Bang announced in 1996 was to restore the vigor of Tokyo's financial market so that it would "be on a par with New York and London by 2001" (MOF [1997]). It was anticipated that a robust capital market would provide substantial domestic benefits. Such a financial market would both create a newly important financial services industry with high-paying jobs and a significant role in a post-industrial society, and also provide efficient financial support for other sectors of the Japanese economy including emerging growth industries.

Beginning in the late 1990s, financial markets and deregulation also received greater attention internationally due to a new emphasis on international stock exchange competition. An influential view developed that the "winner" in international stock market competition would be the market with the lowest regulatory standards that could attract the most foreign companies willing to cross-list on that stock exchange. During the 2000s, this view was manifested in a vigorous debate in the United States as to

whether New York was losing its competitiveness as a global financial center in favor of weaker regulation in the London market (Committee on Capital Markets Regulation [2006]).

The Tokyo Stock Exchange was the subject of even more dire warnings about its viability, as many observers saw stock exchange privatization, IPOs, and international mergers and acquisitions as leading to the formation of four global groups (led by the NYSE Euronext, Nasdaq OMX, CME, and Deutsche Börse) that would dominate equity and other trading. Tokyo also had to face the presence of an Asian competitor, Singapore, which even more so than London was a stock exchange without a substantial domestic market whose long-standing strategy was to attract foreign issuers and active traders through permissive regulation.

This issue seemed to disappear following the 2008 financial crisis, as the debate shifted to ways and means of strengthening financial regulatory systems to restore investor confidence. On an international level, this included greater cooperation among stock exchanges in enforcing securities laws. In theoretical terms, the paradigm of a "race to the bottom" was now equaled or exceeded by a new "race to the top." The rising stock exchanges were markets with strong domestic bases such as Shanghai SE and BM&Fbovespa (Rio de Janeiro) rather than offshore centers seeking to attract traders and listings with weak regulation (see Table 4).

The question of stock exchange competition and alliances returned with Singapore's bid for the Australian stock exchange in 2010. This issue then re-emerged with a vengeance in February 2011 with the sudden disclosure of London's bid for the Toronto stock exchange followed immediately by a stunning announcement of a proposed merger between Deutsche Börse and NYSE Euronext. However, the focus is now on business models rather than deregulation. Discussions in 2007 were premised on an anticipated international harmonization of stock listing standards (which never occurred) and possible aggressive moves by stock exchanges to form global networks and dominate equity and other trading. This time media reports view merger talks as an effort to gain global share in the more profitable derivatives markets. Proposed mergers also represent defensive measures on equity trading as stock exchanges lose business to private electronic networks and seek efficiencies of scale.

Authorities in Tokyo undertook significant deregulatory efforts after 2001 in an attempt to reinvigorate Tokyo's financial market (Fuchita [2007]). Government study groups and plans over the past decade on the issue of Tokyo's competitiveness include a MOF study group in 2003, the Abe cabinet's economic plan in 2005 and a FSA study group in 2007 (see Shirai [2009]). If, however, substantial efforts at deregulation were ultimately not successful in revitalizing Tokyo's financial market, we must consider other possible factors.

Cross-listing decisions by individual corporations are not generally dictated by the level of regulation and the accompanying costs of compliance, but rather are subject to numerous practical factors. These would include: the desire to raise capital, the cost of capital and valuation of a company's stock in that market, business connections in that market and increased visibility from a stock exchange listing, and geographic and cultural familiarity.

In addition to a lack of cross-listing by foreign issuers, an even more striking failure of Tokyo's financial market is its continued dominance by domestic Japanese securities firms. A lingering suspicion remains that this is due to an unwelcoming attitude by the Japanese government. There has, in fact, long been some ambiguity in the general plans that the Japanese government has put forward to make Tokyo a leading financial center. Is the primary goal to develop a strong and efficient Japanese financial services industry or, instead, to promote the creation of a strong international financial center at the possible cost of efficient international firms dominating Japanese firms (Toya [2006] pp. 106-107)?

Japanese government reports to date treat these two goals as compatible. In fact, evidence from one market segment—foreign underwriters entering the samurai bond market following deregulation in 1995—suggests both that some Japanese issuers favored Japanese underwriters but that the entry of foreigners did increase competition and lower underwriting costs (Spiegel and Lopez [2009]). However, as neither goal of creating an efficient Japanese domestic industry or a strong international financial center has been achieved, it is difficult to say which would be given priority in the case of conflict. Foreigners note fears expressed in Japan about the theoretical possibility of rapid internationalization in Tokyo leading to domination by foreign firms in a

"Wimbledon effect" (Pohl [2002]). This phenomenon refers to the Wimbledon tennis tournament in London achieving world-class status at the cost of dominance by foreign players, and the same is said to apply to the financial market in London following its own Big Bang deregulation in 1986.

However, like cross-listing decisions for individual foreign issuers, there are a variety of practical factors that affect the attractiveness of a financial center. Various reasons are given for the steady decline of foreign firms in Tokyo's financial market over the past decade (Makino [2007] p. 28), including taxes and administrative infrastructure. Foreign firms often cite taxes, heavy regulation by the FSA, and insularity as reasons for this inability to attract widespread participation by foreign financial institutions.

A simpler and more persuasive explanation for the weak foreign presence in Tokyo is that foreign financial institutions have limited interest in Japan's stagnant market and are concentrating resources and expanding their presence in rapidly growing markets such as Shanghai and Hong Kong. The Japanese government has proceeded with deregulatory efforts and certainly has undertaken no measures to exclude or discourage foreign participation in Tokyo's financial market. At the same time, however, it has also failed to implement many important measures unrelated to deregulation, such as tax relief, that are discussed in plans to enhance Tokyo's attractiveness as an international financial center. There is also no clear business strategy to distinguish Tokyo from other Asian markets and attract foreign interest by, for example, utilizing the scale of Japan's economy and its vast financial resources to develop a leading corporate bond market in the region.

In retrospect, it seems likely that Tokyo's perceived role as a leading financial center in 1990, with a large number of foreign companies listed on the Tokyo Stock Exchange, was an anomaly or a bubble. At the time, Japan had the greatest amount of capital available and was generally valuing company stock at a very high level. It was perhaps inevitable, or at least highly likely, that companies without a close business or other connections to Japan were attracted to a "hot" capital market, and that such companies would lose interest when the market cooled. The issue of the competitive

position of Tokyo's financial market is sure to become prominent once again in light of the recent international merger announcements.

V. Conclusion

The Big Bang initiative and ongoing reforms resulted in substantial deregulation of the banking, securities, and insurance industries, a regulatory style with greater information disclosure and transparency, and greater reliance on legal rules and market mechanisms than in the past. Over the past 15 years, gradual progress was also made in slowly moving Japan from a system of indirect finance based on bank lending to a system of direct finance based on capital markets.

However, this transformation remains incomplete, as governmental reform to date had only limited impact on the behavior of financial institutions and corporate borrowers. Many of the anticipated benefits from capital market efficiency have not materialized.

Even though Japan's program of financial deregulation was more extensive than that undertaken in New York or London, it was not nearly as successful in growing Japan's financial services industry or achieving other broad goals related to a service-oriented post-industrial society. This result clearly illustrates the limits of what can be accomplished through financial deregulation alone and the necessary contribution of other important factors. Japan faced very strong headwinds: a debilitating banking crisis, poor economic growth and stock market performance, an aging society, deflationary pressure, mounting debts from government fiscal stimulus to keep the economy afloat, and unfortunate external shocks in 1997 and 2008.

In the environment following the 2008 financial crisis, deregulation is no longer held out as the panacea to solve all economic and social problems. Japan is now appropriately focusing on a broad range of policy measures to achieve the laudable goals associated with Big Bang reform efforts and restructuring of the Japanese economy. These include tax measures, such as an increase in consumption tax rates and a decrease in corporate tax rates, reform of the social security system, and new free trade agreements (particularly participation in the Trans-Pacific Partnership).

To continue the development of capital markets, researchers should devote greater attention to the reasons underlying the two great mysteries of Japan's financial system: (1) the lack of a robust corporate bond market, and (2) the continuing low profitability of Japanese banks due to inefficient lending practices. Policy-makers must develop means to break out of a vicious cycle: traditional banking practices hinder development of the corporate bond market, and the lack of a viable corporate bond market as an alternative to bank lending acts to reinforce traditional banking practices.

The most likely means to break this cycle would be to provide both carrots and sticks—a broad range of measures aimed specifically at this issue that both encourage the corporate bond market and discourage unprofitable banking practices. Such measures should include areas like tax policy and administration, which heretofore have not been well integrated into overall government policy initiatives. Additional efforts could also be made that focus specifically on the development of household investment, venture capital, and Tokyo's financial market.

The Big Bang achieved substantial, if by no means complete, success. Changes in regulatory style for the financial services industry should facilitate continuing reform in that sector. However, it is now also time for other measures to make a greater contribution to Japan's transition to a post-industrial society.

Figure 1 Process of Big Bang Leading to Transformation to a Post-Industrial Society

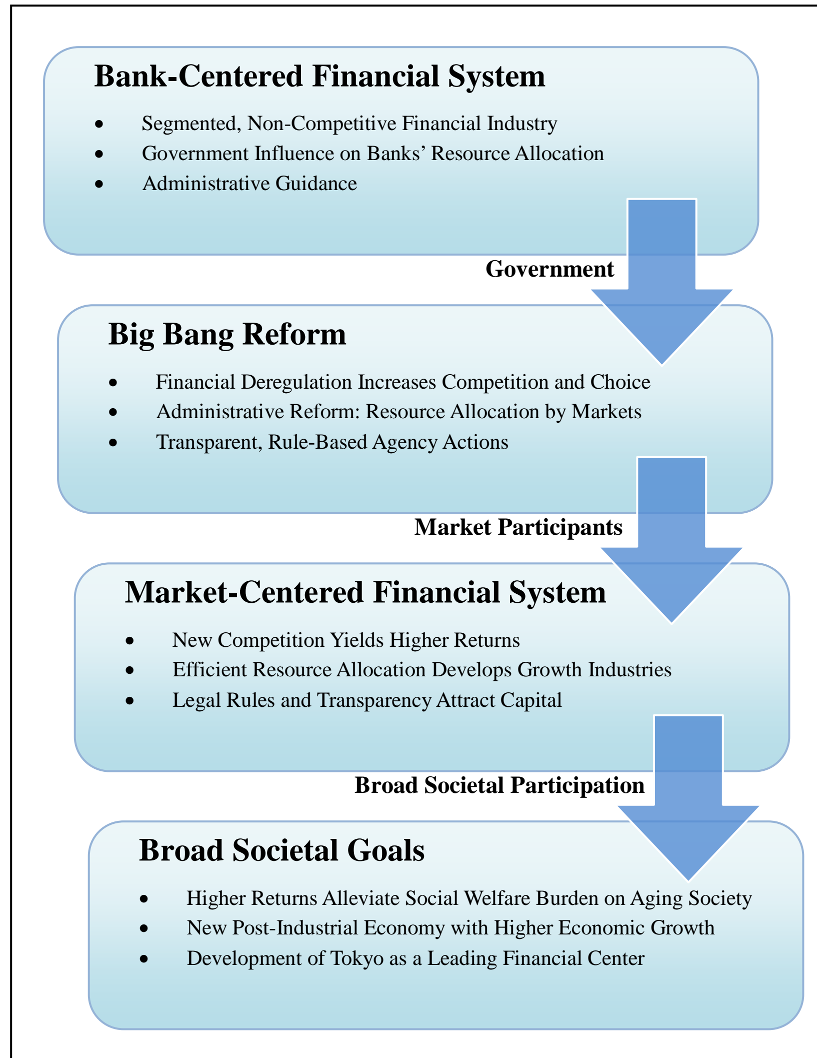

Table 1 Corporate Finance (Liabilities of Nonfinancial Corporations)

(Unit = trillion yen, percentage)

	1980	(%)	1985	(%)	1990	(%)	1995	(%)	2000	(%)	2005	(%)	2009	(%)
Loans	202	50.4	301	54.0	498	52.4	555	53.6	445	48.1	327	39.2	337	41.1
Securities other than shares	197	4.8	31	5.6	79	8.3	76	7.3	74	8.0	71	8.5	72	8.7
Shares and Other Equities	33	8.1	54	9.6	95	10.0	117	11.3	141	15.3	156	18.7	158	19.2
Deposit money	27	6.8	36	6.4	60	6.3	58	5.6	42	4.5	37	4.4	3	4.5
Inter-business credits	116	29.0	129	23.2	198	20.9	208	20.1	194	21.1	182	21.8	166	20.3
Others	3	0.9	6	1.2	20	2.1	21	2.0	28	3.0	62	7.4	50	6.1
Total	400	100.0	557	100.0	950	100.0	1,034	100.0	924	100.0	834	100.0	820	100.0

Source: Flow of Funds, Bank of Japan.

Table 2 Household Financial Assets

(Unit = trillion yen, percentage)

	1980	(%)	1985	(%)	1990	(%)	1995	(%)	2000	(%)	2005	(%)	2009	(%)
Cash and Deposits	217	58.5	329	52.6	482	47.4	630	50.1	751	54.1	769	50.7	798	54.9
Bonds	27	7.4	48	7.7	64	6.3	74	5.9	48	3.5	40	2.7	42	2.9
Stocks and Other Equities	49	13.2	100	16.0	172	16.9	144	11.5	107	7.7	197	13.0	103	7.1
Investment Trusts	4	1.2	14	2.3	34	3.4	29	2.3	34	2.4	52	3.4	55	3.8
Insurance and Pension Reserves	50	13.4	102	16.3	212	20.8	319	25.4	378	27.2	391	25.8	393	27.0
Others	24	6.3	33	5.2	53	5.2	61	4.8	70	5.1	67	4.4	62	4.3
Total	372	100.0	627	100.0	1,017	100.0	1,256	100.0	1,389	100.0	1,517	100.0	1,453	100.0

Source: Flow of Funds, Bank of Japan.

Table 3 Entrepreneurial Attitudes and Perceptions

	Perceived Opportunities	Perceived Capabilities	Fear of Failure*	Entrepre-neurial Intentions**	Entrepre-neurship as a Good Career Choice	High Status to Successful Entrepre-neurs	Media Attention for Entrepre-neurship
Innovation-Driven Economies							
Belgium	15	37	28	5	46	49	33
Denmark	34	35	37	3	47	75	25
Finland	40	35	26	4	45	88	68
France	24	27	47	16	65	70	50
Germany	22	40	37	5	54	75	50
Greece	26	58	45	15	66	68	32
Hong Kong	14	19	37	7	45	55	66
Iceland	44	50	36	15	51	62	72
Israel	29	38	37	14	61	73	50
Italy	25	41	39	4	72	69	44
Japan	8	14	50	3	28	50	61
Republic of Korea	13	53	23	11	65	65	53
Netherlands	36	47	29	5	84	67	64
Norway	49	44	25	8	63	69	67
Slovenia	29	52	30	10	56	78	57
Spain	16	48	45	4	63	55	37
Switzerland	35	49	29	7	66	84	57
United Arab Emirates	45	68	26	36	70	75	69
United Kingdom	24	47	32	4	48	73	44
United States	28	56	27	7	66	75	67
average (unweighted)	28	43	34	9	58	69	53

*Denominator: 18-64 population perceiving good opportunities to start a business.

**Denominator: 18-64 population that is not involved in entrepreneurial activity.

Source: GEM Adult Population Survey (APS), 2009.

Table 4 10 Largest Stock Markets by Domestic Market Capitalization

(Unit = billion U.S. dollars)

1990		1999		2009	
1. Tokyo SE	2,929	1. NYSE Euronext (US)	11,438	1. NYSE Euronext (US)	11,838
2. NYSE Euronext (US)	2,692	2. Nasdaq OMX	5,205	2. Tokyo SE	3,306
3. London SE	850	3. Tokyo SE	4,463	3. Nasdaq OMX	3,239
4. Deutsch Börse	355	4. London SE	2,855	4. NYSE Euronext (Europe)	2,869
5. Nasdaq OMX	311	5. NYSE Euronext (Europe)	2,444	5. London SE	2,796
6. TSX Group	242	6. Deutsche Börse	1,432	6. Shanghai SE	2,705
7. SIX Swiss EX	158	7. TSX Group	789	7. Hong Kong EX	2,305
8. Borsa Italiana	149	8. Borsa Italiana	728	8. TSX Group	1,676
9. Johannesburg SE	137	9. SIX Swiss EX	693	9. BME Spanish EX	1,435
10. BME Spanish EX	111	10. Hong Kong EX	609	10. BM&Fbovespa	1,337

Source: World Federation of Exchanges (available at http://www.world-exchanges.org/statistics/time-series/market-capitalization).

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