

---

# Purifying Japan's Banks: Issues and Implications\*

---

## Randall Morck

School of Business  
University of Alberta  
3-23 Business Building  
Edmonton, Alberta  
Canada T6G 2R6  
randall.morck@ualberta.ca

## Bernard Yeung

Stern School of Business  
New York University  
44 West 4th Street,  
Suite 7-190  
New York, NY 10012-1126  
USA  
byeung@stern.nyu.edu

## Abstract

We use a simple real options framework and empirical data to establish that although Japanese banks hold borrowers' shares, their interest is more along the lines of a contractual claimant than a residual claimant of corporations. We then explain why the Japanese model of corporate governance was useful during the "catching-up" growth of that country's postwar reconstruction decades but became problematic subsequently. The interests of shareholders, creditors, workers, and managers are more readily aligned because such growth entails investment in known-technology physical-capital-intensive projects with highly predictable cash flows. Once firms are on the technological frontier, "keeping-up" growth requires risk taking and a tolerance for "creative destruction." This is better accommodated by entrusting corporate governance to firms' true residual claimants, their shareholders.

---

## I. Introduction

Japan is Asia's greatest success story, and the first major country outside the West and Western colonies of settlement to rank among the world's richest. Yet when Admiral Matthew Perry bombarded Japan in 1853 into opening trade with America, its Tokugawa economy was mainly traditional agriculture, and its society was largely frozen in a feudal caste system. How did this stagnant Asian civilization rise to world economic leadership?

Japan's unique institutions—its banks, *keiretsu* corporate groups, and unique governance and employment prac-

---

\* This paper was presented at the Asian Economic Panel meeting in Tokyo on 7 March 2005. We are grateful for comments from participants at that meeting, and especially from Eisuke Sakakibara, Juro Teranishi, Wing Thyee Woo, and Lin See Yan.

tices—are often proposed as explanations and as models for other countries. Yet these institutions are quite recent, having developed only in the second half of the 20th century (Morck and Nakamura 2005). Japan arguably “caught up” with the West, or at least its poorer regions, long before that—plausibly in the early 20th century—and did so with an economy of family-controlled pyramidal groups and conventional labor markets (Morck and Nakamura 2005). The institutions now associated with Japan are thus mainly of interest in explaining Japan’s most recent “catching up” with the West—its reconstruction after World War II.

Nonetheless, how Japan’s banks, *keiretsu*, and other unique institutions of the time achieved this feat is still of considerable interest. In 1945, Japan’s modern infrastructure was in ruins, and the success of its reconstruction is remarkable. What lessons does this era of Japan’s economic history hold for other developing economies?

We argue that the governance role Japan gave its great banks was critical to its successful and rapid postwar reconstruction. In a nutshell, this is because banks prefer stability and Japan needed economic stability during this period. Once the “catch-up” phase was complete, however, Japanese banks and their client firms were ill-equipped to participate in “creative destruction,” that is, the turnover of firms that takes place as creative new innovators rise and, in so doing, destroy staid older firms. Bankers unintentionally misallocated the savings of middle-class Japanese into more of the same kinds of investments that would have made perfect sense in the 1950s but were ill-suited to the technological developments and markets of the late 20th century. As the former sorts of investments dried up in the 1980s, bankers’ well-meaning influence over the governance of large firms in Japan’s great horizontal *keiretsu* magnified this misallocation problem into a macroeconomic crisis.

Japan’s institutions are thus well worth study in any country reconstructing after war or other similar disasters. The usefulness of such institutions in energizing long-dormant economies is unclear, for they never served that purpose in Japan. Their usefulness to economies whose growth opportunities lie mainly on the frontiers of new technology is also unclear, for institutional fault lines appeared when Japan reached this status, and Japanese institutions are now changing.

Japan’s financial system is opening up, and banks’ control over matters outside banking is passing. Traded bonds are now allowed, and other competition from foreign capital is displacing banks. These developments are sensible and are likely to “purify” Japan’s banks—rendering them “just banks” by undermining their former roles as “corporate governance advisors.” Japan’s academic, political, and business elites now realize the need for another round of institutional “selective breeding.”

Since the Japanese are proven masters at this art, it would be arrogant for outsiders (especially from the West) to proffer advice.

Therefore, this paper focuses on lessons that other economies with less successful track records at importing and domesticating foreign institutions might draw from Japan's experience. Assigning large private sector banks a role in corporate governance may well encourage "catch-up" development in a way that mitigates the cultural instability engendered by institutional transplants. But banks' voices in corporate governance must eventually be muted, for they grow less helpful as the catch-up process nears completion.

Section 2 discusses postwar Japanese institutions in more detail, and section 3 uses option-pricing theory to explain bank governance, how it accords with manager and employee governance, and how it fails to accord with growth through creative destruction. Section 4 applies this view to the governance of Japanese firms. Section 5 considers the social welfare implications of creditors, employees, and managers having dominant voices in corporate governance. Section 6 discusses how the advantages of these sorts of governance evaporate as a country approaches the technology frontier. Section 7 considers how institutions might evolve to deal with this problem, and Section 8 concludes.

## 2. The import of institutions

Institutions are both important and difficult to import. Few economists now dispute North's (1990) emphasis on "institutions," broadly defined as the legal, regulatory, religious, and social constraints that guide human behavior. Unique institutions, to some extent, surely do underlie the continued prosperity of the Western world. Yet Pistor et al. (2003), Romano (1993), and others show that institutions are also quite difficult to transplant and in foreign soil often either choke or develop into ungainly weeds.

One might quip that Buddhism reveres inconsistency as the path to enlightenment and that the Japanese energetically "Zenned" Western imports and cherished customs into new hybrid institutions that soon became uniquely Japanese. However, Japan's postwar institutions developed haphazardly, as most institutions do.<sup>1</sup>

The post-World War II American military government disbanded the great family-controlled pyramidal corporate groups, or *zaibatsu*, that dominated Japan's large

<sup>1</sup> This summary is from Morck and Nakamura (2005).

corporate sector from the late 19th century until the prewar and wartime militarization of the economy. By 1952, when the U.S. occupation ended, Japan's large corporate sector was a mirror image of America's—large, freestanding, widely held firms run by professional managers. Over the next two decades, Japanese firms experienced the same governance crises now associated with America—hostile takeovers, greenmail, and takeover defenses. In contrast to American firms in the 1980s and 1990s, which relied on poison pills, staggered boards, and antitakeover legislation to stymie raiders, Japanese firms in the 1950s and 1960s used the “*keiretsu* defense.” Japan's great commercial banks helped potential target firms swap individually small blocks of shares with each other. The resulting webs of small intercorporate block holdings accumulated to majority voting control in the formerly vulnerable targets, rendering them immune to hostile takeovers. These webs generally connected firms that had been members of the same prewar *zaibatsu* and had retained ties to that group's main bank. Freed of shareholder pressure (hostile takeovers, greenmail, and the like) and grateful to the bankers who freed them, Japan's corporate managers rebuilt their country.

But which, if any, of the institutions that emerged from this fracas were really essential to Japan's postwar miracle? Institution parsing is a useful exercise but must be conducted carefully. For example, Japan's large banks played a central role in creating modern institutions. They continued to intervene in the corporate governance of their client firms during much of the postwar period (Kaplan and Minton 1994) and presumably therefore affected capital allocation and economic growth. Banks and their affiliated insurance companies held substantial equity blocks in their client firms during those decades. Bankers joined the boards of troubled companies and presumably influenced governance. Banks organized many of the great horizontal *keiretsu* groups and played leading roles in all of them. But how can we distinguish critical institutional architecture from historical baggage?

Japanese bankers' professed decisive role in catching up with the West exposed them to (probably excessive) derision when the economy faltered in the 1990s. Japanese banks were told to divest themselves of their shares in client firms, keep their noses out of those firms' business, and deconstruct their *keiretsu*. Were the banks and the *keiretsu* mere institutional baggage all along?

In our view, banks likely played a crucial role helping Japan “catch up” with the West after the nearly complete destruction of its modern physical infrastructure in World War II. But once this process was mostly complete, the banks lost their magic because “catching up with the West” and “keeping up with the West” present different corporate governance challenges.

"Catching up" requires many things, but the most important are probably a trustworthy elite, technological skills, and extremely large amounts of capital. Japan's political and economic elites were seldom accused of the wholesale corruption that blights many developing economies. Japanese students brought foreign technological skills home, and Japanese universities acquired international status. Japanese banks placed the country's national savings at the disposal of largely honest, largely technologically competent businesses. This institutional formula let Japan "catch up."

"Keeping up" requires sustained innovation. The technology frontier moves outward as entrepreneurial firms vie to develop and apply new ideas. This too requires honesty, skill, and large amounts of capital. But it also requires a tolerance for risk and instability. Schumpeter (1912) describes the outward expansion of technological capabilities as a process of "creative destruction." Creative entrepreneurs devise new products and production techniques. Many fail, but some succeed dramatically. In succeeding, they destroy established but less innovative firms. Sustaining this process of creative destruction, with all its tendencies toward instability, is perhaps the West's major institutional achievement.

Japanese business and political leaders show increasing signs of understanding this. One might quip that, since "creative destruction" and "sustained instability" both have a Zen-like ring, neither is irretrievably alien to Japan. Japan's prospects of eventual success in "keeping up" are probably good.

Many Japanese industries are already enthusiastic participants in the global process of creative destruction. Sony led the world into miniaturized electronics, and Japanese automakers reacquainted Detroit with creative destruction. The great postwar horizontal *keiretsu*—Dai Ichi Kangyo, Fuji, Mitsui, Mitsubishi, Sanwa, Sumitomo, and the others—in which bank influence was greatest (Morck and Nakamura 1999) essentially rebuilt Japan from the ruins of World War II (Johnson 1982). Yet Japan's great modern innovators (e.g., Honda, Sony, and Toyota) are, at most, only very loosely affiliated with the country's great banks and horizontal *keiretsu*.<sup>2</sup>

In retrospect, this should hardly be surprising. Bankers rationally dislike risky borrowers, and bank-influenced firms thus invest in proven technologies with easily

2 An issue arises here concerning the definition of *keiretsu*. For example, Toyota is listed among Mitsui *keiretsu* firms, but Toyota also runs its own Toyota *keiretsu* of auto parts suppliers and other affiliated firms. Debates about the proper boundaries of each *keiretsu* are tangential to this discussion. What is germane is that Toyota avoids borrowing money from the Mitsui bank and that no bank has significant influence over Toyota's governance.

auditable value as collateral. Large swathes of Japan's economy, especially the large firms central to the great horizontal *keiretsu*, are governed much as bankers everywhere would idealize good governance. Risk is avoided and assets are made of concrete and steel. At the same time, from the perspective of top corporate executives, stable financial support is a necessary condition for large-scale investment in the commercialization of proven technologies. This double alignment of incentives permitted Japan to "catch up."

Success in financing postwar reconstruction gave the banks great credibility (Teranishi 1995). This locked in banks' dominance. Lobbying by major banks probably contributed to Japan's severe restrictions on the use of traded debt and to the consequent market power of the great *keiretsu* banks. Once a firm became dependent on a bank, switching to another was rare. This probably reflected adverse-selection problems—other bankers wondered why the firm was no longer borrowing from its former bankers and suspected hidden financial problems (Diamond 1991; Rajan 1992). But tacit collusion to limit competition cannot be ruled out. Regardless of its origin, this dependence gave bankers substantial influence over the governance of their client firms without corresponding exposure to the effects of that influence on those firms' residual cash flows. Bankers pressed borrower firms to undertake low-risk projects and shun high-risk ones (Morck, Nakamura, and Shivdasani 2000). Soon, bank-dependent firms evolved low-risk governance cultures that precluded risk-taking *ex ante*—a logical consequence of bank influence over their boards (Morck and Nakamura 1999).

Bank influence over corporate governance was probably important to Japan's success nonetheless. The resulting stability let Japanese employees and consumers spend the past half century buying wholeheartedly into modern lifestyles. Such stability is plausibly socially efficient, because employees also dislike risk, especially if large-scale low-risk/high-return investment opportunities existed during postwar reconstruction.<sup>3</sup> Lifetime employment, though never as pervasive as some Japan enthusiasts alleged, was not uncommon (Lincoln 1999). Aggregate supply rose steadily, chasing an even more buoyant aggregate demand in a "big push" toward development of the sort modeled by Murphy, Shleifer, and Vishny (1989). Factory towns prospered, and Japanese consumers developed middle-class tastes. These tastes—especially for democracy and the rule of law—accorded with the agenda of Japan's postwar political leaders.

3 This is not dissimilar from Gerschenkron's (1952) explanation of the role of banks in early German industrialization. These arguments apply more readily to postwar Japan than to previous high-growth episodes.

But once Japan caught up with the West, its banks, like ships suddenly without accustomed winds, did not know what to do next. Further debt-financed investment in steadily expanding the output of old-line industries, instead of being low risk, left banks holding huge nonperforming loans (Hanazaki and Horiuchi 2000, 2001, 2003). Yet *keiretsu* firms with closer main bank ties continued accumulating debts and investing in ever more physical capital (Morck, Nakamura, and Shivdasani 2000). The next section explores how this came to be.

### 3. Putting growth options in perspective

Firms are legal persons, usually capable of generating wealth, against whom various claimants have various rights. The firm's employees, managers, and creditors all have *contractual claims*. These parties are *contractual claimants*, for their wages, bonuses, and interest payment schedules are all set forth in contracts that define the obligations of the firm in precise terms.

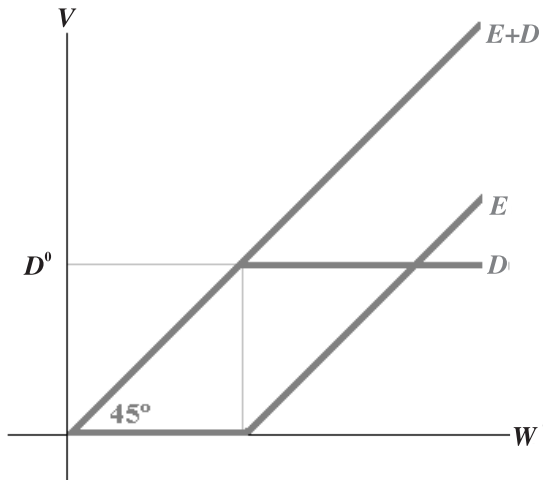
Once the firm has fulfilled those contractual obligations, all additional wealth it creates belongs to the firm's shareholders—its *residual claimants*. Residual claimants own this unpredictable residual cash flow and so must be prepared to accept gains or losses as the firm's fate unfolds. Residual claimants share proportionately in the fruits of good firm performance and in the costs of poor performance.

Employees, managers, and creditors can become residual claimants under rare circumstances, such as bankruptcies. In these circumstances, the firm lacks the resources to make good on its contractual obligations, and contractual claimants to some extent also share proportionately in the firm's fate.

But empirical evidence (see, e.g., Morck and Nakamura 1999; Morck, Nakamura, and Shivdasani 2000) shows that in Japan, as elsewhere, banks behave primarily as contractual claimants and use such influence as they have to maximize the value of their fixed contractual claims, not to share eagerly in the uncertain residual claims that customarily flow to shareholders. It seems likely that Japanese managers and employees act similarly, though direct evidence of this is not currently available. Faleye, Mehrotra, and Morck (2005) show empirically how American employees shun acting as residual claimants even if they directly own large blocks of stock. John, Litov, and Yeung (2005) show that the managers of American firms likewise behave like contractual claimants.

Upon reflection, this is sensible, for students of Japan acknowledge the importance in postwar Japan of stable wage streams and lifetime employment guarantees—

Figure 1. Shareholdings as an option



*Note:* The horizontal axis plots the value of the firm, and the vertical axis plots the value of various claims on the firm. The value of shareholders' equity in the firm,  $E$ , is zero if the firm's assets are worth  $D^0$  or less, where  $D^0$  is the wealth the firm promised to its contractual claimants—its employees, customers, suppliers, and creditors. The value of those claims is  $D$ , which rises with the worth of the firm's assets,  $W$ , until the latter exceeds  $D^0$ , after which point it remains constant.

essential characteristics of contractual, rather than residual, claims. Only recently have merit-based raises, promotions, and layoffs started to replace rigid seniority-based rules (Schmidt 1996). Likewise, Kubo (2005) shows that director “pay-for-performance” in Japan is not structured to align directors’ incentives with shareholder wealth. Japan cannot have offered corporate managers solid job and income security while simultaneously making them residual claimants in their corporations’ risky residual cash flows. While Japan was “catching up,” this inconsistency could be ignored, for residual cash flows grew steadily. Once Japan “caught up,” her great corporations had to play the game of creative destruction. The increased risk this inflicted on their residual cash flows made the contradiction impossible to overlook.

How all this happened can be illustrated with some simple diagrams of risk allocation, as commonly used in the financial economics of risk management. Figure 1 shows that, in classical finance theory, a firm should relegate corporate governance to its shareholders because only they have a clear interest in maximizing the wealth it creates.



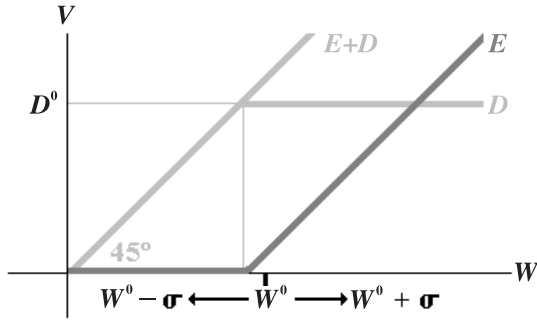
Figure 1 shows that contractual claimants (e.g., employees, managers, and creditors) obtain the full value of their claims,  $D$ , as long as the firm generates wealth  $W \geq D^0$ . As long as  $W$  exceeds  $D^0$  by a safe margin, the contractual claimants see no immediate purpose in maximizing it further. The residual claimants, the shareholders, own the remainder of the wealth the firm generates,  $E = W - D$ . Assuming efficient markets, the value of the firm to all its stakeholders (contractual and residual claimants) is  $E + D = W$ . As long as  $W \gg D^0$ , maximizing share value is equivalent to maximizing firm value. Consequently, to the extent that the presumptions of neoclassical economics apply, letting shareholders govern the firm to maximize their own wealth is economically efficient.

Well-known inefficiencies arise if  $W$  falls close to  $D^0$ . Under those circumstances, the firm's equity value can be thought of as a *call option*. A call option is a claim that gives its owner the right to buy an *underlying asset* at a predetermined *exercise price*, regardless of the actual market value of the underlying asset. The firm's shareholders can buy continued ownership of the firm's assets by *exercising* the option: paying the contractual claimants their promised dues. If the shareholders elect not to make those payments, they can walk away, but ownership of the firms' assets transfers to the contractual claimants, who must recoup what they can through bankruptcy procedures. The *underlying asset* of the call option is the firm's assets, its *exercise price* is the wealth promised the contractual claimants, and to *exercise* the option is to pay the contractual claimants their due.

This sets the stage for tragedy if the value of the firm's assets falls to, for example,  $W^0$ , a value only slightly greater than  $D^0$ , the wealth due the contractual claimants; figure 2 illustrates the situation. In this situation, shareholders rationally undertake inefficiently risky strategies because they get any upside and have little to lose. That is, if a project might generate  $W^0 + \sigma \gg D^0$ , the shareholders win big. They might undertake such a project even if it has a greater probability of leaving the firm's assets worth  $W^0 - \sigma \ll D^0$ . This lost worth is inconsequential to the shareholders, who really only lose  $W^0 - D^0 \approx 0$ .

This sort of inefficient high-risk investment plays a role in many corporate governance crises. For example, American savings and loans banks, rendered nearly bankrupt by interest rate swings associated with high inflation in the 1970s, undertook numerous high-risk investments, from real estate speculation like the White-water Development in Arkansas to junk bonds. If these gambles paid off, the owners of the savings and loan were back in the black. If they failed, as most did, the banks were near death anyway.

Figure 2. Inefficiently adventurous governance



*Note:* The shareholders, entrusted with corporate governance, rationally undertake a project that is most likely to subtract  $\sigma$  from the firm's current worth,  $W^0$ , but that might add  $\sigma$  as well. The shareholders gain from any upside risk and have little to lose from downside risk.

In general, shareholder value in a limited-liability company with debt outstanding can be represented as

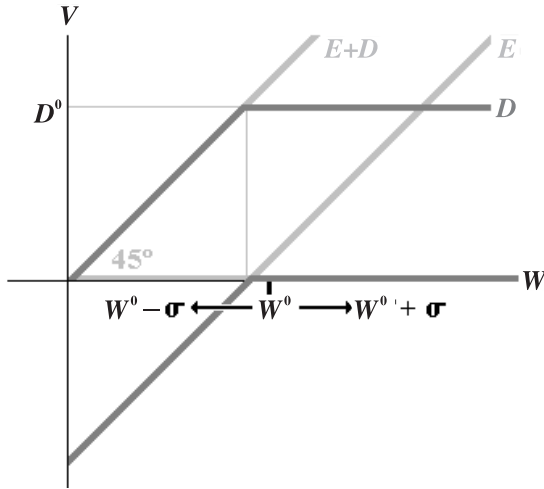
$$E = E(D^0, \sigma), \quad (1)$$

where  $\partial E / \partial D^0 < 0$  and  $\partial E / \partial \sigma > 0$ , with  $\partial^2 E / \partial \sigma \partial D^0$  positive and growing larger as  $D^0$  approaches  $W$  from below. That is, all else equal, shareholder value falls with rising nominal debt but rises as the standard deviation of the firm's fundamental value rises. The latter effect grows stronger as the nominal value of the firm's debt rises toward the firm's fundamental value.

The above analysis is a fixture in finance textbooks in the United States, United Kingdom, Canada, Hong Kong, and other countries that entrust corporate governance to shareholders or their professional fiduciaries. However, it must be turned on its head to be applied to a country like Japan, if banks have a paramount influence in the corporate governance of their client firms.

Suppose that a creditor-governed firm, initially worth  $W^0$ , has a genuine growth opportunity: a project much more likely to increase the firm's wealth by  $\sigma$  than to decrease it by that amount. The creditors see no immediate point in undertaking this project because  $W^0$  currently exceeds  $D^0$ , and they gain nothing if the firm's value rises by  $\sigma$ . If the project does lower the firm's worth to  $W^0 - \sigma$ , the creditors get only that amount, which is less than  $D^0$ .

Figure 3. Inefficiently conservative governance



*Note:* The contractual claimants, entrusted with corporate governance, rationally avoid undertaking a project that is most likely to add  $\sigma$  to the firm's current worth,  $W^0$ , but that might subtract  $\sigma$  instead. They lose from any downside risk and have nothing to gain from upside risk.

Figure 3 shows that the creditors' claim,  $D$ , is not a simple option, but rather a composite of a sure payment of  $D^0$  and a *short position* in a *put option*. A put option gives its owner the right to sell a given underlying asset at a predetermined exercise price. Taking a *short position* in a put option means being the party that stands ready to buy the underlying asset on those terms. The creditors can be thought of as having a sure claim of  $D^0$ , represented by the horizontal line at  $D^0$ , plus a short position in a put option. This means that if the firm's assets fall below  $D^0$ , their claim becomes  $D^0$  less their obligations under that put option, which amount equals the value of the firm's assets. In other words, the creditors pay  $D^0$  to buy the firm's assets, worth  $W < D^0$ . This is represented by the hockey-stick-shaped line in the lower right quadrant of figure 3. When this and the horizontal line at  $D^0$  are added together, the result is the function  $D$ .

Standard option-pricing theory shows the value of a short position in a put option to fall as the standard deviation of the value of its underlying asset rises—see any standard reference on options, for example, Hull and White (1996). Thus, figure 3, buttressed by more formal mathematical arguments in option-pricing theory, demonstrates that creditors, entrusted with corporate governance, refuse to implement economically efficient growth opportunities.

More formally, the value of the creditors' claims in a limited liability firm is

$$D = D^0 - P(D^0, \sigma), \quad (2)$$

where  $\partial P/\partial D^0 > 0$  and  $\partial E/\partial \sigma > 0$ , with  $\partial^2 P/\partial \sigma \partial D^0$  positive and growing larger as  $D^0$  approaches  $W$  from below. That is, all else equal, the value of the creditors' claims rises with rising nominal debt and with the standard deviation of the firm's fundamental value. The latter effect grows stronger as the nominal value of the firm's debt rises toward the firm's fundamental value.

Of course, these are not the only problems that can arise from entrusting corporate governance to either shareholders or creditors. Either can be incompetent or venal. In either case, powerful individuals can bend corporate policy to suit their own wishes. But the problems outlined above are especially interesting because they arise in otherwise well-governed firms. They result from fully rational and informed behavior and often entail no violation of the law.

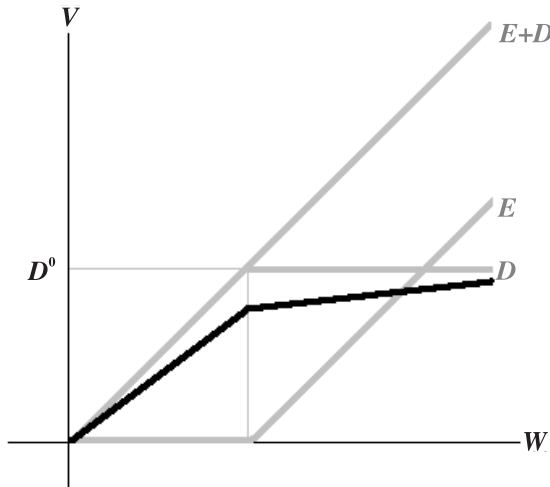
Finally, these are microeconomic effects. Individual firms, endeavoring to reduce risk, might not lead to low risks at the macroeconomic level. If low-risk investments prevail throughout an industry, or even the whole corporate sector, productivity and overall competitiveness can suffer. Other countries' firms, investing in higher-risk projects, can quickly outmatch competitors that play it "too safe." This "fallacy of composition in risks" means that low-risk microeconomic policies can put at risk the competitive advantage of an industry, or even a nation.

#### 4. The objective functions of large Japanese banks

Japanese banks hold both equity and debt claims on their client firms. This gives them cause to value both the maximization of firm wealth, since this maximizes the values of their shares in their client firms, and the curtailment of volatility in the worth of their client firms' assets, since this protects the value of their debt claims.

This means a Japanese bank's situation is actually a composite of figures 2 and 3. Suppose the bank owns fraction  $\alpha_E$  of a firm's equity and fraction  $\alpha_D$  of its debt. The value of its total claim, as a function of the firm's total worth, is  $V = \alpha_E E + \alpha_D D$ , where  $E$  and  $D$  are the values of the firm's equity and debt, as shown in figures 1 through 3. Figure 4 illustrates these relationships.

Whether Japanese banks act more like shareholders or more like creditors is an empirical question that depends on the relative values of  $\alpha_E$  and  $\alpha_D$ . If  $\alpha_E$  is near zero

**Figure 4. Main Japanese banks' combination of stakes in their client firms**

*Note:* Figure shows the value of a main bank's claims on a claim firm, of whose equity,  $E$ , it owns fraction  $\alpha_E$  and of whose debt,  $D$ , it owns fraction  $\alpha_D$ . The vertical axis gauges the value of each claim. The horizontal axis measures the fundamental value of the firm, its total worth.

and  $\alpha_D$  near one, the bank is mainly a shareholder and can be expected to use its corporate-governance sway, obtained by holding  $\alpha_E$  of the shares, to discourage risk taking when the firm's total worth,  $W$ , is not far above the face value of the firm's debts,  $D^0$ . Of course,  $\alpha_E$  must be large enough to give the bank a dominant voice in corporate governance.

It is possible to estimate  $\alpha_E$  and  $\alpha_D$  from readily available financial data, and table 1 displays these estimates for 1985, a year prior to Japan's most extreme bubble economy excesses and the subsequently stuttering economy. The average Japanese firm is 4.23 percent owned by its main bank and owes 7.27 percent of its debt to its main bank. The situation is slightly more lopsided for the median firm (4.48 percent owned by its main bank and owing 11.30 percent of its debts to its main bank). This suggests that main banks should be two to three times more worried about their client firms' debt values as opposed to equity values.

Thus, a median firm's main bank has a stake with value of

$$\begin{aligned} V &= \alpha_E E(D^0, \sigma) + \alpha_D D^0 - \alpha_D P(D^0, \sigma) \\ &= 0.113 D^0 + 0.0448 E(D^0, \sigma) - 0.113 P(D^0, \sigma). \end{aligned} \quad (3)$$

**Table 1. Debt and equity stakes of Japan's main banks in their client firms**

		Mean	First quartile	Median	Third quartile
Main banks' equity as a percentage of total firm equity	$\alpha_E$	4.23	3.10	4.48	9.64
Main banks' debt as a percentage of total firm debt	$\alpha_D$	7.27	3.56	11.30	22.50
Main banks' equity as a percentage of claims	$\gamma_E$	17.40	5.60	11.30	22.50
Main banks' debt as a percentage of claims	$\gamma_D$	82.60	77.50	88.70	94.40

*Source:* Data are from Morck, Nakamura, and Shivdasani (2000).

*Note:* The debt stakes of Japan's main banks are much larger than their equity stakes in their client firms, both as percentages of the client firms' outstanding debt and equity and as fractions of the sum of the main banks' debt and equity holdings. The sample is 322 large Japanese firms in 1985. Equity is estimated as the market value of equity in 1983, before the onset of the bubble economy, and is adjusted using subsequent years' net retained earnings to provide a 1985 estimate. Debt is taken at book value.

We argued that a main bank's preferences as to the level of risk in its client firms' strategies depend on the relative values of  $\alpha_E$  and  $\alpha_D$ , its proportional stakes in the firm's equity and debt, respectively. This can now be made more precise. Taking Black-Scholes pricing as an approximation for valuing the options in equation (3) provides a functional form for equations (1) and (2) and thus for equation (3).<sup>4</sup>

$$\begin{aligned} E &= W\Phi(d_1) - D^0e^{-rt}\Phi(d_2), \\ P &= D^0e^{-rt}\Phi(-d_2) - W\Phi(-d_1), \end{aligned} \quad (4)$$

where

$$d_1 = \frac{\ln(W/D^0) + (r + \frac{1}{2}\sigma^2)t}{\sigma\sqrt{t}} \quad \text{and} \quad d_2 = \frac{\ln(W/D^0) + (r - \frac{1}{2}\sigma^2)t}{\sigma\sqrt{t}}, \quad (5)$$

where  $r$  is the interest rate,  $t$  is the time until the firm's debt is due, and  $\sigma$  is the standard deviation of the rate of increase in the firm's fundamental value. Given this, equation (3) becomes

$$\begin{aligned} V &= \alpha_E[W\Phi(d_1) - D^0e^{-rt}\Phi(d_2)] + \alpha_D D^0e^{-rt} - \alpha_D[D^0e^{-rt}\Phi(-d_2) - W\Phi(-d_1)] \\ &= \alpha_D W + (\alpha_E - \alpha_D)W\Phi(d_1) - (\alpha_E - \alpha_D)D^0e^{-rt}\Phi(d_2). \end{aligned} \quad (6)$$

<sup>4</sup> The Black-Scholes approach to option pricing is not necessarily valid here, especially as regards the put option. This is because the approach ignores the possibility of early exercise of the option. That is, it assumes that the firm's debts are all pure discount bonds or loans, with no coupon or periodic interest payments. Default can occur at the maturity of the debt agreements, but never before. This is clearly not realistic; however, the simplification does not affect the relationship between  $\sigma$  and the value of the main bank's claims. It is also assumed that all the firm's debts come due at once. If the firm has different debt contracts with different maturities, the algebra grows more complicated, but the basic intuition remains.

By substituting equation (5) into equation (6) and differentiating, it can be shown that

$$\text{sign} \left[ \frac{\partial V}{\partial \sigma} \right] = \text{sign} [\alpha_E - \alpha_D]. \quad (7)$$

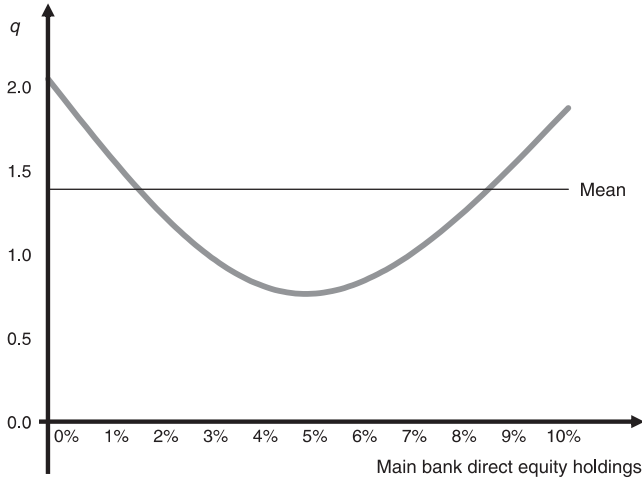
That is, Japanese banks prefer, all else equal, that their client firms minimize the risk in their fundamental values if  $\alpha_E < \alpha_D$ . This condition holds for the typical Japanese borrower firm—indeed, it holds for about 61 percent of our sample client firms for main banks' debt and equity stakes. This rises to 74 percent when we aggregate all banks' debt and equity stakes in each borrower firm.

A more natural way to express Japanese banks' overall attitude toward risk taking by their client firms is to sum the value of the main bank's debt and equity claims in each client firm and then to ask what fraction of this total reflects equity as opposed to creditor interest. This is done in the lower panel of table 1. The average bank has 4.75 times as much tied up in loans to its client firms as in equity holdings. For the median firm, the ratio is nearly eight times as much debt as equity interest.

The statistics in table 1 probably understate the lopsided nature of Japanese banks' financial relations with their client firms. Hoshi, Kashyap, and Scharfstein (1990, 1991) argue that Japanese firms' main banks, their largest lenders, often offer implicit guarantees to other banks that lend to their client firms, and even to bondholders. This greatly magnifies the banks' vulnerability to their client firms' insolvency. For example, if we take  $\alpha_E$  as the main bank's equity stake in a given client firm and  $\alpha_D$  as all its debts to banks, equation (7) holds for less than 16 percent of our sample. Japanese banks are not thought to offer any comparable implicit promise to augment, or even safeguard, the values of other equity block holders' investments.

Japanese main banks, despite owning equity, are likely to use what corporate governance suasion they have to protect the value of their claims as creditors. Their interest in their equity holdings is clearly secondary.

That Japanese banks affect the governance of their client firms seems well documented in the literature. Kaplan and Minton (1994), Morck and Nakamura (1999), and others show that bankers are inserted into the boards of borrower firms whose performance sags, that is, whose  $W$  falls toward their  $D^0$ . It is far from clear that this influence is to the long-run advantage of shareholders, for Morck, Nakamura, and Shivdasani (2000) show that larger bank equity holdings are actually associated with lower Tobin's average  $q$  ratios, although the authors also detect a significant



**Figure 5. Main Japanese banks' ownership and shareholder value, prebubble**

*Note:* In 1986, the shareholder value of a typical Japanese firm falls with the ownership stake of its main bank at low levels of main bank ownership but rises with the ownership stake of its main bank at higher levels of main bank ownership. Shareholder value is measured as Tobin's average  $q$ , adjusted for real estate and cross-holdings price inflation.

nonlinear trend. If the bank's equity stake is very large, banks' shareholdings do become positively related to firm valuation. Figure 5 summarizes Morck and colleagues' main result.

Most large Japanese firms fall on the left side of figure 5. Morck, Nakamura, and Shivdasani (2000) report that main bank ownership averages 3.59 percent, with a standard deviation of 2.22 percent. These statistics, however, come from a distribution with a very thin right tail. Although the median of the distribution is 4.18 percent, the 75th percentile is 4.99 percent. Very few Japanese firms have main bank block holdings larger than 5 percent. Japanese banks were historically permitted to hold blocks of their client firms' stock as large as 10 percent. But the 1977 Anti-Monopoly Act required all banks to reduce their ownership positions to 5 percent or less by 1 April 1987. Most Japanese banks had already complied by 1986. Consequently, figure 5 primarily indicates a negative relationship between main bank share ownership and firm value.

This is consistent with Japanese banks' using the governance voice their equity stakes provide primarily to lobby for policies that limit risk taking even though these policies maximize neither shareholder value nor overall firm value (Hanazaki



and Horiuchi 2000, 2001, 2003). Reverse causality is unlikely, for when Morck, Nakamura, and Shivdasani (2000) repeat their analysis using 1975 main bank ownership to predict 1985 average  $q$  ratios, they obtain similar results.

McGuire (2002) reports that the sensitivity of capital investment to  $q$  ratios is less for Japanese firms more dependent on bank financing. This is consistent with governance in these firms having goals other than shareholder value maximization, which would manifest in high  $q$  ratios.

Japanese banks' involvement in their client firms' corporate governance need not be entirely inimical to shareholder value. Morck and Nakamura (1999), again looking at 1980s data, find that troubled horizontal *keiretsu* firms' share prices rise significantly when bankers join their boards. This is consistent with their banks' having at least some concern for shareholder value. However, they find an insignificant decline in the values of troubled client firms not in horizontal *keiretsu* when bankers join their boards. This is consistent with horizontal *keiretsu* member firms' having main bank equity block holdings toward the right in figure 5 and highlights the dual incentives under which such banks operate.

Morck, Nakamura, and Shivdasani (2000) delve further into the influence banks exert on the governance of their client firms. They discover that higher levels of main bank ownership are associated with higher property, plant, and equipment spending. This might be consistent with main banks' encouraging their client firms to invest overly heavily in collateralizable assets, rather than intangibles such as technology or improved flexibility, even when investment in intangibles would add more to firm value (Hanazaki and Horiuchi 2000, 2001, 2003). Unfortunately, Morck, Nakamura, and Shivdasani (2000) do not directly test for a link between bank voice in governance and risk taking.

## 5. Macroeconomic effects of microeconomic risk avoidance

Society as a whole might prefer firms to adopt strategies that are either more or less risky than would maximize shareholder value or firm value. Economists usually think of social welfare as a trade-off between economic efficiency and equality; this might reflect debates between liberals and socialists within the profession. A trade-off of growth against stability might better reflect the politics of many countries, which often contain liberal and conservative parties. However, we argue that this cannot be pressed too far in a globalized economy. If domestic firms avoid risk too thoroughly, they risk falling behind their foreign competitors in productivity growth and putting their country's living standard at risk. To see the intuition behind this,

consider a good produced by both Japan and the rest of the world. If risk taking were to raise the productivity of foreign producers, Japanese firms would have to sell their output at a lower price to remain competitive. This would require paying their workers less through lower domestic wages. A depreciating exchange rate would also work, but that too would reduce domestic living standards by making imports costlier. In short, excessive microeconomic risk avoidance can create macroeconomic risk as the economy is forced to adjust to reduced competitive strength.

Corporate sector employees' claims against firms are quite similar to those of creditors. Employees, like banks and bondholders, have contractual claims against firms and share little of the upside or downside risk in their firms' operations. Faley, Mehrotra, and Morck (2005) examine U.S. firms in which employee-controlled investment funds have equity stakes greater than 5 percent and in which no other blockholder has a larger share. These firms have depressed values and follow decidedly lower-risk strategies than otherwise comparable control firms with no employee voice in corporate governance.

Assigning corporate governance powers to either shareholders or creditors might actually let a country adjust corporate governance to reflect the risk tolerance of its people. Roe (2002) and, more explicitly, Claessens and Klapper (2002) propose precisely such a policy choice. From the late 1940s through the 1960s, the Japanese people, who were recovering from earthquakes, depressions, fascism, nuclear war, and defeat, were probably especially risk-averse. Unsurprisingly, that is when Japan's main banks and *keiretsu* assumed their now-familiar economic roles. Giving creditors a role in corporate governance may not have reflected a deliberate policy objective of corporate governance that avoided risk taking, but the result was probably not unpopular with Japanese politicians and voters at the time.

Blending "catch-up" growth with job stability might be a politically appealing institutional framework for many countries in the current-day developing world, even if it necessitates further institutional changes as these countries draw abreast of those in the developed world. Western institutions cannot be transplanted piecemeal into developing countries, and the same is surely true of Japan's unique institutions.

However, there are pitfalls in this strategy. We have stressed a sort of fallacy of composition. Banks, intent on promoting low-risk microeconomic corporate strategies, might inadvertently undermine their client firms' competitive advantage in the global economy and thereby create macroeconomic problems, such as low productivity and slow growth. We believe this to be an important factor in Japan's recent macroeconomic stagnation.

Other pitfalls also merit notice. First, banks' interests, although concordant with employees' interests as regards risk taking, might diverge in other dimensions. For example, once a client firm is in financial distress, its creditors and employees compete for recompense. Ogawa (2003) shows that financially distressed Japanese firms shed jobs in the 1990s, whereas Morck and Nakamura (1999) find this only for firms outside financial *keiretsu* in the 1980s. Prolonged financial distress has perhaps made banks less able to accommodate employees' claims to retain popular support for the banks' voice in corporate governance.

Also, Rajan (1992) argues that banks might "capture" their client firms. Unable to switch banks without signaling problems with their credit, borrower firms might be trapped into paying above-market interest rates. Consistent with this, Morck, Nakamura, and Shivdasani (2000) find that higher main bank ownership is associated with higher interest costs per yen of borrowings. Caves and Uekusa (1976) also show that main banks charge their client firms higher-than-market interest rates, with the premium proportional to main bank dependence in horizontal *keiretsu* firms. Despite these higher costs, Nakatani (1984) shows horizontal *keiretsu* firms to be more leveraged than other firms. Weinstein and Yafeh (1998) discuss how Japanese banks might pressure firms whose governance they influence to borrow. All of these results are consistent with main banks' using the governance voice their equity holdings provide to direct their client firms to borrow more at higher interest rates. This might be thought of as a form of tunneling, in which banks use their governance influence to extract wealth from their client firms.

What gives bankers so much power? Certainly, firms became locked into financing arrangements with their main banks—switching to another could easily have been perceived as abandonment by the first, perhaps signaling concealed financial trouble. Certainly, client firms had few alternative sources of financing, given the severe constraints on corporate bond flotation in postwar Japan. Certainly, bankers wielded considerable political influence—probably explaining the constraints on corporate bond flotation. But another possibility, implied by John, Litov, and Yeung (2005), is that client firm managers submitted to bank influence because doing so maximized their utility too. John, Litov, and Yeung (2005) show using U.S. data that entrenched top managers behave like contractual claimants. Like banks, they seek to avoid risk to protect their claims on corporate resources.

This makes the fallacy of composition, alluded to above, even more plausible. Top managers of the large firms in Japan's great financial *keiretsu* and their main banks typically have rather short careers (Kaplan and Minton 1994; Morck and Nakamura 1999). This might induce a myopia problem. Even if corporate and bank top execu-

tives understand that avoiding risk in the short term creates greater danger in the long run, they may shun risk nonetheless if their career considerations depend only on short-term outcomes. Bankers and corporate executives may decide to continue eschewing risks as long as the long-term costs of this strategy fall due long after their retirement dates. By the time those costs become imminent, it may be too late for the cohort of bankers and corporate managers who take charge at that time to take corrective actions.

## 6. Success sows seeds of failure

This issue of myopia is actually a broader and more general concern if bankers affect their client firms' governance. In providing a functional form to the values of the options implicit in Japanese banks' claims against their client firms, equation (6) requires that we specify a maturity date for the client firms' debts. This underscores another significant difference between shareholders' and creditors' claims. Shareholders' claims are of indeterminate horizon, for shareholders can be thought of as valuing an option to buy free and clear ownership of the firm's assets and the cash flows those assets generate over a theoretically infinite horizon. Creditors' claims, in contrast, are risk-free payments at predetermined points in time, compromised by the possibility that shareholders might leave creditors with the firm's assets by exercising their option to default. The major part of the creditors' claims is thus short-term claims. Consequently, creditors might be expected to use such governance voice as their shareholdings provide to lobby for strategies beneficial to the firms' short-term prospects, despite those policies' inflicting long-term disadvantages.<sup>5</sup>

Consistent with this, Morck and Nakamura (1999) show that bankers join their client firms' boards when those firms have shortfalls in *current earnings* or *current liquidity*—among the *shortest of short-term performance measures*. Measures of longer-term performance are distinctly less useful in predicting bankers' joining boards and thus presumably banks' exercising of their corporate governance voices.

"Catching up" with the most advanced economies involves relatively capital-intensive corporate investments with relatively predictable cash flows. Japan's post-war reconstruction and "catching up" in the subsequent decades involved using existing technology to produce copies of goods made elsewhere for sale both in Japan and abroad. These sorts of investments are well suited to bank financing. They in-

<sup>5</sup> The actual situation is probably somewhat more complicated. Short-term bank loans continuously rolled over de facto imply long-term put options with indefinite maturity, implying that the bank would limit risk taking over the longer term.

involve investment primarily in property, plant, and equipment (collateralizable assets) and generate predictable returns suitable for funding interest payments. In an economy predominated by such investments, banks' focus on generating short-term cash flows might incidentally generate high growth and rising standards of living. Creditor myopia would not only stabilize the economy but also direct capital to where it is needed to "catch up" fast.

Of course, fundamental asset values occasionally fall below nominal debts owed, despite firms' following fairly low-risk policies. Hoshi, Kashyap, and Scharfstein (1990, 1991) and others show that main banks often orchestrate bailouts of their distressed client firms in such circumstances. This often involves directing other client firms to buy equity in the distressed client. This might explain the positive stock price reaction Morck and Nakamura (1999) report around bankers' joining their client firms boards, although this interpretation suggests that firms whose governance is influenced by their main banks, and who consequently participate in such bailouts, should report correspondingly reduced performance.

Hoshi, Kashyap, and Scharfstein (1990) suggest that Japanese main banks orchestrate such bailouts because they make implicit promises to "insure" their client firms' debts. That is, main banks are vulnerable not only to put options from shareholders, but also to other put options from other creditors. This effectively raises the effective value of  $\alpha_D$  above the main bank's explicit share of the firm's debts, aggravating the imbalance referred to above.

A more profound myopia, alluded to above, plausibly afflicts the top executives of the main banks. These executives often come to top positions near the ends of their careers and retire soon after taking charge. If they can delay the realization of problems at their client firms even a few years, they can bequeath their problems to their successors (Hanazaki and Horiuchi 2000, 2001, 2003).

None of this need pose serious problems to the economy as long as an abundance of value-creating investments remains. The costs of bailouts to stabilize troubled client firms can be spread across financially sounder client firms and ultimately recouped through further profitable, low-risk investments.

However, Aghion and Howitt (1992), Aghion, Howitt, and Mayer-Foulkes (2005), Fogel, Morck, and Yeung (2005), and others argue that the investments underlying "catch-up" growth and those required to "keep up" are fundamentally different. Keeping up with other rich countries requires risk taking—investing in unproven technologies and uncertain ventures. It also requires investing in intangibles, such

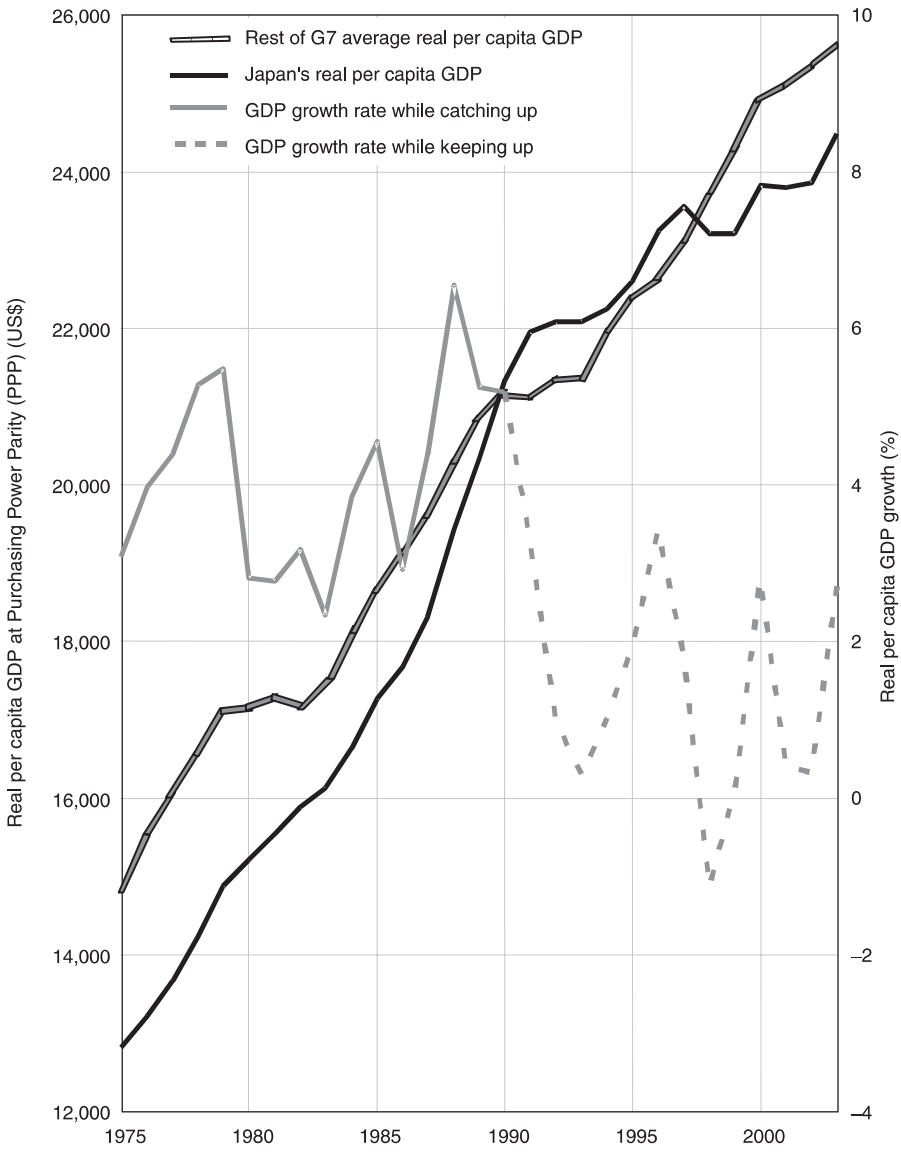
as research, process development, and productivity enhancement. All of this requires a degree of instability, for Fogel, Morck, and Yeung (2005) link more extensive turnover in countries' ranks of top corporations with faster productivity growth in high-income countries, but not low-income countries. Also, John, Litov, and Yeung (2005) and Faleye, Mehrotra, and Morck (2005) link low corporate risk-taking with both low productivity growth and low per capita GDP growth.

Japanese firms are clearly capable of undertaking risky investments. Sony, Toyota, and Honda lead the world in their respective industries precisely because of their skill in choosing such investments. But these firms are unusual in Japan for their remoteness from major banks and their strictly limited use of debt financing. All three were clearly governed through recent decades by entrepreneurial shareholders who, except in the case of Toyota, were their firms' founders. Such exceptions prove the rule that giving banks a dominant voice in corporate governance mixes poorly with entrepreneurial risk-taking. Figure 6 shows that Japan drew abreast of the other six countries in the G7 group of leading industrialized nations and then surpassed them in per capita GDP, evaluated at purchasing-power parity, in 1990. The figure also shows that this year marked the implosion of Japan's bubble economy. The arguments above suggest that this is no coincidence.

As Japan drew abreast of the world's richest economies in the late 1980s, "catch-up" investments ran out. Japanese firms could no longer grow through low-risk fixed-capital-intensive investments. Yet the governance structures of most large Japanese firms, still entrusting a commanding voice to banks, encouraged just such investments. Though these traditional investments no longer paid off as before, these firms' managers continued pouring capital into those investments as their bankers nodded assent. Japanese industries that had prospered almost continually as the country caught up now found themselves in increasingly dire straits. Value-destroying investments depressed the fundamental values of many firms toward the nominal values of their debts. As  $W$  fell toward  $D^0$ , banks would have grown increasingly nervous about risk taking, using their governance voices to minimize the put option implicit in their claims by preventing radical restructuring or dramatic strategy shifts. This, of course, only further misallocated capital.

Japanese investors, accustomed to an abundance of low-risk but financially sound investments, continued to save at a high rate and to entrust their savings to the domestic financial system. The stock market and real estate bubbles that ensued, as investment managers sought uses within their traditional bounds for the funds at their command, follow the classic pattern described by Kindelberger (1978) and are discussed in Goyal and Yamada (2004) and elsewhere. Goyal and Yamada (2004) in

Figure 6. Japan catches up with the West



Downloaded from <http://direct.mit.edu/asep/article-pdf/5/1/1/1682186/asep.2006.5.1.1.pdf> by guest on 24 May 2024

particular show that effervescent share prices probably induced further misallocation of capital during the bubble years, for they show substantial equity and convertible debt issues corresponding to likely windows of share price excesses. Thus, years of avoiding microeconomic risks triggered macroeconomic instability and then a macroeconomic crisis.

## 7. Japan's banks need purification, not just cleansing

Friedman and Schwarz (1963), in their *A Monetary History of the United States, 1867–1960*, contrast that country's fragmented banks with Canada's much larger, geographically and industrially diversified multibranch banks. They note that, while waves of bank failures paralyzed the American financial system during the Great Depression of the 1930s, no single Canadian bank of any importance failed during that decade. This has become a traditional argument among American students of bank finance for multibranch banks, interstate banking, and the internationalization of banking.

However, Kryzanowski and Roberts (1993) suggest a different lesson. They examine Canadian archival files and show that all major Canadian banks were legally insolvent during the Great Depression. With the blessing of the Canadian government, the banks simply ignored their insolvency and continued as if nothing were wrong. Canada emerged from the depression with all its major banks intact and enjoyed several decades of almost continual high growth thereafter. Perhaps one sensible way to deal with a banking crisis is simply to pretend that it does not exist until it goes away!

The Japanese government has tried this "Canadian cure" for over a decade now, but another high-growth period has not materialized. There are several reasons for doubting that the Canadian approach can work in Japan. First, the Great Depression was almost certainly primarily exogenous to Canada.<sup>6</sup> Trade barriers erected by American protectionists were undoubtedly a proximate cause of corporate and industry collapses across the country, though speculative excesses in the 1920s bull market clearly led to excess capacity in some industries, such as paper production. The Canadian government's mercantilist approach to combating deflation—the mandatory cartelization of every industry in the country—also probably made things worse. But Canada's banks owned no block holdings in their client firms. They were purely creditors but had no governance voice of any volume until their client firms actually defaulted, either formally or informally, whereupon the banks

<sup>6</sup> The following is summarized from Bliss (1987).



organized speedy liquidations. Canadian banks had no power to press their solvent client firms to eschew risk or over-invest in collateralizable assets.

Japan's ongoing economic problems, in contrast to Canada's situation in the Great Depression, are most probably endogenous. No foreign influences, such as trade barriers or a worldwide financial crisis, can be identified as proximate triggers of the 1990 stock and real estate price collapses and ensuing banking crisis. Rather, the arguments above suggest that the corporate governance voice Japan's main banks had previously used to influence the governance of many of the country's great firms was increasingly off-key.

Bailouts of some of a bank's client firms could no longer be financed by other client firms, for too many had projects that turned out to be unprofitable. Yet Hamao, Mei, and Xu (2003) show that banks continued their past policies of bailing out troubled client firms, especially those in horizontal *keiretsu*. Peek and Rosengren (2003) persuasively argue that Japan's banking regulations also encouraged such bailouts by promoting the evergreening of bad corporate loans but find this especially true for firms in horizontal *keiretsu*. If Hoshi, Kashyap, and Scharfstein (1990) are correct that main banks implicitly guarantee their client firms' debts to other creditors, main banks' implicit put options would be most dangerous in those firms, perhaps explaining this favoritism in forbearance. Neither did banks' and firms' attempts to compensate with investments in stocks and real estate pay off. The central problem, the increasing divergence of banks' natural interests in corporate governance from the corporate strategies needed for continued economic growth, requires a different approach to "cleaning up" the banking system.

The Japanese bank regulators have orchestrated a series of mergers and other stabilization programs, discussed by Hoshi and Kashyap (2004) and others. The banks' major insolvent client firms can be reorganized or liquidated as Japanese laws and regulations dictate. However, a "cleansing recession" of the sort described by Caballero and Hammour (1994) does not seem to have taken place. Hamao, Mei, and Xu (2003) find that the share prices of horizontal *keiretsu* display little of the idiosyncratic volatility that such a re-sorting of firms would probably imply.

Instead, Hoshi and Kashyap (2004) argue that continued weakness in Japan's banks and in their major client firms creates a self-reinforcing feedback, prolonging financial weakness. They argue that the continued access of many Japanese borrower firms to bank credit is a sign of this continued weakness, not of an underlying strength in the banking system. They assert that the banks' continued attempts to prop up their most important client firms and constrain their liabilities from their

put options, shown in figure 3, leave the economy anematized by legions of “zombie firms.” This leads to a productivity growth collapse without a credit crunch. Japan's antirecessionary monetary and fiscal policies of low interest rates and expansive deficit spending exacerbate this problem by transfusing more funds into zombie firms.

Hoshi and Kashyap (2004) argue convincingly that various aspects of Japan's banking regulations encourage banks to sustain zombie client firms. This seems likely, but the banks' actual ability to sustain these firms for so long is remarkable. The number of perambulating zombie firms, some apparently sustained for well over a decade by special access to bank capital, suggests that banks had substantial financial market power. Otherwise, it is hard to see how better-managed banks could have been restrained from driving out worse-managed ones.<sup>7</sup>

These arguments perhaps explain why Japan's bank regulators are considering both increasing competition in banking and muting banks' voices in their solvent client firms' governance. Truly cleaning up Japan's banks requires more than just eliminating the current crop of zombie firms by revising the rules under which banks calculate capital adequacy requirements and dispose of nonperforming loans. The banks' voice in corporate governance no longer accords with the needs of an economy as advanced as Japan has become. A hermetic seal preventing further bank influence over the corporate governance of solvent Japanese firms is in order. Japan's banks need to be pure banks—they can no longer moonlight as guardians of corporate governance, for they are no longer qualified for what that job has become. The banking system needs to be purified, not just cleaned up.

The forceful voice that Japan's system of corporate governance accorded its major banks encourages a degree of risk avoidance inimical to entrepreneurial success, a bias toward investments in tangible, collateralizable assets that leaves innovation underfunded, and a bias toward short-term investments and short-term solutions to financial problems.

One option for institutional reform is to revisit the Anglo-American system of shareholder primacy in corporate governance that was foisted upon Japan by the American occupation authorities in the immediate postwar period. John, Litov, and Yeung (2005) link stronger protection for shareholder rights to greater corporate risk taking. Claessens and Klapper (2003) report higher bankruptcy rates in market-

<sup>7</sup> Capital market power is not unique to Japan. It seems to be commonplace in developed and developing countries (see, e.g., Morck, Stangeland, and Yeung 2000; Rajan and Zingales 2003; Morck, Wolfenzon, and Yeung 2005).

oriented economies, suggesting that shareholder primacy in corporate governance permits more risk taking. But Japanese corporate executives and bankers found that system distasteful in the 1950s and early 1960s and actively undermined it. Perhaps tastes have changed.

But Anglo-American shareholder primacy is clearly not the only option. Other countries that grant banks loud voices in corporate governance, such as Germany, confront analogous problems. Germany's handful of major banks control most large firms' shareholder meetings through their proxy voting powers. Germany's largest firms have held to tried-and-true techniques and done acceptably well for decades.

Fohlin (2005) argues that, in Germany, family-controlled firms are much more important, and banks are less important, than generally realized. Family control also entails governance problems, but the controlling family (unlike a creditor) benefits primarily from raising the share price and so tolerates a degree of risk a bank would prefer to avoid. Kleeberg (1987), Fohlin (2005), and others argue that banks' role in the governance of large German firms was not always beneficial, or even benign. Franzke, Grobs, and Laux (2001) argue that banks actively subverted financial development in Germany. For example, they argue that the paucity of initial public offerings in Germany in part reflects banks' lobbying of stock exchanges to prevent the rise of competitors to their existing client firms.

La Porta et al. (1999) show that family-controlled corporate groups, similar to Japan's great prewar *zaibatsu*, remain the predominant form of corporate organization in most countries at all stages of economic development. Morck, Stangeland, and Yeung (2000) argue that these structures are vulnerable to a range of corporate governance problems and that such problems may sometimes reach macroeconomic proportions. Morck, Wolfenzon, and Yeung (2005) present a survey of the microeconomic and macroeconomic resource allocation problems inherent in concentrated control of a country's corporate sector in modern countries with *zaibatsu*-like corporate governance arrangements.

Japan need not follow the Anglo-American model of large, widely held firms whose controversially highly paid managers are disciplined by equally controversial corporate raiders and activist pension funds. Family firms might do the trick. But modern Japan is an intensely egalitarian society (Kitamura, Suto, and Teranishi 2004). The inequality in economic power inherent in a Western European-style economy of old-money family corporate empires might arouse unacceptable memories of the prewar *zaibatsu*, which were organized along those lines.

Japan's past success at domesticating foreign institutions makes it likely that Japan will find its own solution. Perhaps a Japanese system of widely held firms with modestly paid professional managers disciplined by equally modestly paid pension fund managers might emerge as another Japanese model for other nations. It is too soon to tell.

## 8. Conclusions

Japan is justly seen as a role model for other countries. It is the first large country outside the Western world to join the ranks of the world's richest countries. The institutional development that let it do so is unique in the world and worthy of study for purely academic reasons as well as practical ones.

We argue that the institutional innovations normally associated with Japan—its corporations' heavy reliance on bank financing and its great banks' involvement in their client firms' corporate governance—probably were important to the country's rapid postwar reconstruction in the mid-20th century and to its rapid economic ascent in the 1970s and 1980s. "Catching up" entailed large-scale low-risk investment in physical assets—precisely the sorts of investments best suited to bank financing.

Other countries in similar situations can learn from the Japanese experience. Countries recovering from wars, natural disasters, or other calamities that need to rebuild physical assets quickly should consider bank-centered governance and bank financing. Perhaps decades of totalitarian socialism count as this type of calamity as well, and transition economies might profit from the Japanese model. An important caveat remains, though, for Japan had already experienced high-growth periods and had a modern corporate sector prior to World War II. It clearly developed a range of institutions capable of sustaining a modern economy in the late 19th and early 20th centuries. Transition economies may well need those earlier institutions as well to follow the Japanese example.

However, the Japanese postwar experience is perhaps of more value as a negative example to countries in other situations. Certainly, many in 21st-century Japan no longer find its postwar system adequate and seem likely to move on to governance models that entrust less power to banks (Hanazaki and Horiuchi 2000, 2001, 2003). We have presented detailed explanations about why banks are ill-equipped either to finance or to monitor the governance of firms whose assets are largely intangibles—ideas, software, and the like. Indeed, we have explained how banks are likely to try to avoid risks of the sort they normally avoid, and in doing so, misdirect capital in ways that undermine the macroeconomy and ultimately the stability of the banking system itself.

If Japan's postwar experience is of limited value to developed economies, what of emerging markets? Most developing economies are not reconstructing the physical infrastructure of their corporate sectors, but rather trying to develop modern economies for the first time. Japan's initial high-growth phase, prior to World War I, occurred under markedly different institutions from those prevailing after World War II. That earlier period might be a more valuable source of inspiration to policy-makers in emerging economies seeking a Japanese model. Still, Japan's lost decade serves as a warning to other countries about the loss in economic versatility and agility that bank-centered governance models can induce if they become overly entrenched.

This is no criticism of Japan. Every extant corporate governance system has problems. The dot.com bubble in the United States shows that that country's stock market-based system has its own set of problems. The weakness or, in some occasions, the outright absence of high-tech sectors in many European countries demonstrates that the *zaibatsu*-like systems still commonplace there fare perhaps even worse. As developed nations everywhere, including Japan, move forward with further institutional reforms and experiments, it seems unlikely that future developments will give banks the sorts of power they wielded in postwar Japan.

## References

- Aghion, Philippe, and Peter W. Howitt. 1992. A Model of Growth through Creative Destruction. *Econometrica* 60 (2):323–51.
- Aghion, Philippe, Peter W. Howitt, and David Mayer-Foulkes. 2005. The Effects of Financial Development Convergence: Theory and Evidence. *Quarterly Journal of Economics* 120 (1):173–222.
- Bliss, Michael. 1987. *Northern Enterprise—Five Centuries of Canadian Business*. Toronto: McClelland and Stewart.
- Caballero, Ricardo, and Mohamad Hammour. 1994. The Cleansing Effect of Recessions. *American Economic Review* 84 (5):1350–69.
- Caves, Richard, and Masu Uekusa. 1976. *Industrial Organization in Japan*. Washington, D.C.: Brookings Institution Press.
- Claessens, Stijn, and Leora Klapper. 2002. Let a Country Adjust Corporate Governance to Reflect the Risk Tolerance of Its People. Department of International Finance working paper, University of Amsterdam.
- . 2003. Bankruptcy around the World: Explanations of Its Relative Use. World Bank Policy Research Working Paper no. 2865. Washington, D.C.: World Bank.
- Diamond, Douglas. 1991. Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt. *Journal of Political Economy* 99 (4):688–721.
- Faley, Olubunmi, Vikas Mehrotra, and Randall Morck. 2005. When Labor Has a Voice in Corporate Governance. *Journal of Financial and Quantitative Analysis*, forthcoming.

- Fogel, Kathy, Randall Morck, and Bernard Yeung. 2005. *Is What's Good for General Motors Good for America?* Stern School of Business working paper, New York University, New York.
- Fohlin, Caroline. 2005. The History of Corporate Ownership and Control in Germany. In *A History of Corporate Governance around the World: Family Business Groups to Professional Managers*, edited by Randall K. Morck, pp. 223–77. Chicago: University of Chicago Press.
- Franzke, Stefanie, Stefanie Grobs, and Christian Laux. 2001. Initial Public Offerings and Venture Capital in Germany. Unpublished manuscript, Universität Mannheim, Mannheim, Germany.
- Friedman, Milton, and Anna J. Schwarz. 1963. *A Monetary History of the United States, 1867–1960*. Princeton: Princeton University Press.
- Gerschenkron, Alexander. 1952. *Economic Backwardness in Historical Perspective*. Cambridge, Mass.: Harvard University Press.
- Goyal, Vidhan, and Takeshi Yamada. 2004. Asset Price Shocks, Financial Constraints, and Investment: Evidence from Japan. *Journal of Business* 77 (1):175–200.
- Hamao, Yasushi, Jianping Mei, and Yexiao Xu. 2003. Idiosyncratic Risk and the Creative Destruction in Japan. National Bureau of Economic Research Working Paper no. 9642.
- Hanazaki, Masuharu, and Akiyoshi Horiuchi. 2000. Is Japan's Financial System Efficient? *Oxford Review of Economic Policy* 16 (2):61–73.
- . 2001. A Vacuum of Governance in the Japanese Bank Management. In *Banking, Capital Markets and Corporate Governance*, edited by Hiroshi Osano and Toshiaki Tachibanaki, pp. 133–80. New York: Palgrave.
- . 2003. A Review of Japan's Bank Crisis from the Governance Perspective. Center for Economic Institutions, Institute of Economic Research working paper, Hitotsubashi University, Tokyo.
- Hoshi, Takeo, and Anil K. Kashyap. 2004. Solutions to the Japanese Banking Crisis: What Might Work and What Definitely Will Fail. Working paper, Institute of Economic Research, Hitotsubashi University, Tokyo.
- Hoshi, Takeo, Anil Kashyap, and David Scharfstein. 1990. The Role of Banks in Reducing the Costs of Financial Distress in Japan. *Journal of Financial Economics* 27 (1):67–88.
- . 1991. Corporate Structure, Liquidity, and Investment: Evidence from Japanese Industrial Groups. *Quarterly Journal of Economics* 106 (1):33–60.
- Hull, John, and Alan White. 1996. *Hull and White on Derivatives*. London: Risk Books.
- John, Kose, Lubomir Litov, and Bernard Yeung. 2005. Corporate Governance and Corporate Risk Taking: Theory and Evidence. Paper presented at NBER Corporate Governance Conference, May 13, 2005, Cambridge, Mass.
- Johnson, Chalmers. 1982. *MITI and the Japanese Miracle*. Stanford: Stanford University Press.
- Kaplan, Steven, and Bernadette Minton. 1994. Outside Intervention in Japanese Companies: Its Determinants and Its Implications for Managers. *Journal of Financial Economics* 36 (2):225–58.
- Kindelberger, Charles. 1978. *Manias, Panics and Crashes*. London: Macmillan.

Kitamura, Yukinobu, Megumi Suto, and Juro Teranishi. 2004. Reflections on the New Financial System in Japan: Participation Costs, Wealth Distribution and Security Market-Based Intermediation. In *Designing Financial Systems in East Asia and Japan*, edited by Joseph P. H. Fan, Masaharu Hanazaki, and Juro Teranishi, pp. 334–84. London: Routledge Curzon.

Kleeberg, John M. 1987. *The Disconto-Gesellschaft and German Industrialization: A Critical Examination of the Career of a German Universal Bank, 1851–1914*. D.Phil. thesis, University of Oxford.

Kryzanowski, Lawrence, and Gordon Roberts. 1993. Canadian Banking Solvency, 1922–1940. *Journal of Money, Credit and Banking* 25 (3):361–76.

Kubo, Katsuyuki. 2005. Executive Compensation Policy and Company Performance in Japan. *Corporate Governance* 13 (3):429–36.

La Porta, Rafael, Florencio López-de-Silanes, Andrei Shleifer, and Robert Vishny. 1999. Corporate Ownership around the World. *Journal of Finance* 54 (2):471–520.

Lincoln, Edward. 1999. Job Security in Japan. *Brookings Review* 17 (4):44–46.

McGuire, Patrick. 2003. Bank Ties and Bond Market Access: Evidence on Investment—Cash Flow Sensitivity in Japan. National Bureau of Economic Research Working Paper no. 9644.

Morck, Randall, and Masao Nakamura. 1999. Banks and Corporate Control in Japan. *Journal of Finance* 54 (1):319–40.

———. 2005. A Frog in a Well Knows Nothing of the Ocean: A History of Corporate Ownership in Japan. In *A Global History of Corporate Governance: Family Business Groups to Professional Managers*, edited by Randall Morck, pp. 367–459. Chicago: University of Chicago Press.

Morck, Randall, Masao Nakamura, and Anil Shivdasani. 2000. Banks, Ownership Structure, and Firm Value in Japan. *Journal of Business* 73 (4):539–68.

Morck, Randall, David Stangeland, and Bernard Yeung. 2000. Inherited Wealth, Corporate Control, and Economic Growth. In *Concentrated Corporate Ownership*, edited by Randall Morck, pp. 319–69. Chicago and London: University of Chicago Press.

Morck, Randall, Daniel Wolfenzon, and Bernard Yeung. 2005. Corporate Governance, Economic Entrenchment and Growth. *Journal of Economic Literature* 43 (3):657–722.

Murphy, Kevin, Andrei Shleifer, and Robert Vishny. 1989. Industrialization and the Big Push. *Journal of Political Economy* 97 (5):1003–26.

Nakatani, Iwao. 1984. The Economic Role of Financial Corporate Grouping. In *The Economic Analysis of the Japanese Firm*, edited by Masahiko Aoki, pp. 227–58. New York: North-Holland.

North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Ogawa, Kazuo. 2003. Financial Distress and Corporate Investment: The Japanese Case in the 90s. Institute of Social and Economic Research Working Paper no. 584. Osaka: Institute of Social and Economic Research, Osaka University.

Peek, Joe, and Eric S. Rosengren. 2003. Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan. National Bureau of Economic Research Working Paper no. 9643.

Pistor, Katharina, Yoram Keinan, Jan Kleinheisterkamp, and Mark West. 2003. Evolution of



Corporate Law and the Transplant Effect: Lessons from Six Countries. *World Bank Research Observer* 18 (1):89–112.

Rajan, Raghuram. 1992. Insiders and Outsiders: The Choice between Informed and Arm's-Length Debt. *Journal of Finance* 47 (4):1367–1400.

Rajan, Raghuram G., and Luigi Zingales. 2003. *Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity*. New York: Random House.

Roe, Mark. 2002. *Political Determinants of Corporate Governance: Political Context, Corporate Impact*. New York: Oxford University Press.

Romano, Roberta. 1993. A Cautionary Note on Drawing Lessons from Comparative Corporate Law. *Yale Law Review* 102 (June):2021–29.

Schmidt, Richard. 1996. Job Cutting, Japanese Style. *Human Resource Management International Digest* 14 (6):15–19.

Schumpeter, Joseph A. 1912. *Theorie der Wirtschaftlichen Entwicklung*. Berlin: Leipzig, Dunker und Humboldt. Translated by R. Opie (1934) as *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge, Mass.: Harvard University Press.

Teranishi, Juro. 1995. Saving Mobilization and Investment Financing during Japan's Postwar Economic Recovery. In *Corporate Governance in Transitional Economies: Insider Control and the Role of Banks*, edited by Masahiko Aoki and Hyung-Ki Kim, pp. 405–33. Washington, D.C.: World Bank.

Weinstein, David, and Yisheh Yafeh. 1998. On the Costs of a Bank-Centered Financial System: Evidence from the Changing Main Bank Relations in Japan. *Journal of Finance* 53 (2):635–72.