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Uncertainty, Financial Fragility and Monitoring: Will Basle-type Pragmatism Resolve the Japanese Banking Crisis?

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ABSTRACT *This paper argues that the naïve adoption of an Anglo-American approach to the management of credit risk as the prescription for Japan's prolonged financial slump would amount to a very risky strategy. The neoclassical arguments for the adoption of Basle-type pragmatism and the adoption of Anglo-American financial norms neglect the important question of how to manage Japanese lenders' uncertainty, which affects their assessment of credit risk. We point out that an ill-planned transition without mechanisms for diversifying risk and uncertainty has encouraged herd behavior in lending. We also argue that Japan's traditional rent-based mode of financial intermediation and monitoring performed important functions, including the incubation of new enterprises, and should have been retained in alternative form rather than abandoned.*

1. Introduction

It is widely argued that the accumulation of a huge volume of non-performing loans[1] in Japanese banks represents a malfunction of the traditional 'rent-based' main bank system.[2] Rent opportunities used to play a key role in creating incentives for Japanese main banks to act as long-run agents for effectively screening and monitoring borrowers as well as to manage the risk of their loan portfolios

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[1]The outstanding balance of non-performing loans held by Japanese banks hit an all-time high of about JPY 32.5 trillion in March 2001, after the bursting of bubble economy (Cabinet Office, 2001). Since then the outstanding balance has continued to climb and, as of March 2002 stood at JPY 43.2 trillion (Cabinet Office, 2002).

[2]A main bank relationship is a long-term relationship between a firm and a particular bank from which the firm obtains most of its credit. The term 'main bank system' as currently used encompasses not only these corporate financing relationships, but also the various monitoring- and governance-related practices and institutional arrangements that connect industrial and commercial firms, banks and the regulatory authorities (see Aoki *et al.*, 1994, p. 3).

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(Hellmann *et al.*, 1997; Aoki, 1994). On the one hand, the prospective benefits from monitoring efforts in the rent-based mode include the rent that a bank must earn to preserve its 'franchise value' (Hellmann *et al.*, 1997, pp. 171–174) and 'reputation' (Stiglitz, 1994, p. 223) as intangible assets for ensuring good credit risk management and efficient monitoring. On the other hand, the threat of reduced rent opportunities played the important role of preventing banks from shirking their monitoring function (Aoki, 1994). The Japanese rent-based mode of monitoring utilized a protection and sanction mechanism that was effectively controlled by the regulators. However, recent arguments tend to focus only on the negative aspects of bank rents, in particular the moral hazard consequences or the unproductive character of rent-seeking activities. The burst of the bubble economy encouraged Japanese banks (as well as banking regulators) to move from the traditional mode of screening and monitoring toward an Anglo-American mode of monitoring, which uses pragmatic criteria such as risk-adjusted returns on capital to quantify credit risks.[3] At the same time, the Anglo-American influenced Basle Capital Accord has increasingly become a normative standard for solvency regulation and therefore another constraint on the behavior of Japanese bank managers. Japanese bank managers have been encouraged to adjust to the new style of financial intermediation, monitoring and risk management (including risk-based pricing) reflected in the practices of the Anglo-American 'securities-based' financial system.

It is not evident that a rules-based assessment of credit risks that uses homogenized information flows (i.e. expected default frequency and the external ratings based upon it) can provide an effective guide to managing financial resources. The arguments supporting this rules-based approach ignore the question of how Japanese lenders are to manage uncertainty – the unmeasurable subjective probabilities that affect credit risk assessments. This paper argues that an ill-planned convergence to an Anglo-American approach to the management of credit risk, without the critical preconditions for diversifying risk and uncertainty, may have encouraged herd behavior in lending by Japanese banks. In general, uncertainty in the process of credit risk management is likely to drive lenders to watch others and seek a normative or widely accepted standard for justifying their decisions. However, a codified assessment of credit risk based on homogenized information flows can make lenders' sentiments much more volatile. This paper examines the process of herd behavior formation in lending and the resulting lender mood swings from speculative euphoria à *la* Minsky in upturns to negative spirals in reversals.

This paper also examines the understated role of bank rents observed in the heyday of the Japanese main bank system. These rents encouraged better credit risk assessments in the face of lender uncertainty. An ill-planned transition has cost Japan critical components of the rent-based system. One of these components involved rent transfers for the purpose of nurturing new enterprises. Another was a *non-algorithmic* monitoring style, which was acquired through the establishment

[3]Miyoda (1994) points out how important concepts such as risk-adjusted returns were to the revitalization of US banks. The Long-Term Credit Bank of Japan retained the Bankers Trust Company, the US investment bank that developed the Risk Adjusted Return on Capital concept in the early 1980s, as a consultant to introduce the system as the key criterion for evaluating profits and performances.

of long-term partnerships between banks and their clients. We shall utilize some of Herbert Simon's insights on bounded rationality to focus attention on important but now discarded features of the Japanese rent-based financial system. We argue that naively expecting that a transition to an Anglo-American banking system and the adoption of Basle-style pragmatism will take Japan out of its financial slump amounts to a very risky strategy.

2. The Delicate Relation Between Monitoring and Financial Regulations

We begin with a discussion of the delicate relation between monitoring (credit risk management) and financial regulation. Effective screening and monitoring by lenders and investors are critical for properly functioning capital market. Yet, 'of all the markets in the economy, the capital markets are perhaps the most complicated and least understood' (Stiglitz, 1994, p. 207). In most capital markets, it is almost always the case that individuals and firms seek more funds than are available. Efficient allocation of scarce funds requires ex ante monitoring for selecting projects to be funded; ensuring that the allocated funds are used for the purposes proposed, ongoing and ex post monitoring are necessary.

Capital markets, and in particular banking and credit markets, also need to be regulated. Credit markets deal not only with intertemporal trade but also with promises whose fulfillment is uncertain (Stiglitz, 1994; Davis, 1995). Hence these markets are exposed to a systemic risk of potential contagious runs, which cannot be prevented and resolved by the ordinary auction market mechanism. Finance is an information-intensive industry that mediates the transactions reflected in borrowers' deposit or cash flow histories and in ongoing credit relationships. The intangible nature of the information relating to a borrower's promise to repay renders such information almost impossible to transmit to markets or to other lenders through the ordinary auction market. The insolvency of a single bank could therefore lead to a collapse of the banking system, with severe macroeconomic consequences. Moreover, since banks exchange huge amounts of liquidity for the settlement of various payment orders in interbank money markets, the insolvency of a bank could trigger a system-wide bank run. This is a systemic risk that the market mechanism will not prevent; consequently, financial regulation and government intervention are critical to financial stability.

Most banking textbooks emphasize liquidity risk – the inability to obtain funding for current obligations. Instruments like deposit insurance and central bank lender of last resort facilities have been developed to counteract liquidity risk by maintaining confidence in banks. The more important and more complicated issue for banking regulators is how to discourage banks from acquiring bad loans in the first place. Monitoring banks is costly and necessarily imperfect because of (1) the element of *uncertainty* in credit risk assessments (the difficulty of estimating the *subjective* probability of default); and (2) *asymmetries of information* between banks and banking supervisors, which can possibly create an inefficient protective structure, resulting in moral hazard problems in the loan portfolio management by banks. As Stiglitz (1994) points out, the structure of financial markets is in some important respects vastly different among major

capitalist economies. The differences are important; each country's institutions reflect an adaptation to particular cultural or economic circumstances. It follows that the appropriate rules for socializing risk and uncertainty to allow better monitoring and more efficient allocations of financial capital may vary according to historical circumstance.

Aoki (1994), Davis (1995), Dore (2000) and Stiglitz (1994), among others, have made useful comparative analyses of the economic and financial systems of Japan and the United States. A common observation is that banks play a dominant role in corporate finance in Japan, while the financial role of US banks is largely limited to making short-term working capital loans. Securities markets in Japan are relatively underdeveloped, while more long-term funds are mediated through bond and equity markets in the United States. Bank loans amounted to at least 90% of total corporate finance in Japan in the past, while American banks contributed no more than 30% (Davis, 1995, p.37).

Each financial structure evolved over a long period on the basis of country-specific conditions, and therefore could not easily be reproduced elsewhere (Davis, 1995). Japan, however, has been encouraged to abandon its traditional financial system. Since the mid-1980s Japan has moved to adopt the Anglo-American type of financial deregulation that has been promoted and propagated by the United States. Although American banks play a limited role in providing corporate finance, they are subject to strict disclosure rules and tight capital adequacy requirements. At the same time, US regulators, worried that the tighter capital adequacy standard might cost US banks their competitive edge in international financial markets, promoted the establishment of an international capital adequacy standard at the Basle Committee. In the US financial system, the diversification of risk and uncertainty is accomplished through securities markets comprised of a large and diversified base of investors. This unique structure (see Suzuki, 2002, pp. 222–226 for the details) allows and encourages US banks to avoid large exposures to particular companies or industries. By contrast, given the predominance of Japanese banks in corporate funding, the limitation of their important financial intermediary and monitoring roles has had profound implications for the Japanese economy.

3. Uncertainty

Uncertainty makes our decision processes complex and volatile. Volatility stemming from lenders' uncertainty, in particular, in terms of subjective probability in credit risk management, is a crucial factor contributing to the systemic fragility of financial markets (Meltzer, 1982; Davis, 1995). Uncertainty often encourages agents to adopt rules of thumb because standardization and coordination may be more effective than individual prediction (Simon, 1996, p. 42). However, such standardized rules of thumb can themselves become constraints on our decision-making: if they acquire the status of norms, they can reduce us to mere engines of procedural rationality. In international banking and credit operations, a codified assessment of credit risk in purely quantitative terms by inference from the statistical Expected Default Frequency or EDF is now a widespread practice. The codified rule of thumb encourages lenders to measure expected credit losses

mathematically and to maintain a capital buffer against unexpected credit losses. To promote the stability of international banking and credit markets, banking regulators at the Basle Committee on Banking Supervision (BCBS) established a required capital ratio of 8% as the internationally acknowledged capital cushion; lenders are discouraged from assuming credit liabilities that cause their capital ratio to fall below this threshold. But the convergence to standardized credit risk modeling creates a homogenized information flow and, in fact, undermines financial stability by amplifying herd behavior in lending.

Since the consequences of actions extend into the future, accurate forecasting is essential for making objectively rational choices. But in the real world, most choices take place under conditions of uncertainty. Frank Knight (1921) drew a famous distinction 'between "measurable uncertainty" or "risk", which may be represented by numerical probabilities, and "unmeasurable uncertainty" which cannot' (Ellsberg, 1961). This paper adopts the Knightian definition of uncertainty as the subjective assessment of the likelihood of events whose objective probability is not susceptible to measurement. Subjective probability can be distinguished from statistical or objective probability in the sense that uncertainty cannot be reduced to measurable risks. Uncertainty may be more or less ignored or, alternatively, subjective probabilities may be applied, together with a risk premium, to cover unspecified adverse events. Since there is no precise economic theory of how decisions are made under uncertainty, agents tend to observe each other's responses and do not deviate widely from the norm regarding which factors should be taken into account and how much weight should be assigned to them. However, 'when the crowd is wrong *ex-post*, there is the making of a financial crisis' (Davis, 1995, p. 135).

We can assume that uncertainty in credit risk management drives lenders to observe others and seek a widely accepted normative standard for justifying their decisions. Bikhchandani & Sharma (2000) suggest several reasons why a profit maximizing investor should be influenced by the behavior of others. First, others may know something about the return on a particular investment, and their actions reveal this information. Second, individuals may have an intrinsic preference for conformity. Third, the compensation schemes and terms of employment of money managers may be such that imitation is rewarded. According to Bikhchandani & Sharma (2000, p. 10), if an investment manager and his employer are uncertain of the manager's ability to pick the right stocks, conformity with other investment professionals preserves the fog – that is, the uncertainty regarding the ability of the manager to manage the portfolio. This benefits the manager and, if other investment professionals are in a similar situation, then herd behavior occurs.[4] Bikhchandani & Sharma also note the recent research on herd behavior among investment analysts, and the rising 'skepticism about the "independence" ' of research findings of investment banks and other researchers about the prospects of firms who are their clients or would be clients.

[4]As Keynes (1931, p. 176) observed, 'a "sound" banker, alas!, is not one who foresees danger and avoids it, but one who, when he is ruined, is ruined in a conventional and orthodox way, along with his fellows, so no one can really blame him.'

In addition to the adoption of pragmatic rules of thumb, such as the statistical EDF or external ratings based upon it, loan managers rely upon newsletters such as the *International Financial Review* or *Basis Points* that indicate the yield curve of spread margins in each rating category. The over-reliance on rules of thumb, ratings services and newsletters can amplify the volatility of market sentiment, causing euphoric over-lending in upturns and severe credit rationing in reversals, as in Minsky's financial fragility hypothesis (see Minsky, 1977). In the scenario described by Minsky,

> Some event increases confidence. Optimism sets in. Confident expectations of a steady stream of prosperity, and of gross profits, make portfolio plunging more appealing. Financial institutions accept liability structures that decrease liquidity, and that in a more sober climate they would have rejected. The rise is under way, and may feed on itself until it constitutes a mania . . .. Yet euphoric speculation, with stages or with insiders and outsiders, may also lead to manias and panics when the behaviour of every participant seems rational in itself. This is the fallacy of composition, in which the whole differs from the sum of its parts. (Kindleberger, 1996, pp. 29–30, 34)

The mechanism by which homogenized credit information flows lead to financial fragility can be described as follows. When external rating agencies such as Standard & Poor's maintain an unchanging rating category for a particular borrower (or country), a codified assessment of credit risk (the statistical EDF or the external ratings based upon it) may cause lenders to adjust their subjective probabilities toward the statistical or codified ones. As a result, lenders may be more inclined to take risks even if subjective ex ante risk premiums are not fully reflected in pricing. Needless to say, herd behavior in lending does not necessarily reduce the asymmetric information problem typically observed between lenders and borrowers. Rather, the codified assessment of credit risks with homogenized information flows attenuates lenders' incentives to monitor borrowers on their own. The stronger is the confidence in the external information, the weaker will be their confidence in their own information acquired from direct credit relations with borrowers.

When external rating agencies offer a positive outlook moving towards an upgraded category, the codified assessment of credit risks may drive lenders to reduce risk premiums further. The expectations of better ratings may encourage competition for loan exposure, because the expected risk-adjusted return on the current EDF can be expected to shift favorably. This process may lead to euphoric speculations à *la* Minsky. There also ensues a game of chicken in which players assume that they can exit just before the bubble crashes.

When external rating agencies issue a negative outlook towards a downgraded category, in particular when they downgrade a borrower unexpectedly, the codified assessment of credit risks may lead to panics in which lenders call in their loans. In accordance with the extent to which the codified assessment with the homogenized external information attenuated lenders' incentives to monitor borrowers on their own, the sudden reversals may amplify the panics. This is because the lost confidence in any information would increase lenders' uncertainty. Lender panics may also be explained in terms of loss aversion. If

a sudden reversal causes actual losses to banks, lenders may act sharply to reduce their exposure; the result may be a negative spiral or trap in which no lender is willing to take risks, even if a very high risk premium is offered.

4. Internationally Accepted Credit Risk Management

The Basle Committee has urged banking regulators to encourage the adoption of an internationally accepted model for quantifying and aggregating credit risks (see Basle Committee on Banking Supervision, 1999a, p. 8). At the same time, standard Credit Risk Modeling has become increasingly important in banks' risk management and performance measurement processes, including performance-based compensation, customer profitability analysis, risk-based pricing (Basle Committee on Banking Supervision, 1999a, Summary). Although there are a range of practices in the conceptual approaches to modeling, from the simple to the complex, the Committee's focus is on models that estimate a portfolio's current value and the probability distribution of its future value at the end of the planning time horizon. In general, a portfolio's expected credit loss can be defined as the difference between the two, and the key issue is how to determine the expected probability of default (often termed the expected default frequency or EDF) as a critical model input.

Basically, the internal credit risk rating for each client firm as determined by a bank's credit staff has been a key criterion for determining the EDFs. Thus, the EDFs adopted in each bank may vary according to its own circumstances and credit strategy. But the Basle regime has also encouraged lenders to utilize statistical external rating systems, such as Standard & Poor's or Moody's ratings for corporate bonds, to justify its own EDFs. The Basle Committee has decided, in its New Accord proposal, to promote the replacement of existing approaches with a system that would use external credit assessments for determining risk weights. The Committee wants to ensure that the regulatory capital charge under the internal rating-based approach is determined in a manner that ensures accuracy and consistency with the standardized approach based upon external credit assessments (Basle Committee on Banking Supervision, 1999b, pp. 37–40).

It has been suggested that the basic methodology in credit risk models promoted by the BCBS has been driven by US regulators' pursuit of a 'level playing-field' for US banks subject to the constraints of Anglo-American financial rules. Some risk management instruments are necessary as economies become more complex of course, but the codified assessment of credit risks under the Anglo-American system does not appear to have universal applicability. In so far as a complete set of risk markets is absent, it is impossible in theory to determine the definite value of the EDF without risk of error, even from myriad of data sets. Even when the credit rating transition matrix (the probability of migrating to another rating within one year) provided by external rating agencies is statistically significant, it cannot indicate in which direction a particular customer will be migrating. As Herbert Simon reminds us, our existing knowledge cannot provide a basis for the precise calculation of mathematical expectation:

> No number of viewings of white swans can guarantee that a black one will not be seen next. . . . Reasoning processes take symbolic inputs and deliver symbolic

> outputs. The initial inputs are axioms, themselves not derived by logic but simply induced from empirical observations, or even more simply posited. . . . The processes that produce the transformations of inputs to outputs are also introduced by fiat and are not the products of reason. (Simon, 1983, p. 190)

Regardless of the arbitrariness in the rules of inference, lenders use the statistical EDF and the external ratings based upon it as a critical input for measuring credit risk, because they are required by their banking regulators to adopt normative procedures for calculating the capital adequacy requirement as well as for risk-based pricing. In the past, bankers were considered professionals in screening and monitoring, and banks played the important role of mediating a stable flow of long-term funds to new industries and middle-sized enterprises. External-rating agencies played the limited role of providing the credit profiles of bond issuers for the sake of non-professional investors who had limited capacity to assess credit information. As lenders came increasingly to rely on the statistical EDF provided by external rating agencies for publicly rated corporate bonds, bank lending began to conform to investors' behavior in bond markets. In the US securities market, regulators favor a competitive and less protective framework, based on the neoclassical belief that such a market-oriented mechanism backed by a large and diversified base of investors would efficiently allocate financial resources. In this framework, the financial intermediaries have increased their capabilities by specialization in credit risk assessment and monitoring. The existence of a large and diversified base of investors with quite different animal spirits and initiatives is essential for providing finance for the entire range of economic activities in a growing and changing economy. As long as the base as a whole has the capacity to absorb many different types of risks and uncertainty, the investment market functions well. But this implies that the Anglo-American financial system is not universally applicable, since other countries may not possess the large and diversified base of investors which is a critical foundation of the system.

The Japanese banks have tried to adopt their mode of lending and monitoring to the Anglo-American model without the preconditions or alternatives for diversifying risks and uncertainty. This transition has exacerbated the 'crowd psychology in lending', and has had a deleterious effect on the mediation of financial resources. For instance, small or middle-sized firms have limited access to loan markets until they acquire external ratings.[5] And firms that fail to be rated may be forced to accept loan conditions severe enough to compensate for the banks' uncertainty about their creditworthiness. Higher pricing may lead borrowers to pursue riskier projects – a moral hazard problem identified by Stiglitz & Weiss (1981).

5. Bank Rents and Lenders' Uncertainty

Here we discuss the understated role of bank rents in the traditional rent-based mode of monitoring. These rents facilitated the channeling of financial resources

[5]The credit contraction that triggered a public outcry in Japan in 1997 was at least partly the result of changes in the mode of screening and monitoring adopted by Japanese bank managers.

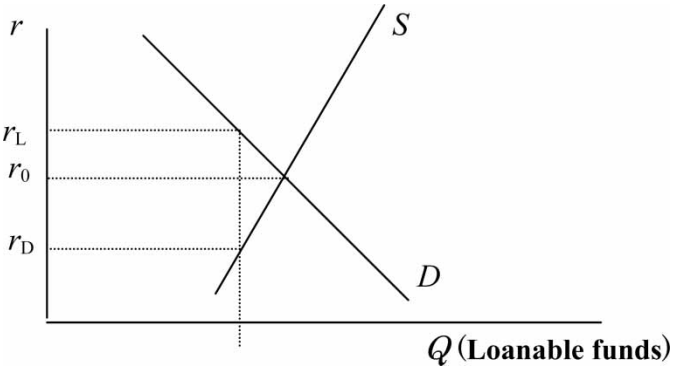

Figure 1. Financial sector rents as incentives for portfolio monitoring

to new industries and the pooling of monitoring skills and knowledge, by socializing lenders' uncertainty. Bank rents create incentives for banks to operate as long-run agents who monitor firms effectively and manage the risk of their loan portfolios. Beyond the monitoring perspective, the analysis of bank rents has provided new tools for investigating the role of financial institutions (Khan, 2000). We need to examine what Japan lost and should have preserved in its transition to an Anglo-American mode of screening and monitoring.

The Stiglitz & Weiss (1981) model is of importance to show that credits are intrinsically rationed due to asymmetric information problems. Since lenders cannot perfectly and costlessly monitor the behavior of borrowers, the price mechanism does not clear the excess demand for loanable funds.[6] For instance, even when a borrower deemed by a bank to be uncreditworthy offers to pay higher interest rates, the bank may decline the loan application, because this offer is interpreted as a signal of higher default risk. Hellmann *et al.* (1997) expand this theory by arguing that if government-imposed ceilings on the deposit rate are below the market-clearing rate, rent opportunities may emerge which give banks strong incentives to monitor their portfolio more carefully.

According to this financial restraint framework, the household sector supplies funds, the corporate sector is a user of funds, and banks act as financial intermediaries. Figure 1 shows the market equilibrium at interest rate r_0 as the intersection of a supply curve of household funds and a corporate demand curve for funds. If the government intervenes in the financial sector by regulating the deposit rate of interest, rents can be captured by financial intermediaries. The new lending rate will be r_L and the gap between the regulated deposit rate r_D and the market

[6]Market failure in credit markets, such as credit rationing even in equilibrium, can be caused by information asymmetries between lenders and borrowers. However, information asymmetries do not always lead to market failure in credit markets. In my view, the market failure peculiar to credit markets would be caused by divergences between the state of confidence of lenders and borrowers in the information used to assess risk or in the reliability of the instrument for measuring risks. Under conditions of uncertainty swings of confidence are apt to be substantial.

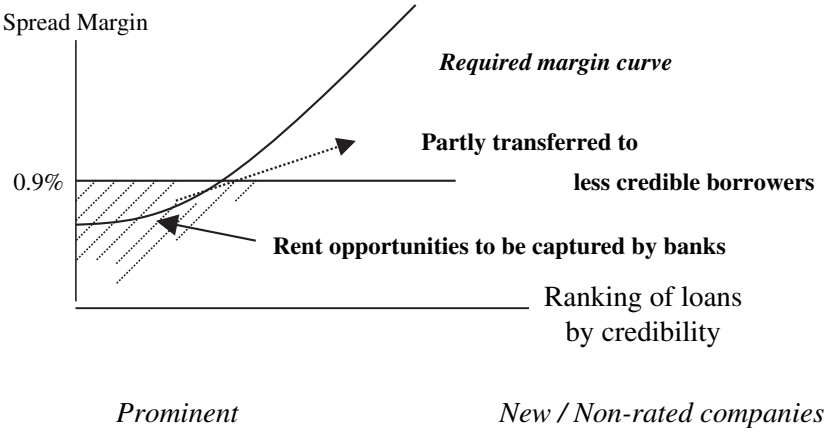

Figure 2. Potential bank rents on transfers to less credible borrowers

lending rate r_L is the source of the rent. The rent will continue to be available for owners of banks only if the banks' portfolio of assets and liabilities is managed sufficiently well to keep the portfolio solvent (see Khan, 2000, p. 58). This financial restraint framework was a key element of the Japanese financial system in which major banks played important roles, at least in the catching-up period, as financial intermediaries and monitors for the allocation of financial resources.

5.1. Bank Rents on Transfers to New Enterprises

In a closed financial system, even large borrowers would have to pay higher spread margins than they would pay if they could raise funds in international financial markets. The rent in terms of excess spreads is likely to be captured by banks. In the case of Japan before financial differentiation,[7] the lending rate, in particular, the long-term lending rate (Long-Term Prime Rate or LTPR) was strongly controlled and was fixed at the level of 0.9% over the coupon rate (funding rate) of the 5-year debenture which long-term credit banks are privileged to issue.

Figure 2 illustrates the mechanism, which may have contributed to incubating new enterprises and ventures through the transfer of rents. A particular firm's credit ratings and statistical EDFs for its credit category allow us roughly to estimate a range of expected interest-rate margins, in which the firm would be able to raise funds in the market. We can then draw the *required margin curve* – the relation of the expected spread to the credit ranking of each borrower. In a closed financial system, a gap between the required margin curve for large borrowers and the regulated LTPR may possibly arise as rent opportunities to

[7]Financial differentiation accelerated in Japan in the 1980s: in 1984 the prohibition was lifted on short-term Euro yen loans (which were not subject to interest rate controls) to domestic borrowers; the gradual removal of restrictions on access to the corporate bond market began in 1987.

be captured by banks if large companies cannot easily tap into international financial markets. Meanwhile, another gap between the required margin curve for new enterprises or small companies and the regulated LTPR may be covered with the transferring of rents, in the sense of financing them with lower interest rates than such small borrowers would have to pay if they would attempt to raise funds in international financial markets. To the extent that this transfer creates social benefits as a whole, the rent for incubating infant corporations or industries can be justified.

This mechanism can attenuate adverse selection/moral hazard effects. Stiglitz & Weiss (1981) claim that as interest rates for borrowers rise, it becomes increasingly likely that only risk-loving borrowers or borrowers with no intention of repaying will keep borrowing. However, a closed financial market keeps good borrowers in the domestic debt market and creates the rent opportunity for incubating new enterprises by financing them with lower interest rates. From the lenders' viewpoint, the rent opportunity may function as a buffer for them to underwrite venture capital, and the lower spread condition may contribute to raising the probability of success in investment projects. This mechanism may partly stabilize swings in lenders' confidence.

On the other hand, the incentive to screen and monitor new enterprises can be weakened because banks can enjoy more rents by concentrating their portfolio on large borrowers. In the case of Japan, this problem did not arise so significantly in the catching-up period. In the Japanese main bank system of relationship finance (Aoki *et al.*, 1994), the main bank played the important roles of allocating financial resources and of ensuring that the allocated funds be used in the way promised. In post-war Japan, having a good main bank relationship with one of the major banks was the cornerstone of corporate financial strategy, and virtually essential for corporate success. Of course, as seen in the post-war *keiretsu* system, the major commercial banks played a unique role as main banks for those firms and enterprises within their groups, a role that stemmed from the historical context of a relatively decentralized exclusive group (*zaibatsu*) banking system. Even throughout the post-war period and the adjustment to slower economic growth from the mid-1970s, the main bank was deeply involved as a quasi-partner in mapping out the strategies of its client firms, particularly those firms within its *keiretsu* group. For instance, the bank occasionally played the role of nurturing entrepreneurs who were considered strategically important for integrating and internalizing supporting industries for its core business in order to enhance the group's competitiveness. The mechanism of transferring rents described above was well-suited to the post-war period, when banks and Japanese enterprises worked together to revitalize their groups. These arrangements underpinned what came to be called Japan Incorporated.

Dealing with lenders' uncertainty is difficult but very important for the efficient allocation of financial resources while maintaining financial stability. Adverse selection or moral hazard problems in credit markets have a complex relationship with the issue of how to manage lenders' uncertainty. For example, the *keiretsu* system in Japan may have created a moral hazard by encouraging main banks to make credit easily available to companies within their group. In this case, rents are no longer effective in ensuring responsible

management of banks and the efficient allocation of funds. On the other hand, the mechanism of transferring main bank rents in a partnership strategy may have contributed to the incubation of new enterprises and to the stabilization of swings in bank confidence. There is a trade-off relation between financial differentiation and financial intermediation by banks for nurturing ventures, in particular, in a special context of the Japanese 'bank-based' financial system. This is why it is important to examine what conditions and mechanisms would increase or decrease the positive effect of bank rents.

5.2. The 'Lost' Japanese Approach to Credit Risk Management

Shiro Yokoi, an influential Japanese banker, pioneered the so-called 'limited recourse loan' or 'project finance'. In such an arrangement, the lender, while coordinating the complicated interests of the concerned parties to a project, bears a portion of the project's risk on the condition that the projected cash revenue is pledged as security. Needless to say, a great deal of skill is required to structure limited recourse loans and to assess the risks associated with them. Consequently, higher spread margins are awarded for undertaking higher risks. Interestingly, although Yokoi talks about 'risks' in his book on *Project Finance*, in fact, lender confidence (at least, in a *subjective* sense) that there is 'no risk at all', was a prerequisite for approving any loan application, including rescue operations (Yokoi, 1985, p. 272). In the heyday of the main bank system, Japanese bankers did not use the concept of probability of default in their screening and appraisal process. The relation based non-algorithmic style encouraged an *all or nothing* approach to credit risk assessment.

Herbert Simon's concept of bounded rationality recognizes that 'a great deal of the success of human beings in arriving at correct decisions, is due to the fact that they have good intuition or good judgment' (Simon, 1983, p. 200). Simon's intuitive model is related to the non-algorithmic style described above:

> What is intuition all about? It is an observable fact that people sometimes reach solutions to problems suddenly. They then have an 'aha!' experience of varying degrees of intensity. There is no doubt of the genuineness of the phenomenon. Moreover, the problem solutions people reach when they have these experiences, when they make intuitive judgments, frequently are correct. (Simon, 1983, p. 201)

Many executives may find Simon's account of their intuitive decision processes persuasive. Under the main bank system, experienced Japanese bankers seem to have identified credit risks by intuition, whereas more junior lending officers often would not be able to recognize problems with clients whose staffs were later accused of covering up serious losses. Sometimes, in spite of positive recommendations by junior officers, the suspicions of veterans were raised by an examination of the profit and loss account of a firm with a hidden liquidity problem. There are many episodes in which Japanese veterans' first impulse was correct.

Intuitive decision processes were also applied to the underwriting of venture capital. No stereotyped assessment of financial statements of new enter-

prises can accurately identify the good prospects under conditions of uncertainty. Fast Retailing Co., Ltd., which became Japan's top casual clothing chain under the UNIQLO brand, recorded net sales of JPY 418.6 billion in fiscal year of 2001. But its financial statement in fiscal year 1996 showed that the company was still a middle-sized unlisted retailer with net sales of JPY 59.9 billion. Rakuten Inc., whose CEO is one of the most popular figures in the newly emerging E-commerce and internet shopping-mall business, recorded net sales of JPY 3,089 million with ordinary profits of JPY 970 million. The company started its business in 1997 and had a net loss of JPY 18 million in its first financial report.

How did Japanese bankers acquire a reliable intuitive monitoring style? Simon (1983) points out two interesting features of 'intuitive rationality'. One is that it emerges only in people who possess the appropriate knowledge; Simon refers to Henri Poincaré, who suggested that inspiration comes only to the 'prepared mind'.[8] The other is that intensive learning and practice are required to acquire intuitive rationality. Simon referred to empirical data gathered by John R. Hayes, on chess masters, composers, painters and mathematicians. Hayes found that 'Almost no person in these disciplines has produced world-class performances without having first put in at least ten years of intensive learning and practice' (Simon, 1983, p. 203). Both of these conditions were present in the post-war Japanese financial system.

The Japanese system relied on the cultivation of long-term partnership relationships. Japanese bank managers based their credit risk assessment largely on the analysis of actual and projected cash flows. Through this process of analysis, they acquired the appropriate knowledge for monitoring their clients. The main banks were in a position to compel their client firms to open checking accounts for clearing almost all of their payment transactions. This arrangement enabled the bank managers and officers in charge to monitor the borrowers' outflows of funds because their promissory notes and checks for accounts payable were addressed to the bank. At the same time, loan officers usually contacted the clients on an almost daily basis to collect their bills of accounts receivable, enabling them to monitor the borrowers' projected inflows of funds. The ability and right to monitor clients' flows of funds were presumably important to the main banks, who otherwise would have been less willing to act as incubators or partners. Most firms consulted their main banks about their cash management and about their working capital needs. The main banks taught cash management skills when necessary and gave warning when clients' projections seemed too optimistic. The partnership strategy created by monitoring dynamic flows produced a positive incentive for the Japanese main bank officers and managers to support their client firms. At the same time, the partnership arrangement enabled them to acquire a higher capability of monitoring, which put banks in a better position to make intuitive credit risk assessments. The main banks'

[8]Poincaré, a French scientist and mathematician, insisted that mathematical reasoning is not based upon logical understanding such as the syllogism but is a kind of creative virtue (Poincaré, 1952, p. 3).

central role in the Japanese economy enabled them to recruit graduates from elite educational institutions; the quality and morale of their staff were exceptional. The banks cultivated an organizational ethics that encouraged managers and lending officers not only to pursue business profits but also to evaluate the social value of their clients and their businesses and to support clients and projects considered socially beneficial.

The relation-based non-algorithmic monitoring skills of bankers were acquired through a process of trial-and-error. In Japanese society, 'practicality outweighs the theoretical element' (Schinzinger, 1958, p. 125) and intuitive methods acquired through trial-and-error have traditionally been highly respected.[9] An intuitive style of monitoring ran the risk of error, of course, as does any managerial style. For instance, hopeless borrowers were sometimes carried for much longer than circumstances warranted, with the result that the costs of the eventual defaults were higher than they would have been had the loans been terminated earlier. However, bank rents created incentives for the Japanese main banks to manage their loans effectively over the long run. Moreover, bank rents facilitated the development of relation-based non-algorithmic monitoring approaches, which require skills acquired through trial-and-error. And the profits and franchise value which the bank earned through more effective management of their loan portfolios may have given their staffs the incentives and time to improve their non-algorithmic monitoring style, which in turn would have contributed to the profitability and the long-run reputation of the banks.

This relation-based non-algorithmic monitoring style, however, seems to have disappeared after the late-1980s. The Returns on Assets (ROA) captured by Japanese banks were already declining by the 1970s because of more intense competition resulting from 'internationalization and disintermediation' (Schaberg, 1998).[10] To compensate for the decline of their ROA and maintain their nominal profits, many Japanese banks had to reduce their monitoring costs or expand their loan assets using leverage. At the same time, financial deregulation was undermining the foundation of the rent-based mode of monitoring.

[9]It is notable that early twentieth century Japanese philosophers and intellectuals such as Nishida Kitaro and Kobayashi Hideo were strongly influenced by French philosophers such as Henri Bergson and Henri Poincaré. Bergson criticized efforts to make all the phenomena in the world subject to 'causality', a typical viewpoint of modern natural science. Rather, he insisted on the role of the creative mind and emphasized the internal point of view for understanding reality (Bergson, 1992). Bergson's focus on how *real time*, whose essence is to flow, eludes mathematical treatment, points to the limitations of pragmatic monitoring solutions. His perspective has much in common with Shackle's argument that 'Time is the denial of the omnipotence of reason' (Shackle, 1972, p. 27).

[10]Empirical studies indicate a structural change in the relationship between Japanese banks and Japanese corporations due to internationalization and technological change since the mid-1970s (Aoki *et al.*, 1994; Schaberg 1998). As Japanese manufacturers shifted their production base abroad, they acquired access to a wider variety of funding sources such as local financial markets and offshore or Euro capital markets. But monitoring has become more difficult with the increasing complexity of technology and as borrowers invested in projects whose prospects outsiders find increasingly more difficult to assess.

Deposit rate deregulation had steadily progressed since its initiation in 1984 and was completed in 1994. In 1986, one Japanese 'long-term credit bank' changed its credit analysis/approval form for internal use, shifting the focus from the analysis of cash flow projections to the evaluation of pledged collateral values. This change reflected (i) the bank's consciousness of losing its effective power to discipline client firms (in particular, the difficulty of getting borrowers to disclose more information than what is contained in financial statements) and (ii) the internal demand to speed up the credit approval process in order to increase loan assets. In 1988, the same bank adopted a software program for analyzing a borrower's financial statements and gave loan officers warnings based on mechanical calculations of financial ratios and earning trends showing the borrower's one-shot liquidity or profitability. This change in the style of monitoring was partly intended to avoid the increased monitoring costs associated with internationalization and disintermediation. The installation of the monitoring software may, in turn, have had an adverse effect on the bank's capacity to monitor, by depriving its officers of the need to develop more intuitive monitoring skills.

Japanese bank managers nowadays behave much like technicians, in the sense of applying advanced technical skills to estimate market risks and default probabilities. This change is partly attributable to the fact that the proportion of young US-trained PhDs staffing Japanese economics departments and teaching from American textbooks has grown steadily, along with the number of Japanese businessmen with American MBAs. The migration of American-trained MBAs and PhDs has led to the wide diffusion of the doctrines of neoclassical economics, which elevate the basic precepts of individualism to the status of axioms (Dore, 2000, p. 57).

Some analysts claim that the huge growth of non-performing loans in Japanese banks represents a malfunction of the rent-based main bank system. The burst of the bubble economy encouraged Japanese banks (as well as banking regulators) to shift from the traditional mode of screening and monitoring to an Anglo-American mode of monitoring. But as we have seen, the over-reliance on rules of thumb has had the damaging effect of amplifying the volatility of market sentiment, causing reckless over-lending in upturns and severe credit rationing in reversals.

Important and valuable components of the rent-based mode of allocating financial resources to new enterprises and industries and of pooling monitoring skills and knowledge have been lost in the ill-planned transition to an Anglo-American banking system. Japanese regulators and bankers should have sought to preserve these elements of the traditional system, perhaps in modified form. Had they done so, some of the difficulties encountered by the Japanese economy, and in particular its financial markets, might have been less severe. Simply resurrecting the practices of the post-war period is not feasible, because that system has its own defects. But we should undertake to recover those dimensions of the old system that were useful. At the very least, it is clear that the wholesale adoption of the Anglo-American approach and the convergence toward the Basle rules has proved to be an ineffective (and potentially very risky) prescription for Japan's lingering financial slump.

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