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A MICRO-THEORETIC ANALYSIS OF JAPANESE FINANCIAL SYSTEM

By Kazuhito IKEO*

I Introduction

In Japan, the conventional and predominant opinion (the traditional paradigm) has long held that the standard economic theories developed in Anglo-American countries are inadequate to give convincing explanation of the Japanese financial system which has too much uniqueness. Also, this majority view has given way to the common attitude to understand the Japanese financial system as something that is backward or "distorted". With some noteworthy exceptions,[1] this attitude is shared by both of mainstream as well as Marxist economists of this country. However, we could challenge this majority view with two issues as follows: firstly, we can question whether the standard economic theories give in fact a satisfactory account of the reality of financial system in Anglo-American countries, and secondly, we can question if the Anglo-American financial system should really be considered as the absolute norm.

In this paper, we will investigate the possibility of a new counter-paradigm in relation to the set of two questions mentioned in the above. In doing so, we will first effectuate a shift in the angle of analytical vision through summarizing the seminal results of new information economics (i.e., applied micro-economics) with regard to the theory of finance. Then, we will attempt to demonstrate the validity of typological analysis of financial system which tries to understand various systems in different countries in different times as entities each of which is endowed with an internal coherence, as opposed to the traditional, monistic analysis which uses Anglo-American countries as the sole ideal model. The paper ends with a few concluding remarks.

II The Predominance of Indirect Financing— A Common Phenomenon

We could undoubtedly state that "predominance of indirect financing" was the magic phrase, which prevailed all theories related to the financial system in postwar Japan. Indeed, the predominance of indirect financing has long been a typical cliché

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1) Of these, the most important exception concerns a series of studies done by Toshio Suzuki. His work consists of analysis of financial mechanism, specially that of price mechanism in call money market, by the use of "the orthodox approach taken by the modern economist" with a view to consider the effectiveness of monetary policy. He demonstrates that in the phenomena arising in Japanese finance, the part that could be explained by the standard economic theory is larger than the one assumed by conventional thinking.

Table 1. Changes in Indirect Financing Ratio (%)

Year	Japan	U.S.A.
1950~54*	81.5	76.7
1955~59	85.0	70.1
1960~64	82.5	89.6
1965~69	92.2	78.5
1970~74	91.5	74.7
1975~79	87.6	68.0

Source: Kimura and Royama [1985]
Remark: Exclusive of inter-company trade credit
* For Japan, 1954 only

to express peculiarity of the financial system in Japan. However, the recent uncovering of factual data which have been derived from international comparisons strongly suggests that the predominance of indirect financing is by no means a peculiarity unique to the Japanese system, and that, on the contrary, supremacy of indirect financing is a common phenomenon among a number of well-developed systems elsewhere.

For instance, Kimura and Royama [1985], who devoted much efforts to tally the U.S. and Japanese statistics concerning the accounts of funds flow to compare those two sets of statistics on a common base, concluded that there was no meaningful difference between the U.S. and Japan in their respective importance of indirect finance at least on the funds flow base, and that the ratio of indirect finance was in fact often higher in the United States (see table 1). Moreover, if we make similar comparisons with other developed countries like United Kingdom and West Germany, it can be seen that there is no significant difference in the proportion of funds obtained from financial institutions by companies operating in non-financial sector (ref. Kaizuka [1983]), and while it is a fact that the ratio of indirect financing is relatively high in Japan, the fact alone by itself is not sufficient as a factor to distinguish the Japanese system from the systems in other countries.

For the sake of clarity, we should like to remind readers that the term "indirect financing" as it is used here is defined in line with the traditional basis set by Garley & Shaw's theory of financial intermediary. Consequently, it is a definition as seen by the users of funds in non-financial sectors. Therefore, when financial institutions derive funds from issuing of indirect security instruments in order to invest the funds only in the capital market, there should be no conflict between the existence of well-developed security market and the predominance of indirect financing.

The fact that the supremacy of indirect financing in this sense is a common phenomenon in most advanced countries indicates that financial transactions through intermediary are generally profitable. Nevertheless, due to the magic power exercised by the concept of predominance of indirect financing, there has been a clear lack of theoretical study in Japan concerning the basic issue of whether and what advantage could exist in indirect financing by intermediary as opposed to direct financial transaction between the ultimate

parties. However, financial analysis based on new information economics which developed in the United States and other countries where people are free from the powerful cliché, is providing in the recent years far more general and convincing arguments concerning the raison-d'étre of intermediary organizations.

As it is, we shall now proceed to the analysis of the later school of thoughts and start from confirming the importance of intermediary organizations which are causing the predominance of indirect financing.

1. Raison d'étre of Intermediary Organizations

(1) Any instrument of financial transaction is no other than a deed of obligation which contains promise to provide income to the holder of the deed in future. In actual transaction, therefore, it is essential for the holder to know the certainty that the promise will indeed be honored. The certainty is naturally different for each issuers or debtors, and excluding such issuers and debters, it is very difficult in most cases for anyone to ascertain such credibility. The debtor who issues the deed is usually assumed to have relatively large amount of information regarding his own credibility or his ability to honor the commitment. However, because of the risk that such information might be manipulated, the purchaser of the deed (lender) cannot rely fully on the debtor's words. Therefore, in order for the credit quality of each deed to be confirmed by the lender, there is a need for relevant information to be acquired and processed (i.e., production of information in a broad sense).[2)]

On the other hand, since financial transaction is different from other types of business in that the transaction does not end by the exchange of goods. It can be said to be complete only if the debtor's promise to provide future income to the lender (repayment of the principal and payment of interest) is honored. In order to make sure that such obligation will be dutifully performed, it is not enough for the lender to ascertain credit quality of the debtor in advance of actual transaction. After the lender has purchased the deed, he must continue to monitor the borrower's activity and financial position by obtaining and analyzing relevant information so that he can assert and maintain his rights.

Such preliminary as well as ongoing efforts usually necessitates substantial expenditures on the part of the lender. Therefore, if these efforts are entrusted to the third party at a smaller cost, the lender can find some benefit in such an arrangement. As it is, we can say that the primary "raison d'étre" of intermediary organizations in financial market is that they can reduce information costs by their service to supply information, which is indispensable for any and all financial transaction.

However, inasmuch as screening and monitoring of debtor are essentially an act of producing information, it is not always possible to consign this activity to a third party with satisfactory results. In other wards, in producing information, there are dual

2) Another possibility is that borrower performs a sort of signaling activity so that the information on his credit risks can be communicated in a reliable manner. Generally, such signaling activity also requires costs to be shared somehow among transactors.

difficulties regarding to externality and reliability of such information which might make any private production of it impossible. Financial information, of course, is no exception to this.

It is a well-known fact that because of the externality which is inherent in information, the latter acquires that information as an economic goods is like a public goods, and for this reason, there is always a considerable difficulty for the information to be supplied in market. Also, in the absence of any assurance as to the reliability of such information, there is a risk that the market of information might collapse at any time (the law of Lemon). Even if the intermediary organization can offer some economy of the cost, the advantage of indirect transaction by an intermediary cannot be held as an absolute truth unless it is known, at the same time, that these two difficulties in production of information could indeed be resolved.

Leland and Pyle [1977] were the first to point out this problem and suggest a possible solution. According to their conjecture the difficulties in production of information can be overcome if the information producer himself chose to organize a financial institution for the purpose of purchasing such obligation instruments and keeping them. In other words, if the information producer himself makes use of his own information instead of disclosing such information to outsiders in order to manage the assets, and if he markets not his information but the beneficary certificates which embody the results of utilizations of his information, the difficulty arising from externality of information could be resolved, because in that case, the public goods character of information is eliminated by being put together with the beneficiary certificate which is a private goods.

Also, the fact that the information producer himself is the investor in the financial institution set up by him resolves the problem associated with reliability of the information. The reason is that the information producer himself will sustain a less if the quality of his information is unsatisfactory. His efforts to improve quality of information he is producing become then compatible with his own interests. It should be remembered, however, that because of the need to secure such incentive compatibility, the information producer could be forced to make an excessive investment, thus resulting in a deadweight loss in allocation of resources which does not exist otherwise.

Following the appearance of this conjecture, analysis of financial institution based on approach of new information economics has been developing more or less in the form of critique and extension of the proposition of Leland and Pyle [1977] introduced earlier.

Firstly, Campbell and Kracaw [1980] pointed out a case in which the externality of information does not conflict with production of information. This absence of conflict occurs when the beneficiary of information on credit quality is not the potential lender (or owner of such information) but the borrower himself (the party to be known). If a borrower's credit quality is high and the fact is known by others, then he can enjoy better terms of transaction. Even if information is consumed collectively by potential lenders, the benefit is confined to the specific borrower. Therefore, the latter can reasonably be asked to bear the relevant expenses and thus, there is no "free riding" situation in information costs.

In such an instance, therefore, there is no special reason for the information producer to transmute his assets. According to the proposition of Leland and Pyle, the information producer must be at the same time the party to transmute assets in order for the financial market to allow production of information on commercial basis. However, the case pointed out by Campbell and Kracaw shows that those intermediary organizations who do not have the asset transmutation function (such as security houses) could also perform the role of information producer. In fact, Ramakrishnan and Thakor [1984] made an analysis of investment bankers (underwriters) as a pertinent case of intermediary organization producing information. Their findings contain several interesting issues.

Secondly, Diamond [1984] argued that the proposition of Leland and Pyle is not complete because it does not prove that the deadweight loss which must be borne by the information producer is always smaller than the benefit derived from producing the information. An intermediary organization who assumes the task of producing information must have an incentive to perform the task in a proper manner. To realize such incentive compatibility, certain costs must be borne because it involves deadweight loss which should not exist if complete information were available. If we follow Diamond by calling these costs delegation costs, such delegation cannot be viable unless the gross margin derived by delegation of production of information exceeds the delegation costs. The fact that the margin exists does not constitute the real incentive.

Diamond [1984] then examines the nature of delegation costs and emphasizes that diversification is essential to realize net profit by delegating production of information to an intermediary organization. He considers that the cost of deadweight loss to intermediary organization per each transaction should decrease (i.e., the degree of constraint imposed by the necessity of investing warrant money should become smaller) if individual producers of information are united (to form an organization) and diversify their clients rather than to continue their activity independently. Indirect transactions through intermediary organization can be said to excel direct deal between the end parties only if such diversification is accomplished to the full extent.

(2) Although the approach as introduced so far to look at the aspect of financial institution as producer of information is a relatively new one, it is a well known fact that one of the essential functions of financial institutions is to alter risk characteristics of the total assets which are held by the ultimate lender by means of asset transmutation. Above all, asset transmutation made by financial institutions of deposit (commercial) bank type actually reduces the risks to the final lender (depositor) and increases liquidity. Thus, another "raison d'être" of intermediary organization in financial market is its function to reduce such risks.

If, however, we admit that Arrow-Debreu type market of contingent goods can exist and function under perfect competition, it should be possible to achieve the most effective reallocation of risk bearing in such a market, and in that event there should not be any need for intermediary organization at all. Therefore, we can presume that if such intermediary organization is functioning, it is because the market mechanism is not working completely. So, one of the main constraints for market mechanism to realize

reallocation of risk bearing is due to the problems inherent in information.

A market for contingent goods (or insurance market) can function properly only if individual states (or occurrence of accidents) could be recognized publicly. On the other hand, if such state or occurrence could only be recognized by private information, it becomes impossible to utilize the market. However, transmutation of assets by financial institutions (offer of deposit) could still constitute a means of risk reallocation to replace the market for contingent goods. Diamond and Dybvig [1983] were the first to undertake analysis of such a model, while Haubrich and King [1984] provided additional insight to the point.

Let us imagine, based on the latters' model, a situation where income fluctuation risks exist. Then it would be the potential benefit of all to introduce an income compensation insurance, that is an insurance which pays as insurance or receives as premium an amount equal to the gap between expected income and actual income. However, if each member's income could only be known privately, it is impossible to eliminate the incentive for the members not to declare their real income, then the insurance system will become impossible to operate. Nevertheless, it is possible even under such a circumstance for a financial institution to adjust reward structure for each term of the indirect security (deposit) offered by the institution, in order to perform a function that is at least partially equivalent to the income compensation insurance.

This is because those who realize lower level income will withdraw deposit earlier than those who realize higher income, the institution pays higher interest to the former while paying less to the latter, thus realizing partial redistribution of income. Moreover, insurance offered by the financial institution through the creation of new assets is based on individual self-selection and it does not require verification of individual income. Thus, the insurance can remain effective even if information available is inadequate. An important aspect of functions of financial institution in asset transmutation is that it can provide (partial) insurance to the risk which cannot be confirmed without the availability of private information.

2. The Angle of Analysis of Financial System

So far, we have presented a brief survey of financial analysis based on the economics of information, and it will be seen that the existence of financial institutions owes a great deal to the incompleteness of information in financial transaction. Because in the financial market it could hardly expect that various information related to transaction opportunities are evenly and sufficiently distributed among the parties to transaction in advance. It must undertake costly efforts to obtain information, or it finds often under severe constraints to proceed to an effective reallocation of risk bearing through the formation of market for contingent goods or insurance market. Under these circumstances, we can understand the existence of intermediary organization in financial market essentially as "a means achieving the benefits of collective action in situations in which the price system fails" (Kenneth Arrow, *Limits of Organization*, N.Y.: Norton, 1974, pp. 31).

It is obvious that such a collective activity cannot achieve full advantage unless it succeeds in avoiding ineffectiveness (delegation costs) which could result from the fact that the interests of parties—who are supposed to cooperate—are not identical in reality, and the existence of intermediary organization does not automatically means an improvement of efficiency. Nevertheless, the problem of moral hazard in a broader sense inherent in delegation of activity is by no means insurmountable. Various key factors in doing business, such as the importance of long-term relationship and reputation, can function as safeguard against moral hazard, and diversification is often effective in reducing the delegation costs as Diamond [1984] demonstrated.

Because the activity of production of information itself can be expected to benefit from better efficiency by specialization and economy of scale (or scope), it will result in a considerable advantage from a social point of view to entrust the activity to specialized intermediary organization if the delegation cost involved is a modest one. As it is, we will be able to advance the following conjecture: (1) the more it is important to depend on information activity, there should be increased shift from the direct transaction between the ultimate parties to the indirect transaction through intermediary, and (2) development of an institutional basis which encourages diminution of delegation costs (for instance, statutory legislation of professional code of conduct, supervision by the public agencies, etc.) will have an effect to give more importance to the indirect transaction via intermediary organization.

Therefore, it is quite natural that the ratio of indirect financing is higher in those advanced countries where information activities are important because of the complexity of economic activities and where the institutional bases are well developed. If we include those types of indirect transactions which do not involve the function of asset transmutation, the share of indirect transaction through intermediary organizations will be significantly higher in the advanced countries. In contrast to this, direct lending based on personal or family relationships such as mutual financing and loan association should occupy the predominant position in less developed countries where the institutional bases do not exist and delegation costs are not negligible.

These considerations suggest that in the context of theory of economic development, it is meaningful to study the ratio of indirect financing, while in other contexts, it is more important to investigate the contents of indirect financing.

In this respect, we could say that "the predominance of indirect financing in Japan, during the period of rapid growth, did not mean the supremacy of financial intermediaries in general, but in reality the predominance of banking sector" (ref. Suzuki [1980]). Presumably, this situation arose because there was a strong demand for the service proper to those intermediary organizations represented by the deposit banks, although the importance of artificial factors such as administrative control should not be neglected. Obviously, the proper function of deposit banks is to provide liquid assets made up by deposits (which often have the character of money). Therefore, we can conclude that the predominance of banking sector arose because there was a strong demand for liquidity.[3)]

According to the study made in the proceeding subsection (2), the demand for liquidity is no other than the demand for insurance (provision against risks) against those risks which cannot be ascertained except by private information. On the other hand, the market for contingent goods (in reality, stock market is close to this concept) is effective for transaction of those risks which can be ascertained by public information, but it cannot trade private risks. We could therefore presume that the supremacy of banking sector in the period of rapid growth indicate the relative importance at that time of those risks which were unknowable from public information over those others which were knowable from the public information. Such an interpretation is at least consistent with the fact that per capita balance of financial assets and level of income were lower during the period while the country was experiencing high economic growth.

III Credit-based Financial System

If we exclude the ratio of indirect financing from a set of the basic variables in comparative analysis, we could say that the Japanese financial system during the period of high growth was different from its counterpart in the United Kingdom or in the United States in that the bank loan market played the leading role in financing of non-financial sectors in Japan, and that the security market was relatively underdeveloped, which was the other side of the coin. That is to say, the Japanese financial system during this period did not have the open market which was at the core of the Anglo-American financial system. Although such a point of view to characterize financial systems as specific types has been advanced in Japan also by several authors of whom Professors Kaizuka and Royama are well known, the most comprehensive international comparison ever made in the subject so far is that of Zysman [1983].

In his research, Zysman finds the main reason of difference in economic performance of five advanced countries (U.S., U.K., France, West Germany and Japan) after the War in the structure of financial market of each country, and he classified these national financial systems in two distinctive types. The first type is called capital market-based financial system which is established on a well-developed security market, and the U.S. and U.K. systems belong to this type. The second is so-called credit-based financial system in which even long-term credit is offered by the loan made by banks or specialized financial institutions. French, German and Japanese systems belong to the second category.[4)]

In the first or capital market-based system, it is easy to terminate business relationship before it is consummated. On the contrary, in the credit-based system, the business

3) Refer Kosai [1982]. Note that although these were certain restrictions by regulation in providing financial assets, other than deposits, to private lenders, we should have been able to notice attempts to circumvent such restrictions through development of private money market (such as black market) if there were no demand for deposit.

4) It should be remembered that the credit-based system is divided into two subsystems according to the difference in terms of price fixing procedure. If we include these subsystems, then it can be said that Zysman assumes existence of three financial models.

relationship between the financial institution and the borrower tends to become increasingly closer. Because of such a difference, Zysman stated, borrowing the argument of Hirschman,[5] that in the first system, financial institutions could influence allocation of funds through the "exit" mechanism, while in the second system, they could exert influence through the "voice" mechanism. We find that this sort of analysis by means of classification into types is much more meaningful than the monotonous development analysis.

At the same time, we must point out that the key point of Zysman's analysis of performance of credit-based financial system is strongly influenced by traditional paradigm and some aspects of his observations are hard to be accepted. For instance, he states (pp. 71) that "[s]ince prices are administratively fixed there is an inherent tendency for markets to be in disequibrium... [t]he balance must then be achieved by administrative action that discriminates in favor of some users and against others". Based on this point of view, Zysman concludes that the government has a profound influence on allocation of funds in a credit-based financial system. However, this sort of conclusion of a "Japan, Inc." type image is not necessarily in agreement with our experience during the period of high growth.

In this part, we should like to attempt to resolve this problem and to add some improvements in the typological approach by introducing our own views concerning the mechanism of price (interest rate) determination and its adjustment in the credit-based system.

1. The Effect of Long-term Relationship

The price mechanism as conceived in the traditional economic theory can be understood as a structure in which adjustment of demand and supply is made through the price competition among a number of unspecified parties. However, in order for such price mechanism to be able to function properly, quality of goods to be traded must be homogeneous, or the quality should at least be easily graded by all of the members to transaction. Unless these conditions are satisfied, parties to the transaction will not be able to concentrate their attention to price alone. In other words, people can trade only such goods through the price mechanism for which quality information is broadly shared by all participants.

Such sharing of information on quality of goods to be traded cannot be assumed to exist in practice, particularly in case of financial transaction. Generally, borrowers can be distinguished into three classes on the basis of availability of public information on the quality of the deeds of obligation issued by them. The first class comprises those borrowers for whom common availability of their credit information is confirmed from the very beginning. Central government agencies and public bodies who are well-known through their current activities and whose credit worthiness cannot be doubted are typical of such borrowers. The second class borrowers are those who are relatively well-known to an

5) Hirschman, A. O., *Exit, Voice and Loyalty*, Cambridge, Massachusetts: Harvard University Press, 1970.

extent that information pertaining to them is commonly available from analysis done by security underwriters or on the basis of credit rating made by specialized institutions. So-called big business firms with strong financial position are typical of this group.

For the deeds of obligation issued by these class 1 and class 2 borrowers, it should in principle be possible to trade them through price mechanism. In reality, however, there are a large number of borrowers who cannot enjoy such transactions. For these borrowers who constitute the third class, evaluation of their credit risk take a great deal of costly information activities, and moreover it is rather difficult for the results of such activities to be fully transmitted to a third party. If certain factors which are critical to determine the credit risks of a given borrower happen to be those which are specific or special to him, it will be quite impossible for these factors to be fully defined and explained, and thus, such information is not readily transferable to other parties.[6] Medium to smaller enterprises and practically all individuals are considered to be in the third group.

Inasmuch as sharing of information could hardly be expected in the case of borrowers of this class, it should be impossible to trade securities issued by these entities through the price mechanism as conceived by the traditional theories. Therefore, borrowers of the third class has no alternative than to conduct bilaterally transactions with financial institutions who are in charge of information activities essential for such transactions. As we shall see later on, this type of transaction tends to have a long-term character, and the performance characteristics of transactions of this type are considerably different from those which are normally presumed on the basis of theoretical price mechanism.

For a financial institution, the expenses which accrue from information activities vis-à vis those borrowers of the third class should be considered as investments. This is because the most reliable source of information as to this class of borrowers is the record of their past transactions, and the experience gained from today's information activities should have an effect to reduce future information costs regarding the same borrower. In this sense, the initial costs of credit analysis which are necessary to begin the transaction can be understood as a setup cost. Also, if we can assert that the information cost is actually borne by the borrower since it is made a part of interest charged to him, the borrower himself should consider it a sort of investment to start doing business with a particular financial institution.

At the same time, we must bear in mind that this sort of investment is "transactor-specific", that is, the investment will be lost if transactors are no longer the same. Because of the nature of the information, it is impossible to transfer to a third party the stock of information and knowledge a financial institution has accumulated for a given borrower, just as it is almost impossible to transfer to others one's knowledge of any foreign language. If other financial institution desires to obtain the same stock of information and knowledge concerning the same borrower, he must be prepared to sustain once again the information costs, and obviously, the borrower cannot refuse to share a part of the costs.

6) As to the concept of "indefinable knowledge", refer to Takenori Inoki, "Economy and Implicit Knowledge" (in Japanese) in *Kikan Gendai Keizai* (Contemporary Economics Quarterly), No. 61, 1985, pp. 119–126.

The fact that setting up of transaction relationship involves certain investment specific to the parties suggests that the very relationship itself has an investment value. It gives to the parties an incentive to prefer long-term transactions between themselves rather than one-time, spot transaction. At the same time, the fact that information cost is an investment means that competition, which was thought to be perfect before the start of such transaction, becomes a limited one as soon as the transaction takes place, because there is then an entry barrier (a sunk cost) which is equal to the cumulative total of investment up to the start of transaction.

Consequently, bilateral bargaining determines the terms and conditions of transaction (i.e., sharing of profit from the transaction) between the parties who maintain long-term relationship between themselves. Bilateral bargaining is a type of structure for adjustment of demand and supply quite different from price mechanism, and it is hard to determine precisely character of the bilateral bargaining. Nevertheless, we could presume it to have the following characteristics. First, in the case of bargaining, communication between the transacting parties is not limited to the one expressed in terms of prices. It may involve more direct and diverse exchange of information. Second, the transactors are free to take account of any factor and to consider it in determining terms and conditions even if such factor is not directly relevant to actual demand-supply conditions so long as it is found to be mutually advantageous.

The first characteristic shows the fact that autonomous quantity adjustment could be done in this type of trading. In other words, even though price (interest rate) is under control, it does not mean automatically that adjustment in terms of quantity is inadequate, because by bargaining, the transactors could agree to make such adjustment independently from fixing of price. Generally speaking, personal contact gained from a long-term transaction relationship (customer relationship) can act as a medium of communication in the place of prices. In this sense, we can say that the resistance against distortion of funds allocation under the price control is larger in bargaining than it is with the price mechanism.

If it is prerequisite that repeated transaction be made with same party, the second characteristic or the freedom can be utilized for the mutual benefit of transactors based on a long-term point of view. In such a case, one of the parties might decide to accept some one-time sacrifice in anticipation of larger return in future. This makes it possible to include in transaction such factors like future growth potentiality which are often hard to be adequately accounted of in the case of spot transactions done through the price mechanism. Furthermore, it might be possible to adjust behavioral patterns in a way to make smooth each profit variation so as to obtain a sort of insurance (or sharing of risks).[7]

Needless to say, the existence of possibility to communicate in diverse ways and of the freedom mean that at the same time, there is a larger room for opportunistic activity such as strategic manipulation of information. As it is, there is no assurance that bargaining process can always be effective. To what an extent bargaining could be effective

7) Wakita [1981] was the first to point out these effects.

depends on the degree of cooperation between the transactors and also on the difference of information between them. Not withstanding these limitations, we must give a due recognition to the possibility that bargaining could be a better scheme when price mechanism may not be functioning properly.

2. The Japanese Financial System

According the viewpoint we have reviewed so far, a major reason that the Japanese financial system during the high growth period was the credit-based one arose from the fact that the absolute majority of borrowers was in the third class category and few could qualify as the first and second class borrowers. That is to say, bank loan was the basic means of financing for the non-financial sectors and development of the security market was rather slow not entirely because of the artificial administrative control, but also because the supply of high-quality deeds of obligation, i.e., for which quality information was shared in common, was far from adequate. As it is well-known, the public sector at that time was maintaining budgetary balance, while the industrial finance was totally in the middle market.

We have already seen that bargaining based on a long-term relationship becomes the main form of transaction between those borrowers in the third class category and financial institutions. This type of transaction was by far the most prevailing one, and in spite of the existence of total control over interest rates called "artificial low interest policy", this fact does explain why allocation of funds at that time was not so ineffective in retrospect. In short, because it was possible to utilize media of communication other than interest rate and to make multilateral as well as comprehensive settlements (by way of combining loan with deposit and other service transactions), it should be concluded that the private sector can realize de facto cancellation of impact of the control over interest rates in order to proceed with determination of funds allocation on its own initiative.

Thus, funds allocation in the private sector was fairly aggressive in its anticipation of future growth (ref. Noguchi [1980]). We have not found sufficient evidence to prove that the private sector was under any systematic inducement by the public sector. Rather, we find that the public and private sectors were complementary to each other in a kind of division of labor, and that public sector financing was mainly directed at those less-developed or declining industries (such as coal mining, marine transport and agriculture) as well as to social infrastructures, while allocation of funds to developing industry was entirely made at the discretion of the private sector itself. As it is, in the area of finance also, it should be said that "the role of the government to promote the country's

8) This view is in agreement with the results of recent works made by Akiyoshi Horiuchi and Juro Teranishi concerning the role played by the Japanese financial system during the period of high growth. Cf. Horiuchi, A., "Economic Growth and Financial Allocation in Postwar Japan," in the Discussion Paper 84-F-3, August 1984, of Research Institute for the Japanese Economy, Faculty of Economics, University of Tokyo. Teranishi, J., "Economic Growth and Regulation of Financial Markets: Japanese Experience During Postwar High Growth Period," Discussion Paper ♯124, July, 1985 of the Institute of Economic Research, Hitotsubashi University.

economic growth was limited to provide a favorable environment of the growth and to be setting up of broader guidelines, while individual decision-making was assigned to private entities in this structure of division of decision-making powers" (ibid., pp. 177).[8]

Table 2. Long-term Government Debt/GNP (%)

Year	Japan	U.S.A.	U.K.	Germany	France
1950	10.9	84.5	151.0	6.6	41.4
1960	4.1	46.3	90.5	7.6	14.1
1965	3.1	39.1	71.5	6.7	7.2
1970	5.7	29.7	57.0	6.4	3.9
1975	12.3	26.6	42.0	9.4	3.7
1980	33.9	26.5	45.6	15.1	5.3
1985	47.9	36.5	47.2*	20.8	9.9*

Source: Ministry of Finance of Japan
* Data in 1984

On the other hand, we know that starting from mid 70's, the Japanese financial system has been undergoing a far-reaching evolution and it is gradually getting away from the previous credit-based practice, and this shift has occurred mainly because there are more and more parties who could qualify themselves as the class 1 and class 2 borrowers. The massive government bond issues naturally bears witness to the appearance of the central government, with the highest credit rating, as a new borrower (see table 2). Also, as a result of the economic development, there are far larger numbers of private sector borrowers of the second class category. These changes show the fact that a large volume of deeds of obligation, having sufficient quality to warrant this circulation through the security market, is actually being supplied today, and this pressure alone can trigger future development of the security market.

To be sure, development of security market always accompanies change in the mode of transaction (from bargaining to dependence on price mechanism), but on the basis of the argument in the preceding section, the development may not be considered as a key factor to cause a drop in the share of indirect financing. On the contrary, because we can expect that market risk will grow and that effective counter measures will become necessary, there is even a fair chance that the share of indirect financing might actually go up in the future. However, we could also expect that there will be many significant changes in the components of indirect financing, as is already evidenced by a large decrease of the share of deposit banks (60–70% during the period of high growth, which decreased to 41.6% in 1983).

This decrease in the share of deposit banks is considered to be the consequence of two factors: the first is that deposit banks are not allowed to issue any means of long-term financing even though demand for liquidity has decreased as accumulation of financial assets is proceeding, and second, these banks are strictly restricted from participating to the security business. However, even if such restrictions were abolished, the trend of

decrease in deposit banks share can no longer be stopped, because as the overall environment for the Japanese financial system changes, the functions required of the intermediary organizations are undergoing certain changes (in a simple term, the shift of demand from commercial banking to investment banking). Only those intermediary organizations who succeed in adapting themselves to the change will be able to survive and grow.

IV Conclusion

Lastly, we would like to make some additional comments regarding two questions setout in the beginning of this paper as they will be useful as the summary of our discussions so far.

The financial analysis using the approach of new information economics as we briefly surveyed in Section II is usually accompanied by an observation as to inadequacy of the traditional standard theories and a criticism as to its limitations. This is also true with the analysis made by the U.S. and other countries economists, which constitutes an eloquent proof that the traditional standard theory cannot give full satisfaction in explaining the reality of financial systems in the United States and in the United Kingdom. The economists of these countries themselves are showing dissatisfaction to the conventional theories. As it is, the fact that the conventional theories are not perfect in accounting for the financial system in Japan would not necessarily justify a conclusion that "such unaccountable factors in themselves show the essential character of financial mechanism in Japanese capitalism" (Iwata and Hamada [1980] pp. ii), because these theories are insufficient to explain the Anglo-American systems as well.

It is only natural that the Japanese financial system should have its own character. However, as the financial theory develops, we shall probably find that this sort of peculiar characteristics are not as important as they have been assumed to be. Under the new paradigm which is interested in the scarcity of market information and the role played by individual incentives, it is possible to understand the past (and present) financial system in Japan as a structure endowed with internal coherence and capable of accepting the logic of economic theory, as we have seen in Section III. Furthermore, it would be reasonable to expect that the theory we have introduced in this paper can be applied to the financial systems of U.S., U.K. and elsewhere (by taking into consideration the specific difference of environment) because it is not solely dependent on the peculiar characteristics of the Japanese system.

Therefore, in that there is a possibility of understanding financial systems of different countries on the same bases and giving each of them due coherence, the new paradigm can be said to contain high promises. We believe that more detailed studies made on the framework as introduced here are quite worth while in the future.

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