Finance and Economic Activities

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This paper reviews the roles and limits of finance in modern economies.

Finance improves the efficiency of resource allocations. It does this by first correcting market failures and second by making markets function better. Finance also contributes toward economic growth and development. Finance does this by making more efficient investments and faster technological progress possible.

Finance, when it malfunctions, can bring serious economic disasters. Because of the asymmetry of information inherent in financial transactions, and because of the ability of the most important segment of the financial industry to create credit, finance may break down under certain conditions. When finance breaks down, it can easily bring the entire economy into trouble because finance is so pervasive.

Finance can malfunction, too, when the policy environment surrounding the financial markets and systems are so ill-designed as to give them wrong incentives. Here, financial controls used by developing economies often turn out to be the real causes for the breakdown of finance.

One of the key reasons why finance may malfunction has to do with poorly working corporate governance mechanisms. When mechanisms governing the behavior of financial institutions and markets, the lenders and the intermediators, do not work properly, the latter are very likely to malfunction. When financial markets and institutions malfunction, they can easily bring trouble to the real economy. When mechanisms governing the corporate sector, the investor-borrowers, do not work properly, the real sector could breakdown. And when the real sector breaks down, financial systems and markets could breakdown, too.

The paper also compares different modes of corporate governance being used in Korea, Japan, and America.

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I. Introduction

Finance, by which I mean activities, markets, and institutions associated with borrowing and lending, is so pervasive in modern economies that we tend to take it for granted. As finance usually works well, we are not much concerned with how it actually functions. Recent Asian economic crises, however, have reminded us that finance can have disastrous effects when it malfunctions.

Many economists have long been interested in the roles that finance plays in economic activities. Bagehot (1887) and Hicks (1969) had emphasized the positive roles finance played in industrialization. Schumpeter (1912) had emphasized the positive roles of finance in fostering technological progress. Gurley and Shaw (1955), Goldsmith (1969) and McKinnon (1973) were modern day economists who had viewed finance as important. Levine(1997) succinctly reviews recent approaches to the issue emphasizing the roles finance plays in economic development.

Most economists, however, tend to view finance as secondary to money or real activities. Robinson (1952) who declared that, "where enterprise leads finance follows," Lucas (1988) asserted that economists "badly over-stress" the role of financial factors in economic growth, and Fama (1985) views finance or money as a veil, are such examples.

General equilibrium models pioneered by Arrow (1964) and Debreu (1959) generally treat markets as perfect and frictionless. When all markets are frictionless and when all trades can be made in a grand contingent claims market, finance may not be needed. If that is the case, finance does not play much role and it remains secondary to real activities. Of course, reality is different from this ideal picture.

Monetary models developed by Friedman or Lucas, which maintain the classical dichotomy, also treat finance as secondary to money. Interest rates, which are one of the key variables essential to finance, are usually represented in monetary models as a simple sum of the real rates and inflation rates. Here the real rates are assumed to be determined in the real side of the model while inflation rates are assumed to be determined in the monetary side of the model. This dichotomy, however, may break down when finance is more than a mere mirror image of the real activities.

In light of these diverse views, it would be interesting to

systematically review how economists regard finance. What is the essence of finance? What are its roles in resource allocation, and how it might or might not contribute toward economic progress and stability? These are important questions and this paper is an attempt to provide some answers to the questions. I am going to handle the problem from three different angles.

The first approach is to investigate the roles of finance in resource allocation. Finance improves the efficiency of resource allocation by correcting market failures and by making markets function better. Efficiency gains that finance brings are not only gains at a point in time, but also gains over many a period of time. That is, finance improves both static and dynamic efficiency in resource allocation. The former promotes better and wider exchange of goods and services. The latter promotes economic growth. Section II deals with the static efficiency issue and Section III deals with the dynamic efficiency issue.

The second approach is to investigate when and how finance may bring disaster to the entire economy. Finance, when it malfunctions, have very strong destabilizing effects on the whole economy. As finance is so pervasive in modern economies, failure of a financial institution or malfunctioning of financial markets can have devastating effects. These failures might stem from the inherent problems of finance or they may be outcomes of a faulty policy environment. Section IV deals with the issue of how finance may bring economic crises.

The third approach is to investigate the roles of finance in corporate governance. As most economies in East Asia are currently experiencing prolonged economic hardship, serious debates are being waged among scholars whether there exists the so-called Asian Model, and if it does, what it is, how it has helped Asian economic growth, and why it is failing now. I will add to this debate with a discussion on the role of finance in corporate governance in Section V. There we will see, for example, the Japanese model, which is a precursor for the Korean and Chinese models, and is quite different from the Anglo-Saxon model.

The structure of the paper naturally follows these approaches. Thus in Section II I will deal with the role of finance in static resource allocation. There we will see that the main role of finance is to correct market failures and to improve the working of markets. In Section III I will deal with the role of finance in

economic growth. There we will see that as finance develops, it could very well contribute toward economic development and growth by making investment more and better and by hastening technological progress. In Section IV I will deal with the problems that may arise when finance malfunctions. There we will see that finance can easily malfunction, and when finance malfunctions, it can easily bring disastrous results to the entire economy. Finance would most likely malfunction when the mechanism governing the behavior of the financial markets and institutions do not work well. Needless to say, when mechanisms governing the behavior of the borrowers do not work well, finance could very well malfunction, too. Partly because of this, in Section V I will deal with the issue of corporate governance mechanisms. There our main focus is on the comparison of different modes of corporate governance being used in Korea, Japan, and America. Section VI concludes the paper.

II. Finance and the Efficiency of Resource Allocation

Finance improves the efficiency of resource allocation either by correcting market failure or by helping markets to function better.

A. Finance Can Correct Market Failure

Finance can correct market failure in various ways. I will illustrate the point using an example of borrowing and lending activities. When borrowing and lending are impossible, exchanges of goods and services would be severely limited. This would in general result in non-optimal resource allocations.

Consider an inter-temporal consumption decision problem of an agent whose life-time income is exogenously given as $\{Y_t\}$, $t=0, 1, 2, \cdots$. Let $\{C_t\}$, $t=0, 1, 2, \cdots$, be the consumption stream to be chosen. If a borrowing-lending market fails to operate, agents would have difficulty in altering a given income stream to better satisfy inter-temporal consumption desires. Three cases can be considered depending on whether goods are storable and/or finance is possible.

When goods are non-storable, the consumer has to consume whatever income given to him. In this case the budget constraint is given by the following:

$$C_t \leq Y_t, \text{ for all } t. \tag{1}$$

This must hold in every period. The constraint (1) represents a case of inter-temporal autarky, i.e. self-subsistence. Though the agent may want to consume more than his income, he is unable to achieve this. If the agent wants to consume less than his income, he can do that in principle. However, whatever he does not consume will be wasted away. Thus the autarky solution is most likely allocation inferior to one obtained when storage or finance is possible.

Even when storage is possible, the resulting allocation would in general be sub-optimal, too, if finance fails. Consider the following revised budget constraint. Here S_t is the amount of goods stored in period t and δ is a depreciation rate.

$$C_t + S_t \leq Y_t + (1 - \delta)S_{t-1}, \; t=0, \; 1, \; \cdots, \; S_{-1}=0, \text{ given.} \tag{2}$$

The budget constraint (2) allows a new option to the consumer. Now he can bring current goods into future periods through storage. Nevertheless, the resulting consumption choice would in general be sub-optimal. There are two reasons. First, since the agent cannot use future income as collateral, he cannot consume more than his current income. Were borrowing possible, he could have consumed more than his current income. Second, even when storing is desirable, storing goods amounts to sub-optimal use of resources from the society's viewpoint. Were lending possible, the stored goods could have been consumed by other agents.

When borrowing and lending (finance) is possible through the existence of financial institutions or financial markets, agents can rearrange their income stream so as to satisfy their desired consumption plans better. Suppose there exist financial institutions that charge (pay) r_t for one period borrowing (deposit) from t to $t+1$. For the moment let us assume that the borrowing and lending rates are the same. Let S_t be the amount lent (when positive) or borrowed (when negative). Under this financial arrangement, the budget constraint becomes as follows:

$$C_t + S_t \leq Y_t + (1+r_t)S_{t-1}, \text{ for all } t. \tag{3}$$

As borrowing or lending is allowed, a consumer can obtain the optimal consumption plan by suitably rearranging his life time income stream. That is, now he can borrow at cost ($S_t < 0$), lend

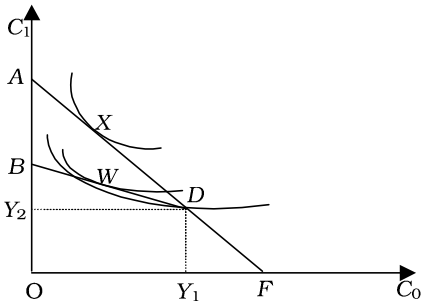

FIGURE 1
FINANCE IMPROVES WELFARE

profitably ($S_t > 0$), or consume all that he has ($S_t = 0$), whereas before he could either consume all that he had ($S_t = 0$) or store some at a cost.

This way finance can improve welfare by correcting market failure, i.e. by making borrowing and lending possible. Figure 1 succinctly summarizes the essence of this discussion. Figure 1 depicts a two period consumption choice when income in each period is given. Here C_0 and C_1 denote respectively consumption in period 0 (current) and 1 (future). When neither storage nor finance is possible, the choice set is limited to the rectangular area Y_2DY_1O. In this case a consumer would choose the point D attaining a welfare level given by the lowest indifference curve. When storage (but not finance) is possible, the choice set expands to the area BDY_1O and the consumer would choose a point like W attaining a welfare level given by the middle indifference curve. When finance is possible, the choice set expands again to the area given by AFO. In this case the consumer would choose a point like X attaining the highest welfare level. Clearly finance can improve welfare.

B. Finance Can Improve the Working of an Economy

Finance can contribute toward an improvement in social welfare by making the economy function better. There are several ways that finance does this. All of them are concerned with reducing information and transaction costs involved in matching potential borrowers with potential lenders. The main tasks of finance are then to reduce these information and transaction costs to facilitate allocation of resources across space and time in an uncertain

environment (Merton and Bodie 1995).

What kinds of information and transaction costs exist in borrowing and lending activities? Potential borrowers and lenders have different needs and wants, and matching them efficiently entails large information and transaction costs. Lenders have different wants concerning the amount, the duration, the returns, and the risks associated with lending activities. Likewise, borrowers have different needs concerning the amount and length of borrowing. Their borrowing needs also have different characteristics in terms of payoffs and risks. These latter arise ultimately from the investment projects for which the borrowing is being made. These differences in wants and needs may make it very costly for potential borrowers and lenders to enter into fruitful borrowing and lending arrangements, resulting in sub-optimal allocation of resources. When the costs are too high, of course, no transactions may occur resulting in grave market failures. Hence there exist incentives for the emergence of financial markets and institutions.

The most essential role of financial markets and institutions is to reduce the information and transaction costs involved in borrowing and lending so that market failure could be cured and more efficient resource allocations could be achieved. In an Arrow-Debreu contingent claims framework without information or transaction costs, there is no need for financial markets and institutions. In such a framework markets would be frictionless and the resulting resource allocation would be Pareto-optimal. Needless to say, in reality there exist lots of friction and actual resource allocation need not be optimal. That is why financial markets and institutions do arise to ameliorate the problems created by such frictions.[1]

Financial markets and institutions (1) promote investments through efficient trading of risks, (2) help resource allocation processes by efficiently processing information, (3) act as an effective corporate governance mechanism, (4) help mobilize savings, and (5) facilitate the exchange of goods and services (Levine 1997). Without a well functioning financial system some of these tasks will never be done and, even when they could be done, all of them would be done at a sub-optimal level and in sub-optimal forms. Let us now briefly review the essence of each task.

[1]Of course, in addition to finance there also exist many other mechanisms that try to solve these problems.

Financial markets and institutions facilitate the trading, hedging, diversifying, and pooling of risks involved in lending and borrowing. The two most important are liquidity risks and idiosyncratic risks. Liquidity risks refer to the uncertainties associated with converting the lending claims (assets) into a general medium of exchange and idiosyncratic risks refer to the uncertainties associated with random outcomes of individual investment projects. Stock markets and financial intermediaries can minimize these risks either by offering lenders secondary markets to trade primary claims or by offering risk-hedging, risk-diversifying, and risk-pooling services.

It is often very difficult and costly to evaluate firms, managers, and market conditions that form the backbone of given investment projects. Individual lenders may not have the time, ability, or means to collect and process information. In this situation lenders may not want to commit resources to investment projects about which, however promising they may appear to be, there is little information. Financial markets and institutions can alleviate these problems by specializing in the activities of screening and evaluating investment projects. They can perform these tasks much more efficiently than individual lenders because they enjoy benefits stemming from economies of scale and learning-by-doing. The result would be a more and better allocation of financial resources.

In addition to the costs of screening and evaluating potential investment projects before committing resources, there also exist substantial costs of monitoring the agents who are actually managing the investment projects, and costs of exerting appropriate corporate controls, once loans are committed. The costs would be especially substantial when there is an asymmetry of information between the agents and the principals. Financial markets, contracts, and institutions can fruitfully minimize these costs on behalf of individual lenders. The results would again be a more and better allocation of financial resources.

Financial markets and institutions can increase the overall savings by offering diverse financial instruments to potential savers. By offering instruments with differing denomination, maturity, and diverse return-risk characteristics, financial markets and institutions can mobilize savings from more savers. They can also economize on costs of collecting savings from many different individuals. Some of these efficiency gains would be returned to the savers as higher returns, inducing them to save more.

Financial arrangements that lower transaction costs involved in borrowing and lending activities can promote specialization and division of labor. That division of labor and specialization are the ultimate sources for productivity growth is well known ever since Adam Smith emphasized this point. Division of labor and specialization, however, cannot occur unless exchange of goods and services produced through the division of labor and specialization are possible. Thus financial arrangements, by reducing transaction costs and thereby enabling more and wider exchanges to occur, promote specialization and division of labor.

These arguments all point to the key premise that financial arrangements contribute toward economic welfare by first correcting market failure and second by making markets function better. Here the two most important sources that might cause markets to fail, or might make markets function badly, are transaction costs and information costs. Financial arrangements, which arise to ameliorate problems caused by these costs, make some trade newly possible and other trade more efficient, all by eliminating or reducing these costs.

These points are again explained using a diagram. In Figure 2, which depicts demand and supply curves for financial resources, S stands for savings=lending supply, and D stands for borrowing demand. When financial markets and institutions are not well developed, marginal cost of supplying financial resources would be very high due to higher information and transaction costs. The savings curve S_0, which has a very steep slope, depicts such a situation. Suppose now the borrowing demand is given by the curve D_0. Then the market equilibrium would be attained at the real interest rate r_0 and $S_0=B_0$ amount of financial resources would be traded. The resulting interest rate would be very high and the traded amount of resources would be very small. If the cost of financial intermediation is very high and very rapidly increasing, then no trade could well be the only solution. That is, when the supply schedule S is positioned very high and has a very steep slope, the resulting equilibrium could be such that the actual amount traded is zero. If this happens, a market failure occurs. Compared with this situation of no trade, the equilibrium attained at the point A surely represents an improvement in social welfare.

Now the curve S_1 stands for the loan supply schedule with improved financial markets. Here improvement means essentially a

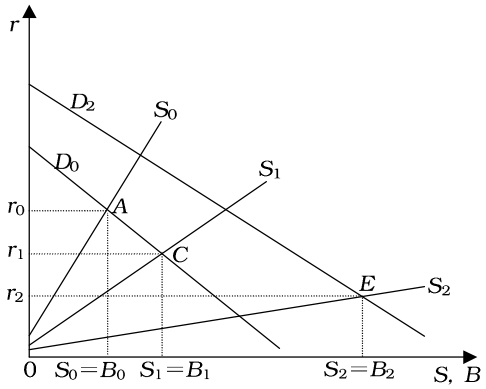

FIGURE 2
IMPROVED FINANCIAL ARRANGEMENTS ENHANCE WELFARE

substantial reduction in information and transaction costs. That is why S_1 is positioned lower than S_0 and has a flatter slope: The cost of financial intermediation is lower for any given amount of financial transaction and rises less steeply with an increase in the amount traded. If the borrowing demand remained the same, then a new equilibrium would be attained at the real interest rate r_1 and the volume of trade $S_1=B_1$. With an improvement in financial markets, the interest rate would surely decrease and the amount of financial resources traded would surely increase. Clearly the point now attained represents an improvement in social welfare. This welfare gains stem from the improvement in financial markets.

Suppose now there occurs further improvements in financial markets and institutions so that the new savings supply schedule would be given by S_2. Since this represents an improvement, it is positioned very much below the S_1 curve and has a much more flatter slope: Marginal cost of supplying financial resources is now everywhere lower and rises very slowly. With the improvement in financial arrangements it may well be the case that the demand for financial resources would also substantially increase. New borrowers may come into the markets and borrowing for newer activities may occur. As these happen, the demand schedule may also shift up to a new one. The demand curve D_2 depicts such a case. Now the equilibrium would be attained at a point like E. Here the resulting interest rate would be very low r_2 and the amount

traded would be very large $S_2 = B_2$. With further improvements in financial arrangements the equilibrium real interest rates would decrease and the volume of financial resources traded would increase, resulting in substantial welfare gains.

III. Finance and Economic Growth

Financial markets and institutions can contribute toward economic growth through various channels. This point can be demonstrated utilizing the following alternative theoretical frameworks.

A. Finance and Aggregate Production Function

The first approach is to consider financial services as productive inputs in the aggregate production process. One way of doing this is to define the financial capital stock from which financial services flow out and to treat the financial capital stock as input. For this consider the following aggregate production function:

$$Y_t = A_t \cdot F(N_t,\ H_t,\ K_t,\ FC_t,\ SC_t). \tag{4}$$

Here Y_t = real output = real GDP, A_t = the level of technology adopted, N_t = labor force = number of work hours, H_t = human capital stock, K_t = private physical capital stock, FC_t = financial capital stock, and SC_t = social capital stock, all for a period t.

Except for the financial capital stock, all other variables are standard and need no further elaboration. In equation (4) the financial capital stock enters as input in the economy's aggregate production technology. In this case, then accumulation of the financial capital through appropriate investment activities will lead toward increases in the aggregate output. That is, the prolonged accumulation of financial capital will lead toward the growth of output. This is one way of modeling the role of financial markets and institutions in bringing about economic growth.

In equation (4) the inputs would normally have positive marginal products and persistent increases in any of them would lead toward economic growth. If X stands for various capital stock, its evolution over time is usually given by the following:

$$X_{t+1} = I_t^X + (1 - \delta_X)X_t\ .$$

Here I^X = an investment to accumulate capital goods of type X and

δ_X=depreciation rate for the capital stock of type X. In particular, for the financial capital we have:

$$FC_{t+1}=I_t^{FC}+(1-\delta_{FC})FC_t\,, \tag{5}$$

where I^{FC}=an investment for financial capital and δ_{FC}=its depreciation rate. Thus when human as well as physical resources are used to accumulate financial capital stock, they lead toward economic growth as more financial capital is used for production. This is the point explained in the previous paragraph.

The contribution to economic growth by finance through this channel, however, would in general be limited. The accumulation of financial capital would be eventually subject to the diminishing marginal productivity principle. When that happens, further accumulation of financial capital would only have level effects and cease to have long lasting growth effects.

In addition to this direct influence, there are other channels that the economy's financial arrangements could contribute toward economic growth.

First, they could contribute toward more and better accumulation of other capital stocks. For example, developments in financial markets and institutions can promote more and better accumulation of human capital, physical capital, and social capital. If, thanks to the availability of financial arrangements, the cost of those investments can be reduced or the benefits of those investments can be enhanced, then not only more investment but also better investment can be made. Thus in equation (5), developments in financial markets and institutions could positively influence the investment activities I^X and thereby result in increases in X=H, K or SC. These latter then increases output, i.e. promotes economic growth.

Second, developments in financial markets and institutions can promote the accumulation of technology. Of course, when more and better investments are made and when the speed of technological progress is hastened, then the result would be a more rapid economic growth. This point can be described more formally using the following:

$$A_{t+1}=A(I_t^A,\ A_t)+(1-\delta_A)A_t\,. \tag{6}$$

Equation (6) describes one possibility of how technology might evolve over time. Technology, or more generally knowledge, increases

over time if newly produced technology is larger than the amount that has become useless due to depreciation or obsolescence. The production of new technology is modeled in equation (6) as a function of the amount of investment made and the existing level of technology. Both of them have positive marginal products in the technology production function. Now developments in financial arrangements could make I^A less costly or make the production of new technology more efficient. In either case financial developments could contribute toward economic growth by speeding up technological progress.

Alternatively, we can directly put financial capital stock into the $A(\cdot)$ function in equation (4). This is the case when developments made in the financial sector directly contribute toward the economy wide technological progress. Growth of venture capitalists is a good example for this direct contribution.

The contribution to economic growth by finance through these channels can have long lasting growth effects in addition to the usual level effects. When developments in the financial sector directly enhances the speed of technological progress, it will most likely raise the steady state growth rates. When developments made in the financial sector interact with other kinds of capital stock, the interaction may result in economy wide constant returns, thereby making higher steady state growth rates possible.

B. Finance and Reduction in the Cost of Intermediation

The second approach is to model the impact to economic growth of a reduction in the overall transaction costs, especially in the form of intermediation costs, being made possible when finance develops. As finance develops, the cost of intermediation would in general decline. This decline in the cost of intermediation could have a favorable impact on economic growth. When the cost of intermediation declines, lenders as well as borrowers benefit from it. Lenders benefit because they earn more, while borrowers benefit because they pay less. When lenders earn more, more resources will be available for lending. When borrowers pay less, more and better investments can be made. This would usually lead to higher economic growth. When borrowers pay less, it could well promote more rapid technological progress. When this happens, growth rates would also most likely go up.

The mechanism through which a reduction in intermediation costs lead to more rapid economy growth can be most conveniently explained using a simple model of optimal growth. Consider a growth model, where households have a constant elasticity of substitution utility function of the following form,

$$U=\int_0^{\infty} e^{-\rho t}\left(\frac{c^{1-\theta}-1}{1-\theta}\right)dt, \tag{7}$$

and output producing firms have the so-called Ak production technology. That is, $y=Ak$, where y=output per person, A=level of knowledge, and k=capital per person. It is well known that in this kind of model, the followings should hold:

$$r_k=A \text{ and } r_s=\rho+g_c\theta. \tag{8}$$

Here r_k is the real borrowing rate paid by firms (borrowers), r_s is the real lending rate received by households (lenders), and g_c is the growth rate in per capita consumption. In our model g_c is identical to the growth rate in per capita income.

When the cost of intermediation is 0, i.e. when financial intermediation is super efficient, the borrowing and lending rates would coincide. Then the resulting growth rate would be given by

$$g_c=\frac{A-\rho}{\theta},$$

which is the highest possible growth rate in this kind of model.

However, in reality the borrowing rate would in general be higher than the lending rate due to costs of intermediation. Let these costs be denoted by a parameter b. Then, $r_k=r_s+b$ and therefore the growth rate of per capita consumption is given by

$$g_c=\frac{A-\rho-b}{\theta}. \tag{9}$$

The presence of the cost of financial intermediation b in equation (9) clearly lowers the growth rate. It is also clear that the higher the financial costs b are, the lower becomes the growth rate. This means that when developments in financial markets and institutions reduce the costs of financial intermediation b, growth rates would go up. Naturally when the costs of intermediation are nil, i.e. $b=0$, the growth rate would be at its maximum.

This discussion is clearly incomplete since the costs of financial

intermediation b are treated as an exogenous parameter. In reality, however, b would be a complicated function of other economic variables. For example, the amount of human and physical capital stock employed in the financial industry would definitely influence b. So do general and specific knowledge and technology concerning financial activities. As the amount of inputs used in the financial industry increases and/or as knowledge or technology relevant for the financial industry progresses, average or marginal intermediation costs could decrease. When this happens, b would decrease. Of course there is no free lunch: Activities to lower b require resources and these uses of resources for financial development might negatively affect the growth potential of the economy. Some of these issues are dealt with in Becsi and Wang (1997) and Becsi, Wang, and Wynne (1998).

IV. Finance and Economic Crisis

So far I have reviewed only the positive aspects of finance. Finance, however, may contribute toward economic crises when it malfunctions. This section investigates when finance can go wrong.

Several Asian economies including Korea are currently experiencing economic hardships caused by the foreign exchange crisis which erupted in the middle of 1997. The crisis, which started from Thailand in July 1997, had quickly engulfed Indonesia, Malaysia, and Korea. These economies have suffered heavily from the crises.

As with other crises, notably Latin American crises of yesteryears, the East Asian crises have a lot to do with faulty financial systems. We have just seen in the previous section that developments in financial markets and institutions would in general promote economic growth by making more and better investment possible. This conclusion is heavily dependent on the premise that financial markets and institutions perform their roles of identifying, screening, and monitoring investment projects efficiently and fruitfully. That is, the conclusion is crucially dependent on the premise that financial systems would efficiently and productively do their parts in resource mobilization and allocation. However, if financial systems do not perform these tasks well, they can and do create troubles for the entire economy.

A. When a Financial System Malfunctions, It Can Bring a Disaster

Faulty financial systems can cause trouble for the entire economy, because finance is so pervasive in modern economies. Millions of borrowers and lenders from all over the nation and frequently from all over the world participate in the financial markets. Households, firms, and governments all take part in financial activities almost daily throughout the year. A financial system is like the system of blood circulating in a body. When it promotes uninterrupted circulation of resources in an economy, it is fulfilling its tasks of allocating resources to where they can be used most fruitfully. A well functioning blood system can make the body healthy and strong. Likewise a well functioning financial system can make the economy healthy and prosperous. However, the pervasiveness of finance is a double-edged knife: When its circulation is interrupted, troubles will surely arise. Sometimes the troubles can get so serious as to bring the entire economy to a screeching stop.

When does finance cease to function well? Finance can cause troubles either because of weaknesses in its innate nature or because of faults in the system designs. There are two weaknesses of finance that can be causes for its own demise. One is the information asymmetry existing between borrowers and lenders and the other is the ability of the financial system to create credits. Faults in the financial system can take various forms. Lack of meaningful competition in financial markets, lack of a governance system that can discipline financial institutions, or wrong incentives built in a deposit insurance system are all examples of the latter.

a) Asymmetric information may ignite bank runs

The asymmetric information structure between borrowers and lenders is the most important feature of finance. To the extent that financial markets and institutions can handle the problems arising from the information asymmetry well, they would contribute toward efficient allocation of resources. In fact well functioning financial markets and institutions can solve various problems stemming from the asymmetry of information. They do this first by developing their capacity to evaluate and to screen borrowing requests *ex ante* and second by developing their capacity to monitor the borrowers once lending commitments are made, and to exert appropriate controls to the latter when they misbehave.

When a financial system cannot perform these tasks well, financial institutions could very well lend to unworthy borrowers. When that happens, investment projects thus financed could very easily go sour. If this happens on a massive scale, not only the borrowers but also the lending institutions would be in serious trouble. When information asymmetry is not addressed properly, activities based on moral hazards and adverse selection are very difficult to avoid. Borrowers as well as lenders would have wrong incentives in this situation. When this happens the result can be an accumulation of non-performing loans or an accumulation of excessively risky loans. A financial institution with a large amount of non-performing loans or with highly risky loan portfolios, is an easy target for a bank run. The trouble is that when a bank run occurs, it can very easily develop into a banking crisis.

b) Credit creation and boom-bust cycles

Now if all financial institutions engage only in pure inter-mediation without creating credits, failures of the above kinds would not be as serious as failures that occur when credit creating institutions are pervasive. In the former case, lenders and lending institutions would experience partial or total losses. The financial system would function less well, too. But the troubles usually stop here. However, in the latter case, failures may mean a widespread collapse of credit creating institutions, which would in turn interrupt a whole array of economic activities. Therefore, the fact that financial institutions can create credit can become an important source for financial troubles.

Banks can and do create credit by issuing deposit money in several multiples of reserve assets. In normal times, this practice of keeping fractional reserves does not cause any trouble. However, when events turn bad, the fact that banks keep only fractions of deposits as reserves can be an important source for trouble. In such a situation, a bank run can easily turn into a major banking crisis. If this happens, financial activities would suddenly become very costly, which would inevitably make entire economic activities costly. The result would be a substantial decrease in economic activities. Not infrequently, the trouble may grow so much as to bring the entire economy into a crisis.[2]

[2]Of course, the ability to create credit by financial institutions has positive effects, too. The discussion here focuses only on its negative aspects.

Financial institutions can cause boom-bust cycles. It is especially so for the deposit money banks that can create credits. A boom-bust cycle happens when a boom in real economic activities created or fueled by easy bank credit collapses as the over-stretched banks cut off further credit to save their own skins. Banks can initiate credit booms when they find themselves to be with excess reserves. Banks can find themselves to be with excess reserves when the central bank increases the supply of reserve money or when the central bank reduces the reserve requirement ratio. An increased lending by foreign financial institutions to domestic entities is also an important source for excess reserves. Therefore, easier monetary policy and increased availability of international liquidity can trigger credit booms.[3]

Banks can and do fuel booms once they begin, too. Banks usually require borrowers to supply collateral assets before they will commit to loans. When economic activities prosper the value of collateral assets would usually rise. As a result borrowers find themselves able to supply an increased amount of collateral assets during economic booms. This in turn allows banks to supply additional credit. As banks give out more credit, business activities heat up further. This may further increase the value of assets a borrower holds, which then may allow the borrowers to borrow more from banks. In this way a boom may develop into a bubble.

The process, of course, cannot continue indefinitely. Sooner or later banks would find themselves over-stretched. When they realize this, they would begin to reduce loans. The availability of easier credit would also increase the overall level of risks associated with investment projects financed with bank loans. As this happens, the probability of some investment projects going bankrupt would go up. Some of the borrowers would find themselves unable to meet loan repayment schedules. When this happens, banks would tighten their credit lines. As the supply of credit is reduced, overall economic activity would cool down. And as overall business activities cool down, more borrowers would go bankrupt. And so on. The process can develop into an avalanche and the result

[3]Again the point here is that the ability of financial institutions to create credit may lead to trouble if it is not carefully managed by suitable preventive supervisory mechanisms. If well managed, the ability to create credit may contribute toward the stability of the financial markets.

would be a serious recession.

Sometimes the avalanche thus begun cannot be easily contained and can develop into serious banking crises. As more firms go bankrupt, banks would further reduce credit, and as banks reduce credit, more firms would go bankrupt. In this process, some of the weaker banks may go bankrupt, too. If a bank fails or shows signs of troubles, a bank run would be almost unavoidable. The bank run, when not contained in the beginning, may easily develop into a full-blown banking crisis.

International capital flows may ignite or fuel these destabilizing processes, too. When the magnitude of internationally flown capital are big enough, international capital flows alone can produce boom-bust cycles. Even when their magnitude is small, they may amplify the boom-bust cycles ignited by domestic agents, since the two tend to move together.

c) Is finance inherently unstable?

The troubles discussed above arise from the very nature of finance. Some of them may be unavoidable. But others can be avoided or minimized, if proper preventive mechanisms could be established. In this regard a well designed deposit insurance system, a well designed strictly enforceable disclosure system, and a well-designed prudential regulatory framework would be helpful. If any of these is not properly operating, financial troubles would occur with higher probability. These institutions and systems, however, are mostly environmental variables. They define the outer environment in which borrowers, lenders, financial institutions, and financial markets operate. Financial markets, on the other hand, constitute the inner environments in which the players, borrowers, lenders, and financial institutions, pursue their goals through diverse interactions. Therefore, ill functioning markets could be another important cause for financial troubles.

Given the outer environment, whether borrowers and lenders can efficiently fulfill their wants and needs would depend on how efficiently financial markets are functioning. In general the efficiency of financial markets would be highest when there exists fierce competition among borrowers, lenders, and financial institutions. Since there are usually millions of borrowers and lenders, none of whom are big enough as to exert strong market powers, the most important requirement for a competitive financial

market is the competition among financial institutions. When multitudes of financial institutions fiercely compete among themselves, the resulting resource allocation would most likely be efficient.

B. Financial Controls May Be the True Villain

Financial markets would not work properly when the outer environments surrounding the financial markets are poorly designed. Faulty financial systems could cause financial troubles by giving wrong incentives to borrowers, lenders, and financial institutions. Let me illustrate the point using an example.

Financial controls have been extensively used as the main means for conducting industrial policies in many developing countries. Here diverse modes of financial controls had been used. Among those the government-led credit allocation policy appears to have been the most important. The essence of the policy is the creation of economic rents through financial regulations and distribution of thus created economic rents to policy designated areas. This policy has seriously distorted incentives of borrowers, lenders, and financial institutions.

a) Mechanisms of financial control: A graphical exposition

In order to understand the issues involved, let us utilize Figure 3.[4] In the figure, the horizontal axis denotes the amount of financial resources and the vertical axis the typical interest rate. The curve S_0 denotes the supply of funds when there do not exist entry barriers to the financial industries, while the curve S_1 denotes the supply of funds when there are entry barriers. With entry barriers the efficiency of the incumbent tends to decline and marginal costs tend to rise. That is why the curve S_1 lies to the left of S_0 with a steeper slope. The curve D meanwhile denotes the demand for funds as a function of the interest rate. As usual D slopes downward, while S slopes upward.

When there exist no restrictions, the equilibrium market clearing interest rate would be set at R_0 and the equilibrium amount of funds transacted would be equal to f_0. When there is complete freedom in international capital movement, the equilibrium interest rate R_0 would be equal to the international interest rate plus the

[4]The discussions in this and the following sections are based on Lee (1998).

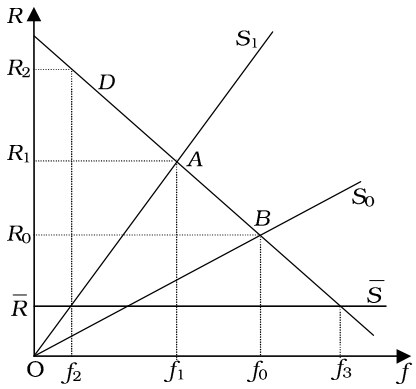

FIGURE 3
EFFECTS OF LOW INTEREST RATE POLICY

country risk premium plus exchange rate risk premium. When international capital movement is not free, the domestic equilibrium rate could deviate from the international rate by substantial margins.

Now with entry barriers but no interest rate regulations, the new equilibrium would be set at R_1 and f_1. With entry barriers, interest rates will rise and amount of funds transacted will decline. These changes will reduce social welfare (consumers' surplus and producers' surplus) by the amount equivalent to the triangle *ABO*. When entry barriers raise marginal cost of providing financial services substantially, the social welfare loss will also be substantial.

Suppose now an interest rate ceiling is imposed: Banks cannot charge more than $\bar{R}$. The regulated interest rate $\bar{R}$ is kept lower than the pre-regulation equilibrium rate R_0. When the interest rate is set at $\bar{R}$, the demand for funds increases to f_3, while the supply of funds decreases to f_2. As a result there would appear an excess demand for funds by the amount of f_2f_3. As the amount the borrowers want to borrow is much greater than the amount the lenders are willing to lend, borrowers will fiercely compete for the limited funds.

As the interest rate is regulated now, it cannot play the role of adjusting demand and supply. Alternative mechanisms are needed to allocate the available funds. One such mechanism is the allocation of credit following the guidelines set by the government.

When the interest rate ceiling is set at $\overline{R}$ in Figure 3, this is the rate officially charged to the borrowers and paid to the depositors after charging service fees. Since the rate $\overline{R}$ is lower than the rate R_1 that prevailed before, it appears that the borrowers who in fact can borrow at $\overline{R}$ gain the rate differential $R_1-\overline{R}$. The benefit that a borrower can get from this transaction is proportional to the amount borrowed. This is not the whole story, though, since the marginal borrower who faces the credit limit is willing to pay up to the interest rate R_2. This is the rate that would prevail in the curb market, had the government left things to the market once it introduced the interest rate ceiling. Thus the actual benefits of securing a loan at the rate of $\overline{R}$ become $R_2-\overline{R}$ times the amount borrowed. In Figure 3, then the amount $Of_2\times(R_2-\overline{R})$ corresponds to the economic rents created by the policy of financial control.

b) Financial controls and the rent seeking behavior

Economic rents created by the policy of imposing an interest rate ceiling can be very large. For example, there were times that the curb market rate was 30% when the regulated rate was kept at the 15% level in Korea. When gains were this large, naturally there occurs fierce competition among various players in the financial markets to secure economic rents for themselves.

First, there are shareholders of the financial institutions. Financial institutions devise various ways to charge borrowers more than the regulated interest rate $\overline{R}$. One such way is to require borrowers to maintain compensating balances. These are deposits a borrower must maintain at the lending bank in return for a loan. By keeping interest rates paid for these deposits lower than the regulated rates, banks can recoup some portion of the rents. To the extent that the rents taken by the financial institutions strengthen the value of the financial institutions, the owners of the latter gain, too.

Second, the employees of financial institutions receive some of the rents. Some of the rents taken by the financial institutions by requiring, for example, compensating balances, are distributed to their employees in the form of higher salaries and other benefits. Employees including top management often take bribes or commissions from the borrowers, too.

Third, the borrowers also take part in the sharing of rents. When borrowing costs, including not only the explicit interest payments,

but also including all other legal and illegal implicit costs, are kept lower than R_2, the borrowers also gain from the transactions. Now it turns out that frequently it is the case that such big borrowers as chaebols or those borrowers that got favors from the government are those who gain most from this rent allocation process.

Fourth, the authorities who impose financial controls also take part in the rent sharing. These include high-ranking officials of the related ministries or supervisory authorities. Of course, politicians including Presidents who can exert influences on the bankers or their regulators, take a large portion of the rents, too. They take bribes or 'contributions' from the favored borrowers, from the bankers, and from the government officials.

Fifth, the ultimate lenders, i.e. savers, also share some portion of the rents. Since interest rates are regulated, savers are compensated instead with in-kind benefits. The latter includes such practices as maintaining as many branch offices as possible to allow easy access for depositors or give favors to relatives of big depositors when they apply for positions. These in-kind payments, however, are well known to be very inefficient ways to compensate the savers.

Sixth, the rent seeking behavior exerted by various players themselves also use some of the rents. Costs of rent seeking can be very large, in which case, there would arise large social welfare losses. Politicians, regulatory authorities, managers and employees of financial institutions, their shareholders, large or small borrowers, and savers all compete to take the rents. Resources used for this kind of fierce competition are pure losses.

c) Negative effects of financial controls

Of course, the government-led credit allocation policies can produce good effects for the economy, too. The achievement of rapid growth through promotion of export industries might be one example. However, the negative effects of the policies seem to have been as great as or greater than their good effects. The followings are some of the negative effects.

First, policies could induce financial firms to remain complacent. Since they are protected with entry barriers, they are not exposed to serious competition. Restrictions imposed on foreign banks in their operation in the host countries also greatly reduce competitive pressures. Furthermore, as there exists persistent excess demand

for funds due to the low interest rate policy and as the financial institutions are required to disburse loans according to guidelines set by the government, they are not compelled to develop loan evaluation skills. In the end banks become *de facto* loan disbursement windows. The policy thus can retard the normal development of financial industries leaving them as laggards in international financial markets.

Second, the policies would induce those borrowers who can secure loans at subsidized rates to borrow more, making them heavily dependent on bank loans. These would induce firms to maintain liabilities and capital structures very skewed toward liabilities. Since the firms that can borrow most from the banks at subsidized rates are usually bigger ones, the latter's financial structure would over time become overly debt dependent.

Third, the policies induce borrowers who can secure loans at subsidized rates to invest heavier than otherwise would be the case. The policies also induce firms to invest more recklessly. Again these policies can help big firms to expand their empires beyond, by many times, the levels deemed to be prudent. Excessive investments or improper investments made by big firms in many Asian countries were very much of this kind.

Fourth, the policies can result in unhealthy concentration of financial resources within particular types of borrowers. Big firms who are engaged in manufacturing or selling products for export markets are usually the most favored borrowers in many developing countries. For example, when the Korean government promoted the establishment of 10 general trading companies in the late 1960s, the latter got most of the subsidized loans. As a result, the general trading companies became very big in a very short period of time. They soon became the *de facto* holding companies of their affiliates, as the former acted as pipelines supplying financial resources for the latter. These related firms linked through a general trading company later grew into chaebols. Thus chaebols were in a very important sense products of the policy of financial repression. When the government undertook the so called heavy and chemical industrialization drive in the 1970s, many big businesses took the opportunity and grew bigger utilizing again the subsidized bank lending.

Fifth, the policies of keeping interest rates lower will induce the surplus units of the economy to save less. In order to mitigate the

disincentive effects on savings, governments usually introduce various means to promote savings. Though these policies can raise national saving rates, promoting savings using means other than the interest rate mechanism is invariably very costly. The low interest rate policy can also induce savers to hold their savings more in non-financial assets. Real estates, for example, can become the most preferred medium for savings. This tilt toward real estate would raise the value of real estates higher than otherwise. As their value rises, more people want to hold real estates, and as this happens, the value of real estates rises further. This, of course, can be a birth of the bubble economy.

Sixth, the policy of regulating interest rates can result in raising the costs of financial intermediation. Entry barriers and interest rate regulations will weaken the incentives for the financial institutions to raise productivity. The lack of improvement in productivity in turn takes away a very important source for the reduction of the cost of intermediation. The rent-seeking behavior associated with the interest rate regulation policies raises the cost of financial intermediation by forcing both the lenders and borrowers to spend unnecessary resources. Finally, those borrowers who could not borrow from banks at subsidized rates have to resort to the curb markets, where interest rates are much higher. This also results in raising the cost of financing for many borrowers.

d) A simple mathematical exposition of the effects of the low interest rate policy

In order to understand the impact of a low interest rate policy on the lender's welfare and on economic growth, consider a simple two period model. Here a typical consumer-saver solves the following problem:

$$Max\ u(C_0)+\frac{1}{1+\rho}u(C_1), \tag{10}$$

$$\text{subject to:}\quad C_0+S=Y_0,\ \text{and}\ C_1=Y_1+S(1+r)+\pi .$$

And a typical firm solves the following investment problem:

$$\text{Max}\ \ \pi=F(K)-(1+r)K. \tag{11}$$

Here Y_0 and Y_1 are endowments and C_0 and C_1 are consumptions for each period, S is the amount saved or borrowed by a typical consumer, π is the profit of a typical firm to be returned to the

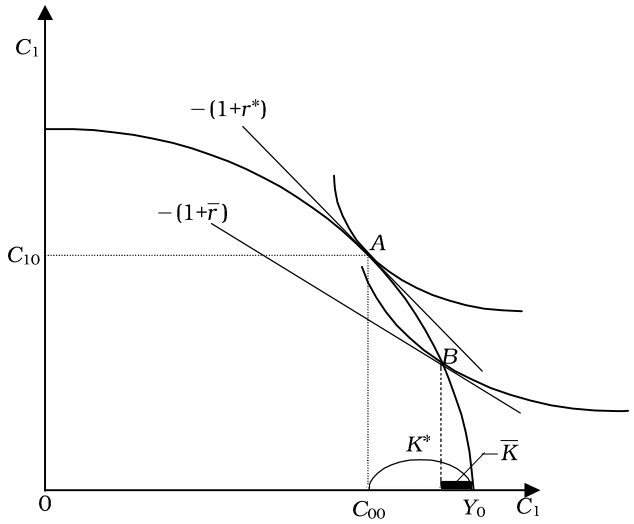

FIGURE 4

IMPLICATIONS OF THE LOW INTEREST POLICY WITH CAPITAL CONTROLS

consumer as dividend, K is the capital stock used for production, and r is the interest rate prevailing in the market. In equilibrium, $S=K$ must hold.

When consumers and firms are free to choose what they want and when markets remain free, the following would hold:

$$\frac{u'[Y_0-K^*](1+\rho)}{u'[Y_1+F(K^*)]}=F'(K^*)=r^*. \tag{12}$$

This is nothing more than the tangency condition between an indifference curve and the transformation curve. The point A in Figure 4 corresponds to this. When this holds, saving and investment would be at their optimal level K^* and welfare would be maximized.

Suppose now there exists an interest rate ceiling at $\bar{r}$, which is lower than the market clearing level r^*. When the interest rate is set at $\bar{r}$ consumers would save less, while firms would like to invest more. Thus the borrowing-lending market would not be cleared. Something else must be done to clear the market. Two polar cases can be considered.

The first case is where consumers would save $\bar{S}$, which is the amount saved when the interest rate is $\bar{r}$, and firms invest only

the saved amount $\overline{K}=\overline{S}$. Note that the point B in Figure 4 corresponds to this case. As we can see from Figure 4, it is clear that the point B is welfare inferior to the point A. Note that at point B, the slope of the indifference curve is flatter than the slope of the production frontier. At point B, the slope of the indifference curve is $-(1+\overline{r})$ and the slope of the production frontier is $-(1+r_1)$, where $r_1=F'(\overline{K})$. It is clear from Figure 4 that at point B, a smaller amount is saved and invested than at point A. When government imposes an interest rate ceiling without doing anything to augment savings, the society might save and invest less. Consumers might save less because the rate of return on savings is lower, while the firms invest less because the implicit borrowing rate is higher.

The second case is where domestic consumers would save $\hat{S}$ and firms would invest $\hat{K}$, where $\hat{K}$ is determined as in $F'(\hat{K})=1+\overline{r}$. That is, $\overline{K}$ is the amount firms would invest when the borrowing rate is $\overline{r}$. Here domestic saving $\hat{S}$ is in general different from the amount $\overline{S}$ given above. Since the lending rate and the borrowing rate, which are both at $\overline{r}$, are lower than the market-clearing rate r^*, the amount invested $\hat{K}$ is larger than the amount domestically saved $\hat{S}$. How is the remainder made up for? One way to finance the deficiency is to borrow in the overseas market. Suppose domestic firms can borrow $\hat{B}$ from overseas at the rate $\overline{r}$. Then $\hat{K}=\hat{S}+\hat{B}$ will hold. Note that in this case domestic consumers would be at point C while domestic producers would be at point D in Figure 5. C is the point at which households consume $Y_0-\hat{S}$ in period 0 and $Y_1+F(\hat{K})-(1+\overline{r})\hat{B}$ in period 1. D is the point at which firms invest $\hat{K}$ to achieve $1+\overline{r}=F'(\hat{K})$. As we can see in Figure 5, point C would in general guarantee higher utility than point A. How is this possible? It is possible because domestic firms have access to lower cost international financing thanks to capital market opening and thereby can produce greater output.

These two may just be cases of theoretical interest and the reality might be different from these. Policy makers usually do not allow fully free capital mobility. Therefore, they would always exist excess demand for funds at the regulated rate $\overline{r}$. Government typically uses guidelines by which banks are supposed to allocate funds to the favored borrowers. In this case the favored borrowers who can borrow at the regulated rate will invest more than what they would invest at the unregulated rate. Of course, those borrowers who are not favored would have to pay substantially

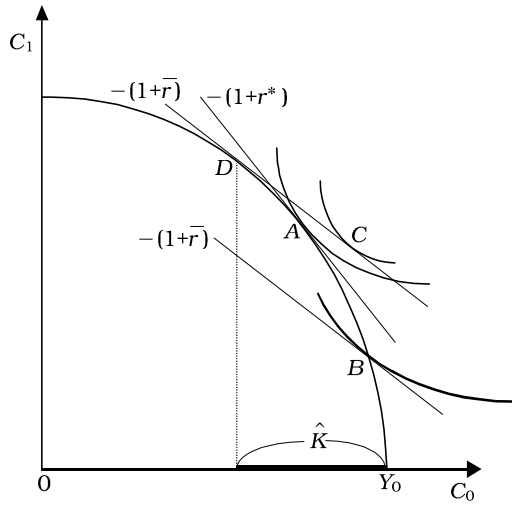

FIGURE 5

IMPLICATIONS OF THE LOW INTEREST POLICY WITHOUT CAPITAL CONTROLS

more than the unregulated rate.

As I have illustrated above, these kinds of selective interventions could result in substantial efficiency losses for the entire economy. This situation can be depicted as an inward rotation of the production frontier curve as is shown in Figure 6. If the efficiency losses are really substantial, it could well be the case that the final equilibrium with interest rate regulation, turns out to be welfare inferior to the unregulated equilibrium. Points E and F in Figure 6 depict such a situation.

Here F is a point at which firms invest $\tilde{K}$ amount of resources to attain $1+\bar{r}=\tilde{F}'(\tilde{K})$, where $\tilde{F}(K)$ is the production technology rendered inefficient due to financial controls. Point E is a new equilibrium point for households. Because of the inefficiency caused by financial controls, consumers could only reach point E, though firms invest a fair amount of $\tilde{K}$. As indicated in Figure 6, point E is welfare inferior to A, B, or C. When prolonged financial controls make the economy inefficient, an outcome might be a substantial deterioration in welfare.

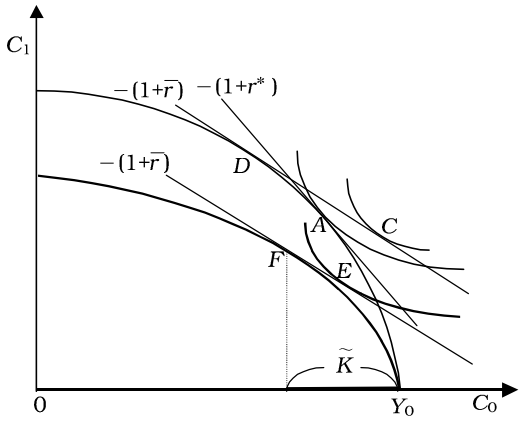

FIGURE 6
EFFICIENCY LOSS DUE TO THE LOW INTEREST POLICY

V. Finance and Corporate Governance: East Asian versus Western Perspectives

Failure of the corporate governance systems is an important aspect of the 1997 Korean economic crisis. The same may be applicable to other countries experiencing crises, too. Here corporate governance refers to the activities of outside agents, institutions, or markets disciplining the target firms or industries. We can consider several alternative corporate governance mechanisms.[5]

A. Corporate Governance Mechanisms

The output market on which a firm trades its outputs and inputs can be a very effective governing mechanism. What is most important here is fierce competition among buyers and sellers. Competition is in general the most effective mechanism through which true winners and losers are identified and rewarded or punished.

The capital markets on which a firm's newly issued or existing shares are traded can be another effective mechanism governing the behavior of firms. As variations in stock prices reflect how well

[5]See, for example, Aoki and Kim (1995) for discussions on corporate governance.

a firm is managed, share holders can easily reward or punish the managers of a firm by buying or selling the shares. Mergers and acquisitions and hostile takeovers are very effective means enhancing the governing role of capital markets.

Financial institutions also play the role of corporate governors. Carefully screening loan applications, faithfully monitoring borrowers' behaviors after loans are committed, and exerting appropriate controls on them are activities of financial institutions bearing on corporate governance. When financial institutions can perform these tasks well, the most deserving investment projects would be financed (screening), the investor-managers can be induced to do their best (monitoring), and costly managerial mistakes can be avoided by exerting appropriate controls.

In addition to these market or insider based corporate governance mechanisms, two outsider based mechanisms are used, too. One is governance by rule based regulations and the other is discretionary interventions and controls of the government. An example of the former is the direct or indirect corporate governance of regulatory agencies. The Security Exchange Commission of U.S. and its counterparts in other countries are a case of indirect corporate governance. The SEC governs the behavior of corporate firms indirectly by enforcing regulations on the capital markets. Federal Trade Commission and its equivalents on the other hand are a case of direct corporate governance: They enforce regulations directly on corporate firms. Discretionary interventions of governments are also used to govern the behavior of firms. Direct control by governments are used more in underdeveloped economies, whereas in advanced economies market based self disciplines or rule based regulations are normal modes of governance.

B. Different Modes of Corporate Governance Mechanisms

In terms of corporate governance mechanisms actually adopted we can discern differences between Anglo-Saxon practices and practices in several East Asian countries. The former rely more on the markets' own self-disciplinary measures supplemented by rule based regulations. The latter rely more on discretionary governance by financial institutions and/or governments. This difference may reflect to some extent differences in the extent to which markets are developed. Thus in countries where markets are well developed,

self disciplines imposed by markets supplemented by strictly enforced rule based regulations can be a very effective governance mechanism. However, in countries where markets are not well developed and regulatory frameworks are inadequate, self-discipline of markets cannot be relied upon and direct and very frequently discretionary controls of the government are unavoidable. This may be the case in Korea, China, Indonesia, and Malaysia (the first group hereafter).

However, not all East Asian economies follow this pattern. Hong Kong and Singapore rely more on markets and rule based regulations. Taiwan and Thailand also belong to this group, although discretionary mechanisms are also often used. Japan is another exception. Japan is a precursor of the first group of East Asian economies in that she does not rely much on markets (output, input, and financial markets) for corporate governance. Nevertheless, Japan is different from the first group in that her government does not directly try to control corporate firms. Instead, in Japan governance by financial institutions has been the main mode of corporate governance. The main bank system very well epitomizes the Japanese way of corporate governance.

A comparison among Korean, Japanese, and American corporate governance mechanisms may well reveal issues involved here.

In the case of Korea, when she undertook processes of economic development in the early 1960s, the government was perhaps the only institution capable of formulating and implementing development plans. Though the stated goal was to develop a market based economy imitating western economies, markets, firms, financial institutions, and regulatory frameworks were grossly underdeveloped at that time. Thus the government took initiatives and began to influence the economic activities of private agents. In doing this the government found that controlling financial institutions was a very effective means to exert controls on corporate firms. The result was a rapid subjugation of financial institutions to government, the practice of which continued until recent years. Thus the Korean system of corporate governance may be described as direct and discretionary controls of government using financial institutions as simple intermediaries between government, the governor, and corporate firms, the governed.

In the case of Japan, her government does not directly try to control corporate firms. Instead she lets the financial institutions,

the main banks, do the jobs. Thus in Japan the main banks have been exerting disciplines on their client firms.[6] As firms that are directly controlled by the main banks have numerous subsidiaries and interrelated firms under the umbrella of each, the main banks have been exerting controls effectively on almost all firms. The main reason why Japan relied on the main bank system was the belief that markets in general were not a reliable corporate governance mechanism. Most in Japan thought that financial institutions, relying on their long-term relationships with their main clients, and the main clients' long-term relationships with their subsidiaries and other interrelated firms, could much more effectively govern the corporate sector. Here one of the fundamental aspect of finance, namely the asymmetry of information between depositors and financial institutions, and financial institutions and borrowers is frequently cited as the key reason why markets may be imperfect.

American system of corporate governance is a comprehensive system relying on markets, market participants, and regulatory institutions. There open and fair competition in all markets is the norm, financial institutions for their own survival rarely fail to impose discipline on borrowers, and regulatory agencies faithfully enforce rules agreed upon. The philosophy here is that well functioning competitive markets are the best means to discipline firms. Firms, be they financial institutions or not, have to do their best to win in competition. Financial institutions in particular have to do their best in governing the borrowers in order to survive in the fierce competition among themselves. Regulatory agencies here exist to ensure fair and open competition in all markets. They also punish those players who violate rules.

Which system is better? All the evidences indicate that the American system is the best, the Japanese system next, and the Korean system the worst. The Korean system of corporate governance by government might be the most powerful one in that its effects are direct and immediate, but it is very open to abuse and mistakes. The Japanese system might be better than the Korean system in that multitude of competing banks can do a better job of corporate governance than a monopoly government.

[6]See, for example, Aoki and Patrick (1994) for detailed discussions on the Japanese main bank system.

The system is also less open to abuse and mistakes. The American system is better than the Japanese system, because in America financial markets and institutions perform the task of disciplining borrowers better than their Japanese counterparts, and because in America governance mechanisms other than financial markets and institutions perform their parts well, too.

VI. Concluding Remarks

Finance which encompasses the activities, markets, and institutions related to the borrowing and lending behaviors is so pervasive in modern economies that we tend to take it for granted. The recent Asian crises, however, have vividly demonstrated that finance is anything but to be taken for granted. When it goes wrong, the entire economy may fall in trouble. In order to understand why finance may go wrong, it is imperative to understand what finance is, what kind of roles it plays, and how it is related to real economic activities.

The main role of finance is to correct market failures and to improve the workings of markets by substantially reducing the costs of intermediation. Costs of intermediation arise fundamentally from information and transaction costs inherent to borrowing and lending activities occurring in uncertain environments. Finance improves the state of resource allocation by correcting important market failures. Finance does this in the first place by enabling agents to enter into the lending and borrowing arrangements. This would in general improve social welfare. Finance also contributes toward economic welfare through its role of reducing the various forms of intermediation costs. When costs of intermediation are reduced, more and better investments are made so that a persistently higher economic growth should be possible.

However, when finance goes wrong, it can bring serious disaster to the entire economy. Finance may go wrong because it is inherently unstable. Financial instability stems from two sources. The first is the information asymmetry usually present in borrowing and lending activities. When information asymmetry encourages behavior based on moral hazard and adverse selection, financial institutions can go bankrupt leading sometimes to banking panics. The second is the aspect of finance that its most important sector,

the banking sector, can create credits. Banks create deposit money in multiples of reserves. As banks hold only a fraction of deposit money as reserves, they may be susceptible to bank runs. And a bank run can easily develop into full-blown banking panics.

The instability of finance, though it may stem from its inherent weakness, is by no means unavoidable. Instability becomes a serious problem when mechanisms that can ensure proper workings of the financial system and financial markets do not function well. That is, when the corporate governance mechanisms do not work properly with respect to the financial system and financial markets, the instability of finance becomes problematic.

Another important case when financial instability becomes problematic is when corporate governance mechanisms with respect to the real corporate sector do not work properly. The real corporate sector, which constitutes the borrowing side of finance, can lead the financial sector into trouble. When mechanisms governing the behavior of the firms in the corporate sector do not work well, business activities undertaken by the real corporate sector can become sour. When this happens on a massive scale, the failure of borrowers does not stop here. It would very likely lead the lenders, i.e. the financial markets and institutions, into serious trouble.

Therefore, making the corporate governance mechanisms for the financial sector as well as the real sector work well should be an important policy goal. It is well known that the various corporate governance mechanisms would work best when all the relevant markets are as competitive as they can and when the relevant rule based regulatory frameworks are clearly established. When these conditions are met, financial markets, institutions, and systems would work best so as to bring out the positive roles of finance to the maximum and to minimize the destabilizing effects of finance.

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