THE FINANCIAL DEVELOPMENT, INVESTMENT AND ECONOMIC GROWTH

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Abstrak

Artikel ini mencoba untuk mengungkap peran pembangunan finansial sebagai mesin pertumbuhan dan mengupas masalah-masalah berdasarkan kajian empirik. Meskipun definisi finansial itu sendiri tidak jelas, akan tetapi tulisan ini tetap mengindikasikan suatu hubungan antara "keuangan", investasi dan pertumbuhan. "Keuangan" dapat menjadi kunci investasi dan akselerator pertumbuhan. Meskipun demikian kesalahan dalam mengaturnya yang dibarengi dengan kondisi makorekonomi yang buruk dap menyebabkan peranannya menjadi tidak signifikan. Terlebih lagi, dalam situasi tertentu "keuangan" dapat berpengaruh negatif terhadap pertumbuhan ekonomi dan menuntun perekonomian menuju krisis.

Kata Kunci: Sistem Finansial, Investasi dan Pertumbuhan Ekonomi

A. Introduction

The World Development Report, 1989, stated that finance is the key to investment and hence to growth. By mobilizing savings from people with an excess of funds and transferring them to the most efficient uses, the financial system has increased the amount of investment and its productivity. This statement supported and strengthened the old argument of Joseph Schumpeter in 1911. He revealed the significant role of financial intermediaries in economic development since they decide to which firms to distribute the society's savings as investment.

There is a lack of consensus amongst economists as to the relationship between financial development and growth. In his argument, Schumpeter stressed the importance of the allocation decisions of financial intermediaries and not on their capital accumulation role in relation to economic growth. Conversely, other economists have argued that financial intermediaries influence the rate of savings and eventually influence capital accumulation and growth (King and Levine 1994, Beck, Levine and

Loayza 2000). In 1973, McKinnon and Shaw argued from a different perspective. They argued that the loss of liberalized allocation decisions, as a result of financial repression, directed the economy to low savings and low investment conditions.

The definition of financial development also differs in the literature. The difference depends on the perspective of the research. The development can be seen from the size of the fund in the financial institution, the system that mobilizes the fund, and the capacity to invest. Moreover even in one definition, there could be some different proxies used as the indicator.

The initial results of empirical studies seemed to suggest a positive relationship between financial development and growth. This positive relationship occurred in both cross-country and individual country studies. However, later on, further research exposed the problem of causalities, insignificant contribution to the real sector in some kinds of development, failure in specific conditions and even a connection between financial development and the economic crisis[1]. Despite these negativity, most of the research saw financial development as an engine of growth.

[1] See discussion in McKinnon 1982, Demetriades and Hussein 1996, Balkarasingh 2000, De Gregorio and Guidotti 1995, Loayza and Ranciere 2001, and Athukorala and Warr 2001

This paper will attempt to ascertain the role of financial development as an engine of growth and reveal the problems from the results of empirical studies. The first section will look at finance in this specific context and its development. This will be followed by a section on the four leading models in this area. The third section will reveal the results of empirical studies of those models and evaluate their implications.

B. Finance and Its Development

The Oxford concise dictionary definition of finance is the management of a large amount of money. The important role of this management, as the World Development Report 1989 states, is mobilizing this large amount of money to its most efficient use. Based on this, the development of finance can be defined as improvement in "identifying the most worthwhile projects, exerting corporate control, mobilizing savings, providing risk management facilities, and easing transactions" (Levine 1999). The question is how to measure it. Measurements have been developed from the particular functions of the finance, which include the size of the financial intermediaries, the investments from financial intermediaries, and the performance of the system.

The size of the financial intermediaries was the first measurement used in 1969 by Goldsmith. King and Levine (1993) using the currency plus

demand and interest-bearing liabilities of banks and nonbank financial intermediaries divided by GDP to measure the size of financial intermediaries. This was almost the same as the measurement of M2/GDP. Considering the evolution of the financial system, the size could also be measured by bank deposits. This measurement excluded the currency in circulation in order to take account only of the size of the funds controlled by the financial intermediaries (Demetriades and Hussein 1996). The larger the size of the financial intermediaries, the more funds could be mobilized with greater efficiency from the scale.

The importance of the investment from financial intermediaries can be measured by the ratio of bank claims on the private sector to nominal GDP. It is also often measured by the comparison of the funds invested by the private financial intermediaries to the ones provided by the central bank and the government. Besides that, King and Levine (1993) used the ratio of bank credit divided by bank credit plus central bank domestic assets. Levine, Beck and Lorayza (2000) revised this measurement by including all kinds of credits of financial intermediaries that are plausible to measure. The rationale behind all these measurements was the belief that commercial banks were more likely to identify profitable uses, control the borrowers, mobilize savings, consolidate risk, and advance transactions than central banks.

The measurement of the system performance is a bit more complex since there are a lot of aspects to it. McKinnon's research on financial repression lends great clarity to the issue. McKinnon (1973) defined financial repression as the suppressed real rate of return of money by government intervention such as interest rate ceiling, credit subsidy, high reserve ratio and so on. Roubini and Sala-i-Martin (1992) postulated that a less repressed or, in other words, more liberalized financial system would lead the financial system to work at full potential and induce faster growth. Haslag and Koo (1999) stated that the inflation rate and reserve ratio could be the indicators to measure the level of repression. The reserve ratio is one of the usual policy tools to control financial institutions. A higher reserve ratio can lead to fewer funds to be invested. Concerning the inflation rate, they argued that it was related to the increase of fiat money to fund the repression policy.

The other system development examined was the legal system development within the financial system. Levine (1999) recognized three kinds of development in the legal system: First, the role of the legal system in protecting creditor's rights in cases of bankruptcy, reorganization and insolvency; second, the development of law and regulation

enforcement regarding contracts; and finally the development of accounting standards.

C. Theoretical Model

1. The McKinnon Model

The term financial development used by McKinnon in 1973 was related to the fragmented economy, which meant firms and households were isolated in that they faced different prices of inputs and outputs and also access to them. Therefore the development of finance was closely defined as the liberalization of the financial market. The economic fragmentation was the result of government policy to subsidize the entrepreneur and manipulate the commodity prices. The financial market in this economy was also fragmented. A different effective price in financial resources caused the misallocation of labor and land, suppressed entrepreneurial improvement and set the economic sector to inferior technology (curve T_1T_1' in Figure 1).

The difference between McKinnon's idea and the old neoclassical theory was the emphasis on the impact of financial restraint on productivity in contrast to the common productivity. McKinnon recognized the mistake of considering the development process as capital accumulation in uniform productivity. It was also important to encourage the decision-maker to use the capital in more productive ways given that the lack of savings and the inability to access financial lending had become the barriers to adopting more productive technology. So the ability to allocate new investment to building up the new technology (curve T_2 T_2' in Figure 1) could give a crucial increase in the marginal return.

Nevertheless, following McKinnon's argument, the greater access to finance cannot work alone. The entrepreneur has to be forced to replace the low return production technology by the new higher return technology. This is the point where high interest rates play an important role. Since the entrepreneur has to pay higher interest rates than the return from the investment on the old production method, he then has to move the investment in order to invest in the improved method. And that is the way the whole productivity increases because the investment is forced to move to higher productivity methods due to the higher interest rate that needs to be paid.

McKinnon already acknowledged the problem of risk that will prevent the development of financial institutions. The problem would encourage the need for collateral, which also prevents the entrepreneur from borrowing. However, McKinnon argued that there would be some individuals who have more information and less aversion to risk that will make the change to the higher return technology. Moreover, the best investment opportunities do not always

need to be risky anyway. The other problem revealed is the fact that the current time consumption rate in a poor society is very large so that the interest needs to be very high to move the production technology. To sum up, McKinnon argued that financial liberalization is the key to investment productivity since the high interest rate force the entrepreneur to use more productive technology. And hence the higher productivity and greater access to finance in the same time will enhance the economic growth.

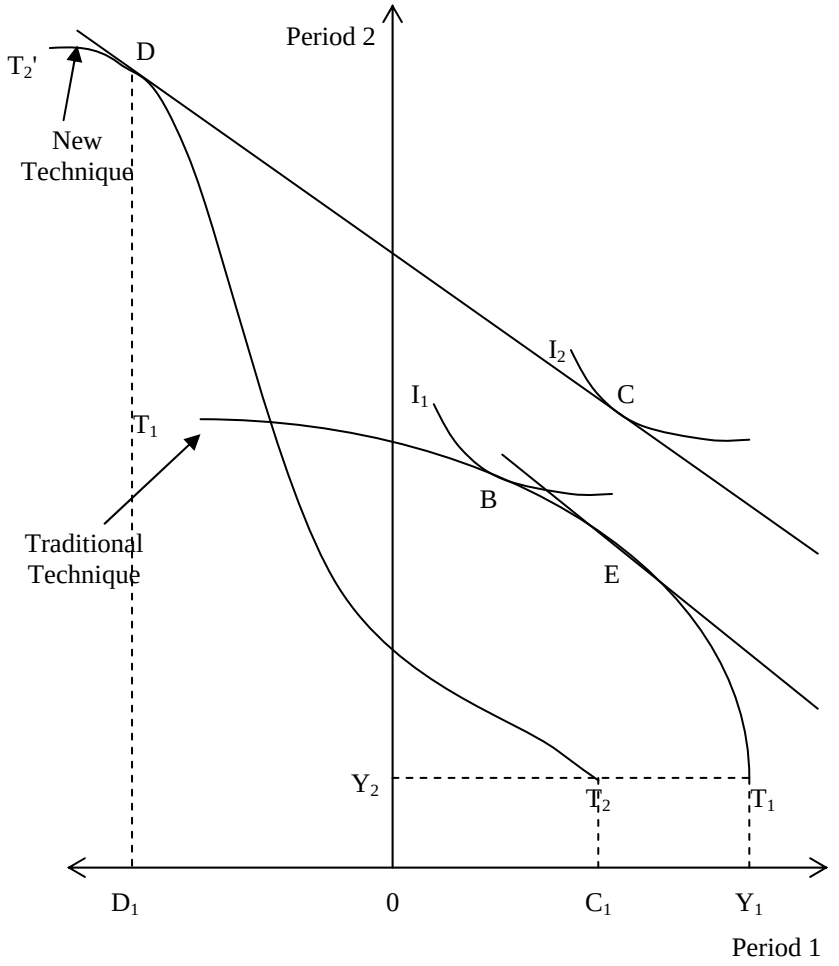

Figure 1. Two-Period Fisherian Diagram

2. The Neoclassical and The Endogenous Growth Model

The neoclassical growth theory states that the output that can be produced by each person depends on the capital it has. So, growth, defined as the increase of output, also depends on the increase of the capital stock for each person or, in other words, investment per capita.

The simple neoclassical model uses the Cobb Douglas production function, described as

$$Y(t) = A(t)K(t)^{\alpha}L(t)^{1-\alpha},$$

where Y is output, K is capital, L is Labor and A is TFP. Taking the log function and the derivation with respect to time, it can be concluded that A is just the residual of production function regression in this school of thought.

Following the Solow Swan exposition, the growth of physical capital comes from the fraction of output invested in physical capital (s_k). Taking the rate of depreciation (δ) into account, the physical capital grows at a rate $s_kY/K- \delta$. Given that $y = Y/L$, and $k = K/L$ are quantities per effective unit of labor, the accumulation of each kind of capital is settled by

$$\partial k/\partial t = sy(t) – (n + \delta)\ k(t) \text{ or}$$

$$\partial k/\partial t = sAk^{\alpha} – (n + \delta)\ k(t)$$

where k is capital per labor ratio; n is the growth of population; δ is the depreciation rate; and s is the saving rate.

Nevertheless, Prescott in 1998 found that the differences in capital endowment could not characterize the inequality of income and growth among countries and showed that the variable A has a significant role as the key determinant. The more important discovery was the proof that the reason for the difference in A among countries was not the publicly available stock of technical knowledge.

The endogenous growth model is a modification of the neoclassical growth model, which was built because of the dissatisfaction with the exogenously driven explanation of growth in the long run. As a result, the model was constructed so that the key determinant of long run growth could be explained endogenously. In this instance, we assume that the level of financial development dominates the explanation.

According to this model, financial development can determine the growth level in two ways. First, it impacts on productivity growth and technological change. This means that although the level of investment in the economy stays the same, the financial intermediaries can induce the growth because each of the investment produces more output. Second, the financial development can generate the capital accumulation in the economy. The basic argument is better financial intermediaries influence growth primarily by raising domestic saving rates and attracting foreign capital.

In measuring the impact of financial development on the productivity growth,

it should be shown that the output could be increased without increasing all the factor inputs in the production function. This composite variable in neoclassical growth theory is called total factor productivity or TFP. TFP consists of any other things besides the factor inputs that can determine the difference in output; for simplification in some literature this is defined as technology since technology seems to have such a characteristic. However, in the growth accounting method, the TFP is merely the residual of the input growth explanation on overall growth.

Beck, Levine and Loayza (2000) then characterized the significant impact of financial development on TFP. According to them, the role of financial intermediaries in determining productivity is twofold. First, they can reduce the information and transaction costs since they conduct continuous research into potential investment and specialize in risk management and saving mobilization. Second, given these factors, it is most likely that intermediaries will have the ability to allocate the savings to the highest return activities.

This characteristic was translated into the simple linear equation that gives the relationship between growth in TFP and financial development and a set of other variables called the conditioning information set. The equation is specified by

$$\hat{A}_i = a + b\,\text{Finance}_i + \gamma_i X_i + \varepsilon_i$$

where $\hat{A}$ is the TFP growth, Finance is the financial development proxy and X is the vector of the conditioning information variable which consists of initial income per capita, average years of schooling, government size and inflation. As mentioned before, the regression $\hat{A}$ can be derived from the residual of production function growth accounting. However as we have defined the capital accumulation to be

$$\partial k/\partial t = sAk^{\alpha} - (n + \delta)\, k(t),$$

the growth of total factor productivity (A) will make the capital accumulation become faster.

However, the physical accumulation approach more often analyzes the financial development impact in generating saving. In other words, instead of increasing A it will increase s. According to this view, financial development influences growth primarily by raising domestic saving rates and attracting foreign capital. Nevertheless, the effect of financial development on the saving rate is still undecided. Higher returns affect saving rates due to income and substitution effects. The income effect will encourage the saving rate to increase since the increase of consumption does not increase as fast as income. The substitution effect, on the other hand, will let the saving rate decrease; the certainty of a higher return will decrease the precautionary demand for saving. Also, greater risk diversification opportunities have an

ambiguous impact on saving rates. To find the impact of financial development on saving rates and hence on investment, the equation is set to be

$$\partial k/\partial t = sy(t) - (n + \delta)\, k(t)$$

where $s = a + b\, Finance_i + \gamma_i X_i + \varepsilon_i$

So the endogenous growth theory can explain the important role of financial development to accumulate the capital in two ways, which are through saving and productivity, and hence make the growth process become faster.

3. The Patrick Hypothesis

In 1966, Patrick presented the issue of establishing the direction of causality between economic growth and finance. He concentrated on the relationship between those two variables and came up with two hypotheses, which are supply leading and demand following hypotheses.

The supply leading hypothesis states that the establishment of financial institutions and services will encourage the transfer of resources to higher growth sectors and provoke entrepreneurial responses to achieve growth. Patrick argued that this would happen in the beginning of the growth process.

On the other hand, the demand following hypothesis sees economic growth as generating the establishment of financial institutions and services. Furthermore, it could also increase the productivity of the financial sector due to a bigger scale in the sector. In this case, a more mature economy is more likely to have such an experience.

Patrick did not perform any statistical tests on his hypotheses. However, these are needed to ascertain whether there is indeed a bi-directional relation between the two variables. The tests are important to confirm the conclusion derived from the empirical results.

D. Empirical Studies

In 1969, Goldsmith started the empirical studies that counted as the first in this field. He used the size of financial intermediaries to measure the quality of finance. Using the value of financial intermediaries, he estimated the relationship between financial development and growth. He used the data of 35 countries from 1860 to 1963. However, as he related the financial development directly to growth, his model did not give any explanation as to whether the positive connection was related to capital accumulation or productivity.

McKinnon in 1973 then expanded the research by looking more at the financial system. His studies investigated financial repression in specific country: Argentina, Chile, Brazil, Germany, Korea and Taiwan. McKinnon concluded that there was a positive relationship between a better functioning financial system and faster growth in an economy. But later on, McKinnon found that financial liberalization as opposed to financial

repression caused specific problems in particular countries. For example, in Argentina 1981, the financial system broke down. He blamed the overvalued Argentinean exchange rates (McKinnon 1982).

In 1992, Roubini and Sala-i-Martin followed this work using cross-country data. They proved that after controlling for other determinants of growth, two measures of financial repression had a negative influence on economic growth. The measures are inflation rates and banks' reserve ratios. The other finding was that inclusion of a financial repression policy variable would cause the dummy variable of the Latin America countries to become insignificant. This showed that the different behavior of Latin America's economic growth was due to the repression policies. Haslag and Koo (1999) managed to show the relationship between financial repression measures and the other financial development measures. Their results showed a negative relationship, which was significant for the reserve ratio but insignificant for the inflation rate in the short run. In the long run, both variables were significant.

With regard to financial repression and investment, Vogel and Buser (1978) observed 16 Latin American countries[2] during 1952-1971. The results showed that as a financial repression index, the reserve ratio gave the indication of a significant negative relationship between financial repression and capital formation. However, the inflation rate, the other index they used, failed to show significant result.

Regarding system development, Levine (1999) proved that legal and regulatory environments were needed for financial development. The guarantee that creditors get the value they expect and the efficiency in the law enforcement will develop better financial intermediaries. Information disclosure was also found to be important. Finally, using an instrumental variable technique, Levine proved a positive relationship between those three variables and economic growth.

After Goldsmith in 1969, the most important studies on financial development in terms of financial intermediary size and its capability to invest were performed by King and Levine in 1993. They studied 80 countries in the period 1960-1989 to examine the role of financial development in increasing capital accumulation and productivity. There were four measurements used in the studies. They were the currency plus intermediaries liabilities per GDP (DEPTH), the ratio of bank credit to the sum of bank credit and central bank asset (BANK), the ratio of private

[2] Included Uruguay, Brazil, Bolivia, Chile, Argentina, Colombia, Peru, Paraguay, Mexico, Ecuador, Costa Rica, Honduras, Nicaragua, Venezuela, Guatemala, an El Salvador

enterprise credit to total domestic credit (PRIVATE), and private enterprise credit divided by GDP (PRIVY). The results of 74 countries that have complete pooled data showed that there was a strong positive relationship between the four measurements and growth, capital accumulation and productivity.

However, De Gregorio and Guidotti (1995) presented evidence that the positive relationship in a cross-sectional worldwide sample of countries was turning into a negative relationship in panel regressions for Latin American countries. They argued that this was the result of the impact of the repeated financial crises and overlending problems that the region had suffered. Loayza and Ranciere (2001) strengthened the argument by revealing the negative relationship between the size of financial intermediaries and economic growth around the economic crises period. The research was motivated by the fact that the intermediaries' size was a significant factor in the financial crises. The basic argument was the behavior of financial intermediaries especially the banking industry toward the crises. Athukorala and Warr (2001) also showed that the private credit to GDP ratio (PRIVY) increased sharply in Indonesia, Korea, Malaysia, Philippines, and Thailand before the crisis struck.

The other problem concerned causalities between growth and financial intermediaries. Gupta (1984) was the first to examine the causality problem in this area. He examined Patrick's hypothesis in 14 countries to disclose the predominance of the supply leading hypothesis along with the bidirectional causality and even demand following hypothesis. Yet, altogether the evidence supported the impact direction from financial intermediaries to growth.

In 1996, Demetriades and Hussein used a similar variable with PRIVY to re-examine the causality in 16 less developed countries. The result showed that the supply leading hypothesis was not dominant. The demand following hypothesis was stronger in some countries but overall, the bi-directional relationship was dominant. Nevertheless the causality behavior varied across countries, and it is dangerous to assume that it was the same.

Balkarasingh (2000) re-examined the hypothesis once more and found that using the DEPTH variable from King and Levine (1993), the direction of the impact was from economic growth to financial development in both developed and developing countries. Yet, using the PRIVATE variable, the causality direction from financial development to economic growth was dominant in Guatemala, Korea, India, Greece, Honduras, Mauritius, Venezuela, Sri Lanka, Thailand and New Zealand. The interesting features revealed from their test was the fact that using the DEPTH variable, the relationship between financial

development and economic growth was only significant in the financial sector but not in the real sector.

E. Conclusion

The 1989 World Development Report stated that finance played a key role in mobilizing savings from people with an excess of funds and transferring them to the most efficient uses. In this way, the financial system has increased the amount of investment and its productivity hence accelerated growth. This paper attempted to ascertain whether this was indeed the case by examining the relationship between finance, investment and growth.

Although the definition of finance itself is not clear, as indicated in the paper, still a definite relationship between finance, investment and growth was supported by the theoretical approaches for each definition. However the results of empirical studies were not that conclusive. The positive relationships that occurred in both cross-country and individual country studies were found to have problems of causalities, failure in specific condition, and may have led to the financial crises, and even made an insignificant contribution to the real sector in some kinds of development.

In conclusion finance can be the key to investment and the growth accelerator. However its mismanagement together with poor macroeconomic conditions can cause the role to become insignificant. Moreover, under certain conditions finance can have a negative influence to economic growth and direct the economy into crisis.

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