

# Financial Systems and Economic Growth: A Theoretical Overview\*

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## Abstract

This paper presents theoretical research of the relation between financial systems and economic growth. We summarize the endogenous growth models featuring connection between financial systems and economic development and consider the point at issue from comparing those models. We also focus on an issue which there is a gap between developed countries and developing countries. Besides we also consider the role of stock markets to demonstrate the connection between financial systems and economic growth because well-functioning banks and capital markets promote economic growth by different financial services. Accordingly, we discuss whether there is a relationship between domestic financial development and participation in the global economy.

## 1. Introduction

The purpose of this paper is to survey recent literature on financial development and economic growth and consider the point at issue of the theoretical literature on the link financial systems and economic growth.

A number of recent studies have used the endogenous growth theory in order to show the link between financial development and economic growth. Since economic study, this link has been watched with the keenest interest. For example, Gurley and Shaw (1955) and Cameron (1967) illustrate the role of the financial system through the historical experience of England and the United States. The focus of neo-classical growth model had been on modeling accumulation of human and physical capital, and technological progress was the main engine of economic growth in this model. Since then, macro economists succeeded in studying the hypothesis more formally with theoretical model to analyze the relationship between financial development and economic growth.

Into the 1970s, Machinnon (1973) and Shaw (1973) point out that the 1950s and 1960s had seen low inflation rate and high real rate of interest in some developing countries had realized high economic growth, and urge that the financial system is indispensable for economic growth.

Now it is well recognized that financial development is crucial for economic growth. There are hosts of the papers that analyze the effect of the financial structure on the rate of growth. According to Tressel (2003), two main arguments that financial institutions (banks or stock markets) stimulate economic growth can be classified as below.

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- i . Financial intermediaries allow the diversification of risks: Bencivenga and Smith (1993), G. Saint -Paul (1992)
- ii . By financial intermediaries are more efficient than by individual investors when collecting information. This implies that financial intermediaries let capital investors invest in profitable projects: Greenwood and Jovanovic (1990, 1997), King and Levine (1993b), Berthelemy and Varoudakis (1994), Sussman and Zeira (1995), Acemoglu and Zilibotti (1999)

In addition to these studies, the current analysis focus on uncertainty in capital markets and analyze that the long run effects of the wealth distribution on the rate of economic growth, as shown in Banerjee and Newnan (1993), Galor and Zeira (1993), Aghion and Bolton (1997) and Piketty (1997), Lloyd -Ellis and Bernhardt (2000). They emphasize the accumulation of collateral assets consequently boost financial sector up. However, in these papers financial institutions are not clearly modeled. Accordingly, a new theory considered financial institutions based on them as above have been developed, and besides it focuses on the interaction between growth and convergence.

It explains why some countries or regions are richer than other ones by using the endogenous growth model. Growth is sustained by the development of new varieties of intermediate goods; thereby convergence must require an important investment effort on the part of poorer countries.

Financial intermediaries allow better risk sharing and closer monitoring, which yield a higher level of innovative activity and faster growth. Thus the gap of national income between rich countries and poor countries depends on whether good financial system or not.

This paper considers some points at issue from surveying the theoretical literature on the link financial system and economic growth, and furthermore on growth and convergence across countries. And we discuss their theoretical implications. The second section looks at what influence the functions of financial system have on economic growth. The third section surveys the implication of multiple equilibrium, and we compare banks and stock markets to examine the influence on economic growth in the fourth section. The fifth section concludes and points out some possibility for further research.

## **2. The theoretical models of financial system and endogenous growth**

The financial sector leads to the process of economic growth has been a widely accepted idea. In fact, this sector has ability to intermediate a large part of an economy's savings towards profitable investment. The more developed financial sector is potentially important for the long-term performance of an economy because the rate of capital accumulation is a fundamental determinant of long-term growth.

Financial systems affect the entrepreneur's activity that yields productivity growth in following four ways.

- i . Financial systems evaluate prospective entrepreneurs and profitable projects.
- ii . Financial systems mobilize sufficient resources for projects.
- iii . Financial systems provide individuals and entrepreneurs with good information through the

diversification of the risk associated with uncertain innovative activities.

iv . Financial systems value the expected profits from innovative activities.

In short, a more-development financial system promotes productivity growth by evaluating, managing and funding the entrepreneur's activity. Better financial systems stimulate economic growth in these ways.

This section summarizes the endogenous growth model featuring connection between financial system and economic growth suggested by Bencivenga and Smith (1991), Greenwood and Jovanovic (1990) and King and Levine (1993).

### 2. 1 *Bencivenga and Smith (1991) model*

Bencivenga and Smith (1991) discuss the relation between financial intermediation and endogenous growth through the mechanism of effective resource allocation financial systems have. A special feature of this model is that the activities of intermediaries (banks) have an effect on resource allocation, as a result, also influence real growth rate. In short, the economy with competitive banking systems grows faster than the economy lacking such systems.

In order to empathize that saving up leads to higher economic growth and that financial intermediaries do not need to change saving rate, they assume that there is an "external effect" in production and saving rate is constant.

In the concrete, they consider the economy consists of three-period-lived (young, middle, old-aged generations), overlapping generations model under the assumption that there are two assets, liquid and non-liquid assets, in economy. In absence of banks capital investors have to need for self-financing of investment. That means that they can't expect when they get to need liquidity, so they invest little income in non-liquid assets. However, if there are banks in economy, and capital investors put their income in the banks and can draw necessary liquid assets from the banks accordingly, banks will promote capital investment and raise rates of growth. Since as compared to the economy with non-banks, banks can reduce liquid reserve holdings by capital investors and invest deposit money to non-liquid assets.

Bencivenga and Smith (1991) point out the following difference between the economies with financial intermediaries and non-financial intermediaries.

- i . All capital accumulation is self-financed.
- ii . Capital investors do not have any opportunity to avert liquidity risks.
- iii . Capital investors have to decide how much they should invest their deposit to liquid assets or non-liquid assets no matter how they have no information on liquidation cost.

In this way, they show that banks play an important role of reducing liquidation cost and financial intermediaries lead to a positive growth rate. Finally, note that in their model, competitive banks are formulated as social planners.

## 2. 2 *Greenwood and Jovanovic (1990) model*

Greenwood and Jovanovic (1990) analyze the reason to why financial intermediaries allow an effective resource allocation. To add to the function of financial intermediaries, as Bencivenga and Smith (1991) highlighted, they point out that networks of financial intermediaries have the ability of collecting and analyzing information.

They emphasize that institutions which facilitate trade in the economy arise endogenously from two following ways since economic growth promotes investment in organization capital, while organization capital promotes economic growth.<sup>1</sup>

• First, trading organizations result in higher expected earnings. In particular, in the economic environment modeled, information is valuable because it let capital investors learn about the level of technology in the whole economy.

Intermediaries collect and analyze information through a process of research, and then they invest capital investor's resources to the most profitable business.

• Second, trading organizations play a role of pooling risks large numbers of investors have. Townsend (1978) asserts that intermediary's the most important role is not to allow a more efficient resource allocation, but is to guarantee capital investors higher yields. Thus individuals can obtain a higher and safer return by investing capital through intermediaries.

Greenwood and Jovanovic (1990) consider that capital investor's condition for participating in financial networks. In the concrete, they assume that there're two production technologies (one with a lower return but more safely and another one with a higher return but more risky) in their model, and that individual carry out a project by adopting which of these production technologies only once in a period.

Consequently, they conclude that it's desirable that economic agents participate in financial intermediation networks for the whole economy. This reason is that the networks have three following potential benefits.<sup>2</sup>

- i. The networks have useful information on the realized project returns and that allows economic agents to invest in a great project with highest return.
- ii. The networks lead to diversification of idiosyncratic risks associated with individual projects.
- iii. The networks also allow optimum resource allocation through arrangements for borrowing and lending.

In particular, Greenwood and Jovanovic (1990) focus on the function i of networks. The function i means that financial intermediation allows a higher rate of return to be earned on capital by collecting and analyzing information, thereby it also promotes economic growth.

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<sup>1</sup> Greenwood and Jovanovic (1990, p.1078)

<sup>2</sup> Greenwood and Jovanovic (1990, p.1081)

Note that financial intermediary maximizes profit for his own self in this model. Thus this intermediary is different from one looked as social planner in Bencivenga and Smith (1991).

### 2. 3 *King and Levine (1993) model*

Note that innovation activity is risky and the probability of success depends on entrepreneurs' actions, so that capital investors might get information are imperfectly observed by outsiders through the use of a costly monitoring technology. Accordingly, one of financial functions which avoiding the duplication of monitoring activities and negotiating incentive contracts with innovators plays a key role in economic activity.

Bencivenga and Smith (1991) and Greenwood and Jovanovic (1990) do not discuss how financial intermediary influences real factor of economic growth. On the other hand King and Levine (1993) focus on the links between finance and innovative activity which is indispensable for economic growth and one of real factor of economic growth.

They stress that the financial system plays an important role as the main engine of growth. Better financial services not only expand the innovative activity but also promote the efficiency of one. In short, financial system allows investors to diversify the risks associated uncertain innovative activities by evaluating prospective entrepreneurs and choosing the best projects. Thus, a more developed financial system promotes improvement of productivity growth by choosing higher quality entrepreneurs and projects, by effectively mobilizing external financing for entrepreneurs.

King and Levine (1993) show that financial intermediaries directly influence on real factor of economic growth in their model.

As mentioned above Bencivenga and Smith (1991) and Greenwood and Jovanovic (1990) focus on management function of liquidity risks and diversification function of risks financial institutions have respectively since these function lead to the increasing in resources invested in productive capital. On the other hand, King and Levine (1993) focus on evaluation function of entrepreneurs and projects financial institutions have since this function leads to the increasing in productive efficiency.

According to King and Levine (1993), actually financial intermediaries can diversify the productivity risks, but despite the diversification of productivity risks there is still a positive probability that entrepreneurs invest in non-profitable projects.

At this point, King and Levine (1993) urge that the role of financial intermediaries is to facilitate the most cost-effective innovations. In other words, financial systems play an active role in evaluating, managing and funding the entrepreneur's project that leads to productivity growth.

## 3. The possibility of multiple equilibria

Recently there are many studies have analyzed level of international inequality through the importance of financial systems and investment in human and technological capital as determinants of growth. The convergence of per capita income levels across countries or regions has been a matter of extremely importance as Durlauf and Johnson (1992) suggested "convergence club".

In the previous section we consider three literatures on the influence of financial intermediary upon economic development. Clearly, they show that financial intermediary played an important role in economic growth. However they do not make mention of an issue which there is a gap between developed countries and developing countries. Accordingly, we focus on three pieces of literature, G. Saint-Paul (1992), Berthelemy and Varoudakis (1996), T. Tressel (2003), have taken this issue into consideration and emphasize the importance of financial development through the possibility of multiple equilibrium in this chapter.

### 3. 1 *G. Saint-Paul (1992) model*

A number of recent studies such as three studies we showed in the previous section focus on the role of financial systems in appropriating savings for investment and the fact that financial intermediaries allow the solution of informational problems in order to show the links between financial development and economic growth. On the one hand, G. Saint-Paul (1992) stresses the impact of financial markets on technological choice. According to him, productivity growth must be achieved through a greater division of labor. This implies that this greater division of labor will put increasingly specialized resources at a greater risk.

G. Saint-Paul (1992) shows that financial markets directly produce a positive effect on productivity growth from the point of view of financial diversification, because financial markets allow a greater specialization of resources like capital and labor.

In the concrete, his model focuses on the duality between financial diversification and technological diversification, it shows that diversification of economy occurs through choosing inferior technologies which have less productivity but more flexibility when financial markets are lacking by comparing undeveloped and developed financial markets. His standpoint is like risks have to be diversified through technological flexibility, which means choosing less productive technologies, if no financial markets exist. In short, G. Saint-Paul (1992) highlights this diversification (financial and technological) as a strategic instrument, and he succeeds in explaining the reason why countries with underdeveloped financial markets have an underdeveloped real sector.

Furthermore, G. Saint-Paul (1992) also focuses on a following point. Financial markets allow to share risks, so firms have to avert all risks through technological diversification if financial markets do not exist in economy, thereby he makes it clear that multiple equilibria are possible. To put it more concretely, at first he shows that there are two equilibria: financial equilibrium and non-financial equilibrium, then leads to a theory by comparing these multiple growth paths.<sup>3</sup>

His theory means that the economy with underdeveloped financial markets and little division of labor stay at a 'low equilibrium', conversely the economy with developed financial markets and much division of labor stay at a 'high equilibrium'. In other words, the economy with developed financial markets grows faster than the economy with undeveloped financial markets. However, here both economies will grow at the same rate in the long run.

On this point, G. Saint-Paul (1992) gives an example as a special case, and he points out that the

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<sup>3</sup> see G. Saint-Paul (1992, p.772) for a detailed description.

economy on financial equilibrium growth path keeps growing, whereas the economy on non-financial equilibrium growth path keeps depressing. This mechanism implies the economies with financial equilibrium and non-financial equilibrium have a positive and negative growth rate respectively.

However a factor backgrounding this mechanism is not described in G. Saint - Paul (1992). Accordingly, there's still open to debate about that.

The most important point of G. Saint - Paul (1992) is that the interaction between financial and technological diversification can explain differences of national income across the world. This results are similar to the one obtained by Greenwood and Jovanovic (1990) we gave in previous chapter. There models are that growth and financial developments are jointly determined. In both models, financial intermediaries entail real resource costs that are fixed or less than proportional to the volume of funds have intermediated. However, their results are different in several points. The main point is that Greenwood and Jovanovic (1990) doesn't have multiple growth paths, whereas G. Saint - Paul (1992) does. Because G. Saint - Paul (1992) assumed that there was no existence of financial intermediary in his model. In short, financial diversification allows the spreading of risks and the interaction between financial and technological diversification may lean to multiple equilibrium.

Furthermore G. Saint - Paul (1994) analyzes more carefully the role of demand factors in financial development by using a simple macroeconomic model based on G. Saint - Paul (1992) and stresses the importance of financial system.

### 3. 2 *Berthelemy and Varoudakis (1996) model*

As shown in the previous sections, in order to analyze the causality between financial development and economic growth, Bencivenga and Smith (1991) focus on improved management of liquidity risks financial intermediaries have and G. Saint - Paul (1992) focuses on more efficiently financial diversification, Greenwood and Jovanovic (1990) and King and Levine (1993) stress the fact that financial intermediaries lead to the efficiency of various investment projects and investor's abilities by collecting information. Accordingly, Berthelemy and Varoudakis (1996) more in-depth theoretically analyze about the interaction between financial development and real growth and show the causality run both ways. In short, the development of per capita income stimulates the development of financial systems.

Here this paper refers to other literature on the causality. "Does financial development promote economic growth, or does economic growth do financial development?"

Patrick (1966) labels a causal relationship from financial development to economic growth as the supply-leading approach and other one as the demand-following approach. Mackinnon (1973), King and Levine (1993), Neusser and Kugler (1998), Levine, Loayza and Beck (2000) emphasize the supply-leading approach, on the other hand, Tressel (2003) attaches great importance to the demand effect, Calderon and Liu (2003) point out "Granger causality".

To get back to the original subject, Berthelemy and Varoudakis (1996) point out that a two-way positive causation between financial development and economic growth leads to multiple equilibrium. They describe about these multiple equilibrium as following comments. "*One of these steady states leads to a poverty trap in which the financial sector disappears and the economy stagnates.*"

*The second steady state is characterized by positive endogenous growth and a normal development of financial intermediation activities.*"<sup>4</sup> In order to show these multiple equilibrium, they built a model which three main characteristics as below.

- i . The real sector is assumed as having endogenous growth properties based on leaning-by-doing externalities. In Keynes-Ramsey condition the interest rate is assumed by the bank's creditor rate. Furthermore, the leaning-by-doing influences are assumed as the existence in intermediary's activities, so that the technical efficiency of the financial sector is an increasing function of gathering volume of savings. That implies financial sector produces a kind of positive external effect on economic growth through the volume of savings.
- ii . The financial sector uses real resources, which present an opportunity cost in terms of production and let firms invest their savings in more productive investments by collecting information about investment opportunities, which leads to the increase of the productive physical capital. In short, banks incur monitoring costs relating to the number of firms and projects with which they are concerned.
- iii . Since the economy of scale in the banking sector leads to imperfect competition, the financial sector operates in a monopolistic competition framework, and the size of the financial sector has a negative effect on the concentration and margins of financial intermediaries, financial intermediation margin is given as that the amount of investment intermediated by each bank represents a fraction of the current savings, since the number of banks compete for the market.<sup>5</sup> In other words, this margin is the counterpart of the intermediary's service provided by the banks but this could be achieved as well by capital markets.

Under these main characteristics, Berthelemy and Varoudakis (1996) consider the possibility of the existence of multiple steady states. According to them, if the financial sector is underdeveloped, banking competition will be getting weaker and thus financial intermediation margin will be getting higher than the other case where the financial sector is developed. High intermediation margins lead to a low level of net real interest rates paid to household, a low growth rate, a weak incentive to save and a small financial market. In short, the economy with underdeveloped financial sector can stay trapped in a low equilibrium (poverty trap). On the other hand, the economy with developed financial sector can also stay a high equilibrium.

Moreover, Berthelemy and Varoudakis (1996) describe that multiple endogenous growth equilibrium do not only exist from insufficient development of financial sector, and point out the importance of the accumulation human capital is a positive effect on economy's educational development. In the concrete, Berthelemy and Varoudakis (1996) analyze both thresholds of financial and educational development by cross-country data on economic growth (convergence club tests). We don't focus on their empirical result in this paper, but we discuss empirical studies including them in another our paper.

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<sup>4</sup> see Berthelemy and Varoudakis (1996, p.301)

<sup>5</sup> Roubin and Sala-i-Martin (1992) also put forward a similar formalization as Berthelemy and Varoudakis (1996).



### 3. 3 *Tressel (2003) model*

As shown in G. Saint-Paul (1992) and Berthelemy and Varoudakis (1996), actually financial systems stimulate economic growth through the diversification of risks and by collecting information about investment opportunities. In addition, Tressel (2003) concentrates the consequences of asymmetric information caused by the separation between lenders and borrowers. More specifically, he considers the emergence of a modern banking sector in a developing countries and then describes the duality of financial structure is caused by asymmetric information between lenders and borrowers.

In the concrete, in Greenwood and Jovanovic (1990) model, the fixed cost can be interpreted either as cost borne by each family or by the entire economy, on the other hand in Tressel (2003) model, fixed costs of starting modern financial institutions are fairly standard and are aimed at capturing financial frictions leading to increase returns. In short, Tressel (2003) model assumes that the evolution of financial institutions is itself determined by the characteristics of the economy.

Tressel (2003) also considers the possibility of multiple equilibrium through the effect bringing by fixed costs. According to him, *if banks expect to face a large demand for bank loans, the fixed cost will be spread among more borrowers, hence the unit cost of borrowing will be low, and the demand for bank loans will indeed be large, alternatively, if banks expect to face a low demand for bank loans, the fixed cost will be spread among few borrowers, hence the unit cost of borrowing will be high, and the demand for bank loans will indeed be low*<sup>6</sup>, which leads to multiple equilibrium, *stagnation equilibrium* implies the economy stops growing and the banking system never improves, *development equilibrium* implies the economy reaches a sustained growth.<sup>7</sup>

In short, he shows that modern banks develop only if demand for bank loans is sufficiently large and then "big push" process leading to financial development in developing countries relies. Namely, in order to analyze underdeveloped financial sector in low-income countries such demand-side effect is of extremely importance.

## 4. Financial intermediaries and stock markets

P. Rousseau and R. Sylla (2001) point out that a good financial system has five key components as below.

- i . Sound public finances and public debt management.
- ii . Stable monetary arrangements.
- iii . A variety of banks, some with domestic and others with international orientations, and perhaps some with both orientations.
- iv . A central bank to stabilize domestic finances and manages international financial relations.

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<sup>6</sup> Tressel (2003) says his model different from G. Saint-Paul (1992) model as the point G. Saint-Paul (1992) consider there is indeterminate of equilibrium in presence of a fixed cost of intermediation at intermediate levels of development.

<sup>7</sup> see P. Rousseau and R. Sylla (2001, p.2-3)

v . Well-functioning securities markets.

They consider how a country's financial development and economic growth relate to the extent of its participation in the global capital markets.

Countries with well-functioning financial systems have one of the conditions conducive to economic growth and a set of institutions that give confidence to foreign investors and thus promote financial globalization by allocating world's capital more efficiently. Well-functioning banks and stock markets facilitate long-term economic growth by different financial services. Accordingly, it has been of importance of considering the role of stock markets to clear the link between financial systems and growth.

This paper has provided implications of recent literature; this extensive literature studies and discusses the role of financial markets in economic development. Moreover in order to help explain the link between financial markets and economic development, recent studies focus on stock markets.

Singh (1997) stresses stock markets play a key role in the internal as well as external financial liberalization processes in developing countries, which yields an achievement quicker industrialization and faster long-term economic growth in most developing countries. However Singh (1997) also points out some cases which stockmarket development doesn't have good influence on economic growth as blow.

- i . The inherent volatility and arbitrariness of the stock markets pricing process under developing county conditions make it a poor guide to efficient investment allocation.
- ii . The interactions between the stock and currency markets in the wake of unfavorable shocks may exacerbate macroeconomic instability and reduce long-term growth.
- iii . The development of stock market is likely to undermine the existing group-banking system in developing countries, which, despite their many difficulties, have not been without merit in several countries.

In the concrete, Levine (1991) focuses on endogenous growth model in which a stock market allows the diversification of risks and analyzes how the stock market gives a stimulus to investment in ways that change steady state growth rate. Levine (1991) emphasizes that stock markets promote economic growth in following two ways.

- i . *By facilitating the ability to trade ownership of firms without disrupting the productive process occurring within firms.*
- ii . *By allowing agents to diversify portfolios.*

Levine (1991) models where more liquid stock markets reduce the disincentives to investing in long-term projects; enhanced liquidity promotes investment in long-run high-return projects that boost productivity growth. In his model, stock markets allow individuals to invest in a large number of firms and diversify against idiosyncratic firm shocks even if financial markets do not work, that yields

economic development. Consequently, stock markets facilitate economic growth directly by eliminating premature capital liquidation and indirectly by reducing liquidity risk, which leads to the increase of firm's productivity.

Based on this model, Levine and Zervos (1998) show that stock market liquidity and banking development both positively predict growth, capital accumulation, and productivity development, banks provide different financial services from those provided by stock markets, further they investigate stock market size, volatility and integration with world capital markets are not correlated with current and future economic growth rate empirically. On the contrary they find that stock return volatility reduce private saving rates or hinder long-run growth.

After that, Beck (2003) discusses the different functions that capital markets and banks and the channels through which intermediaries and stock markets. Besides he focuses on the relative advantages of financial intermediaries and stock markets; both perform a variety of functions like the efficient mobilization and allocation of savings, which are fulfilled by the better financial systems and thus lead to the higher economic growth. Accordingly, Beck (2003) analyzes which a financial system is based on stock markets or banks.

At first, he highlights how banks and stock markets play a key role on economic growth respectively and emphasize the better financial systems are supported by these functions.

The functions of banks: (1) Banks allow investors to invest in prospective projects and stimulate innovation and efficient resource allocation by collecting and processing information on firms. They can increase savings and capital accumulations in the economy by relieving asymmetric information between savers and borrowers. Furthermore, they monitor and control borrowers to avoid duplication and free-riding of individual investors. (2) They can lower liquidity risk by pooling savings investing both in short-term securities and long-term investments as shown in Bencivenga and Smith (1991). (3) They allow the pooling and sharing of risk by reducing transaction costs of individual investors. In short, banks facilitate economic growth through the diversification of risks.

The functions of stock markets: (1) The more liquid markets allow investors to motivate to invest in the acquirement and analyzing of information. (2) Liquid markets can promote corporate control and efficient resource allocation. (3) They allow investors to sell rapidly by easing liquidity risk.<sup>8</sup> (4) They can stimulate diversification of risk as shown in G. Saint-Paul (1992).

To consider whether banks or stock markets are better than the other one, it is necessary to compare their functions like collecting and analyzing information and controlling of borrowers, diversification of risk leading to the efficiently allocation of savings and thus economic growth. Consequently, he points out that banks and stock markets operate in different ways and with different focus, and banks may be better than stock markets at overcoming information asymmetries and at providing smoothing of risks, however stock markets may be better than banks at supporting innovative activities and at providing diversification of risks.

However, recent research argues that classifying countries as bank-based or market is not a very

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<sup>8</sup> According to Beck (2003), Levine (1991) stresses stock markets will be more willing to provide resources for investment projects that require long-term commitment of resources if individual investors can rapidly convert equity claims into cash.

fruitful way to distinguish financial systems. Although overall financial development is robustly linked with economic growth, there might be no support for either the bank-based or market-based view. Accordingly, it is important to investigate empirically whether measures of stock market liquidity, size, volatility, and integration in world capital markets influence rate of economic growth. We discuss empirical studies in another our paper.

## 5. Conclusion

In this paper I have reviewed the recent literature on the link between financial system and stock markets and economic growth, and on growth and convergence. The first part of the paper focused on theoretical model's implication where analyzed how financial intermediaries have played a key role on economic growth. We summarized three studies and compared those models; Bencivenga and Smith (1991), Greenwood and Jovanovic (1990), King and Levine (1993)

After discussing the main point in the relation between financial intermediation and economic growth, we have illustrated some descriptive model where involve the possibility of multiple equilibrium. G. Saint - Paul (1992) analyzes a mechanism which could give multiple equilibrium in financial and economic development. Next Berthelemy and Varoudakis (1996) more in-depth theoretically analyze about the interaction between financial development and real growth, consider the possibility of the existence of multiple steady states. Tressel (2003) points out the consequences of asymmetric information caused by the separation between lenders and borrowers since it leads to the duality of financial structure and shows that the possibility of multiple equilibrium through the effect bringing by fixed costs.

In the rest of the paper we have discussed the implications on financial intermediation and stock markets and economic growth. Levine (1991) highlights liquidity risks can be also be managed through the functions of stock markets. Based on recent literature on stock markets and economic growth like Levine (1991), Beck (2003) discusses the channels through which intermediaries and stock markets.

As above, recent theoretical work on financial development and endogenous growth points out there is a positive relation between financial development and economic growth. Recent theoretical studies are accompanied by empirical studies to examine whether theory and practice go together or not. Empirical studies necessarily entail more realistic models and to understand what important is that financial services are provided. For instance, a well-functioning legal framework is crucial for a healthy financial system, or important policy implication must influence financial system.

Making an issue what the determinant of good financial system as further research is an important for modeling new idea or empirical analysis about the link between financial development and economic growth and convergence.

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