

## INTERNATIONAL CONNECTIONS AND INNOVATIVE DEVELOPMENT OF FINANCIAL INSTITUTIONS

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**Abstract.** *Despite a numerous researches, which are connected with cooperation between financial institutions worldwide, there is constantly need to observe their current positions and innovativeness of their activities. The difficulties of such researches are arisen because of the integrated nature of above mentioned questions. In this research we examine the effect of increased international integration of financial institutions worldwide, its influence on the quality and innovativeness of financial services. To do so, we develop a new approach, which makes its possible to develop the connection and to model the theoretical function of connections between the level of international integration of national financial institutions and their innovativeness. Our results suggest that the level of innovative development of financial institutions depends on the measure of their international integration.*

**Key words:** *financial institutions, innovative development, international connections, international capital, bank.*

### 1. Introduction

Nowadays, it is no doubt that successful national economy should be innovative and can't exist without international connections. Particularly, it is important to develop the international connections between the financial institutions, which creates the financial basis for further economical growth, development of the national companies relying on new technologies. Furthermore, economic growth come either from putting more people to work - that is, from more financial resource input. It causes the increase in demands on innovative sources of financing, which can come only from a very sharp and continuing increase in the productivity of the financial resource. At the same time the developed countries still have a competitive edge: highly developed and widespread network of financial institutions, which have all advantages of modern society (including knowledge, qualified workers and progressive banking and non-banking technologies). Therefore, their experience and skills are one of the most important backgrounds for innovative development in other countries. Nevertheless, the connection between the financial institutions of developed countries contributes to save the current level of financial institutions' innovativeness, the quality of appropriate services. It shows the importance of international connections and innovative development of financial institutions for progressive development of our modern society.

### 2. Materials and Methods

In order to explain the theoretical basis and practical aspects of international connections between the financial institutions and their innovative development to be presented in this article it seems to be essential to point out some fundamental theoretical starting points.

There are many significant contributions to the study of importance of above mentioned aspects. The currently popular real business cycle paradigm proceeds under the working hypothesis that financial structure is irrelevant. To a first approximation, it also applies to the traditional literature. The main real/financial interaction in conventional Keynesian, Monetarist and Classical models stems from activity in the market for the medium of exchange, and not from the performance of markets for borrowing and lending (Gertler R, 1988).

The dynamics of the development process resemble the Kuznets (1955) hypothesis. In the early stages of development an economy's financial markets are virtually nonexistent and it grows slowly. Financial superstructure begins to form as the economy approaches the intermediate stage of the growth cycle. Here the economy's growth and savings rates both increase, and the distribution of income across the rich and poor widens. By maturity, the economy has developed an extensive structure for financial intermediation. In the final stage of development the distribution of income across agents stabilizes, the savings rate falls, and the economy's growth rate converges (although perhaps not monotonically) to a higher level than prevailing during its infancy. According to Lindert and Williamson (1986), "it is exactly this kind of correlation - rising inequality with rising savings and accumulation rates during Industrial Revolutions - that encouraged the trade-off belief (between growth and inequality) among classical economists who developed their growth models while the process was underway in England"

With the globalization of the world economy, interest in international connections has increased rapidly (Brush 1993, 1995; Hitt & Bartkus 1997; Hisrich, Honig-Haftel, McDougall & Oviatt 1995). One of the most important features of today's global economy is the growing role of new ventures (Almeida & Bloodgood 1996; Bell 1995; Clark & Mallory 1997; Fujita 1995; Haug, 1991). The researchers have focused on examining the innovative activities, aiming to uncover the key patterns of innovative activities associated with successful internationalization (e.g., Zahra & Garvis 2000). According to the Menzie D. Chinn and Hiro Ito (2008), the world economy has enjoyed a period of remarkable tranquility. Nonetheless, the interest in the effect of financial globalization has not waned.

Cameron (1961) and Gerschenkron (1962) have associated the economic growth of France in the middle of the nineteenth century with the establishment of the Credit Mobilier. Nevertheless, some economists have questioned the interpretation of these studies, arguing that correlation does not imply causality. Paraphrasing North, financial development does not cause economic growth, it is economic growth.

The importance of the duration of bank relationships is also studied by Petersen and Rajan (1994) and Berger and Udell (1995). Using the 1988-89 National Survey of Small Business Finances, a large cross-section of data collected by the U.S. Small Business Administration (SBA), Berger and Udell (1995) find that the interest rate charged and collateral pledged on lines of credit is decreasing in the length of a firm's relationship with its bank. Using the same SBA survey, Petersen and Rajan (1994) find no relationship between the average loan interest rate and the length of a firm bank relationship, but do find that credit is more readily available to firms with longer bank relationships.

A distinguishing feature of a bank may be its ability to reduce costly information asymmetries between those seeking financing and those willing to contribute capital. Leland and Pyle (1977), Diamond (1984), Ramakrishnan and Thakor (1984), Fama (1985), and Boyd and Prescott (1986) argue that a bank can monitor and credibly communicate inside information more efficiently than its individual depositors or borrowers.

Sharpe (1990) studies an economy where banks compete for firms of varying unobservable quality requiring financing of two-period projects. Within this environment, a bank has an incentive to lure firms in the first period with below cost loan rates. A privately successful firm with a noisy, but low public signal of success is "captured" by the bank and must pay a high loan rate because the cost of switching banks is too high. The strength of the monopoly power is mitigated by a more accurate public signal of the firm's ability to pay or through the loss of reputation with new customers.

Boot and Thakor (1994) consider an infinite-period contracting framework in which banks require pledged collateral in addition to per-period interest payments. Banks choose the interest

rate-collateral combination that dynamically induces the borrower to expend maximal effort towards completing a project, while attempting not to lose the borrower to another bank. Banks offer high interest rate-high collateral contracts in the early part of a relationship to induce optimal effort. Once a firm establishes a successful project, the bank reduces both the interest charges and required collateral on the project.

### 3. Results

Financial institutions give means of monetary transactions to society through the transfer of funds between agents. It is impossible to form a “banking system” only by a single financial institution. The “banking system” is organized only when several financial institutions cooperate with each other through monetary transactions. Furthermore, the “banking system” must be based upon a stable network of transactions, in order to fulfil its role. The structure formed by financial institutions is interpreted as a network structure by regarding the financial institutions as nodes and the connection defined by transactions between them as links. We call the network by this definition a “banking network.” By means of the methods developed in the studies of network structures in the field of the statistical physics, we may be able to gain knowledge of the structure of the “banking network”.

The study of the structure of the banking network provides useful insight from a practical viewpoint. For example, if a financial institution ceases to transfer funds, financial institutions expecting to receive the funds from the troubled one may face difficulty to maintain their function. In a worst case scenario, the malfunction of one financial institution could provoke the malfunction of several financial institutions, creating considerable damage to the entire banking system. In such a situation, if we have an idea of the relationship or network structure of financial institutions in terms of monetary transactions, we may be able to take necessary action in order to prevent systemic contagion (Hajime Inaoka, Takuto Ninomiya, Ken Taniguchi, Tokiko Shimizu, Hideki Takayasu, 2004).

De Gregorio (1998) examines the question of whether economies exhibiting greater financial integration experience greater financial development. Instead of relying upon financial restrictions of a regulatory nature, he investigates the effect of lack of financial integration characterized by deviations from two no arbitrage profits conditions, the international arbitrage pricing model (IAPM) of Levine and Zervos (1995) and the international capital asset pricing model (ICAPM) of Levine and Zervos (1998). After controlling for inflation rates and trade openness, De Gregorio finds that in a cross-section of developing and industrialized countries, the no-arbitrage profits conditions have a positive and statistically significant effect upon the lending, stock market capitalization and volatility measures of financial deepening. The total value of shares traded per year measure only appears to depend upon the ICAPM measure. In these analyses, one important distinction is that between behaviour in developed and developing countries. In the sample for which De Gregorio has data on the gross capital flows and composite measures, the observations are restricted to developing countries. In these samples, he finds only mixed evidence for any of these two measures having an effect. Gross capital flows do appear to be correlated with the lending measure of financial deepening, an intuitive finding; at the same time, this is the least convincing measure of the variable of interest.

There also is a trend toward cross-border mergers and acquisitions (M&As) between large financial service firms in different nations. These cross-border M&As often involve large universal-type institutions that provide multiple types of financial services in multiple nations. One prominent example is the Deutsche Bank–Bankers Trust mega-merger, which provided a leading European universal bank with greater access to wholesale commercial and investment banking resources in the United States. In Europe, there has been considerable cross-border consolidation of all types of financial institutions following substantial deregulation of cross-border economic activity in both financial and nonfinancial markets.

For the securities and insurance industries, the market values of crossborder M&As involving European financial institutions have actually exceeded the values of within-nation M&As in recent years (Berger, Demsetz and Strahan, 1999).

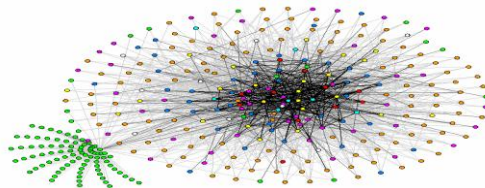
The increased M&A activity raises important research and policy questions about the causes and consequences of consolidation and the future structure of the financial services industry. There is an extensive research literature on the motives for and consequences of consolidation, covering efficiency, market power, and managerial topics. Presumably, much of the increase in consolidation represents market responses to deregulation that made it more possible and less costly to consolidate, such as the Riegle-Neal Act in the United States and the Single Market Programme in the European Union (EU). Future consolidation may be motivated by recent policy changes, such as passage of the Gramm-Leach-Bliley Act in the United States and creation of the monetary union in the European Union. These policy changes may precipitate further consolidation of large institutions, with important social consequences for systemic risk, the safety net, and monetary policy as well as for efficiency and market power in the financial services industry (Berger, DeYoung, Genay and Udell, 2000).

A pioneering study by King and Levine (1993) using a sample of 80 countries found that the greater was financial development back in 1960, as represented by a larger financial sector (known as financial deepening), the larger the economic growth over the subsequent 30 years. Later studies using more sophisticated techniques have confirmed this finding and indicate that a doubling of the size of private credit in an average less-developed country is associated with a two percentage point annual increase in economic growth (e.g., Levine, Loayza, and Beck 2000). Furthermore, industries and firms which are more dependent on external sources of funds and so would benefit more from financial deepening are found to grow faster in countries that are more financially developed (Rajan and Zingales 1998, Demirguc-Kunt and Maksimovic 1998). Similarly, more newfirms are created in countries with developed financial systems. The evidence also suggests that the way financial development raises growth is more through improvements in the allocation of capital that produces higher total factor productivity rather than through higher investment (Beck, Loayza, and Levine 2000, Levine 2004). As stated by Honohan (2004), "The causal link between finance and growth is one of the most striking empirical macroeconomic relationships uncovered in the last decade."

One of the major strands of thought prevalent in the growth and development literature, often associated with the work of Goldsmith (1968), McKinnon (1973), and Shaw (1973), stresses the connection between "a country's financial superstructure and its real infrastructure". Simply put by Goldsmith (1968), the financial superstructure of an economy "accelerates economic growth and improve economic performance to the extent that it facilitates the migration of funds to the best user, i. e., to the place in the economic system where the funds will yield the highest social return". Further evidence, again not decisive, establishes the link between financial structure and economic development. For instance, Goldsmith (1968) presents data showing a well-defined upward secular drift in the ratio of financial institutions' assets to GNP for both developed and less developed countries for the 1960 - 1963 period. As he notes, though, it is difficult to establish "with confidence the direction of the causal mechanism, i. e., of whether financial factors were responsible for the acceleration of economic development or whether financial development reflected economic growth whose mainsprings must be sought elsewhere ". And indeed Jung (1986) provides post war econometric evidence for a group of 56 countries of causality (in the Granger sense) running in either and both ways. Finally, historical case studies such as those undertaken in Cameron (1967) have stressed the key importance of financial factors in the economic development of several European countries.

Finally, because it has inherited characteristics of both a European styled, "bank-denominated" economy and a regulatory framework similar to the United States, the Norwegian banking environment provides a rich experimental setting. Like many European countries, virtually all debt financing to the corporate sector in Norway comes in the form of "inside" debt from financial institutions. In contrast to other European countries, banks are prohibited from owning large equity positions in the companies they do business with. Loans from financial institutions in 1994 accounted for 91% of all outstanding debt in the nonfinancial corporate sector in Norway (Statistical Yearbook of Norway, 1996), while banks owned only 1% of the equity in the non-financial sector (Nilsen, 1995). Thus, although sample firms are publicly traded, they exist in an environment where the primary debt financing source is "inside" bank debt.

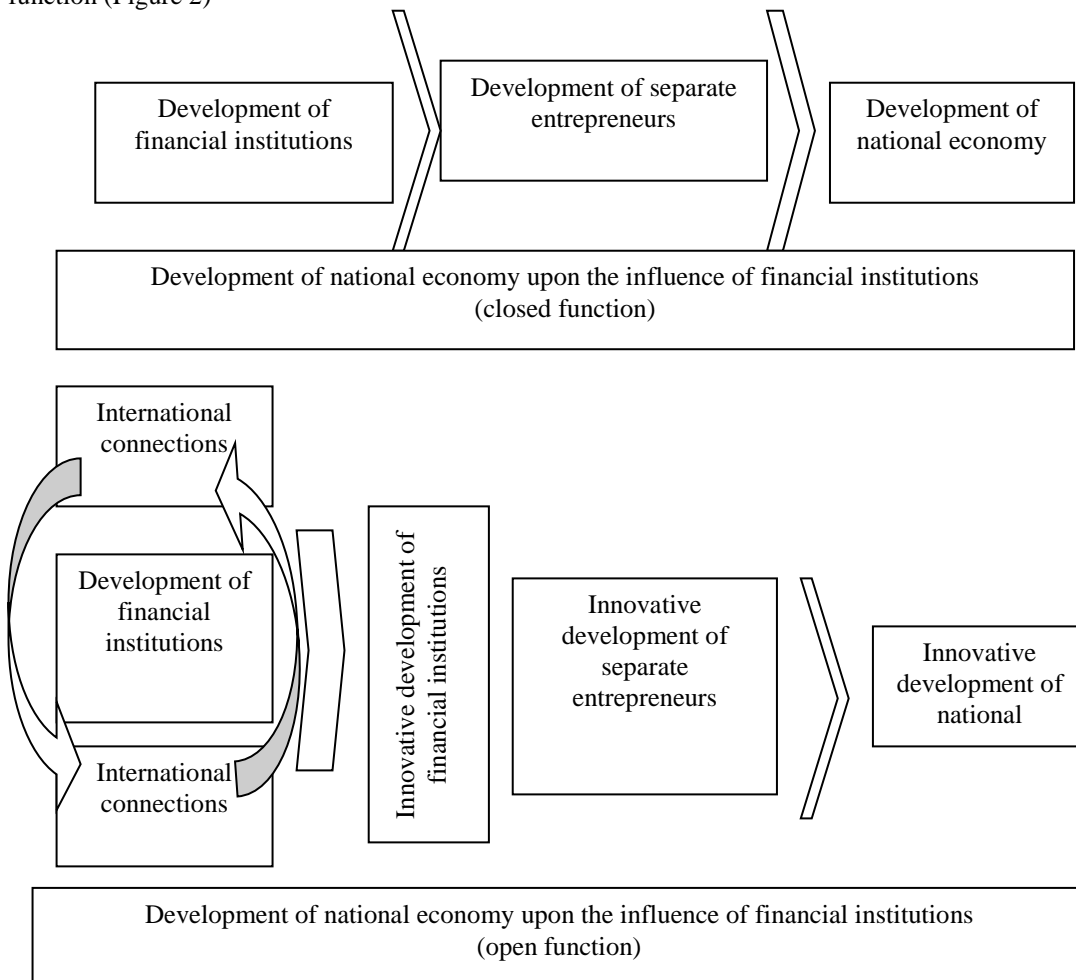
The Bank of Japan researches covers 546 banks that executed transactions in the observation period, some of the banks were not considered in our analysis, because pairs with less than 21 transactions were not connected by links. As a result, the banking network is composed of 354 banks. The network structure is presented in Figure 1.



**Figure 1. Banking network in Japan**

The bold lines (concentrated in the middle) illustrate the frequency of transactions between pairs. The colored dots represent the following financial institutions. Red: City banks, Pink: Local banks, Yellow: Trust banks, Lime: Shinkin banks, Aqua: Tanshi, Security finance companies, Purple: Foreign banks, Blue: Security firms, White: Others (researches of Bank of Japan)

According to above mentioned researches we are able to observe the connections between the level of international integration of national financial institutions and their innovativeness, which influence the innovative development of separate enterprises and the national economy as a whole. In our research we show above mentioned connections with the model of theoretical function (Figure 2)



**Figure 2. The model of theoretical function of connections between the level of international integration of national financial institutions and their innovativeness**

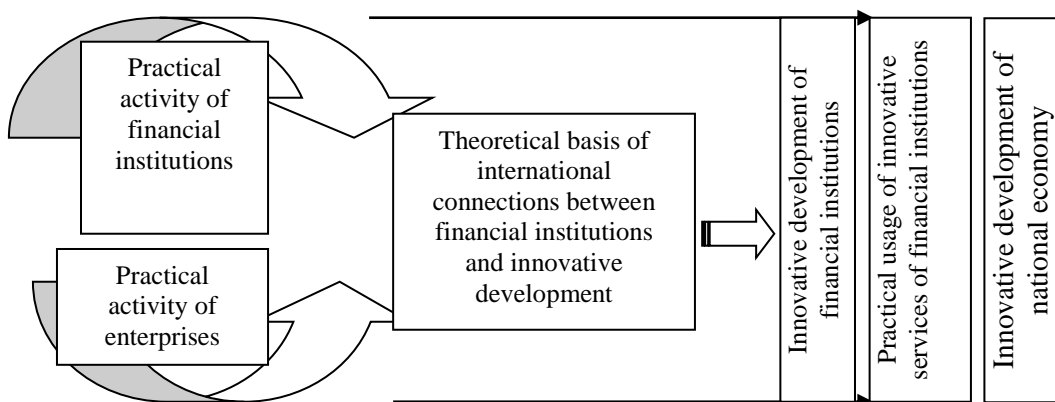
The above given model of theoretical function shows, that the systematic development of national economy can be connected only with the systematic development of financial institutions. The higher level of development nowadays is always connected with innovations.

#### 4. Conclusions

In order to build the worldwide competitive economy, its innovative development has to be presented. Moreover, there is need for the growth and development of financial institutions for such a goal. For the above mentioned purpose is important to fulfil financing needs of the separate entrepreneurs and the national economy as a whole. This purpose can be wholly satisfied only upon the connections between financial institutions worldwide and their corporate innovative development.

The results of the current study found that, the importance of innovative development upon the influence of worldwide integrated financial institutions isn't the creation of our modern scientists. The significant role of innovative development, its financing and international connections between financial institutions were the subjects of studies of famous representatives of the classical political economy. On the other hand there is a need for international connections and innovative development of financial institutions for the practical economical activity nowadays.

It is possible to conclude, that spatially the possibilities of international cooperation between financial institutions and financing of innovative development are the base for combining the theoretical points of views and the practical prospects for further economic development (Figure 3).



**Figure 3. Practical usage of international connections between financial institutions and innovative development**

The study was conducted using analytical method. The main particular conclusion from this study is about the fact, that international connections aren't only the attribute of modern society, it is also an important resource for its innovative development, including innovative development of financial institutions and practical usage of its possibilities during the activity of separate enterprises.

The current study has its limitation in terms of its samples (which is only analytical method). Future research can also compare other methods of international connections between financial institutions and innovative developments research.

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