

THE RELATIONSHIP BETWEEN DEVELOPMENT OF FINANCE AND
ECONOMIC GROWTH



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YEDİTEPE UNIVERSITY

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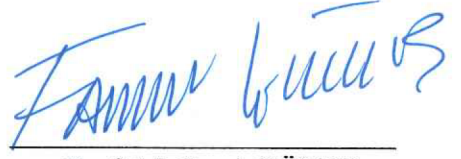
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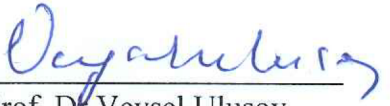
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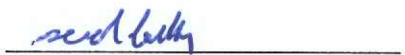
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27.08.2019

RAHİM DAŞDEMİRLİ



ABSTRACT

At last dates have been made important many academic and observational studies on importance of financial indicators in encouraging economic growth. The interrelation between finance market progress and economic growing negatively affected economic performance after global crisis. Like these situations show us the degree of importance of studying the interrelation between finance market progress and economic growing. This study, reveal a new special revisable of scientific studies, as well as new observational and statistical proof on the interrelation between finance market progress and economic growing for a wide cross-section sampling of forty-one states for the time period of the first quarter of 1999 to third quarter of 2011. We use a range of econometric approaches, focusing on developed and developing countries. Finance market progress is measured by five variables to keep the different dimensions of the financial systems. These variables are total current account balance (percent of GDP), exchange rate (national currency to USD), net direct investment ratio to GDP, total loan to private sector (percentage of GDP) and interest rate. The result of study shows us the presence of causality and the trend way of causation between finance market progress and economic growing. It is determined by the factors that are chosen to represent progress of finance. We use Panel Var and GMM method to detect every aspects of this relationship. In addition, the interrelation between finance market progress and economic growing indicate differences among states in spite of these economies have almost identical structural features.

ÖZET

Son zamanlarda, ekonomik büyümenin teşvik edilmesinde finansal indikatörlerin önemi ile ilgili birçok akademik ve gözlemsel çalışma yapılmıştır. Finansal piyasaların gelişimi ile ekonomik büyüme arasındaki ilişki, küresel krizden sonra ekonomik performansı olumsuz etkilemiştir. Bu tarz ekonomik gelişmelerin, finansal piyasaların gelişimi ile ekonomik büyüme arasındaki ilişki üzerinde kötü bir etkisi vardır. Bu gibi durumlar bize finansal piyasaların gelişimi ile ekonomik büyüme arasındaki ilişkiyi incelemenin önemlilik derecesini göstermektedir. Bu çalışma, bilimsel çalışmaların yeniden gözden geçirilmesi ile birlikte, 1999 senesinin ilk çeyrek döneminden 2011 senesinin üçüncü çeyreğine kadar olan zaman diliminde kırk bir devletin geniş kesitli örnekleme aracılığıyla finansal piyasaların gelişimi ile ekonomik büyüme arasındaki ilişkiye dair yeni gözlemsel ve istatistiksel kanıtı ortaya koymaktadır. Gelişmiş ve gelişmekte olan ülkelere odaklanan çeşitli ekonometrik yaklaşımlar kullanıyoruz. Bu çalışmada, finans piyasalarındaki gelişmeler, finansal sistemlerin farklı boyutlarını bulundurmak için beş değişkenle ölçülüyor. Bu değişkenler toplam cari işlemler dengesi (GSYİH'nın yüzdesi olarak), döviz kuru (USD cinsinden ulusal para birimi), net doğrudan yatırımın GSYİH'ye oranı, özel sektöre verilen toplam kredinin (GSYİH'nın yüzdesi olarak) ve faiz oranıdır. Çalışmanın sonucu bize nedensellik ilişkisinin varlığını ve finansal piyasaların gelişimi ile ekonomik büyüme arasındaki nedenselliğin yönünü göstermektedir. Bu, ekonomik büyüme ve finansal gelişimi temsil etmek için seçilen faktörlerle belirlenir. Bu ilişkiyi her açıdan keşfetmek için Panel Var yöntemini kullanıyoruz. Ayrıca, finansal piyasaların gelişimi ile ekonomik büyüme arasındaki ilişki, bu ekonomilerin neredeyse aynı yapısal özelliklere sahip olmalarına rağmen devletlerarasındaki bazı farklılıkları da göstermektedir.

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LIST OF ABBREVIATION

GDP – Gross Domestic Product

USD – United States Dollar

VAR – Vector Autoregressive Model

GMM – Generalized Method of Moments

UK – United Kingdom

M2 – Money Supply

IPO – Initial Public Offering

M&A – Mergers and Acquisition

G 20 – Group of Finance Ministers and Central Bank Governors from World's
Largest Economies

SME – Small and Medium-Sized Enterprises

OLS – Ordinary Least Squares

MCO – Multi Criteria Optimization

DMC – Direct Monte Carlo Approach

PMG Estimator – Pooled Mean Group Estimator

MENA – Middle East and North Africa

VECM – Vector Error Correction Model

U.S. – United States

ACP – Autoregressive Conditional Parameter

TCA – Total Current Account Balance

ER – Exchange Rate

NDI – Net Direct Investment

TC – Total Credits to Private Sector

FRED – Federal Reserve Economic Data

OECD – The Organisation for Co-Operation and Development

ADF – Augmented Dickey – Fuller Test

PP – Phillips Perron Test

HAC – Heteroscedasticity Autocorrelation Consistent

Probab - Probability

DF – Dickey Fuller test

ST. ERROR – Standard Error

VARIAB - Variable

SE. OF REGRES. – Standard Error of Regression

SD. – Standard Deviation

RHO – Represents Autocorrelation

CHI SQ. – Chi Square

CHI. SQ. D.F. – Chi Square of Degree of Freedom

ADJ. - Adjusted

INST. RANK – Instrument Rank

ST. DEV. – Standard Deviation

J STAT. – J Statistic

PROBAB. OF J STAT. – Probability of J statistic

1. INTRODUCTION

The interrelation between finance market progress and economic growing is among widely studied issues for many years. First of all, it is important to explain the meaning of both concepts.

Firstly, let's start to understand what economic growth is. Economic growth refers to the increase in production capacity, production and thus national income in a country. If per capita income in one country increases from one year to the next, the economy is considered to be growing. The rate of increase in national income per capita shows how much production opportunities in a country have increased. In order to achieve economic growth in a country, first of all, investments need to be increased. Further investment depends on increasing savings, which are the source of investments. If the saving rate increases in a country, the investment rate also increases. Therefore, the growth rate will be so high if the other conditions do not change.¹

Achieving savings that significantly affect economic growing depends on the existence of an improved financial system. A safe investment environment, liquidity and a reasonable return to savings owners are necessary conditions for transferring savings to the economy.²

In general, financial development is known as to rise quality and amount level of financial services of banks or other financial institutions besides the financial operations on financial markets. The existence of an advanced financial system is important to direct savings to the economy. However, it is not available concurrence

¹ Kandir, Iskenderoglu, Onal, 2007.

² Helhel, 2018

on how to measure finance market progress. Different studies and different institutions can use different criteria to measure finance market progress. For instance, the development of stock and bond markets; and market capitalization and market transaction volume. On the other hand, the degree of progress of the banking system may be measurable by the proportion of sum loans and sum deposit to national income. It is possible to add different criteria.

After the introduction of the scientific research of Shaw (1973) and McKinnon (1973) into the world of economics, the involvement between economical growing and financial market in emerging states has been shaped by an important and remarkable subject in the work of economics analysts who interested in economic growing and financial markets. Especially in the 1980s, it had a great attention in the political environment, which has been warned to significantly degree by the negative results of the worldwide loan crisis, which was erupted in August 1982 along with the Mexican loan crisis. The loan crisis and on account of this the internal economic recession emerging in too few states which have advanced economies, stressed the significance of using internal financial sources in the most efficient way rather than relying on monetary entry from outside in order to finance GDP growth. The great loans from outside left the economies of emerging states very undefended against bigger economies and economic impacts from strong economies.³

Shortly, the significant impact of monetary markets on the duration of GDP growth may obviously demonstrated by emphasize the contributions and supportive tasks by monetary sector. As a firstly, financial markets offer usable and desirable exchange tool that makes trading simpler between economic institutions and individuals, and the importance of the degree of expertise in the economy and the

³ Hermes, Lensink, 1996.

increase in the number of experts in this field. As a secondary, financial markets undertake with different many types of supportive missions which increase the capacity of savings and transfer those savings to more effective and more profitable investment plans. Clearly, in this manner, financial markets create a positive and stimulating effect to GDP growth.⁴

Subjects that are increasingly get importance in the academic environment as well as in the political environment are under 3 main titles. They are;

- the prerequisites for financial development,
- optimal planning and regulation of monetary establishments or markets,
- the most efficient financial reformative planning.

Generally accepted that GDP growth of states which have undeveloped internal financial markets would significantly undermine the long-term growth probabilities of emerging economies. The World Bank outspokenly emphasized this concept in published research about that subject in 1989.⁵ In the 1980s, when reconstruction of financial becomes important necessity, as a response, some emerging states planned and implemented required reformative economic actions.⁶

It is given great importance to effect of finance sectors in economy development by many of academicians and political environment. This attractiveness of financial markets was increased anymore along improved policies and changes in Eastern Europe last of 1980 and beginning of 1990s. Mentioned sharp changing processes have occurred as a result of transition of those states from socialism to capitalism. Previously, financial markets have not actually existed throughout the

⁴ Hermes, Lensink, 1996.

⁵ World Bank, 1989.

⁶ Hermes, Lensink, 1996.

period of socialism. Therefore, mentioned sharp changing processes found out new matters which is how building and regulating financial markets as an optimal. In particular, states that live system transition, were looking for new channels for effective financial systems and organizing methods.⁷ That oriented study aimed to evaluate the structure, organization and characteristics of financial markets in improved and also in emerging states.

Generally, four widely investigated assumes is accepted for the interaction relation among finance market progress and economic growing.

1. There is not causal relationship among finance market progress and economic growing. Both have no significant impact on the other, and the observable and (established a strong empirical basis) relation among them is only the consequence of historic feature: economic growing happened and finance markets increased, however both of them acted on their own channel. Contemporary economic growing was controlled through actual elements, whereas finance progress was ingrained in the chronicle of finance establishments; probably a result of the Trading Reform of Italy of the medieval or of the Finance Reform of England in the seventeenth century. The progress at another nations, nevertheless, was probably born with the influence of early Italian and English examples. For example; Lucas (1988) strongly argues that monetary changes do has no any impressive power over economy growing, and hence there is no causative interrelation among finance market progress and economy growing.

The above view is indirectly derived from the negligence of corporate questioning standard for numerous neoclassical economics experts. (specially: main pioneers of economy later of the time period of the Economics of Classic Politics and

⁷ Hermes, Lensink, 1996.

Germanic History College and earlier than contemporary institutionalization and the latest curiosity in the ultimate factors of growing.)⁸

2. Economical growing is the cause of progressing of finance market which is referred to as the demand following hypothesis. Economic growth triggers the change and progress of finance institutions and the growing of credit markets. Therefore, finance market progress depends on demand. As the growth of economy actions require increasing capitals, the rise of corporate funds and the collection of funds for the industry replaced the profits of individual wealth and economic expansion to launch enterprises. The variety of existing financial systems is due to the fact that various institutional arrangements can equally well fulfil the two basic functions of any financial system: bringing together savings holders and investors and choosing the most optimal use for mutual funding. In addition, the causes for the selection of finance structures which is capital market basis and bank basis are external of the economy (and for example, in the field of historical, socio-psychological and administrative analysis).⁹

This hypothesis assumes that an increase in economic activity will create a need for finance duties and then facilitate the progress of the finance structure. According to this hypothesis, the requirement of finance duties due to the upward trend in economic actions shows that there is an important incentive behind the development of financial sectors (Fung,2009). This opinion is addressed directly by several contemporary institutionalism supporters (and diverse followers of the Coase-theorem) and indirectly by several different economy experts.¹⁰

3. Progressing of finance is a determining factor of economical growing. The causality bar goes through finance progress to actual economy improvement. Finance

⁸ Graff, 2001.

⁹ Graff, 2001.

¹⁰ Graff, 2001.

improvement, certainly, is just one of the elements that triggered economic growth.

Of course, other factors (or combination of them) are important or sufficient too. The logically difference among the required and adequate conditions provide explain the further variation among the two different formularizations of the hypothesis. It is may obtained in last economical literary writings:

- Finance improvement is a prerequisite for economical growing. In addition to historically presenting, also may be seen along with simply theoretically that insufficient finance structures are one of the biggest obstacles to economical growing. This opinion is accepted through several economy history experts who are currently investigating the finance improvement of improved states and through theoretically economy experts. Numerous of their latest models have given important reasons for assuming that fiscal and bank structures and finance markets can be very important to well-functioning economical growing.
- Finance improvement strongly encourages economical growing. Unless exist exact obstacles to economical growing, advanced finance structures can provide superior and sustainable economic growth ratios. For this reason, this opinion gives great significance to improvement of finance market.¹¹

Its defenders generally tend to Schumpeter. However, its origin is more ancient and extends to Smith or other classics. There are some "monetary cranks" and famous economists among those who approve and support them. Although the discussions vary, Schumpeterian writers along with several Neo Keynesian experts, often emphasize the ability of the bank structure to make funds and to direct funds to generative and innovative usage. Other experts, reveal that professional players of

¹¹ Graff, 2001.

credit and capital markets are collecting and processing information. It provides to increase the performance of fund distribution.¹²

4. Finance improvement may be an obstacle to economical growing (at least sometimes and in the short run period). At this view also, as in the third hypothesis, the causality line extends from improvement of finance market to actual progress. However, instead of the perfect operating of the finance structure, the central attention is on the potentially possible instability and lowering effectiveness of financial re-commerce and negative shocks. This opinion believes that the finance structure is unbalanced and this instability is by its nature. Although some theorists are willing to take the commercial banks into financial distress, most of the supporters focus their caution on bourse or country to country cash-flow. This opinion is of considerable importance to many economists through Keynes (1936) to Diamond and Dybvig (1983), Singh (1997) and Krugman (1995).

Considering all of it, it exists an ongoing discussion about the erudition of state intervene in loan and fund marketplaces (pressure by the way of finance against finance liberalizing). The proponents of the pressure ideas in finance offer the idea that the applied interest rates (i.e., unnaturally fallen) prevent finance savings and ration loan, thus decrease capital goods and obstructing allocation effectiveness. In addition, those who advocates of state intervention in loan and asset marketplace discuss that existence critical marketplace failings that could lead to credit and collapses, (high risk) venture capital shortages, or other socially unwanted consequences.¹³

¹² Graff, 2001.

¹³ Graff, 2001.

Never even for someone that would exclude several opinions as exactly incorrect, it is not exist easy process for deciding which opinion is empirical sufficient among the views expressed. First of all, the elements that cause economical growing undoubtedly involve numerous different ones in addition to finance improvement and the interplays between them may be probably dominant. Secondly, bilateral causality in economical growing, seen more as a rule than an exception, excluding a particular hypothesis makes difficult, if not impossible. Thirdly, current data on financial development is facing a low level of reliability and suspected validity. Thus, current econometrically researches do not actual exclude and ignore none of the main hypotheses. Besides, important results can be given for any one.¹⁴

Furthermore, a financial system that may be sufficient at a particular moment or in a publicly, corporate and economy conditions can be completely harmful in another duration period or in another different conditions. If we want to explain it more generally: there may be various structural changes or interruptions that make it more difficult to define the causal relationships between concepts.¹⁵

As a result, economic historians can give examples that are close to certainty for all the causality possibilities which mentioned above as a generally. In plain words, there is need for more research and review with include even the smallest details. The aim of this study is to provide a distinct perspective to this literature with various theoretical and methodological innovations.¹⁶

In the last many discussions and studies on development economics, the interrelation along with finance marketplaces and economical growing has a large

¹⁴ Graff, 2001.

¹⁵ Graff, 2001.

¹⁶ Graff, 2001.

importance to be investigated in detail. From this point of view, providing a general and detailed overview of the most modern and current theoretical and empirical literature on this subject can make great progress. This study trying to put forward a highly content research of recent theoretical and empirical contributions with respect to the interrelation along with finance marketplaces and economical growing. Additionally, it provides a broad analysis of experiences in developing countries and developed countries on the process of influence along with finance marketplaces and economical growing. The point of view and inferences we provide in this study not only provide an academic benefit, but can also provide an effective benefit to economic policy makers in finding answers to difficult questions when they design financial market policies in practice.

2. LITERATURE REVIEW

In the world of science and economy, there are many literature studies which broadly and in-depth describing the interrelation along with progressing finance market and economical growing. In this study, it is investigated presence of the interrelation along with progressing of finance market and economical growing and causality properties of this important relationship. In order to create a work based on a stronger foundation, we will firstly separately explain the concepts of progressing of finance market and economical growing and then we will examine the relationship between these concepts with detailed studies. In this way, we will review our literature in three main topics:

- Economic growth
- Progressing of finance market
- The interrelation along with economic growth and financial development

2.1. Economic Growth

‘As a historical nothing has processing better than economy growing for making possible community to develop the living quality of their people, covering also those at the lowest part.’¹⁷

It is existing distinct notions of economical growing and methods of evaluating it. We will explain some economic growth definitions which using in some studies.

¹⁷ Rodric, 2007.

Economical growing is the regularly development in capability to meet the requisition for commodity and duties because of developed efficiency (newness in output and procedures) and increased production volume.¹⁸

Another description is as regards growing of efficiency capability of the economies in the large time frame and usually evaluated by real growing in Gross Domestic Product GDP.¹⁹

Economical growing is the enhance in the market value of commodities and duties generated in a certain time in an economy markets which adapted to inflation. Economic growth is traditionally evaluated as the ratio of change in real GDP (Gross Domestic Product). Economic growing takes into account only the quantity of goods and services produced, not quantity of items which are producing or will be produced. So economic growth; purified growth from price increase, namely real growth. This means the real changes of commodities and duties in the economy, for example that, increase 100 pieces of bread production per year is the real growth. This growth has led to a welfare increase and for this cause, when the GDP data measured at the current prices, therefore it contains price increases, it only changes the image and does not contribute to the increase in welfare.

¹⁸ Department for Business Innovations & Skills of UK, 2011.

¹⁹ Department for Business Innovations & Skills of UK, 2011.

2.1.1. Theories Of Economic Growth

Although the complexity of growth is obviously, the basic theorems of economical growing are easy to understand as a conceptual. As a basis, we can investigate economical growing theorems as two categories. There are; founded on the conventional Solow economical growing model (1956) and founded on the notion of endogenous growing. According to this model, all of market-oriented economies will ultimately achieve the identical permanent growing ratio as long as they achieve the identical ratio in technologic development and increase in the number of people. Furthermore, the model supposes, the long-term growing ratio is on the outside of achievement distance of policy makers.²⁰

After Paul Romer's work, the number of endogenous growth models increased significantly. Romer implemented empirical observations that in the long-term states have growing rates of economic growth and that growth rates across countries vary considerably. As a result of these observations, he was failed to correlate traditional theory with its predictions. The idea that economic incentives are the key factors of economical growing in the long-term is the basis for endogenous growing theories. There are very popular models which has this feature that advocate that, innovative processes are deliberate and that technologic innovations that reduce the expenses of oncoming newness. Inherently, the models like these which have that feature highlight emphasize the significance of trained workforce in determining technological development and long-term economic growth. In the continuation of

²⁰ Gould, Ruffin, 1993.

this topic in the sub-sections as a generally, we will examine the mechanism of two growth paradigms.²¹

2.1.1.1. The Solow Growth Model

Probably the most important growing model is the conventional growing model which is developed through from Robert Solow (1956) who owner of the Nobel award. The main idea of Solow's model, accumulated fund (capital) and autonomous technologic change are elements that cause growing of economy.²²

$$(1) Y = F(K, L)$$

According to the Solow model volume of product, Y, is created by the manufacture function which is shown above where K represents the volume of fund stock (capital) and L represents the volume of workforce. Accordingly, to the model of Solow, is accepted that production function presents fixed turns adapted to the scale, in this way, if we doubled all inputs, then, outputs are doubled automatically. Nevertheless, keeping an input (namely labour) as a constant and doubling the capital will provide less than twice of the amount of output. This is one of distinctive elements of the Solow growing model which is called the law of diminishing marginal returns as a name.²³

The growing model of Solow is put forward by saved money amount and changes in the rate of fund stock (capital) to labour. Let's present fund stock-workforce rate as a $k = K/L$. Then;

²¹ Gould, Ruffin, 1993.

²² Gould, Ruffin, 1993.

²³ Gould, Ruffin, 1993.

$$(2) \quad k/k = K/K - L/L$$

Observation implied that the rate changes at k is equivalent to the percent changes at K and is smaller than the percent changes at L . We can note that, the changes in the fund stock is equivalent to invested amount (investment), and invested amount is equivalent to amount of the final product.

$$(3) \quad K = sY$$

S represents the save money amount proportion in equation which is above. We assume that, both of them that the growth share at amount of people, L/L , and saved money amount rate, s , are fixed. If we replacement third equation (3) into second equation (2) and multiplying it by k , then we will get;

$$(4) \quad K = sY / L - k(L/L).$$

As long as we need simply explain the equation 4, we can say that the element sY / L presents the quantity of invested money per unit of the workforce. At same time, the amount of investment per worker is presented by $k(L/L)$ and it is required to keep the fund stock-workforce rate, $k = K/L$.

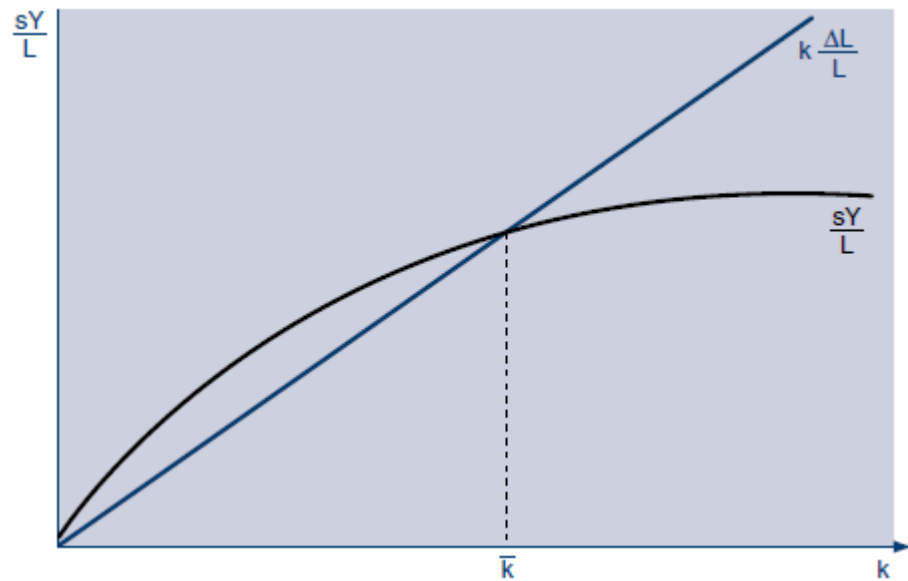


Figure 2.1: The Solow Modelling²⁴

Figure 2.1 shows us the Solow model as a graph. In this graph, investment per labourer is evaluated on the y-axis and population stock ratio to labourer is evaluated on the x-axis. As you see, even though increasing of the invested money per unit of the labourer, sY/L , this increase continues at a declining ratio. This is due to according to the rule of decreasing return, per person product, sY/L , decreases when k increases. Moreover, we need to add that investments per worker are necessary and important to keep the capital fully and intact. Investment per worker is constantly increasing and this is due to it is only commensurate to k . Consequently, these two lines interrupt each other in the equilibrium rate of the stock to the workforce, $\bar{k}$. Due to fact that the rate of fund (stock or capital) to labourer force is lesser than $\bar{k}$, the real invested money per labourer is more than necessary to hold the k fixed. And so, k declines. On the contrary of that, as a result of the fact the ratio of capital to the labour force is more than $\bar{k}$, the real investment per worker is less than necessary to keep the k constant and thus, k falls. Therefore, economy moves on towards the $\bar{k}$. Economy is

²⁴ Gould, Ruffin, 1993.

sustainable at this point forever. For this cause, it is named steady state. The amount of output and the degree of capital stock increased at the identical ratio as the population growing. As a result of this, per capita income, Y/L , maintains its position with no change.²⁵

The amount of physical or human capital will increase the revenue in Solow growth model where technological advancement is accepted as an exogenous factor. However, even so, rise will not provide steadily increasing growth rates. Qualified labour force, like all other producer factors, also leads to an increase in income levels. However, technological development is not the factor that depends on the existence or absence qualified work force. For this reason, qualified work force does not increase economical growing in the long-run.²⁶

When we add the proportion of increase in workforce to the exogenously determined technologic development proportion, we achieve the economical growing rate in the long-term. We can mention that this is the basic conclusion of model about economic growth. Although saving rates do not influence the economical growing proportion in the long-term, but it only affects the GDP level. Since more capital accumulation will result in a higher GDP level and labour productivity, the larger saving rate will temporarily increase the growth rate by positively affecting. However, in the long term, it can be emphasized the proportion of economical growing will depend on the proportion of changings at the workforce in addition to the proportion of technologic development.²⁷

According to the Solow model, that if economic growth ratios of countries seen as different to each other, this is only because the countries are at different positions of movement in the direction of the steady state. As related to this, wealthy

²⁵ Gould, Ruffin, 1993.

²⁶ Gould, Ruffin, 1993.

²⁷ Gould, Ruffin, 1993.

countries achieve economic growth at a slower rate than poor countries, and, over time, level of per capita income of poor and rich countries will meet at same balanced point.²⁸

2.1.1.2. Endogenously Growing Models And Innovations

The supposition that technological development cannot be fully explained by the economic authorities is damaging the Solow model. In the Solow model, we cannot find a detailed description about the technological development mechanism. Nonetheless, the economic growth models which recently presented to the world of economy have tried to reveal the economic course behind technological development with detailed. The economists like as a Joseph Schumpeter (1950) and economist Jacob Schmookler (1967), strongly defends that there was significant technologic development in the world. One of the causes of this, that innovators found the technological progress to be profitable to find new ways to do something. The profit sector is the one of the most significant elements affecting the technological improvement. Schmookler examined the records and emergences of important inventions such as oil refining, papermaking, railways and agricultural technologies. He found convincing examples which is a result of his research and studies and according to this inferences, discoveries or inventions were not only the result of deep scientific studies. On the contrary, according to the results, technological developments were the encouraging result of the desire to make a profit.

Therefore, according to the obtained results, the productivity of a state or of any organization is not related to luck or other exogenous factors, it is related to its economic structure and the economic policies which it carries out. If economic

²⁸ Gould, Ruffin, 1993.

growth is endogenous, we most likely see significant differences in the growth rates of different countries or nations without a certain correlation in their per capita income levels.²⁹

Investigation and improvement activities are made through to obtain income by creating a novel good. However, every novel good which is produced and released to the market join adds more new and valuable information to humanity. We need to underline a past statement, we remain on the ridge of the previous ones. After the invention of the wheel and the engine that uses the fuel, the car was introduced to the world. Panatti (1987) has interesting and illustrative examples of about this subject. The invention of the vacuum cleaner had a significant effect in the emergence of the hair dryer; vulcanized rubber was needed for the emergence of sports shoes; the invention of potato chips was inspired by the French-fried potatoes; The discovery of detergent was made easier by discovering the soap (over 3000 years ago). In addition, if we consider the invention of automobiles, airplanes, laptops, or television sets, the results of these instances show that the proportion of growing of economies depends on the introduction of new products to markets. And thus, it affects the variation of economic growth rate of between different countries.³⁰

Recently, new endogenous growth models have been developed to explain the development and causative process prior to the development and entrance of novel goods. At these models, it is stated that people's knowledge level is bigger and technological development is faster. According to the models, the cost of innovation is constantly falling as people's knowledge increases and occurs scientific development. In contrast to the Solow model, in these models, the returns on capital is

²⁹ Gould, Ruffin, 1993.

³⁰ Gould, Ruffin, 1993.

not moving towards a constant reduction when other factors are kept constant and for this reason, increasing the amount of capital can lead to steadily rising growth rates. Some countries have an important economic and social feature that make them superior than others. These features are such as favourable economic environment for the accumulation of human knowledge, a larger capital stock, a higher education level, a more educated population. For the reasons we mentioned earlier, the growth in income in these countries will always tend to rise faster and more regularly.³¹

2.1.1.3. A Converges Hypothesis

One of the issues described in the Solow model is the strong possibility these nations with same priorities and those with entry to the similar pool of technology can achieve the same per capita revenue degree. The speed of economically growth rate of the poor countries or nations will be faster than the rich countries until the income levels of the poor countries or nations reach or converge the income levels of the wealthy countries or nations.³²

In spite of that, the endogenous growth model does not agree with the Solow model at this subject and does not defend same prediction. According to the prediction of endogenous growth model, countries that have already begun to prosper and countries with more resources such as rich human capital or physical capitals than any other countries will have more economic development level than less developed countries. That is, the endogenous growth model as a strongly finds the possibility of less developed countries not being able to reach developed countries.³³

³¹ Gould, Ruffin, 1993.

³² Gould, Ruffin, 1993.

³³ Gould, Ruffin, 1993.

When we examine the issues, it arising new questions such as is poor countries catching up on rich countries or is rich countries catching up on richer countries. As the cost of living is very different from one country to another, and the exchange rates of countries vary widely, the comparison of income levels between countries is somewhat complex and difficult. Assuming that marketplace currency rates are used to transform the formal GDP statistical figures into the general monetary unit, in 1960, sixty per cent of the all globe's poorest countries had merely ten per cent of the globe's total revenue and it is detected that this rate fell to 5 percent in 1988. These results show us that poor countries are losing. However, we know that people who living in poor countries have lower living costs than people who living in richer countries. In order to correct this difference and to obtain accurate results, it is possible to employ the measurement of purchase power parity, in other words, to use the exchange rate that make living costs in countries more comparable. In this manner, predictions of purchasing parity was used in the studies of professor Robert Summers and economist Alan Heston (1991), to correctly define the income levels of the countries again. According to the results of the study, it is clear that income convergence occurs. If we take this as a basis, we can accept the estimates of the Solow model as a correctly. At the during 1960 - 1988, the portion of the lowest revenue degree sixty per cent of the globe's community arose from about seventeen per cent of global revenue to nearly twenty-one per cent, meanwhile the portion of the highest revenue degree series of nations decreased from sixty-eight per cent of global revenue to about sixty per cent.³⁴

When making income classifications, changes in income shares may give very sensitive responses, depending on how is this classification made and by which

³⁴ Gould, Ruffin, 1993.

criteria. Therefore, sometimes the analysis may not fully reflect the completely true results. If we do a study which include comparing the wealthiest ten per cent of the nations with the lowest revenue ten per cent of the nations, we may not obtain convergence in the emerging results. Even so, sometimes we can see convergence in the comparison of medium-revenue nations which may classified with too low revenue nations, with wealthy countries. By carefully observing the relationship between the growth rates and income levels of countries, we can find out how much or how degree income convergence at between countries come out. If the convergence tendency is detected in the income levels of the countries, the poor countries reach faster growth rates than the rich countries to reach higher income levels.³⁵

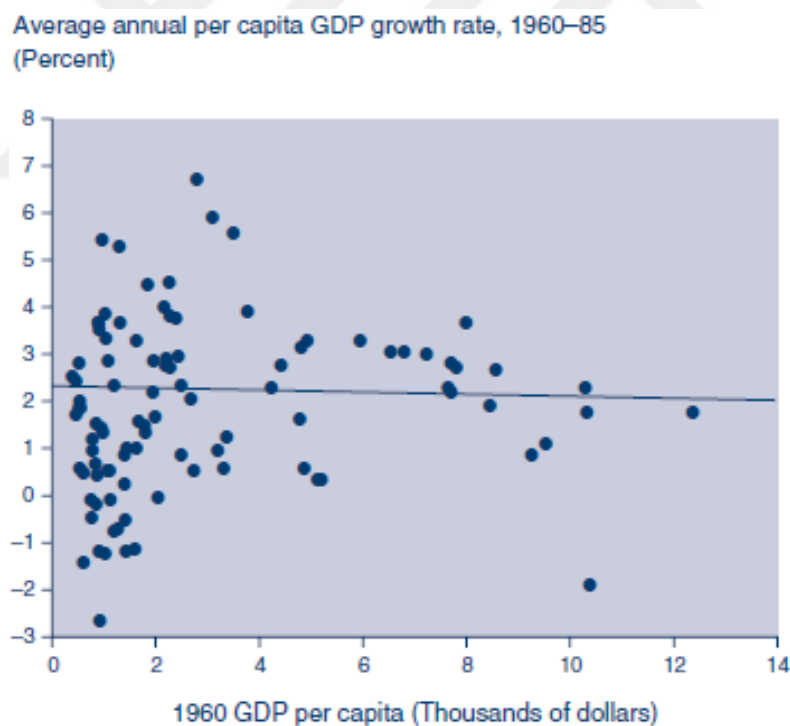


*Figure 2.2: Real GDP Growing Per Person and 1960 Real GDP Per Person*³⁶

³⁵ Gould, Ruffin, 1993.

³⁶ Gould, Ruffin, 1993.

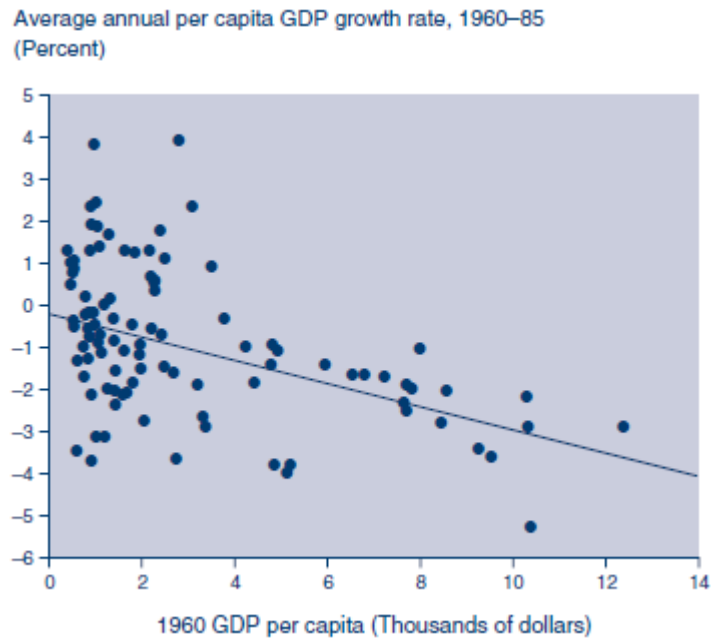


*Figure 2.3: Real GDP Growing Per Person and 1960 Real GDP Per person: Human Capital Held Constant*³⁷

The study, which reflects the relationship between the growth rates between 1960 and 1985, and the income in 1960, was shown in figure 2.2 on 98 countries in the Summer Heston data set. In presented table which based on Summer and Heston data, we cannot determine that existence of a strong and definitive adverse interrelation among GDP growing ratio and income level which showing that there is no convergence. To be able to say existence of a powerful and definite adverse interrelation among growing rate and income level, the slope which indicating the relationship between these two variables should be more negative slope at the table than the pictured. According to the controversial claims about with figure 2.2, other factors that determine growth rate do not shown as a fixed. Considering the interrelation among the degree of revenue in 1960 and rate of growth in the 1960-

³⁷ Gould, Ruffin, 1993.

1985 period, assuming that human capital is constant, as shown in Figure 2.3, we can conclude that poor countries are reaching to rich countries in time.³⁸

It can be said that revenue convergences based on workforce and other elements is presented as proof opposite to endogenous growing theorem (Mankiw, Romer, and Weil 1992). Nevertheless, it may not possible certainly declared as extreme opposites. As we noted in the previous paragraphs, there are created suitable environments for discoveries and inventions in countries which have high levels of education and qualified human capital. That's why, such countries have higher growth rates than others. However, convergence can be predicted by keeping human capital constant. According to the endogenous growth theory, countries can be separated from each other as long as they have various degrees of workforce when all distinct variables are fixed. Such that, since countries have different levels of human capital and economic growing ratio has same directional interrelation with workforce, we can say that there is strong evidence which points out divergence of countries.

In this thesis, the relationship among real GDP growing rates per person and real GDP per person in 1960 is presented graphically using data from 26 different countries. Primary data were taken from the Federal Reserve and the World Bank database. In one of the figures below, human capital was held constant but in the other one was not.

³⁸ Gould, Ruffin, 1993.

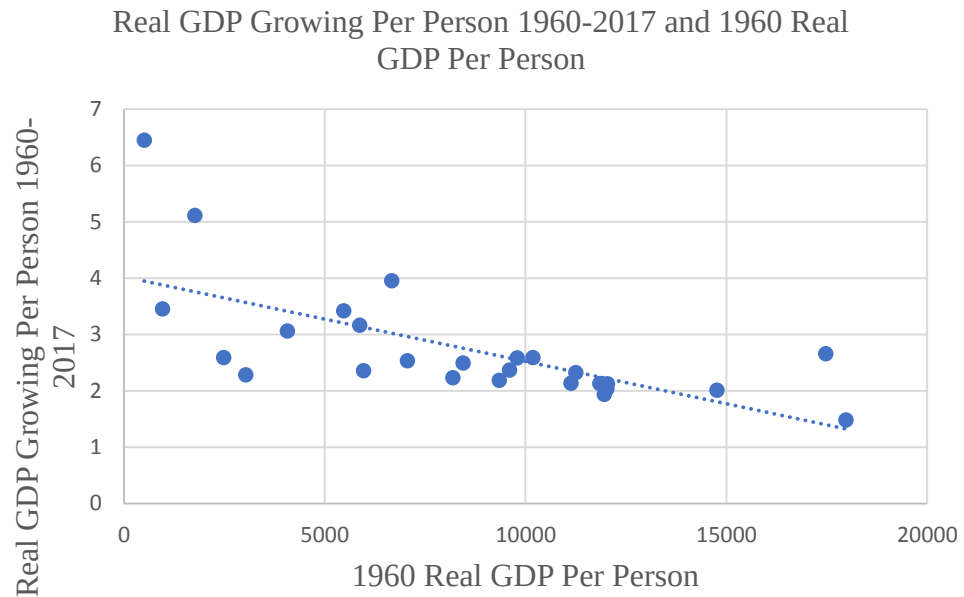


Figure 2.4: Real GDP Growing Per Person 1960-2017 and 1960 Real GDP Per Person

At the figure 2.4, the workforce factor also varies through country. As can be seen in the table, there is a strong negative relationship among real GDP growing rate per person and real GDP per capita in 1960. The curve representing the interrelation among these two elements is moving towards the adverse. If we look at the distribution of points which are representing countries, we can see that there is convergence, although not very strong.

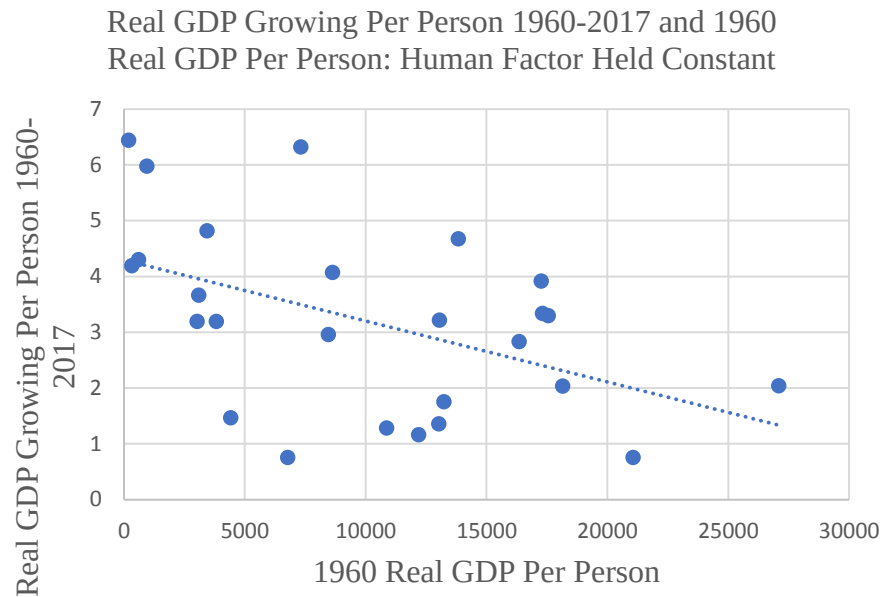


Figure 2.5: Real GDP Growing Per Person 1960-2017 and 1960
Real GDP Per Person: Workforce Held Constant

At the above, figure 2.5, workforce is hold fixed and thus the impact of changes in human capital on growth rate is fixed. As can be seen in this figure, there is also a negative relationship among real GDP growing per person and real GDP per person in 1960. The curve line representing the interrelation among the elements is moving towards to down in this figure too. When the distribution of the points representing each country is examined, it is seen that there is no remarkable convergence.

If looked at both figures, can concluded that human capital has a significant effectiveness in the growing rate of nations in terms of convergence over time or in developing countries to reach developed country economies over time.³⁹

³⁹ Gould, Ruffin, 1993.

2.1.2. The Determining Factors Of Economic Growing

Solow and endogenic growing models have dissimilar methods that explain the importance level of many factors affecting the rate of economic growth. As economists estimate the various factors that stand out in determining the economic growth rate and have various role, they resort to the assistance of such models.

After what we have explained above, there are emerging questions about the movements of the real-world economy. Does the world economy actually act as an endogenic growing model that includes technologic development and long-maturity growing which is affected by economic elements? The other question is; Does the world economy actually act as a Solow growth models which include the knowledge that the economy is exogenous and determinants of technological development? These questions have great importance to us. Because the answers of these questions will explain to us how the countries affect their economic growth rates. It is not easy to answer these questions because it may take a very long time to observe the growth period of technological growth. On the other hand, in obtained results with data which presents little duration of time, in fact, factors affecting the economic growth rates can only affect the level of income. As a result, may be the increasing in growth is not an important continuous increasing, only the short-term transition to higher income levels.⁴⁰

For instance, suppose the Indonesian government decides to subsidize education by removing tuition fees throughout the country. If the Solow model is more suitable for real life, at this situation, Indonesia may be getting experience to

⁴⁰ Gould, Ruffin, 1993.

growing quicker with obtaining an upper degree of revenue for why it has invested more in people's educational degree in order to have an educated workforce.

However, even so the level of income in Indonesia will not continue to increase regularly as shown in figure 2.6. As shown in figure 2.7, if endogenous growth models are more suitable for real life, having more knowledge of education which will guide to a steady enhancement in income degree, will also lead to a steadily increasing growth rate. Both models have short-term estimates that the removal of tuition fees in Indonesia has increased Indonesia's economic growth. Therefore, it becomes difficult to distinguish these models in the little duration maturity. Only just in the long-time maturity, we can distinguish these two models when acceleration at the rate of growth occurs or the growth rate does not change.⁴¹

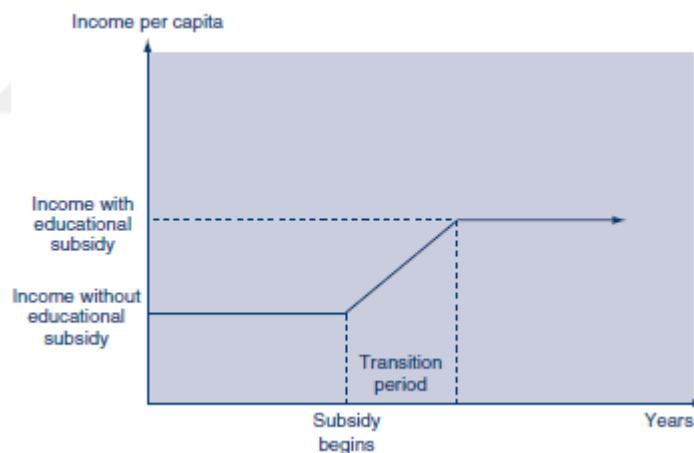


*Figure 2.6: Solow Model: Increasing in Income Because of Education Subvention*⁴²

⁴¹ Gould, Ruffin, 1993.

⁴² Gould, Ruffin, 1993.

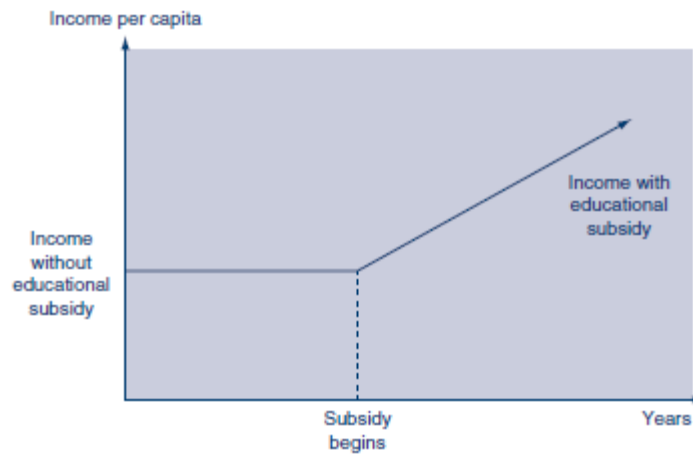


*Figure 2.7: Endogenously Growing Model: Increasing in Growing Because of Education Subvention*⁴³

Plosser (1992) argued that even though the Solow growing model was in transform to an upper revenue degree, it could not fully explain changes of growth rate of countries. For instance, suppose that, Indonesian government rise up its investment rate by 50 percent more. As we mentioned in the previous paragraphs, the model offers the assumption which predicts that the rate of economic growth will rise as a rapidly but will fall over time until it reaches more amount of capital and higher income levels. If we accept the assumption that the ratio of the proportion of sum fund in the throughput to total output is one third, according to the prediction of Solow model there is only 22 per cent enhance in per person revenue. If the country is able to complete the transform to the renewed upper income degree in 30-year, average annual growth rate of that country will reach an increasing of 0.7 percent. At a result, we can underline that, the large-scale increases in investment rate in the Solow growth model are completely insufficient by alone to clarify the obviously emerged distinct in the growing ratios of economy of among nations.

⁴³ Gould, Ruffin, 1993.

There are many studies that explain as a broadly why economic growth shows such differences between countries. Due to the importance offered by the endogenous growth model, many recent important researches have attention on the effect of workforce collection in growth. At the same time, we can emphasize that workforce which is accepted as entry factor in manufacture process is also important in Solow model. Additionally, we would like to inform that the economic environment and economic policies of a country is not less important to influence economical growing besides human capital. Thus, the economic internal competition structure, the degree of aperture of the state to foreign commerce, the political and economic stability of the country and the fact that the government can offer an increase in productivity are among the reasons that can trigger the rise of innovative activities and economic growth, as mentioned before.⁴⁴

2.1.2.1. Human Knowledge

Having an educated workforce can keep in effective part in increasing the ratio of economical growing? Some researchers conducted research and studies to prove that the educated population is of great importance in increasing the growth rate. Barro (1991), Gregory Mankiw, Romer, and economists David Weil (1992), Ross Levine and Renelt (1992), and David Gould and Roy Ruffin (1993) are some of these researchers. Increased educated workforce may contribute to the development of new ideas or projects by educated individuals, or by making a considerable impaction on the production process of state, leading to accelerated technological development in the country. Therefore, educated labour force leads to increasing of rate of growth as

⁴⁴ Gould, Ruffin, 1993.

an effectively. We can offer a good example from Guatemala. According to statistical data, in 1960, only 7% of secondary school-aged children in Guatemala went to secondary school. According to Barro's estimates (1991), the government of Guatemala increased education investments in 1960 and contributed 50 percent more. Therefore, this increase in the government's investments in education surprisingly caused to increase of the per capita annual growth rate to 1.3 percent.⁴⁵

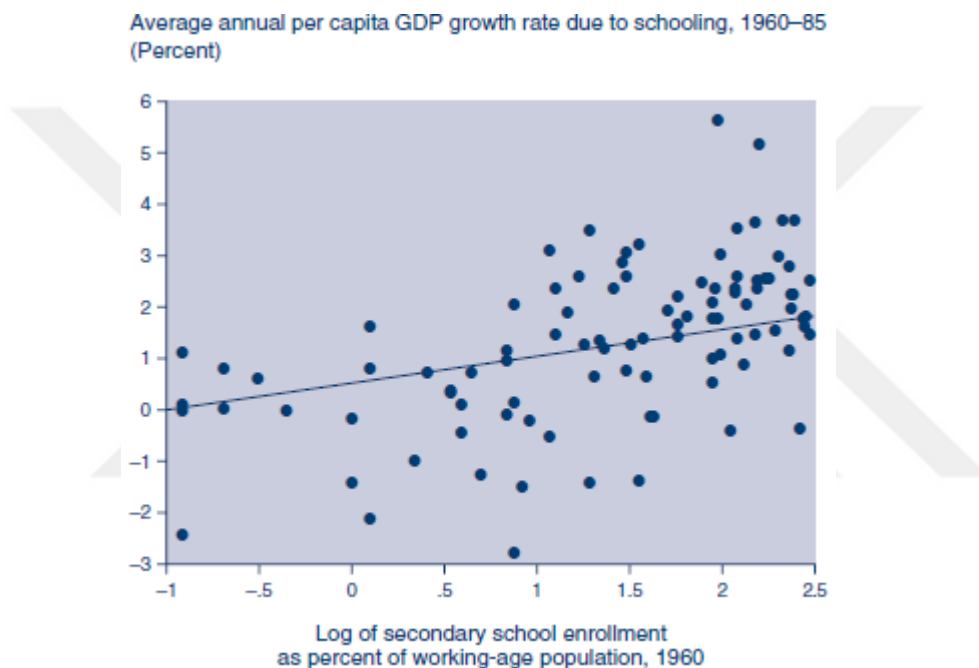


*Figure 2.8: Partially Association Among Real GDP Growing Per Person and School Enrollment Ratio.*⁴⁶

Figure 2.8 demonstrate the graphical analysis of the interrelation among the school enrollment ratio of the working age population and GDP growth rate, based on data from 98 countries which at period between 1960 and 1985. Average annual per capita growth rates for between 1960 and 1985 is presented on vertical axis. On the other hand, billet of lyceum enrolment ratios as a ratio of the employment age people

⁴⁵ Gould, Ruffin, 1993.

⁴⁶ Gould, Ruffin, 1993.

in 1960 is presented on horizontal axis. The capital savings rates and income levels of 1960 were kept constant. If we look at the pictured incline of the adapted linear in figure six, holding other factors constant, we can see that the average growth rate increased by (0.5) point five per cent yearly due to the increase in the secondary school enrolment rate changes two per cent, from eight per cent to ten per cent. According to the meaningful conclusion, the investments of the governments in the education system are very important for the poor countries to achieve their progress and high growth rates.⁴⁷

2.1.2.2. Political Impactions And Impactions Of Governments

Wherewith badly can the policy surroundings affect increase of economical growing or how positively? In fact, this query has large importance in the study of the sources of economically growth or the factors which affecting economic growth. One of the issues hidden in this question is that governments take into account the economic impacts and consequences of this when producing and implementing policies. We can predict that the government, which has unstable policies that can make sharp political changes, will create distrust of the future of the economy and reduce the investments that will conduce to the future development of the states' economies. For instance, private investors who invest in oil exploration, if they know that the oil wells have been nationalized, will stop their investments and oil explorations in this area. In another example, if people cannot get profit from their innovative ideas that will create new products or services, they will stop investing in new products or services. For this reason, copyright and patent protection policies can

⁴⁷ Gould, Ruffin, 1993.

be some of the effective and considerable ingredients in economical growing. As a result of a number of political revolutions, political assassinations, or other political chaos environment in a country, it would be difficult to measure the property rights and security of property rights in that.⁴⁸

Barro (1991) put forward a prediction study, assuming that the level of schooling, revenue level and state spending are fixed, that politic indecision in the country as evaluated by insurrections and politic conspiracies will negatively affect and will reduce the growth of GDP per capita. To illustrate this with example, South Korea achieved a 5.25 percent per year growth rate between 1960-1985, when it experienced political crises. However, if a stable political environment had been provided, it would easily achieve 6.25 percent per year growth rate. If we need to give more dramatic instance, El Salvador missed around seven per cent per person rate of growing of economy due to bad political environment and political instability. In this sense, we have to consider, as evaluated by insurrections and conspiracies, politic indecision may also be linked together the directly extermination of a state's fund stock. That is, by oneself, may absolutely decrease a state's economical growing ratio.⁴⁹

Wherewith does the magnitude of state influence the economical growing in a world where unstable state policies and a bad political environment have negatively affected economic growth? According to Barro's studies (1989, 1990, 1991), being greater the share of the total spending of the government on GDP, except for defence and education, is mean the less growth and investment. Barro's other statement is that it is not exist statistically considerably efficacy of the state investments on economical

⁴⁸ Gould, Ruffin, 1993.

⁴⁹ Gould, Ruffin, 1993.

growing. The government may try to increase the private production power of the state by using government spending to increase private production. However, according to the findings so far, the act like this of the state does not have an effect on growth and even may cause negative effects by reducing growth. The increase in government spending will cause the growth will move in a downward trend as the private savings will decrease and at the same time will cause the disruptive effects of erroneous government spending programs and unbalanced taxes.

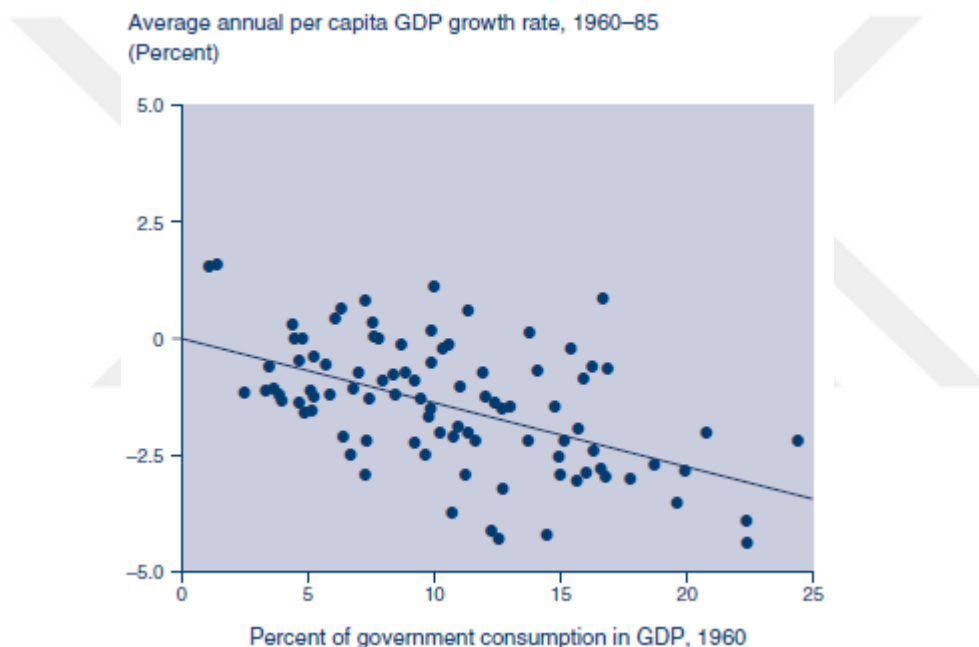


Figure 2.9: Partially Association Among Real GDP Growing Per Person and Government Consumption in GDP⁵⁰

We can clearly see at figure 2.9 that the relation between the share of government consumption in GDP and the economical growing rate per person is negative. In addition to the determinants of political stability and the level of education, the level of income in 1960 also was kept constant. As you can see in

⁵⁰ Barro, 1991.

figure 2.9, the increase of portion of state spending in GDP from ten percentage to fifteen percentage will affect economical growing as negatively and reduce economic growth by 0.6 percent per year.⁵¹

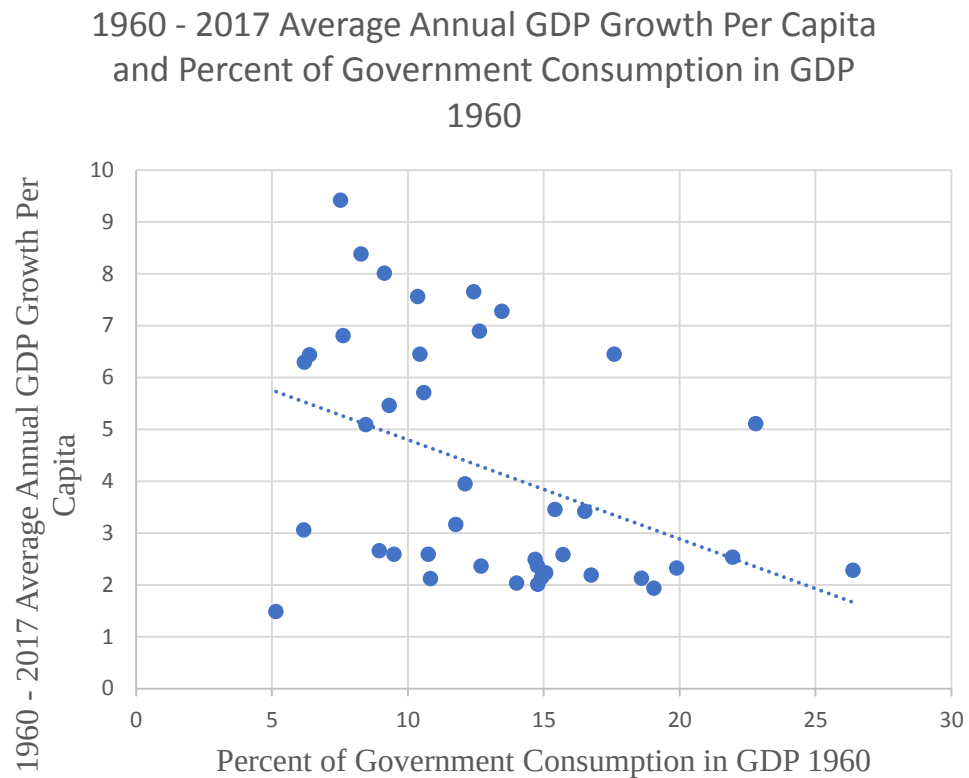


Figure 2.10: Partially Association Among Real GDP Growing Per Person and Government Consumption in GDP

We can clearly see also at figure 2.10 that the relation between the share of government consumption in GDP and the economical growing rate per person is negative. This means that per capita GDP growth will decline over time if government consumption in GDP is constant at percent. Thus, we can say that government expenditures negatively affect GDP growth per capita.

⁵¹ Gould, Ruffin, 1993.

2.1.2.3. International Trade

Have countries with economies opened to transnational commerce have a quicker growing rate according as closed states? Considering the evidence, we see that the answer to this question is yes. The entitled as Asiatic tigers (Hong Kong, Singapore, Taiwan, and South Korea) which have large outward trade economies, and strong outward-oriented commercial relations, achieved a growth rate of between 8 percent and 10 percent annually between 1960 and 1985. On the contrary, the annual growth rates of African and Latin American countries, which have more closed economies and poor foreign trade relations, were even harder to reach 5 percent. According to the findings of the Ben-David studies, countries which settled in Europe when moved to the European Community, and after the elimination of their trade barriers, their income levels and growth rates rose and they approached the richer countries.⁵²

Countries with foreign trade open economies and strong foreign trade ties achieve faster technological progress and greater economical growing. In consequence of the ease of access to high-tech products, the cost of developing new technologies is reduced, thus accelerating the state's technology progress and economical growing. In plain words, having a wide trade network increases economical growing as it rising the range of products and technologies that can be reached. As a result of De Long and Summers (1991) studies, they found that countries with closed foreign relation economies and high protection rates to foreign economies, had a 1.1 percent lower productivity growth rate compared to other countries. According to Roubini and Salai-Martin (1991), the annual growth rate will be reduced by 2.5 percent due to sharp changes in the structures of countries which is

⁵² Gould, Ruffin, 1993.

passed from strong and large extrovert economy structure to strong and narrow inward oriented economy structure. Gould and Ruffin (1993) conducted a research study trying to explain the difference among workforce as an ingredient in manufacture and workforce as the welding of long-maturity growing. At this study, countries having opened trade economies and countries with closed trade economies were taken as a sample. According to the obtained results of this study, when assume that workforce is evaluated through the literacy ratio, the growing rates of countries with open trade economies are 1 percent or 2 percent greater according as the economical growing ratio of countries with enclosed trade marketplaces.⁵³

2.1.2.4. Investments To Equipment

Summers (1991) and De Long defended that invest in equipment has huge implications for economic growth that needs to be considered. According to stated issue at their study, the new technologies invented while developing technology are mostly new types of machines. We can give many examples about this point. Looking at the technological developments at the lasts of the 18th centenary, vapor motors were needed to obtain vapor force. Inventing of spinning machines and power looms were required to produce automatic textile. On the other hand, if we need to give an example from the starting of the twentieth centenary, the large number of novel type high-precision metal forming machines, which can be easily interchanged and made assembly lines possible, enabled assembly line production and also enabled significantly development of assembly line production technology.

⁵³ Gould, Ruffin, 1993.

De Long and Summers are conducting scientific research studies showing the cross-sectionally dispersion of economical growing ratios in the globe afterward the Secondary Globe Warfare. According to the obtained results of this study, it must be taken into attention that invests in mechanisms and instruments have a crucial role in increasing economic growing and have major efficacy on the future of the state's technological development process. In their study, Summers and DeLong emphasized that every additional proportion in investments dedicated to the production of machinery and equipment will provide increasing a yearly growing ratio of 0.26 per cent in economic growth. At this study which yielded important findings regarding the relationship between investments in machinery and equipment and economic growth, obviously, labour productivity, growing of labour power, colleges enrolment ratios and distinct investments other than mechanisms instruments investments were assumed as fixed. Of course, other investments also definitely have an efficacy on economical growing, yet their impact force is just one-fourth of the impact of investment in machinery and equipment.⁵⁴

2.2. Financial Development

While the financial sector is a statutory and regulative instrument that allows procedures be carried out through applying loan expansion, also as well as it is the

⁵⁴ Gould, Ruffin, 1993.

economic environment formed by institutions, vehicles and markets as together.

Basically, we can say that the progression of the finance industry is linked to solving problems which originate from various exposed expenses in the finance structure.

Financial contracts, financial markets and financial intermediaries emerged as a result of the process of collecting information, establishing contracts for financial purposes and reducing the costs of doing various financial transactions. The existence of various versions and associations of data acquisition costs, implementation costs and procedures expenses along with distinct statutory system, regulative system and duty system throughout the history has encouraged the occurrence of different finance agreements, marketplaces and mediators across countries.⁵⁵

The financial system has 5 important basic tasks. These are;

- to obtain preliminary information about the planned invests and to to assign fund
- follow-up invests and implement institutional administration afterward provided financing
- making risk management, diversification and trading easier and more convenient
- fund creation from savings and mobilization of savings
- make trade of goods and services easier for institutions or individuals

Finance progress take shaped when finance marketplaces, financial paraphernalia and financial mediators can make information costs, implementation costs and transaction costs easier and more affordable. In this manner, a more

⁵⁵ <http://www.worldbank.org/en/publication/gfdr/gfdr-2016/background/financial-development>.

favourable environment is established for the realization of the most important tasks of the financial sector in the economy.⁵⁶

2.2.1. Significance Of Financially Progress

The finance system has a too considerable part in good working of a every nation's economies. Like other important financial service providers, banks are also in central position of the financial system. The financial system, which has many important functions such as offering job opportunities to large masses of population, is deeply embedded in the social, economic and political structure of the countries. Baily and Elliott emphasized that the financial system has three major tasks.⁵⁷

- Providing credit - States may investing in substructure undertaking or other projects that will contribute to the national economy by regulating expenditures and reducing the tax revenue cycle. Businesses may turn to investments in quantities exceeding their capital amounts and individuals can obtain home or other properties without having to pay full price in advance. Banks or other credit providing institutions offer the credit facility required in all these cases.
- Providing liquidity - Banks and other financial service providers ensure protection to institutions or individuals against risks arising from sudden cash needs. Banks provide businesses or individuals with the ease of demand deposits which they can use at any time they need. Furthermore, it provides the enterprises with the credits they can use and the amounts of money that exceed their capital. In addition, banks and financial

⁵⁶ World Bank, 2013

⁵⁷ <https://talentedge.in/blog/role-finance-development-economy/>

institutions are able to offer large amounts of stocks to the market for purchase and sale, so that shareholders can meet their immediate cash needs.

- Services of venture administration – Financially fields ensure managing of venture by collecting all risks that may arise from commodity prices and financial markets. As a financially tool derivatives procedures help banking to ensure venture administrate. These services are highly valued even though they are harshly criticized for the excesses that occur during the financial crisis.

2.2.2. Determinants Of Financial Development

Many factors should be taken into account to ensure adequate efficiency and depth when providing financial services. Other important point is that, these factors and interaction of these factors with each other should be taken into account to measure and understand the magnitude and degree of financial development. If we need to explain the measurement in the index measuring financial development in general terms, we can see the main determinants of financial development in three categories and seven determinative items in these three categories. This grouping is obviously shown in figure 2.11.⁵⁸

⁵⁸ World Economic Forum, 2012.

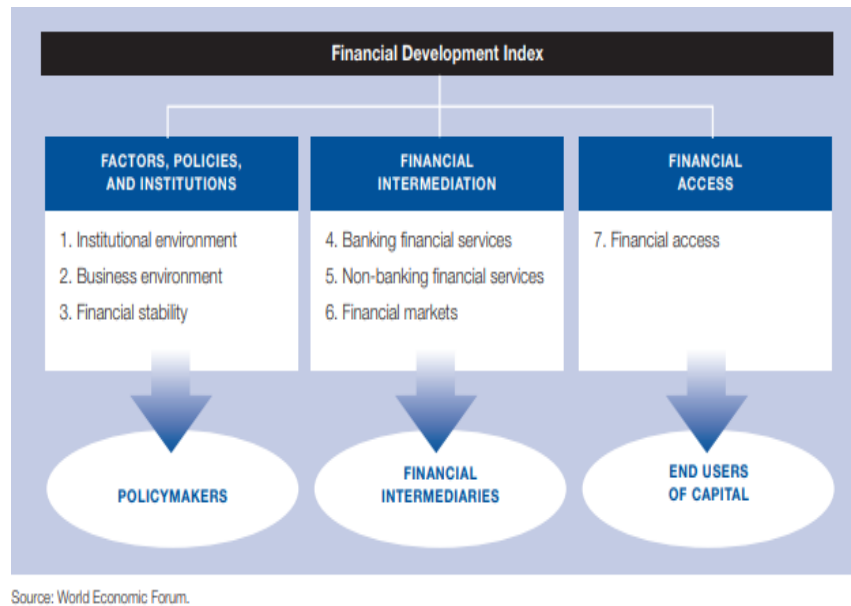


Figure 2.11: Financial Developing Index⁵⁹

- 1. Elements, politics and establishments:** The elementary features essential to the progress of financially mediators, services, paraphernalia and markets.
- 2. Financial intermediation:** Diversity, dimensions, effectiveness and impaction depth of financial intermediaries and markets whose purpose is to provide financial services.
- 3. Financial access:** access to various sources of capital and various financial services by businesses and individuals who need.

In accordance with these three categories, seven determinative items are presented in detail at below.

⁵⁹ World Economic Forum, 2012.

2.2.2.1. Factors, Policies And Institutions

This first category includes key features that support the best financial services and financial intermediation service. Also, the first three of the seven determinative characteristics are in this category. These are the institutionally surroundings, the working circumference, and the grade of financially stability.⁶⁰

2.2.2.2. First Determinant: Institutionally Circumference

The institutionally circumference has wide coverage. The issues covered by the institutional environment item are the macroprudential surveillance of the financial system, laws and regulations that enable effective and in-depth development of financial intermediation, services and markets. Other issues covered by this item are regulatory instruments, impressive general laws, financial sector monitoring, effective corporate governance and the quality of contractual applications. According to the theory of economics, a strong institutional environment significantly lowers information and transaction cost. In many empirical studies, in general, the significance of corporations and their efficacy on economically activities and developments has been mentioned. The existence of statutory corporations that protecting the benefits of capitalists is one of the indispensable requirements of financial development. Reforms of country which protecting the state's statutory circumference and capitalist takes a considerable part at the development and strengthening of the financially sector. Thus, the independence of the judiciary and judicial effectiveness should be included as factors in the studies on financial development. Furthermore, recent studies have indicated that creating institutional

⁶⁰ World Economic Forum, 2012.

reforms, such as legal regulations targeting stronger property rights, are very important for the development of the financial area. That is must specified that the transition to the market-based financial system through such reforms would benefit most of the population of the country including the poor population.⁶¹

One of the most important consequences of the recent crises is that institutional level regulations are very important for the economy and markets, because, these regulations are related to the financial stability and its effects on the real economy of the country. All the same time, some industries and organizations require adaptive supervision through more rigid regulatory tools because of the complex structures they have. In particular, it is may pointed out that shadow bank fields have attracted much attention recently.⁶²

Another point seen in recent economic crisis is that central banks have a significant part in the functioning and development of the financial system. At this way, when measuring the progress of the financial areas, variables that represent the transparency of the central bank and the effectiveness of the regulation of the stock exchange should also be taken into account. According to the study published by the World Economic Forum in 2012, the poor management quality of the government is related to the increase in the ratio of both the financial and political negative situations and the indicators indicating the social trust towards the politicians. In addition, we have to state that discussions and differences of opinion on the effectiveness of economic or financial arrangements that are subject to international audit and which have been coordinated or adapted is continue. Notwithstanding to that, unfortunately, as there are not enough cross-country data about the indicators that represent them, we

⁶¹ World Economic Forum, 2012.

⁶² World Economic Forum, 2012.

cannot take these indicators until further studies and observations are made in the future. That is believed that financially development, which has an affirmative efficacy on economically growing, is positively influenced by high quality and effective corporate governance. Contract application is also important, as it block disobey to conditions of contract between the parties and thus supports mutual compliance. The variables that take these measures in transfer transactions like as the funds transferred from savers to investors are included in this determinant. If there is not conditions and environment for high level protection of investors, then it will undoubtedly cause to the negative effects of the country's well-functioning capital market and external financing. However, despite all these, there are warnings about over-protective arrangements of investors in many studies and literatures⁶³

Investigation of the impact of investor protection regulation on corporate governance in the studies conducted based on the data of several countries shows that the investor protection regulation has a neutral or negative effect on the effectiveness and performance of the companies. It was found that deficiencies in the implementation process of financial agreements and the failure to fulfil them fully incentivize the credit rationing and thus cause damage to the growth process.

The liberalization of the domestic financially area in the state and the openness of the state's capital account can be included among the important aspects of the institutional environment. On the other hand, financial liberalization creates the optimal environment for larger financial depth which means greater financial intermediation between savings holders and investors. In this way, the monetization of the states' economies accelerates and increases. As a result of this, the flow of resources is becoming more efficient. However, despite of this, sometimes the

⁶³ World Economic Forum, 2012.

liberalization of the capital account can lead to mixed and obscure results. Studies investigating the efficacy of the openness of fund account on growing have achieved different results. According to the results of some studies, the openness of fund accounts has a supporting and affirmative effect on economically growing. At the same time, according to the results of other studies, the openness of the fund accounts has not any efficacy on growth. Contrary to the results of all these studies, some of the other results show that the interrelation among the openness of capital account and economically growing cannot be fully determined.

When we encounter the uncertainties of the effects of the openness of capital account on the economy as mentioned above, we look at the state of the legal environment. The better the legal and regulatory system of a country works, then it causes the greater the benefit from the openness of capital account for the economy. If there are disruptions and faults in the functioning of the legal and regulatory system, it is not possible for us to see the positive effects of the openness of the capital account. In this index, it is paid carefulness to the existence of interrelation among the openness of the fund accounts and the legal and regulatory development of the country. There are also variables that we need to measure each of them and the interaction between them.

It is obviously that the strong and effective legal and regulatory system which country has and the openness of its fund accounts will have a significant affirmative efficacy on the country's financially progress. Moreover, the importance of the progress of indigenous bond marketplaces in order to increase the liberalization of domestic fund accounts has been shown in many studies. For this reason, associating the openness of the capital account with the development of the domestic bond market

would be more accurate to achieve broader results. Furthermore, the evaluation of the commercial agreements of the World Trade Organization with the countries related to the financial services is included in this determinative item and it has been approved that it affects the degree of financially progress.

The degree of liberalization of the domestic finance sector may also be subject to benchmark analysis. If we are talking about the liberalization of a country's financial sector, we need to look at whether the country controls interest rates such as ceiling interest rates or base interest rates, whether the maximum allowed limit of the loan amount, and whether foreign exchange deposits are allowed in the country. We need to specify that if a country has a very good level of statutory and regulative system, the liberalization of the financially sector in that country has a strong affirmative efficacy on economically growing. The variables that represent all these concepts are in interaction with each other. Research shows that well-functioning legal systems and institutions are as important as the existence of the least developed banking sector and equity market to the national economy. Thus, it revealing that the fact that these institutions have a strong functioning system is an important ingredient for financially progress.⁶⁴

2.2.2.3. Second Determinant: Business Environment

The second determinative item takes into account on business environment. It includes these factors:

⁶⁴ World Economic Forum, 2012.

- *The presence of human capital* - a skilled and trained workforce which capable of providing efficient financial services in the financial sector;
- *Quality of physical capital* - includes potential technological and physical infrastructure
- *Other factors* – factors that are considered important in the business environment, including business costs for financial intermediaries and tax policies

According to the empirical results of the studies, making better conditions for the development of the human capital and making increasing easier, positively affects the economic growth. At the same time, positive correlation between human capital and financial development was observed. When we talk about the quality of human capital, we pay more attention to enrolment rates in higher education institutions. Other measurement elements we need to include in the factors that determine the qualification of workforce are the degree of education of the labourer, the quality of the schools that offer management training, the quality of the mathematics and science education in schools, the possibility to use easily from the research and education services. These are important elements which show the level of quality of human capital in country.

When talking about business environment, another area that should be considered is infrastructure. By increasing the profitability levels of the investments made, we obtain a main measure of the quality of the physical infrastructure, which upgrade the private capital accumulation and the financial depth. However, information and technology measurements are indicated in infrastructure analyses. This is on account of the high importance of these technologies in the continuum of

managing the business of companies due to conditions of intensive data flow and make easier many working processes for companies or institutions.

Another factor related to the business environment is the costs to be took over for doing business in the country. According to some studies, the costs of undertaking business activities have great importance especially for financial institutions. The types of costs incurred in the process of continuum commerce are important to assess the state's commerce circumference and also to assess the barriers that businesses may face in future. The business environment based on better conditions causes financial institutions to work more efficiently, thus helping to enhance the degree of financially progress of the state. In accordance with measurement method of World Bank, the variables representing the costs of doing business and the business process are the costs of starting the business, the costs associated with the ownership of the property and the costs incurred in closing the business. Variables which such as duration of the starting of business, the enrolment duration of the owned properties and the closing duration of the business, are contained indirect costs or transaction costs.

As some analysis results confirm, taxes are one of the obstacles facing companies in the financial sector. The focus of the variables we describe in this section is misrepresentation and aggravated tax policies. The variable was included which representing the high marginal tax rates that in many respects have the detrimental effects to the financial sector and businesses. Generally, the academic literature does not include clear and concise information about the effects of absolute tax rates and being comparability of data, and therefore, the measurement of general tax rates is not included in the studies.

Finally, we would like to point out that, based on the empirical evidence obtained in the studies, while civil capital covers positive economic returns, also, it clearly demonstrates the reason for permanent differences in economic development levels among countries. On the contrary of it, there is not enough data which show us the level of civil capital of all countries and for this reason, we cannot include it to among variables to use for measurement.⁶⁵

2.2.2.4. Third Determinant: Financially Stability

The third determinant encompassed the stability of the financial system. As in many financial crises, it has been seen financial instability also in recent crisis has caused too much damage to the economy and economic growth. Financial instability can lead to systemic banking crises and corporate crisis, foreign exchange crises and state debt crises. In this situation, these negatives cause significant losses to investors. Third determinant item covers all of these risk conditions.

Which risks are we talking about when we say the risk of foreign exchange crisis? Foreign currency crisis risk includes changes at real effective currency ratios, currents accounts balances, dollar exposure index, exterior liability to GDP ratio and net transnational invest statuses. We apply the variables that represent the ratio of exterior liability to GDP and net transnational invest status separately to both developed countries and developing countries.

The systematic bank crises unite the measurement of formation of the real estate bubbles also known as real estate turbulence which significantly affect the level

⁶⁵ World Economic Forum, 2012.

of instability of the banking tract and the measurement of historical instability of the banking tract, at same group. The historical instability has been observed in the measurement of the frequency of bank crisis from 1970 until now, and it is seen more prevalent in these recent crises. Some studies have shown that economies of some countries are more sensitive to intense negative short-term effects on financial intermediation. This is because the economies of that country are constantly exposed to bank crises and high financial fluctuations. In addition, it was determined that severe crisis caused losses at the level of economic output of the country and the amount of these output losses increased at the last crisis. It is important that determine the required standard level of capital for the future of economy. In this sense, the variable representing the measurement of capital should be added among the variables examined in this group. Some research shows that quantitative measurement of capital adequacy does not precisely represent the financial strengths of banks in developing countries. Another financial strength indicator should be added as a variable. This indicator is that balances the quantitative measurement of power of balance sheet with a qualitative assessment of the ability of banks to carry through their obligations to creditors and depositors. It is also important and valuable that the share of existing government bonds is measured by local banks.

One of the examined crises in the financial stability category is the state debt crisis. The proportion of sum publicly liability to GDP, in other words the manageability of public liability is included in this sub-group. In the state credit notes, which are important stimulus for crisis risk, the ability of states to pay these debts completely and on time is included in the scope of coverage. These variables have special importance in the transition of the debts through the privately sector to the publicly areas. These data are calculated with the separately averages both of the state

loan grading of the local money and the state credit grading of the foreign currency. High sovereign credit rating of country indicates that the country's obligations under the sovereign debt crisis are less. The quantitative and market-based indicator of the country's ability to fully repay its debt is reflected in credit default swaps of that country. We need to add GDP growth and inflation as a macroeconomic variable because affect the ability of country to pay its debts.

The larger the risks which we are talking about, the greater the likelihood of existing barrier to various financial intermediation. In addition, it causes decreasing of economically growing ratios. Although, the impact of financial steadiness on economically growing may be assessed by considering the balance between factors such as and innovation, return and risk. The idea that financial innovation brings more economic efficiency to the financial system is also presented by many theories. The tightly regulated financial system may be very stable and even may be hamper financial crises. Nevertheless, such a strictly controlled system can damage innovation and financial development which leading resources to high-yielding investments, dividing risks and raising returns. On the contrary of that, innovative, independent and less controlled financial system can lead to dangerous instability by leading to serious bubbles and unpredictable credit booms that seriously hinder economic growth, earnings and prosperity. At the same time, although, there is a certain balance and a delicate relationship between stability of financial system and some factors of financial development, financial stability remains a feature of crucial input for financial development.⁶⁶

⁶⁶ World Economic Forum, 2012.

2.2.2.5. Fourth Determinant: Banking Financially Services

Even though we talk about the negative and detrimental efficacy of the unstable bank tract on economically growing in the third determinant item, banks have very important positive effects on economic growth. We will explain about the positive efficacy of the banking tract on economy and growing under the heading of this determinant. Some of the main tasks of bank-based financial systems are important issues for the economies of the countries, such as improving the methods of obtaining financial information, reducing transaction costs and allocating loans more efficiently.

Banking-founded systems and marketplace-founded systems have special roles for the effective assignment of capital at the financially tract. The results of some studies show that banks have more effectiveness and more efficiency to finance economic growth of country than market-based systems, especially in underdeveloped economies which have non-complex financial intermediaries. On the other hand, some studies show that banks that have strong ties with companies and are built on solid foundations are more effective in gathering information about companies, and at the same time it is also have more effective functions to convince companies to pay their debts on time. In the studies defending bank-based systems, it is stated that the banks, which are not subject to any legal restrictions, tend to optimal take advantages of through the economy of scales in the process of collecting information. According to the defence, at the result of this, a significant contribution occurs to the increase of industrial growth. Banks are also effective in eliminating liquidity risk and so on it cause increasing of investments which have high returns, increasing of non-liquid assets and high speed of economic growth. One of the most effective factors in

measuring the bank system is its size. The larger the bank system has superiority to direct the more capital from savers to investors. As a result of this, the degree of financial progress that leads to more economic growth increases. Nowadays, we can see that the economies of countries are growing which have many emerging market banks. In order to measure the size of the bank tract, it is used the proportion of deposit banks to GDP, the proportion of M2 to GDP, the proportion of non-public loans to GDP. M2 is defined as a measurement of the money supply which contains cash, checking deposits, and easily convertible near money.⁶⁷

Another important feature of the bank system is the efficiency criterion. We consider the criteria directly to measure efficiency in this index are the total operating rates like as the proportion of banking operating costs to entity or the proportion of non-performing liabilities to total liabilities. The indirect criterion of measurement of efficiency is public ownership. Public banks have less efficiency than others. These banks prevent capital redirection and credit allocation and thus causing financial intermediation to slow down. According to recent studies, the progress of the banking areas in nations with less pressure of public possession of banking has a major efficacy on orientation of companies to innovation. In contrast of that, in countries where the state has higher ownership over banks, it is emphasized that financial progress has no efficacy on banks' orientation towards innovation and sometimes even negatively affects them.

If the bank system is not as profitable as sufficient, management efficiency measures may not provide the full level of efficiency of the banking system. Thus, we have to add the bank's total profit as a variable. In some cases, banking system may have achieved high earnings despite poorly operating in the management measures. In

⁶⁷ Chappelow, 2019

this situation, we can say that, the level of inefficiency of operating is high and there is also a lack of competition in the market where the bank system is part of it.

The third influential factor in terms of the performance of the banking tract is the disclosure of financial information about operations of banks. Policies that ensure the correctly disclosure of financial information are the granting of powers to the private sector in the institutional control of banks, giving support to the private institutions to perform institutional control, encouraging the development of banks, ensuring operational efficiency and stability. Nevertheless, since the limited data of countries can be reached, the variables we mentioned cannot be included. Simultaneously, since the data of privately loan institutions, international economic organizations or public credit records can be accessed, these criteria or some of them can be included in studies which explaining financial development.⁶⁸

2.2.2.6. Fifth Determinant: Out Of Banking Financially Services

Financially intermediaries out of banking, like as brokerage sellers, conventional entity administrators, alternate entity administrators, assurance corporations, have the potential to perform some duties of banks, and at some situation, they can be both complementary and alternative to services offered by banks. The complementary features of that emphasized financial intermediaries are coming out when try to close any emerged gap by commercial banks. The race between banks and these financial intermediaries forces them both to be more efficient and more effective in meeting the demand of the market. The allocation and orientation of financial resources and participation in the securities market are some

⁶⁸ World Economic Forum, 2012.

of the activities included in non-bank financial intermediary institutions. In the recent financial crises, services such as securitization of financial intermediaries other than banks, due to lack of adequate supervision and surveillance, have damaged the market and the economy as part of the shadow banking system. Nevertheless, as a financial intermediary, these services are unique and important when we consider it from a point of legal and regulatory.

The development of non-bank financial intermediation significantly triggers financial development. Studies and investigations show that in countries with developed economies, banks and non-bank financial intermediaries have a larger, stronger and more efficient structure. The supporters of the market-based systems claim that non-bank financial intermediaries also support the development by financing innovative and high-risk projects. Non-bank financial intermediaries have three main coverage areas in index;

- Initial public offerings (IPO): The first offering of shares by any private company or organization is called the initial public offering (IPO). Growing companies use IPO to collect capital when they need more capital.⁶⁹
- Mergers and acquisitions (M&A): It's the term that refers to consolidation of companies or assets through various financial transactions and it includes different process of transaction such as consolidations, mergers, offering of tenders, acquisitions, managing of acquisitions, purchasing of assets.⁷⁰
- Securitization: The process of converting non-liquid assets or asset groups into securities through financial engineering. Mortgage backed security (MBS) may be the

⁶⁹ Chen, 2019.

⁷⁰ Kenton, 2019.

example for securitization. This is the type of asset backed security which is secured by a collection of mortgages.⁷¹

Research has shown that there is a positive interrelation among the progress of the insurance area and economically growth, especially in developing countries. Together with the development of the insurance sector, liquidity increases in the economy and thus, the configuration of scale economy in investments being easier. As a result of all these impacts, the insurance sector significantly increases financial efficiency.⁷²

2.2.2.7. Sixth Pillar: Financially Market

According to recent literature, as economies continue to evolve, demand for financial services provided by banks increases in markets. Thus, we can say that as economies of countries grow, the importance of their financial markets is to increase more. It is existing 4 primary sorts of financially market and there are bonds marketplaces, derivative marketplaces, alien currency marketplaces and equities trading stock markets.

Obviously, the stock market liquidity takes a considerably part in terms of positively affecting economically growing rates, growing of prolificacy and fund backlog. The fund marketplace has been emphasized in the economic theory in which it promotes long-term growth by encouraging efficient savings to encourage investments, facilitating the collection and dissemination of information, and encouraging it to specialize. As countries become richer and bigger, fund

⁷¹ Gallant, 2019.

⁷² World Economic Forum, 2012.

marketplaces turn into more efficient and stronger than banking. Although bonds marketplaces do not attract too much empirical attention, they have importance in the efficient allocation of capital and financial development process.

Derivative markets are also important factors in this group so because they have the ability to develop risk management and risk diversification. The reliance level of transnational financiers and financially establishments is high in countries which have more developed derivative markets. As this result, international investors and organizations are willing to participate in the markets of these countries. As an actually, observed that the derivatives marketplaces in emerging states are small. For these markets to grow and become more effective, should be created regulatory and legal environment which has stronger structure.⁷³

2.2.2.8. Seventh Determinant: Financially Access

In this section we will talk about access to capital through both commercial and retail routes. As empirical studies confirm, access to financial services is connected with economical growing and financially progress.

Since the input channels are different such as commercial and retail channels, we can separate the measurements accordingly. Access to native equities marketplaces, access to trading credits and entry to interference fund is explored within the framework of commercial access. Entrance to microfinancing and diffusion to individual banking data and cashpoints are being investigated in retail access.

⁷³ World Economic Forum, 2012.

International organizations reflecting economic power of countries such as the G-20, emphasized the importance of financial access of smaller and mid-scale establishments (SMEs) in many states to increase economic growth. Since they are defined differently in each country, depending on how they are defined, SMEs can meet their financial needs through both commercial and retail channels. The financial accessibility factor, such as the dimensions and deepness of the financially tract, also significantly affects the country's productivity level, economic performance, economic growth and overall prosperity.⁷⁴

2.3. The Relationship Between Financial Progress And Economically Growing

One of the most explored and studied subject matters in the world of economy and finance is the interrelation among finance progress and economically growing. There are many research studies on these two factors that shape the economy. We cannot say that all of these studies offer the same result. According to the results of some of the studies, it is existing an affirmative interrelation among finance progress and economically growing, some of them have a negative relationship between these two factors and there is no relationship between them according to some other study results. The effects of financially progress diverge in accordance with the grade of economic growing of countries' economies. The importance of the financially system may vary in different periods of economic growth.⁷⁵

The interrelation among finance progress and economically growing was firstly examined by Bagehot (1873). At his study work, he explains how financial

⁷⁴ World Economic Forum, 2012.

⁷⁵ Loayza, Ranciere, 2005.

market development in England influenced capital inflows to achieve a high return, and how financial intermediaries transform savings into long-term investments in promoting economic growth.⁷⁶ In addition, this issue has been touched in written work of Adam Smith which name is “Wealth of Nations”. He emphasized that banks take a too considerably part in the development of trade volume in Scotland.⁷⁷

The studies in the economy literature, which have been carried out very early, have tried to learn and explain the efficacy of the financially tract and financial development on economically growing or its role in the growth process. According to traditional theories, financial systems have difficulty adapting to the requirements of the real growing economy. In contrast, the theories which discussed in contemporary times argue that financially progress has a considerably efficacy on economical growing.⁷⁸

Studies of Schumpeter, Goldsmith, Mc Kinnon and the Show were the first reasons for this issue to gain great importance in the economy literature. In the studies investigating the efficacies of financially progress on economically growing, these 3 subjects are the most frequently mentioned subject matters:

- Structural analysis of financial intermediation mechanism and its importance and effect in economic growth process
- The causal interrelation among financially progress and economically growing and the analysis of the aspects of this interrelation
- Empirical investigation of the relationship between financial progress and economic growth

⁷⁶ Mutlugun, 2014.

⁷⁷ Smith, 1986.

⁷⁸ Hermes, Lensink, 1996.

There have been researches and observations that demonstrate a strong link among financial progress and economically growing. Nevertheless, the aspect of the relationship between these two economically significant elements has not been fully substantiated by providing consensus. According to some opinions, financial progress triggers economically growing, but other views suggest that economically growing triggers financial progress. It is existing many scientific explorations that have been made to prove the accuracy of both views. Despite all these results, it is generally accepted that there may be a bidirectional causality relationship.⁷⁹ Once of the main justifications for the diversities in the interpretation of the results of the works is that the variables utilized to explain the interrelation among economically growing and financial progress cannot be determined clearly and are not being able to withstand the fully exact data.⁸⁰

The opinions that explain the direction of this relationship are divided into two. One of them is the view that emphasizes the course of causal relation from financial progress to economic growing. In accordance with this opinion, financial progress has an affirmative efficacy on the economically growing process. Put another way, this approach can be named supplying-lead financial progress. The other approach emphasizes that the course of causality interrelation is through economically growing to financial progress. In accordance with this opinion, financial progress follows economically growing, meaning that economic growth has a considerably efficacy on the financial progress process. The other name of this approach is demand-pulling approach. For the first time, in 1966, an economist named Patrick attempted to elucidate the causality between these two approaches, theoretically and in detail. According to the model developed by the Patriarch, supplying-lead

⁷⁹ Akcoraoglu, 2000.

⁸⁰ Gregorio, Guidotti, 2005.

financially progress takes place at the first periods of economically growth and after the economic growth process is completed, demand-pulling financial development takes place. In another aspect of this study, the higher the difference between a developing country and developed countries causes the higher the probability that this country will be able to undertake supply-leading financial development.

Developments in later industrialized countries such as Japan provide examples that support this hypothesis. In later times, Gupta and Jung, in this hypothesis which they examined with utilizing Granger causal connection testing, they succeeded to obtain the consequents that supported opinions of Patrick.⁸¹ It should be noted that, as a result of many studies, it is probable that both types of financial development can be experienced. In some studies, it has been found that there is a possibility two types of financial development in one country may occur by following each other. It is tried to present a summary of these two types of financial development relationship that mentioned below at figure 2.12.

⁸¹ Hermes, Lensink, 1996.

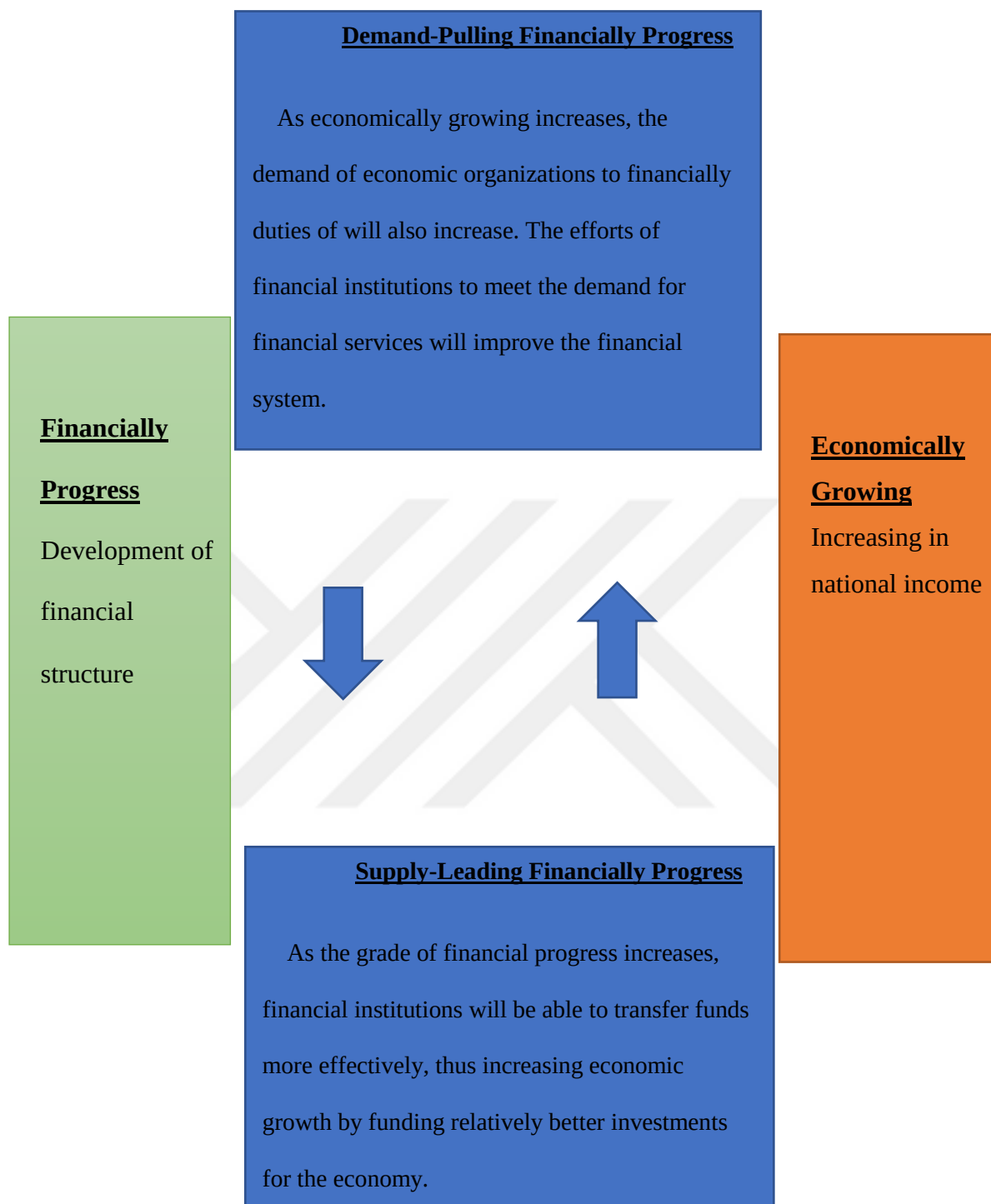


Figure 2.12: Types of Financial Development

The followings are the studies that previously analysed the relationship between financial development and economic growth.

In the scientific study conducted by Goldsmith (1969), financial development and economic growth variables between 1949 and 1959 were tested based on the data of 35 countries. OLS and graphical analysis methods were used. According to the results obtained from the study, there is a positive relationship between financial development and economic growth, although there is a static weak link. Goldsmith's study is similar to the results of this thesis in terms of positive relationship between these two variables.

In the scientific study conducted by Atje and Jovanovic (1993), the variables representing the development and economic activity of the capital market between 1960 and 1985 were tested based on the annual data of 94 countries. MCO method was used in the study. According to the results obtained from the study, there is a positive relationship between the development of the capital market and economic activity. According to another conclusion, the development of the capital market has a significant impact on economic growth. Atje and Jovanovic's study is similar to the result of this thesis in terms of the positive relationship between these two variables and the development of the financial market positively affecting economic growth.

In the scientific study conducted by Harris (1997), the variables representing the development of the capital market and economic growth between 1980 and 1988 were tested based on the annual data of 39 countries. Double least squares (DMC) method was used in the study. According to the results obtained from the study, the development of stock exchange activity has a positive effect on economic growth. According to another result, the development of the capital market in very few

developing countries has a very low impact on economic growth, but the development of the capital market in developed countries has a significant positive impact on economic growth. Harris's study is similar to the result of this thesis in terms of the positive relationship between these two variables and the development of the financial market positively affecting economic growth.

In the scientific study conducted by Levine and Zervos (1998), the variables representing the development of the banking sector and real GDP per capita between 1976 and 1993 were tested based on the annual data of 42 states. MCO and GMM methods were used in the study. According to the results of the study, the development of the banking sector has a positive effect on real GDP per capita. Levine and Zervos's study is similar to the result of this thesis in terms of the positive relationship between these two variables and the development of the banking sector, which is a part of the financial market, positively affecting economic growth.

In another scientific study conducted by Levine and Zervos (1998), the variables representing the marketplace liquidities and the bank sectors, the growing of the real GDP per person, the prolificness and the physically capital stocks between 1976 and 1993 were tested based on the annual data of 47 countries. MCO method was used in the study. According to the results obtained from the study, the primary degrees of marketplace liquidities and bank sectors progress are affirmatively and considerably correlating to the oncoming growing of the real GDP per person, the prolificacy and the physically capital stock. According to another conclusion, not powerful efficacy regarding the dimension of the stock marketplaces on the welds of growing was explored. Levine and Zervos's study is similar to the result of this thesis

in terms of the positive relationship between these variables and the development of elements of financial market positively affecting economic growth.

In the scientific study conducted by Levine (1999), the variables representing the financially mediations and the economically growing between 1960 and 1989 were tested based on the annual data of 49 states. GMM method was used in the study. According to the results obtained from the study, the progress of the financially mediation is affirmatively and considerably correlating to the oncoming economically growing. Levine's that study is similar with the result of this thesis in terms of the positive relationship between these variables and the development of financially mediation as a part of financial market positively affecting economic growth.

In the scientific study conducted by Ram (1999), the variables representing the proportion of the liquidity obligations and the economically growing between 1960 and 1989 were tested based on the annual data of 95 states. MCO method was used in the study. According to the results obtained from the study, the progress of the correlating relation among the financially progress (proportion of the liquidity obligations) and the growing is poorly negatory or immaterial. Although the relationship between these variables is weak in Ram's study, it is similar to the result of this thesis in terms of the existence of the relationship between financially progress and the economic growing.

In the scientific study conducted by McCaig and Stengos (2005), the variables representing the proportion of the liquidity obligations, the loan to the non-publicly sectors and the economically growing proportion between 1960 and 1995 were tested based on the annual data of 71 states. GMM method was used in the

study. According to the results of the study, the development of the financial sector has an efficacy on economic growth when the financial progress is evaluated by the proportion of the liquidity obligations or that of the loan to the non-publicly sectors. In addition, the correlating interrelation among both elements is too inferior when is characterized the financial progress by the entity proportion of trading banking on the total of that one with the entity of the centric banking. In McCaig and Stengos (2005)'s study, it is similar to the result of this thesis in terms of the existence of the relationship between financial progress and the economic growing.

In the scientific study conducted by Beck et al. (2000), the variables representing the financial mediation, the growing of prolificacy and the real GDP per person, the stock backlog and the economical saved amounts between 1960 and 1995 were tested based on the quinquennial average data of 77 states. GMM on dynamic panel method was used in the study. According to the results of the study, there is substantially affirmative and powerful efficacy of the progress of the financial mediation on the growing of prolificacy and the real GDP per person. In addition, it found lesser mighty affirmative efficacy of that one on the capitally accumulating and the growing of the economical saved amounts. In Beck et al. (2000)'s study, it is similar to the result of this thesis in terms of the existence of the relationship between financial progress and the economic growing.

In the scientific study conducted by Levine et al. (2000), the variables representing the financial mediation and the growing of the real GDP per person between 1960 and 1995 were tested based on the quinquennial average data of 74 states. GMM on dynamic panel method was used in the study. According to the results of the study, it is found that the presence of a correlating relation considerably

affirmative among the progress of the financial mediation and the growing of the real GDP per person. In Levine et al. (2000)'s study, it is similar to the result of this thesis in terms of the existence of the relationship between financial progress and the economic growing.

In the scientific study conducted by Lopez and Spiegel (2002), the variables representing the financial development and the economically growing between 1960 and 1990 were tested based on the quinquennial average data of 101 states. GMM at dynamic panel method was used in the study. According to the results of the study, although there is indefinite interrelation in short-maturity, it is found that financial progress has a considerably affirmative efficacy on long-maturity economic growing. In Lopez and Spiegel (2002)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financial progress and the economic growing.

In the scientific study conducted by Calderon and Liu (2003), the variables representing the development of the financial intermediation and the economically growth were tested based on mean of datum whereon five to ten years among 1960 to 1994 of 109 states. VAR modelling on panels, Geweke dissociation and Granger causal relation method was used in the study. According to the results of the study, it is found that two-way causal interrelation among the progress of the financial mediation and the growing. Efficacy of the financial progress on the growing more powerful in emerging states, comparing with the industrialised states. The financial progress influences the growing by treating substantially on the prolificacy growing. In Calderon and Liu (2003)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financial progress and the

economic growing and other similarity is existence of effect of financial progress on economic growth.

In the scientific study conducted by Beck and Levine (2004), the variables representing the progress of the financially mediation, the fund market's liquids and the economically growth were tested based on quinquennial average data between 1976 and 1998 of 40 states. GMM on dynamic panel method was used in the study. According to the results of the study, it is found that the development of the financially mediation and the fund market's liquids authorise the ascending of the growing. In Beck and Levine (2004)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growing and other similarity is existence of effect of financial progress on economic growth.

In the scientific study conducted by Loayza and Ranciere (2004), the variables representing the financially mediation and the economic growth were tested based on annual data between 1960 and 2004 of 75 states. PMG estimators (PMG) at dynamically panels method was used in the study. According to the results of the study, it is found that an interrelation among the progressing of the financially mediation and the growing considerably is affirmative at the long maturity, co-exist withal a short maturity negator interrelation in many states at the exemplary. In Loayza and Ranciere (2004)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth.

In the scientific study conducted by Stengos and Liang (2005), the variables representing the banking development, the economic growth and the market

capitalization were tested based on the quinquennial average data between 1988 and 2001 of 30 developing states. GMM at dynamical panels method was used in the study. According to the results of the study, it is found that it does not impress or considerably negator of the bank progress on the growing whenever is checked the progress of the fund marketplace. Considerably affirmative efficacy of fund marketplace progress. In Stengos and Liang (2005)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth.

In the scientific study conducted by Hassan et al. (2011), the variables representing the financially mediation and economic growth were tested based on the the quinquennial average data between 1980 and 2007 of states with low or average income. MCO-method, Weighted-Least-Squares-Method, VAR modelling Granger causal relation, FIR-model and variation method was used in the study. According to the results of the study, it is found that affirmative interrelation among the progress of the financially mediation and the long-maturity growth. In Hassan et al. (2011)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth.

In the scientific study conducted by AL Malkawi and Abdullah (2011), the variables representing the progress of the financially mediation and the economically growth were tested based on the annual data between 1985 and 2005 of 13 countries of the MENA region. Pooled OLS, fix effect modelling, randomly effect modelling method was used in the study. According to the results of the study, it is found that affirmative interrelation among the progress of the financially mediation and the economically growth. In AL Malkawi and Abdullah (2011)'s study, it is similar to the

result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth.

In the scientific study conducted by Kar et al. (2011), the variables representing the progress of the financially progress and the economically growth were tested based on the annual data between 1980 and 2007 of 15 countries of the MENA region. VECM-modelling, MMG-method, Hurlin-technic (2008) and Konya-approach (2006) was used in the study. According to the results of the study, it is found that the course of causal interrelation among financially progress and growing differs considering the financially progress index utilized, like other among the nations of the examined exemplary. In Kar et al. (2011)'s study, although the degree of the relationship varies according to the financial indices of the countries, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth.

In the scientific study conducted by Gupta (1984), the variables representing the finance sectors and the economically growth were tested based on the quarterly data between 1961 and 1980 of 14 developing states. VAR-modelling and Granger-causal interrelation test was used in the study. According to the results of the study, it is found that a causal interrelation whichever outgoing of the financially tract toward to the growing. That is promoted, at particular situations, the availability of opposite causal interrelation. A reciprocal causal interrelation is verified yet seldomly. In Gupta (1984)'s study, although the degree of the relationship varies according to the financial indices of the countries, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the

economic growth and other similarity is the direction of causal relation which from financial progress to economically growth.

In the scientific study conducted by Jung (1986), the variables representing the finance sectors and the economically growth were tested based on the annual data between 1950 and 1981 of 56 states. According to the results of the study, it is found that causal interrelation which go away of the financially progress toward to the economic growth in the minimum improved states. On the other hand, it is a causal interrelation at the adverse meaning for the emerged states. In Gupta (1984)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth and similarity is the direction of causal relation which from financial progress to economically growth.

In the scientific study conducted by P. Arestis, P. Demetriades and K. Luintel (1997), the variables representing the financial development and the real GDP were tested based on the quarterly data between 1979 and 1991 of economically data belongs to Germany and also U.S. VECM model and Johansen cointegration methods were used in the study. According to the results of the study, it is found that causal interrelation goes away from financially progress to real GDP in order to Germany, nevertheless which acts as the opposed course in order to the U.S. In P. Arestis, P. Demetriades and K. Luintel (1997)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between financially progress and the economic growth and similarity is the direction of causal relation which from financial progress to economically growth.

In the scientific study conducted by Arestis et al. (2001), the variables representing the mediation of bank, fund marketplaces and economically growth were

tested based on the quarterly data between 1972 and 1998 of 5 industrialized states. VECM model and Johansen cointegration methods were used in the study. According to the results of the study, it is found that financial progress of bank and fund marketplaces encouraged growing. The banking development which conduce at a more considerable and more remarkable route to the growth process, in comparison to fund marketplaces. In Arestis et al. (2001)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between banking sector as a part of financial progress and the economic growth and similarity is the direction of causal relation which from financial progress to economically growth.

In the scientific study conducted by Thangavelu and Ang (2004), the variables representing the economically growth, the elements of the bank sectors and the elements of progress of the fund marketplace were tested based on the quarterly data among 1960 to 1999 of Australia. VAR-modelling and Granger-causal interrelation methods were used in the study. According to the results of the study, it is found that the economically growth causes the progress of the bank sectors (in accordance with Granger-method), when the progress of the fund marketplace induces the growing. In Thangavelu and Ang (2004)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between banking sector as a part of financial progress and the economic growth.

In the scientific study conducted by Ang and McKibbin (2007), the variables representing the economic growth and the development of the banking sector were tested based on the annual data between 1960 and 2001 of Malaysia. VECM-method, Johansen-Cointegration, Granger-causal interrelation test and ACP methods were used in the study. According to the results of the study, it is found that a long-maturity

interrelation that run from the economically growth to the progress of the bank fields and it is not the opposing. In Ang and McKibbin (2007)'s study, it is similar to the result of this thesis in terms of the existence of the affirmative relationship between banking sectors as a part of financially progress and the economic growth. However, the difference between this study and Ang and McKibbin (2007)'s study is the direction of causal relation which from economic growth to financial development.⁸²

In the following, at figure 2.13, economists are grouped in terms of the direction of causality between financial development and economic growing they found as a result of their studies.

⁸² Aydi, Aguir, 2017.

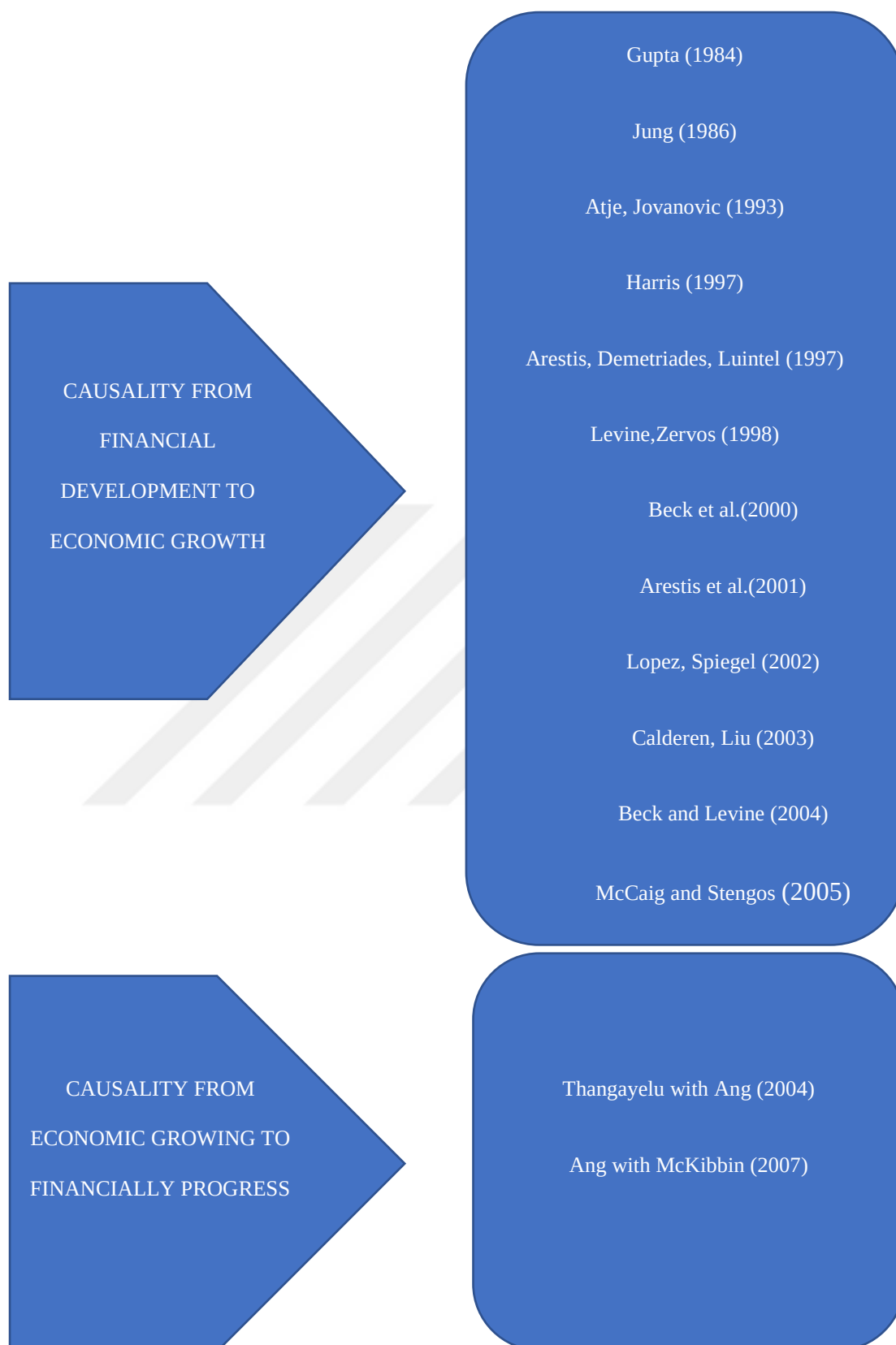


Figure 2.13: Workings' Authors About Directions Of Interrelation

3. METHODOLOGY AND ANALYSIS

3.1. Panel Var (Panel Vector Autoregressive Models) and GMM (Generalized Method Of Moments)

VAR models are widely applied and defined in applied economics studies. In these economically patterns, overall ingredients are considered endogen and interdependently variables. However, at some cases, as a dynamic and static sense, exogenous variables may also be added to the model.

Our empirical strategy in this study is to use the panelized data – Vectoral Autoregression processing. This procedure combines the panel data process, which permits individual heterogeneity with the VAR approach, which considers all variables as endogenous variables.

We use Panel data method which it can be defined as gathering or sorting the section observations such as countries, firms, households etc. in a defined period of time. Thus, we can say that the panel data method combines section analysis with time series analysis.

We will use the Generalized Moments Method (GMM) to estimate the interrelation among financially progress and growing within the framework of analysis, which is the aim of our study. It has been found for dynamical panels patterns led by Holtz-Eakin; 1990, Arellano with Bover; 1995, Arellano with Bond; 1991. It may be presented the conventional growing model kind of following;

$$(y_{i,t} - y_{i,t-1}) = (a * y_{i,t-1}) + (\beta' * x_{i,t}) + u_i + \varepsilon_{i,t}$$

y - logarithm of GDP growth rate

x - represents explanatory variables or authority of economically growing like as education, inflationary ratio, trading aperture, state expenses in per cent of GDP, political stability and current account balance in percentage of GDP

u - an undetected state-private effectiveness

ε - an error-element which is varied over period

i and t - indices representing state and period

Furthermore, can be counted in dummyming elements to imply the private period effects. Let's differentiate the equation (Arellano and Bond, 1991);

$$(y_{i,t} - y_{i,t-1}) - (y_{i,t-1} - y_{i,t-2}) = a * (y_{i,t-1} - y_{i,t-2}) + \beta'(x_{i,t} - x_{i,t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1})$$

Thus, the specific country effectiveness is being fulfilled but the novel error element is generated, which correlates with the delayed dependant element. Arellano and Bond supposed that the error element (ε) has not a correlating relationship and expository variable which is presented as X is weakly exogenous variable. Based on that supposition, they found out the moment conditions like as following;

$$E [y_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2; t = 3, \dots, T$$

$$E [x_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2; t = 3, \dots, T$$

Based on conditionally of moment, according to Arellano as well Bond (in 1991), there are 2 stage GMM estimators. The error term accepted as an independent and homoscedastic variable in the first step. By using obtained residuals of first stage, making a coherence variance-covariance matrix estimation is included in second step.

It is accepted that 2 stage forecasters are too efficiently according as obtained in the first stage. Rousseau with Wachtel (in 2000) analysed the interrelation among economic growth and fund marketplaces and banks based on annual data and using this estimator. In the situation of continuous expository elements, being weakening and inadequate of the delayed levels for the regression of differential equations are shown in the studies of Cesar Alonso-Borrego, Manuel Arellano (in 1999), Blundell with Bond (in 1998). At this case, experienced an enhancement in variation multipliers. At Monte Carlo imitation, we can see that's the weaknesses of tools can generate sided multipliers. Arellano with Bover, (in1995); Blundell with Bond, (in1998) proposed the GMM systemic forecaster, what relates the distinction regressing to the degree of regressing to reduce the uncertainty of the GMM differentiation forecaster. Instrumentals for degree regressing are lags of differentiated appropriate elements. Instrumentals used in the framework of additional suppositions are;

- country-specific effect, although there is a correlated interrelation among the grades of variables on the rightly part of the equation
- it isn't existing state own effectiveness and no correlated interrelation among the difference levels of elements

Considering that delayed grades are utilized as an instrument in the regressive pattern of difference, the last distinction taken can be shown as an instrument for level regression. It has been expressed that the use of additional delayed differences in moment conditions gives better results (Arellano with Bover, in 1995). Thus, supplemental momentum requirements for grade regressions are shown at below.

$$E [(y_{i,t-s} - y_{i,t-s-1})(u_i + \varepsilon_{i,t})] = 0 \text{ for } s = 1 \quad E [(x_{i,t-s} - y_{i,t-s-1})(u_i + \varepsilon_{i,t})] = 0 \text{ for } s = 1$$

3.2. Model and Variables

In order to analyze the interrelation among financially progress and economically growing, the model and variables will be explained and used in this study on 41 countries. Variables and their signs:

- GDP- GDP growth rate
- TCA- Total current account balance (% GDP)
- ER- Exchange rate
- NDI- Net direct investment / current price of GDP
- TC- Total loans to privately outside-financially area (% of GDP)
- I- Interests ratios

These variables will used for this analysis with the signs are mentioned above and model is $GDP=f(TCA, ER, NDI, TC, I)$. GDP growth rate presents economic growth and other variables present financial development in this model. Firstly, the purpose is briefly to explain the all variables which is used and mentioned above.

GDP (GDP growth rate) - The most widely used measure in the world to determine economic development levels of countries is Gross Domestic Product (GDP). Generally, countries with high GDP growing ratios are contemplated to be developed states, except in some special cases. It is the important variable utilized to compare the grades of economically growing of countries. By definition, Gross Domestically Production (briefly GDP) is the sum monetary valuation of entire commodities and duties manufactured inside of a particular session of time therein the

borders of a state.⁸³ The GDP growth rate can be defined as a change in the ratio of GDP according to the previous year or the previous time period.

TCA (Total currently balanced accounts as a percentage of GDP) - The current account variable has many descriptions and definitions. One of these descriptions is the addition of net transfers made from abroad and net factor payments to the balancing of commerce in sum commodities and duties. In a distinctive perspective, currently accounts of the balance of payment is financial variable which expresses the monetary value of flows in goods and services, investment income and single-sided transfers.⁸⁴ According to the definition made on the website of the World Bank, "current balanced accounts is the aggregate of clear primary income, clear secondary income and clear exports of goods and services" (World Development Indicators, World Bank). The variable which have expressed here symbolizes the proportion of total currenting accounts into GDP.

ER (Exchange rate) - We can understand the exchange rate as the valuation of a state's national money unit against the currency of the other country. Based on the information on the World Bank site, we can say that the exchange rates are expressed as the average rate for a given time. It means that exchange rate can changes according to time and country (World Development Indicators, World Bank). In this study, exchange rate refers to the ratio of the national currency values of the countries to the dollar.

NDI (net direct investment / current price of GDP) - It refers to foreign investment that is included in the country through many financial means. Thus, it can

⁸³ Ozsoy, Tosunoglu, 2017

⁸⁴ Orhan, Nergiz, 2014.

also define as a foreign direct investment. This variable represents the proportion of net directed foreigner investments into GDP.

TC (Total loans to privately outside-financially area like a percentage of GDP)
 - Households and non-profit organizations which providing services to the public and also, private and public non-profit companies or organizations are included in the private non-financial sector. As a financial instrument, credits contain debt securities and loans.⁸⁵ This variable represents the ratio of sum loan to outside-financially institutions into GDP.

I (Interest ratios) - In general, the interest rate is the current preference index of the currency over the future income of the currency in a society or country. In this study, data on interest rates between certain time periods of each country were taken.⁸⁶

All data of the above-mentioned variables are collected separately according to each country. The data includes the time period from the first period of 1999 to the third period of 2011. During the collection of these data, Federal Reserve Economically Data (briefly FRED), World Bank, International Monetary Fund, OECD and Penn World Table databases were used.

The list of names of the countries whose data are used in this study are listed below, at table 3.1.

⁸⁵ Bank for International Settlements, 2019.

⁸⁶ Fisher, 1907.

Table 3.1: Used Countries in Study

1	Portugal		
2	Spain	22	Germany
3	Austria	23	Italy
4	Belgium	24	Japan
5	Czech Republic	25	New Zealand
6	Luxembourg	26	Norway
7	Slovenia	27	Switzerland
8	Iceland	28	United Kingdom
9	Estonia	29	Hungary
10	Korea	30	Brazil
11	Netherlands	31	China
12	France	32	Indonesia
13	Finland	33	India
14	Turkey	34	Mexico
15	Israel	35	Poland
16	USA	36	Chile
17	Sweden	37	Lithuania
18	Greece	38	Latvia
19	Ireland	39	South Africa
20	Australia	40	Slovakia
21	Canada	41	Denmark

3.3. Panel Vector Auto Regression (VAR) Analysis

Let us remind that all tests and analysis are done using the E-Views program. Firstly, the unity roots testing was utilized to audit the stationary of the serials. The null hypothesis is that the element has a unity root. The fact that the variable doesn't have unit root is an alternative hypothesis. If the probability values are higher

according as 0.05, the null hypothesis is acceptable and the alternating hypothesis is refused. If the probability values of series are lesser according as 0.05, the null hypothesis is refused and alternating hypothesis is acceptable. The probability valuations of the variables in the test results are shown at below.

Table 3.2: *Panel Vector Testing Results*

	Levin; Lin and Chu- t*	ADF; Fisher; Chi squares	PP; Fisher; Chi squares
logGDP	0.00	0.00	0.00
logTCA	0.00	0.00	0.00
logER	0.02	0.84	0.79
logNDI	0.73	0.59	0.00
logTC	1.00	1.00	0.99
logI	0.01	0.00	0.00

As you see, log ER, log NDI and log TC probability values are higher than 0.005 and so they have a unit root. It means they are not stationary. When unity roots testing is performed to primary differentiation of these variables, the probability value is 0.0000. Thus, series are stationary at first difference.

To audit whether or not existence of cointegrated interrelation in the model, directed to panel cointegration testing and the Johansen cointegration test is applied. The applied model is $GDP=f(TCA, ER, NDI, TC, I)$. When applying the Johansen cointegration test, one of three methods is selected. These methods are Pedroni (Engler-Grangers basis), technique- Kao (Single-Grangers basis), technique- Fisher (integrated Johansen). Actually, the Kao testing is selected to audit whether or not the

elements are co-integrated. Lag selection is automatic settled. Deterministic trend specification is selected as individual intercept. After setting them up, the following window appears.

Table 3.3: *Kao Residual Cointegration Test*

ADF	T Statistics: -3.45	Probab.: 0.00
Residuals variation	3.17	
HAC-variation	0.84	

The nulls hypothesis stresses that there isn't cointegrated interrelation between variables. The alternating hypothesis stresses that there is exist cointegrated interrelation among elements. As you can see, the probability value is 0.00 and it less than 0.05. Thence, we can refuse nulls hypothesis and approve alternating hypothesis. It expresses existing of cointegration among variables. It seems long-maturity interrelation among variables. The following table shows the testing results.

Table 3.4: *Residuals Cross-Sectional Dependency Testing*

Residuals Cross-Sectional Dependency Testing			
Testing	Statistically	df	Probab.
Breusch-Pagan-LM	7332.01	820	0.00
Pesaran scaling LM	160.80		0.00
Pesaran CD	74.42		0.00

If probability valuation is lesser according as 0.05, then nulls hypothesis is refused. As you seen, probability value is 0.0000 and it is lesser according as 0.05. So, nulls hypothesis is refused and alternating hypothesis is acceptable. This demonstrates that existence of crossing-sectional dependency at residuals. In other words, the negative or positive shock in one country affect other countries too. There are two way to estimate panel data. These two models are illustrated;

- Fixedly effectiveness modelling
- Randomly effectiveness modelling

For to use at fixedly effectiveness modelling and random effectiveness model, created new model is $\log GDP = f(\log GDP (-1), \log TCA (-1), \log ER (-1), \log NDI (-1), \log TC (-1), \log I (-1), \varepsilon (-1))$. Because of the cointegration among the elements, the erroneous object is added to the modelling.

Table 3.5: *Fixedly effectiveness modelling:*

Variable	Parameter	St. Erroneous	T Statistical	Probab.
C	0.49	0.28	1.73	0.08
Log GDP (-1)	0.11	0.02	4.84	0.00
Log TCA (-1)	0.08	0.02	3.61	0.00
Log ER (-1)	0.00	0.08	0.11	0.91
Log NDI (-1)	-4.66 e-05	0.01	-0.00	0.99
Log TC (-1)	-0.12	0.05	-2.53	0.01
Log I (-1)	-0.12	0.06	-2.03	0.04
ε (-1)	-0.03	0.01	-2.22	0.02
Efficacy Characterization				
Crossing-sectional fixedly (dummies elements)				
R squaring	0.31	Average dependency		-0.13
		variab.		
Adjust R squaring	0.29	Sd. dependency variab.		1.13
Se. of regres.	0.94	Akaike-infor. criteria		2.75
Summation squaring	1747.77	Schwars-criteria		2.88
Residuals				
Log. likelihoods	-2697.10	Hannan quin criteria		2.80
F statistical	19.04	Durbin watson statistical		1.98
Probab. (f statistical)	0.00			

Dependency element is Log GDP.

Table 3.6: Randomly effectiveness modelling

Element	Multiple	St. Erroneous	T statistical	Probab.
C	0.00	0.09	0.04	0.96
Log GDP (-1)	0.26	0.02	12.06	0.00
Log TCA (-1)	0.09	0.01	4.58	0.00
Log ER (-1)	0.02	0.00	2.48	0.01
Log NDI (-1)	0.00	0.00	0.73	0.46
Log TC (-1)	-0.06	0.01	-5.21	0.00
Log I (-1)	0.03	0.03	0.83	0.40
ε (-1)	0.10	0.01	9.17	0.00
Efficacy Characterization				
	Sd.		R.h.o	
Crossing-sectional randomly	0.00		0.00	
Idiosyncratical randomness	0.94		1.00	

Dependency element is Log GDP. The model was applied according to fixedly effectiveness modelling and randomly effectiveness modelling. Now it is necessary to find out what of these two-effectiveness modelling is appropriate. The Hausman testing is applied to determine which of these two models are appropriate.

Table 3.7: *Correlating randomly effectiveness – Hausmann Testing*

Testing Outline	Chi.Sq.	Chi.Sq. d.f	Probab.
	Statistically		
Crossing-sectional randomness	365.15	7	0.00
Caution: anticipated Crossing-sectional randomly effectiveness variation is zeros.			

The nulls hypothesis is that randomly effectiveness modelling is convenient and the alternating hypothesis is that fixedly effectiveness modelling is convenient. If you look to probability value, you can see that it is 0.00 and it is lesser according as 0.05. Thence, nulls hypothesis is rejected and alternating hypothesis is accepted. In accordance with result of Hausmann testing, the fixed effectiveness modelling is convenient model. After decide which model is appropriate, the causality relationship should be checked with using the Wald test.

Table 3.8: *Wald Testing*

Testing Statistics	Valuation	df	Probab.
F statistics	4.38	(5,19)	0.00
Chi squares	21.94	5	0.00
Nulls Hypothesis: $c(3) = C(4) = C(5) = C(6) = C(7) = 0$			

In this test, the nulls hypothesis is $c(3) = c(4) = c(5) = c(6) = c(7) = 0$. The alternating hypothesis is $c(4) = c(5) = c(6) = c(7) \neq 0$. As you see, the probabilistic valuation of f statistical is 0.00. For this cause, nulls hypothesis is refused and

alternating hypothesise is acceptable. This means that Log TCA (-1), Log ER (-1), Log NDI (-1), Log TC (-1), Log I (-1) is jointly cause Log GDP (-1). Accordance to the consequence of testing, total currently accountability balancing (% GDP), exchange rate, net direct investment ratio, GDP, total loan to privately outside-financially area (GDP) and proportion of interest cause to gross domestic product growth rate. The causal relation flowing from financially progress variables to GDP growing rate.

3.4. GMM (Generalized Method Of Moments)

Table3.9: *Regression result of Log GDP (-2) exogenous dependency element*

Elements	Coefficients	St. Errors	T statistical	Probab.
Log TCA (-2)	0.09	0.01	4.89	0.00
Log ER (-2)	0.02	0.00	2.37	0.01
Log NDI (-2)	0.01	0.00	2.27	0.02
Log TC (-2)	-0.08	0.00	-8.64	0.00
Log I (-2)	0.08	0.02	3.30	0.00
£ (-2)	0.23	0.01	23.17	0.00
R square	0.23	Average dependency variably		-0.11
Adj. r square	0.23	St. Dev. Dependency variably.		1.11
S.e. of regres.	0.97	Summation square residuals		1868.79
Durbin watson	1.52	J stat.		0.02
statically				
Inst. ranking	7	Probab. of j stat.		0.87

As shown in the table, Log GDP (-2) is the dependent variable and used method of test is generalizing methods of momentums (GMM). The used as instrument variables are C, Log TCA (-2), Log ER (-2), Log NDI (-2), Log TC (-2),

Log I (-2), ε (-2). First of all, it is checked whether the independent variables are significant. Nulls hypothesis is that variable is not significant and alternating hypothesis is that variable is significant. Probability rate of Log TCA (-2), Log ER (-2), Log NDI (-2), Log TC (-2) and Log I (-2) is lesser according as 0.05. Thus, nulls hypothesis is refused and alternating hypothesis is acceptable. It purports that, these variables are significant.

Johansen cointegration test is also carried out here. The Kao method is selected and then the following consequences is opened.

Table 3.10: *Kao Residual Cointegration Test*

ADF	T Statistics: 14.42	Probab.: 0.00
Residuals	1.56	
variation		
HAC-variation	0.24	

The nulls hypothesis is that there is not cointegrated interrelation between variables. The alternating hypothesis is that existence of cointegrated interrelation among elements. As shown in the table, the probability value is 0.00 and it less than 0.05. Thus, we can refuse nulls hypothesis and admit alternating hypothesis. It purports that existence of cointegration among variables. There is long-maturity interrelation among elements.

To estimate the panelling data, the fixedly effectiveness modelling and the randomly effectiveness modelling are applied separately.

Table 3.11: *Fixedly effectiveness modelling:*

Variable	Parameter	St. Erroneous	T Statistical	Probab.
C	-0.00	0.28	-0.00	0.99
Log TCA (-2)	0.04	0.02	1.87	0.06
Log ER (-2)	0.00	0.08	0.02	0.97
Log NDI (-2)	0.07	0.01	3.90	0.00
Log TC (-2)	0.01	0.04	0.27	0.77
Log I (-2)	0.00	0.06	0.01	0.98
ϵ (-2)	0.14	0.04	10.36	0.00
Efficacy Characterization				
Crossing-sectional fixedly (dummies elements)				

Table 3.12: *Randomly effectiveness modelling:*

Element	Multiple	St. Erroneous	T statistical	Probab.
C	0.09	0.16	0.55	0.57
Log TCA (-2)	0.06	0.02	2.81	0.00
Log ER (-2)	0.03	0.02	1.61	0.10
Log NDI (-2)	0.03	0.01	3.06	0.00
Log TC (-2)	-0.05	0.02	-2.21	0.02
Log I (-2)	0.01	0.05	0.36	0.71
ϵ (-2)	0.17	0.01	13.58	0.00

The modelling was performed according to fixedly effectiveness modelling and randomly effectiveness modelling. Now it is necessary to find out which of these two effect models is appropriate. The Hausman testing is applied to decide which of these two effect models are appropriate.

Table 3.13: Correlating randomly effectiveness – Hausman Testing

Testing Outline	Chi.Sq. Statistically	Chi.Sq. d.f	Probab.
Crossing-sectional randomness	43.00	6	0.00
Caution: anticipated Crossing-sectional randomly effectiveness variation is zeros.			

The nulls hypothesis is that randomly effectiveness modelling is convenient and the alternating hypothesis is that fixedly effectiveness modelling is convenient. If you look to probability value, you can see that it is 0.0000 and it is lesser according as 0.05. So, nulls hypothesis is rejected and alternating hypothesis is accepted. Accordance to result of Hausmann testing, the fixed effectiveness modelling is convenient model. After decide which model is appropriate, the causality relationship should be checked with using the Wald test.

Table 3.14: *Wald Testing*

Testing Statistics	Valuation	df	Probab.
F statistics	4.60	(5,19)	0.00
Chi squares	23.02	5	0.00
Nulls Hypothesis: $c(2) = C(3) = C(4) = C(5) = C(6) = 0$			

At this test, the null hypothesis is $C(4) = C(5) = C(6) = 0$. The alternating hypothesis is $C(4) = C(5) = C(6) \neq 0$. As you see, the probability is 0.0004 and it is lesser accordance as 0.05. For this cause, nulls hypothesis is refused and alternating hypothesis is acceptable. It purports that Log TCA (-2), Log ER (-2), Log NDI (-2), Log TC (-2), Log I (-2) is jointly cause Log GDP (-2). Accordance to the consequence

of testing, total currently accounts balancing (% GDP), exchange rate, net direct investment ratio, GDP, total loan to privately outside-financially area (GDP) and proportion of interest cause to gross domestic product growth rate. The causal interrelation flowing from these variables to GDP growing rate. On other words, according to result of test, financially progress induces GDP growing.

The following consequences are obtained by separately looking at the relation among every independently element and dependency element with the Wald test. It is based on model which is adapted to GMM method with none effects specification.

- Nulls hypothesis is $C(2) = 0$ and the alternating hypothesis is $C(2) \neq 0$.
According to result of Wald test is that t-statistic and f-statistic is 0.00. At the result, nulls hypothesis is refused and alternating hypothesis is acceptable. The $C(2)$ represents coefficient of Log TCA (-2) and Log TCA (-2) means that second lag of logarithm of total current account ratio to GDP. The result of this test emphasizes that the variable representing the ratio of total current account to GDP causes GDP growth rate.
- Nulls hypothesis is $C(3) = 0$ and the alternating hypothesis is $C(3) \neq 0$.
According to result of Wald test is that t-statistic and f-statistic is 0.01. At the result, nulls hypothesis is refused and alternating hypothesis is acceptable. The $C(3)$ represents coefficient of Log ER (-2) and Log ER (-2) means that second lag of logarithm of exchange rate. The result of this test emphasizes that the variable representing the exchange rate causes GDP growth rate.
- Nulls hypothesis is $C(4) = 0$ and the alternating hypothesis is $C(4) \neq 0$.
According to result of Wald test is that t-statistic and f-statistic is 0.02. At the result, nulls hypothesis is refused and alternating hypothesis is acceptable.

The C (4) represents coefficient of Log NDI (-2) and Log NDI (-2) means that second lag of logarithm of net direct investment ratio to GDP. The result of this test emphasizes that the variable representing the net direct investment ratio to GDP causes GDP growth rate.

- Nulls hypothesis is $C(5) = 0$ and the alternating hypothesis is $C(5) \neq 0$.

According to result of Wald test is that t-statistic and f-statistic is 0.00. At the result, nulls hypothesis is refused and alternating hypothesis is acceptable.

The C (2) represents coefficient of Log TC (-2) and Log TC (-2) means that second lag of logarithm of total credit ratio to GDP. The result of this test emphasizes that the variable representing the ratio of sum loan to GDP causes GDP growth rate.

- Nulls hypothesis is $C(6) = 0$ and the alternating hypothesis is $C(6) \neq 0$.

According to result of Wald test is that t-statistic and f-statistic is 0.02. At the result, nulls hypothesis is refused and alternating hypothesis is acceptable.

The C (6) represents coefficient of Log I (-2) and Log I (-2) means that second lag of logarithm of interest rate. The result of this test emphasizes that the variable representing interest rate causes GDP growth rate.

4. DISCUSSION AND RESULTS

Financial structure and the development process of financial structure of countries has special role to develop better economic environment, to increase the flow of foreign investment, to get more positive results from macroeconomic factors and to prevent any kind of economic crisis. In this context, it is important to investigate the interrelation among financial progress and economically growing. By this importance, the interrelation among financial progress and economically growing was examined in this study.

In this thesis, the variables representing the economically growing and financially progress of forty-one states in the period between the first quarter of one thousand nine hundred ninety ninth year and the third quarter of two thousand eleventh year were examined. As a firstly the Panel Var method was used and then the GMM method was utilized to analyze the interrelation among economically growing and financially progress.

According to the results of the previous analysis, it is confirmed that existence of correlated interrelation among financially growth variables and economically growing. There is long maturity interrelation among these two factors. Moreover, it is found that, there is interaction between series of variables. So, negative or positive shocks of one country's variable affect other countries too.

In generally, it is obviously found that financially progress induces economically growing. The variables which represent financially progress affect economically growing. In this section, the relationship of these variables with economic growth will be explained.

4.1. Currently accounts balancing (%of GDP) and GDP Growing

Firstly, let's start with relationship between ratio total currently accounts balancing to GDP and GDP growing ratio. According to result of Wald test in this study, it is existing bidirectional causality interrelation among the ratio total currently accounts balancing to GDP and GDP growing rate.

The currently accounts are measured by the sum of changings in the time period in three economic variables. These are the income accounts, the trade accounts, the transference accounts. Commerce accounts refers to the differentiation among the export of commodities and duties in a country and the import of commodities and duties. If the importation amount of a country is more than the export amount, a trade deficit occurs.⁸⁷

Trade balance is one of the most important elements of the grossly domestically products (GDP) formula. The interrelation among the growing of GDP and the trade balance is in the form of increased GDP when the trade surplus is experienced. In order to have a trade surplus, the total value of the exported domestic products should be higher than the total value of the products imported from abroad. If domestic consumers are investing in imported goods more than the value of goods sold by domestic producers to abroad, trade deficit occurs and as a result GDP falls.⁸⁸

The increase or being higher in the proportion of currently accounts deficiency to GDP is one of the leading indicators for the crisis. When this situation is

⁸⁷ Orhan, Nergiz, 2014.

⁸⁸ Ross, 2019.

taken into consideration, the importance of the interrelation among currently accounts deficiency and GDP growing is clearly seen.⁸⁹

Songur with Yaman (2013) have tested the interrelation among the current account and the economic growing by taking the data of 10 countries between 1981 and 2010. In that study, panel cointegrated relation and panel vector errors correction modelling are used. According to their results, there is a long-maturity interrelation among current account and economically growing. That working implies that although economically growing in the long maturity has a negative effect on current account, current account has an affirmative efficacy on economically growing in the long maturity.⁹⁰

Shit and Alancioğlu (2016) used VAR analysis to examine the causality between 1980 and 2014 by using GDP and current accounts data. As a consequence of the study, they discovered existence of a bidirectionally causal interrelation among current account and GDP. Moreover, the current accounts deficiency has a negatory efficacy on economically growing and economically growing has guide to an increase in the current account.⁹¹

The ratio of a country's current account balance to GDP is also an effective factor for determining the level of international competitiveness of that country.

The graph below demonstrates the interrelation among the GDP growth rate and their balance of current accounts (% of GDP) of the 18 countries in 2017. All used data is annual.

⁸⁹ Erdogan, Acet, 2016.

⁹⁰ Erdogan, Acet, 2016.

⁹¹ Erdogan, Acet, 2016.

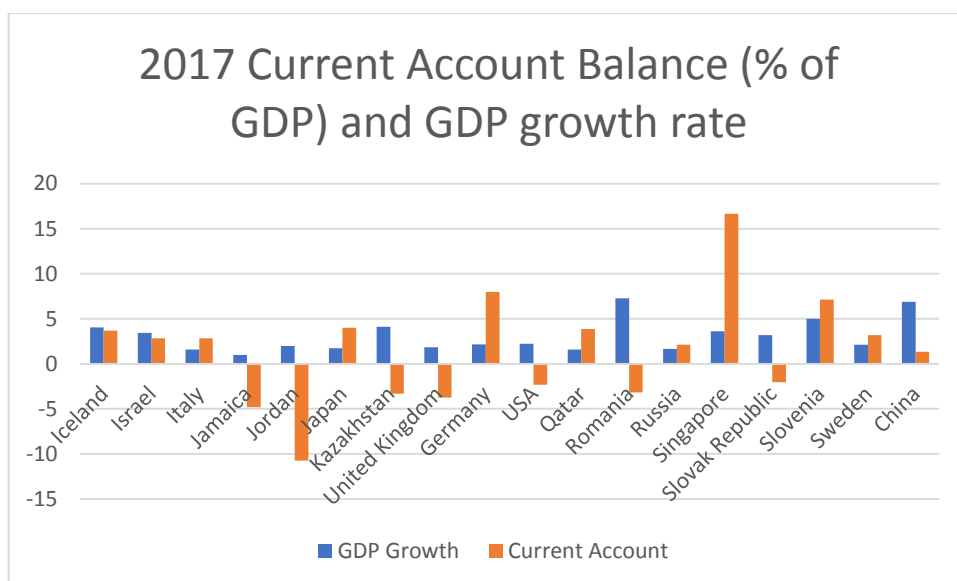


Figure 4.1: 2017 Balance of Current Accounts (%of GDP) and GDP Growing Ratio⁹²

As you see, in figure 4.1, ten countries out of seventeen countries have both positive GDP growing and positive balance of current accounts (%of GDP) at same time. Based figure 4.1, at below, table 4.1 shows the relationships between positive or negative current account balance ratios and grouped GDP growth rate ranges.

Table 4.1: Relationships Among Positive or Negative Current Accounts Balance Ratios and Grouped GDP Growing Rate Ranges

0-2 GDP Growing Rate	7 countries	3 negatives (Jamaica, Jordan, United Kingdom), 4 positive (Italy, Japan, Russia) current account balance ratios
2-4 GDP Growing Ratio	6 countries	2 negatives (USA, Jordan), 4 positive (Singapore, Israel, Germany, Sweden) ratios of balance of current accounts
>4 GDP Growing Ratio	5 countries	2 negatives (Romania, Kazakhstan), 3 positive (Slovenia, Iceland, China) balance of current accounts ratios

⁹² Source of data is <https://data.worldbank.org/>

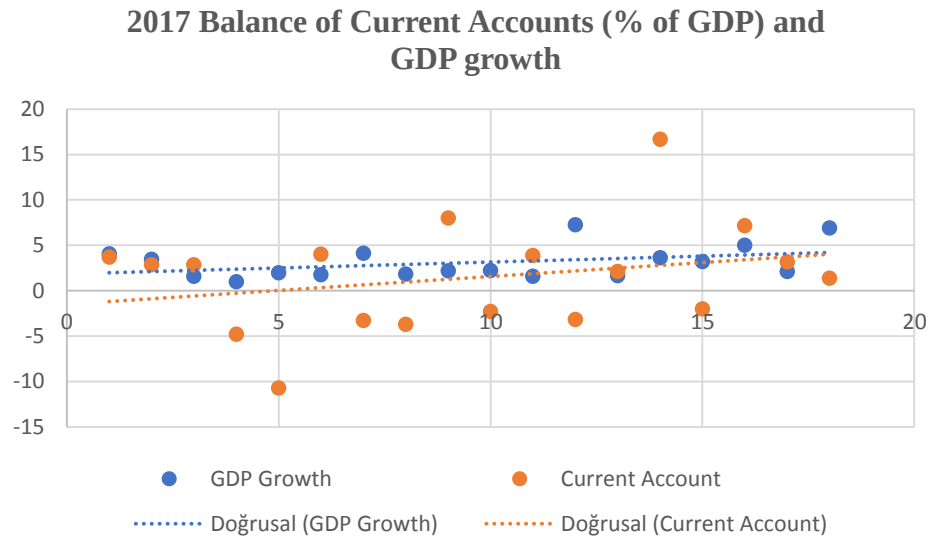


*Figure 4.2: 2017 Balance of Current Accounts (% of GDP) and GDP Growth*⁹³

The distribution of annual GDP growing and the annual balance of current accounts (% of GDP) of previously mentioned eighteen countries are shown in figure 4.2. As you can see, the linear lines of the two variables are moving upward. As a consequence, it is clear that these two elements generally influence each other's. When the current account balance gives a surplus, the growth in the GDP ratio positively affects GDP growth. When the current account balance is deficit, GDP growth is affected negatively.

4.2. Currency Ratio and GDP Growing

At the consequence of this working, there is relationship between economically growing and exchange rate. Exchange rate cause economic growth.

⁹³ Source of data is <https://data.worldbank.org/>

In many studies, it is mentioned that exchange rate positively affects economic growth with two ways. Firstly, it is implied that exchange rate reduces liquidity risk and thus reduces interest rate. At this situation, it increases investment and economic growth. As a second way, it affects economic growth by reducing the cost of international transaction costs.

At the below, works of the interrelation among economic growth and currency ratio are listed.

- Tarawalie (2010) explored the interrelation among real currency ratio and economically growing in Sierra Leone. Data which belong to quarterly period 1996-2006 is used. Used method is Granger causality test. The obtained result is that existing affirmative correlational relation among economic growing and real currency ratio.⁹⁴
- Cheung and Lai, investigated 5 Asian countries and obtained result is affirmative interrelation between economically growing and currency ratio.
- Chen investigated the data of China which belong to period of 1992-2008. Obtained result is that increasing value of real currency ratio has affirmative efficacy on economically growing.
- The studies of Rodrik and Gluzman imply that weak exchange rate positively effect economic growth.⁹⁵
- Dollar (1992) overvaluation of currency harms economic growth.
- Calderon (2005), Aguirre and Collins (1997) stressed that overvaluation and undervaluation harms economic growth. However, tolerable undervaluation can increase economic growth.⁹⁶

⁹⁴ Habib, Mileva, Stracca, 2016.

⁹⁵ Habib, Mileva, Stracca, 2016.

As you see, there are the differences of opinions about the interrelation among economically growing and exchange rate.

The figure 4.3 below shows the interrelation among GDP growing and exchange ratio in 2017 in twenty countries.

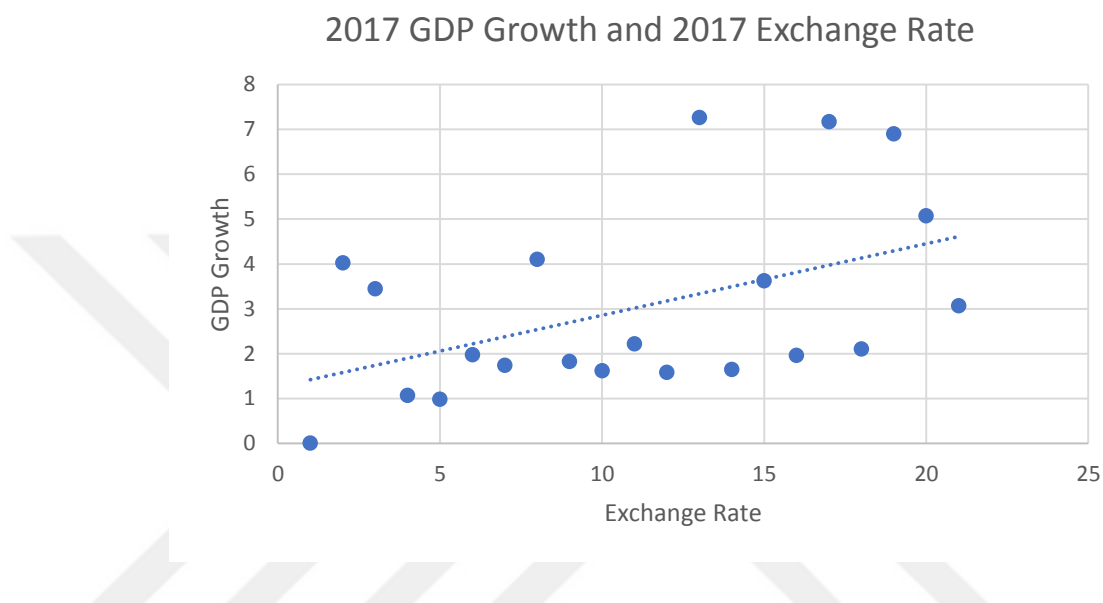


Figure 4.3: 2017 GDP Growth and 2017 Exchange Rate⁹⁷

According to figure 4.3, the GDP growth regression line is upward. High level GDP Growth countries have high level exchange rate. The exchange rate affects GDP growth, especially through the way of foreign trade balance. The country which have cheap national currency because of having high exchange rate, the domestic produced goods and services will be cheaper compared to foreign produced goods and services. Thus, import increases and imports decrease. High exchange rate as one of the factors causing the surplus of the trade balance positively triggers GDP growth.⁹⁸

⁹⁶ Habib, Mileva, Stracca, 2016.

⁹⁷ Source of data is <https://data.worldbank.org/>.

⁹⁸ Kaya, Belke, 2017.

4.3. Net Direct Investment (%of GDP) and GDP Growth

At this thesis, it is found that net direct investment or foreign net direct investment inflow affects GDP growth positively and there is obviously relationship between them. This result matches with most of the work done before. Table 4.2 is a list of done workings about interrelation among foreign directly invest and economic growth at next.

Table 4.2: *Studies about Interrelation Among Foreign Directly Invest and Economic Growing*

Author	Data	Foreign direct invest affects economic growing
Feldstein (1983)	17 countries, 1960 to 1979	Affirmative
Oseghale with Amonkhienan (1987)	Nigeria, 1970 to 2000	Affirmative
Santiago (1987)	Puerto Rico, year-1979	Affirmative
Savvides (1990)	47 least developed countries, 1980-1986	Affirmative
Smits (1988)	30 states, 1978	Affirmative
Aitken et cetera (1996)	3 states, 1987-1990	Affirmative
Borensztein et cetera (1998)	69 states, 1970-1989	Affirmative
Liu, Burridge, and Sinclair (2002)	China, 1981-1997	Affirmative
Wang (2002)	12 Asian countries, 1987-1997	Affirmative
Makki and Somwaru (2004)	66 countries, 1971-80, 1981-90, 1991-2000	Affirmative

Table 4.2: *Studies about Interrelation Among Foreign Directly Invest and Economic Growing (Continued)*

Frenkel, Funke and Stadtmann (2004)	22 countries, 1990-2002	Affirmative
Omoju and Adesanya (2012)	Nigeria, 1980-2010	Affirmative
Antwi (2013)	Ghana, 1980 to 2010	Affirmative
Anochiwa (2013)	Nigeria, 1970-2010	Affirmative
Feeny et cetera (2014)	Pacific Island, 1971 to 2010	Weakly
Salin and Ege (2015)	Greece, Turkey and others, 1996 to 2012	Affirmative
Fauzel (2016)	Emerging countries, 1990 to 2013	Affirmative
Seiko (2016)	14 East African states, 1980 to 2013	Affirmative
Bayer with Marius (2018)	Centric and East Europe states, 1996 to 2015	Affirmative
Choi (2003)	53 countries, 1994-1996	Affirmative
Akdogan (2013)	11 OECD, 1995-2008	Affirmative ^{99 100}

Although there are some mixed or opposite results, most studies generally confirm that the interrelation among foreign directly invest and economically growing is positive.

⁹⁹ Lasbrey, Enypghasim, Tobechei, Uwajumogu, Chukwu, Kennedy, 2018.

¹⁰⁰ Afshar, 2008.

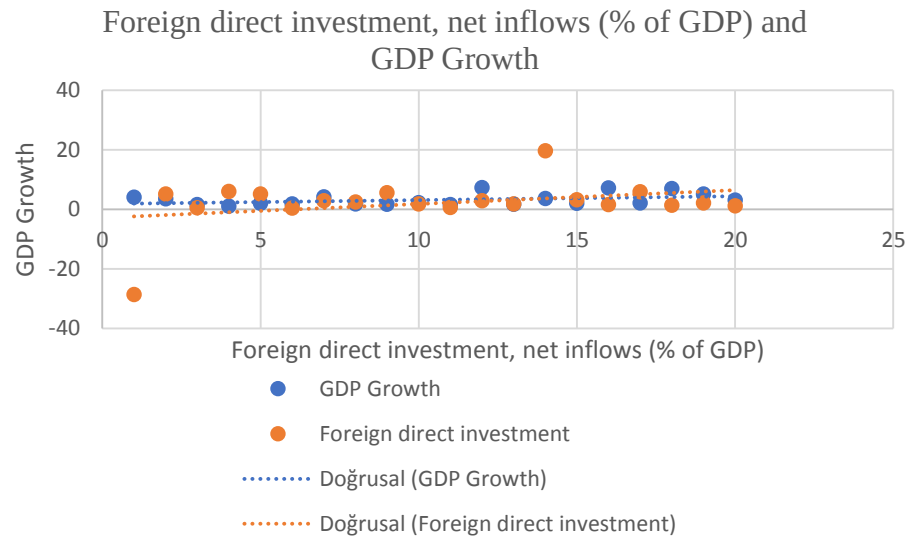


Figure 4.4: Foreign directly invest (% of GDP) and GDP Growth¹⁰¹

As observed at the foregoing figure 4.4, as the foreigner invest curve moves to upwards, the GDP growing curve moves to lightly upwards. Even the foreigner invest curve which commenced from the minus area interrupts with the GDP growing curve over time.

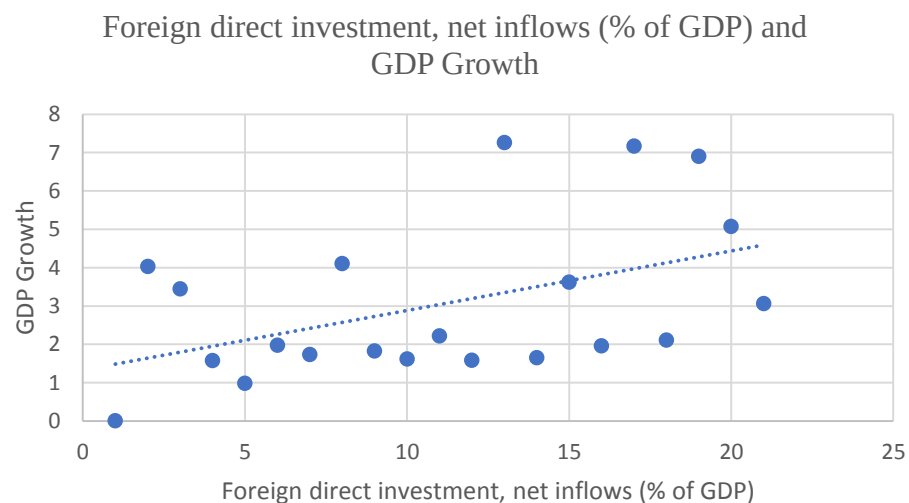


Figure 4.5: Foreign directly invest (% of GDP) and GDP Growth¹⁰²

¹⁰¹ Source of data is <https://data.worldbank.org/>.

These figure 4.4 and figure 4.5 is based on foreign directly invest (% of GDP) and GDP growing data of 20 countries at 2017. As you see, GDP growth regression line is upward and these two variables have positive relationship.

4.4. Total Loans to Outside of Financial Establishments (%GDP) and GDP Growth

According to this thesis, sum of loans to outside of financial corporations (%GDP) causes GDP growth. Result of the test demonstrates that it is existing affirmative relation among them. The consequence of GMM test shows that if sum of loans to outside of financially corporations (%GDP) increases then GDP Growth increase too.

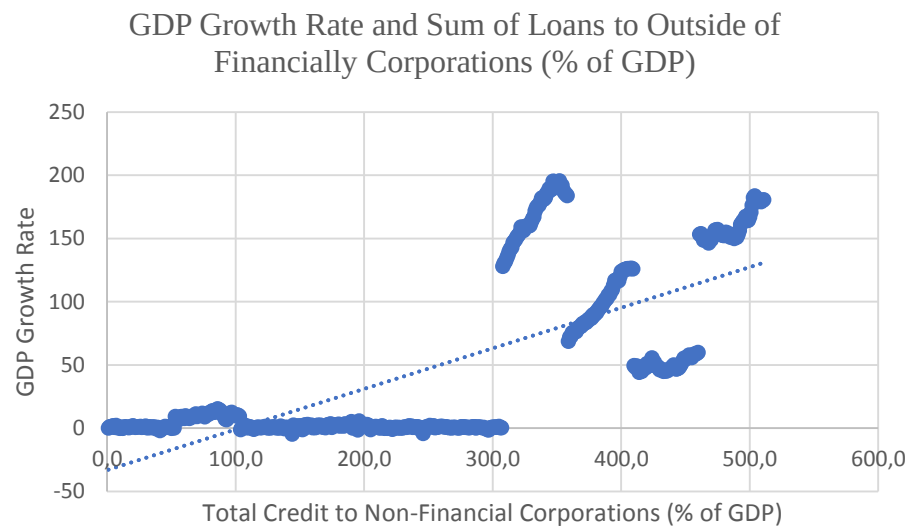


*Figure 4.6: GDP Growth Rate and Sum of Loans to Outside of Financially Corporations (% of GDP)*¹⁰³

¹⁰² Source of data is <https://data.worldbank.org/>.

¹⁰³ Source of data is Federal Reserve Economic Data, <https://fred.stlouisfed.org/>.

The figure 4.6 is made by using the sum of loans to outside of financially establishments and GDP growth data of the world's top 10 economies in 2018: United States, China, Japan, Germany, India, France, United Kingdom, Italy, Brazil and Canada. The period through the first quarter of 1999 to the third quarter of 2011 was taken as the time interval. It is obviously seen from graph that GDP growth rate regression line is upward since sum of loans to outside of financially establishments (% of GDP) increase.

Non-financial establishments produce market goods and services and not deal with financial assets or liabilities. Manufacturers, retailers, utilities, business service providers, airlines, construction companies can be shown as examples for non-financial corporations.¹⁰⁴ If these corporations get more credit, they can increase their investment, production and capital. Thus, increasing of investment, production and export causes to rise GDP growth.

4.5. Long Maturity Ratio of Interest and GDP Growing

There is affirmative interrelation among long-term ratio of interest and GDP growing in this thesis. Long maturity ratio of interest and economically growing can be related by savings channel. Interest rate is an important incentive for savings due to its potential to provide returns. In addition, according to neoclassical theories, interest rate is the factor causing the enhancement in savings.

¹⁰⁴ <https://www.ons.gov.uk>

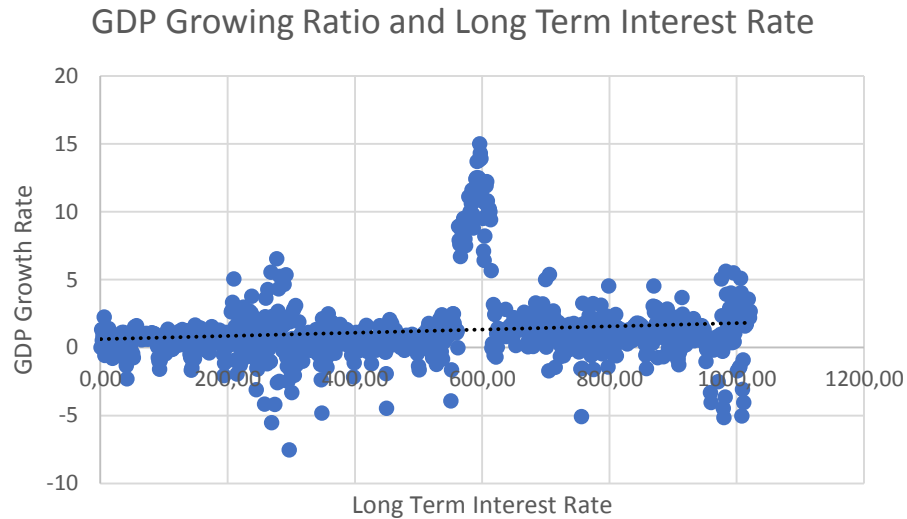


*Figure 4.7: GDP Growing Ratio and Long-Term Interest Rate*¹⁰⁵

In the figure 4.7, data on long maturity ratio of interest and GDP growing ratio of 20 countries, including 10 developed countries and 10 developing countries, were used. The data used covers the period through the first quarter of 1999 to the third quarter of 2011. The consequences in this graph are the same as our test results. As it seen, the GDP growth rate regression line is moving upwards as long maturity ratio of interest enhance.

If the data at the above graph are used as two separate groups as developed countries and developing countries, the following graphs appear.

¹⁰⁵ Source of data Federal Reserve Economic Data, <https://fred.stlouisfed.org/>

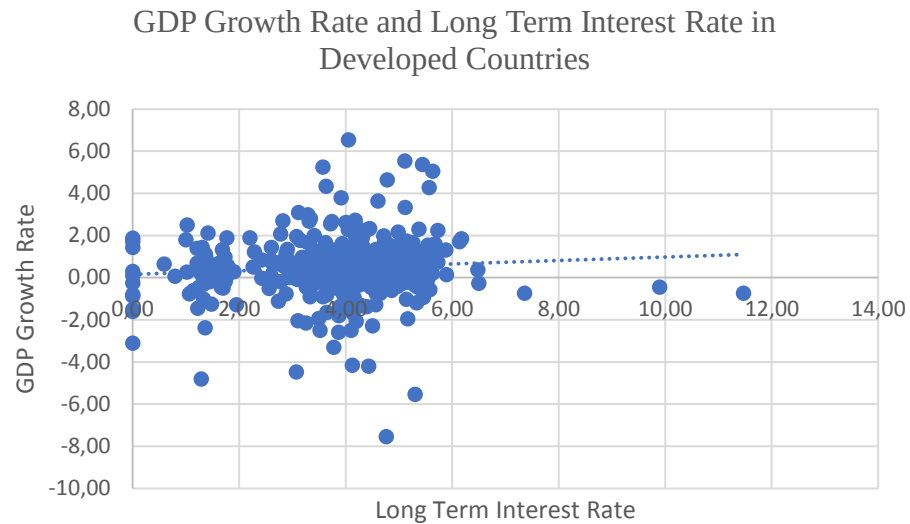


*Figure 4.8: GDP Growth Rate and Long-Term Interest Rate in
Developed Countries*¹⁰⁶

It is clear from the figure 4.8 that demonstrates the interrelation among GDP growing and long maturity interest proportion in improved states, GDP growing is affirmatively influenced by the time-dependency changing in long-maturity interest ratios. The growing ratio in improved states enhances with positive shocking in interest ratios. Convergence among nations besides appears in near of starting point of the growing trend of the linearly line.

¹⁰⁶ Source of data Federal Reserve Economic Data, <https://fred.stlouisfed.org/>.

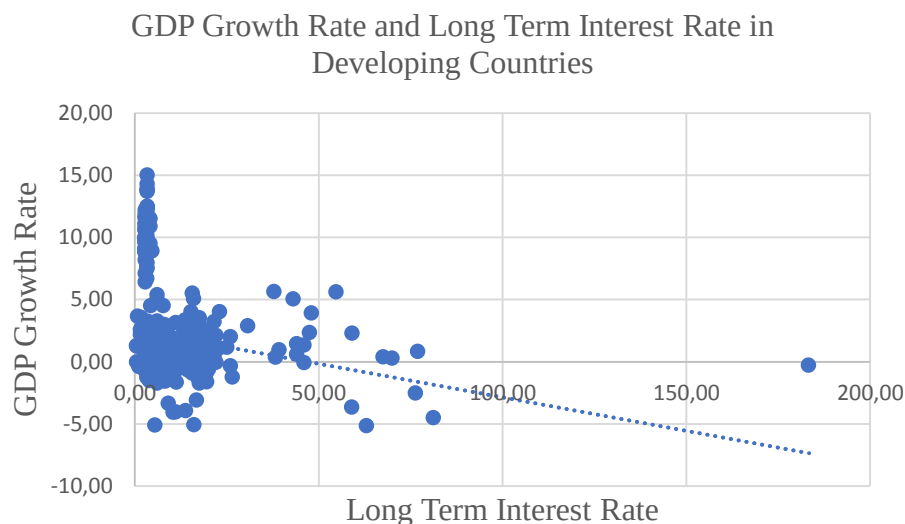


*Figure 4.9: GDP Growth Rate and Long-Term Interest Rate in Developing Countries*¹⁰⁷

As seen from the tables above, the interrelation among long maturity interest rate and GDP growing rate varies according to country groups. While the GDP growing ratio regression linear is moving upwards in developed countries (Figure 4.8), the GDP growing ratio regression linear is moving downwards in developing countries (Figure 4.9).

In figure 4.9, long-term interest rates increase in developing countries, triggers risk expectations and adversely affects investment and consumption. Therefore, GDP growth rate is affected negatively. In figure 4.8, the rise in long-term interest rates in countries with developed economies significantly increases inward flows of funds because these countries have stable and low-risk financial systems. Thus, GDP growth rate is affected positively.¹⁰⁸

¹⁰⁷ Source of data Federal Reserve Economic Data, <https://fred.stlouisfed.org/>.

¹⁰⁸ Cheti, Aksoy, 2016.

5. CONCLUSION

As may be seen through the analysing and testing results, financially progress variables have a considerable efficacy on economically growing. The destination of the thesis was to determine the interrelation among economic growth and financially progress. The variable quarterly GDP growth rate was selected as a representative of economically growing. Furthermore, the variables representing financially progress were the current account balance (as a per cent of GDP), the foreign exchange rate, net directly invest (as a per cent of GDP), total credits to non-financial companies (as a per cent of GDP), and long maturity interest ratio. The data of these variables also were obtained as quarterly data. As a result, we have seen that all of these variables affect economic growth both with panel analysis, GMM (generalized method of moments) method and graphs which based on data. The results obtained through graphs were similar to those obtained by GMM and Panel Var method. Moreover, the other point is have determined that this relationship is stronger in states with improved financially marketplaces. These results show that the interrelation among economically growing and financially progress is also open to the influence of other influential factors, such as the social and political elements of countries.

At a conclusion of the study, let us briefly examine the relationship between all used financial variables and economic growth.

If current account balance of state is positive, that state is lender and it has surplus condition. In this situation the current account balance proportion in GDP is bigger. So, it can be saying that being more current account balance ratio in GDP cause GDP growth.

To explain briefly the relationship between the rate of national currency to foreign currency and economic growth, domestic currency rate depreciates if foreign currency rate rises. Thus, prices of domestic goods are more attractive than abroad. Thus, the demand for domestic goods from abroad increases and exports increase. Thus, it has a positive impact on GDP growth. Of course, this is more important for countries that have more exports than imports.

The increasing in net direct investments positively affects the growth of GDP. Foreign capital flow to the country, technology transfer and the opening of new capital channels to high profitable sectors have undoubtedly positive effects on economic growth.

Organizations producing goods and services are non-financial institutions. The higher the amount of loans granted to these organizations, the higher the production and quality of goods and services. As a result, this development positively affects GDP growth in every respect.

Long-term interest rates have a positive impact on GDP growth. Long-term increased interest rates increase interest investment and savings. Thus, GDP growth is positively affected through increased savings.

Generally, supporting the financial system with a strong structure increases the efficiency and quality of the financial system. Thus, economic growth is significantly supported. Today, countries with a strong financial system have a strong economic structure. It is clear that countries without financial development cannot have long-term economic growth.

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