



KADIR HAS UNIVERSITY  
GRADUATE SCHOOL OF SOCIAL SCIENCES  
INTERNATIONAL TRADE AND FINANCE DISCIPLINE AREA

**THE EFFECT OF FINANCIAL DEVELOPMENT ON  
NATIONAL WELFARE: COMPARISON OF TWO  
EMERGING AND TWO UPPER MIDDLE INCOME  
ECONOMIES**

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SUPERVISOR: ASST. PROF. DR. ARHAN S, ERTAN

MASTER'S THESIS

İSTANBUL, JUNE, 2018



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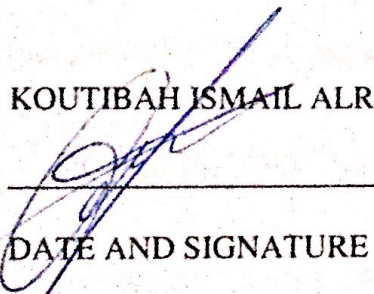
Submitted to the Graduate School of Social Sciences of Kadir Has University in partial fulfillment of the requirements for the degree of Master's in the Discipline Area of International trade and finance under the Program of finance and banking

ISTANBUL, JUNE, 2018

I, KOUTIBAH ISMAIL ALRIFAI,

Hereby declare that this Master's Thesis is my own original work and that due references have been appropriately provided on all supporting literature and resources.

KOUTIBAH ISMAIL ALRIFAI



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DATE AND SIGNATURE

07/06/2018

## ACCEPTANCE AND APPROVAL

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## TABLE OF CONTENTS

LIST OF TABLES .....	i
LIST OF FIGURES .....	ii
ABSTRACT .....	iii
ÖZET .....	iv
ACKNOWLEDGMENTS .....	v
1. INTRODUCTION .....	1
1.1 Organization of the Study .....	1
1.2 Theoretical Background .....	1
1.3 Contribution of the Study .....	4
2. LITERATURE REVIEW .....	6
2.1 Turkey .....	8
2.2 European Union .....	10
2.3 Africa .....	11
2.4 Asia .....	12
2.5 Latin America .....	14
3. DATA AND METHODOLOGY .....	16
3.1 Sample .....	16
3.2 Variables .....	16
3.2.1 National income .....	16
3.2.2 Financial development .....	17
3.2.3 Control Variables .....	20
A) Macroeconomic variables .....	20
B) Quality of other institutions (WGI – World Governance Indicators) .....	21
3.3 Time Trends of Selected Variables .....	22
4. METHODOLOGY AND RESULTS .....	28
4.1 Methodology .....	28
4.2 Difference Between the Four Countries .....	31
5. CONCLUSION AND RECOMMENDATIONS .....	46
REFERENCES .....	48
APPENDICES .....	55

## LIST OF TABLES

<b>Table 4.1</b> - The estimation about the effect of the private credit on the growth in GDPP-PC .....	32
<b>Table 4.2</b> - The estimation about the effect of the domestic credit on the growth in GDPP-PC .....	33
<b>Table 4.3</b> - The estimation about the effect of the stock market capitalization on the growth in GDPP-PC .....	34
<b>Table 4.4</b> - The estimation about the effect of the credit to government on the growth in GDPP-PC.....	35
<b>Table 4.5</b> - the estimation about the effect of the Lerner index on the growth in GDPP-PC .....	36
<b>Table 4.6</b> - The estimation about the effect of the Boone indicator on the growth in GDPP-PC .....	37
<b>Table 4.7</b> - The estimation about the effect of the financial institutions on the growth in GDPP-PC.....	38
<b>Table 4.8</b> - The estimation about the effect of the financial markets on the growth in GDPP-PC.....	39
<b>Table 4.9</b> - The estimation about the effect of the financial development on the growth in GDPP-PC.....	40
<b>Table 4.10</b> - The difference between Turkey, Brazil, Hungary, Poland in terms of to the impact of financial institution on growth in GDPPC. ....	41



<b>Table 4.11 - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of financial development on growth in GDPPC.....</b>	<b>42</b>
<b>Table 4.12 - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of private credit on growth in GDPPC.....</b>	<b>43</b>
<b>Table 4.13 - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of domestic credit on growth in GDPPC.....</b>	<b>44</b>
<b>Table 4.14 - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of stock market capitalization on growth in GDPPC.....</b>	<b>45</b>

## LIST OF FIGURES

Figure 3.1 Model .....	17
Figure 3.2 Financial Development in Turkey, Poland, Hungary and Brazil from 2000-2015 .....	23
Figure 3.3 Inflation Rate in Turkey, Poland, Hungary and Brazil from 2000-2015 .....	24
Figure 3.4 Trade Openness in Turkey, Poland, Hungary and Brazil from 2000-2015 ..	25
Figure 3.5 Human Capital in Turkey, Poland, Hungary and Brazil from 2000-2015 ...	25
Figure 3.6 GDP PC in Turkey, Poland, Hungary and Brazil from 2000-2015.....	27

## ABSTRACT

ALRIFAI, KOUTIBAH. *THE EFFECT OF FINANCIAL DEVELOPMENT ON NATIONAL WELFARE: COMPARISON OF TWO EMERGING AND TWO UPER MIDDLE INCOME ECONOMIES: BETWEEN 2000-201*. MASTER'S THESIS, Istanbul, 2018.

This study investigates the effect of financial development on the national incomes of two emerging economies (Brazil and, Turkey) and compared them with two other countries namely Hungary and, Poland which are upper middle-income countries, over the period 2000-2015.

This study tries to figure out the relationship between financial development and national income. The study constructs a Panel dataset for the four countries. And the results of Ordinary Least Squares (OLS) with Fixed Effects (FE) regressions showed that financial development has a positive effect on national income in the four countries. But the highest impact was in Turkey, then Poland, Hungary, and Brazil respectively.

The findings of this paper will be useful for both professional and academic research sectors of financial institutions and who wish to consider the important role of financial development in promoting growth in economies.

**Keywords:** Financial development, National income, Panel data.

## ÖZET

ALRIFAI, KOUTIBAH. FİNANSAL GELİŞİMİN MİLLİ REFAH ÜZERİNE ETKİSİ: İKİ ACİL VE İKİ YÜKSEK ORTA GELİR EKONOMİLERİNİN KARŞILAŞTIRILMASI: 2000-2015. YÜKSEK LİSANS TEZİ, İstanbul 2018.

Bu çalışma, finansal kalkınmanın gelişmekte olan iki ekonominin (Brezilya ve Türkiye) ulusal gelirleri üzerindeki etkisini incelemekte ve bunları 2000-2015 döneminde üst orta gelirli ülkeler olan Macaristan ve Polonya ile karşılaştırmaktadır. Bu çalışma finansal gelişme ile milli gelir arasındaki ilişkiyi ortaya çıkarmaya çalışmaktadır. Çalışma dört ülke için bir Panel veri kümesi oluşturuyor. En Küçük Kareler (OLS) ile Sabit Etkiler (FE) regresyonları sonuçları, finansal gelişmenin dört ülkede milli gelir üzerinde olumlu bir etkiye sahip olduğunu göstermiştir. Ancak en büyük etki sırasıyla Türkiye'de, sonra Polonya, Macaristan ve Brezilya idi.

Bu makalenin bulguları, finansal kurumların hem profesyonel hem de akademik araştırma sektörleri için yararlı olacak ve ekonomilerde büyümenin desteklenmesinde finansal gelişimin önemli rolünü dikkate almak isteyecektir.

**Anahtar Kelimeler:** Finansal gelişme, Milli gelir, Panel verileri.

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*To my parents, family members, teachers and friends from around the world  
One day ..... I will make you proud of me. I promise*

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Organization of the Study**

This study is composed of five chapters. In chapter one a theoretical background and rationale of study are presented. The contribution of the study, research questions, methodology and terms of the study are defined. In chapter two the relevant literature is reviewed in the areas of financial development, growth of economy and the effect of financial development upon growth of economy in many regions. In chapter three the data and methodology are presented. In chapter four the results of the study are examined and discussed. In chapter five conclusions and recommendations for future research are provided.

### **1.2 Theoretical Background**

The growth in national income and economy is an important issue in modern economies. Also it received a great deal of attention in previous decades. One of the variables which impact the national income is financial development. Consequently the financial development, growth in national income, and the connection between them have become one of the most important emerging research topics in the field of economy and finance. According to the viewpoint of Schumpeter, (see Schumpeter 1912,1934), who was one of the greatest economists to study growth in economy, sophisticated financial intermediaries and institutions will catalyze the growth of

economy by accelerating the accumulation of capital which eventually leads to economic growth. This means that the change in services leads to innovation and economic growth through guiding savings to fruitful investments. Recently, the aspect of the financial sector within the growth of economy method has garnered attention. Moreover, the new work on the growth in economic literature focuses on the positive turn of the financial system in promoting growth in the economy, especially in financial functions. According to Levine (see Levine, 2004) the development in the financial sector includes amelioration in (i) the produce of information about future investments, (ii) putting investments under surveillance (iii) management of risk, and diversification (iv) motivation and collecting of savings, and (v) reciprocity of goods and services. Every one of the above five financial functions might impact investment and subsequently growth in an economy.

Thus, financial institutions modulate resources to be allotted to innovative and productive fields by providing credits to companies. So, financial institutions have a significant role to play in economic growth and national income by authorizing technological innovations. (see Arac , Ozcan 2014). Patrick (1966) called this view “supply leading hypothesis.” Another view by Robinson (see Robinson, 1952), argues about the link between the growth in economy and financial development. As a result it can be said that the order for financial firms will increase, and the financial structure will be developed because of the growth in national income. This opinion is called “demand following hypothesis” by Patrick (1966). Hicks (1969) declared that the Revolution of Industry would not have been possible in the absence of an effective financial system (see Taivan, Nene, 2016). Share in the growth of an economy is a massive topic for debate. (see Ram Mohan, Nitsure, Joseph; 2005).



On the other hand, there is a debate about the great value of financial development in promoting growth in national income. In addition, some economists are of the opinion that the correlation in the midst of financial development and growth in national income is not a significant matter. According to Lucas (1988) economists should mull over financial ingredients because they will increase the growth in an economy. However most development economists demonstrate their considerable uncertainty about the function of the financial system.

Nevertheless, although a new action would cause doubt about the development of financial institutions, markets are important and; an inseparable part of national income growth, far from the view that shows the irrational side of the financial system. There is noteworthy evidence which shows that the financial development level of certain countries is a perfect indicator of future rates to measure growth in national income. (see Levine, 1997)

From the above we can see that the link between financial development and growth of national income is a conversational issue, but still there is no unanimity about and causative trend between them. And the trend of whether growth in national income is causing financial development or vice versa is still unresolved. However, the connection among financial development and growth in national income is an important matter for economic decision makers in developing countries. For many countries, the importance of financial development was made clear as they experienced a recession in the period after the global financial crisis of 2008.

Hence, a robust and well-developed financial structure is the crux of any economy in the world. Efficacious financial firms and institutions cause higher growth in national

income while inefficacious financial institutions and firms are usually the reason for economic crises.

Finally, based on the above and due to the value of the financial sector in an economy for promoting the growth in national income and the importance of this subject for both economic and finance fields, the contribution of the study is significant and will be explained in the next paragraphs.

### **1.3 Contribution of the Study**

This study examines the effect of financial development on national welfare and in making a comparison between two emerging economies (Brazil, Turkey) and two upper middle income counties (Hungary , Poland) over the period 2000-2015 is foreseen to add to the literature in financial development and growth in economy the upcoming points:

- (1) The main point which differentiates this study from preceding studies is the use of new alternative indicators and indexes to measure financial development.
- (2) Examining the hypothesis that financial development might lead straight to the growth in national income specifically in the four countries, and supplementary exploration will contribute to the literature and the orientation of the link between financial development and national income growth.
- (3) To acquire dependable findings about the influence of financial development on the national income growth in the four countries, a trustworthy dataset belonging to the period of 2000-2015 has been applied in the study.
- (4) A comparison has been made between two emerging economies (Brazil and Turkey) with two upper middle income countries (Hungary, and Poland).

The main research questions of this study are :

- 1) Does financial development have an impact on national income growth in Turkey?
- 2) Is there any difference between Turkey and the countries compared Brazil, Hungary and Poland in terms of the impact of financial development on national income growth?

## **CHAPTER 2**

### **LITERATURE REVIEW**

The relationship between financial development and growth in national income has been studied in details. Almost all the outcomes indicated that a positive relationship between financial development and national income growth does exist, as described below

Ciftcia, Ispirb and Yetkiner (2017) illustrated the role of financial development in promoting national income growth. This study developed a suitable model for empirical applications by using the Trade-off Theory. At the next point, the model which was based on empirical approach, by a panel database of 40 countries during the period 1989–2011 was estimated by using Augmented Mean Group (AMG) and Common Correlated Effects (CCE) estimation methods. The results showed that both stock market development and credit market development have positive effects on the level of gross domestic product per capita. Moreover, Kazar, A., Kazar, G (2016) looked into the connection between financial development and growth in national income, with globalization for the countries classified according to income levels over the period 1980-2010, After considering the panel characteristics of the dataset, the data were analyzed by dynamic Ordinary Least Squares (OLS) method. The results revealed that financial development has a positive and good impact on the growth of gross domestic product per capita in developed countries. Also, Nicolae, Codruta, Violeta and Adriana

(2016) stated that depending on the financial indicator was considered in developing countries (the evolving part of each territory constructed by the World Bank) used in analysis were: Europe and Central Asia, East Asia and the Pacific, South Asia, Latin America and the Caribbean, Sub-Saharan Africa, the Arab World, and Middle East & North Africa for over the period (1988–201), and they employed statistical analysis (time-series) based on the Granger causality Method. The outcomes revealed that there is a strong correlation and relationship between the financial market gross domestic product per capita in the African countries (developing countries). Furthermore, Valickova, Havranek, and Horvath (2015) made a Meta-regression test of studies that examine the impact of financial development on growth in economy. The Meta-regression examination presented evidence that the revealed estimates of financial development and growth in economy connection rely upon the set of control variables included in the growth regressions. The study recommended that the analysis should apply the control for the level of human capital and financial setbacks, primary income in order to show and approve the effect of financial development on growth of gross domestic product per capita, and that advises the instability of the regression model and excluded variable bias are the main features driving the estimated effect of the financial development on the growth in economy. Moreover, Nyasha and Odhiambo (2014) examined the empirical and theoretical literature review on the relationship between financial development and growth in economies in both developing and developed countries. The results demonstrate that the causal relation among financial development and growth in economy is not visible and the fact that financial development robotically drives economic growth is just based on fictional evidence. Furthermore, Masoud and Hardaker (2012) investigated stock market development and economic growth

empirical relationship in 42 countries over the period (1995-2006). This study is built on an internal study of the economic growth model. The findings showed that there is a strong relationship between most indexes of a stock market and the growth in gross domestic product per capita. On the other hand Choong and Chan (2010) believed that the connection between financial sector development and growth in gross domestic product per capita is significant in all countries because the evolution of the financial system is impacting the growth in gross domestic product per capita through the efficient allocation of resources which results in growth of economy. The impacts of development of the financial sector's efficiency on the growth in economy were demonstrated by Waheed and Younus in (2010). The method which they used is the logical method from both developed and developing countries which was based on the Extreme Bond Analysis (EBA) method. The findings showed that the effect of the financial sector competence on growth in gross domestic product per capita is uncommonly positive for all of 98 developed and developing countries. For a specimen of 64 developing countries, the effects of the development of a financial sector competence is also positive and very substantial, whereas in a sample of 26 developed countries, the financial sector's development is sufficiently positive, and the influence of the financial sector's efficiency is also positive. Moreover, in the upcoming titles I will focus on the studies on the specific regions.

## **2.1 Turkey**

In Turkey, a lot of research and studies have been implemented to explore the relationship between the development of finance and growth in gross domestic product per capita. Zeki, Kirca, and Altıntaş (2016) investigated the connection among the

development of finance and growth of economy in Turkey over the period 1960-2013. The study applied the Granger Causality Method, and the results showed that the causality connection among financial development and growth of gross domestic product per capita in Turkey does not exist over the stated period. The causal relation between financial development and growth of economy in Turkey over the 1987-2012 period was examined by Arca and Ozcan (2014). Bound testing and Ganger Causality tests were used and the results showed that there is a long-run relationship between the development of finance and growth of economy. Moreover, Kar, Nazlıoğlu, and Ağır (2014) studied the case that trade liberalization causes economic growth in Turkey between (1987:q1- 2007:q1), by employing non-linear analysis. The results showed that economic growth causes financial development, and financial development leads to trade liberalization. These outcomes furnish logical hypotheses which support both the demand-following and export-led growth hypotheses. Furthermore, Mercan and Göçer (2013) investigated the influence of financial development on growth of gross domestic product per capita in five developing countries, which have a crucial status in the world's economy (Russia, China Brazil, India and Turkey, BRIC/T), panel data analysis being used for those countries. The conclusions obtained that the growth in gross domestic product per capita of the country will increase if financial firms offer the credit demands of the real sector, which means that economic growth has a financial development impact. The long-term connection between financial development and growth in gross domestic product per capita in Turkey over the period 1991-2005 was examined by Soytaş and Kucukkaya (2011). The basic upfront conclusions confirm the nonexistence of causality. Even when financial or monetary policies and inflation are considered, they could not find a link between financial development and growth of

economy in Turkey. The impact of financial development on economic growth since the inception of the economists of the 1900s was examined by Demirhan, Aydemir, and Inkaya (2011). The relationship between financial development and growth in gross domestic product per capita in Turkey during the period 1987-2006 was examined by the researchers. There have been many logical and theoretical studies to illustrate the orientation of causality among them. Nonetheless, the orientation of causality stays unresolved in both theory and practice since the relationship between financial development and growth economy is specified country wise. The results of many empirical types of research show that countries with sophisticated financial systems tend to grow quicker. Moreover, İnce (2011) studied if financial development leads to growth in gross domestic product in Turkey over the period of 1980-2010. Co-integration and Granger Causality Tests were used to look into the causal connection between financial development and growth of economy. The outcomes maintained that the relation among financial development and growth in gross domestic product is a strong and stable relationship in the short- term.

## **2.2 European Union**

In the European Union, many studies have been carried out about connection between financial development and growth of national economy. Lebe (2016) researched the connection between the financial development and growth of economy in 16 European countries during the 1988-2012 period by using the bootstrap panel causality test. The outcomes showed that there was a robust link between financial development and growth of gross domestic product in the sample 16 European countries. Furthermore, Tsaurai (2015) examined the connection between the financial development and growth



of the economy in Hungary between the years 1991 and 2012 and the case study approach was used. The findings illustrated that the relation between the financial development and growth of economy in Hungary over the given period was not obvious. Furthermore, DUDIAN and POPA (2013) examined the relation between financial development and growth of economy during the period 1996-2011 in Central and Eastern Europe and a panel data model was used. The results showed that an increase in interest rate and nonperforming debts have an effect the economic growth, in other words, there will not be good effect on gross domestic product (GDP) growth if there is a rise in domestic credit to private sector. However a rise in growth rate positively impacts gross domestic product and extensive money growth does not have that influence on the growth of an economy. Also, Gurgul and Lach (2012) studied the connection between economic growth and financial development in Poland by a using quarterly database for the period (2000 q1–2011 q4), the methodology was Granger Causality and the outcomes showed that causality working from economic growth to the banking scheme may be evidence that a more developed economy has a more financially developed scheme. At the same time, they could not find any evidence of causality running in the opposite direction. The connection between the financial development and growth of economy in France by using annual data for the period 1965-2007 was investigated by Athanasios and Antonios (2010) .They used Ganger Causality tests analysis. The results were in line with Levine and Zervos's study (1998) which came to the conclusion that financial development has an affirmative influence on growth in national income.

### **2.3 Africa**

According to researchers in the Africa region, only a few studies have been carried out about the connection between the financial development and growth in national income. Assaf and Mollick (2017) explained financial development and growth of economy in Africa by examining 15 African countries between the years from 1995 to 2010. They employed both static and dynamic panel data methods and outcomes. They observed that the financial development index (FDI) has a positive effect on real gross domestic product (GDP) growth. The relation between the financial development and growth of gross domestic product in Ghana over the period 1988–2010 was observed by Adu, Marbuah, and Mensah (2013). The study was based on the Autoregressive Distributed Lag (ARDL) bounds test. The result revealed that financial development has a considerable statistically positive effect on the growth of an economy. Moreover, Abida, Sghaier, and Zghidi (2015) examined the link between financial development and growth in gross domestic product in North African countries, namely Egypt, Morocco, and Tunisia from the year 1980 to 2012, the Generalized Method of Moments (GMM) dynamic and panel estimation method were used. The outcome demonstrates that a strong and robust relationship does exist between financial development and growth in gross domestic product.

### **2.4 Asia**

In the Asia region, many studies have been conducted into the connection between financial development and growth of economy. Lenka, Sharma (2017) looked into the connection between the financial inclusion and growth of economy in India over the 1980-2014 period. They used the financial inclusion variable based on Principal

Component Analysis (PCA) procedures with a group of variables. The study was limited to scheduled commercial banks related variables to capture financial inclusion due to data availability in India, and they plan to include MFIs, SHGs, and POSB in future research for a better understanding of the financial inclusion process and its influence on economic growth in India. The results showed that in India financial inclusion, in the long run as well as in the short run has a positive effect on the economic growth. Moreover, to examining the connection between financial development and economic growth in India, Lenka (2015) said that growth in the long term has an effect on financial development and growth in the economy in the years from 1980 to 2011; the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) methods were used to examine and verify the stationary (Fixed Effect) among the variables. The researcher found co-integration connection between the financial sector development and growth of economy. On the other hand, Xiang and Dongye (2016) illustrated the empirical research results of the relation between the financial development and growth of economy. They conducted a logical analysis of Shenzhen over the period (2000-2012) by considering panel data. It was recommended that the Chinese government should accelerate the reform of the financial system in order to effectively solve their financing difficulty in the development of the real economy. Moreover, Kaushal and Pathak (2015) revealed the results of the Granger test which examined the influence of trade openness and financial development in India over the period 1991-2013. The results show that openness to trade does not have an impact on the growth of an economy, but growth has an influence on financial development and trade. Furthermore, Azam, Haseeb, Samsi and Raji (2016) investigated countries from Asia (Bangladesh, India, China and Singapore) for the impact of the stock market on the

growth of the economy in the years from 1991 to 2012. Lag bound testing approaches and analytical techniques were used. The outcomes showed that there is long-run integration between growth of economy, inflation, foreign direct investment (FDI) and stock market development. Also, the relationship between financial development and growth of economy in five emerging South Asian countries - Bangladesh, India, Nepal, Pakistan and Sri Lanka was investigated by Rana, Barua (2015) over the period from 1974 to 2012. The panel regression model and time fixed effect have been used, Cross-sectional dependence, Heteroskedasticity, serial correlation and integration have been tested for suitability. The conclusion shows that the impact on promoting growth of economy in the emerging South Asian countries is not yet established from financial sector credit to private sector credit.

## **2.5 Latin America**

In Latin America, only a few studies have investigated the connection between financial development and growth of economy. Rosalia (2013) inspected the relation between financial development and growth of economy in Latin America; 18 countries were studied including a group of Latin American countries during the period 1980 to 2011. The researcher chose to analyze the relationship by using a fixed effects model with instrumental variables by estimating the growth equations with fixed effects.

The conclusions reveal that there is no link between financial development and growth of economy. Moreover, Bittencourt (2012) examined the part played by financial development in creating growth of economy in four Latin American countries between the years from 1980 to 2007. The researcher used panel-time series data analysis, the

result indicating that financial development indeed has an important part in procreating economic growth. On the other hand, Stefani (2007) investigated the causal relation between financial development and growth of economy in Brazil during the year from 1986 to 2006 by employing the Vector Autoregressive (VAR) model. The results concluded that there is a proven relation between financial development and growth of economy.

## **CHAPTER 3**

### **. DATA AND METHODOLOGY**

#### **3.1 Sample**

To analyze the relationship between the financial development and growth in national income in the four countries, annual time series data spanning a period of 16 years (2000-2015) is used. Also, to compare Turkey and Brazil (emerging economies) with upper middle income countries, namely, Hungary and Poland, data have been collected and a Panel data analysis is used for this purpose.

In conduct this study and to analyze a panel dataset, STATA software was used, estimation and regressions were shown in the results section.

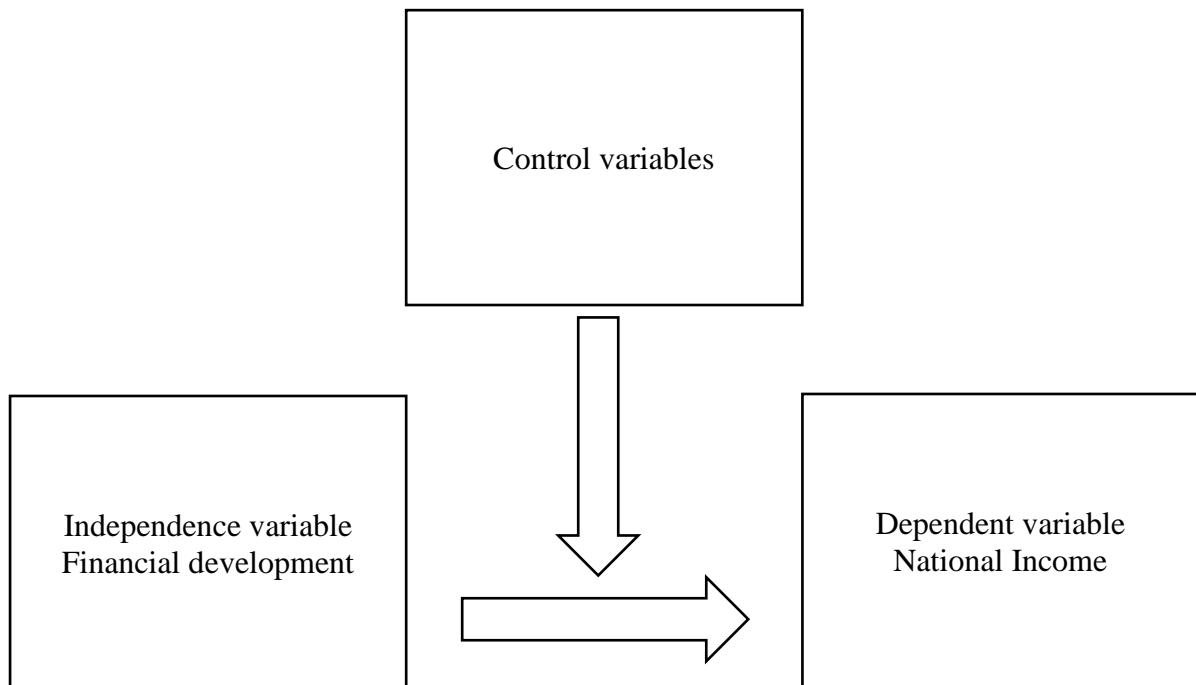
#### **3.2 Variables**

3.2.1 National income: is defined as the total net profit through the production of services and goods in a state or country over a period time and, is used to measure the growth of the economy in a country.

3.2.2 Financial development: is defined as the procedure which shows financial services. This development is measured by the various services which the financial system provides, whether through institutions or financial markets.

Also, it is defined as the development in the size, efficient and stability of the financial system. Moreover, financial development indicates to the evolution in producing information about possible investments. In other words financial development can be the development of the financial system by increasing the efficiency of financial system functions.

The growth in national income is the dependent variable measured according to real GDP per capita, indicated by loggdppc. Trade openness and financial openness, inflation rate, real board exchange rate, human capital, terms of trade, VIX index and quality of institutions are used as the control variables.



*Figure 3.1 Model*

The measurement of the financial development is a hard issue for many reasons. So many financial firms, either institutions or intermediaries, are providing financial services. Alongside them, there are banks and the stock exchange market which also have an important essential function. So to get a clear view, I have to mention different and alternative indicators of financial development. Therefore, I have used the Global Financial Development Dataset (GFDD) which includes indicators and measures of access, depth, efficiency and stability, each of these aspects captures both, (1) financial markets (bond markets and stock markets) , and (2) financial institutions (financial firms, insurance companies, banks). It also contains other significant indicators, such as measures of competition and concentration in the financial sector. The dataset builds on, extends previous efforts, and updates in particular the data collected for the Dataset on the Structure and Financial Development of the financial system. Also, the National Bureau of Economic Research which has dataset for the annually measurements of financial development over all constructed by Svirydzenka (see IMF working paper 16/5, 2016) with other measures of financial structure for the four countries concerned has been used , in order to reach trustworthy results. The indicators which have been used in measuring of financial development are defined below:

Private credit: The ratio of credits issued by banks and other financial institutions to the private sector divided by gross domestic product (GDP). calculated by using the following method:  $\{(0.5) * [F_t/P_{et} + F_{t-1}/P_{et-1}]\} / [GDP_t/P_{at}]$  where F is credit to the private sector, P\_e is end-of period CPI, and P\_a is average annual CPI. Raw data are from the electronic version of the IMF's International Financial Statistics Private credit by deposit money banks and other financial institutions. (WB)



Domestic credit to private sector (% of GDP): Refers to financial resources provided to the private sector by financial firms, such as purchases of nonequity securities, through loans, and trade credits, which establish a claim for repayment. For some countries these claims include credit to public enterprises.( WB)

Stock exchange market capitalization to GDP (%): The overall value of listed shares in a stock exchange market, illustrated as ratio of gross domestic product, calculated using the following deflation method:  $\{(0.5) * [F_t/P_{et} + F_{t-1}/P_{et-1}]\} / [GDP_t/P_{at}]$  where F is stock market capitalization, P\_e is end-of period CPI, and P\_a is average annual CPI. (WB)

Credit to Government (%): The ratio of credit by domestic money banks to government enterprises and GDP. (WB)

Bank Z-score: is a financial statistic that determines the probability of bankruptcy. Also, it captures the probability of weakness of a country's banking system. Z-score compares country's financial system (capitalization and returns) with the fluctuations of those returns. It is estimated through the standard deviation of return on assets (ROA), return in equity (ROA) by the following equation:  $(ROA + (equity/assets)) / (sd(ROA) + sd(ROA))$ . (WB)

Lerner Index: is a measure of market power in the banking market and correlates output pricing and marginal costs, which the Prices are calculated as overall bank revenue over assets, while marginal costs are illustrated from an estimated cost function with respect to outcome. Higher ratios of the Lerner index indicate less bank competition.( Demirgüç-Kunt and Martínez Pería 2010) (WB).

Boone Indicator: is indicated regarding profit-efficiency in the banking market and it is used to measure the degree of competition. It is estimated as the elasticity of profits to marginal costs. To obtain the elasticity, the log of profits (measured by return on assets) is regressed on the log of marginal costs. Consequently, the high negative ratio of the Boone indicator will cause the higher the degree of competition. (WB)

### 3.2.3 Control Variables

#### A) Macroeconomic variables

Trade openness ((exports + imports) / GDP): openness of trade is the aggregation of imports, exports, services and goods measured as a share of gross domestic product. (WB)

Financial openness (Chinn – Ito KAOpen Index): is an indicator showing a country's openness level of capital account. Hence, the financial openness refers to country's approach for investments by foreign in corporations within its authority, each country has policies of with regulating exports of specified services and goods, and to each government's policy on what is called "capital flows." (WB)

Real Broad Effective Exchange Rate: is determined as weighted averages of exchange rates fixed by relative consumer prices, which is estimated to the country's currency. (FRED)

Terms of Trade: is calculated as a ratio of the export unit value indicates to the import unit value indicates, weighted relative to the base year. (WB)

Inflation Rate: is a ratio of consumer price index and it reflects the yearly percentage change in the cost to the average consumer of acquiring services and goods that might be interchangeable per year. (WB)

Human Capital Index: is a measure of yearly average of schooling, and supposed rate of return to education. (PWT9)

VIX (global volatility): The Volatility Index (VIX Index) is a gauge of market anticipations of near-term fluctuation conveyed by S&P 500 stock index option prices

Global Variables: financial crises dummy (for years 2008 and 2009), there was a global economic crisis over the period December 2007 – June 2009.

#### B) Quality of other institutions (WGI – World Governance Indicators)

Rule of Law: Percentile Rank estimation, applies Law which captures perceptions of the range within which agents have confidence to stand by the rules of society, specifically the quality of enforcement contract, the police, property rights and the courts, also the certainty of crime and violence. (WB)

Voice and Accountability estimation: Voice and Accountability captures awareness of the extent to which a country's citizens are able to indulge in selecting their government, as well as free media, sense of association, and freedom of expression. This will give the country's score on the combined index range from -2.5 to 2.5. (WB)

Regulatory Quality estimation: Regulatory Quality shows an image of the capacity of the government to modulate and implement sound policy rules that promote and permit private sector development. This will give the country's score on the combined index range from -2.5 to 2.5. (WB)

Political Stability and Violence/Terrorism estimation: it measures political coherence and absence of violence/terrorism measures, plus perceptions of the factors of political instability and terrorism. This will show the country's score on the combined index range from -2.5 to 2.5. (WB)

Government Effectiveness estimation: A measure of government efficiency captures standards of public and private services. The credibility of the government depends on the commitment to public and private services. This will illustrate the country's score on the combined index range from -2.5 to 2.5. (WB)

Control of Corruption estimation: A measure to control corruption indicates perceptions of the extent to which public power is used for personal matters. This will reflect the country's score on the combined index range from -2.5 to 2.5. (WB)

### **3.3 Time Trends of Selected Variables**

This study investigates the link between financial development and growth in gross domestic product in two emerging economies namely, Brazil and Turkey and compares them with two upper middle income countries namely Hungary and Poland.

These four countries are somewhat comparable, according to level of income and size of geographical area (see World Bank World Development Indicators). The Turkish economy has become successful by adopting a sound financial system. After the crisis in 2001 and with IMF financial assistance (see Erinç Yeldan & Ünüvar, 2016), a new financial structure was built and made a remarkable change in the economy. Also, Brazil has a sound financial system and the performance of business services and finance has been magnificent as is the case of Hungary and Poland.

Their financial development and the differences between these countries are shown in the figure below.

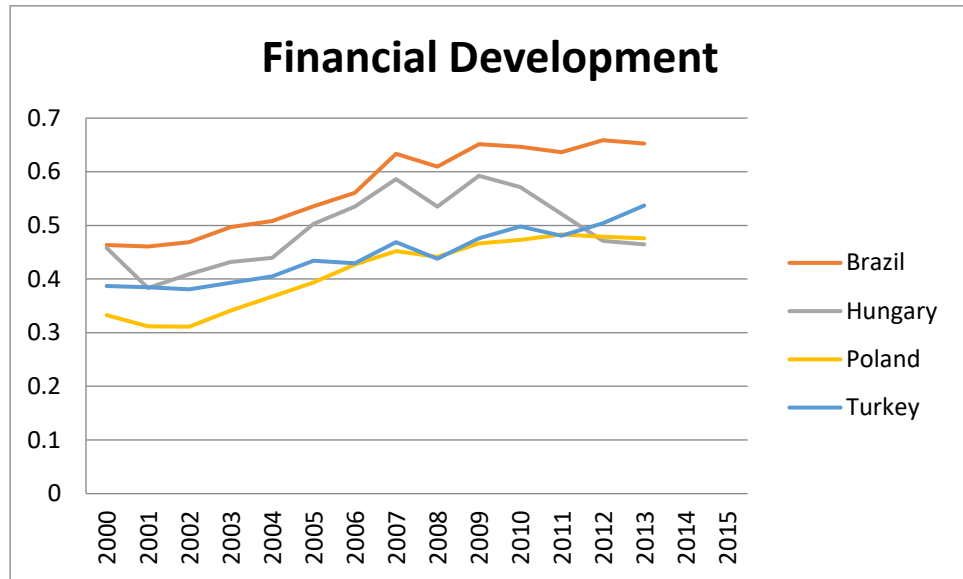
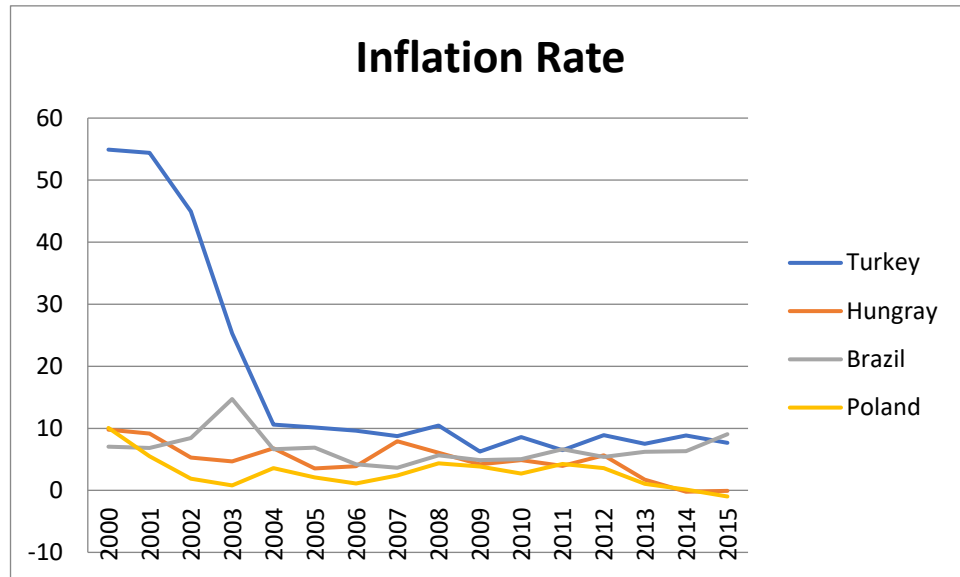


Figure 3.2 Financial Development in Turkey, Poland, Hungary and Brazil from 2000-2015

Since the crisis in 2001, the performance of the Turkish economy has been magnificent. For instance, the inflation rate has fallen to less than 10 % during the last fifteen years, while it was more than 10 % before. Whilst in Brazil, inflation was less than 10% from 2000 till 2001 and reached in the range of 15 % in 2002-2003. After this rise, performance became normal in 2004 - 2006 (see Barbosa-Filho, 2008). As for Hungary, the inflation rate decreased from 5.3 % to 3.6 % between 2004-2006 (see States et al., 2006). In the Polish economy, the inflation rate is very low and the National Bank of Poland aims to keep the inflation rate at 2.5 %.

The following chart illustrates the inflation rate (consumer prices) for the four countries.



*Figure 3.3 Inflation Rate in Turkey, Poland, Hungary and Brazil from 2000-2015*

In addition, their foreign trade has become more open than before, and the volume of Turkish exports to the Middle East increased from 11% in 2001 to 35 % in 2013, while the volume of Turkish exports to the EU during this period was around 60%. This is similar to Brazil, which has immense natural resources. According to Baer (see Baer, 2001, 2008) Brazil has many different resources of various types, such as iron, coal ,and copper. In 2004, more than 60 % of Brazil’s exports consisted of industrial products. On the other hand and according to the European Union dataset, the industrial sector has become the most important sector in Hungary’s economy, which means that trade has become more open than before. While in Poland the trade openness is not as strong as the other three countries mentioned above.

The chart below shows trade openness % of GDP for the four countries.

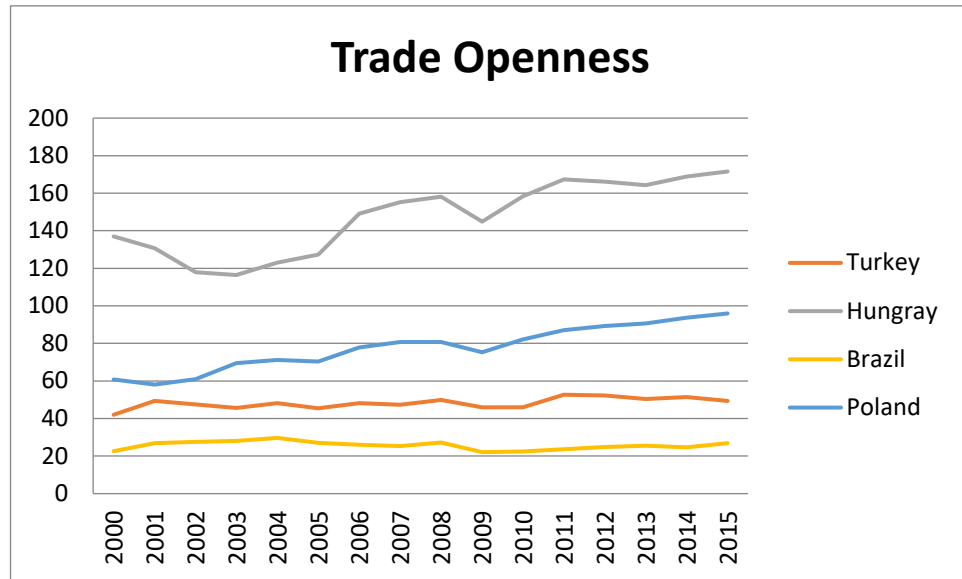


Figure 3.4 Trade Openness in Turkey, Poland, Hungary and Brazil from 2000-2015

The improvement in education in Turkey can be noticed through the Human Capital index, which has grown in a positive way in the last 10 years. The same thing applies for the other three countries; the Human Capital index improves and becomes higher than it was before. The human capital of the four countries, based upon years of education and returns to schooling, is demonstrated in the figure below for the four countries.

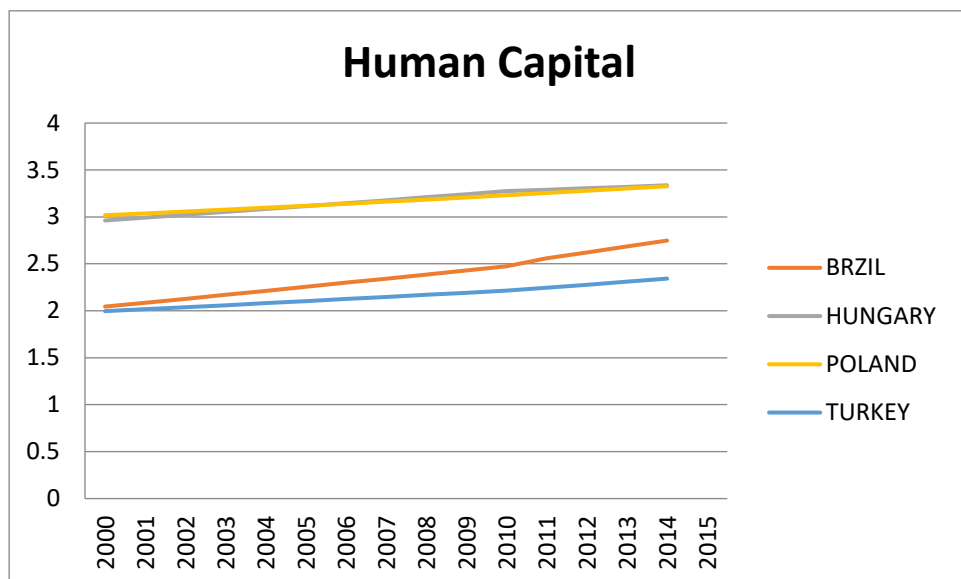


Figure 3.5 Human Capital in Turkey, Poland, Hungary and Brazil from 2000-2015

Finally, according to the World Bank, the Turkish economy is ranked as having the 13th largest GDP based on purchasing power parity (PPP), and the 17th for nominal GDP in the world's top 20 economies. As for the Brazilian economy, it is the biggest economy in Latin America, and one of the fastest growing economies in the world. Moreover, Brazil is a member of the BRICS countries. However, economic stagnation in 2015 moved Brazil from 7<sup>th</sup> to 9<sup>th</sup> rank in the world's top economies (see Parbleen, 2017). The Hungarian economy is improving, and it has become strong than before. Additionally, Hungary became a member of the European Union in 2004, and this had a massive impact on the country's economy, Also, it is a high income economy, and it is the 57<sup>th</sup> largest economy in the world. According to World Bank statistics, the Polish economy is the largest economy in Central Europe, and it is ranked as the eighth economy in Europe. Furthermore, the growth in GDP in 2016 was expected to rise up to 2.7 .The World Bank classified the Polish economy as a high income one , with the 23<sup>rd</sup> rank in the world (see Economy, Years, & Forecasts, 2017). According to World Bank statistics, the figure below shows the Gross Domestic Product Per Capita (GDPPC) for the four counties.



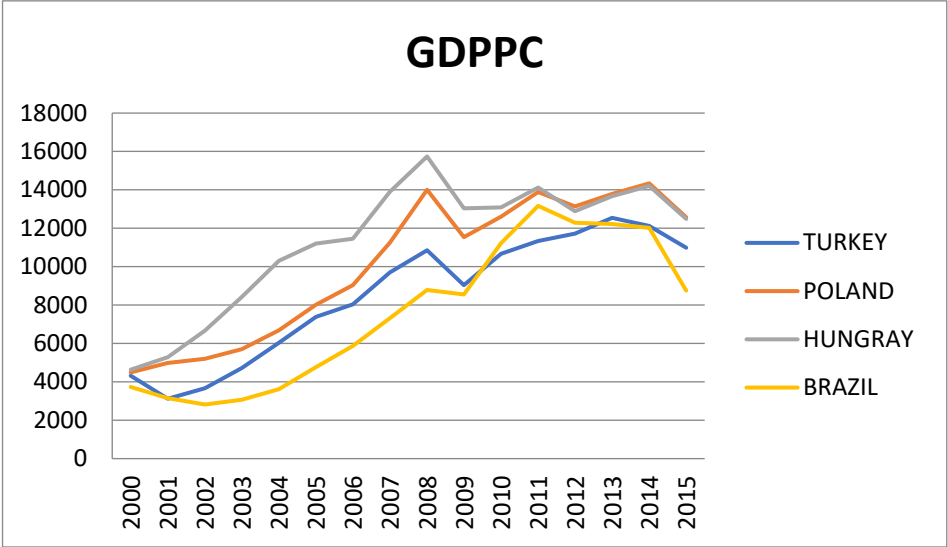


Figure 3.6 GDP PC in Turkey, Poland, Hungary and Brazil from 2000-2015

## CHAPTER 4

### . METHODOLOGY AND RESULTS

This part presents methodology and the estimation results of the models explaining the data analysis. In addition, correlations were calculated to examine the relationship between the variables. Also, the regression was run to analyze the research questions and to test the hypotheses.

#### 4.1 Methodology

This research uses a standard approach to test the validity of the hypothesis of the study which investigates the effect of financial development on the growth of gross domestic product in the four countries. Moreover, this study compared two emerging economies with another two upper middle income countries namely Turkey, Brazil, Hungary and Poland; Panel data of the four countries (typically with cross-sectional and longitudinal method) is used. According to Baltagi and Hsiao (see Baltagi 2001 and Hsiao 2014) Panel data analysis is based on the error term ( $u_{it}$ ) which ingredients in terms of its time effects and individual. In doing so, and to analyze the link between financial development and growth gross domestic product, all of the four countries will be examined based on the upcoming model:

$$Y_{it} = \alpha_i + \beta_X X_{it} + \beta_Z Z_{it} + u_{it} \quad (1)$$

*Equation (1)*

In equation (1)  $Y$  is the dependent variable,  $X$  is the focus on the measure of the financial development, and  $Z$  is the control variables, where  $\alpha$  is the intercept and  $\beta$  is

the factor of coefficients. Data consist of observations for the four countries in the specified time periods ( $t = 2000$  to  $2015$ ), and  $u_{it}$  is the error term.

In doing so, and to analyze the Panel data, I will use Ordinary Least Squares (OLS) with Fixed Effects to analyze the Panel dataset for the four countries. Ordinary Least Squares (OLS) is used to estimate the parameters of the relationship between financial development and growth in national income from statistical observations. Furthermore, it is the technique which is going to estimate a line that will minimize the sum of the squares and the error term. (see Craven & Islam, 2011) Fixed Effects (FE) is used to analyze the impact of variables that change over time for all countries. To explore the link between financial development and growth in national income, the study assumes that something within the country may impact the independent variables. Thus the FE controls the effect of over time changeable factors, which make a clear way to get the net effect of independent variables on the dependent variable. (see Baltagi 2008).

In order to determine the effect of financial development on growth in gross domestic product per capita for the four countries, estimations have been run for a Panel dataset. Firstly, the estimations go through the alternative financial development indicators then the financial development over all to get trustworthy results. Table (1) reveals the outcomes of the estimations about the effect of the Private Credit indicator on the growth in gross domestic product per capita by employing the Fixed Effects (FE) with Ordinary Least Squares (OLS) estimators described above. The analysis was carried out with two information sets; the first one contains changes in the level of income and is indicated by *loggdppc* and the second one obtains financial openness, openness to trade, terms to trade, the interaction between the openness to trade and, terms to trade, hc, z-score, inflation, exchange rate aboard, vitality index, and regulatory quality. The results

indicate that the Private Credit indicator has a positive and significant coefficient on growth in gross domestic product per capita over the given period for the four countries, which favors the study of Levin 2000. Table 2 shows the estimation between the Domestic Credit indicator and growth in gross domestic product per capita with the same information set, and the outcomes reveal that the Domestic Credit index has a positive significant effect on growth in gross domestic product per capita for the four countries over the given period. Table 3 presents the estimation between Stock Market Capitalization and growth in gross domestic product per capita by using the same information set and, the results show that the Stock Market Capitalization indicator has a positive significant impact on the growth in gross domestic product per capita for all samples. Table 4 shows estimation about the effect of the Credit to Government on the growth in gross domestic product per capita, and the results show that the Credit to Government has a negative significant effect upon the growth in gross domestic product per capita in the four countries, which favors the concept of Crowding out in an economy. Moreover, when the government increases its borrowing this might lead to increases in the interest rate, and consequently will affect the economy. See (Devereux, 1989) and (Carlson & Spencer, 1973).

The estimation about the effect of Lerner index on the growth in gross domestic product per capita is illustrated by Table 5, and the results show that the Lerner index has a positive impact on the growth in gross domestic product per capita in the four countries. Also, Table 6 presents the estimation about the effect of Boone Indicator on the growth in gross domestic product per capita, and the outcomes show that the Boone Indicator has positive impact on the growth in gross domestic product per capita in the four countries.

Table 7 describes the estimation about the effect of Financial Institutions on the growth in gross domestic product per capita, and the results indicate that the Financial Institution has a positive significant impact on growth in gross domestic product per capita in the four countries. On the other hand, the estimation about the effect of Financial Markets on the growth in economy is shown by Table 8, and the outcome reveals that the effect of Financial Markets on growth in gross domestic product per capita in the four countries is not clear.

Table 9 shows the estimation about the effect of Financial Development over all for the four countries on the growth in gross domestic product per capita, and the results reveal that Financial Development has a positive impact on growth in gross domestic product per capita in the four countries.

#### **4.2 Difference Between the Four Countries**

Concerning difference among the four countries, Table 10 shows the effect of Financial Institutions on GDP per capita, and it is significant for all countries, but this effect is strongest on Turkey first, then on Poland, then on Brazil and, finally on Hungary. Also, the difference in impact of Financial Development on GDP per capita between the four countries is illustrated by Table 11; it is significant for all countries, while the highest effect is on Turkey, then on Poland, Hungary and Brazil respectively. Also the study has run the same estimations for other indexes, private credit in Table 12, domestic credit in Table 13, and stock market capitalization in Table 14, and the results show that the indicators have the largest impact in Turkey first, then Poland, then Hungary and finally in Brazil.

**Table 4.1** - The estimation about the effect of the privet credit on the growth in GDPP-PC

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
privcrdt	0.0116*** (0.00108)	0.0141*** (0.000997)	0.00980*** (0.00192)	0.00951*** (0.00176)	0.00303* (0.00179)	0.00387** (0.00185)	0.00318 (0.00195)	0.00296 (0.00178)
finopen	0.417*** (0.118)	0.412*** (0.0970)	0.228* (0.116)	0.203* (0.106)	0.280*** (0.0906)	0.265*** (0.0898)	0.283*** (0.0933)	0.191** (0.0902)
tradeopen	0.00753*** (0.00130)	-0.0290*** (0.00696)	-0.0213*** (0.00738)	-0.0173** (0.00688)	-0.0181*** (0.00544)	-0.0186*** (0.00537)	-0.0182*** (0.00552)	-0.0255*** (0.00555)
termoftred	0.000128 (0.00208)	-0.0133*** (0.00304)	-0.0160*** (0.00327)	-0.0124*** (0.00320)	-0.0120*** (0.00250)	-0.0114*** (0.00250)	-0.0119*** (0.00255)	-0.0177*** (0.00299)
c.tradeopen#c.termoftred		0.000363*** (6.82e-05)	0.000255*** (7.61e-05)	0.000225*** (7.04e-05)	0.000232*** (5.61e-05)	0.000235*** (5.53e-05)	0.000233*** (5.70e-05)	0.000307*** (5.71e-05)
hc			0.747*** (0.252)	0.580** (0.217)	1.202*** (0.218)	1.150*** (0.217)	1.181*** (0.242)	1.168*** (0.220)
inf				-0.00416*** (0.00128)	-0.00391*** (0.00117)	-0.00337*** (0.00121)	-0.00387*** (0.00120)	-0.00252** (0.00118)
rquest					0.525*** (0.0893)	0.488*** (0.0913)	0.523*** (0.0909)	0.542*** (0.0831)
z_score						0.0100 (0.00655)		
vix							-0.000291 (0.00137)	-0.00128 (0.00129)
reer_broad								0.00424*** (0.00136)
Constant	8.376*** (0.241)	9.676*** (0.314)	8.413*** (0.534)	8.487*** (0.490)	6.676*** (0.504)	6.668*** (0.496)	6.723*** (0.554)	7.026*** (0.515)
Observations	64	64	60	60	56	56	56	56
R-squared	0.881	0.921	0.926	0.939	0.961	0.963	0.961	0.968
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.1** - The estimation about the effect of the domestic credit on the growth in GDPP-PC

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc
domecrd	0.0113*** (0.000880)	0.0126*** (0.000835)	0.00961*** (0.00142)	0.00931*** (0.00129)	0.00466*** (0.00137)	0.00461*** (0.00137)	0.00480*** (0.00143)	0.00409*** (0.00135)
finopen	0.459*** (0.102)	0.484*** (0.0904)	0.310*** (0.104)	0.283*** (0.0946)	0.311*** (0.0829)	0.306*** (0.0833)	0.319*** (0.0860)	0.236*** (0.0855)
tradeopen	0.00724*** (0.00115)	-0.0182*** (0.00629)	-0.0157** (0.00606)	-0.0121** (0.00557)	-0.0168*** (0.00470)	-0.0165*** (0.00472)	-0.0167*** (0.00475)	-0.0228*** (0.00494)
termoftred	0.00272 (0.00177)	-0.00602** (0.00265)	-0.0111*** (0.00296)	-0.00782*** (0.00283)	-0.00984*** (0.00234)	-0.00949*** (0.00238)	-0.00963*** (0.00242)	-0.0149*** (0.00294)
c.tradeopen#c.termoftred		0.000253*** (6.19e-05)	0.000196*** (6.14e-05)	0.000169*** (5.60e-05)	0.000218*** (4.76e-05)	0.000215*** (4.80e-05)	0.000218*** (4.81e-05)	0.000279*** (4.99e-05)
hc			0.682*** (0.210)	0.528*** (0.194)	1.004*** (0.184)	1.027*** (0.187)	0.979*** (0.196)	1.028*** (0.183)
inf				-0.00396*** (0.00113)	-0.00387*** (0.00108)	-0.00360*** (0.00112)	-0.00380*** (0.00110)	-0.00268*** (0.00110)
rquest					0.441*** (0.0834)	0.436*** (0.0837)	0.439*** (0.0842)	0.475*** (0.0795)
z_score						0.00508 (0.00585)		
vix							-0.000474 (0.00120)	-0.00121 (0.00115)
reer_broad								0.00359*** (0.00130)
Constant	8.128*** (0.206)	8.973*** (0.275)	8.075*** (0.381)	8.149*** (0.345)	6.967*** (0.364)	6.840*** (0.393)	7.010*** (0.384)	7.150*** (0.361)
Observations	64	64	60	60	56	56	56	56
R-squared	0.907	0.928	0.941	0.953	0.967	0.968	0.967	0.972
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.2** - The estimation about the effect of the stock market capitalization on the growth in GDPP-PC

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
stockmart	0.00259 (0.00258)	0.00229 (0.00268)	0.00406*** (0.00138)	0.00364*** (0.00131)	0.00329*** (0.000777)	0.00349*** (0.000849)	0.00342*** (0.000783)	0.00281*** (0.000927)
finopen	0.958*** (0.195)	0.946*** (0.198)	0.102 (0.136)	0.0883 (0.128)	0.240*** (0.0795)	0.240*** (0.0801)	0.217** (0.0815)	0.189** (0.0843)
tradeopen	0.0112*** (0.00220)	0.0169 (0.0133)	-0.00768 (0.00752)	-0.00390 (0.00726)	-0.0188*** (0.00452)	-0.0192*** (0.00460)	-0.0193*** (0.00453)	-0.0218*** (0.00495)
termoftred	0.00810** (0.00340)	0.0100* (0.00558)	-0.0171*** (0.00380)	-0.0135*** (0.00385)	-0.0138*** (0.00223)	-0.0142*** (0.00234)	-0.0143*** (0.00227)	-0.0164*** (0.00282)
c.tradeopen#c.termoftred		-5.79e-05 (0.000134)	9.26e-05 (7.48e-05)	6.53e-05 (7.15e-05)	0.000232*** (4.56e-05)	0.000237*** (4.66e-05)	0.000237*** (4.56e-05)	0.000263*** (5.00e-05)
hc			1.801*** (0.167)	1.610*** (0.173)	1.541*** (0.103)	1.529*** (0.105)	1.566*** (0.105)	1.542*** (0.106)
inf				-0.00399** (0.00151)	-0.00331*** (0.00103)	-0.00347*** (0.00107)	-0.00347*** (0.00104)	-0.00297** (0.00111)
rquest					0.599*** (0.0623)	0.602*** (0.0630)	0.587*** (0.0629)	0.597*** (0.0631)
z_score						-0.00376 (0.00604)		
vix							0.00127 (0.00110)	0.000684 (0.00120)
reer_broad								0.00184 (0.00151)
Constant	7.425*** (0.392)	7.250*** (0.565)	6.179*** (0.304)	6.304*** (0.291)	5.980*** (0.175)	6.070*** (0.228)	5.953*** (0.176)	6.098*** (0.211)
Observations	64	64	60	60	56	56	56	56
R-squared	0.637	0.639	0.904	0.916	0.971	0.971	0.971	0.972
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



**Table 3.4** - The estimation about the effect of the credit to government on the growth in GDPP-PC

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
crdgv	-0.0208*** (0.00574)	-0.0206*** (0.00582)	-0.0111*** (0.00365)	-0.0106*** (0.00341)	-0.00468* (0.00244)	-0.00467 (0.00282)	-0.00501* (0.00249)	-0.00398* (0.00233)
finopen	1.086*** (0.165)	1.072*** (0.172)	0.361** (0.142)	0.328** (0.133)	0.357*** (0.0950)	0.357*** (0.0993)	0.346*** (0.0964)	0.247** (0.0955)
tradeopen	0.0124*** (0.00203)	0.0162 (0.0118)	-0.00246 (0.00734)	0.00105 (0.00697)	-0.0136** (0.00508)	-0.0136** (0.00514)	-0.0138*** (0.00511)	-0.0211*** (0.00535)
termoftred	0.0106*** (0.00310)	0.0118** (0.00486)	-0.0115*** (0.00385)	-0.00802** (0.00379)	-0.0102*** (0.00257)	-0.0102*** (0.00260)	-0.0104*** (0.00259)	-0.0162*** (0.00311)
c.tradeopen#c.termoftred		-3.94e-05 (0.000118)	5.35e-05 (7.29e-05)	2.91e-05 (6.86e-05)	0.000185*** (5.10e-05)	0.000185*** (5.16e-05)	0.000187*** (5.13e-05)	0.000260*** (5.37e-05)
hc			1.602*** (0.177)	1.408*** (0.179)	1.440*** (0.123)	1.441*** (0.133)	1.453*** (0.124)	1.432*** (0.115)
inf				-0.00427*** (0.00148)	-0.00397*** (0.00116)	-0.00397*** (0.00124)	-0.00411*** (0.00118)	-0.00282** (0.00118)
rquest					0.574*** (0.0742)	0.574*** (0.0752)	0.563*** (0.0760)	0.584*** (0.0706)
z_score						6.90e-05 (0.00727)		
vix							0.000978 (0.00127)	-9.55e-05 (0.00123)
reer_broad								0.00398*** (0.00137)
Constant	7.566*** (0.358)	7.445*** (0.511)	6.294*** (0.310)	6.430*** (0.293)	6.020*** (0.209)	6.018*** (0.292)	6.006*** (0.210)	6.320*** (0.223)
Observations	64	64	60	60	56	56	56	56
R-squared	0.701	0.702	0.904	0.918	0.962	0.962	0.962	0.969
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.5** - the estimation about the effect of the Lerner index on the growth in GDPP-PC

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
lerind	0.256 (0.255)	0.240 (0.258)	0.463*** (0.148)	0.349** (0.158)	0.109 (0.113)	0.0758 (0.136)	0.117 (0.114)	0.0569 (0.107)
finopen	0.960*** (0.194)	0.939*** (0.199)	0.143 (0.132)	0.138 (0.129)	0.286*** (0.0926)	0.286*** (0.0934)	0.275*** (0.0958)	0.189** (0.0929)
tradeopen	0.0108*** (0.00220)	0.0182 (0.0130)	-0.00654 (0.00739)	-0.00322 (0.00746)	-0.0155*** (0.00524)	-0.0151*** (0.00536)	-0.0158*** (0.00530)	-0.0228*** (0.00544)
termoftred	0.00865** (0.00337)	0.0110** (0.00536)	-0.0147*** (0.00368)	-0.0121*** (0.00387)	-0.0119*** (0.00257)	-0.0115*** (0.00271)	-0.0121*** (0.00263)	-0.0177*** (0.00307)
c.tradeopen#c.termoftred		-7.41e-05 (0.000130)	8.40e-05 (7.36e-05)	5.78e-05 (7.34e-05)	0.000200*** (5.28e-05)	0.000195*** (5.42e-05)	0.000202*** (5.34e-05)	0.000273*** (5.49e-05)
hc			1.709*** (0.167)	1.586*** (0.178)	1.516*** (0.120)	1.527*** (0.124)	1.529*** (0.124)	1.489*** (0.115)
inf				-0.00303* (0.00168)	-0.00357*** (0.00125)	-0.00349*** (0.00128)	-0.00364*** (0.00127)	-0.00249* (0.00124)
rquest					0.597*** (0.0757)	0.598*** (0.0765)	0.589*** (0.0775)	0.613*** (0.0719)
z_score						0.00348 (0.00785)		
vix							0.000707 (0.00131)	-0.000417 (0.00126)
reer_broad								0.00419*** (0.00143)
Constant	7.419*** (0.392)	7.195*** (0.557)	6.169*** (0.301)	6.244*** (0.297)	5.914*** (0.205)	5.829*** (0.283)	5.899*** (0.209)	6.248*** (0.226)
Observations	64	64	60	60	56	56	56	56
R-squared	0.637	0.640	0.905	0.911	0.959	0.960	0.960	0.967
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.6** - The estimation about the effect of the Boone indicator on the growth in GDPP-PC

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
booneind	0.155** (0.0695)	0.158** (0.0698)	0.0796 (0.0536)	0.0768 (0.0502)	0.146 (0.0906)	0.168* (0.0916)	0.157* (0.0924)	0.115 (0.0867)
finopen	0.944*** (0.179)	0.906*** (0.185)	0.172 (0.141)	0.147 (0.132)	0.201* (0.108)	0.179 (0.109)	0.180 (0.113)	0.120 (0.106)
tradeopen	0.0111*** (0.00212)	0.0213* (0.0125)	-0.00322 (0.00782)	0.000484 (0.00744)	-0.0124** (0.00530)	-0.0117** (0.00530)	-0.0125** (0.00534)	-0.0203*** (0.00563)
termoftred	0.00841** (0.00326)	0.0117** (0.00515)	-0.0146*** (0.00394)	-0.0108*** (0.00393)	-0.0111*** (0.00252)	-0.0104*** (0.00255)	-0.0113*** (0.00256)	-0.0170*** (0.00307)
c.tradeopen#c.termoftred		-0.000103 (0.000125)	4.70e-05 (7.76e-05)	2.18e-05 (7.33e-05)	0.000166*** (5.41e-05)	0.000156*** (5.42e-05)	0.000166*** (5.44e-05)	0.000246*** (5.75e-05)
hc			1.787*** (0.177)	1.575*** (0.182)	1.507*** (0.118)	1.535*** (0.119)	1.524*** (0.121)	1.488*** (0.113)
inf				-0.00446*** (0.00158)	-0.00640*** (0.00193)	-0.00633*** (0.00192)	-0.00671*** (0.00199)	-0.00469** (0.00197)
rquest					0.552*** (0.0821)	0.532*** (0.0830)	0.539*** (0.0845)	0.571*** (0.0789)
z_score						0.00810 (0.00644)		
vix							0.000904 (0.00129)	-0.000190 (0.00125)
reer_broad								0.00402*** (0.00140)
Constant	7.484*** (0.380)	7.171*** (0.536)	6.057*** (0.319)	6.212*** (0.304)	5.987*** (0.209)	5.817*** (0.247)	5.973*** (0.211)	6.292*** (0.224)
Observations	64	64	60	60	56	56	56	56
R-squared	0.661	0.665	0.891	0.907	0.961	0.962	0.961	0.968
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.7** - The estimation about the effect of the financial institutions on the growth in GDPP-PC

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	loggdppc	loggdppc	loggdppc	loggdppc	loggdppc	loggdppc	loggdppc	loggdppc
FI	2.747*** (0.202)	2.754*** (0.206)	1.887*** (0.256)	1.791*** (0.255)	1.066*** (0.245)	1.028*** (0.251)	1.068*** (0.250)	0.949*** (0.227)
finopen	0.197* (0.104)	0.202* (0.106)	0.0161 (0.0972)	0.0225 (0.0950)	0.162* (0.0820)	0.157* (0.0826)	0.162* (0.0841)	0.0946 (0.0784)
tradeopen	0.00265** (0.00116)	0.000862 (0.00631)	-0.00458 (0.00541)	-0.00293 (0.00536)	-0.0106** (0.00443)	-0.0103** (0.00447)	-0.0106** (0.00449)	-0.0169*** (0.00448)
termoftred	0.00139 (0.00152)	0.000815 (0.00251)	-0.00857*** (0.00293)	-0.00704** (0.00298)	-0.00886*** (0.00237)	-0.00865*** (0.00240)	-0.00885*** (0.00243)	-0.0138*** (0.00267)
c.tradeopen#c.termoftred		1.87e-05 (6.49e-05)	5.11e-05 (5.47e-05)	4.15e-05 (5.37e-05)	0.000133*** (4.55e-05)	0.000129*** (4.60e-05)	0.000133*** (4.61e-05)	0.000199*** (4.62e-05)
hc			0.937*** (0.204)	0.866*** (0.203)	1.135*** (0.175)	1.171*** (0.182)	1.134*** (0.180)	1.126*** (0.162)
inf				-0.00201* (0.00111)	-0.00243** (0.00101)	-0.00223** (0.00105)	-0.00242** (0.00104)	-0.00144 (0.000983)
rquest					0.423*** (0.0756)	0.425*** (0.0761)	0.423*** (0.0768)	0.454*** (0.0696)
z_score						0.00421 (0.00548)		
vix							-4.50e-05 (0.00108)	-0.000791 (0.000996)
reer_broad								0.00371*** (0.00115)
Constant	7.803*** (0.174)	7.850*** (0.241)	6.956*** (0.280)	7.004*** (0.275)	6.405*** (0.249)	6.277*** (0.301)	6.407*** (0.256)	6.671*** (0.244)
Observations	56	56	56	56	52	52	52	52
R-squared	0.929	0.929	0.951	0.955	0.971	0.972	0.971	0.978
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.4-** The estimation about the effect of the financial markets on the growth in GDPP-PC

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	loggppc	loggppc	loggppc	loggppc	loggppc	loggppc	loggppc	loggppc
FM	0.515 (0.377)	0.533 (0.450)	-0.232 (0.267)	-0.156 (0.259)	0.202 (0.185)	0.135 (0.195)	0.198 (0.188)	0.0219 (0.180)
finopen	1.008*** (0.183)	1.009*** (0.186)	0.0555 (0.142)	0.0645 (0.137)	0.230** (0.0994)	0.211** (0.101)	0.222** (0.102)	0.116 (0.0990)
tradeopen	0.00921*** (0.00228)	0.00802 (0.0161)	-0.00152 (0.00917)	0.000116 (0.00884)	-0.0165** (0.00632)	-0.0147** (0.00655)	-0.0165** (0.00638)	-0.0205*** (0.00594)
termoftred	0.00596* (0.00348)	0.00552 (0.00684)	-0.0150*** (0.00439)	-0.0122*** (0.00441)	-0.0135*** (0.00289)	-0.0125*** (0.00302)	-0.0136*** (0.00292)	-0.0181*** (0.00303)
c.tradeopen#c.termoftred		1.23e-05 (0.000164)	1.43e-05 (9.32e-05)	1.08e-05 (8.95e-05)	0.000200*** (6.58e-05)	0.000178** (6.89e-05)	0.000199*** (6.65e-05)	0.000239*** (6.17e-05)
hc			2.103*** (0.210)	1.864*** (0.229)	1.616*** (0.159)	1.665*** (0.165)	1.624*** (0.162)	1.597*** (0.147)
inf				-0.00350** (0.00158)	-0.00346*** (0.00119)	-0.00302** (0.00126)	-0.00354*** (0.00121)	-0.00214* (0.00119)
rquest					0.614*** (0.0802)	0.601*** (0.0812)	0.609*** (0.0824)	0.604*** (0.0747)
z_score						0.00716 (0.00674)		
vix							0.000507 (0.00128)	-0.000399 (0.00120)
reer_broad								0.00443*** (0.00145)
Constant	7.580*** (0.378)	7.614*** (0.590)	5.524*** (0.395)	5.779*** (0.396)	5.827*** (0.263)	5.602*** (0.337)	5.815*** (0.267)	6.092*** (0.259)
Observations	56	56	56	56	52	52	52	52
R-squared	0.668	0.668	0.895	0.906	0.959	0.960	0.959	0.967
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.5** - The estimation about the effect of the financial development on the growth in GDPP-PC

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc
FD	2.165*** (0.387)	2.460*** (0.418)	0.807** (0.382)	0.799** (0.363)	0.635** (0.246)	0.580** (0.262)	0.629** (0.250)	0.429* (0.243)
finopen	0.563*** (0.166)	0.564*** (0.163)	0.0613 (0.137)	0.0686 (0.130)	0.229** (0.0918)	0.221** (0.0933)	0.225** (0.0946)	0.144 (0.0926)
tradeopen	0.00537*** (0.00193)	-0.0141 (0.0117)	-0.0124 (0.00829)	-0.00924 (0.00800)	-0.0181*** (0.00537)	-0.0173*** (0.00555)	-0.0181*** (0.00544)	-0.0226*** (0.00530)
termoftred	0.000860 (0.00278)	-0.00604 (0.00491)	-0.0177*** (0.00387)	-0.0142*** (0.00396)	-0.0131*** (0.00253)	-0.0127*** (0.00263)	-0.0132*** (0.00258)	-0.0176*** (0.00289)
c.tradeopen#c.termoftred		0.000199* (0.000118)	0.000127 (8.43e-05)	0.000109 (8.06e-05)	0.000216*** (5.54e-05)	0.000206*** (5.78e-05)	0.000216*** (5.61e-05)	0.000262*** (5.47e-05)
hc			1.718*** (0.250)	1.494*** (0.255)	1.415*** (0.173)	1.453*** (0.184)	1.421*** (0.177)	1.435*** (0.164)
inf				-0.00360** (0.00150)	-0.00326*** (0.00111)	-0.00303** (0.00117)	-0.00330*** (0.00114)	-0.00224* (0.00113)
rquest					0.576*** (0.0732)	0.574*** (0.0739)	0.574*** (0.0750)	0.591*** (0.0699)
z_score						0.00413 (0.00639)		
vix							0.000273 (0.00121)	-0.000453 (0.00115)
reer_broad								0.00375** (0.00138)
Constant	7.797*** (0.301)	8.335*** (0.434)	6.316*** (0.425)	6.507*** (0.413)	6.140*** (0.275)	6.000*** (0.351)	6.131*** (0.281)	6.332*** (0.271)
Observations	56	56	56	56	52	52	52	52
R-squared	0.791	0.803	0.903	0.914	0.964	0.964	0.964	0.970
Number of country	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6.10** - The difference between Turkey, Brazil, Hungary, Poland in terms of to the impact of financial institution on growth in GDPPC.

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
BRAZIL .FI	-1.202* (0.617)	-1.200* (0.635)	-3.119*** (0.469)	-3.038*** (0.505)	-1.866** (0.700)	-2.039*** (0.715)	-1.903** (0.709)	-1.797*** (0.600)
HUNGARY .FI	-1.218** (0.547)	-1.215** (0.589)	-1.570*** (0.378)	-1.516*** (0.399)	-1.078** (0.483)	-1.163** (0.487)	-1.120** (0.492)	-1.286*** (0.417)
PLPLAND .FI	-0.980*** (0.316)	-0.980*** (0.321)	-0.0571 (0.234)	0.00968 (0.277)	0.119 (0.282)	0.0212 (0.294)	0.141 (0.286)	0.0871 (0.241)
FI	3.280*** (0.262)	3.281*** (0.269)	1.352*** (0.294)	1.281*** (0.334)	0.981*** (0.359)	1.029*** (0.361)	0.940** (0.369)	0.852*** (0.310)
finopen	0.213* (0.110)	0.213* (0.112)	0.124* (0.0719)	0.125* (0.0726)	0.184** (0.0794)	0.172** (0.0798)	0.179** (0.0805)	0.119* (0.0702)
tradeopen	0.00473*** (0.00141)	0.00464 (0.00683)	0.00479 (0.00435)	0.00503 (0.00442)	-0.00119 (0.00514)	-0.000468 (0.00516)	-0.000936 (0.00520)	-0.00677 (0.00464)
termoftred	0.00462* (0.00247)	0.00459 (0.00357)	-0.000932 (0.00237)	-0.000890 (0.00240)	-0.00394 (0.00278)	-0.00321 (0.00285)	-0.00401 (0.00281)	-0.00906*** (0.00274)
tradeopen# termoftred		9.56e-07 (6.71e-05)	-5.07e-05 (4.32e-05)	-5.27e-05 (4.39e-05)	2.43e-05 (5.40e-05)	1.55e-05 (5.43e-05)	2.14e-05 (5.47e-05)	8.65e-05* (4.91e-05)
hc			1.663*** (0.206)	1.657*** (0.208)	1.518*** (0.214)	1.565*** (0.218)	1.550*** (0.223)	1.509*** (0.184)
inf				-0.000461 (0.000994)	-0.00141 (0.00119)	-0.000844 (0.00128)	-0.00152 (0.00121)	-0.000489 (0.00104)
rquest					0.225** (0.0969)	0.213** (0.0972)	0.217** (0.0988)	0.250*** (0.0833)
z_score						0.00593 (0.00529)		
vix							0.000604 (0.00102)	
reer_broad								0.00374*** (0.000985)
Constant	7.525*** (0.211)	7.528*** (0.293)	5.233*** (0.340)	5.252*** (0.345)	5.554*** (0.362)	5.352*** (0.403)	5.502*** (0.375)	5.812*** (0.317)
Observations	56	56	56	56	52	52	52	52
R-squared	0.943	0.943	0.977	0.977	0.978	0.978	0.978	0.984
Number of COUNTRY_NEW	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.11** - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of financial development on growth in GDPPC.

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
BRAZIL.FD	-3.709*** (0.700)	-3.722*** (0.699)	-3.169*** (0.443)	-2.836*** (0.507)	-1.376** (0.614)	-1.367** (0.621)	-1.483** (0.619)	-1.485*** (0.540)
HUNGARY.FD	-4.757*** (0.591)	-4.990*** (0.633)	-2.893*** (0.470)	-2.593*** (0.518)	-1.816*** (0.601)	-1.822*** (0.608)	-1.898*** (0.604)	-1.681*** (0.529)
POLAND.FD	-2.296*** (0.601)	-2.240*** (0.603)	-0.535 (0.430)	-0.212 (0.491)	0.165 (0.454)	0.210 (0.469)	0.152 (0.452)	0.228 (0.399)
FD	5.026*** (0.498)	4.935*** (0.505)	2.496*** (0.431)	2.184*** (0.489)	1.453*** (0.508)	1.466*** (0.514)	1.487*** (0.507)	1.208** (0.452)
finopen	0.466*** (0.111)	0.463*** (0.111)	0.165** (0.0784)	0.163** (0.0778)	0.258*** (0.0753)	0.264*** (0.0773)	0.242*** (0.0763)	0.167** (0.0712)
tradeopen	0.00795*** (0.00141)	0.0171* (0.00899)	0.00861 (0.00572)	0.00930 (0.00570)	0.000544 (0.00600)	0.000444 (0.00607)	0.00127 (0.00602)	-0.00460 (0.00548)
termoftred	0.00605** (0.00259)	0.00910** (0.00393)	-0.00146 (0.00277)	-0.00112 (0.00276)	-0.00460 (0.00285)	-0.00471 (0.00289)	-0.00441 (0.00285)	-0.00901*** (0.00281)
tradeopen# termoftred		-9.25e-05 (8.95e-05)	-7.70e-05 (5.61e-05)	-8.29e-05 (5.58e-05)	-2.38e-05 (6.06e-05)	2.54e-05 (6.13e-05)	1.56e-05 (6.08e-05)	7.22e-05 (5.51e-05)
Hc			1.450*** (0.174)	1.421*** (0.174)	1.288*** (0.163)	1.265*** (0.173)	1.311*** (0.164)	1.357*** (0.145)
Inf				-0.00140 (0.00106)	-0.00236** (0.00111)	-0.00253** (0.00118)	-0.00245** (0.00111)	-0.00147 (0.00101)
Rqest					0.308*** (0.0904)	0.305*** (0.0916)	0.283*** (0.0929)	0.310*** (0.0795)
z_score						-0.00248 (0.00549)		
Vix							0.00109 (0.000985)	
reer_broad								0.00359*** (0.00104)
Constant	7.113*** (0.258)	6.873*** (0.347)	5.346*** (0.285)	5.427*** (0.289)	5.791*** (0.268)	5.869*** (0.322)	5.728*** (0.273)	5.902*** (0.238)
Observations	56	56	56	56	52	52	52	52
R-squared	0.922	0.924	0.971	0.972	0.978	0.978	0.979	0.983
Number of COUNTRY_NEW	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



**Table 4.12** - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of private credit on growth in GDP

VARIABLES	(1) loggdppc	(2) loggdppc	(3) loggdppc	(4) loggdppc	(5) loggdppc	(6) loggdppc	(7) loggdppc	(8) loggdppc
BRAZIL .privcrdt	-0.00159 (0.00234)	-0.000839 (0.00224)	-0.0120*** (0.00308)	-0.00800*** (0.00269)	-0.00656** (0.00260)	-0.00620** (0.00285)	-0.00628** (0.00285)	-0.00930*** (0.00204)
HUNGARY .privcrdt	-0.0124*** (0.00191)	-0.00860*** (0.00233)	-0.00808*** (0.00194)	-0.00604*** (0.00166)	-0.00530*** (0.00175)	-0.00547*** (0.00176)	-0.00521*** (0.00181)	-0.00706*** (0.00137)
POLAND .privcrdt	0.00387* (0.00207)	0.00501** (0.00201)	0.00549*** (0.00170)	0.00765*** (0.00148)	0.00615*** (0.00153)	0.00586*** (0.00165)	0.00629*** (0.00165)	0.00444*** (0.00121)
privcrdt	0.0129*** (0.00115)	0.0135*** (0.00111)	0.00837*** (0.00133)	0.00789*** (0.00111)	0.00526*** (0.00138)	0.00567*** (0.00144)	0.00541*** (0.00151)	0.00464*** (0.00106)
finopen	0.488*** (0.0886)	0.476*** (0.0842)	0.238** (0.0900)	0.256*** (0.0747)	0.308*** (0.0782)	0.306*** (0.0783)	0.315*** (0.0842)	0.165** (0.0650)
tradeopen	0.00857*** (0.00105)	-0.0106 (0.00741)	0.00283 (0.00654)	0.000984 (0.00544)	-0.00269 (0.00534)	-0.00292 (0.00535)	-0.00305 (0.00559)	-0.00625 (0.00412)
termoftred	0.000175 (0.00239)	-0.00655* (0.00343)	0.000731 (0.00361)	0.000245 (0.00300)	-0.00162 (0.00289)	-0.00161 (0.00289)	-0.00176 (0.00298)	-0.00583** (0.00233)
tradeopen# termoftred		0.000183** (7.01e-05)	-4.49e-06 (6.63e-05)	2.46e-05 (5.52e-05)	6.51e-05 (5.45e-05)	6.87e-05 (5.47e-05)	6.93e-05 (5.78e-05)	9.89e-05** (4.20e-05)
hc			1.187*** (0.222)	0.868*** (0.196)	1.086*** (0.216)	1.049*** (0.220)	1.052*** (0.260)	1.279*** (0.168)
inf				-0.00403*** (0.000851)	-0.00382*** (0.000915)	-0.00354*** (0.000963)	-0.00382*** (0.000926)	-0.00198** (0.000773)
rquest					0.236*** (0.0794)	0.224*** (0.0805)	0.233*** (0.0810)	0.263*** (0.0608)
z_score						0.00475 (0.00504)		
vix							-0.000275 (0.00112)	
reer_broad								0.00465*** (0.000844)
Constant	8.331*** (0.238)	9.008*** (0.344)	5.876*** (0.650)	6.668*** (0.564)	6.169*** (0.584)	6.208*** (0.586)	6.265*** (0.707)	5.807*** (0.450)
Observations	64	64	60	60	56	56	56	56
R-squared	0.946	0.952	0.968	0.979	0.981	0.981	0.981	0.989
Number of COUNTRY_NEW	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4.13** - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of domestic credit on growth in GDPPC.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	loggppc	loggppc	loggppc	loggppc	loggppc	loggppc	loggppc	loggppc
BRAZIL .domecrd	0.00342 (0.00236)	0.00420* (0.00237)	-0.0173*** (0.00417)	-0.0118*** (0.00378)	-0.00772** (0.00357)	-0.00834** (0.00352)	-0.00861** (0.00383)	-0.0119*** (0.00310)
HUNGARY .domecrd	-0.0118*** (0.00212)	-0.00900*** (0.00268)	-0.00882*** (0.00219)	-0.00678*** (0.00193)	-0.00557*** (0.00185)	-0.00530*** (0.00182)	-0.00599*** (0.00196)	-0.00768*** (0.00160)
POLAND .domecrd	0.00162 (0.00165)	0.00218 (0.00166)	0.00277** (0.00136)	0.00450*** (0.00122)	0.00393*** (0.00112)	0.00495*** (0.00126)	0.00377*** (0.00115)	0.00235** (0.000989)
domecrd	0.0108*** (0.000946)	0.0110*** (0.000936)	0.00666*** (0.00119)	0.00631*** (0.00102)	0.00419*** (0.00107)	0.00403*** (0.00105)	0.00402*** (0.00111)	0.00340*** (0.000902)
finopen	0.566*** (0.0834)	0.574*** (0.0823)	0.225** (0.0910)	0.265*** (0.0783)	0.329*** (0.0788)	0.342*** (0.0776)	0.309*** (0.0847)	0.167** (0.0746)
tradeopen	0.00877*** (0.00104)	-0.00326 (0.00730)	0.00799 (0.00611)	0.00618 (0.00523)	-0.00129 (0.00498)	-0.00116 (0.00488)	-0.000372 (0.00520)	-0.00392 (0.00416)
termoftred	-0.000486 (0.00222)	-0.00475 (0.00337)	0.00454 (0.00358)	0.00363 (0.00306)	-0.000579 (0.00289)	-0.000449 (0.00283)	-0.000210 (0.00296)	-0.00417 (0.00252)
tradeopen# termoftred		0.000115 (6.90e-05)	-6.43e-05 (6.23e-05)	-3.43e-05 (5.36e-05)	4.95e-05 (5.18e-05)	4.60e-05 (5.08e-05)	3.90e-05 (5.45e-05)	7.31e-05* (4.32e-05)
hc			1.460*** (0.240)	1.107*** (0.221)	1.186*** (0.211)	1.168*** (0.207)	1.253*** (0.235)	1.451*** (0.185)
inf				-0.00372*** (0.000866)	-0.00386*** (0.000868)	-0.00446*** (0.000924)	-0.00387*** (0.000874)	-0.00211** (0.000817)
rquest					0.266*** (0.0685)	0.255*** (0.0675)	0.262*** (0.0692)	0.297*** (0.0570)
z_score						-0.00823 (0.00499)		
vix							0.000660 (0.000986)	
reer_broad								0.00411*** (0.000918)
Constant	8.386*** (0.222)	8.809*** (0.335)	4.969*** (0.690)	5.858*** (0.624)	5.854*** (0.576)	5.978*** (0.569)	5.665*** (0.645)	5.321*** (0.490)
Observations	64	64	60	60	56	56	56	56
R-squared	0.948	0.950	0.970	0.979	0.983	0.984	0.983	0.989
Number of COUNTRY_NEW	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

**Table 4.14** - The difference between Turkey, Brazil, Hungary, Poland in terms of the impact of stock market capitalization on growth in GDPPC.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc	loggdpcc
BRAZIL# .stockmart	-0.0297*** (0.00796)	-0.0290*** (0.00797)	-0.0133*** (0.00438)	-0.0102** (0.00440)	0.00174 (0.00302)	0.00163 (0.00303)	0.00158 (0.00306)	0.00309 (0.00326)
HUNGARY# .stockmart	-0.0278*** (0.00995)	-0.0339*** (0.0114)	-0.0179*** (0.00632)	-0.0150** (0.00618)	-0.00536 (0.00398)	-0.00557 (0.00400)	-0.00496 (0.00408)	-0.00266 (0.00468)
POLAND #.stockmart	-0.0152* (0.00891)	-0.0139 (0.00896)	-0.00555 (0.00474)	-0.00194 (0.00480)	0.00194 (0.00303)	0.00247 (0.00309)	0.00197 (0.00305)	0.00298 (0.00316)
stockmart	0.0261*** (0.00745)	0.0255*** (0.00746)	0.0146*** (0.00405)	0.0114*** (0.00413)	0.00234 (0.00274)	0.00259 (0.00277)	0.00245 (0.00278)	0.000505 (0.00321)
finopen	0.960*** (0.181)	0.900*** (0.189)	0.152 (0.129)	0.137 (0.123)	0.194** (0.0816)	0.197** (0.0819)	0.187** (0.0830)	0.164* (0.0857)
tradeopen	0.00960*** (0.00223)	0.0258* (0.0148)	0.00248 (0.00865)	0.00544 (0.00838)	-0.0119** (0.00557)	-0.0120** (0.00558)	-0.0126** (0.00575)	-0.0165** (0.00695)
termoftred	0.0113*** (0.00327)	0.0162*** (0.00549)	-0.0102** (0.00402)	-0.00768* (0.00400)	-0.0119*** (0.00251)	-0.0122*** (0.00254)	-0.0122*** (0.00260)	-0.0148*** (0.00365)
tradeopen#c.termoftred		-1.33e-05 (0.000155)	-1.33e-05 (8.93e-05)	-3.77e-05 (8.61e-05)	0.000157*** (5.80e-05)	0.000158*** (5.82e-05)	0.000164*** (5.98e-05)	0.000204*** (7.23e-05)
hc			1.584*** (0.162)	1.454*** (0.165)	1.519*** (0.104)	1.495*** (0.108)	1.531*** (0.107)	1.522*** (0.104)
inf				-0.00340** (0.00147)	-0.00349*** (0.00105)	-0.00377*** (0.00110)	-0.00357*** (0.00107)	-0.00322*** (0.00108)
rquest					0.611*** (0.0703)	0.609*** (0.0705)	0.602*** (0.0726)	0.629*** (0.0719)
z_score						-0.00556 (0.00619)		
vix							0.000638 (0.00115)	
reer_broad								0.00175 (0.00160)
Constant	7.093*** (0.397)	6.720*** (0.520)	6.032*** (0.279)	6.152*** (0.272)	5.936*** (0.173)	6.072*** (0.230)	5.927*** (0.175)	6.078*** (0.216)
Observations	64	64	60	60	56	56	56	56
R-squared	0.727	0.733	0.926	0.933	0.974	0.974	0.974	0.975
Number of COUNTRY_NEW	4	4	4	4	4	4	4	4
country FE	YES	YES	YES	YES	YES	YES	YES	YES
Time FE	NO	NO	NO	NO	NO	NO	NO	NO

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## CHAPTER 5

### . CONCLUSION AND RECOMMENDATIONS

The aim of this research was to investigate the effect of financial development on growth in gross domestic product per capita in two emerging economies (Brazil and Turkey) and compare them with two upper middle upper income economies (Hungary and Poland) over the period 2000-2015. To answer the research questions; the study constructed a panel dataset from reliable resources. The results have shown that financial development has a good and positive impact on national income in (q1). This is in line with the studies of Schumpeter 1912, Levin 1997 and, Levin 2004, which implies that there is correlation between financial development and growth of economy. This is in agreement with the studies of Arca and Ozcan (2014), and İnce (2011), but it is not in the line with the studies of Zeki, Kirca, and Altıntaş (2016), and Kucukkaya (2011) which have shown that there is no link between financial development and growth in gross domestic product in Turkey. Also, the results have shown that there is a difference between Turkey, Brazil, Poland and Hungary in terms of the impact of financial development on growth in economy (q2). The highest and strongest effect was on Turkey then on Poland, then on Hungary, and finally on Brazil. The causes of the difference between these countries depend on the financial sector; the more modern the financial system, the more it will benefit the growth of gross domestic product.

This study focused on the effect of financial development on national income in four countries, namely Brazil, Turkey, Hungary and Poland, so other researchers can do the same thing with other related indicators of financial development to extend the parameters of the study. To confirm the findings of this study and in order to generalize it, it would be better to use a similar research context. Nonetheless, from the estimations

above, we observed that Human Capital (HC), Financial Openness and, Regality Quality are positive and significant indicators, and it would be better to use them, when researchers are investigating the relation between the financial development and growth in gross domestic product per capita. On the other hand, the terms to trade impact upon the growth in economy is not clear. While the openness to trade and, z\_score indicators are not important, as we notice from the information set of the estimations above.

To conclude, financial development had a significantly and positive influence upon national welfare in the four countries over the period (2000-2015). Thus a well-developed financial sector will promote growth in national income. So governments should focus on developing their financial sector in order to increase gross domestic product per capita.

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## APPENDICES

### APPENDIX A

#### DATA

VARIABLE	SOURCE
Financial Development Financial Openness	International Monetary Found
Privet Credit, Domestic Credit, Stock Market Capitalization, Credit to Government, Boone Index, Lerner Index. Trade Openness, Real Exchange Rate, Inflation Rate, Quality of Other Institutions	World Bank
Human Capital	<a href="http://www.ggd.net/pwt">www.ggd.net/pwt</a>
VIX Indicator	CBOE Dataset

## APPENDIX B

### ACCESS

A.1) Debt in financial intermediaries in one year (approximately % (15+)): This variable is used for ratio of scrounging money from a bank in one year, an approximately value for this variable is 15% . (WB)

A.2) Loan in the last year (approximately % (15+)): This variable is used for the ratio of borrowers who have received money from one or more of the following financial sources within the previous 12 months: a formal financial institution, a store by using installment credit, family or friends, employer, or another private lender, approximately value for this variable is 15%. (WB)

A.3) Credit card (% age group (15+)): The percentage of respondents possessing a credit card. (WB)

A.4) Firms using banks to finance investments (%): the number of firms (measured in percent) that rely on banks when purchasing fixed assets. (WB)

A.5) Companies using financial institutions to finance working capital (%): Many firm approach banks to receive loans with which they plan on funding working capital. (WB)

A.6) Investments provided by financial institutions (%): approximated proportions of bank-financed fixed assets. (WB)

A.7) Financial institutions financing working capital (%): the amount of working capital which was bank-financed through loans. (WB)

A.8) Major constraint for companies to realizing access to finance (%): the percentages number of firms that name financial funding as the main and "very severe" obstruction. (WB)

A.9) Market capitalization except top 10 firms to total market (%): the value of listed shares which are not listed within the top ten largest companies. (WB)

A.10) Nonfinancial corporate bonds to total bonds and notes outstanding (%): The total amount of domestic nonfinancial corporate bonds and notes outstanding to total amount of domestic bonds and notes outstanding, both corporate and noncorporate. (WB)

A.11) Investments financed by equity or stock sales (%): Estimated proportion of purchases of fixed assets that was financed by owners' contribution or issue of new equity shares. (WB)

## **APPENDIX C**

### **DEBT**

D.1) Private credit by deposit money banks to GDP (%): The financial resources provided to the private sector by domestic money banks as a share of GDP. (WB)

D.2) Deposit money banks' assets to GDP (%): Total assets held by deposit money banks as a share of GDP. (WB)

D.3) Nonbank financial institution's assets to GDP (%): The total assets held by financial institutions that do not accept transferable deposits but that perform financial intermediation by accepting other types of deposits or by issuing securities or other liabilities that are close substitutes for deposits as a share of GDP. (WB)

D.4) Liquid liabilities to GDP (%): The ratio of liquid liabilities to GDP. Liquid liabilities are also well-known as broad money, or M3. (WB)

D.5) Central bank assets to GDP (%): Central bank assets are defined as demands by the Central Bank on domestic real non-financial sectors. (WB)

D.6) Mutual fund assets to GDP (%): A mutual fund is some sort of managed collective investment which merges money from various investors for purchasing securities. (WB)

D.7) Financial institutions deposits to GDP (%): Saving deposits in deposit money in the financial institutions as a share of GDP. (WB)

D.9) Pension fund assets to GDP (%): Pension fund is defined as any kind of plan, fund, or scheme which provides income throughout retirement to GDP. (WB)



D.12) Stock market total value traded to GDP (%): The overall value of all traded shares within a stock market exchange, illustrated as percentage of gross domestic product. (WB)

D.13) Outstanding domestic private debt securities to GDP (%): The overall amount of domestic private debt securities publicized as share of GDP in domestic markets. Thereby it contains and covers data regarding long-term bonds and notes, commercial papers and further short-term notes. (WB)

D.14) Outstanding domestic public debt securities to GDP (%): The amount of domestic private debt securities publicized as share of GDP in domestic markets. Containing long-term bonds and notes, treasury bills, commercial papers and more. (WB)

D.15) Outstanding international private debt securities to GDP (%): The sum of international private debt securities, issued as shares of GDP that cover long-term bonds and notes, as much as money market instruments placed on international markets. (WB)

D.16) Outstanding international public debt securities to GDP (%): The amount of public international debt securities as a share of GDP. (WB)

D.17) Outstanding total international debt securities / GDP (%): Amount of international debt securities (amount outstanding), as a share of GDP. (WB)

D.18) Gross portfolio equity liabilities to GDP (%): Ratio of gross portfolio equity liabilities to GDP. (WB)

D.19) Gross portfolio equity assets to GDP (%): Ratio of gross portfolio equity assets to GDP. (WB)

D.20) Gross portfolio debt liabilities to GDP (%): Ratio of gross portfolio debt liabilities to GDP. (WB)

D.21) Gross portfolio debt assets to GDP (%): Ratio of gross portfolio debt assets to GDP. (WB)

D.23) Corporate bond issuance volume to GDP (%): Ratio of new corporate bond issuance volume by private entities in industries other than finance, holding companies and insurance to GDP. (WB)

## **APPENDIX D**

### **STABILITY**

S.3) Bank capital to total assets (%): Ratio of bank capital and reserves to total assets. Capital and reserves consist of funds subsidized by owners, retained earnings, general and special reserves, provisions, and valuation adjustments.

(WB)

S.4) Bank credit to bank deposits (%): The financial resources provided to the private sector by domestic money banks as a share of total deposits. (WB)

S.6) Liquid assets to deposits and short term funding (%): The ratio of the value of liquid assets to short-term funding plus total deposits. (WB)

## **APPENDIX E**

### **OTHERS**

O.1) Bank concentration (%): Assets of three largest commercial banks as a share of total commercial banking assets. (WB)

O.2) Bank deposits to GDP (%): The total value of demand, time and saving deposits at domestic deposit money banks as a share of GDP. (WB)

O.3) H-statistic: Measure of the level of competition in the banking market. (WB)

O.6) 5-bank asset concentration: Assets of five biggest banks as a share of total commercial banking assets. (WB)

O.7) Loans from nonresident banks (net) to GDP (%): Ratio of net offshore bank loans to GDP. (WB)

O.8) Loans from nonresident banks (amounts outstanding) to GDP (%): Ratio of outstanding offshore bank loans to GDP. (WB)

O.9) External loans and deposits of reporting banks sector (%): The ratio of deposits of reporting banks and on the other side the banking sector to the domestic bank deposits. (WB)

O.10) External loans and deposits of reporting via the nonbanking sectors (%): ratio of loans and deposits of reporting banks compared to the non-banking sectors. (WB)

O.11) External loans and deposits of reporting to all sectors (%): Proportion of loans and deposits of reporting banks opposite all sectors to the domestic bank deposits. (WB)

O.12) Remittance inflows to GDP (%): Workers' remittances and compensation of employees comprise current transfers by migrant workers and wages and salaries earned by nonresident workers. (WB)

O.13) Consolidated foreign claims of BIS reporting banks to GDP (%): The ratio of consolidated foreign claims to GDP of the banks that are reporting to BIS. Foreign claims are known as the sum of cross-border claims plus foreign offices' local claims in all currencies. (WB)

O.14) Foreign banks among total banks (%): Ratio of the amount of foreign owned banks to the number of the total banks in an Economy. A bank is defined as foreign bank, when 50 or more percent of its shares are held by foreigners. (WB)

O.15) Foreign bank assets among total bank assets (%): Proportion of the total banking assets that are held by foreign banks. A foreign bank is defined as a financial institute where minimum half of the shares are being owned by foreigners. (WB)

O.16) Global leasing volume to GDP (%):  $\text{Global leasing volume} / \text{GDP}$ . (WB)

O.17) Total factoring volume to GDP (%):  $\text{Total factoring volume} / \text{GDP}$ . (WB)

O.18) Number of listed companies per 1,000,000 people: Number of domestically incorporated companies listed on the country's stock exchanges at the end of the year per 1,000,000 people (does not include investment companies, mutual funds, or other collective investment vehicles). (WB)