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Meta-Analysis of the Empirical Relationship Between Financial Development and Economic Growth

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ABSTRACT

Meta-Analysis of the Empirical Relationship Between Financial Development and Economic Growth

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International Area Studies

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This dissertation examines the empirical relationship between financial development and Economic growth in different regions by conducting a meta-analysis study. The measures of precision of the effects (for example t-statistics and Standard Errors) were derived from 22 recently published studies that provided the current study with 295 unique observations, which are used for interpretation and analysis purposes. To tackle the file-drawer problem, some other studies suggesting a negative empirical relationship were selectively added for the study's exposure to more profound scrutiny and a different analytical and interpretation approach.

The finding confirms the empirical relationship between the two variables, however, it also highlights the major discrepancies in defining and measuring financial development by researchers, and how it can impinge upon the policies, should we disregard the different definitions of the term. The study argues that the inverted U-shaped relationship as highlighted by some of the recent studies is perhaps strictly confined to the cases of "most developed countries". The study also concludes after providing policy recommendations.

Keywords: **Financial Development, Economic Growth**

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ABBREVIATIONS

CEECs   **:** Central and East European Countries.

FD   : Financial Development

GDP   : Gross Domestic Product

GDPpc   : Gross Domestic Product per capita

GNI   : Gross National Income

GNP   : Gross National Product

M1   : Coins and Note Currency in Circulation

M2   : M1 plus Short-Term Time Deposit in Banks and 24-Hour Money Market Funds

M3   : M2 plus Longer-Term Time Deposits and Money Market Funds with more than 24-Hour Maturity

MENA   : Middle East and North Africa

OECD   : Organization for Economic Cooperation Development

OLS   : Ordinary Least Squares

RBI   : Reserve Bank of India

TFP   : Total Factor Productivity

WB   : The World Bank

WDI   : World Development Indicators

SD   : Standard Deviation

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CHAPTER ONE: GENERAL INTRODUCTION

1.1. Background of the Study

As one of the most important components of development, economic growth has always been a major objective for the countries and most of their policies ensure its attainment. Moreover, different methods and approaches have been tested and utilized to achieve a higher growth rate. In theory, there are several factors that affect economic growth; e.g. Human Resources, Natural Resources, Capital Formation, Technological Development, Social and Political factors. Researchers and economists have examined the effects of each of those factors, either separately or in a generalized context. The present study will examine the impacts of financial development on economic growth by amalgamating and analyzing the empirical findings of the existing literature on this topic.

The number of disagreements among economists about the implications of financial development on economic growth is significant. Discrepancies range from putting a strong emphasis on financial development to taking a mediocre stance or even

nullifying the role of financial development in economic growth. For instance, some of the 'pioneers' of economic development (Clark, Lewis, Rostow, Baur) have simply excluded financial system (development) from their lists of factors responsible for economic growth (Chandavarkar, 1992) and rejected a connection between the two. However, despite strong disagreements among the scholars, the contemporary perspective about finance-growth nexus has significantly altered, which will be briefly explained in the following paragraphs.

In theory, a sound and efficient financial system could set up a favorable macroeconomic framework for substantial growth by channeling capital to its most productive uses, mobilizing savings, enhancing consumer spending, reducing problems of information asymmetry, and improving investments. Overall, the construction of several models embodying financial institutions and explaining the mechanisms that showed how financial intermediaries could impact economic growth was led by the advancement of endogenous growth theory during the 1980s and 1990s. Thereby, the two channels; total factor productivity channel and capital accumulation channel were identified to illustrate how would well-functioning financial systems the allocation decisions and savings. In accordance with the capital

accumulation channel, mobilizing savings is the basic function of financial intermediation as these savings are channeled to meet the investment needs of entrepreneurs. The total factor productivity channel (TFP) explains the allocation decisions and refers to how intensely and efficiently inputs are put to work in the production process (Kohli, 2004). This view, however, is long disputed by scholars who have adopted diversified positions. The existing discrepancies among the scholars have sparked further investigations of the relationship among the variables: financial development and economic growth.

While several scholars underlined the sizable role of financial development in economic growth in their works, others have objected such glorifications and advocated that relations between the two variables are rather infirm. However, the number of scholars who suggest the lack of any relationship between finance and growth is also significantly discernible. Moreover, some studies have highlighted that overgrown financial systems can impinge upon economic stability and growth rate. Notwithstanding, most of the empirical studies have not taken into consideration the varying extent of financial development in the countries at their different economic stages which is yet another interesting subject needing further

investigation. Some countries lack functioning financial mechanisms and suffer from a low level of financial development and financial deepening. In contrast, several countries with developed economies have surreptitiously triumphed in devising more efficacious financial mechanisms. Although it has evoked fervent debates among economists, this thesis is unable to cover the issue due to limited space.

Since both the time to conduct this study and the literature on 'developing' and 'developed' economies' cases were limited, the main theme and topic of this study are to plunge into a finance-growth relationship while solely categorizing the countries by different regions and through a range of various time spans. The classification of these regions is based on the available literature and includes East Asia, South Asia & the Pacific, Middle East & North Africa, Sub Sahara, Europe, Latin America & Caribbean, Asia, and Rest of the World which mainly encompasses high-income OECD countries.

So far, the studies have produced inconsistent results. Therefore, I attempt to abbreviate the disparities among the pros and cons of finance-growth nexus by conducting a meta-analysis. A meta-study of the topic can add more insight and

evoke meaningful questions regarding the underlying factors behind the conflicting outputs. Bloom's *Stability and Change in Human Characteristics* (1964) provides this approach of extracting and combining the evidence by aggregating correlation coefficients from several studies.

Furthermore, in his book '*Statistical Methods for Meta-analysis'*, Larry V. Hedges succinctly explains meta-analysis as "the rubric used to describe quantitative methods for combining evidence across studies" and adds "because meta-analysis usually relies on "data" in the form of summary statistics derived from the primary analysis of studies, it is truly an analysis of the results of statistical analyses." Despite the fact that it was originally developed for medicinal studies, the approach is gaining increasing popularity in economic studies as well and is used by many renowned researchers and economists (e.g. Stanley and Jarrell, 1989, Asongu, 2015, Capon et al., 1990, Chau et al., 2013, Danišková and Fidrmuc, 2012, Nijkamp and Poot, 2004, Stanley, 2001, Valickova et al., 2015).

After collecting literature through Google scholar, Seoul National University online library, and several other online library websites, more than 40 academic papers

were downloaded. None of them were published earlier than 2000, focusing on specific country(S), or region(S). In total, 22 studies were used for data collection.

To ensure quality, only published studies in which GDP growth rate or GDP per capita was the dependent variable were selected. Overall, the final selection is based on whether the empirical studies reported a measure of the precision of the effect; i.e. standard error, or *t*-statistics. As a result, the final dataset ended up including 295 different observations. The study also briefly attends to the problem of publication bias, finding symptoms of positive results[1].

A handful of researchers run regression analysis using the obtained coefficients to test the empirical connection among financial development and economic growth (Valickova et al., 2015; Asongu, 2015). In such studies, since the methodologies adopted by different researchers vary, and the obtained summary statistics of their empirical studies cannot be directly compared to study the effects, a standardized effect size is calculated. Obtaining a standardized effect size includes calculation of partial correlation coefficients coupled with their corresponding standard errors and

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[1] Publication bias, also known as file drawer problem is highlighted in the following sections of the study.

treating for Fisher's *z*-transformation. However, this approach is subject to serious debate and the current study refrains from adopting it. Further, to explore the effects of financial development on economic growth in a regional context, the conventional way of assigning dummy variables is utilized.

After executing the foregoing procedure, we find that the overall effect of finance on growth is not only positive, but also significant. The results of our meta-analysis also suggest the varying degrees of effects in the specific regions.

1.2. Problem Statement

The purpose of this research is not to study the effects of financial development on economic growth of an economy or a group of economies; in this respect, I recommend the readers to refer to the numerous literature on the topic[2]; rather, the ambition is to take the discussion to another level by analyzing the obtained results of the foregoing literature. Distinctive methodologies have been adopted for the task of investigating the empirical effects of financial development on economic growth.

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[2] There are comprehensive reviews and empirical studies of the finance-growth nexus, the findings of some of which are used in this thesis.

Nonetheless, this study cannot cover the methodological aspect due to time constraints[3]. Also, several recent studies indicate an inverted U-shaped relationship between finance and growth and report negative causality after financial development reaches a certain point (Arcand et al., 2015; Cecchetti and Kharroubi, 2012; Cline, 2015; Kose et al.,2018; Reisen et al., 2015). These findings put major question marks on the conventional believes regarding the type of relationship between the two variables.

Moreover, some of the empirical studies suggesting positive connections between finance and growth, robustly accentuate that the confinement of the sample to African and South American countries leads to a negative association between the two variables (Andersen and Tarp, 2003, De Gregorio and Guidotti, 1995, Luintel and Khan, 1999). Since it might be indicating the varying level of financial development in the regional concept, this difference in the findings is not only interesting but thought-provoking, as well.

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[3] For thorough reviews on methodologies used in the literature, refer to Levine, 2005 and Ang, 2008.

The existing consensus paucity has led to a robust compilation of studies with conflicting results and unsolved puzzles. In addition, some of the Meta-analyses have pointed out the existence of publication bias, which is the dissemination of studies reporting significant and/or positive findings more than the studies that report insignificant or negative results, hereby leading to ambiguity and confusion of the policymakers, especially in the developing countries.

The study of finance-growth nexus in a regional context is assumed to somehow be a proxy for underlining the nature of the effect of financial development on economic growth in countries with a less developed financial mechanism as against the more advanced ones. The concentration of energy on obtaining financial development amid myriad challenges can be an unfavorable tradeoff in the part of economic growth if the relationship between the two is not thoroughly studied.

Besides the foregoing rationales, very few numbers of meta-analyses have been conducted to address the existing heterogeneity and lack of consensus (Asongu, 2015, Valickova et al., 2015). Furthermore, although the number of studies of the finance-growth nexus appears to be inflicted by publication bias, a meta-analysis of the

available results might be challenging due to unequal availability of studies at two opposite sides, however, it can render remarkable contribution in decoding the riddle, should it succeed.

1.3.Objectives of the Study

The fundamental objective of this thesis is to examine the validity of studies conducted to explore the relationships between financial development and economic growth by compiling the obtained results of several studies. Exploring the existence of publication bias is yet another enigma to be solved. To be more specific, the objectives of this research are:

- Exploring the conflicting results of various studies, by using meta-analysis;
- Examining the impacts of financial development on economic growth in different regions,
- And bridging the gap between the pros and cons of finance-growth connections.

1.4.Research Questions

This study will seek the answers to the following questions:

- Is there a direct and significant relationship between financial development and economic growth?
- Does the strength of the relationship vary across different regions?

1.5.Significance of the study

A large amount of literature has studied the role of financial development in economic growth over time. However, the latest updates on financial development suggest that the number of financially excluded has significantly declined since 2011. According to the 2011 Findex data, over 2.5 million adults were "unbanked" (World Bank 2011). The number has fallen to 1.7 million according to the recently collected data showing a decrease of over 30%. In addition, most countries have gone through marked technological development in recent years, therefore, updated data is crucial for contributions and scrutiny in this field of development economics. Based on the

foregoing improvement, the overall status of financial development is changing rapidly worldwide, if not improving. On the other hand, the role of finance in economic growth changes at different economic development stages (Deidda and Fattouh, 2002, Patrick and change, 1966) as well as over time and region (Valickova et al., 2015). Therefore, the latest studies on financial development and its relationship with economic growth should be collectively analyzed so that the conclusion is more comprehensive and updated.

Furthermore, no recent meta-analyses on finance-growth nexus were published (Asongu, 2015, Valickova et al., 2015). Moreover, by mainly including the studies that empirically examine the relationships between the two variables in specific regions, this thesis will attempt to explore the varying effects across different regions in the world- an approach, which has not been adopted since 2015 (Valickova et al., 2015), as per my knowledge.

Furthermore, since this study includes only the studies that were published after 2000, the acquired dataset is based on more quality primary studies in the field of development economics. Countries in Europe and East Asia, for instance, are

supposed to be financially more developed compared to the Sub Saharan, MENA, African, and Latin American countries. Hence, the significance of further scrutiny of the matter also stems from the limited capabilities and resources of countries in prioritizing objectives due to their insufficient resources to obtain multiple goals.

Furthermore, the previous meta-analyses included studies that were conducted much earlier than the studies included in the current thesis. This gives the current research a distinct advantage of containing studies with better statistical tools and methods and more comprehensive and accurate dataset.

Also, since the publication of studies with significant and positive findings seems higher than for studies indicating negative or non-significant outputs, this study will examine the possibility of publication bias, which is supposed to be ubiquitous in different areas of studies and researches concerning finance-growth nexus. Based on several most recent findings and conclusions, this study aims to add to the existing literature on the implication of financial development on economic growth.

1.6.Organization of the Study

The study is composed of five chapters. The contents of each chapter are as following:

Chapter one (the current chapter) provides some background knowledge and information about the study, states the problem statement, objectives of the study, research questions, and hypotheses.

Chapter two of the thesis provides a literature review, introducing the varying theories, researches, and discussions regarding the subject matter. Hence, the basis for understanding the objectives and expectations of this study is presented in this chapter.

Chapter three presents the techniques and methodology of collecting and analyzing the data and the various conducted studies and researches conducted on this topic. Also, it discusses the data sources and collection, arrangement, and analysis methods.

Besides that, the authenticity and reliability of the acquired data are also portrayed in this chapter.

Explaining the findings of the data analysis provides the necessary framework for the data interpretation. This chapter will be processed and organized in a way that serves as the basis of the conclusion.

The last chapter -chapter five- concludes the study by finally answering the research questions. Nullification and approval of the hypothesis are depicted in this chapter. In addition, recommendations for future studies and policies are also provided in the fifth chapter.

1.7.Meaning of Financial Development

Financial development pursues to make financial services available for all businesses and individuals at an affordable cost (World Bank). To elaborate, appropriate financial services and products made accessible at an affordable cost through a fair and transparent channel by mainstream institutional players, to vulnerable groups

such as low income and neglected sections of the society is the process of financial development (RBI, OECD). Furthermore, the World Bank emphasizes that the transactions, payments, savings, credit and insurance needs of individuals and businesses must be met, consistently and responsibly (World Bank). Published by the World Economic Forum, the financial development report 2011 defines the term as "the factor, policies, and institutions that lead to effective financial intermediation and markets, as well as deep and broad access to capital and financial services" (World Economic Forum, 2011). Financial access of individuals and businesses to the formal financial system makes everyday life easier by allowing them to alleviate shocks, medical emergencies, compile assets, and engage in productive investment activities.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

Studying the factors and determinants of economic growth -as the main component of development- is one of the most crucial subjects in economic analysis, and the longest standing issue in development economics (Ioannidis et al., 2017). Most commonly, economic growth is measured in terms of the annual increase in GNI (Saulnier and Policies, 1963). Using various conceptual and methodological approaches, scholars have produced a large amount of literature on economic growth and the factors leading to it. Although their findings differ significantly, they do agree on certain factors in both their theoretical and applied researches.

2.2. Theoretical Background

Despite discrepancies, there are partial theories that review the economic growth determinants. For instance, based on Solow's growth model, the neoclassical theory stresses the role of investment activities. Also known as the *exogenous Growth*

Model, the Solow's growth model approximates economic growth by the sum of production function:

$$Y_t = A \, K_t^\alpha \, L_t^\beta \qquad\qquad (2.1)$$

Where *Y* represents the aggregate production, *A* is a parameter for measuring the productivity of provided technology ($A > 0$), *K* stands for capital, *t* denotes time, subscript *L* is labor, and *α, β* stand for the constants that gauge capital and labor share, respectively, and to meet the presumption of diminishing returns to a unit factor, the constants are considered to be less than one.

The equation is then rearranged to highlight the effects on output over time when labor, capital, and technology are changing. Dividing both sides of the equation by the number of workers (*L*) changes the equation in a way to express the production function in terms of per capita variables:

$$Y_t = A \, (K_t / L_t)^\alpha$$

subsequently, $\qquad\qquad Y_t = A \, K_t^\alpha \qquad\qquad (2.2)$

This equation suggests that the per capita productivity is solely dependent on per capita labor. Also, the purpose of (Solow's) model is to analyze and describe the long-term output behavior.

Later, human capital and innovation capacity (developed by Romer and Lucas[4]) drew the scholars' attention. Known as the endogenous growth theory, it suggests that self-maintained economic growth will be induced by the introduction of the accumulation determinants like innovation, knowledge, and the like (Petrakos and Arvanitidis, 2008). In simple words, the endogenous growth theory emphasizes the importance of investment in the physical and human capital development and the policies that reinforce these components.

The endogenous growth theory, basically, has two models; the AK- Model (Rebelo, 1991), and the Human Capital Model (Barro and Sala-i-Martin, 1995). The two models share extremely identical threats and endogenize the economic growth rate and emphasize on the potential impacts of policies on the long-run growth rate of an economy. Although the equation of AK-Model is almost similar in appearance to that of Solow's growth model, the former hypothesizes that investment in research and development can enhance the quality of capital which in turn compensates for the diminishing marginal productivity as explained by later.

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[4] Romer (1986) introduced a model that yields positive and long-term growth based on technological development. Lucas (1988) model highlights the basic role of human capital in sustainability of economic growth and prevention of diminishing returns to physical capital accumulation.

$$Y_t = A\,K_t \tag{2.3}$$

The above formula illustrates production function according to the AK-Model.

On the other hand, as a determining factor of economic growth, the Human Capital Model-unlike Solow's model- emphasizes the accumulation of knowledge and skills in determining economic growth. According to this theory economic growth is boosted when household savings are invested in human and physical capital (Barro et al., 1992). According to this model, the production function can be explained by employing the below formula:

$$y_t = k_t{}^{\alpha}\, h_t{}^{\beta} \tag{2.4}$$

In the above formula; y denotes productivity (output per capita), k presents capital per capita, human capital is represented by subscript h, and to measure human capital and physical capital share of income, the subscripts α and β are respectively presented.

Furthermore, the institutional framework is also highlighted as an important determinant of growth. The key structures include property rights, regulatory

institutions, institutions for social insurance, institutions for macroeconomic stabilization, and conflict management institutions (Rodrick, 2000).

When it comes to political factors, it has been concluded that political issues have extensive and significant impacts on the economy and its potential for growth (Grier and Tullock, 1989, Hermes and Lensink, 2001, Lensink et al., 1999, Scully, 1988), and the relevant variables to measure the quality of a political environment can be listed as; democracy, government stability, political volatility, subjective perception of politics, and political violence (Brunetti, 1997).

In addition, there are some social-cultural factors that could potentially affect growth (Harrison and Samuel, 1960, Zak and Knack, 2001). Some of the examples are; ethnic diversity, that can impinge upon growth rate (Easterly and Levine, 1997), and trust which can help in physical capital accumulation and enhance innovative incentives, thereby, fostering economic growth (Keefer and Knack, 1997). Nonetheless, financial development as a determinant of economic growth has long been subject for scrutiny for the past quarter of the century. It is this determinant of growth that will be discussed in this thesis; Broadly speaking, scholars generally use

financial depth, financial activity, and the bank ratio as proxies of financial development (Valickova et al., 2015). Furthermore, the studies are generally inconsistent in their choices of proxies for financial development which is perhaps due to the presence of lingering challenges in studying the various factors altogether.

2.3. Finance as a Determinant of Growth

As mentioned in the earlier section, financial development is often gauged by examining financial depth, financial activity, and the bank ratio. When it comes to financial depth, it is typically connected to money supply; hence, it reflects the extent of the financial sector and it is measured as the ratio of liquid liabilities to GDP (Gross Domestic Product). However, this indicator raises the problem of double counting as it also encompasses the deposits by other financial intermediaries (Levine, 1997).

The second indicator commonly used in the literature is the ratio of bank credit to the sum of domestic assets of the central bank and bank credit (which was first used by King and Levine 1993). Compared with central banks in allocating surplus resources

in the economy, the bank ration emphasizes the significance of commercial banks. Nonetheless, this indicator is not flawless. One of the weaknesses associated with the implementation of this measure is that it disregards the role of other financial institutions in providing financial services (Levine, 1997), fails to explain how well the commercial banks mobilize savings, execute corporate control, and appropriate resources and reflect upon the beneficiaries of credit.

Financial activity is the third widely used indicator of financial development. It can be measured in different ways; as the proportion of private domestic credit availed by bank deposits and other financial intermediaries to GDP (implemented by(Andersen and Tarp, 2003), the ratio of private domestic credit provided by bank deposits to GDP (Beck et al., 2004), and the ratio of credit allotted to private domestic credit to aggregated domestic credit (Rousseau and Wachtel, 2011). Since these measures concentrate on credit provided to the private sector, they present a clearer proxy of the size and quality of financial intermediations offered by the financial mechanism. As expected, this indicator is also inflicted with weaknesses; Levine et al, (2000) note that neither financial depth nor private credit can

competently determine the efficacy of financial institutions in funneling capital to the most productive use and ameliorating market frictions (Levine, 2000).

Besides the foregoing measures of financial development, examination of stock markets' implication on the economic growth also became popular (Atje and Jovanovic, 1993), further boosting the utilization of indicators for the stock market. Also known as market value, market capitalization is the share price multiplied by the number of shares outstanding inclusive of their various classes (WDI, World Bank, 2017). Some of the common stock market proxies include the turnover ratio (Beck et al., 2004), stock market performance (Huang et al., 2011), and market capitalization ratio (Shen et al., 2006).

In addition to the foregoing frequently used indicators, some other proxies are also used that leads us to create the "other" category among the categories of indicators in this thesis. Some of these indicators include the measurement of the efficiency of financial allocation which equals the ratio of bank credit to bank deposit. And computing the share of domestic resources to the financial system (Graff and Trade,

2003), and aggregate deposit money bank assets divided by GDP (Bangake and Eggoh, 2011) to estimate the development of the stock market.

Given the explanations above, let us now examine how much importance the various scholars and development economists have given to the development of financial system and activities in fostering economic growth in the following part of the study.

2.4.The Literature on Finance-Growth Nexus

The foregoing paragraphs imply paucity of consensus in the literature regarding the choices of indicators in the literature on financial development. In other words, the preceding paragraphs are indications of asymmetries in measuring financial development among economists and researchers. Therefore, many researchers -to corroborate the robustness of their findings- have chosen varied definitions of the term. Most importantly, the ultimate findings of the studies are also inflicted with disagreements and lack consensus.

While some scholars have attributed economic growth to financial development by arguing that the financial system is crucial for industrialization (Gerschenkron, 1962), and "important" for economic growth in the long run (Stiglitz, 2010), "pivotal" (Schumpeter, 1961), or "too obvious for serious discussion" (Miller, 1998), some scholars have labeled the role of financial development in economic growth as "overstressed" and excessively magnified (Robinson, 1952; Lucas, 1988).

Moreover, as an aftermath of the global financial crisis of 2008-09, the view that finance can degenerate into a rent-seeking activity was also further strengthened (Zingales, 2015), and finance was even viewed as a strong force for facilitating future financial crisis (Mian and Sufi, 2014, Schularick and Taylor, 2012) that could have a detrimental effect on growth in the long run. Also, with global banks viewed as culpable for spreading the crisis beyond borders, the reevaluation of the globalized banking virtues was facilitated (Global Financial Report, 2017/18, WB).

Linking finance and growth in a conceptual sense can be traced back to more than a century ago. The importance of finance in capital mobilization for "immense works" during the Industrial Revolution in England was highlighted by Bagehot (1873),

while Schumpeter (1912) stressed upon the efficacious reallocation of investment funds by financial institutions that led to an acceleration of technological progress, a process also called as "creative destruction." Further, arguing that financial development promotes the application of advanced technology and innovation, Hicks (1969) emphasized the crucial role of financial markets in the industrial revolution.

Nonetheless, the modern empirical approach to finance and growth connection was revived by Goldsmith (1969), who used data on the assets of financial institutions relative to GNP in his study for 35 countries during 1860-1863. He found evidence for a positive connection between financial development and economic growth. However, his study was criticized for numerous data and econometric defects including a limited number of observations, problematic choice of financial development indicators, failure to identify the direction of causality, and not attempting to control for different factors of economic growth (A. Popov, 2017).

To improve upon the early methodology, King and Levine (1993) studied 77 countries during the period 1960-1989. Borrowing the approach of Barro (1991), they controlled for country-specific proxies such as the rate of population growth,

secondary school enrollment, and initial wealth, which inspired many cross-country studies. The subsequent studies have sought to extend their analyses beyond bank credit (e.g. Levine and Zervos, 1998; La Parta et al., 2002).

Later, some scholars attempted to examine the topic by adopting meta-analysis techniques, which was originally developed for use in medicinal studies. Using meta-analysis in economic research has also gained popularity and many scholars have used the technique in their empirical studies (Card and Krueger, 1995; Stanley and Jarrell, 1989; Stanley, 2001; Disdier and Head, 2008; Doucouliagos and Stanley, 2009; Daniskova and Fidrmuc, 2012; Bunmann et al, 2013; Asongu, 2013; Valickova et al, 2015). However, these studies differ in terms of data collection and observations collection process. For instance, some studies extracted only one observation from each study (Stanley, 2001), and some preferred all the observations (Florax et al. 2003; Valickova, et al. 2015), while others embraced a combination of both and based their selection criteria mainly on the significance level of the summary statistics (S.A. Asongu, 2013).

In addition, the foregoing studies have provided different results which is due to the different research designs and the number and types of explanatory variables, coupled with the differences across regions and time periods (Rousseau and Wachtel, 2011; Valickova et al. 2015). Valickova and associates (2015), for instance, analyze the estimations from 67 studies that indicated positive and statistically significant effects of financial development on economic growth. Yet the findings in individual-level differed tremendously. They also found that the effects are "generally stronger in wealthier countries, a finding consistent with Rousseau and Wachtel (2011)." Even though the examples of meta-analyses noted above have employed various quantitative techniques in their studies, it is worth mentioning that the methodology for meta-analysis of the effects of financial development on economic growth in this thesis is utterly qualitative.

2.5.File-Drawer Problem

Another issue that needs to be investigated is the file drawer problem or publication bias in literature. This problem arises from the fact that nonsignificant findings often remain unpublished as compared to the significant findings that are more likely to be

submitted and published (Dickersen, Min, & Meinert, 1992). Plus, the problem of publication bias is further fueled by reviewers' rejection of manuscripts that contain non-significant results. Hence, as per estimations, the papers with significant findings are published eight times more than the studies with non-significant results (Greenwald, 1975).

Moreover, compared to the studies that confirm the null hypothesis, the studies with positive results are seven times more likely to be published (Coursol & Wagner, 1986). Nonetheless, when it comes to the meta-analyses in the field of economics, some of them have reported that publication bias does not exist in every research area (Doucouliagos and Ulubasoglu, 2008; Doucouliagos and Laroche, 2003; Efendic et al., 2011), while some other such meta-analyses have strongly disagreed and emphasized the expansive presence of this problem such as Card and Kruegger (1995) and Mukherjee (2006), and some more recent meta-analyses of finance-growth nexus like A.A. Simplice (2013) and Valickova et al., (2015). The foregoing inconsistent findings of file-drawer problem support the idea of examining if the studies are plagued by publication bias, regardless.

CHAPTER THREE: DATA AND VARIABLES

3.1.Research Design

A research design is a way of organizing a study from its inception to enhance the possibility of obtaining evidence that convincingly addresses the research question for a level of the resource (Gorard, 2013).

Furthermore, a well-developed research design aims to 1) identify and justify the research problem; 3) synthesize the existing literature with the research problem; 4) specify the hypothesis of the research in an explicit manner, describe the data with an aim of hypothesis testing; and 5) describe the analysis approach for testing the hypothesis. Having said that, since this study is based on the secondary data derived from individual studies, ensuring the data quality has been given utmost importance. The following part explains the measures taken to enhance the reliability and authenticity of our data.

3.2. Data and Sources

As mentioned in the introduction part, this thesis is not based on the primary and raw data, rather, the study relies on the "data" derived from various studies and papers of the relevant topic. Meta-analysis is a rubric that relies on the 'summary statistics' extracted from the primary analysis of other researches and is used to explain quantitative methods for the combined evidence derived from across studies (L.V. Hedges, 1985).

To collect the data for this thesis, I used the keywords 'financial development' and 'economic growth' while giving utmost priority to the studies covering specific countries or a region or regions. Studies that focused on merely one country were also accommodated. To ensure comprehensiveness, data from a few numbers of the empirical studies of finance-growth nexus across the globe (all countries) was collected so that enough representation is given to countries of every region. Also, it was made sure that the dependent variable of these studies is the growth rate of GDP or GDP per capita so that the estimated effects are more comparable across the studies. In addition, studies that reported *t-statistics* or *standard errors* were obtained

only, and the studies lacking these measures of the precision of effects were automatically ruled out.

Overall, the following formula of baseline OLS specification for data collection is considered for all the studies:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \delta_t + \varepsilon_{it} \tag{1}$$

where the dependent variable, growth, is represented by Y, i and t denote country and time, X is a measure of financial development, δ subscript is a time-specific effect, and ε_{it} is an error term.

Considering publication status as a simple indicator of research quality, I have included only published studies. This is based on the findings of Rusnak et al., (2013), that reported the existence of a difference in the extent of file drawers issue among unpublished and published studies. Finally, I have selected studies that were published after the year 2000. The intention behind this was to ensure that the studies benefitted from a relatively good quality data accumulated throughout the years. All these studies are peer-reviewed or published in renowned economic journals. The

finalized studies were downloaded from the internet by using google scholar and the search engine of Seoul National University's online library.

As briefly pointed out in the previous section, researchers have adopted different data collection strategies for their meta-analysis. The preferences vary from selecting merely one observation from each study (Stanley, 2001), to retaining all the summary statistics of each study (Florex et al., 2003; Disdier and Head, 2008; Daniskova and Fidrmuc, 2012; Doucouliagos and Stanley, 2009; Valickova et al., 2015), and to finally the combination of the two approaches and basing the selection on the statistical significance level of each individual observation of the studies under scrutiny (S. Asongu, 2013).

For this study, however, I collect all the reported measures of the precision of effects from the finalized studies, a method consistent with, for instance, Disdier and head (2008) and Florex et al. (2003) among others. As a result, the dataset for this thesis is comprised of 22 studies which provided 295 unique observations. Nonetheless, since the studies with relatively small sample size are also included, some of the reported standard errors (SE) might tend to appear larger. The list of included studies and

their corresponding categorized number of financial intermediary development
dynamics is given in the table below:

Table 1: Papers included in Meta-Analysis

No	Studies	DEPTH	ACTIVITY	PRIVY	BANK	PRIVATE	STOCKCAP	STOCKACT	TURNOVER	OTHER
1	Al-Malkawi and Abdullah (2011)	3	3	-	-	-	-	-	-	-
2	Andersen (2003)	6	6	6	-	-	-	-	-	-
3	Andersen and Tarp (2003)	3	-	3	3	-	-	-	-	-
4	Anwar and Cooray (2012)	15	-	-	-	-	-	-	-	-
5	Anwar and Sun (2011)	-	-	1	-	-	-	-	-	-
6	Aryssi and Fakih (2017)	-	-	-	-	-	-	-	-	30
7	Bangake and Eggoh (2011)	4	-	4	-	-	-	-	-	4
8	Chakraborty (2010)	8	-	-	-	-	8	-	8	-
9	Dawson (2003)	2	-	-	-	-	-	-	-	-
10	Dawson (2008)	2	-	-	-	-	-	-	-	2
11	Djalilov and Piesse (2011)	-	-	2	-	-	-	-	-	4
12	Graff (2003)	-	-	-	-	-	-	-	12	-
13	Hassan et al., (2011b)	9	9	9	-	-	-	-	-	-
14	Liu and Hsu (2006)	-	-	-	-	-	4	-	4	6
15	Lu and Yao (2009)	3	3	-	-	3	-	-	-	3
16	Pradhan et al. (2017)	-	3	-	-	-	-	-	-	-
17	Seetanah et al. (2009)	1	-	1	-	-	-	-	-	-
18	Soedarmono et al (2017)	32	-	-	-	-	-	-	-	-
19	Tang (2006)	5	15	-	6	-	6	15	7	-
20	Tsangarides (2002)	3	-	-	-	-	-	-	-	-
21	Uyi and Hooi (2018)	5	-	-	-	-	-	1	-	7
22	Yu et al. (2012)	1	1	1	-	-	1	1	-	-
	Total	**94**	**40**	**27**	**9**	**3**	**19**	**16**	**31**	**56**

Notes: DEPTH, financial depth; ACTIVITY, private domestic by banks to GDP; PRIVY, private by deposit money banks; BANK, bank ratio; PRIVATE, private to domestic; STOCKCAP, stock market capitalization; STOCKACT, total shares traded on GDP; TURNOVER, turnover ratio.

As it is evident in the table above, most of the summary statistics derived from
studies are related to the financial depth. Which means that financial depth as an
indicator of financial development is used by most of the studies included in our list.

To obtain this indicator, they calculated financial depth by various conventional methods such as by dividing M1/GDP, and/or M2/GDP, M3/GDP, or M3-M1/GDP or a set of these methods. Each of the indicators listed in the table is further explained in the following lines; the indicator DEPTH denotes that financial depth is used as an indicator of financial development by using the foregoing method. ACTIVITY represents financial activity which is private domestic credit provided by deposit money banks to GDP, BANK is the bank ratio obtained by dividing bank credit by bank credit coupled with central bank domestic assets.

Although they seem to be similar, there is a robust difference between PRIVATE and PRIVY; whereas the former is the private credit divided by domestic credit i.e. the sum of credit allocated to private sector to total domestic credit, the later measures financial intermediaries' activities and equals to the ratio of private credit by deposit money banks and other financial intermediaries divided by GDP. STOCKCAP denotes stock market capitalization i.e. the sum value of listed shares relative to the size of the real economy to GDP, and stock market activity is represented as STOCKACT, which equals the aggregate value of traded shares relative to the sum value of listed shares in the market. Finally, subscripts

TURNOVER and OTHER are simply the turnover ratio and other indicators used in the estimations, respectively. The turnover ratio equals the sum of the traded shares value relative to the total value of the listed shares.

3.2.1   Studies indicating negative and/or inverted U-shaped relationship

To obtain a more meaningful and comprehensive conclusion, a few numbers of studies indicating a negative empirical relationship between financial development and economic growth was added for interpretation and comparison purposes. The inclusion of these studies in a separate section is justified by the fact that these studies do not meet the selection criteria highlighted in the above part. However, these studies are also published recently and empirically investigate the connection among financial development and economic growth.

These studies significantly change our conclusion by challenging the findings of included studies. The interpretation of these studies is provided in a separate section in chapter four of the thesis, nonetheless, their findings are collectively and indiscriminately used to draw conclusions in chapter five.

3.3.Variables

since meta-analysis is fundamentally based on the data derived from several studies, the researcher uses the coefficients obtained from the included studies to measure and analyze the effect of financial development on economic growth portrayed in each study.

The cross-study analysis will also include the different indicators and factors included in the regression estimation of each study. These factors are myriad and are selected based on the definition of financial development or economic growth in individual studies. As a result, 21 moderator variables were obtained under three categories of data characteristics, regions, and indicators of financial development. The description of the variables is given in the succeeding part of the chapter.

3.3.1. Proxy Variables for Financial Development

The following paragraphs provides the summary of all the indicators and proxies of financial development used in the studies from which the dataset is derived. Since

each of these indicators is already explained in the previous section, we ought not to dwell around it any further. Hence, we can simply proceed to the last table of this part after providing a brief description of their dummy values:

- DEPTH: 1 if the indicator for FD is financial depth, and 0 otherwise,

- ACTIVITY: 1 if the financial activity is used as an indicator, and 0 otherwise,

- PRIVY: 1 if private credit by deposit money bank (or other institutions) is used, and 0 otherwise,

- BANK: 1 if bank ratio is the indicator, and 0 otherwise,

- PRIVATE: 1 if private credit by domestic credit is indicatory of financial development, and 0 otherwise,

- STOCKCAP: 1 if stock market capitalization is used, and 0 otherwise,

- STOCKACT: 1 if the stock market activity is used, and 0 otherwise,

- TURNOVER: 1 if the turnover ratio is used as an indicator of financial development, and 0 otherwise,

- OTHER: 1 if other financial indicator is used in the study, and 0 otherwise.

Note: Obs, observations; Std. Dev., Standard Deviation.

3.3.2. Real Factors

The economies are divided into eight regions of East Asia and Pacific, South Asia, Asia, Latin America and Caribbean, Europe, Middle East and North Africa (MENA), Sub-Saharan Africa, and Rest of the World that mainly includes high-income OECD member countries. This categorization is based on the conventional method used in the literature on the finance-growth nexus. The list of countries according to their corresponding regional affiliation is provided in the appendix for further information.

In this thesis, the studies of finance-growth nexus in a single country or few countries are also added under the corresponding region. For example, if a piece of literature studies the effects of financial growth on economic growth in China, that literature is added under the category 'East Asia' and so on.

In addition, a literature on a big number of countries of the world is added under each region, separately. the table in the following chapters summarizes these regression variables.

The comparison in a regional context is carried out by assigning dummy variables for different regions to acquire their summary statistics. These variables are explained as following:

- dumEAP: 1 if East Asian and Pacific countries are included, 0 otherwise,

- dumSA: 1 if countries from South Asia are included, 0 otherwise,

- dumAs: 1 if Asian countries, and 0 otherwise,

- dumEU: 1 if European countries are included, and 0 otherwise,

- dumLAC: 1 if Latin American and Caribbean countries are included in the study, and 0 otherwise,

- dumMENA: 1 if Middle East and North African countries exist, 0 otherwise,

- dumSub: 1 if countries from Sub-Saharan Africa are included in the estimation, 0 otherwise,

- dumRoW: 1 if Rest of World (mainly high-income OECD members), and 0 otherwise.

3.4.Methodology

Before getting to the research methodology, I would like to shed some light on the research method. This distinction shall help us to better apprehend the main subject of discussion in this part i.e. methodology. Also referred to as research techniques, methods are used for conducting the research. Hence it is the set of techniques used by the researcher to study the research problem while performing research operations. As a contrast, research methodology is a more systematic approach solving the so-called research problem.

According to the definition provided by the Business Dictionary, the methodology is "a system of broad principles or rules from which specific methods or procedures may be derived to interpret or solve different problems within the scope of a particular discipline." The sources also add: "Unlike an algorithm, a methodology is not a formula but a set of practices." On the other hand, in usual parlance, research refers to a search for knowledge, and it can also be defined as a systematic and scientific inquiry for useful information on a sought subject (C.R. Kothari, 1990).

Hence, research methodology can be defined as the measure or approach adopted by the researcher to answer their research question in a meaningful manner.

The following chart summarizes a very general process of conducting a research-based study. the current meta-analysis as well as the included individual studies, basically, follow identical procedures as illustrated in the picture below. The methodology for the current meta-analysis can be perhaps regarded as a combination of the descriptive and analytical method. Since the researcher does not have control on the variables and seeks to describe the existing facts and findings of the existing empirical studies, according to the common definition of types of analyses (C.R. Kothari, 1990) the adopted method can be termed as descriptive or *Ex post facto research*.

In addition, the researcher uses the correlational methods to answer the main question. Furthermore, it is an analytical research because the researcher is obliged to utilize the existing information or facts and interpret the evaluation material in a critical way. The methodology can also be regarded as Empirical as the study is basically a data-based research, despite the data used is not primary but derived from

the findings and regression estimations of several individual studies on the topic. The empirical research is deemed suitable for studies where the researcher aims to validate or verify the correlation, causality or relation of certain variables with another. Today, this method of study is considered to be the most authentic and reliable method when it comes to providing evidence for a given hypothesis.

The foregoing descriptions about the type of research pave the ground for discussing the different approaches to research; basically, there are two fundamental approaches to research; Qualitative approach, and quantitative approach. This meta-analysis can fall under the category of a qualitative approach to research. As a scientific type of research, qualitative research 1) seeks to answer to a question, 2) systematically collect evidence and use the existing defined processes to solve the research problem, and 3) yield findings that are not prearranged among other aspects. Under this methodology, the current study seeks to analyze and interpret a case from the point of view of the involved local population, in this case, the findings of the included studies.

3.5.Data Treatment and Arrangement

To conduct the meta-analysis, the studies and data are arranged in three main categories. Significant, positively significant, insignificant and negatively significant studies. This will be the preliminary step to narrowing down the studies and creating a basis of comparison of the findings. As the second step, the various variables such initial income level, human capital, investment, and trade status used in the regression in each study are identified and categorized. these steps will help us to organize the available data for better explaining the differences in cross-study findings.

The studies are also categorized based on the covered period. This period is the time during which the effect of financial development on economic growth in country X is studied. Furthermore, the data characteristics of each study will be further decomposed and broken down to the control variables, regions that the countries present, the political stability (if accounted for in the study) and other economic factors that might have affected the resulting regression coefficients. Furthermore, since the time covered in each study is different, the researcher attempts to take under

consideration the various period during which the effects of finance on growth was examined in the individual studies. The table below illustrates the number of estimations of each study under their corresponding periods.

Table 2: Periods covered in each study

ID	Studies	1960s	1970s	1980s	1990s	2000s	2010s	Total
1	Al-Malkawi and Abdullah (2011)	0	0	6	6	6	0	**18**
2	Andersen (2003)	18	18	18	18	0	0	**72**
3	Andersen and Tarp (2003)	9	9	9	9	0	0	**36**
4	Anwar and Cooray (2012)	0	16	16	16	16	0	**64**
5	Anwar and Sun (2011)	0	0	0	0	8	0	**8**
6	Aryssi and Fakih (2017)	0	1	1	1	1	0	**4**
7	Bangake and Eggoh (2011)	12	12	12	12	12	0	**60**
8	Chakraborty (2010)	0	0	0	16	16	0	**32**
9	Dawson (2003)	0	0	0	2	0	0	**2**
10	Dawson (2008)	0	4	4	4	4	0	**16**
11	Djalilov and Piesse (2011)	0	0	0	6	6	0	**12**
12	Graff (2003)	0	12	12	12	0	0	**36**
13	Hassan et al. (2011b)	0	0	27	27	27	0	**81**
14	Liu and Hsu (2006)	0	0	14	14	14	0	**42**
15	Lu and Yao (2009)	0	0	0	12	12	0	**24**
16	Pradhan et al. (2017)	0	0	3	3	3	3	**12**
17	Seetanah et al. (2009)	0	0	2	2	2	0	**6**
18	Soedarmono et al., (2017)	0	0	0	0	32	0	**32**
19	Tang (2006)	0	0	54	54	54	0	**162**
20	Tsangarides (2002)	3	3	3	3	0	0	**12**
21	Uyi and Hooi (2018)	0	0	12	12	12	12	**48**
22	Yu et al. (2012)	0	0	5	5	5	0	**15**
	TOTAL	**42**	**75**	**198**	**234**	**230**	**15**	**794**

Moreover, as it was discussed in the above paragraphs, the studies are categorized in three groups of 1) Significant, 2) Insignificant, and 3) Negative, which is implemented after observation of the estimated regression coefficients along with the different conditioning variables. These conditioning variables and their number are illustrated in the table below:

Table 3: Conditioning variables used in each study

ID	Studies	Macro Stab	Pol Stab	Trade	Income	Human	Investment	TOTAL
1	Al-Malkawi and Abdullah (2011)	6	0	6	0	0	0	**12**
2	Andersen (2003)	18	0	18	18	18	0	**72**
3	Andersen and Tarp (2003)	0	0	0	9	9	0	**18**
4	Anwar and Cooray (2012)	15	6	12	0	15	0	**48**
5	Anwar and Sun (2011)	1	0	1	1	1	1	**5**
6	Aryssi and Fakih (2017)	0	0	0	0	0	0	**0**
7	Bangake and Eggoh (2011)	12	0	12	0	0	0	**24**
8	Chakraborty (2010)	16	0	12	0	0	16	**44**
9	Dawson (2003)	0	0	0	0	0	0	**0**
10	Dawson (2008)	0	0	0	0	0	0	**0**
11	Djalilov and Piesse (2011)	6	6	0	0	0	0	**12**
12	Graff (2003)	12	0	0	0	12	0	**24**
13	Hassan et al. (2011b)	27	0	27	27	0	0	**81**
14	Liu and Hsu (2006)	0	0	0	0	0	0	**0**
15	Lu and Yao (2009)	8	0	8	0	8	0	**24**
16	Pradhan et al. (2017)	0	0	0	0	0	0	**0**
17	Seetanah et al. (2009)	0	0	2	0	2	2	**6**
18	Soedarmono et al., (2017)	0	0	0	0	0	0	**0**
19	Tang (2006)	18	0	18	0	0	18	**54**
20	Tsangarides (2002)	2	3	3	3	0	0	**11**

21	Uyi and Hooi (2018)	0	0	0	0	0	0	**0**
22	Yu et al. (2012)	5	0	5	0	0	0	**10**
	TOTAL	**146**	**15**	**124**	**58**	**65**	**37**	**445**

Each of the above variables is;

- Macro Stab: The study (primary) controls for macroeconomic stability in the conditioning dataset (=control for inflation or government size by including e. g. government final consumption expenditure to GDP, interest rate),

- Pol Stab: The study (primary) controls for political stability in the conditioning dataset (= e.g. number of coups and revolutions or the number of assassinations) or some measure of political rights, civil liberties or indices of democracy, political freedom, political instability or ethnic division.

- Trade: The primary study controls for the effects of trade in the conditioning dataset (= e. g. black market exchange rate premium, trade openness, current account balance, the growth rate of real exports)

- Income: The study (primary) controls for the level of initial income in the estimation (= convergence term),

- Human: The level of human capital is controlled for in the primary study (= e.g. school enrollment rates),

- Investment: The study (primary) controls for investments in the economy (e. g. share of investment in GDP, foreign direct investments).

CHAPTER FOUR: INTERPRETATION AND ANALYSIS

4.1.Introduction

The fourth chapter covers data interpretation and discusses the main findings of the study. As stated in the preceding chapter, our meta-analysis is based on the secondary data which is derived from the literature on the empirical effects of financial development on economic growth. Although the number of studies that are used for data extraction is not significant enough, the number of observations from each study is significantly large.

The derived 295 unique regression coefficients belong to the different studies and each of the observations from the same study is different due to the number and nature of additional variables used in the regression. However, the observations of each study are grouped in accordance with the individual studies and all the control variables are differentiated for comparison purposes during the analysis procedure.

In case of the additional five studies, their findings are provided in a separate section that includes a general conclusion of the grouped studies. This general conclusion is then used as a common finding of the entire section. This method can be perhaps justified by the argument of consolidation and comparability with the studies of other groups. In other words, the general conclusion for the additional five studies could perhaps help us to obtain a consolidated and coherent conclusion in the last chapter. The output of the analysis is used to answer the question posed in the first chapter of this thesis.

4.2. Summary Statistics

GDP growth rate is the common dependent variable in the empirical literature included in this study. Gross Domestic Product (GDP) can be defined as the sum of the market value of aggregate finished goods that are produced by an economy during a given period. The variables used in the study are presented in the following three tables. The table below illustrates the summary statistics of regressions used in the study. These variables encompass some of the general data characteristics that we control for while running the regression function. The moderator variables used in

the studies as proxies to measure financial development and the real factor variables catching the differences between various regions are summarized using the regression command "summarize" through STATA, in the following tables, respectively.

4.2.1. Summary Statistics of Regression Variables

Table 4: Summary statistics of regression variables

Variables |	Obs	Mean	Std. Dev.
t |	295	1.687787	4.260727
N |	295	25.12542	25.8966
T |	295	17.33898	20.42592
Samplesize* |	295	4.902346	.9889308-
Length |	295	6.727119	11.28525

Notes: *Obs*= Observations; *Std. Dev.*= Standard Deviation; *t*= *t*-statistics; *N*= Number of cross-sectional units; *T*= Number of time units; *Samplesize*= Total number of observations used; *Length*= Number of years in the time unit (T). Asterisks (*) denotes logarithmic value.

In the table above, t stands for t-statistics, N represents the of countries included in the estimation, and T subscript is the number of time units included in the study. The logarithm of the sum of observations used in the study is illustrated as Samplesize*, and the number of years in the study is denoted by 'Length'.

4.2.2. Summary Statistics of FD Indicators

Table 5: Summary statistics of financial development proxies

Variable		Obs	Mean	Std. Dev.	
DEPTH		295	.3186441	.4667424	
ACTIVITY		295	.1355932	.3429378	
PRIVY		295	.0915254	.2888448	
BANK		295	.0305085	.1722739	
PRIVATE		295	.0101695	.1005003	
STOCKCAP		295	.0644068	.2458933	
STOCKACT		295	.0542373	.2268702	
TURNOVER		295	.1050847	.3071837	
OTHER		295	.1898305	.3928333	

Note: *Obs, Observations*

Where the indicator DEPTH; denotes that financial depth is used as an indicator of financial development by using the foregoing method. ACTIVITY represents financial activity which is private domestic credit by deposit money banks as a ratio of GDP, BANK is the bank ratio obtained by dividing bank credit by bank credit coupled with domestic assets of the central bank.

Although they seem to be similar, there is a robust difference between PRIVATE and PRIVY; whereas the former is the private credit divided by domestic credit i.e. the sum of credit allocated to private sector to total domestic credit, the later measures the activities of financial institutions and equals private credit by deposit money banks and other financial intermediaries to GDP. STOCKCAP denotes stock market capitalization i.e. the sum value of listed shares relative to the size of the real

economy to GDP, and stock market activity is represented as STOCKACT which equals the aggregate value of traded shares relative to the sum value of listed shares in the market. Finally, subscripts TURNOVER and OTHER are simply the turnover ratio and other indicators used in the estimations, respectively. The turnover ratio equals the sum of the traded shares value relative to the total value of the listed shares.

4.2.3. Summary Statistics for Regions

Table 6: Summary statistics of regions

Variable		Obs	Mean	Std. Dev.
dumEAP		295	.4644068	.499579
dumSA|	295	.2983051	.4582915
dumAs		295	.379661	.4861282
dumEU		295	.2033898	.403204
dumLAC		295	.3322034	.4718038
dumMENA		295	.2305085	.421874
dumSub		295	.3220339	.4680499
dumRoW		295	.3152542	.4654065

Note: *EAP*= East Asia & Pacific; *SA*= South Asia; *As*= Asia; *EU*= Europe; *LAC*= Latin America & Caribbean; *MENA*= Middle East & North Africa; *Sub*= Sub Sahara; *RoW*= Rest of the World *(mainly high-income OECD countries).*

4.3. Analysis of the Findings

The process of providing meaning, structure and bringing order to the mass of derived data is succinctly described as data analysis by Marshall and Rossman (1955). Despite being referred to as an ambiguous, clumsy, and hectic, the process is

considered to be fascinating. Further, since data analysis and interpretation are activities that involve making sense of the information and interpret and theorize data that suggests a search for a general statement among categories of data, it is undoubtedly a process of application of inductive and deductive logic to the search (Schwandt, 2007).

The empirical study of the effects of financial development on economic growth in different countries around the world has produced different results. The inconsistency of the findings can be traced back to a dozen factors related to the study and the dataset used in each study. These different factors are related to the number and type of countries of study, indicators of financial development, research methodology and techniques, the time during which the countries are being studied, and so on. Therefore, the analysis and interpretation and most importantly, comparison of the findings are not only difficult but also bewildering. This thesis has found counter-intuitive and contradicting results, which perhaps can be an indication of its presentability. The thesis raises several questions and highlights new areas of study in the field.

In addition to the tables in the preceding parts, the studies are again categorized in the following table:

Table 7: Effects of conditioning variables

	Study	Macro Stab	Pol Stab	Trade	Income	Human	Investment
	Effects of Each Conditioning Variables (+), (-), or (/)						
Significant	Andersen (2003)	+	0	-	+	+	0
	Chakraborty (2010)	-	0	-	0	-	-
	Liu and Hsu (2006)	na	0	na	0	na	na
	Dawson (2008)	0	0	0	0	0	0
	Al-Malkawi and Abdullah (2011)	+	0	+	0	0	0
	Anwar and Cooray (2012)	+	+	+	0	0	+
	Aryssi and Fakih (2017)	0	0	0	0	0	0
	Bangake and Eggoh (2011)	+	0	+	0	0	0
	Dawson (2008)	0	0	0	0	0	0
	Hassan et al. (2011b)	Na	0	na	na	0	0
	Lu and Yao (2009)	/	0	+	0	+	0
	Pradhan et al. (2017)	0	0	0	0	0	0
	Seetanah et al. (2009)	0	0	+	0	+	+
	Soedarmono et al., (2017)	0	0	0	0	0	0
	Tsangarides (2002)	+	+	+	+	0	0
	Uyi and Hooi (2018)	0	0	0	0	0	0
	Yu et al. (2012)	+	0	+	0	0	0
	Study	**Macro Stab**	**Pol Stab**	**Trade**	**Income**	**Human**	**Investment**
Insignificant	Andersen and Tarp (2003)	0	0	0	na	/	0
	Anwar and Sun (2011)	-	0	/	+	+	/
	Dawson (2003)	0	0	0	0	0	0
	Djalilov and Piesse (2011)	/	/	0	0	0	0
	Tang (2006)	+	0	/	0	0	/

Note: +, positive effect on growth; -, denotes negative effect; na, not applicable; /, changing or no effect.

4.3.1. First Category: Studies with Significant Findings

The aim of these studies was to discover empirical relationship amid financial development and economic growth, and as it was somehow expected, each study produced different interesting results. Focusing on the data gathered from the MENA region countries from 1985 to 2005, the study (Andersen, 2003) finds a significant relationship between finance and growth while indicating that the positive relationship of Macroeconomic stability, Income, and human capital development with economic growth. One of the most salient findings in the region was that the countries with a more improved financial sector would grow faster.

The second study (Chakraborty, 2010) finds a positive relationship between the money market rate of interest and growth and highlights a negative relationship between human capital growth, real effective exchange rate, debt burden, real wealth, and growth. The findings of this study are based on the dataset for India from 1993 to 2005. Furthermore, while emphasizing on the positive role of reforms in the interest rate of the market, the study does not suggest any significant connection between stock market development and growth.

Based on the dataset on finance and growth in Korea, Japan, and Taiwan during 1981 to 2001, the findings of the third study (Liu and Hsu, 2006) in this group shows several inconsistent relationships among indicators of financial development and growth rate of each country; positive role of investment in Japan, while the effects were different in case of Korea and Taiwan, trade played a positive role in Taiwan and Korea, positive role of stock market in case of Taiwan, and also a positive role played by finance-aggregate in Taiwan and negative in Korea and Japan. (Possibly because of the sound financial regulations and system in Taiwan). Finally, the capital outflows negatively affected the three economies.

The last study in the group is also replete with inconsistencies. The study of 44 countries from 1974 to 2001 (Dawson, 2008) shows a "positive and statistically significant relationship" between finance and growth. However, the study emphasizes the conflicting conclusions led by alternative measures of financial sector development. Most importantly, the findings of this study also suggest that the growth in liquid liabilities driven by policies in developing economies can accelerate growth.

The fact that the number of studies in this group is much higher than the other group is intriguing itself. As discussed in the preceding chapters, this huge difference can be potentially fueled by the file-drawer problem. However, this part does not attend to this problem.

Focusing on the Middle East and North African countries, the study is based on the pooled OLS regression of data from 1985 to 2005 (Al-Malkawi and Abdullah, 2011). Showing an overall positive effect of finance on growth, the findings further highlight the conventional view about the negative effects of government expenditure and inflation (or disturbance in macroeconomic stability) on economic growth of the countries, in general.

Anwar and Cooray (2012) base their research on the data covering eight South Asian countries from 1970 to 2009. Empirically examining the interaction between governance, financial development, and ultimately economic growth. The finding suggests positive connections between improvement in civil liberty and political rights, and growth (5.25% and 7.1% respectively). Overall, the study proves the

existence of a significant positive relationship between finance and growth in South Asia.

Furthermore, the study of the relationship between finance and growth during pre-Arab Spring and post-Arab Spring shows the following results (Aryssi and Fakih, 2017); The implication of political reconfiguration on growth is highlighted in this study and is apparently used as a kind of pivot. The findings include a stronger positive and significant effects in pre-Arab Spring (2005 to 2010) and weaker effects in post-Arab Spring era (2011-2014) which is driven by the political instability and uncertainty. Further, the changing significance level of some macro-economic proxies during pre and post-Arab Spring in this study signifies important points.

Consistent with the findings of Andersen (2003), and Al-Malkawi and Abdullah (2013), the research emphasizes on the urgent needs for political reforms in MENA countries to reinforce regional firms and consequently boost economic growth.

One of the significant studies has focused on 71 countries while distinguishing between developing and developed world during 1960 and 2004 (Bangake and Eggoh, 2011).

Providing evidence for a bi-directional causality, the researchers show the differences in interactions between finance and growth in both the country groups: developing (low and middle-income) and developed (high-income). They do not find enough evidence to support the existence of a short-run causality between finance and growth in middle-income countries but find significant statistical evidence in the case of high-income countries. the strong bi-directional causality in the long-run is consistent for both low and middle-income as well as high-income countries. Also, providing evidence on the effects of financial development on economic growth, Hassan and associates highlight a positive relationship between the two variables in developing countries from 1980 to 2007. Particularly, this study is considered to be very suitable for the current thesis since they regionally categorize the countries before testing for any causal relationship.

Moreover, when they included domestic credit by the private sector (as a ratio of GDP), and general savings are the financial development indicators, they found a long-run statistically significant effect (supporting Becsi & Wang (1997) argument that a well-developed financial sector in developing countries leads to growth by contributing to savings and investment) mainly in South Asia (2.35% increase in

growth as result of 1% increase in general savings), Sub Sahara, and High-income OECD countries. Further, they found evidence of positive association in East Asian & Pacific and Latin America & Caribbean countries.

In the case of high-income countries, however, the effects are surprisingly negative. Adding the indicators domestic credit provided by the banking sector in the regression does not change the significance level of savings and trade. Finally, after including the M3 as an indicator of the financial depth and observing consistency in the results especially for developing countries' groups, they highlight the positive association among the level of financial development and rate of economic growth, while also emphasizing on the adverse effect of government expenditure and inflation.

To answer why China's experience has nullified the conventional knowledge that financial repression impinges upon growth, Lu & Yao (2009) base their study on Chinese provincial data in the 90s. as a result, they find a negative relationship between enhanced legal system and investment in the private sector while not adversely affecting financial depth despite improving private share of bank credits

and bank competition, a finding interpreted as the leakage effect. Consistent to the findings of McMillan & Woodruff (1999, 2002) they also conclude that the in case of economies in transition, informal relations play a significant role in boosting private enterprises.

Coming to one of the most recent literature on the finance-growth nexus, a study of 19 Eurozone countries from 1988 to 2013 presents evidence of significant positive effects of financial development on economic growth (Pradhan et al., 2017). They further find that increased integration of countries in terms of inter-regional trade, growth prospects, and financial development enhanced FDI inflow in the long-run.

Moreover, to test the relationship between the variables in 22 island economies, Seetanah and colleagues (2009) use a panel data covering 22 years (1980-2002). They find a positive association between financial development and productivity of the islands. This contribution is explained mainly by the consequent role of investment, openness, and education level. Consistent with the method adopted by, for instance, Hasan et al., (2009) in focusing on single-country settings, Seodarmono and associates (2017) attempt to unknot the long-disputed nature of financial

development effect on economic growth. They include 33 Indonesian provinces from 2000 to 2009 and find an inverted U-shaped relationship between finance and regional growth rate which means that too much of investment credit and consumption credit can impinge on growth rate. Further, they also come up with an inverted U-shaped connection between growth and consumption level.

OECD and African countries are studied by Tsangarides (2002) to empirically test the relationships between the variables. The findings of this study do not suggest any evidence to support the convergence hypothesis[5] in the case of African countries. In the African countries, it was studied that the countries with outward-oriented policies, higher saving rates, speedy financial development, low population growth, with more democracy level grew faster. Further, the detrimental impacts of government expenditure on growth were leniently proved.

Also, a more recent study on African countries is conducted by Uyi and Hooi (2018) using a panel data from 1980 to 2014. The study of 10 West African economies

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[5] Also known as the catch-up theory, convergence hypothesis simply means that the inflation-adjusted income per-capita of all countries/economies of the world will approach equality, given sufficient time (Wikipedia).

reveals a positive effect of finance on growth in general which stems from improved resource allocation and enhanced investment functions. However, the positive effect is limited to merely 75% of the countries and the remaining countries where a weak effect is observed are suggested to be due to lower income level, low level of financial development, incapable institutions, macroeconomic instability, and high rate of inflation, among other possible reasons.

Finally, using a panel dataset covering 1980 through 2009, Yu and associates (2012) empirically study the role of financial development in the growth of 172 countries. their study ends up finding distinct causal direction, different timing, and strength of the causality. While a positive relationship between domestic credit to the private sector and growth was found in the study, the connections between domestic credit provided by the bank and other financial institutions and growth were discovered to be negative.

Categorizing the countries on regional bases show a rather varying evidence. In case of East Asia and Pacific (low and middle-income groups), the Granger causality test highlights a rather weak effect of finance on economic growth in short-run and a

significant relationship between stock market and growth. East Europe and Central Asian countries need further domestic credit to the private sector and the rate of general domestic savings for long-run growth.

Also, the findings for high-income OECD countries indicate crucial role played by a sound and well-functioning financial and stock market for long-run growth. Lastly, using Granger causality test for Sub-Saharan countries, they emphasize on diversification of financial sources, reforming and deepening financial system, and same as the case of MENA countries, raising the share of domestic credit to private sector. This should boost long-term economic growth through fostering investment.

4.3.2. Second Category: Studies with Statistically Insignificant Findings

This category encompasses the two remaining groups of studies i.e. studies indicating negative effects, and studies with evidence of an insignificant relationship between financial development and economic growth. Again, this category contains fewer studies as compared to the succeeding category. Grouping negative and insignificant findings under one category can be justified by considering the thesis

question. The intention of this study is to add to the causal relationship among financial development and economic growth based on other recent studies, hence, it is only fair to try to balance the two sides of pros and cons. It can be further justified by the looking the extensive number of studies with positively significant studies in the previous category. This imbalance can be due to the file-drawer problem which is ubiquitous in every field of study (Dickersen, Min, & Meinert, 1992).

A critical study conducted by Andersen & Tarp (2003) on the issue covering data from 1960 through 1995, uses indicators such related to income and human capital. In the regional level, they find a negative relationship between finance and growth in most of the countries while observing positive but insignificant relations in few countries. They find "disastrous" effects of liberalization in the 70s and 80s on economic growth that stemmed from lack of enough banking supervision and instability in macro-economy. Their study further indicates the "widespread" detrimental effects of government interference in capital markets. Most importantly, they find no empirical evidence to support a positive relationship between financial development and economic growth.

Referring to the cases of China and Vietnam as examples of regulated financial systems, they argue that the association between deregulation and growth cannot be justified. Further, they conclude by highlighting that the tradeoff for not liberalizing the economy is overemphasized.

The second study in this category empirically analyzes Malaysia from 1970 through 2007, using the bank-based theory of financial development. the finding (Anwar & Sun, 2011) indicate positive causal relations between financial development and domestic capital stock, however, the relationship between the former and economic growth is statistically insignificant. The finding further reveals that an increase in the stock of foreign investment leads to the further accumulation of a domestic stock of capital. This increase in the stock of foreign investment, the finding suggest, is driven by the degree of openness and real exchange rate. The study also suggests the detrimental effects of government expenditure and the strong contribution of the human capital formation to Malaysia's economic growth.

Dawson (2003) basis his study on a panel data from 1994 through 1999 for 13 Central and East European Countries (CEECs). He empirically shows that the effect

of labor (human capital) is insignificant in the growth rate of central and east European countries which indicates sufficient availability of labor. The result also shows positive signs for the coefficients of financial development; however, they are statistically insignificant which means that the growth rate is not inhibited by the underdeveloped financial sector.

The case of former Soviet countries and eastern European countries (which is a total of 27 countries) from 1998 to 2008 is studied by Djalilove & Piesse (2011). By saying that "most of the transition countries have reached a point in their development at which the financial sector is an effective determinant of growth" they indicate that the financial sector effects growth only if the economy has already achieved certain development level. They also stress on the varying effect of regulation and legal environment, financial intermediaries including banks and the capital markets in each country.

The last study that falls under this category is conducted by Tang (2006) who used data on APEC member countries from 1981 through 2000. The countries are divided into three categories as Developed, Developing, and All Countries. As indicators of

financial development, the variables related to the stock market, banking sector, and capital flow are used to test the hypothesis. The study provides evidence of a positive and significant relationship between growth and stock market across the countries. Nonetheless, they find insignificant relations between variables corresponding banking sector and growth, during the period of observation. The result further shows that the stock market has more significant effect on growth in developed countries than in developing ones, and overall, it was estimated that the overall effect of financial development in developed countries is higher than the counterpart group (a result consistent with Hasan et al., 2011b; Djalilove & Piesse, 2011, Bangake and Eggoh, 2011; Andersen, 2003).

4.3.3. Third Category: Studies indicating Negative Empirical Relationship

As it was previously stated, this category consists of studies that suggest a negative and/or U-shaped relationship. The reason why these studies are added in a separate section is that these studies- as mentioned before- do not meet the selection criteria for the studies briefly discussed in the first and thoroughly explained in the third chapter. Further, the studies shall be analyzed as an addition to other included studies

to further expand the window through which the relationship between the two variables is captured.

Also, exploration of the findings of these studies can hopefully change or at least affect our findings and conclusion, and construct more meaningful and pragmatic questions. The details of these studies are provided in the following table;

Table 8: Additional Studies

Authors	Name	Date	Dependent Variable	Region effect	Time effect
Arcand et, al.	Too Much Finance?	2015	Real GDPpc	NA	NA
S. G. Cecchelli & E. Kharroubi	Reassessing the impact of Finance on Growth	2012	(5yr average) GDP/worker	NA	NA
Kose et, al.	Financial Integration and Macroeconomic Volatility	2003	SD of GDP growth rate	NA	√
H. Reisen & M. Solo	Which Type of Capital Inflows Foster Developing -Country Growth?	2001	Real GNPpc	NA	NA
W. R. Cline	Too Much Finance, or Statistical Illusion?	2015	NA	NA	NA

Note: GDPpc, Gross Domestic Product per capita; SD, standard deviation; NA, not applicable; √, existence of effect.

This study also challenges the finding of some of the studies included in the above categories; using a variety of estimators and data, Arcand et, al. (2015) discover a negative effect after financial depth reaches a "threshold" ranging between 80 to 120% of GDP. Similar to the findings of the study conducted by Rousseau and Wachtel (2011), Arcand and associates also find a "vanishing effect" of financial depth by using a standard bias formula and Montercarlo simulation. They argue that the

change in the fundamental connection amid financial depth and economic growth is not the reason of this vanishing effect, rather, it is driven by the misspecification of the models that do not allow nonmonotone relationship between the two variables.

In their study, Cecchetti and Kharroubi (2015) address this issue by examining whether productivity growth at the level of aggregate economies is affected by the size and growth of the financial sector. Developing a model that is in conformity with the findings of Kneer (2013), their study reaches two striking conclusions; a sizeable financial system is associated with lower growth at high levels, and the financial boom is detrimental for aggregate real growth. Also, like the study conducted by Arcand and colleagues (2015), highlights a U-shaped relationship between finance and growth. Overall, the two previous studies highlight that when a quadratic term is introduced to the conventional regression analysis, the obtained coefficients become negative.

The evidence for a U-shaped relationship between financial development and economic growth is also provided by the work of Kose et, al (2015). Providing a comprehensive examination of fluctuations in macroeconomic volatility in

developing economies from 1960 through 1999, their study reports rising income growth in financially integrated economies amid declining output growth volatility in the 90s. In addition, the relative volatility of consumption is enhanced by enlarging financial openness up to a "threshold", according to their study.

A more qualitative approach is adopted by Cline (2015) in studying the relationship between financial development and economic growth. He compares the findings of studies while aptly distinguishing among economies with advanced financial system and economies with primitive or immature financial mechanisms. Most importantly, the study highlights the importance of the number of countries in determining the level of the vanishing effect. Also, he emphasizes that there is an innate bias toward a negative quadratic term in a regression analysis that incorporates any variable that tends to rise with per capita income, together with the convergence variable (logarithm of per capita income) in justifying economic growth.

The vanishing effect is also highlighted by Reisen & Marcelo (2015) who conducted a panel data analysis over the period 1986 through 1997 covering 44 countries. measuring the, portfolio equity investment, independent growth effect of bond flows

foreign direct investment, coupled with long-term and short-term bank lending, their finding warns developing countries against solely relying on their national saving. Further, the authors emphasize on the role of foreign direct investment and portfolio equity inflows in stimulating long-run growth prospects.

CHAPTER FIVE: CONCLUSION AND POLICY RECOMMENDATIONS

5.1.Introduction

At the end of the previous chapter, a summary of individual studies was provided while highlighting the points most relevant to the purpose of this thesis. The provided summary conclusion of studies in different categories will be jointly analyzed in this chapter. Thereafter, based on the individual summaries and analyses coupled with the category-based analyses, the general analysis and interpretation are provided. The general analysis of the cross-categorical studies is also used for drawing conclusion and policy recommendation.

5.2.Meta-analysis and Interpretation

The findings of individual studies in different categories are diverse. The diversity is explained by the most important characteristic of the studies included in this research i.e. the different variables used in the regression. This includes the various financial development indicators, indexes related to macroeconomic stability, time dummies,

regional differences, different choices of methodology and models, and so on. Such differences put aside, it is still meaningful to compare the ultimate results of these studies and look for answers about the effects of financial development on economic growth. Hence, before combining the findings of all the included studies, the researcher provides a general picture of each of the categories and try to explore the underlying factors of inconsistencies. Below table indicates the regions covered by each study:

Table 9: Statistical significance of regions in each study

	Statistical Significance and Regions								
	Study	**E.A & P**	**S.A**	**Asia**	**EU**	**LA&C**	**MENA**	**Sub-S.A**	**RoW**
Significant	Andersen (2003)	√	√	√	√	√	√	√	√
	Chakraborty (2010)	-	√	-	-	-	-	-	-
	Dawson (2008)	√	√	-	-	√	√	-	-
	Liu and Hsu (2006)	-	-	√	-	-	-	-	-
	Al-Malkawi & Abdullah (2011)	-	-	-	-	-	√	-	-
	Anwar and Cooray (2012)	-	√	-	-	-	-	-	-
	Aryssi and Fakih (2017)	-	-	-	-	-	-	√	-
	Bangake and Eggoh (2011)	√	√	√	√	√	√	√	√
	Graff (2003)	√	√	√	√	√	√	√	√
	Hassan et al. (2011b)	√	√	√	√	√	√	√	√
	Lu and Yao (2009)	√	-	-	-	-	-	-	-
	Pradhan et al. (2017)	-	-	-	-	√	-	-	-
	Seetanah et al. (2009)	√	-	-	√	√	√	√	-
	Soedarmono et al., (2017)	√	-	-	-	-	-	-	-
	Tsangarides (2002)	√	-	-	-	-	√	√	√
	Uyi and Hooi (2018)	-	-	-	-	-	-	-	√
Insignificant	Yu et al. (2012)	√	√	√	√	√	√	√	√

Study	E.A & P	S.A	Asia	EU	LA&C	MENA	Sub-S. A	RoW
Andersen and Tarp (2003)	√	√	√	√	√	√	√	-
Anwar and Sun (2011)	√	-	-	-	-	-	-	-
Dawson (2003)	-	-	-	√	-	-	√	-
Djalilov and Piesse (2011)	-	-	√	√	-	-	-	-
Tang (2006)	√	-	√	-	√	-	-	√

Note: E.A & P, East Asia and Pacific; S.A, South Asia; EU, Europe; LA&C, Latin America and the Caribbean; MENA, Middle East and North Africa; Sub-S.A, Sub-Sahara Africa; RoW, Rest of the World (mainly high-income OECD member countries).

5.2.1. Studies with Statistically Significant Results

As it is clear from the previous chapter, the findings of studies within a certain category are also different from each other and provide no clear consensus. However, if we look more closely we can see few common results; all the studies are looking at Asia and South Asia and suggest a significant causal relationship between a more developed financial sector and economic growth when the analysis is limited to developing countries in Asia and North Africa. Their findings are further supported by other studies included in this thesis as well. Further, influenced by certain country-level differences, the studies highlight the varying effects of savings and investment, trade and human capital development, and income on economic growth. It is pertinent to state that the countries showing a more lenient set of rules benefited from finance-aggregate and the stock market, and countries with better-functioning

financial system grew faster. Overall, the set of policies and regulations in developing countries plays a major positive role in determining the extent of the causal relationships between financial development and economic growth in that country. in other words, the empirical studies support the argument that initial financial sector development level is important in determining growth.

Moreover, the conflicting outputs are more visible when the countries are divided to 'developed' and 'developing' groups. Studies that investigated the differences between developed and developing countries argue that the regions with a higher level of financial development proved to benefit from FDI in a greater extent.

Furthermore, most of the studies show a marked relationship between macroeconomic stability and financial sector and highlight a sizeable connection between the legal system, financial development, and ultimately economic growth. Also, the findings suggest that political instability, low democratic environment, and government expenditure during the war or conflicts prove to be detrimental to growth.

Most of the studies controlled for Macro-economic stability which mean to control for inflation or government size by including e.g. government final consumption expenditure to GDP, interest rate, and so on. It was found that the developing countries, especially the African economies were most harmed by the extravagant lifestyle of the political elites, which hindered growth. Whereas, the African countries with a lower rate of population, higher savings, more outward-oriented policies, and accelerated the pace of financial development coupled with democracy proved to grow faster.

The difference in long-term and short-term effects on growth was also observed in the studies of this category. Some of their findings also suggest that the effect of financial development on growth in the long-run is even stronger, providing that the financial sector is already efficient enough.

5.2.2. Studies with Statistically Insignificant Findings

The studies that provided Statistically insignificant causal effect between financial development and economic growth mainly -but not exclusively- studied East

European, South and Central Asian countries. except for the South Asian case, the other two regions can be aptly characterized as post-soviet economies. These countries are largely affected by the Soviet era system and perhaps the consequent unequal distribution of wealth after the fall of the Soviet empire in 1991. Further, some of the countries that managed to overcome the challenges of a new era and developed a well-functioning financial system in Central and Eastern Europe for example, demonstrate better growth rate. Despite being statistically insignificant, the finding suggests a positive causal effect between financial development and economic growth.

5.2.3. Studies with Negative Empirical Relationship

The conclusions of these studies may appear to be surprising as financial development is supposed to directly promote investment, lower transaction costs, and distribute capital and risk across the economy (Pagano, 1993). However, the number of empirical studies that suggest a negative empirical relationship after financial development (mainly indicated by the level of financial depth) reaches a "threshold" has recently grown. The factors of such a change could be myriad. Here,

I have explained a few of the potential reasons that are perceived by observing the studies included by the researcher.

The vanishing effect can be perhaps explained by the rapid growth in the financial sector and the use of recent data by the researchers of these recently published studies. Also, Philippon and Reshef (2009) set fort evidence that banking industry (in the US) has become more skilled-labor-intensive over the past three decades. Since the primary factors of production (capital, labor, etc.) are limited, the increasing demand for skilled labor in financial sector impinges upon the productivity in other sectors, undermining overall growth in that economy.

The studies showing an inverted U-shaped effect of financial sector size on the productivity growth also argue that further enlargement of financial sector can be a drag on productivity growth (Cecchelli and Kharroubi, 2012; Kose et al., 2018). Furthermore, the role of the manner through which finance is provided has been strongly stressed upon (Arcand et, al., 2015; Beck et al., 2014). For instance, the choice between utilizing lending to finance investment in production sector against household consumption (Beck et al., 2014).

In addition to that, many researchers that used the recent data (for instance; Rajan, 2006; de la Torre et al., 2011; Arcand et al., 2015; Demirgüç-Kunt et al., 2013) report potential perils of excessive financial depth as well. To explain their results, some highlight the evolving significance of credit and security markets (Demirgüç-Kunt et al., 2013), others point at the positive but declining returns of financial depth which becomes smaller than the cost of instability brought about by the "dark side" of financial development at some point (de la Torre et al., 2011), while few other researchers emphasis on their points by mostly focusing on the finance-crisis nexus (Rajan, 2006).

5.3.General Conclusion

The difference in results varied significantly across the countries and regions. As Benhabib and Spiegel (2000) assert that not all the indicators of FD measure the same forces, it is evident that the possible reason behind inconsistency in the results are driven by choices of the proxies of financial development. These studies adopt different methodologies and sought to answer varied questions to investigate the

relationships between different (possible) determinants of economic growth in relation to financial development. However, the findings of most of the studies are consistent in at least one point; there is an empirical relationship between financial development and economic growth. A number of these findings took a step further and suggested the existence of a direct and significant effect of finance on growth.

In the other hand, the inclusion and interpretation of studies reporting an inverted U-Shaped relationship between the variables, it can be argued that financial development cannot necessarily be an eternally-pursued objective. In other words, after a certain point, the positive effect of financial development can be transformed to a negative effect and undermine growth.

Overall, even when the studies were limited to a single country, their findings voted in favor of an empirical connection between the two. Furthermore, the conclusion in the regional level can be summarized as i) the political stability indicators such as democracy and civil liberty directly affect the relationship between financial development and economic growth in MENA, African, and Asian countries, ii) the countries where the financial sector has already reached a certain level of

development grow faster, however, the positive relationship might transform into a negative in case of a very high financial sector development iii) economies with lenient regulations showed better performance in terms of growth, attracted FDI in most of the regions, and iv) in most cases (studies), the empirical effect of financial development on economic growth proved to be more significant in long-run, than in the short-run.

In a nutshell, after analyzing the included empirical studies, it is found that there is an empirical relationship amid financial development and economic growth. The degree of this causal relationship varies over time and based on the domestic characteristics of the individual countries.

5.4. Limitations of the Study

There are several limitations to this study. Generally, meta-analysis studies require a lot of time and preparation. The studies that meta-analyses are based on should be thoroughly investigated and understood, their implications and findings understood and carefully analyzed. Sadly, the time for the current study, in my opinion, was not

enough to produce a good quality literature. Furthermore, there are few, if at all, qualitative meta-analysis studies on the empirical relationship amid financial development and economic growth, hence, the current study could not benefit from the experiences of any existing identical study. This unavailability of a good sample exposes the current research to many mistakes and limitations.

In addition, the number of studies included for analysis is not enough. Researchers have produced tens of quality literature on the topic since the year 2000AD that could be added to the existing number of studies and analyzed to derive a more reliable and meaningful conclusion. Yet, due to the lack of time, merely 22 studies were included, which is not quite enough to reach a strong and reliable conclusion.

5.5. Policy Recommendations

Recall that our main finding suggested the existence of empirical relationship between financial development and economic growth. Therefore, we recommend the policymakers not to underestimate the role of financial sector in achieving a better growth rate.

The result of our analysis strongly suggests the consideration of institutional characteristics, including the type of financial mechanism and policies to explain the intrinsic differences between individual countries. It is unlikely for the adjustment process - in African countries- to be simple, given the existing imbalances, deep-rooted development constraints, and declines being registered during the past two decades.

The recent wave of political upheavals and democratization in some of the leading performers in Middle Eastern and African countries coupled with some favorable signs of economic revival in a handful of economies spawn some conservative optimism about the regions' future. Nonetheless, this optimism is moderated by the fact that these excelling performers have just begun their recovery from domestic unrest, civil wars, and hectic economic decline, and it will require solid growth (for instance; at rates of East Asia) to catch up with the rest of the world and make up for the lost ground. Any growth-oriented adjustment policy that aims to lift Africa out of the 'low-level equilibrium trap' should address myriad challenges; including savings

and poverty, growth, the demographic trap of population, socio-political stability, restoration of peace, improvement of institutions, and enhancement of public welfare.

Following the financial crisis in the East Asian region, these countries have brought about extensive reforms in restructuring their banking systems. This would subsequently improve the efficacy of the banking sector and ameliorate the growth effect of capital flow. The findings suggest that the level of growth effect would vary directly with the development level of the banking sector, however, this merely applies to the developing member countries in the category. Having reached a substantial financial development stage, the developed countries on the other hand- for example, Eurozone- would further benefit from economic integration and openness.

The policymakers should consider that each of the foregoing challenges involves mutually reinforcing and interrelated multiple factors that interact with each other in a dynamic way. policies can not only accelerate the pace of countries reaching their long-run levels of income but most importantly, they can affect the long-run income levels. It is believed to be pertinent to emphasize that the policymakers in developing

countries need to be granted additional leeway, sufficient time, and discretion in their endeavors to device appropriate mechanisms and introducing suitable reforms to the financial sector. pushing policymakers in urgent and haphazard actions would lead to substantial costs.

5.6.Recommendation for Future Studies

Basically, the limitations of the current study can be referred to for a better future study on the topic. The current study is limited to a relatively insignificant number of empirical studies, the future studies shall have a stronger position by investigating the existence of causal relationships between financial development and economic growth by adding a maximum number of new studies. This study has been unable to scientifically highlight the effects of different periods covered in the studies and fails to adequately and empirically investigate the file-drawer problem. Furthermore, even though meta-analysis studies can add to the literature in this field, it can be recommended to the future studies to concentrate on the individual cases of each economy.

5.7.Concluding Remarks

Many meta-analyses have been conducted to test the type of relationship between financial development and economic growth. This research adds to the existing literature on the topic by using some newly published empirical studies as primary data sources for interpretation and analysis. Particularly, it sought to answer the following questions:

- Whether there is an empirical relationship between financial development and economic growth;

- Whether the level of effect (if any) of financial development varies across the regions.

Undoubtedly, financial development plays a decisive role in process of economic growth. The variance in the explanatory variables and the period in each study leads to certain contradicting results. Most importantly, the characteristics of not only each region but also the individual countries vary extensively. Therefore, attempting to devise a general reformatory mechanism is misleading and costly. Each case and period should be profoundly studied with utmost care and devotion. This study

emphasizes the importance of prudent and watchful policies on the country level in accordance with the socio-economic uniqueness of individual economies.

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