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AN OVERVIEW ON THE RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

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ABSTRACT

Identifying the Financial Development (FD) and Economic Growth (EG) nexus has received considerable attention in both theoretical and empirical literature for many years. Empirically, many scholars argue financial sector plays a vital role in an economy and consider as one of the significant macroeconomic variables which decide the direction of the economic development of a country. Theoretically, the FD leads to identifying better investment opportunities, boosts innovation, enhances the efficiency of capital markets, and improves the risk-taking capacity of investors that eventually directing to a more efficient allocation of resources to the real sector. However, the findings in previous scholarly works are vague and inconclusive. Therefore, this study attempts to do an in-depth analysis of key theories, concepts, and the methodological limitations of the previous studies to measure the validity of FD and EG nexus from an empirical and theoretical perspective. The results of this paper enlighten the new research pathway and direct the policymakers to architect the country's fiscal policies and development strategies to achieve sustainable economic development goals.

JEL: B26, B41

KEYWORDS: Economic Growth, Financial Development, Asian Region

INTRODUCTION

Examining the relationship between Financial Development (FD) and Economic Growth (EG) has obtained substantial attention in both theoretical and empirical literature. Both finance literature and theoretical reasoning argue that FD and EG should have a strong relationship. Because, a well-functioning financial sector determines the direction of investments, minimizes the production cost, converts savings to real assets, motivates innovations, improves the efficiency of capital markets, and encourages the investors to take a risk for better returns that finally directs the efficient allocation of resources from excess to the deficit sectors as well as finance sector to real sector. That results, in the gross domestic product of the country, gets increases due to the development in the real sector and the improvement in the productivity of the country. Increasing in GDP leads to a higher per capita income and then the country can achieve sustainable economic growth (King and Levine, 1993). Endogenous growth theory confirms that the main drivers of economic growth are the internal forces of the economy named; innovations, knowledge, and improvement of human capital. Therefore, availability of financial information at a lower cost due to a high standard financial system, productive labor force due to improvement in human capital, and high production quality resulted in knowledge and skill development leading to boost up the Gross Domestic Production of a country. Faster technological progress in the

financial sector, the inaugural of financial institutions, the establishment of the legal and regulatory framework, innovations in financial products, improvement in financial markets, development in financial services make a positive influence over the financial system development. Instead, having an advanced financial system makes it easy for investments and facilitates the investors to assess their risk in comparison to the return of investments. Comfortability in investments makes efficient allocation of resources which causes rapid improvement in the human and physical capital of the country (Comin and Nanda, 2019). Hence, the developed financial system is so important for a country and considered as the lifeblood for economic development. Therefore, theory suggests that FD and EG should have a positive correlation and FD is one of the vital factors for the EG.

Therefore, this study attempts to review the theoretical and empirical works to find out does FD and EG show a positive correlation? Is FD one of the key economic factors for EG?

The remainder of this paper is structured as follows. Section 2 is devoted to discussing the problem and issues followed by a theoretical review. Section 3 exposes the discussion in terms of theoretical perspective and empirical perspective. Section 4 presents the path forward with a conclusion.

Problem and Issues

Reviewing literature can be run through three key areas; first, examining the relationship, second causality among FD and EG, and the third methodology used in previous pieces of research works. To begin with, many scholars aligning to the theory, have provided ample pieces of evidence to confirm FD lubricates the mobilizing the savings throughout the economy and improve the country production. They argue that development in the financial system affects the improvement of capital allocation among economic sectors. On the other hand, technological advancements in the financial system reduce the information obtaining cost with transaction cost, boost up domestic savings and investments, which energize the economic growth (Puatwoe and Piabuo, 2017, Tursoy and Faisal, 2018, Sharma and Kautish, 2020). Therefore, previous pieces of scholarly works demand a positive relationship and clear causality effect between FD and EG. However, there are many incongruities in empirical literature about the type of relationship and the type of causality effect between FD and EG. While, one line of scholars claims that, FD and EG associate positively with each other showing that financial development forces the better allocation of resources to the real sector and improves the productivity of economic activities (Pradhan et al., 2017, Wang, 2019), others argue the FD and EG having a negative correlation. They state overemphasis on financial development misleads the flow of resources in an economy. Furthermore, experiencing a poor regulatory environment leads to financial instability and results in a negative influence on economic growth (Demetriades and Rousseau, 2016, Naveed and Mahmood, 2019, Siddikee and Rahman, 2020). Meanwhile, researchers argue that having too much financial development leads to drawing the human capital away from the real sector and causes the general economy more susceptible to economic busts (Cecchetti and Kharroubi, 2012, Law and Singh, 2014). Further, some scholars confirmed mixed results showing that in the short run there is a negative nexus between FD and EG but convert into a positive relationship in long run (Naveed and Mahmood, 2019; Qamruzzaman and Jianguo, 2018).

Apart from positive, negative, and mixed relationships, some studies have proven that FD and EG nexus is depending on the country's per capita income. When a country's per capita income goes below a certain level called threshold level (approximately US Dollars 852), in such countries FD and EG show a negative relationship or no relationship (Cecchetti and Kharroubi, 2012, Arcand et al., 2015, Ruiz, 2018, Asteriou and Spanos, 2019). However, when GDP goes above the threshold, financial development becomes a significant factor for economic development (Rioja and Valev, 2014, Menyah et al., Wolde-Rufael, 2014). Furthermore, literature shows that there is no exact agreement between researchers on the linearity between FD and EG. While some academics argue that there is a linear affiliation between FD and EG, others say there is a nonlinear association between FD and EG. The main reason they pointed out for the nonlinearity

is the differences in macro-economic variables and the country-specific factors like size of the country, political stability, economic stability in both country and the world, as well as the per capita income level of such countries (Benczur et al., 2019, Doumbia, 2016, Rioja and Valve, 2014).

Second, there is no ambiguity among scholars on the type of causality effect is there in between FD and EG. So, there is no uniform conclusion among the scholars either financial development leads to economic growth or economic development drives financial development. Therefore, one school of scholar debate that there is a unidirectional relationship and it runs from FD to EG (Bist and Bista, 2018). However, others suggest there is a bidirectional correlation (Olayungbo and Quadri, 2019, Qamruzzaman and Jianguo, 2018). Third, most of the previous studies suffer from methodological limitations. Though many studies have commonly used either time-series or cross-sectional data analysis tools, both of those techniques have many inherent statistical limitations. For instance, although many studies occupied stationarity and cointegration as tools to analyze the effect, those are highly sensitive to sample size and ignore the effect of potential structural breaks, and have not considered the time variances and cross-sectional variances in data sets that make a significant influence to the analysis results (Qamruzzaman and Jianguo, 2018). Having considered these points, this paper focuses to carry out a critical evaluation of previous literature and analyze the pluses and the drawbacks to enlighten the pathway to future studies. Therefore, this study focuses to achieve two main objectives; first; to review the previous works and identify the anomalies to the theory. Second; to analyze the methodological limitations of previous studies. Therefore, this study creates a novel pathway to study the relationship between FD and EG.

THEORETICAL REVIEW

Classical Growth Theories

Finance is the blood of any organization same as the economy of a country because having sufficient funds for production is a key factor of any economy. The main factors of production are capital and labor. Therefore, a well-functioning financial system makes it easier to move those factors to productive operations. There are several classical growth theories are existed in finance and are discussed as follows;

Supply Leading Hypothesis or Finance-Led Growth Hypothesis

This theory was introduced in 1911 by Schumpeter and he showed the development in financial services works positively to the economic growth. It highly concerns the development in the finance sector and entrepreneurship. Because development in the finance sector indicates the well-functioning of financial intermediaries which are the key actors in any economy. So, a sophisticated financial system improves the effectiveness and efficiency of capital accumulation and marginal productivity of the real sector. The main argument under this theory is economic growth is highly dependent on financial deepening or financial sector development. Further, it assumes that there is a unidirectional relationship between financial development and economic growth and having a well-developed financial system is a pre-condition for economic growth. Therefore, it reduces the transaction cost, cost of capital and minimizes the information asymmetry, and directs the excess resources to the productive sectors making the enterprises improve the product that ultimately leads to economic growth. To obtain sustainable growth, the country needs to pay attention to diversified investment opportunities. For that, there should be a strong financial system within the country.

Demand Following Hypothesis or Growth Led Hypothesis

Growth led or demand following the growth model was introduced by Robinson in 1952. The main argument of this theory changes in the real sector affect financial development. In other words, not the financial development makes economic growth but economic growth leads to financial development

because a well-developed economy demands a better financial system to facilitate the smooth functioning of economic activities of the country and allocation of funds from excess to the deficit sectors. Therefore, the financial market is expanded and the need for a financial intermediary exists. Hence, innovations, developments in intermediary services, expansion in the banking sector, and development in the financial system are results of the development in the real sector. because when the economy-boosting up it demands a sophisticated financial system and financial innovations to facilitate the easy functioning of business operations. Therefore, the finance sector gets expanded and innovations are taking place in financial assets and liabilities, financial services and financial institutions also supportive services like finance security services and capital markets.

Endogenous Growth Theory

The endogenous growth model was introduced in the 1980s as classical growth theory which emphasizes that economic growth arises due to the internal factors of the economy rather than external forces. It shows the link between finance, entrepreneurship, and economic growth. Endogenous growth theory explains that well developed financial system directs the investors or the entrepreneurs to make better investments decisions. If the financial institutions are performing well, they help the individual investors to assess the risk and diversify their portfolios to mitigate their risk of investment. This gives the investor confidence for investors and lowers the cost of capital. Therefore, the economy gets more and more investments and ultimately leading to economic growth.

Cobb-Douglas Production Theory

The foundation stone to Cobb-Douglas production function was established by Professor Paul Douglas in 1948 with publishing an article "Are There Laws of Production?" in American Economic Review. He introduced this model because at that time there was no sound theory to explain the marginal productivity curve. Cobb-Douglas production theory explains the output or the production (Gross Domestic Production) of a company (same as to a country) depends on labor and capital those considered as the key factors of production. According to this theory, it indicates if an economy can well manage its capital and labor, it can achieve sustainable economic growth. Because when a country facilitates the efficient allocation of capital to the real sector through their financial system and utilizes the labor force productively, the GDP of such country increases, and the benefits are distributed among citizens.

Solow Growth Theory or Source of Growth Model

Sources of growth model were first introduced by Solow (1957) doing a slight improvement to the Cobb-Douglas production function. The theory introduces financial development as a controlling or mediating variable to the Cobb-Douglas equation. Solow argues when there is financial development, it mediates or works as a mediator to determine how well and fast the economy gets developed. However, the key limitation of this is theory is that it cannot be used for cross-sectional data analysis because this theory is not valid when there are disparities in the total savings, population, and economic conditions of the countries.

DISCUSSION

Theoretical Review

When analyzing the classical growth theories, it is clear that there are several limitations in classical growth theories. The classical growth theories have ignored the key causative factor in modern economies, technology. When there is economic development, there is one unforgettable factor, technological advancements. Technological advancements happened in both the real sector and the finance sector. When

there is technological advancement in the real sector, the cost of production gets reduced. Moreover, when technological advancement happened in the finance sector, a smooth flow of resources to the real sector will happen. Since the technological advancements in the finance sector lubricate allocation and distribution of resources to the relevant sector at right time. The second limitation of the classical growth models is the inaccurate determination of total capital and wages. Here in classical models, it assumes that the factors of production are at a subsistence level every time but in the real world, it is not.

Neoclassical Theory of Growth

Robert Solow and Trevor Swan introduced this theory in 1956, by explaining the causality relationship between labor, capital, and technological advancement to economic growth. They explained that with technological advancement, the fundamentals of scarce resources in an economy, labor, and capital will not be limited anymore. Because the trading capacity of the countries gets boundless and with the trade openness, countries get the privilege to do transactions with other countries and obtain labor and capital from those countries. According to this theory, trade openness influences the decision-makers or the entrepreneurs to amalgamate or acquire the foreign market and integrate their home economies with foreign economies. Then, there will be a trading boost in the import and export sector in the economy and generates the economy of scale and specialization. Further, the theory explains there is bidirectional causality between trade openness and economic growth. It highlights when trade openness is there in a country, economic growth exists because of increasing the production capacity of such country. In contrast, when there is the economic development of a country, they focus the new markets and move towards foreign trading.

AK Growth Model

This theory stresses that financial development increases the growth rate by making a higher savings rate by increasing the marginal productivity of capital. Because previous methods in Cobb-Douglas and Solow's growth theory imply the diminishing return for capital. Therefore, in 1962, Arrow introduce a new theory as the AK model that stresses there is a linear pattern in economic growth and the factors of production especially capital. Further, this model explains the function of technology and savings for economic growth. Arrow explained the intervention of technological advancement in the production process to the development of the production capacity. He explained that learning by doing (experience) makes a big difference in productivity. Therefore, when there is an advancement in technology (way of work done), basic factors of production, labor, and capital become much more productive and make a significant contribution to the country's GDP. Therefore, the production cost gets lower and the saving or retaining after the cost of production improves gradually. Because having a higher saving rate makes the availability of local funds and attracts foreign direct investments to fulfill the capital requirements along with technological advancements within the country. Therefore, the economy grows due to investment in new ventures and the development of physical capital with the technology of the country.

Harrod-Domar Model

It is a Keynesian model of economic growth introduced by two pioneer scholars Roy F. Harrod (1939) and Evsey Domar (1946). However, before the introduction of this model, in 1924, Gustav Cassel has shown the same. Harrod-Domar model is also one of the neo-classical models which explain the growth rate of a country is dependent on its savings rate and the capital. This model argues savings facilize to get the required capital for investments and makes the economic growth. Even though this is one of the main theories that can be applied to countries in Asia, the main limitation of this model is it depends on the efficiency of investments and savings. Because too many savings make it reduce the sustainable growth since it disturbs the consumption pattern of people. Neoclassical theories are based on several key assumptions that work positively to mitigate the several limitations in classical economic theories. With neoclassical economic theories, it believes that people react rationally when making production decisions.

Therefore, efficient allocation of resources and risk-taking capacity gets improved. And the resources are allocated based on the efficiency level of production. Therefore, people try to minimize the cost of production and maximize profit. Hence, they move towards innovations in the real sector as well as the finance sector. Therefore, the development in the financial sector reduces the cost of transactions and the cost of information which opens doors to new ventures, better decisions, and novel investment opportunities. However, there are many arguments against neo-classical theories. One of the key criticisms for neo-classical theories is it hypothesizes that people are making rational decisions in both investment and allocation of resources to the efficient fields. However, it ignores the irrationality in human nature and the deviations of risk assessment patterns of people. Therefore, vulnerability to higher risk is ignored by these theories. Further, most of the neoclassical theories are highly dependent on the mathematical models ignoring that nature is more powerful than the mathematical model. Hence, the reliability of models is highly dependent on the assumptions made in these theories and gets invalid on some occasions.

Empirical Review

Financial Innovation and Economic Development

Technological innovations make the economy boots up because it improves the productivity of operations and utilization of resources to their level best and gives the economic solutions to burning issues in both production and operation in the country. Technological advancements support the easy transfer of both resources as well as knowledge, smooth functioning of economic activities, and allocation of resources among the real sector. Therefore, it is clear that innovations and development in financial markets, financial institutions, financial instruments positively influence productivity improvement, reduce the cost of production while increasing the quality of products. Consequently, it benefits both enterprises and the customers in many directions like customers get an opportunity to consume high-quality products at lower cost that improves the purchasing power of people resulting from the higher living standard. On the other hand, enterprises can expand their production at a lower cost than generates high profits for them and can diversify their business to the other countries which lead to obtaining the competitive advantage and value for what they produce. Innovations take place in both the real sector as well as the finance sector. Technological innovations in the finance sector motivate the introduction of new financial instruments and facilities to the users that lubricate and easy transitions in financial markets (King and Levine, 1993). Further, there are many marketing theories like competitive advantage theory that discuss the importance of innovation to obtain a strategic advantage in the market. Therefore, when there is an advancement in both products and financial services that easy the flow of resources from excess to the deficit leads to the development of the economy. Hence, the long-term impact of technological innovation in financial development over economic growth can be seen (Hsu et al., 2014)

Financial Development and Economic Growth

Financial development is defined as the development in the financial sector of a country. The World Bank defines the financial sector development as development in financial institutions, financial markets, and the financial instruments that provide the intermediary services to transfer capital or funds from excesses to deficits or in other words funds depositors to loan borrowers. On the other hand, financial sector development can be defined as the development in size, efficiency, stability, and access to the financial system of a country. When the size of financial institutions gets larger in terms of the number of branches, facilities provide by those institutions, the efficiency of the transactions process through the financial institutions makes better service to the customers, then, the flow of resources gets efficient and the cost gets reduced. That improves the confidence of the investors to invest in the real sector and creates a perception that the financial system is stable and well-developed. The main task of a well-developed financial system is to produce information to the investors on best investment opportunities and minimize the risk, allocate capital among productive investments, monitor firm performances, maintain the corporate governance,

pooling of savings, motivate trade diversifications, and smooth trading to eliminate the market distortions. Therefore, investors motivate to more investments because of their self-confidence in taking the risk. Hence the economy boots rapidly and showcases economic growth.

IGI Global website defines economic growth as an "increase in the capacity of an economy to produce goods and services, compare from one period of time to another" or it is the "increase in the number of goods and services produce per head of the population over a while". The economic growth is indicated through the percentage increase of the real gross domestic product of a country adjusting to the inflation factor over time. Many economists argue that financial development is one of the crucial factors of the economic growth of a country. Therefore, the debate on the exact link between financial development and economic growth has run for many decades from its starting point around the early nineteenth century. Even though there are many decades have gone from the starting point of this discussion still the relationship between FD and EG is an unsolved puzzle. As one of the pioneer scholars, Boot and Marinc, (2010), explained that development in financial services is the key inherent feature of financial development. Without the financial innovations, it is pointless to discuss FD because when a country moves towards its FD, they need to improve their financial institutions and the financial markets. Aline to the development in the financial markets, it is obvious to have a proper mechanism to do trading. Hence, new techniques and novel financial instruments are the key infrastructures to have sophisticated financial markets. Therefore, financial institutions are highly focused to introduce new financial instruments and new techniques. Qamruzzaman and Wei, (2019), stated that financial innovations and financial inclusions work positively to have the financial development in an economy and works favorably for the economic development. Further, they argue that having a sophisticated financial system and advanced financial market leads to attracting investors and motivates productivity.

Babajide et al., (2015) discussed the importance of financial inclusion on economic growth. Follow up study by Adeola and Evans (2017) confirmed the same. They suggested when the innovations exist, the resources are mobilizing smoothly towards the real sector and creating new opportunities for novel investments, the ultimate result is economic development. A well-performing financial system is facilitated by technological development and innovations (Schumpeter, 1911). The development in financial intermediaries improves resource allocation and accelerates productivity which makes a long-run economic development. Further, the development in the banking sector facilitates the credit to the private sector which is one of the driving forces of the economy (Sharma and Kautish, 2020, Olayungbo and Quadri, 2019, Biplob and Halder, 2018, Puatwoe and Piabuo, 2017, Qamruzzaman and Jianguo, 2018, Pradhan et al., 2017). Stock market liquidity and banking sector development are robustly and positively associated with capital accumulation and productivity. Hence, a well-functioning baking system makes efficiency in capital allocation and effective implementation of capital resources into productive projects strength the economy (Bist and Bista, 2018, Tursoy and Faisal, 2018, Guru and Yadav, 2019, Bongini et al., 2016, Puatwoe and Piabuo, 2017, Kyophilavong et al., 2016).

In addition, developments in financial services and financial innovations are the vital factors that make the structural modifications in the financial system that lubricate the mobility of funds from excess to deficits and improve the gross domestic product of countries (Abeka et al., 2021, Ogbonna et al., 2020, Bist, 2018, Lawal et al., 2016). Therefore, it is well understood that financial development is the key driving force of economic development. Therefore, most empirical findings conclude financial system has a positive effect on economic growth (Karlsson et al., 2021, Hoque and Yakob, 2017). Further, many scholars argue the size and type of the effect are varied based on the income level of the country and different indicators of financial development. They claim the impact of financial development on economic growth is stronger in high-income economies than the lower-income countries (Peprah et al., 2019, Khan and Senhadji, 2000, Bahri et al., 2018, Herwartz and Walle, 2014). Aline with this hot argument, a pool of scholars argue that financial development affects positively up to a certain threshold and when the economy declines to a certain level or a threshold, financial development leads to an economic recession (Ruiz, 2018, Arcand et

al., 2015, Samargandi et al., 2015, Beck et al., 2014, Law and Singh, 2014) and shows a weak form relationship in low-income countries (Ductor and Grechyna, 2015, Grassa and Gazdar, 2014, Mhadhbi,2014). Apart from the positive association, another school of scholars stresses the importance of financial development in economic growth has overstressed. They highlight the function of financial development over economic growth has been over-stressed. Further mention, high volatility in stock prices, share market and money market interactions makes economic crisis and higher financial liberalization generates instability in exchange rates. Hence, financial instability makes a negative effect on economic growth (Ruiz, 2018, Arcand et al., 2015, Creel et al., 2015, Samargandi et al., 2015, Beck et al., 2014, Law and Singh, 2014). Further, some studies have shown there are non-linearities exist in FD and EG for some countries. They state the main reason for the nonlinearity is the differences in macro-level and country-specific factors like size of the country, political situation, economic condition, and per capita income level of such countries (Benczur et al., 2019, Doumbia, 2016, Rioja and Valve, 2014).

Causality of Financial Development and Economic Growth Nexus

Many studies proved that financial development has a direct effect on economic growth. However, the causality remains mysterious (Olayungbo and Quadri, 2019, Qamruzzaman and Jianguo, 2018, Bist and Bista, 2018). The causality relationship can be divided into four categories as unidirectional causality direct from financial development to economic growth, the unidirectional effect from economic growth to financial development, bidirectional causality among dual and no causal relationship. Therefore, some scholars state, that financial development has a unidirectional causality effect from financial development to economic growth called supply leading causality (Bist and Bista, 2018, Menyah et al., 2014). In contrast, some studies proved there is a unidirectional effect in another way round which is called the demand follow causality effect (Atil et al., 2020, Pradhan et al., 2017, Menyah et al., 2014).

Therefore, it shows that the causality relationship between financial development and economic growth get change from one study to another. Jung (1986), stated that in general, underdeveloped countries experience the unidirectional causality that runs from financial development to economic growth, but in developed economies, the causality shows reverse direction. However, some studies proved that there is a bidirectional effect between financial development to economic growth (Olayungbo and Quadri, 2019, Qamruzzaman and Jianguo, 2018). Apart from all of the above arguments, there is another set of studies to prove there is no systematic causality relationship between FD and EG (De Gregorio and Guidotti, 1995, Ram, 1999, Faisal et al., 2018).

METHODOLOGICAL ANALYSIS

Time Series (TS) analysis and the cointegration have been used in many studies to measure the longitudinal effect of FD and EG (Alomari et al., 2019, Comin and Nanda, 2019, Wang, 2019, Tursoy and Faisal, 2018, Bist, 2018, Durusu-Ciftci et al., 2017, Muhammad et al., 2016, Pradhan et al., 2016). However, using TS analysis is having many limitations and has been criticized by many scholars for its' limitations. One of the main arguments against the time series is that it uses a single stream of data which is not enough to predict and generalize the model (Qamruzzaman and Jianguo, 2018). Also, TS models are highly sensitive to the trends, cyclical and seasonal effects. Therefore, accurate understanding and adjusting of the trend, seasonal and cyclical effects is a key factor when interpreting the results but hard to adjust them properly with a single model (one key limitation of time series models). Further, TS analysis suffers from generalizability of results of one study to another, so that needs a systematic replication. Therefore, the analysis tools are appropriate only for one study and need to implement a separate model for the other. Further, identifying the correct model to represent the data is difficult. Another common technique used in previous studies is the Cross-Sectional (CS) analysis which is highly sensitive to the sample size and the elements features of the sample. When the sample size gets lower, the model gets affected badly.

In addition, CS analysis is suffering from predictive limitations. For instance, CS analysis is carried out for a one-time point or a short period that describes the association between variables. Therefore, when analyzing the FD and EG, there needs to be a focus on the longer period to analyze the relationship and the cointegration of variables. In general, the key elements of FD and EG are highly sensitive to time variations and macro variables. Therefore, using CS analysis is inadequate to capture the effect of time variation and change of macro-level variables on the FD and EG. Moreover, using CS analysis cannot be used to measure the causality relationship between variables but empirical reasoning has proved FD and EG have interdependence on one over the other. Further, none of the CS or TS analyses are sensitive to structural breaks. Since there are many structural breaks in economies due to changes that happen in political situations, economic conditions within and outside the countries have directly as well as indirectly influenced the economy of countries. Therefore, the results obtained in TS and CS analysis are weak invalidating when structural breaks are existing in countries. Therefore, there is a vacuum for a strong sophisticated techniques to analyze the FD and EG nexus. Hence, as a substitute for these two techniques, many scholars in the recent past have focused to occupy panel data analysis which reduces the limitations in both TS and CS data analysis (Bist, 2018, Guru and Yadav, 2019).

A Path Forward

This study shows there are several limitations in previous studies and enlighten a pathway for future studies. One of the limitations is though there are pieces of evidence that FD and EG have a sturdy association, the type of the relationship is not clear. Because one set of studies prove there is a positive association between FD and EG, but others state there is a negative relationship or no significant relationship is existing. Furthermore, the causality effect of FD and EG is still a puzzle. Because while one set of studies confirms there is a unidirectional effect between FD and EG, another bunch of pieces of work show there is a bidirectional influence. In addition, most of the previous studies have used either Cross-Sectional (CS) or Time Series (TS) analysis tools as the main equipment to measure the relationship and causality of FD and EG. However, both these techniques are having many statistical limitations. Therefore, literature demands advanced techniques to capture the time and cross-sectional diversifications. Therefore, this study suggests using suitable techniques like panel data analysis like mean group, pool mean group, or dynamic fixed-effect model that overcome many limitations in CS and TS analysis to measure the FD and EG nexuses.

CONCLUSION

The purpose of this study is to have an in-depth review of key theories, concepts, and previous studies in the field of FD and EG nexuses and study the methodologies used and the validity of analysis tools used in preceding literature to examine the relationship and causality between FD and EG. A study did the theoretical and empirical literature review and critically analyze the findings of previous pieces of evidence. The findings evidence that though, theoretically, it is clear that FD and EG should have a strong association with a positive correlation between FD and EG, empirical reasoning challenges the theory to prove that positive and strong association is not valid for all the times. Because empirically it has been proven that there are negative relationships and no significant associations are existing in some countries. Further, one line of scholars confirms there is a unidirectional causal effect over the EG from FD, but others state there is a bidirectional influence between FD and EG. Therefore, its evidence of the ambiguity of the causality effect. Further, proves the studies are still at the infant level and need more attention. In addition, most of the scholarly works occupied either CS or TS to investigate the relationship and causality. However, both methods have many intrinsic statistical limitations. Therefore, using sophisticated in-depth analysis is needed. Therefore, using the panel data analysis techniques in future studies is more appropriate to overcome the limitations in CS and TS techniques.

The findings of this paper enlighten the way forward for both scholars and the policymaker to carry out sophisticated examinations in the field of FD and EG nexuses and focus the findings to make policy

decisions. Further, the results of this paper suggest customizing the analysis tool according to the sample. When analyzing the long-run effect and causality effect of FD and EG, the study recommends utilizing much-advanced techniques like panel data analysis that minimize the inherent limitations in both CS and TS.

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