DOI: https://doi.org/10.4038/sajbi.v3i2.58

The Effect of Financial Development on Economic Growth; Incorporation with Impact of the COVID-19 Pandemic: Evidence from Asian Frontier Financial Markets

South Asian Journal of Business Insights
2023, 3(2), 69-89
ISSN 2773-7012(print)
ISSN 2773-6997(online)

V.U.W. Goonawardhana*
Department of Finance, University of Kelaniya, Sri Lanka
goonawar_bm17133@stu.kln.ac.lk

D.M.U.H. Dissanayake
Department of Finance, University of Kelaniya, Sri Lanka
uththarad@kln.ac.lk

Abstract

This study aimed to investigate how financial development affects economic growth and explore the relationship between financial development and economic growth. The sample considered for the study were Asian frontier financial markets (Sri Lanka, Bangladesh, Pakistan, and Vietnam). The considered period ranged from 1992 to 2021. This study uses a quantitative approach, and the research logic is deductive because the hypotheses are made in the study and the results are assessed. Panel regression is used as the main statistical analysis model. This study concludes that financial development significantly impacts economic growth in the Asian frontier financial markets. The results show both negative and positive figures in individual independent variables. But when those results are considered combined, it offers a positive impact. In addition to the main analysis, another analysis was done to find the impact of the COVID-19 pandemic on the economic growth in Asian frontier financial markets. The results show that the COVID-19 pandemic has had a significant negative impact on the economic growth of the sample selected. The significance of this study is to analyze the impact over 30 years and measure the impact of the COVID-19 pandemic simultaneously.

Keywords: Asian Frontier Financial Markets, COVID-19 Impact, Economic Growth, Financial Development, Panel Data

* Corresponding Author - goonawar_bm17133@stu.kln.ac.lk

Introduction

The countries in the world can be categorized mainly into four markets (categories): Developed Markets, Emerging Markets, Frontier Markets and Standalone Markets (MSCI, 2022). The categorization is made based on economic development, size, liquidity requirements, and market accessibility criteria. Frontier Market is a country that is more established than the least developed countries but still less established than the emerging markets because it is too small, carries too much inherent risk, or is too illiquid to be considered an emerging market. Financial development is highly important to the economic growth of these four countries in various ways, such as by enhancing trade openness, human capital, and foreign direct investments in these countries will improve their economic growth. Capital accumulation can be enhanced by mobilizing savings, reducing transaction costs, and diversifying risks, broadening the access to finance for microenterprises, small and medium-sized enterprises, and low-income households will boost productivity, income, and the welfare of society (World Bank Group, 2022). With these improvements, the countries categorized under frontier markets can shift their categories, even emerging markets.

Many previous researchers have done their studies to identify the relationship between financial development and economic growth and how it affects each other for developed markets, developing markets, emerging markets, South Asian or Asian countries, European countries, and also some selected individual countries such as Nigeria, China, Kenya, etc. (Reyes et al., 2020; Nguyen et al., 2021; Nazir et al., 2018; Azmeh, 2021; Wang & Lee, 2018). However, it cannot be seen in previous research that has taken the sample of the Frontier Markets category separately to find the impact and the countries' capabilities and do an analysis for 30 years. Therefore, an empirical gap can be identified when referring to the previous research.

This study investigates the relationship between financial development and economic growth and how financial development affects economic growth in Asian frontier financial markets, which are Sri Lanka, Bangladesh, Pakistan, and Vietnam. Also, in this study, the analysis has been done for thirty years, which is from 1992 to 2021, which is a help for coverage of lacking long-run relationship studies. The general research objective of this study is to examine the impact of financial development on economic growth and their relationship in Asian frontier financial markets. Other than the general objective, a specific objective is also there, which is to examine the impact of the COVID–19 pandemic on the economic growth in Asian frontier financial markets.

The financial sector can be explained simply as a set of institutions, instruments, and markets, as well as the legal and regulatory framework that permits transactions to be made by extending credit (Nguyen et al., 2021). Fundamentally, financial sector development is about overcoming costs that are incurred in the financial system. Reducing the cost of acquiring information, enforcing contracts, and making transactions are resulting in the emergence of financial contracts, markets, and intermediaries. Different types and combinations of information, enforcement, and transaction costs in collaboration with different legal, regulatory, and tax systems have motivated distinct financial contracts, markets, and intermediaries across countries and throughout history (Yurtkur, 2019). When it comes to economic growth, that means an increase in the production of economic goods and services in

an economy, compared from one period of time to another (World Bank Group, 2022). Increase in capital goods, labor force, technology, and human capital will contribute to economic growth.

Financial development cannot be described as an outcome of economic growth, financial development contributes to growth (Azmeh, 2021). Aggressive economic growth is measured in terms of gross domestic product (GDP) or gross national product (GNP), although alternative metrics are sometimes used. Technological developments and innovations are mainly considered essential driving forces in the growth of an economy. Development in the financial sector plays a considerable role in the economic development. It promotes economic growth through capital accumulation and technological progress by increasing the savings rate, mobilizing, producing investment information, facilitating and encouraging the flows of foreign capital, as well as optimizing the allocations of capital (Azmeh, 2021). This study investigates the relationship between financial development and economic growth using the statements mentioned above. For that purpose, the Asian countries that are categorized under the Frontier Market category are taken.

Literature Review

Theoretical Review

There are two major theories that explain the causal relationship between financial development and economic growth. One is the Demand-following theory (Robinson, 1952). While the other one is the Supply-leading theory (Schumpeter, 1934 & Patrick, 1966). The demand-following theory suggests that financial development will follow economic growth because, when the economy grows, it generates new demands for financial services, and thus, the financial system will grow (Robinson, 1952). On the other hand, the supply-leading theory suggests that financial development promotes economic growth and that financial development has a positive effect on economic growth (Schumpeter, 1934 & Patrick, 1966). There are three major ways in which the financial system can influence economic growth (Patrick, 1966). One is by prompting changes in its ownership and its composition through intermediation among various types of asset holders (Patrick, 1966). Financial institutions can help to allocate tangible wealth more efficiently. The other one is that financial institutions encourage a more efficient allocation of new investment additions to capital stock from savers and entrepreneurial investors by moving from relatively less productive uses to relatively more productive uses (Patrick, 1966). Another is that financial institutions can induce an increase in the rate of accumulation of capital by providing convenient saving, investment, and transaction services that increase incentives to save, invest, and work (Patrick, 1966).

The theoretical relationship between financial development and economic growth is related to Schumpeter's studies (Mehrara, 2014). Financial intermediation services are vital for economic development (Schumpeter, 1934). According to Schumpeter's opinion, financial intermediaries through the banking system, affecting savings allocation, increasing productivity, and technological change in economic growth destroy the mediating role adopted by financial institutions and the information asymmetry between the savers and borrowers. Performing the functions of saving mobilization, capital allocation, monitoring inventory usage, and risk management affect economic growth (Schumpeter, 1934).

Some economists believe that financial development is not quite related to economic growth (Stern & Lukas, 1998). Some economists have insisted on the role of financial markets in economic growth too much. The role of these markets should not be exaggerated (Stern & Lukas, 1998). Lukas has changed the traditional patterns of growth by extending endogenous growth theory. The equation Y = AK is the essence of endogenous growth theory. A is the science and technology factor, and K is human and physical capital. There is a hyperbolic relationship between financial development and economic growth (Lukas, 1998). In line with Solow's growth model, convergence occurs as a process of catching up between countries that have different levels of economic development due to the faster growth of developing countries than developed countries, which is a consequence of the law of diminishing returns on capital.

Empirical Review

The financial markets are termed as the drivers of strong economic outlook and growth as they are responsible for supplying and managing the funds to customers that are public for productive uses that can contribute to the economy (Caporale et al., 2015). Bist (2018) emphasizes that economic growth is an independent variable that triggers the development of the financial sector and that financial development is independent of economic growth. Many studies are available with various inferences related to financial development and economic growth. The majority of the researchers have used quantitative methodology for their conclusions from the studies. And some have used a mixed method by using both quantitative and qualitative methods to do their studies. Various empirical studies have been conducted to analyze and examine the relationship between financial development and economic growth at the cross-country or country level. A study shows that there is an inverted U-shaped relationship between finance and growth in Malaysia (Sohag et al., 2019). A U-shaped relationship was found for Indonesia. However, it has been found that a positive change in institutional quality has a greater impact on growth than playing a mediating role in Malaysia. In Indonesia, changes in institutional quality were found to hinder economic growth, but they played a positive and mediating role in the finance growth relationship (Sohag et al., 2019).

Government Consumption

Cooray, (2009) identified government size which is a function of public expenditure as an important factor that affects economic growth. Research has been done to analyze the relationship between government consumption, and economic growth in India in a non-linear and asymmetric framework (Giri et al., 2021). The study results indicate that there is a cointegrating relationship between government consumption, and economic growth in the long run. Also, from the findings, it can be suggested that a positive shock in government consumption increases economic growth, and a negative shock will harm economic performance. A long-term positive shock in financial development is a boost to the economy. The asymmetric causality test result confirms the bi-directional causality between government consumption and economic growth and the unidirectional causality from negative economic growth to negative financial development. Abdellhafidh, (2013) proves the path of causation connecting financial development and economic growth in Asian nations over the period from 1970-2010. The results from VAR, and GMM models identify that there is a significant positive impact of government consumption on economic growth. Therefore, the following hypothesis is developed to test the impact of government consumption on economic growth.

H1: Government consumption significantly affects economic growth in Asian Frontier Financial Markets.

Inflation

Expansion of the money supply is the primary cause of inflation (Murari, 2017). Financial development is found to have a linear relationship with economic growth (Nguyen et al., 2021). The study was done to examine the impact of financial development on economic growth in emerging markets. The study indicated that inflation has a linear relationship with economic growth. But there arises a problem; can inflation have a linear relationship with economic growth practically? Because if there is inflation in an economy, the GDP per capita will decrease. Therefore, there will not be a linear relationship between inflation and economic growth. Thus, the study results show that financial development generally has a positive effect on economic growth in emerging markets. Another study shows that there is a long-run equilibrium present between economic progress and financial growth (Reyes et al., 2020). The results show that in the short run, inflation controls the relationship between economic growth and financial growth, while the effect of the supply of money is negative for economic growth. The increases in the money supply or broad money would have a negative impact on Asian countries' progress. From the implied results, an argument can be made that, Asian countries need to limit the money supply to have their economies grow prosperously (Galadima & Ngada, 2017). Therefore, the following hypothesis is developed in this study to test the impact of inflation on economic growth.

H2: Inflation significantly affects economic growth in Asian Frontier Financial Markets.

Trade Openness

Trade openness is a measure of how much a country is engaged in international trade (Effiong, 2015). A study shows that when there are more exports and imports in a particular country, the GDP per capita of the country increases (King & Levine, 1993). The study shows enhancements of exports will increase the GDP per capita resulting in economic growth in both the short run and long run. It proves a positive relationship between exports and economic growth. Whereas the study states that enhancements of imports decreases the GDP per capita in the short run while enhancing of imports, in the long run, will increase the GDP per capita by having economic growth. There arises the argument; will the imports of a country be positively impacted to the economic growth of the country? Nyasha & Odhiambo, (2015) show that trade openness which takes the imports and exports combinedly, is positively related to the economic growth of the country. Therefore, this study has taken the imports and exports combinedly as a term, trade openness and derived the following hypothesis to test the impact of trade openness on economic growth.

H3: Trade openness significantly affects economic growth in Asian Frontier Financial Markets.

Human Capital

The impact of human capital on economic growth depends on various factors such as quality and quantity of education, the utilization of skills and the institutional and policy environment (Barro, 2023). According to Mehrara & Ghamati, (2014), there is a significant impact of financial development on economic growth. The study results clearly indicate that the independent variable, human capital is having a significant impact on GDP per capita, while it derives a positive impact also on GSP per capita. A study was conducted to explore the impact of financial development on economic growth in South Asian developing countries (Bibi & Sumaira, 2022). Human capital is tested using VAR, and VECM models to find the impact on economic growth. In the study, the null hypothesis is strongly rejected for the variable. Therefore, the study states that there is no significant impact of financial development on economic growth. Another study states human capital has a positive impact on economic growth (Sethi et al., 2020). Also, analysis indicates that financial development and economic growth are integrated and cannot be separated. Therefore, the following hypotheses are developed to test what kind of effect human capital has on economic growth.

> *H4: Human capital significantly affects economic growth in Asian Frontier Financial Markets.*

Foreign Direct Investment

Well-performing and developed stock markets are key indicators of financial development because they can motivate foreign investors to invest in the country which is an energizer for industrialization (Coskun et al., 2017). A study shows that financial development has a positive impact on GDP per capita (Sethi et., 2020). The study analyses the relationship between foreign direct investment and economic growth. The tests and analysis done in the study indicate that foreign direct investment has a significant impact on GDP per capita deriving a positive relationship between financial development, and economic growth. The result is supported by the findings of a study that suggests that some African regions that are associated with an increased flow of credit to the private sector record higher gross domestic product, while other sectors seem to display a negative impact on GDP per capita (Bist, 2018). A study has been conducted to identify the relationship between financial accessibility and economic development in SAARC countries (Asha et al., 2017). The results of the analysis show foreign direct investment is positively related to GDP per capita. From the findings, it can be proven that it is consistent with the theory that increased financial accessibility can lead to economic development in a nation (Patrick, 1966). Furthermore, Arayssi and Fakih (2017) examined the causal link between financial development and economic growth in Kenya. Results from the study indicate that although financial development is a by-product of growth, the interaction between foreign direct investment and financial development causes growth. The following hypothesis is developed to find the impact of foreign direct investment on economic growth.

> *H5: Foreign direct investment significantly affects economic growth in Asian Frontier Financial Markets.*

Financial Development Index

The financial development index measures the level and quality of financial system development in a country (Azmeh, 2021). Previous research has been done to identify what kind of relationship exists between the financial development index and economic growth. (Nguyen et al., 2021; Reyes et al., 2020). The study analyzes that a positive financial development index positively contributes to financial development and economic growth. Another analysis was done to identify the impact of financial development on economic growth with the variables, FD index FDM and FDB indexes (Bibi & Sumaira, 2022). The data and theories are consistent, which emphasizes that financial development is important for growth proxies measured by the FD index, FDM and FDB indexes of stock market and bank development. Therefore, this study has developed the following hypothesis to find the impact of the financial development index on economic growth.

> *H6: Financial Development Index significantly affects economic growth in Asian Frontier Financial Markets.*

Methodology

Considering the literature reviewed above, it is very vital to examine the impact of development in the financial sector on the economic growth of a country. For that, a positivistic approach is used in this study as the research philosophy. This study is based on a deductive approach. This approach is carefully selected by using existing empirical theories, and it is applied to assess the impact of financial development on economic growth in the context of Asian frontier financial markets. This study uses a quantitative approach. All the variables that are used in this study are quantifiable, and the variables used in this research are the variables that most researchers used in their previous research and that researchers recommend using in future research.

The population of this study consists of Asian Frontier Financial Market countries. It consists of four countries, and those are Sri Lanka, Bangladesh, Pakistan, and Vietnam. The selected sample for the study is also the same. The duration under consideration is 30 years, which is from 1992 to 2021. Mainly, the analysis was done with panel regression by using panel data, and some preliminary statistical tests were done, such as correlation tests, descriptive statistics, and heteroscedasticity tests, to improve the reliability of the analysis.

The conceptual framework of this study was formulated based on the previous works of literature and research design that were used in this study. This study identifies six financial factors that represent the financial sector, namely, Government Consumption, Inflation, Trade Openness, Human Capital, Foreign Direct Investment, and the financial development index for financial development. These will identify the impact of the economic growth mentioned in the six factors (Nguyen et al., 2021; Reyes et al., 2020; Nazir et al., 2018; Hagmayr et al., 2017).

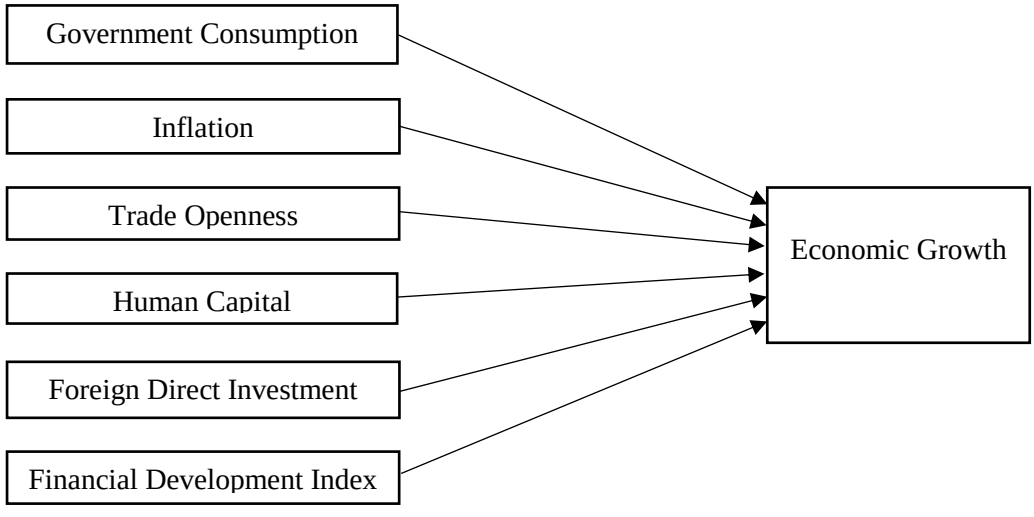

Figure 1: Conceptual Framework

Operationalization

This study has adopted the following measurements presented in the table for the dependent and independent variables mentioned.

Table 1: Operationalization of Variables

Variables	**Measuring Variable**	**Measurement Indicator**	**Relevant Source**	**Data Source**
Dependent Variable	Economic Growth	Growth of GDP per capita growth (Gross domestic production, as per the population of the relevant country)	Nguyen et al., 2021	World Development Indicators (WDI)
Independent Variables	Government Consumption	General government final consumption expenditure of the country.	Nguyen et al., 2021	World Development Indicators (WDI)

Inflation	Annual inflation of the country, consumer prices	Nguyen et al., 2021	World Development Indicators (WDI)
Trade Openness	Amount of exports of goods and services and imports of goods and services of the country.	Nguyen et al., 2021	World Development Indicators (WDI)
Human Capital	Labor force participation rate (% of total population, people ages 15+)	Nasir et al., 2018	World Development Indicators (WDI)
Foreign Direct Investment	Amount of net outflows and inflows (as a percentage of GDP)	Nguyen et al., 2021	World Development Indicators (WDI)
Financial Development Index	Annual Financial Development Index by IMF	Nasir et al., 2018	International Monetary Fund (IMF)

Source: Author Compiled

Research Model

This study investigates the relationship between financial development and economic growth in Asian frontier financial markets and how they affect each other. Hear that the dependent variable is economic growth. It measures the growth of gross domestic production (GDP) per capita. The independent variables that represent financial development are government consumption, inflation, trade openness, human capital, foreign direct investment, and the financial development index. The study examines 30 years, which are from 1992 to 2021.

The below panel regression model attempts to investigate the influence of the independent variables on Economic Growth.

$$EGit = \alpha i + \beta 1GCit + \beta 2INFit + \beta 3TOit + \beta 4HCit + \beta 5FDIit + \beta 6FDINDEXit + \varepsilon it$$

EG - Economic Growth
GC - Government Consumption
INF - Inflation
TO - Trade Openness
HC - Human Capital
FDI - Foreign Direct Investment
FDINDEX - Financial Development Index

Data Analysis

In the analysis of the effect of financial development on economic growth in Sri Lanka, Bangladesh, Pakistan, and Vietnam for 30 years, many tests were used to obtain the correct and realistic outcome. The tests performed and their results are mentioned as follows. Descriptive statistics summarize or describe the characteristics of a data set. The following table represents the overall descriptive statistics of dependent and independent variables in the data set of the study.

Table 2: Descriptive Statistics

Variables	Mean	Std. Deviation
EG	3.776	2.113
lnGC	2.799	0.508
INF	7.387	3.966
TO	62.118	37.644
lnHC	4.071	0.153
FDI	1.269	0.671
FDINDEX	0.255	0.079

(EG - Economic Growth, lnGC - Government Consumption,
INF - Inflation, TO - Trade Openness, lnHC - Human Capital,
FDI - Foreign Direct Investment,
FDINDEX - Financial Development Index)

A descriptive statistics test is used to measure the distribution of each variable in the model. The mean value is the average value of the selected variable, and the minimum and maximum values represent the range of the values of the selected variable. The mean of GDP per capita growth is 3.78, while the minimum and maximum values are -0.57 and 6.84, respectively. The mean value of GDP per capita growth is above or at the same level of the middle value of 3.71 (6.84+0.57)/2) (not shown), indicating the distribution of the data is skewed toward higher values or around its mean value. The mean of inflation is 7.38 while the minimum and maximum values are 2.21 and 17.6, respectively. The mean value of inflation is below or at the same level of the middle value of 7.69 (17.6-2.21)/2) (not shown), indicating the distribution of the data is skewed toward lower values or around its mean value. The standard deviation (SD) is a measure of how dispersed the data is from its mean. A high SD indicates data are more spread out, and a low SD indicates data are clustered around the mean. In this data set, the SD

of GDP per capita growth is 2.11 and has a low SD. That indicates its data are clustered around its mean. It has a centred the distribution of data. All other variables' standard deviations are low, except for trade openness. It is 37.65, and that means it has a wide distribution of data.

Correlation measures the extent to which two variables are linearly related. In the study, a correlation test was conducted to identify whether a correlation exists among the independent variables of the data set.

Table 3: Test for Correlation

	LnGC	INF	TO	lnHC	FDI	FDINDEX
lnGC	1.000					
INF	0.325	1.000				
TO	-0.246	-0.005	1.000			
lnHC	-0.595	-0.098	0.823	1.000		
FDI	-0.193	0.116	0.815	0.788	1.000	
FDINDEX	-0.239	-0.162	0.640	0.539	0.718	1.000

(lnGC - Government Consumption, INF - Inflation, TO - Trade Openness, lnHC - Human Capital, FDI - Foreign Direct Investment, FDINDEX - Financial Development Index)

The results show that trade openness and human capital are highly correlated to each other with a 0.82 correlation. And trade openness is correlated with foreign direct investment with a 0.81 correlation. Human capital is highly correlated with foreign direct investment with a 0.79 correlation, and foreign direct investment is correlated with the financial development index with a 0.72 correlation. Those are the highly correlated variables in the data set. Though a high correlation exists among those variables, those will not be removed from the analysis because it is essential to find the impact of trade openness on economic growth throughout the past 30 years. Many financial and economic crises occurred during that period, which could have affected the imports and exports of these economies. Also, those crises could adversely impact the foreign direct investments of the countries. The labour force might have changed as well because this study considers a lengthy period. The impact of said variables on economic growth should be analyzed in this study.

Heteroscedasticity happens when the standard errors of a predicted variable, monitored over different values of an independent variable over a specific period, are non-constant. The study used the Modified Wald Test to test whether the data set consists of a heteroscedasticity problem (H1: The data set is heteroscedastic). The result is significant at a 5% level. Thus, the null hypothesis will have to be rejected and it could be concluded that the data set has heteroscedasticity.

chi2 (4) = 31.26
Prob>chi2 = 0.0001
(The result retrieved from Modified Wald Test)

Table 4: Robust Results of Heteroscedasticity Problem

Dependent Variable: Economic Growth				
Independent Variables	Coefficients	Robust Standard Errors	t-values	Probabilities
lnGC	0.714	0.237	3.16	0.046
INF	-0.266	0.025	-0.83	0.320
TO	0.000	0.010	0.02	0.994
lnHC	0.980	8.143	0.53	0.817
FDI	1.787	0.957	2.10	0.076
FDINDEX	1.028	1.409	1.02	0.116
Constant	-3.897	34.764	-0.64	0.811
No. of groups	4			
No. of observations	120			
P-value	0.0006			
R-squared - within	0.198			
R-squared –between	0.327			
R-squared - overall	0.289			

Regression Analysis Results of the Effect of Financial Development on Economic Growth

The main objective of this study is, to examine the impact of financial development on economic growth and their relationship in Asian Frontier Financial Markets. For that, panel regression is used as the analysis technique to examine the behaviour of independent variables and the dependent variable. Findings found that the heteroscedasticity problem exists among the variables. Therefore, the results of the panel regression with robust results describe the statistical analysis of the study.

Table 5: Results of the Panel Regression with Robust Results

Dependent Variable: Economic Growth				
Independent Variables	Coefficients (1)	Robust Standard Errors (2)	t-values (3)	Probabilities (4)
lnGC	0.714**	0.237	3.16	0.046
INF	-0.266	0.026	-0.83	0.320
TO	0.001	0.010	0.02	0.994
lnHC	0.980	8.143	0.53	0.817
FDI	1.787*	0.957	2.10	0.076
FDINDEX	1.028	1.409	1.02	0.116

Constant	-3.897	34.764	-0.64	0.811
Time-fixed effect	Yes			
Country-fixed effect	No			
No. of groups	4			
No. of observations	120			
P-value	0.0006			
R-squared - within	0.198			
R-squared – between	0.327			
R-squared - overall	0.289			

[This table reports coefficients, standard errors, and t-values from the estimation of the model in Columns (1), (2), (3) and (4) respectively. ** and * denote statistical significance at the 5% and 10% levels respectively]

The P-value represents the overall significance of the model. It is 0.0006, which means the model is overall significant at a 1% level. The independent variable government consumption is significant at a 5% level with a t-value of 3.16, while the FDI variable is also significant at a 10% level with a t-value of 2.10. Those are the significant independent variables that represent the significant impact of financial development on economic growth. Other variables also make a good contribution, though they are not significant. The least significant variables are trade openness and human capital. The constant is also not significant.

The overall R-squared value of the model (explanatory variable) is 0.2890, which means that economic growth can be explained by 29% from the independent variables representing financial development.

According to the results obtained by panel regression, the statistical model can be defined as:

EG = -3.897 + 0.714GC - 0.286NF + 0.0001TO + 0.980HC + 1.787FDI + 1.028FDINDEX

The value of the intercept (constant) is negative 3.9 means when all other variables are held constant, the value of economic growth is -3.9. That reflects that there will be no economic growth if these financial development variables are not efficient.

The coefficient of government consumption is positive 0.71, indicating that government consumption expenditure and economic growth have a positive relationship. The coefficient of inflation is negative 0.29, indicating that inflation and economic growth have a negative relationship. The coefficient of trade openness is positive 0.0001, indicating that trade openness and economic growth have a positive relationship. The coefficient of human capital is positive 0.98, which reflects that human capital and economic growth have a positive relationship. The coefficient of foreign direct investment is positive at 1.78, indicating that foreign direct investment and economic growth have a positive relationship. The coefficient of

the financial development index is positive at 1.03, indicating that the financial development index and economic growth have a positive relationship.

This analysis has been done for thirty years since the existing research and previous studies have not investigated this phenomenon over a longer period of time. Therefore these particular statistical results represent results for these thirty years. By analyzing these results, it can be concluded that, except for inflation, all the other variables (government consumption, trade openness, human capital, foreign direct investment, and financial development index) have a positive relationship with economic growth. Government consumption expenditure has a positive relationship with economic growth. As per the previous studies Reyes et al., (2020); Mehrara & Ghamati, (2014); Nguyen et al., (2021); Nazir et al., (2018) found a positive relationship between government consumption and economic growth, this study also supports the same results. And government consumption is a significant variable. Therefore, this study rejects the null hypothesis and concludes that government consumption significantly affects economic growth.

Direct foreign investments are also helping to increase the economic growth of the Asian frontier countries. It is also an injection into economic growth. In previous studies, foreign direct investment had not been used as an independent variable to measure the impact on economic growth, while previous research suggested taking foreign direct investment into consideration in future research (Nguyen et al., 2021). This study, using it as an independent variable, has identified that foreign direct investment has a positive relationship with economic growth, proving that it has to be considered in conducting statistical analyses. Furthermore, foreign direct investment is also a significant variable. Therefore, this study rejects the null hypothesis and concludes that foreign direct investment significantly affects economic growth.

Inflation has a negative relationship with economic growth. The same finding can be found in some other previous studies by Nazir et al., (2018); Azmeh, (2021) which found that inflation has a negative relationship with economic growth. Also, this study fails to reject the null hypothesis and concludes that inflation does not significantly affect economic growth. However, the negative relationship identified in this study contradicts a previous study, which states that inflation has a linear relationship with economic growth (Nguyen et al., 2021). The financial development index that was used as an independent variable in this study is the Annual Financial Development Index developed by the IMF. It is developed country-wise, and the annual financial development index of each Asian frontier country is taken into consideration. As per the previous studies' results by Nguyen et al. (2021); Nazir et al., (2018), there is a positive relationship between the financial development index and economic growth, which confirms the results of this study.

Analysis Results of the Effect of Financial Development on Economic Growth in the Pre-COVID-19 Pandemic

The analysis was conducted to measure the impact of financial development on economic growth before the COVID-19 pandemic. Pre COVID-19 period takes 28 years, from 1992 to 2019. The following table represents the results of panel regression done for the pre-COVID-19 period.

Table 6: Results of the Analysis of Pre COVID-19 Period

Dependent Variable: Economic Growth				
Independent Variables	Coefficients (1)	Standard Errors (2)	t-values (3)	Probabilities (4)
lnGC	0.644*	0.281	2.29	0.096
INF	-0.037	0.058	-0.64	0.565
TO	0.002	0.009	0.20	0.855
lnHC	-1.159	7.746	-0.15	0.891
FDI	7.746	0.771	1.89	0.155
FDINDEX	0.991	1.279	0.77	0.495
Constant	4.900	30.345	0.16	0.882
Time-fixed effect	No			
Country-fixed effect	No			
No. of groups	4			
No. of observations	112			
P-value	0.000			
R-squared - within	0.097			
R-squared –between	0.187			
R-squared - overall	0.138			

[This table reports coefficients, standard errors, and t-values from the estimations in Columns (1), (2), (3) and (4) respectively. * Denote statistical significance at the 10%, level]

The overall model is significant at a 1% level, and economic growth can be explained by 14% from the independent variables, which represent a low level. Before the COVID-19 pandemic period analysis, the only significant variable was government consumption, which had a 2.29 t-value. All the other variables do not significantly affect economic growth. Before the pandemic period, the constant had a positive coefficient. That means when all the other variables are held constant, the economic growth value will be positive 4.9. Only inflation and the human capital variables have a negative relationship with economic growth. All the other individual variables are having a positive impact on economic growth.

Analysis Results of the Effect of Financial Development on Economic Growth during COVID-19 Pandemic

The analysis is conducted to measure the impact of financial development on economic growth during the COVID-19 pandemic period. The period takes two years from 2020 to 2021. The following table represents the results of the regression done during COVID-19 period.

Table 7: Results of the Analysis of During COVID-19 Period

Dependent Variable: Economic Growth				
Independent Variables	Coefficients (1)	Standard Errors (2)	t-values (3)	Probabilities (4)
lnGC	-2.157	26.690	-0.08	0.949
INF	0.737	4.336	0.17	0.893
TO	0.763	1.100	0.69	0.614
lnHC	-1.806	80.973	-0.02	0.986
FDI	-22.969**	35.821	-2.64	0.037
FDINDEX	-253.781	503.047	-0.50	0.703
Constant	63.536	317.632	0.20	0.874
Time-fixed effect	No			
Country-fixed effect	No			
No. of observations	8			
P-value	0.095			
R-squared	0.497			
Adj R-squared	0.482			

[This table reports coefficients, standard errors, and t-values from the estimations in Columns (1), (2), (3) and (4) respectively. ** denotes statistical significance at the 5% level]

The overall model is significant at a 10% level, and economic growth can be explained by 48% from the independent variables, which represent financial development. During the COVID-19 pandemic period analysis, the only significant variable was, foreign direct investment, which had a 2.64 t-value and resulted in a negative impact. All the other variables do not significantly affect economic growth. During the COVID analysis, government consumption, human capital, foreign direct investment, and the financial development index were found to have a negative impact on economic growth. Though they are not significant, they adversely affect economic growth. As an example, if there is a one-unit increase in the financial development index, economic growth will decrease by 253.78 units.

Though before the COVID-19 impact happened, the significant variable of financial development towards economic growth was government consumption, during the COVID-19 period, the significant variable became foreign direct investment. Before the pandemic, the significant variable had a positive impact. But during the pandemic, the significant variable is having a negative impact. Before the pandemic, most of the variables had a positive impact on economic growth, while during the pandemic, most of the variables had a negative impact on economic growth. These results can conclude that COVID-19 has had a major negative impact on the economic growth of the four Asian frontier financial markets.

Conclusions

The objectives of this study are to find the impact of financial development on economic growth and their relationship in Asian frontier financial markets. Government consumption, trade openness, human capital, foreign direct investment, and the financial development index were taken to represent financial development. The analysis was conducted over 30 years (from 1992 to 2021) in four countries (Sri Lanka, Bangladesh, Pakistan, and Vietnam). The results of the statistical analysis indicate that government consumption expenditure is a key factor that significantly impacts economic growth and is positively related to the economic growth of the Asian frontier financial markets. Foreign direct investment is also another key factor that significantly impacts economic growth, and it is also positively related to economic growth. While all other variables, namely government consumption, trade openness, human capital, foreign direct investment, and the financial development index are positively related to economic growth, inflation is negatively related to economic growth. Also, the constant has a negative relationship with economic growth in these Asian frontier financial markets.

Other than the main analysis, another analysis was conducted to investigate the impact of the COVID-19 pandemic on economic growth. There, one analysis was conducted to identify the impact before the COVID-19 pandemic, which covered the years from 1992 to 2019, and another analysis was done during the COVID-19 pandemic, covering 2020 and 2021. The results of the pre-COVID-19 analysis, represented only one variable that significantly impacts economic growth, which is government consumption. The other five variables do not significantly affect economic growth. Except for inflation and human capital, all four other variables have a positive relationship with economic growth. When considering the results during COVID-19 pandemic, one variable significantly impacts economic growth, and it is foreign direct investment. The other four variables do not significantly impact economic growth. Before the pandemic, government consumption was significantly but positively affected, while during the pandemic, foreign direct investment significantly but negatively affected economic growth. Furthermore, before the pandemic, financial development positively affected economic growth, while during the pandemic, financial development negatively affected economic growth. In both aspects, it can conclude that COVID-19 pandemic has had a major adverse impact on the economies and economic growth of four Asian frontier financial markets.

The inflation in the economies of Sri Lanka, Bangladesh, Pakistan, and Vietnam has had a negative impact on their economies. If there are relevant procedures for reducing inflation, economic growth will increase in these economies. When it comes to trade openness, it has a

positive relationship. Therefore, if these four frontier markets trade more globally, especially if exports increase, it will increase economic growth. Also, these four countries should increase their foreign direct investments to have economic growth as well. The research was limited to the case of Asian frontier financial markets. Therefore, in the future, the evaluation of Europe and the CIS, Africa, and the Middle East can also be taken into consideration. In furtherance, this study considered annual data for thirty years. Therefore, in the future, it can change the frequency of the data to quarterly or monthly. Hence, this research can be improved considerably.

Managerial Implications

Economic growth is a strength for a country. This study analyzes how financial development impacts the growth of an economy. Therefore, this study can be helpful to researchers and also for policymakers because this study analyzes the open economy, exchange rate fluctuations, and internal factors of the economy. The policymakers can consider the results and make procedures accordingly for the benefit of their economies. The researchers were also enlightened by this study as they can have more insights about this subject through this research and develop the research by adding more insights and considering other areas. This study not only investigates the relationship between financial development and economic growth but also conducts another analysis to investigate how the financial sector and growth were affected by the world pandemic COVID–19 that arose in 2020. Also, a higher period, which is 30 years, was considered in the analysis for the study, which was not touched on by previous studies. A combination of all of these considerations was analyzed in this study. And it would be helpful in future research as well.

References

Abdelhafidh, D. (2013). Financial Development and Poverty: What Role for Growth and Inequality? *International Journal of Academic Journal In Accounting, Finance and Management Sciences, 3*(4), 119-129. https//doi.org/10.6007/IJARAFMS/v3i4/362

Arayssi, M., & Fakih, A. (2017). The Finance Growth Nexus, Again: New Evidence from Kenya. *Economic Analysis and Policy, 22*(2).

Asha, T. E., Bhasi, M., & Chandramouli, R. (2017). Financial Accessibility and Economic Growth-Evidence from SAARC Countries. *Contemplations on New Paradigms in Finance*, 32-52. doi:https://ssrn.com/abstract=3138680

Azmeh, C. (2021). The Effect of Financial Development on Economic Growth in Developing Countries. *SSRN Electronic Journal.* doi:https://dx.doi.org/0.2139/ssrn.3899159

Barro, R. J., & Bianchi, F. (2013). Fiscal Influences on Inflation in OECD Countries, 2020-2022. *National Bureau of Economic Research*, https//doi.org/10.3386/w31838

Bibi, R., & Sumaira, S. (2022). The effect of Financial Development on Economic Growth: Evidence from South Asian Developing Countries. *Journal of Environmental science and Economics*, 1-25. doi:https://doi.org/10.5281/zenodo.6134225

Bist, J. P. (2018). Financial Development and Economic Growth: Evidence from a Panel of 16 African and Non-African Low-Income Countries. *Cogent Economics & Finance*, https//doi.org/10.1080/23322039.2018.1449780

Caporale, G. M., Roult, C., Sova, s., & Sova, A. (2015). Financial Development and Economic Growth. *Economics and Finance Working Paper Series*, 9-37.

Cooray, A. V. (2009). Government Expenditure, Government and Economic Growth. *Comparative Economic Studies*, *51*(3), 401-418. http//dx.doi.org/10.1057/ces.2009.7

Coskun, Y., Seven, U., Ertogrul, H. M., and Ulussever, T. (2017). Capital Market and Economic Growth Nexus: Evidence from Turkey. *Central bank Review*, http://dx.doi.org/10.1016/j.cbrev.2017.02.003

Effiong, E. L. (2015). Financial Development, Institutions and Economic Growth: Evidence from Sub-Saharan Africa. *MPRA Paper*, https//www.researchgate.net/publication/282663826

Ekanayake, E. M., & Thaver, R. (2021). The Nexus between Financial Development and Economic Growth: Panel Data Evidence from Developing Countries. *Journal of Risk and Financial management*, *14*(10). https//doi.org/10.3390/jrfm14100489

Galadima, & Ngada. (2017). Impact of Money Supply on Economic Growth in Nigeria. *Dutse Journal of Economics and Development Studies*, *3*(1), 133-144.

Giri, A. K., Mohaparta, G., & Debata, B. (2021). Technological development, financial development, and economic growth in India: Is there a non-linear and asymmetric relationship? *Journal of Economic and Administrative Sciences*, 1026-1116. doi:https://www.emerald.com/insight/1026-4116.htm

Grassa, R., & Gazdar, K. (2014). Financial Development and Economic Growth in GCC Countries: A Comparative Study Between Islamic and Conventional finance. *International Journal of Social Economics*, 493-514. doi:https://doi.org/10.1108/IJSE-12-2012-0232

Hagmayr, B., Haiss, P. R., & Sumegi, K. (2017). Financial Sector Development and Economic Growth: Evidence from Southeastern Europe. *SSRN Electronic Journal*.

IMF/FDI DBnomics. (2022). Retrieved from Db.nomics.world: https://db.nomics.world/IMF?FDI

International Labour Organization. (2022). *ILO Modelled EStimates and Projections (ILOEST) - ILOSTAT*. Retrieved from ilostat.ilo.org: https://ilostat.ilo.org/resources/concepts-and-definitions/ilo-modelled-estimates/

King, R. G., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *The Quarterly Journal of Economics*, *108*(3), 717-737. https//doi.org/10.2307/2118406

Lukas, R. (1998). Financial development and Economic Growth: Views and Agenda. *Journal of Economic Literature, 35*(2), 688-726. https//www.jstor.org/stable/2729790

Masoud , N., & Hardaker, G. (2012). The Impact of Financial Development on Economic Growth: Empirical Analysis of Emerging Market Countries. *Studies in Economics and Finance, 29*(3), 148-173.

McKinnon, & Fry. (1978). Money and Capital or Financial Deepenning in Economic Development. *Journal of Money, Credit and Banking, 10*(4), 464-475. doi:https://doi.org/10.2307/1991576

Mehrara, M. (2014). The Effect of Fiscal shock on Inflation and Economic Growth in Developing Countries. *International Letters of Social and Humanistic Sciences, 41*, 184-191. https//doi.org/10.18052

Mehrara, M., & Ghamati, F. (2014). Financial Development and Economic Growth in. *International Letters of Social and Humanistic Sciences*, 75-81. doi:https://doi.org/10.18052/www.scipress.com/ILSHS.36.75

Morgan Stanley Capital International. (2022). *MSCI Global Market Accessibility Review*. Retrieved from MSCI Incorporation: https://www.msci.com/

Murari, K. (2017). Financial Development and Economic Growth: A review of Literature. *International Journal of Economics and Finance*, https//dx.doi..org/10.2139/ssrn.3496019

Nazir, H., Majeed, S., & Aleem, A. (2018). Does financial development leads economic growth? Evidence from emerging asian markets. *Asian Economic and Financial Review*, 599-617. doi:https://doi.org/10.18488/journal.aefr.2018.85.599.617

Nguyen, H. M., Le, Q. T.-T., Ho, C. M., & Vo, D. H. (2021). Does financial development matter for economic growth in the emerging markets? *Borsa _Istanbul Review*. doi:https://doi.org/10.1016/j.bir.2021.10.004

Nyasha, S., & Odhiambo, N. (2015). The Impact of Bank Based and Market Based Financial Development on Economic Growth: Time Series Evidence from the United Kingdom. *Global Economy Journal, 16*(2), 389-410. https//doi.org/10.1515/GEJ-2015-0036

Patrick, H. T. (1966). Financial Development and Economic Growth in Underdeveloped Countries. *The University of Chicago Press, 20*(2), *318-325. https//www.jstor.org/stable/1152674*

Reyes, E. d., Chen, C., & Pour, G. Z. (2020). Financial Development and Economic Growth in Asian Countries: A Panel Empirical Investigation. *International Journal of Applied Economics, Finance and Accounting*, 76-84. doi:https://www.researchgate.net/publication/354269972

Robinson, M. (1952). Increasing returns and long run growth. *Journal of Political Economy, 99*(3), *500-521*.

Schumpeter, (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle*, Harvard University Press.

Sethi, N., Das, A., Sahoo, M., Mohanty, S., & Bhujabal, P. (2020). Foreign direct investment, financial development and economic prosperity in major south Asian economies. South Asian Journal of Busiess Studies, 82-103. doi:https://www.emerald.com/insight/2398-628X.htm

Sohag, K., Shams, S. M. R., Omar, N., & Chandrarin, G. (2019). Comparative Study on Finance-Growth Nexus in Malaysia and Indonesia: Role of Institutional Quality. *Strategic Change, 28*, 387-398. https//doi.org/10.1002/jsc.2293

Solow, R., & Swan, T. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics, 70*(1), 65-94. doi:https://doi.org/10.1111/j.1475-4932.1956.tb00434.x

Stern, & Lukas. (1998). The Effect of Market Orientation on Product Innovation. *Journal of the Academy of Marketing Science*, *28*(3), 239-247.

Taivan, A., & Nene, G. (2016). Financial development and Economic Growth: Evidence from Southern African Development Community Countries, *The Journal of Developing Areas, 50*(4), 81-95. https//www.jstor.org/stable/26415517

TRADING ECONOMICS | 20 million INDICATERS FROM 196 COUNTRIES. (2022). Retrieved from tradingeconomics.com: https://tradingeconomics.com/

Vietnam-General Government Final Consumption Expenditure. (2019, December 28). Retrieved from indexmundi.com: https://www.indexmundi.com/facts/vietnam/general-government-final-consumption-expenditure

Wang, J., Lee, Y. P. (2018). Funding Model and Creativity in Science: Competitive Versus Block Funding and Status Contingency Effects. *RESEARCH POLICY*, 47(6), 1070-1083. https//doi.10.1016/j.respol.2018.03.014

World Bank Group. (2022). *World Bank Open Data | Data*. Retrieved from Data.worldbank.org: https://data.worldbank.org/?name_desc=false

Yurtkur, A. K. (2019). The Relationship Between Financial Development, Innovation, and Economic Growth: Evidence from Emerging Markets. *Handbook of Research on Managerial Thinking in Global Business Economics*.