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The effect of financial development on economic growth in high-income countries

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ABSTRACT

This study aims to analyze the effect of financial development on economic growth high-income countries. To support the results of this study, the variables used are financial development from the institutional and market side, as well savings and investment. Through the panel data method using the fixed effects model (FEM) approach. The results of study show that financial development has an effect on economic growth high-income countries. This research emphasizes that financial development can encourage economic growth for countries that focus on building a strong financial sector by mobilizing capital, which is a necessity for economic activity. Especially from the perspective of financial institutions and markets, financial development must become the basis for formulating policies so that it will have an impact on the absorption and distribution of financial resources and become an important factor in driving economic growth. In addition, savings and investment are channels to meet the needs of financial resources and must be maintained so that they can contribute to economic growth. With these results, the governments of high-income countries can strengthen policy in the financial sector so that it becomes the foundation for economic growth.

Contribution/Originality: There is a lot of research on financial development and economic growth developed countries. However, only a few uses the variables of savings and investment, and as this study focuses on high-income countries, it is important to use these variables.

1. INTRODUCTION

Financial development is a process in building the financial sector from the side of financial institutions, such as banks, insurance companies, mutual funds and pension funds, and financial markets, which includes factors and policies that rely on the availability of financial resources to increase economic growth. The financial sector requires not only the development of financial intermediaries and infrastructure but also policies, regulations, and supervision to direct it in managing its resources so that financial institutions and markets can function properly (Čihák, Demirgüç-Kunt, Feyen, & Levine, 2012).

Conceptually, financial development is an economic driver of a country that relies on financial institutions and markets in providing financial resources; financial institutions and markets require infrastructure and policies to strengthen their functions (Čihák et al., 2012). The characteristics of financial development provide a broader understanding of the importance of the financial sector in contributing to economic growth. As a result, financial development indicators, such as financial institutions and markets, have established a strong foundation enabling them to contribute to economic growth (Sahay et al., 2018).

The ability of financial development to perform its functions effectively and efficiently is a critical step in promoting economic progress. In addition, development of the financial sector provides access to financial products and is a determining factor in capital flows, thereby encouraging consumption and investment (by providing employment) that reduces poverty and drives economic performance (Tchamyou & Asongu, 2017). There are a few key findings from the analysis of how financial development affects economic growth. The first is through the savings rate that leads to investment and capital accumulation, and the second is through channel allocation, in which financial development can increase efficient investment allocations thereby increasing productivity (Nayak, 2022).

Economic growth is a goal that every country strives to achieve. One of the factors that can guarantee the achievement of economic growth is investment or capital. In economic theory, investment can increase economic growth through the accumulation of capital provided by the financial sector. The development of the financial sector plays an important role in channeling financial resources to productive sectors in order to finance investment needs. Financial development consisting of financial institutions and markets facilitates the efficient allocation of resources and access needed to increase productivity (Guptha & Rao, 2018).

The theory of financial development and economic growth was put forward by Schumpeter (1934), who states that the financial sector and the existence of financial institutions capable of mobilizing resources for the productive sector is highly relevant in promoting economic growth. Gurley and Shaw (1967) describe financial development as a positive function of real wealth. As the state income increases, the financial structure will become stronger in terms of institutions and financial assets. Goldsmith (1969) emphasized the role of financial intermediaries in channeling capital to the productive sector by analyzing business information to allocate capital to a wider scope. McKinnon (1973); and Shaw (1973) illustrate financial development as a process and strategy to achieve optimal economic growth. The importance of financial structure in spurring economic development is emphasized and accompanied by financial policies. Controlling interest rates aims to increase credit that can encourage economic development. Stable interest rates can encourage households to increase savings and expand the role of financial intermediaries, thereby increasing the supply of credit to the productive sector, as well as encouraging investment and economic growth.

The endogenous growth model relates financial development to economic growth (Bencivenga & Smith, 1991; Greenwood & Jovanovic, 1990; King & Levine, 1993). This model assumes that a strong financial system can improve the services of financial institutions and markets in mobilizing activities and financial resources to stimulate economic growth, such as lowering investment risk, providing information, and presenting diversification. This financial service can boost savings and investments by matching capital availability, allowing it to accumulate in the productive sector and become a channel of economic growth.

Table 1 depicts that, in general, the economic growth of high-income countries fluctuates and does not maintain a constant positive growth. Almost all countries recorded negative economic growth due to the global financial crisis, except for Australia, the Republic of Korea, and Poland. However, the growth rates of these countries declined from the previous year World Bank (2009). Table 1 presents the economic growth of high-income countries from 2005 to 2019.

Table 1. Economic growth of high-income countries from 2005 to 2019.

No.	Country	Year (%)														
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1	Australia	3.2	2.79	3.84	3.66	1.94	2.07	2.46	3.92	2.58	2.53	2.19	2.77	2.3	2.95	2.16
2	Chile	5.74	6.32	4.91	3.53	-1.56	5.84	6.11	5.32	4.05	1.77	2.3	1.71	1.19	3.95	1.05
3	Germany	0.73	3.82	2.98	0.96	-5.69	4.18	3.93	0.42	0.44	2.21	1.49	2.23	2.6	1.27	0.56
4	Japan	1.66	1.42	1.65	-1.09	-5.42	4.19	-0.12	1.5	2	0.37	1.22	0.52	2.17	0.32	0.65
5	The Republic of Korea	4.31	5.26	5.8	3.01	0.79	6.8	3.69	2.4	3.16	3.2	2.81	2.95	3.16	2.91	2.04
6	Poland	3.51	6.13	7.06	4.2	2.83	3.74	4.76	1.32	1.13	3.38	4.24	3.14	4.83	5.35	4.54
7	Portugal	0.78	1.63	2.51	0.32	-3.12	1.74	-1.7	-4.06	-0.92	0.79	1.79	2.02	3.51	2.85	2.24
8	Spain	3.65	4.1	3.6	0.89	-3.76	0.16	-0.81	-2.96	-1.44	1.38	3.84	3.03	2.97	2.43	1.95
9	Switzerland	3.12	3.99	4.11	2.15	-2.22	3	1.69	1.01	1.85	2.45	1.33	1.72	1.8	2.75	0.93
10	United States	3.51	2.85	1.88	-0.14	-2.54	2.56	1.55	2.25	1.84	2.53	2.91	1.64	2.37	2.93	2.16

Source: World Bank (2020).

From Table 1 above, the Republic of Korea had high economic growth in 2010 6.80% although it began to decline the following year. This is because in the same year, the state of financial access and efficiency in Korea. Chile experienced economic growth rates of 6.31% in 2006 and 6.11% in 2011. This is the same as what happened in South Korea, whose declining economy followed a period of relatively high economic growth. This decline was caused by stagnated financial efficiency, especially from 2013 to 2019.

Meanwhile, Germany's economic growth experienced a slowdown compared to other countries from 2012 until 2019, when its annual economic growth was between 1% and 2%. On the other hand, the decline in growth was triggered by decreases in financial depth, access, and efficiency in the same year. Economic growth in Spain grew negatively from 2011 to 2013, although it experienced steady growth of 2%–3% from 2015 to 2018. The same situation also occurred in Portugal who showed negative growth from 2011 to 2013. However, following that, the growth rate remained unstable, only increasing by 1%–2% per year. This is in contrast to the conditions that occurred in Australia and Poland, which experienced stable growth with an average of 3% each year during the study.

From data obtained from the World Bank, domestic credit to the private sector was highest in the United States in 2017, reaching 198.86%. However, economic growth that year decreased from the previous year. The level of domestic credit that tends to be stable occurs in Switzerland, which increased every year. However, this was not followed by declining and fluctuating economic growth. In addition, domestic credit in Poland decreased in the years after 2012, when it increased 36.33%. In fact, there was a decrease in economic growth by 1.32%. Spain's data for financial institution access based on the number of bank branches per 100,000 adults was highest in 2007 at 104.20%, and it was 70.73% Portugal in 2006. However, in 2007, economic growth in Spain decreased from the previous year, amounting to 3.60%. In 2014, South Korea experienced a 17.20% decline in bank branches, but economic growth increased by 3.20% from the previous year. In Chile, the efficiency of financial institutions based on the net interest margin has the highest increase among the countries. Between 2005 and 2010 it reached 4% and decreased the following year to 3%, this also affected Chile's economic growth rate, which fluctuated and decline from 2012 to 2019. The net interest margin in Germany tended to stagnate at 0%–1%, and the same happened in Japan and Spain. The financial market depth based on stock market capitalization in Switzerland is the highest compared to other countries in 2007 at 249.23%, then the United States at 153.21% in 2017. In addition, there are several countries that have the lowest stock market linkage data, such as Portugal at 24.18% in 2019 and Poland at 25.23% in 2009. Financial markets access based on the total value of shares traded in the United States has the highest data from other countries, at 313.71% in 2008, then the Republic of Korea at 160.44% in 2010. In addition, there are several countries that have the lowest data for the total value of traded shares, such as Poland at 7.57% in 2005 and, Portugal at 7.15% in 2019. Financial market efficiency based on the stock market turnover ratio in the United States has the highest data among the countries, at 292.61% in 2008, then Republic of Korea at 199.36% in 2005. In addition, there are several countries that have the lowest stock turnover ratio data, such as Switzerland at 6.41% in 2005 and Chile at 9.94% in 2015.

From the above, it can be observed that the condition of financial development in terms of institutions and financial markets is not sufficient to determine the economic growth rate of high-income countries. The existence of data that fluctuates from year to year becomes an obstacle in mobilizing the financial sector, and the global financial crisis in 2008 made it difficult for high-income countries to further stabilize their financial conditions to grow stronger and drive economic growth. Therefore, this study aims to analyze the financial development of high-income countries to determine the extent to which these variables affect the rate of economic growth and are accompanied by savings and investment variables as a more productive allocation of financial resources.

2. LITERATURE REVIEW

Some previous studies (Bittencourt, 2012; Estrada, Park, & Ramayandi, 2010; Hassan, Sanchez, & Yu, 2011; Škare, Sinković, & Porada-Rochoń, 2019) have indicated that financial development can affect economic growth by performing the function of financial intermediaries so that the distribution of financial resources can be absorbed by

the productive sector. Other studies (Moyo & Le Roux, 2020; Petkovski & Kjosevski, 2014) provide evidence that financial development has a negative influence and has not been able to play a role in economic growth. Previous studies (Aluko & Ibrahim, 2020; Luintel, Khan, Leon-Gonzalez, & Li, 2016) analyzed financial development in terms of financial institutions and show that well-functioning financial institutions can increase capital accumulation in promoting productivity and efficiency to encourage economic growth. Other studies (Pradhan, Arvin, Hall, & Bahmani, 2014; Škare et al., 2019) analyzed the impact of financial development from a financial market perspective.

Luintel et al. (2016) analyzed the impact of financial development on economic growth in 69 countries and found that had a significant effect. Financial activity that tends to increase is a determining factor in mobilizing financial resources channeled by financial institutions and markets. Demetriades and Rousseau (2016) analyzed financial development and economic growth in 84 countries and the result indicate that financial development has no significant effect on economic growth due to the declining allocation of financial resources during the year of the study. In addition, reforms are needed in terms of quality and supervision of financial institutions to ensure that the financial sector can make a positive contribution to economic growth.

Guptha and Rao (2018) carried out research in the BRICS countries, which consists of Brazil, Russia, India, China and South Africa, and the results show that financial development has a significant effect on economic growth. With a high level of credit from the private sector, it will increase investment and mobilize capital that can boost productivity. Anarfo, Abor, Osei, and Gyeke-Dako (2019) found that financial development in Sub-Saharan Africa is able to encourage economic growth due to good access to finance from financial institutions. Policies and stability of financial institutions ensure an increase in the overall allocation of financial resources, which has implications for the productive sector.

Pradhan, Arvin, Norman, and Bahmani (2019) examined financial development and economic growth in G20 countries and they found that economic growth cannot happen if financial development is not encouraged to develop further, causing a bias. This shows that there is a complementary effect accompanied by macroeconomic stability in maintaining a steady growth rate in order to avoid worse consequences and distortions for economic growth. Kapaya (2020) conducted research in the Southern African Development Community (SADC) consisting of 16 countries (South Africa, Angola, Botswana, Comoros, Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Tanzania, Zambia and Zimbabwe) and they found evidence that financial development has no significant effect on economic growth. The quality of financial institutions and markets can be a determinant or a turning point in order to ensure that the financial sector can grow and stimulate economic growth. However, the overall financial development was still not effective in mobilizing financial resources. Sharma and Kautish (2020) examined financial development and economic growth in middle-income countries in South Asia. The results of the study show that financial development has no significant effect on economic growth. The 2008 financial crisis caused shocks that prevented the financial sector from developing, causing stagnation for several years before finally reaching a stable condition.

Research was conducted by Nguyen et al. (2019) in 90 countries and the findings show that financial development has a negative effect on economic growth in high-income countries. However, it has a positive effect in low-income countries. These results provide evidence that, despite having better financial development than other groups of countries, economic growth in high-income countries is still low compared to other countries in this study. A study by Swamy and Dharani (2021) on 24 countries produced different results which show that financial development can be a driving factor and has a positive effect on economic growth.

Samargandi, Fidrmuc, and Ghosh (2015) carried out a study on 52 countries and proved that financial development does not have a significant impact on economic growth. The weak condition of financial development in terms of institutions and markets is the reason for the lack of contribution from the financial sector to the economy. These results are also in line with research from Bahadir and Valev (2017) which proves that financial development is still not capable of being a driving factor for economic growth in 30 European countries. When in fact financial

development in several European countries has reached a good level in terms of policy and resilience. Durusu-Ciftci, Ispir, and Yetkiner (2017) confirmed that good financial development that can absorb and channel resources is a target that has been achieved in 40 countries. Research by Léon (2018) found that financial development had a positive impact on economic growth in 143 countries and they were able to initiate better economic activities. Lee (2012) conducted research in developed countries (France, Germany, Japan, the Republic of Korea, the United Kingdom and United States). With the progress of the financial sectors in these developed countries, this research has proven that economic growth can be achieved with a strong foundation in terms of financial institutions and markets.

Gozgor (2014) analyzed financial development and economic growth in 35 Organization for Economic Co-operation and Development countries. The results prove that economic growth can be achieved by financial development, which becomes an important indicator for productive activities to continue to develop. Ibrahim and Alagidede (2018) found that even though Sub-Saharan African countries are still developing financial development is still able to make a positive contribution to economic growth.

3. METHOD

The panel data was tested on 15 high-income countries (Australia, Chile, Germany, Japan, the Republic of Korea, Poland, Portugal, Spain, Switzerland and the United States) from 2005 to 2019. In this study, the variables used are economic growth, financial institution depth, financial institution access, financial institution efficiency, financial market depth, financial market access, financial market efficiency, savings and investment.

Table 2. Description variable.

Variable type	Variable	Indicator	Unit	Source
Dependent variable	Economic growth (EG)	Annual GDP growth	(%)	World Bank's World Development Indicator
Independent variables	Financial institution depth (FID)	Domestic credit to the private sector to GDP	(%)	World Bank's World Development Indicator
	Financial institution access (FIA)	Bank branches per 100,000 adults	(%)	World Bank's World Development Indicator
	Financial institution efficiency (FIE)	Net interest margin	(%)	World Bank's World Development Indicator
	Financial market depth (FMD)	Stock market capitalization	(%)	World Bank's World Development Indicator
	Financial market access (FMA)	Stock market total value traded to GDP	(%)	World Bank's World Development Indicator
	Financial market efficiency (FME)	Stock market turnover ratio	(%)	World Bank's World Development Indicator
Explanatory variables	Saving (GS)	Gross savings	Nominal	World Bank's World Development Indicator
	Investment (GFCF)	Gross fixed capital formation to GDP	%	World Bank's World Development Indicator

Source: World Bank (2020).

In Table 2 economic growth is the amount of gross added value produced by the population within the scope of a country's economy.

To understand the extent of financial development, financial institutions and markets can indicate the importance of financial development in influencing economic growth. The depth of financial institutions is seen from the domestic credit to the private sector indicator. The higher the level of domestic credit to the private sector, the more the capital owned by banks increases thereby encouraging economic growth. Regarding the depth of financial markets, the indicator used is stock market capitalization, which is the total stock market transactions that determine the overall potential of the stock market.

Financial access, as seen from the number of bank branches per 100,000 adults, is an important factor in allowing households and economic actors to have access to financial institutions, be it financial products or services that aim

to improve transaction processes. Financial access has a positive effect on economic growth, where the higher the access to financial development, the better the economic growth. Financial market access uses the indicator of the total stocks traded.

Financial efficiency is reflected in the net interest margin, which plays an important role in contributing to bank performance in earning income. The net interest margin reflects the profits that banks get from interest and returns from borrowers. For financial market efficiency, the indicator used is the stock market turnover ratio, which is a ratio used to determine the ability of stock trading to attain efficiency that can demonstrate the stock market transaction conditions.

Gross saving can be calculated as the gross national income minus total consumption plus net transfers which are used as control variables in this study. Gross fixed capital formation includes investment in the form of the availability of both building and non-building capital to expand the scope of investment to the productive sector.

3.1. Data Panel Regression

Panel data (longitudinal data) is data that combines a time series and a cross-section, which includes observations of the same variable from several periods. There are four types of variables in panel data the variables can be different, but do not change from time to time; the variables can change from time to time, but remain the same between individuals over a period of time; the variables can vary from time to time between individuals; or the data from the variables have varying trends that can be observed between individuals (Studenmund, 2016).

The following is the panel data model equation:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \varepsilon_{it} \quad (1)$$

Where Y is the dependent variable, β is the variable coefficient, X is the independent variable, i denotes a country (where i = 1,2,…, N), t is the time period (where t = 1,2,…, N), and ε is the error term.

The equation for the panel data regression is:

$$EG_{it} = \alpha_i + \beta_1 FID_{1it} + \beta_2 FIA_{2it} + \beta_3 FIE_{3it} + \beta_4 FMD_{4it} + \beta_5 FMA_{5it} + \beta_6 FME_{6it} + \beta_7 GS_{7it} + \beta_8 GFCF_{8it}\ \varepsilon_{it} \quad (2)$$

Where:

EG is economic growth, *FID1* is financial institution depth, *FIA2* is financial institution access, *FIE3* is financial institution efficiency, *FMD4* is financial market depth, *FMA5* is financial market access, *FME6* is financial market efficiency, *GS7* is gross savings and *GFCF8* is gross fixed capital formation.

The common effects model (CEM) is the first approach in the panel data method. This approach combines time series data and cross sectional data. In addition, the data is assumed to be the same so it does not show the time dimension. The fixed effects model (FEM) is the second approach in the panel data method. Assuming that data between countries can be accommodated as an intercept. In this approach, the dummy variable technique can be used to determine if there are differences in the results obtained. The random effects model (REM) is the last approach in the panel data method. In this approach, the model handles the possibility that data between countries is related so that the results of the analysis can be accommodated by intercepts and errors from each country studied.

Analyzing the panel data required several stages to select the most appropriate model for this research. First, the Chow test was used to select the common effect model or the fixed effects model (H_0 = CEM and H_1 = FEM); second, the Hausman test was carried out to choose either the fixed effects model or the random effects model (H_0 = REM and H_1 = FEM); and third was the Lagrange multiplier test to select the common effect model or the random effects model (H_0 = CEM and H_1 = REM).

4. RESULTS AND DISCUSSION

4. 1. Results

Based on the results of the panel data method, the best model for the analysis in this study was identified.

Table 3. Chow test.

Effect test	Statistic	D.F.	Probability
Cross-sectional F	3.762	(9.131)	0.000
Cross-sectional chi-square	34.258	9	0.000

4.1.1. Chow Test

From Table 3, based on the results of the Chow test, the p-value is 0.000. This value is smaller than $\alpha = 0.05$. Thus, H_0 is rejected and H_a is accepted and fixed effects model is more appropriate to use in this study than the common effect model.

Table 4. Hausman test.

Test summary	Chi. sq. statistic	Chi. sq. D.F.	Probability
Cross-sectional random	25.154	8	0.001

4.1.2. Hausman Test

From Table 4, based on the Hausman test, the p-value is 0.001, which is smaller than $\alpha = 0.05$ meaning that H_a is rejected and H_0 is accepted. Therefore, the fixed effects model is more appropriate to be used in this study than the random effects model.

Table 5. Lagrange multiplier test.

Null hypotheses: No effects Alternative hypotheses: Two sided (Breusch-Pagan) and one sided (All others) alternatives	Test hypothesis		
	Cross-section	Time	Both
Breusch–Pagan	0.909307 (0.3403)	101.9163 (0.0000)	102.8256 (0.0000)
Honda	-0.953576 --	10.09536 (0.0000)	6.464218 (0.0000)
King–Wu	-0.953576	10.09536 (0.0000)	5.571115 0
Standardized Honda	0.763969 0.2224	10.45922 (0.0000)	4.904360 (0.0000)
Standardized King–Wu	0.763969	10.45922 (0.0000)	4.211681 (0.0000)
Gourieroux, Monfort, and Trognon (1984) Pseudo maximum likelihood method	0.2224 --	--	101.963 (< 0.01)
Mixed chi-squared asymptotic critical values			
1%	7.289		
5%	4.321		

4.1.3 Lagrange Multiplier Test

From Table 5, based on the Lagrange Multiplier test, the p-value from Breusch-Pagan is 0.3403, which is bigger than $\alpha = 0.05$, meaning that H_a is rejected and H_0 is accepted and the common effect model is more appropriate to be used in this study than the random effects model.

From the results of the Chow test, it was found that the fixed effect model was better than the common effect model and the Hausman test showed that the fixed effect model was better than the random effect model. Therefore, in this study the fixed effect model is the most appropriate for use in estimation. So, the Lagrange multiplier test does not affect the results in this test.

4.2. Data Panel Estimation Results

This study uses financial development variables in terms of institutions and markets. Indicators of financial institutions are financial institution depth (FID), financial institution access (FIA), financial institution efficiency (FIE), and the indicator of financial markets are financial market depth (FMD), financial market access (FMA), and financial market efficiency (FME) as the independent variables. The explanatory variables are gross savings (GS) and gross fixed capital formation (GFCF) while economic growth (Y) is used as the dependent variable. After estimating the data, the fixed effects model is the best for this study.

From Table 6, based on the estimation, the equation of the panel data regression is:

$$Y_{it} = 0.994 - 0.051X_{1it} - 0.055X_{2it} + 0.058X_{3it} + 0.041X_{4it} - 0.020X_{5it} + 0.014X_{6it} + 6.510X_{7it} + 0.253X_{8it} + \varepsilon_{it}$$

From the regression equation, financial institution depth (FID) has a negative effect on economic growth with a regression coefficient of -0.051. Financial institution access (FIA) has a negative effect on economic growth with a regression coefficient of -0.055. Financial institution efficiency (FIE) has a negative effect on economic growth with a regression coefficient of -0.058.

Table 6. Data panel estimation results.

Variable	Coefficient	Std. error	T-statistic	Probability
EG	0.994	2.054	0.484	0.629
FID	-0.051	0.011	-4.624	0.000
FIA	-0.055	0.025	-2.231	0.027
FIE	-0.058	0.279	-0.210	0.833
FMD	0.041	0.009	4.118	0.000
FMA	-0.020	0.006	-2.959	0.003
FME	0.014	0.006	2.078	0.039
GS	6.510	7.112	0.915	0.361
GFCF	0.253	0.082	3.069	0.002

Financial market depth (FMD) shows a positive influence on economic growth with a regression coefficient of 0.041. Financial market access (FMA) shows a negative effect on economic growth with a regression coefficient of -0.020. Financial market efficiency (FME) shows a positive influence on economic growth with a regression coefficient of 0.014.

Gross savings (GS) has a positive effect on economic growth with a regression coefficient of 6.510. Gross fixed capital formation (GFCF) has a positive effect on economic growth with a regression coefficient of 0.253.

4.3. Discussion

The hypothesis testing results in Table 6 indicate that financial institution depth (FID) has a significant effect on the economic growth of high-income countries. The increase in domestic credit to the private sector will impact economic growth. This is evidence that financial depth can carry out its function in attracting credit and banks can provide financial resources that play a role in credit withdrawal, allowing it to be allocated to the productive sector.

A study conducted by Yang and Chang (2020) in lower-income and high-income countries. Shows that financial institution depth has a significant effect on high-income countries, while in lower-income countries it shows no significant effect. Financial development in lower-income countries has been unable to stimulate the expansion of the

banking sector, which is critical in providing the financial resources required to boost the development of productive sectors and achieve economic progress.

Financial institution access (FIA) also has a significant effect on the economic growth of high-income countries. This means that when access to finance increases, it will have an impact on economic growth. This shows that high-income countries' financial access has expanded the scope of services that ease the intermediary process. This intermediary process is a liaison between households and economic actors in the scope of financial services.

The study by Boldbaatar and Lee (2015) studied three groups of countries – low-income, middle-income and high-income. They found that first, financial institution access has a significant effect on the economic growth of lower-income countries; second, financial institution access has no significant effect on the economic growth of middle-income countries; and third, financial institution access has no significant effect on the economic growth of high-income countries. Only lower-income countries have financial institutions that can facilitate access to households and economic factors.

Financial institution efficiency (FIE) has no significant effect on the economic growth of high-income countries. An increase in financial efficiency has no impact on economic growth, which proves that financial efficiency in high-income countries has not been able to encourage financial institutions to contribute to economic growth.

This results of this study contradict a previous study by Alexiou, Vogiazas, and Nellis (2018) in 34 European countries, which shows that financial institution efficiency has a significant effect on economic growth. Institutional characteristics from a well-managed financial sector, as well as attributes that drive financial indicators, can all help to encourage financial development in order to accomplish economic growth. The results of this study are also contrary to Le, Ho, and Vu (2019) who conducted a study in ASEAN countries. Their results indicate that financial institution efficiency has a significant effect on economic growth, which implies that the efficiency of financial institutions can foster financial development to achieve more effective and efficient performance thereby contributing to economic growth.

The results also indicate that financial market depth (FMD) has a significant effect on the economic growth of high-income countries. The increase in stock market capitalization will have an impact on economic growth. These results are evidence that financial market depth is an important factor that supports economic conditions through stock trading, which can mobilize financial resources for market participants. Market-based financial development is a critical component of capital formation, as it aids in the exploration of financial resources that contribute to a country's economic progress.

The results of the study are supported by Bayar, Kaya, and Yildirim (2014) whose study in Turkey indicates that financial market depth with the indicator of stock market capitalization had a significant effect on economic growth. Financial market depth resulted in information about investment and liquidity, reducing risk, and mobilizing financial resources. The developing stock market has reflected the mechanism to encourage stock trading for economic growth. A study by Jalloh (2015) of 15 African countries shows that financial market depth had a significant effect on economic growth. Hence, the development of the stock market in Africa has the potential to accelerate economic growth. Stock market capitalization in Africa has moved maximally in spurring more profitable capital allocation.

The results of hypothesis testing indicate that financial market access (FMA) has a significant effect on the economic growth of high-income countries. Increasing access to financial markets will have an impact on economic growth. This outcome demonstrates that economic actors as users of financial market services have been able to benefit from access to financial markets, especially in terms of stock trading, encouraging economic actors to look for finance alternatives to meet their capital demands.

Borlea, Mare, Achim, and Puscas (2016) conducted a study on several country groups, and the results show that financial market access has a significant effect in European countries and in Sub-Saharan Africa. The stock market of several groups of countries can meet the financing required by market participants. Financial markets can spur market participants to absorb financial resources from stock market transactions. Therefore, the need for financial resources

does not only depend on financial institutions but financial markets also play a significant role in increasing economic growth in a country.

A study conducted by Tasmaganbetov et al. (2018) in several country groups reveals that financial market access in lower-income and lower-middle income countries did not have a significant effect on economic growth. The stock market in developing countries does not contribute to economic growth. The upper-middle income and high-income countries have a significant influence on economic growth. These results prove that the stock market in various groups of countries has not reflected a significant impact in encouraging economic growth, especially in lower-income and lower-middle income countries.

The results also indicate that financial market efficiency (FME) has a significant effect on the economic growth of high-income countries. This means that when the financial market efficiency increases, there will be an impact on economic growth. This has hampered market participants from withdrawing capital from stock market activities, resulting in poor performance in the financial market regarding promoting efficiency levels.

Another study carried out by Fufa and Kim (2018) confirmed that the financial development of financial market efficiency indicators in lower middle-income, upper middle-income and high-income countries has succeeded in expanding the scope of the stock market so that capital flows can be utilized by companies to increase capacity to spur economic growth. The results of several groups of countries indicated that the financial development in a country can determine the impact on economic growth due to the financial industry's vast ability to supply appropriate financial resources.

The study also indicates that gross savings (GS) has no significant effect on the economic growth of high-income countries. This means that an increase or decrease in gross savings does not significantly impact economic growth. A high level of savings is a determinant in encouraging the allocation of financial resources needed by economic sectors to achieve a high level of economic growth.

Research by Bolarinwa and Obembe (2017) in Sub-Saharan Africa shows that gross savings has a significant effect on economic growth. This proves that gross savings is a determinant of economic growth in Sub-Saharan Africa and can encourage economic strength in developing countries. Research by Mollaahmetoğlu and Akçalı (2019) shows different results in high-income countries and indicates that gross savings has a significant effect on economic growth. Gross savings can be a channel through which financial development can influence economic growth in order to strengthen the financial sector in the provision of financial resources.

The results of the study indicate that gross fixed capital formation (GFCF) has a significant effect on the economic growth of high-income countries. This means that an increase or decrease in gross fixed capital formation will have an impact on economic growth. Gross fixed capital formation in the form of investment in capital goods is able to encourage investment allocation aimed at growing productive sectors that can spur economic growth.

Ruiz (2018) carried out research in developing and industrialized countries and the results show that gross fixed capital formation has a significant effect in industrialized countries, while it had no significant effect in developing countries. These results prove that investment in industrialized countries is able to generate high added value for the economic sector so that it can mobilize financial resources to encourage economic growth. Research by Ouedraogo and Sawadogo (2022) in middle-income and lower-income countries in Sub-Saharan Africa. The results show that gross fixed capital has a significant effect on economic growth in middle-income and lower-income countries in Sub-Saharan Africa. These results indicate that the acceleration of investment is able to encourage access to productive sectors in spurring higher economic growth conditions.

5. CONCLUSION AND POLICY IMPLICATION

This study investigated the effect of financial development on the economic growth of high-income countries from 2005 to 2019 and focuses on financial institutions and financial markets. Based on the results, financial development in high-income countries, with indicators of financial institutions and markets have shown a positive

effect, and only the efficiency of financial institutions has not produced significant results. This proves that financial development is the main source of economic growth and can support sustainable development. In addition, the control variable of gross savings is still not able to support economic growth, although if viewed from a broader perspective, savings can be a resource for the financial sector. Gross fixed capital formation has significant results to encourage economic growth. Investment aims to mobilize capital, which plays an important role in increasing the growth of the productive sector.

Financial development in high-income countries has been proven to be a pillar of economic growth. For this reason, governments in high-income countries are expected to be able to maintain the condition of financial institutions and markets in order to remain stable in channeling financial resources. By formulating regulations that encourage institutions and financial markets to improve performance, they can become resistant to economic shocks. In addition, the absorption of financial resources in terms of savings should be increased, because it is still not sufficient to have a maximum impact on economic growth.

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