Avalaible online at http://journals.ums.ac.id

Jurnal Ekonomi Pembangunan, 17 (1), Juni 2016, 84-99

INSTITUTION, FINANCIAL SECTOR, AND ECONOMIC GROWTH: USING INSTITUTION AS INSTRUMENT VARIABLE

Albertus Girik Allo

Department of Economic and Bussiness, University of Papua, West Papua
Jl. Gunung Salju-Amban, Manokwari, West Papua
Correspondence E-mail: albertusgirikallo@yahoo.co.id

Recieved: February 2016; Accepted: June 2016

Abstract

Institution plays a role in economic growth, but not directly. This research is aimed at studying whether the quality of institution affects economic growth of a country. Foreign Direct Investment (FDI) variable is instrumented by institutional variable will show indirect correlation between the quality of institution and economic growth. This research employed two sets of data periods, i.e. 1985-2013 and 2000-2013, which are available online from the World Bank (WB). The first set of data, 1985-2013, was used to estimate the correlation between financial sector and economic growth, which was focused on 67 countries. The second set of data, 2000-2013, was to test the effect of institution on economic growth through FDI by using 2SLS estimation method. The results of analysis indicated that the better quality of institution (Government Effectiveness, Regulatory Quality, and Rule of Law) affect the increase in the contribution of FDI on economic growth.

Keywords: institution, financial sector, economic growth, instrument variable, FDI(Foreign Direct Invesment)

JEL Classification: D02, E02, F21, N15, O43

1. Introduction

The correlation between financial sector development and economic growth has drawn attention economists since Joseph Alois Schumpeter in 1911 argued that financial sector plays an important role in increasing productivity and economy of a country. Schumpeter argued that the financial sector play a role in the development of technological innovation and economic growth resulted from basic services provided by the financial sector such as mobilizing savings, evaluating investment, managing risk and facilitating transactions. This concept was later corroborated by the results of several researches (Arestis and Demetriades, 1997; Samargandi et al., 2013). However, Lucas (1988) found that the role of financial sector in economic growth of a country is very small and is not an important factor. In addition, the results of several researches suggest that such correlation is bi-directional (Demetriades and Hussein, 1996; Luintel and Khan, 1999). The aforementioned debate shows that financial sector play a role in economic growth, but the size of the role greatly depends on macro-economic, socio-economic, and institutional conditions of a country.

The role of financial sector in economic growth can be seen from various aspects, one of which often used is liberalization aspect of financial sector. The role of the liberalization of financial sector in economic growth varies in each country. The liberalization of financial sector in developing countries does not result in investment flow, economic growth or capital

inflow. This is because the capital flows which freely move cause high levels of uncertainty in the market which then result in uncertainty in output and consumption. Uncertainty in financial market caused by the liberalization of financial sector will lead to financial crisis (Broner and Ventura, 2011). In addition, the liberalization of financial sector may also cause macroeconomic instability in developing countries (Broner, and Rigobon, 2006). However, this condition depends on the characteristics of the country including the country, such as rich or poor countries, and depends on the quality of existing financial institutions in the country. Papaioannou (2009) indicated that developing countries that have strong financial institutions, more developed domestic financial markets and high-income initial cause greater capital inflows than other countries.

Developing countries are more likely to experience a financial crisis rather that developed countries if financial liberalization is implemented because developing countries have low financial reserves and poor institutional system. The impact of the financial crisis is high inflation rate, and the tendency of the price of foodstuffs and fuel to increase. However, financial crisis does not always make developing countries collapsed because there are some developing countries that can survive from financial crisis. The research results of Velde (2008) indicate that most countries in Africa and Asia can survive from financial crisis occurring in the 1990s and the crisis of 2008-2009 (Dullien et al, 2010). The resilience of those countries is affected by appropriate monetary policy, fiscal to overcome the crisis. In addition, their institutional system is better than that of African and Asian countries in crisis.

Financial liberalization has objectives to reduce government's role in implementing financial services and to provide flexibility to the market. The positive impacts of the liberalization of financial sector are among others: increasing short-term capital flow (e.g. portfolio flows, bank loans) and long-term capital flow (e.g. foreign investment inflows); improving financial infrastructure; increasing savings, credit, and investment (Arestis, 2005). On the other hand, orthodox economists argue that the liberalization of financial sector is not suitable for developing countries (Bhagwati, 1998) because capital flow can only happen if it meets a number of assumptions (Rakshit, 2001), including: full employment, economic stability, and capital transfer from one country to another which can only be done in the long term (Foreign Direct Investment, FDI).

Hsiao and Hsiao (2006) argue that the investment from multinational corporation (MNC) will make positive impacts on the economic development of a country because the investment will improve productivity and open up access to the market. The capital flow from abroad in the form of investment (Foreign Direct Investment/ FDI) will also be followed by technology transfer and knowledge that are useful for the economy of a country as an investment destination. However, the size of FDI will mainly depend on the institutional system existing in a country. Such institutional system includes property rights, rule of law prevailing in a country, transparency, accountability, and corruption.

The correlation between financial sector and economic growth in previous researches can be seen directly or indirectly (through an instrument variable). Institution is one of the instruments that can be used, that the better institution of a country is, the better the investment flow will be that will then affect economic growth of a country. This research is aimed at studying the effects of the financial sector are instrumented by institutional variable on economic growth. It is expected that the results of this research can make empirical contribution to building good institution in order to support the flow of foreign

investment through FDI that affect economic development of a country.

2. Research Methods

Data used in this research are divided into two periods: the period of 1985-2013 used to analyze the data of the financial sector that affect economic growth. The number of data in this period is 67 countries, which are cross-section in nature. The second is the data in the period of 2000-2013 used to investigate at the impact of FDI as instrument with the performance of institution on economic growth. The number of data used is 66 countries, which are cross-section in nature. Data sources of both periods were obtained from the World Bank, Worldwide Governance Indicators (WGI) and Barro and Lee (1996).

The quality of institution is affected by several factors which are measured using institutional indicators. The indicators used to measure the institution until today are taken from three (3) organizations, namely: International Country Risk Guide (ICRG), Business Environmental Risk Intelligence (BERI), and the World Bank (WB). In this research, the data used were taken from the World Bank, namely Worldwide Governance Indicators (WGI). Data of institution employed six (6) dimensions of government as proposed by Kaoufmann et al. (2010) contained in WGI, namely: CoC (Control of Corruption); GE (Government Effectiveness); PSAV (Political Stability and Absence of Violence); RQ (Regulatory Quality); RoL (Rule of Law); VA (Voice and Accountability).

Table 1. Group of Countries

Low Income Country	Middle Income Country		High Income Country	
Burundi	Belize	Jordan	Japan	Netherlands
Benin	Botswana	Lesotho	Korea, Rep.	Portugal
Bangladesh	China	Morocco	Singapore	Saudi Arabia
Central African Rep.	Congo, Rep.	Mexico	Australia	Sweden
Gambia, The	Colombia	Mauritius	Austria	Uruguay
Kenya	Costa Rica	Malaysia	Bahrain	United States
Mali	Dominica	Pakistan	Chile	
Malawi	Dominican Rep.	Panama	Germany	
Niger	Algeria	Philippines	Denmark	
Nepal	Ecuador	Senegal	France	
Sierra Leone	Arab Rep.	Thailand	UK	
Togo	Ghana	Tonga	Ireland	
Uganda	Guatemala	Tunisia	Iceland	
	Honduras	Turkey	Israel	
	Indonesia	Venezuela, RB	Italy	
	India	South Africa	Malta	

Note: The grouping of countries is based on the Gross National Income (GNI) per capita, namely low income country (less than US$ 1,045), middle income country (US$1,045 - US$ 12,736), and high income country (over US$ 12,736).

2.1. Estimation method

Estimation model used in this research followed Levin et al. (2000) to investigate the correlation between financial sector and economic growth as follows:

$$Growth_i = \alpha + \beta_i Finance_i + \gamma_i X_i + \epsilon_i \qquad (1)$$

where, is growth of real GDP per capita; is a financial variables that affect growth (domestic

credit to private sector/CPS, Foreign Direct Investment/FDI) and); is control variables including: GDP per capita of 1985/GDP85, SEC85, gross domestic fixed investment/INV. The value of all the variables used in the estimation of Ordinary Least Square (OLS) in the first stage employed natural logarithm.

McCloskey (2010) suggests that the role of institution in economic growth cannot occur directly but through other variables, so that institutional variable will lead to measurement error. Therefore, the instrument variable method can be used to estimate the correlation between institution and economic growth through financial sector. The financial sector variable used in this analysis is the variable of foreign direct investment (FDI) because this variable makes great contribution to economy and robust. The condition of institutions within a country will affect the size of FDI received by the country. The better the institution in a country, the higher the amount of FDI received. Thus, the effect of institutions on economic growth is direct but through FDI, so that the estimation of OLS cannot be used to investigate the effect of institution on economic growth. The model used is instrument variable (IV) model with an estimation of two-stage least squares (2SLS), in which the first stage of the analysis used the following equation:

$$Finance_i = \delta + \theta_i Institution_i + Z_i + \vartheta_i \qquad (2)$$

where, institutional variable used is the variable of CoC (Control of Corruption); GE (Government Effectiveness); PSAV (Political Stability and Absence of Violence); RQ (Regulatory Quality); RoL (Rule of Law); VA (Voice and Accountability); INST (institution). Where, the value of each variable is in a scale of -2.5 to 2.5, the greater the scale is given, the better the condition of institution variable in the country will be and vice versa. Control variable symbolized by consists of inflation variable, trade (% of GDP), and openness. The results of the analysis of the first stage will generate fitted values for variable, whose value will be used to estimate equation (1).

3. Results and Discussion

3.1. Financial Sector and Economic Growth

The results of empirical study indicate that the correlation between financial sector development and economic growth has high heterogeneity between countries, regions, financial factors, and causality (Eschenbach, 2004). Several results of research show positive correlation between financial sector development and economic growth. However, the other researches indicate the opposite results (negative). In addition, previous research employed diverse data, namely: time series, cross-section and panel data.

Cross-section data used in this research were likely to have multicollinearity and heteroscedasticity problems. Multicollinearity is a linear correlation between two or more independent variables (predictor variables). If there is a perfect correlation between the independent variables or the correlation coefficient equals to one, the parameter coefficient cannot be estimated, and the value of the standard error of each estimate coefficient becomes infinite. In general, a case rarely occur in which the variables are not correlated, meaning that there must be a correlation between independent variables but the degree of correlation may not have a significant effect on the parameter estimate.

The results of the analysis in Table 2 gives information that there is a serious correlation between LnGDP85 and LnSEC85 according to the criteria of Gujarati (2004), but not serious according to the criteria of Freund et al. (2006). VIF test showed that the VIF value for all variables was under 5 (five). It can be concluded that there was no multicollinearity between observation variables. The results of analysis using White Test showed that some of the similarities had heteroscedasticity problem, where the variant of that are constant/ homoscedasticity was violated. Homoscedasticity is distribution of uniform error variance., White Robust Standard Error was used to solve such problem. The results in Tables 4 and 5 are the result of estimation after solving the heteroscedasticity problem.

Table 2. Summary of Statistics and Correlation between Variables

	Growth	Lcps	Lfdi	Lgdp85	Lsec85	Linv	VIF
Mean	2.0299	1.5903	9.0049	3.3953	0.0169	1.3294	2.75
Std.Dev	1.5833	0.3850	1.0636	0.7017	0.4004	0.0996	
Minimum	-0.9079	0.5951	6.1536	2.2665	-1.1549	1.0385	
Maksimum	8.8892	2.2779	11.1627	4.5737	0.7050	1.6475	
Observasi	67	67	67	67	67	67	
Growth	1.0000						
Ln CPS	0.3952	1.0000					3.91
Ln FDI	0.3935	0.6380	1.0000				3.41
Ln GDP85	-0.0109	0.7321	0.6321	1.0000			3.04
Ln SEC85	0.2320	0.7138	0.6079	0.8215	1.0000		1.98
Ln INV	0.6138	0.4662	0.3787	0.2056	0.2708	1.0000	1.41

Source: author's calculations (2015)

The results of the analysis indicate that in general initial income (per capita GDP in 1985/ GDP85), human resources (school enrollment rates at secondary level 1985/ SEC85), and the variable of contribution of investment to GDP (INV) are factors which significantly affect economic growth. These results are consistent with previous research proposed by Levine and Renalt (1992), that the variable of contribution of investment to GDP that significantly affect the economic growth was included in 33 research, initial income in 18 research, and human resources in 13 research. In Table 3, the correlation between economic growth (1985-2013) and initial income in 1985 is negative and occurs across all groups of countries. This condition indicates that the economic growth experienced fluctuating growth during the observation period, especially in low incomes countries, while in middle and high income countries tends to be positive. The Average economic growth of low income, medium and high countries is, 0.81, 2.42, and 2.18 respectively. Another indication of this finding shows that the hypothesis of conditional convergence between low and high incomes countries cannot take place while between middle and high income countries may take place. In the other words, medium income countries can pursue their backwardness from high income countries because the economic growth rate of middle-income countries is higher than that of high-income countries. However, this condition does not occur in low income countries.

The correlation between human resources (school enrollment rates at secondary level 1985/SEC85) and the variable of contribution of investment to GDP (INV) and economic growth is positive. In the other words, the investment is human resource at the beginning of the period has a significant effect on the economic growth of a country in the next period. This shows the importance of the role of human resources in the economy, especially in low income countries. However, for middle and high income countries it is not statistically significant for the variable of average rate at the level of secondary education. The investment in human resources represents more than formal school, and the participation rate does not represent the quality of education in a country. Some middle and high income countries use another standard to measure the quality of human resource investment in the country (for example: level of primary education, illiteracy rate). Meanwhile, the physical resource investment (capital) has positive impact on the economy because this type of resource is capital that is used in the economy of low, medium, and high income countries with.The higher the contribution of investment to GDP, the higher the economic growth is .

Table 3. The Effect of Identity Variable on Economic Growth

	All Country	Low Income Country	Middle Income Country	High Income Country
Identity Variable				
Ln GDP85	-1.330*** (-3.67)	-3.569*** (-2.27)	-1.857** (-2.49)	-2.951*** (-5.26)
Ln SEC85	2.207*** (3.96)	1.722*** (2.35)	1.749 (1.26)	1.408 (1.50)
Ln INV	9.283*** (3.96)	8.264*** (3.42)	8.143** (2.12)	7.450*** (3.04)
Observasi	67	13	32	22
R-squared	0.4942	0.7558	0.3881	0.6621
White Test	Yes	No	Yes	No

Notes: *, **, *** = significant at level of significance 10%, 5%, 1%, respectively. Number in parentheses are t-value.

Kargbo and Adamu (2009) classify the relationship between financial sector development and economic growth into two groups: supply leading and demand following. Supply leading is more directed to positive impact resulted from the financial sector development to economic growth, which means that financial institutions and markets improve financial services and become the "leader" in economic growth. Meanwhile, demand- following shows the causal relationship from economic growth to financial sector development. This means that economic growth will create demand for the development of financial institutions and services. The increase in demand for financial services is an impact of the better economic growth in a country. This condition shows that the correlation between financial sector and economic growth can occur in both directions. On the one hand, financial institutions collect and analyze information related to investment opportunities with high return rate, so it will create efficiency in the use of investment and eventually will increase economic growth. On the other hand, economic growth will create a financial structure at low cost.

The results of analysis indicate that the correlation between the financial sector represented by the percentage of domestic credit for private sector to GDP (CPS) and Foreign Direct Investment (FDI) is positive to economic growth and is statistically significant. This shows that during the observation period (1985-2013), financial institutions played a role as a supply leading in the growth of country's economy. This finding is consistent with results of previous studies proposed by Goldsmith (1969), which employed data of cross-section and time series in 35 countries (19 developed countries and 16 developing countries) in the period of 1880 - 1963, but the period of developed countries and developing countries was different. Goldsmith's research conclusion indicated that most of the countries in question follows the pattern of development, in which the financial instrument used has a correlation with the national production and national prosperity.

The increasingly better financial sector will be useful to transfer resources from traditional productive sectors which have low growth towards modern productive sectors which have high growth rate. In high income countries, the growth of the financial sector makes insignificant impact on economic growth because traditional sectors with low productivity have been transformed into modern sectors with high productivity. It can be seen from the results of research, that the financial sector variables of CPS and FDI are not significant to the economic growth.

However, for middle-income countries, the growth of the financial sector is very important because there are many traditional sectors which require need financial assistance to develop into modern sectors. For low income countries, the growth of the financial sector will make positive and negative impact. This research shows that the CPS made negative impact, but it was not statistically significant. Meanwhile, FDI made positive impact and was statistically significant. This situation shows that the unpreparedness of financial institutional system of low-income countries in facing changes in the financial sector cannot take place simultaneously, but partially. The difference in the measurement of the soundness of the financial sector in each country is a factor that causes the difference in the level of significance of each variable, for example market liquidity, price volatility in the market, interest rates, monetary aggregates /transaction, saving, credit, money supply/ M3). The stability of the financial sector of each country is greatly affected by the financial policy implemented by the country.

Table 4. The correlation between Financial Sector and Economic Growth

	All Country	Low Income Country	Middle Income Country	High Income Country
Identity Variable				
Ln GDP85	-2.049*** (-5.85)	-4.124** (-3.37)	-2.033*** (-2.92)	-3.544*** (-5.75)
Ln SEC85	1.565*** (2.73)	1.843** (2.85)	1.578 (1.26)	0.768 (0.80)
Ln INV	6.166*** (4.16)	6.643 (1.43)	6.523** (2.49)	5.347817* (2.07)
Financial Variable				
Ln CPS	1.572*** (2.79)	-0.501 (-0.34)	1.986** (2.45)	1.863 (1.68)
Ln FDI	0.501*** (3.04)	0.808* (2.22)	0.479* (1.82)	0.154 (0.61)
Observasi	67	13	32	22
R-squared	0.6231	0.9151	0.5808	0.7267
White Test	No	No	No	No

Notes: *, **, *** = significant at level of significance 10%, 5%, 1%, respectively. Number in parentheses are t-value.

3.2. Effect of Institution on Economic Growth

Institution is rules and guidelines used as a guide for members of a community to organize and create relationship (interaction) that bind to each other or are interdependent between them on the political, social and economic aspects, in the rules and the guidelines are called as a rule of the game (North, 1990). According to neoclassical economists, the institution has no role in the movement of the economy because the economy will grow following the system of market mechanism. It is then criticized by North (1990) who argues that without the institution in an economy there will be high transaction costs on any economic activity. The presence of an institution is very important in supporting the economic performance of a country because the institution plays a role as a tool to regulate and control the economic actors in the market so as to reduce the level of uncertainty and transaction costs which will then create fair and dynamic competition (Arsyad, 2010). Therefore, the institution is established to create a better life

and to reduce uncertainty in the society, so that the economy will be better.

Table 5 shows the estimation results of the first stage of the two stages least square (2SLS), which would explain how the role of the institution in the flow of foreign investment perceived by using FDI variable. The results of analysis indicates that the institutional variables of CoC (Control of Corruption), GE (Government Effectiveness), PSAV (Political Stability and Absence of Violence), RQ (Regulatory Quality), RoL (Rule of Law), and VA (Voice and Accountability) have positive impact and are statistically significant on FDI. This is consistent with the results of some previous research using different institutional indicators, such as: democracy (Busse and Hefeker, 2005); low corruption, political stability and reliable legal system (Asiedu, 2013); governance stability, low internal conflicts, indicating that institutional variables have positive impact on FDI.

The positive correlation between the quality of institutions and FDI shows that the better the quality of the institutions of a country, the greater the flow of foreign investment into the country is. Countries with poor quality institutions are indicated by bureaucratic and judicial obstacles, property rights issues, unstable political conditions, high levels of corruption, enforcement of contracts and terms of employment not in favor of investors which will cause low foreign investment flowing into a country. The above issues will result in transaction costs and business uncertainty. The transaction costs will lead to inefficiency in the economy not only because the structure of the market is not perfect, but because of the intangible cost resulted from weak institutions (Arsyad, 2010). Thus, the improvement of the institution will reduce inefficiencies in the economy which then serves as an incentive for investors who are outside the country to invest their money into a country. This is in line with the research of Rodrik (1997) which indicate that Taiwan, Japan and Singapore have high economic growth because they are supported with good institutions, while the Philippines and Indonesia have poor institutions so that their economic growth are also poor.

North (1990) argues that good institution will provide incentive structure for the economy which eventually will increase productivity. The quality of institution indicated by 6 (six) indicators of the Worldwide Governance Indicators focuses on institutional quality in the country which include: accountability, rule, corruption, political stability, quality of policies, and effectiveness of services provided by the government. The quality of policies and the effectiveness of the services provided by the government are indicators that make the biggest impact on FDI compared with other institutional indicators. Accordingly, the better the quality of policies which encourage the private sector to play a role in development, the better the response of foreign investors to invest capital into a country. This also applies for government services, that the better the quality of public services, the level of independence of public service from political pressures, policy formulation and implementation, and the credibility of the government's commitment to the policy, the higher FDI is. This results is consistent with the research conducted by Rock (2015) that the improvement of institutions in Southeast Asia as seen from changes in institutional system (from centralized to democracy) applied make an impact on better economic growth.

The quality of institution (such as index of right ownership, index of regulation quality, corruption index, and the index of bureaucratic delays) will affect the economic outcome of a country. The results of analysis indicate that without variable of institution, FDI is affected by inflation (negative) and openness (positive) which are statistically significant, while the variable of trade has negative effect (not significant). The correlation between inflation and FDI in this research is similar with the results of research conducted by Sayek (2009) who found that

inflation will push the decline of consumer's power of purchase, cause disturbances on the return of investment and employment. This condition will cause low flow of capital from abroad into the destination country.

Table 5. Effect of Institution on Foreign Direct Investment (FDI): FDI as Dependent Variable

Variabel	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Institution Variable								
CoC		0.590*** (5.12)						
GE			0.784*** (7.24)					
PSAV				0.330** (2.12)				
RQ					0.855*** (6.93)			
RoL						0.669*** (5.48)		
VA							0.409*** (2.92)	
INST								0.710*** (5.23)
Control Variable								
INF	-0.044* (-1.82)	0.005 (0.22)	0.021 (1.05)	-0.024 (-0.93)	0.023 (1.12)	0.013 (0.58)	-0.018 (-0.75)	0.010 (0.43)
OPN	1.003** (2.44)	0.930*** (2.68)	0.886*** (2.91)	1.108*** (2.75)	0.887*** (2.86)	1.075*** (3.17)	1.022** (2.64)	1.010*** (2.94)
TRD	-0.989 (-1.45)	-1.465** (-2.51)	-1.547*** (-3.03)	-1.567** (-2.18)	-1.524*** (-2.93)	-1.613*** (-2.81)	-1.020 (-1.58)	-1.569*** (-2.69)
Observasi	66	66	66	66	66	66	66	66
R-squared	0.1433	0.4008	0.5088	0.2022	0.5209	0.4259	0.2485	0.4084

Notes: *, **, *** = significant at level of significance 10%, 5%, 1%, respectively. Number in parentheses are t-value.

The variable of openness is calculated by summing the export and import of goods and services which are then divided by the Gross Domestic Product (GDP) of the country. The value of openness indicator shows that the greater the value of openness, the more open the country to trade, so that it stimulates the flow of foreign investment into the country. Liargovas and Skandalis (2012) who conducted research in 36 developing countries in the period of 1990 - 2008 found that trade openness will increase the flow of FDI in developing countries.

The impact of the contribution of the trade (% of GDP) on FDI can affect have positive and negative impact depending on the characteristics of the country and the composition of the constituent of the contributions, whether dominated by export or import. If the structure of the contribution of trade to GDP is more inclined towards export, it will stimulate the flow of FDI. The impact of exports on FDI can be both negative and positive, depending on the destination of FDI itself. If FDI aims to increase the volume of exports of a country, high export value will have positive effect on FDI. Meanwhile, if FDI aims to improve the quality of the domestic market, higher exports will decrease FDI. This research results indicate that the impact of the contribution of trade (%

of GDP) on FDI is negative. If it is related to the ratio of export and imports value, it can be seen that of the 66 countries in question there are 46 countries (69.70 percent) whose trade is dominated by imports. This can explain that the correlation between the contribution of the trade (% of GDP) on FDI is negative.

North (1990) argued that the institutions have an impact on economic activity and the transaction costs associated with the production, which will encourage institutions that will decrease the transaction costs which would then raise the profits of companies and economic activity. This condition is a signal for foreign investors to invest in a country. Therefore, investment indirectly affect the economic growth through FDI. The analysis showed that the institution gives a positive and significant impact on economic growth. If viewed from the coefficient of each institution and R-square of the obtained that dimension Government Effectiveness (GE) provides a greater impact than the other dimensions. This shows that the improvement of the quality of public services, increasing the independence of public service from political pressures, the formulation and implementation of better policies and plan, and the credibility of the government's commitment to such policies is an important thing that must be considered to boost economic growth. These results are consistent with results found in the first estimation stage (Table 6) which suggests that the effectiveness of government services positively contribute to FDI. Thus, the institution as an instrument for FDI variables which affect economic growth to be robust. This is in line with the research conducted by Rodrik (2000) that an institution is necessary for the performance of an economy is doing well and in the long run will contribute to the economic growth of a country.

The changes in institution are really needed by all countries, especially low income countries because its changes towards better will results in greater FDI and long-term impact on economic growth. The impact of FDI on economic growth in the absence of instrument variables is 0.709 smaller than that in the presence of the institution as instrument variable primarily on three (3) indicators, namely: GE (0.829), RQ (0.730), and RoL (0.719). Therefore, the improvement of the quality of institution in three indicators above will give better economic growth in the long term. This is in line with the research conducted by Chang (2011) that the improvement in the institution (property rights and liberalized institutions) will have great impact on economic development.

The variable of initial income (GDP2000), investment (% of GDP), and education (SEC2000) significantly affect economic growth both before and after FDI is instrumented by variable institution. This indicates that these three variables are robust on the economic growth in the long term. This result supports the findings of Levine and Renelt (1992) which shows that there are three major components that affect economic growth, namely: investment (contribution to GDP), initial income (using the base year), and human resource (for example: school enrollment rate in secondary education at a certain age in a certain year).

The variables of Government Effectiveness (GE), Regulatory Quality (RQ) and Rule of Law (RoL) increase value of the FDI coefficient by 0.120, 0.011 and 0.010 respectively compared to the coefficient in the first stage of 2SLS analysis. Meanwhile, the variables of Control of Corruption (CoC), Political Stability and Absence of Violence (PSAV), and Voice and Accountability (VA) decrease the FDI coefficient by 0.001, 0.005, and 0.030 respectively. This shows that not all of the dimensions of the institution will increase economic growth through FDI, depending on whether these variables have direct relation with the investment or not. The variables of GE, RQ and RoL indicate the quality of institution that directly affect the investment, that the better services provided as well as the rule of law that

is consistent and in favor of the investor will be a stimulus for foreign investors to invest in a country. This is in line with the research conducted by Asongu (2015) that the quality of the rules will have an impact on the efficiency of financial sector, which will then increase economic growth.

Table 6. Effect of Foreign Direct Investment on Economic Growth (Instrument Variable: Quality of Institution): Economic Growth as Dependent Variable

Variabel	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Instrumented Variable								
FDI	0.709* (1.77)							
Instrument Variable								
CoC		0.708* (1.76)						
GE			0.829** (2.24)					
PSAV				0.686* (1.94)				
RQ					0.730** (2.07)			
RoL						0.719* (1.80)		
VA							0.669* (1.71)	
INST								0.706* (1.76)
Control Varible								
Ln GDP00	-1.875*** (-4.25)	-1.874*** (1.76)	-1.962*** (-4.60)	-1.858*** (-4.43)	-1.890*** (-4.52)	-1.883*** (-4.27)	-1.846*** (-4.22)	-1.873*** (-4.24)
Ln INV	6.964*** (3.51)	6.967*** (-4.25)	6.617*** (3.43)	7.030*** (3.68)	6.904*** (3.63)	6.933*** (3.50)	7.079*** (3.60)	6.972*** (3.52)
Ln SEC00	1.838*** (2.38)	1.838** (2.38)	1.770** (2.31)	1.850** (2.41)	1.826** (2.39)	1.831** (2.37)	1.860** (2.41)	1.839** (2.38)
Observasi	66	66	66	66	66	66	66	66
R-squared	0.5337	0.5337	0.5352	0.5327	0.5345	0.5341	0.5319	0.5336

Notes: *, **, *** = significant at level of significance 10%, 5%, 1%, respectively. Number in parentheses are t-value.

4. Conclusion

The correlation between financial sector and economic growth shows that the better the financial sector, the better the economic growth in the long-term. The variables of the percentage of domestic credit for private sector to GDP (CPS) and Foreign Direct Investment/FDI (% of GDP) have a positive effect on economic growth and are statistically significant. For low-income countries, only the variable of FDI has positive and significant effect, while the variable of CPS has negative (not significant) effect. The variables of FDI and CPS for developed countries (high-income countries) have a positive effect but not significant. Differences in the measurement of the soundness of financial sector in each country are a factor that causes the difference in the level of significance of each variable.

The dimensions of the institution, namely: Control of Corruption (CoC), Government

Effectiveness (GE), Political Stability and Absence of Violence (PSAV), Regulatory Quality (RQ), Rule of Law (RoL), and Voice and Accountability (VA) have positive impact on economic growth through FDI. However, not all dimensions of these institutions increase economic growth if compared to the control. It can be seen from the decline in the coefficient value of the dimensions of Control of Corruption (CoC), Political Stability and Absence of Violence (PSAV), and Voice and Accountability (VA).

The overall results of analysis indicate that the institution plays an important role in economic growth. Therefore, boosting economic growth is not only through monetary and fiscal policies, but also have to make improvements in the institution. The impact of improvement in the institution will decrease uncertainty and transaction costs that will attract overseas investors to invest, increase efficiency and productivity of macro economy. At the micro level, the improvement in institution will improve efficiency, productivity, profitability and sustainability in the economy.

The use of variable instrument in a research is not easy because it should meet two requirements (Wooldridge, 2013). First, the instrument variable should be an exogenous variable, cov $(z,\varepsilon) = 0$, where z is an instrument variable and ε is error term of the main equation. Second, the instrument variable should be correlated with instrument variables, cov $(z, x) \neq 0$, where x is instrument variable. If both requirements are not met, it will a weak instrument. The results of the analysis in this research indicate that the variable of institution is a weak instrument because coefficients in equation (1) may still contained the effects of independent variables contained in equation (2). Therefore, it is suggested that further research use similar control variable in the equation of first stage and second stage so as to produce better coefficient. In addition, further research may also focus on the quality of institution that affect economic growth of developing countries with a path dependent of "former colonies" of a country, that there are indications that the former British colonies have better institutional quality than the former Dutch colony and therefore contributes to the economic growth of the country.

5. Refference

Arestis, P. 2005. *Financial Liberalization and the Relationship between Finance and Grwoth*. CEPP Working Paper, No. 05/05. Department of Land Economic, Cambridge.

Arestis, P., & Demetriades, P. 1997. *Financial Development and Economic Growth: Assessing the Evidence*. Economic Journal 107(442), 783-799.

Arsyad, L. 2010. *Ekonomi Pembangunan, Edisi Kelima, Cetakan Pertama*. STIM YKPN, Yogyakarta.

Asiedu, E. 2013. *Foreign Direct Investment, Natural Resources and Institution*. International Growth Centre (IGC), Working Paper, March 2013.

Asongu, S.A. 2015. *Law, Finance, Economic Growth and Welfare: Why Does Legal Origin Matter?* Institutions and Economies, 7 (2): 30-55.

Barro, R.J. 1991. *Economic Growth in a Cross-Section of Countries*. Quarterly Journal of Economics, 106, 407-443.

Barro, R.J., & Lee. J.W. 1996. *International Measures of Schooling Years and Schooling Quality*. American Economic Review, 86, 218-223.

Bhagwati, J. 1998. *The capital myth: The difference between trade in widgets and dollars*. Foreign Affairs, 7, 7-12.

Broner, F., & Rigobon, R. 2006. *Why Are Capital Flows So Much More Volatile in Emerging than in Developing Countries?* In External Vulnerability and Preventive Policies, Central Bank of Chile.

Broner, F., & Ventura, J. 2011. *Globalization and Risk Sharing*. Review of Economic Studies, Oxford University Press, 78(1), 49-82

Busse, M., & Hefeker, C. 2005. *Political Risk, Institutions and Foreign Direct Investment*. Hamburgisches Welt-Wirtschafts-Archiv (HWWA), Discussions Paper, 315.

Chang, H.J. 1998. *The Role of Institutions in Asia Development*. Asian Development Review, 16 (2), 64-95.

Chang, H.J. 2011. Institutions and Economic Development: Theory, Policy and History. Journal of Institutional Economics, 7(4): 473-498.

Demetriades P.O dan A.K. Hussein. 1996. Does Financial Development Cause Economic Growth? Time Series Evidence from 16 Countries. Journal of Development Economics, 51: 387-411.

Dullien, S., Kotte, D.J., Marquez, A., & Priewe, J. 2010. *The Financial and Economic Crisis of 2008-2009 and Developing Countries*. UNCTAD, United Nations Publication, New York and Geneva.

Eschenbach, F. 2004. *Finance and Growth: A Survey of the Theoretical and Empirical Literature*. Tinbergen Institute Discussion Paper No. TI 2004-039/2 Department of Economics, Erasmus University of Rotterdam, and Tinbergen Institute.

Freund, R.J., Wilson, W.J., & Sa, P. 2006. *Regression Analysis: Statistical Modeling of A Response Variable,* 2nd Edition. Elsavier, United States of America.

Goldsmith R.W. 1969. *Financial Structure and Development*. New Haven: Yale University Press.

Gujarati, D.N. 2004. *Basic Econometrics, 4th Edition*. McGraw Hill, New York.

Hsiao, F.S.T., & Hsiao, M.C.W. 2006. *FDI, Export, and GDP in East and Southeast Asia-Panel data versus time series causality analyses*. Journal of Asian Economics. 17(2006), 1082-1106.

Kaoufmann, D., Kraay, A., & Mastruzzi, M. 2010. *The Worldwide Governance Indicators: Methodology and Analytical Issues*. World Bank, Policy Research Working Paper 5430.

Kargbo S.M., & Adamu, P.A. 2009. *Financial Development and Economic Growth in Sierra Leone*. Journal of Monetary and Economic Integration, 9(2), 30-61.

Levin, R., & Renalt, D. 1992. *A Sensitivity of Cross-Country Growth Regressions*. The American Economic Review, 82(4), 942-963

Levin, R., Loayza, N., & Beck, T. 2000. *Financial Intermediation and Growth: Causality and Causes*. Journal of Monetary Economics, 46: 31-77.

Liargovas, P.G., & Skandalis, K.S. 2012. *Foreign Direct Investment and Trade Openness: The Case of Developing Economies*. Social Indic Research, 106, 323-331.

Lucas R.E. 1988. *On the Mechanics of Economic Development*. Journal of Monetary Economics, 22(1): 3-42.

Luintel K.B., & Khan, M. 1999. *A Quantitative Reassessment of The Finance Growth Nexus: Evidence from a Multivariate VAR*. Journal of Development Economics, 60(2), 381-405.

McCloskey, D.N. 2010. *Bourgeois Dignity: Why Economics can't Explain the Modern World*. Chicago: The University of Chicago Press.

North, D.C. 1990. *Institution, Institutional Change and Economic Performance*. Cambridge University Press, Cambridge, UK

Papaioannou, E. 2009. *What Driver International Financial Flows? Politics, Institutions, and Other Determinants*. Journal of Development Economics, 88(2), 269-281.

Rakshit, M.K. 2001. *Globalization of Capital Markets: Some Analytical and Policy Issues, in Globalization and Economic Development*. Naastepad, USA.

Rock, M.T. 2015. Southeast Asia's Democratic Developmental States and Economic Growth. Institutions and Economies, 7 (1): 23-51.

Rodrik, D. 1997, *Total Factor Productivity Growth, controversies, Institutions, and Economic Performance in East and Southeast Asia*. NBER Working Paper No. 6914, National Bureu of Economic Research, Cambridge, MA.

Rodrik, D. 2000. *Institutions for high-quality growth: What they are and how to acquire them*. Studies in Comparative International Development, 35(3), 3-31

Sayek, S. 2009. *Foreign Direct Investment and Inflation*. Southern Economic Journal, 76(2), 419-443.

Samargandi, N., Fidrmuc, J., & Ghosh, S. 2013. *Financial Development and Economic Growth in an Oil-Rich Economy: The Case of Suadi Arabia*. BRUNEL, Economics and Financial Working Paper Series, No. 13-12.

Velde, D.W. 2008. *The Global Financial Crisis and the Developing Countries*. ODI Background Note. London: Overseas Development Institute.

Appendix

Appendix 1. Explanation of Observation Variables

Variable	Unit	Definition
Real GDP per capita	US $	Real GDP per capita is the sum of the final value of goods and services produced by all units of production in a country within a year are divided by the number of population in the country in the same year.
Growth rate of GDP per capita	US $	The size of growth of GDP per capita in a given period.
The percentage of domestic credit for private sector to GDP (CPS)	%	Domestic credit for private sector refers to financial resources on financial institutions given to private sector in the form of loans and so on. The calculation in this research is the ratio between the amount of resources allocated by financial institutions to private sector and GDP.
Foreign Direct Investment (FDI)	US$	Foreign Direct Investment is the amount of investment value coming from abroad, for example, from MNC.
The percentage of investment to GDP (INV)	%	The ratio of investment made by a country originating from foreign countries (FDI) and from the country (Domestic Investment) and GDP.
Initial income per capita in 1985 and 2000 (GDP85 and GDP2000)	US $	The value of GDP per capita in 1985 and 2000.
Average length of study at secondary level in 1985 and 2000 (SEC85 and SEC2000)	Year	Average length of study at secondary level for those aged above 25 years in 1985 and 2000.
Control of Corruption (CoC)	Score	Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.
Government Effectiveness (GE)	Score	Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
Political Stability and Absence of Violence (PSAV)	Score	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.
Regulatory Quality (RQ)	Score	Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
Rule of Law (RoL)	Score	Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
Voice and Accountability (VA)	Score	Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Variable	Unit	Definition
Institution (INST)	Score	Institution is the average value of CoC (Control of Corruption); GE (Government Effectiveness); PSAV (Political Stability and Absence of Violence); RQ (Regulatory Quality); RoL (Rule of Law); VA (Voice and Accountability) which describes overall quality of institution of a country.
Inflation (INF)	%	Inflation is a process of the increase in prices generally and continuously relating to the market mechanism. Inflation is measured using consumer price index (CPI).
Trade (TRD)	%	Trade in question is the size of trade contribution to GDP (% of GDP).
Openness (OPN)	Score	Openness is used to see the openness of a country's trade with the formula: