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Financial Depending and Economic Relations in Indonesia, Malaysia and Singapore

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A B S T R A C T

A good economy for a country is an ever-increasing economy. The economy of a country can be affected by its financial sector. Economic activity can be encouraged by developments in the financial sector. In this study, the objectives to be achieved are to analyze the effect of the ratio broad money to GDP (M2/GDP), the ratio of domestic credit to the private sector by banks to GDP (PCS/GDP), inflation and the ratio foreign direct investment to GDP (PMA/GDP) simultaneously and partially to the economy (GDP) in Indonesia, Malaysia and Singapore. The approach used is multiple linear regression complete with granger causality test and panel data analysis. The results of the analysis can be seen that partially M2/GDP, PCS/GDP, and PMA/GDP have a positive and significant effect on GDP while inflation has no significant effect on GDP. Simultaneously, these variables have a significant impact on GDP. There is a need for cooperation between the governments and banking in accelerating the turnover of money, facilitating credit requirements and maintaining inflation so that it can increase consumption and improve the investment climate.

Keywords: *M2/GDP, PCS/GDP, Inflation, PMA/GDP, GDP*
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INTRODUCTION

The economy is a field that has an important role in the development process of a country but in fact, the economy experienced by each country is fluctuating. A good economy for a country is an economy that is always increasing or can be called experiencing economic growth. According to Pateda, et al., (2017), economic growth is defined as a continuous process of transitioning the economic conditions of a country which will lead to a better state during a certain period. Total Gross Domestic Product is an indicator that can be used to see the level of the economy.

An economy can be affected by the financial sector. Economic activities can occur if the financial sector develops well, on the other hand, if the financial sector cannot develop, it will cause liquidity constraints to arise in achieving a high level of the economy. The emergence of the financial sector plays an important function in the economy. Sanjaya, et al., (2017) say that economic growth can increase if a country maximizes the performance of its financial system functions. In the financial system, the banking and non-bank sectors have a major role in the economy. The role of banks can be through lending to the private sector which will affect the real sector, while the role of non-banks can be through foreign investment.

According to Adam Smith in the theory of economic growth, it states that the rate of economic growth is determined by the accumulation of capital where the accumulation of capital comes from public savings and in the end, capital accumulation can encourage investment into the real sector. So, the main objective of financial deepening is to increase the ratio of domestic savings to income, as well as to increase (deeper) the size of the monetary system and can also generate profit opportunities for investors as well as strengthen the process of mobilization and allocation of savings. Better cation of savings by expanding and diversifying financial markets and capital markets (Sembiring, 2016).

Financial institutions have a function in the formation of the money supply as the origin of development funds. Pulungan (2012) states that the greater the volume of money supply will encourage and increase financial deepening, namely the withdrawal of development funds sourced from the financial sector. So one of the indicators used to measure financial deepening is the ratio of the amount of money to GDP (M2/GDP). The results of this ratio will show the level of GDP obtained from the use of M2. The larger the M2/GDP ratio means that the financial sector of a country is getting deeper. On the contrary, the smaller the ratio indicates that the financial sector of a country is getting shallower (shallow finance). The higher the financial deepening, the greater the use of money in the economy and the larger and more widespread the activities of financial institutions and money markets (Sem-biring, 2016).

Empirical results show that financial deepening and the economy will not have a strong influence if they ignore the real sector (Aye, 2015). Therefore, apart from the M2/GDP indicator, financial deepening can also be measured using the private credit ratio indicator by banks to GDP (PCS/GDP). This is in line with Schumpeter's theory of economic growth which states that the role of entrepreneurs is important in realizing economic growth by expanding credit.

According to World Bank data, Indonesia's financial sector can still be considered shallow when compared to other countries in the ASEAN region, one of which is Malaysia, which has similar country characteristics, namely both developing countries. Indonesia's low financial deepening is due to tight economic liquidity. On the one hand, Malaysia is able to have a higher financial deepening than Singapore. In fact, Singapore is the only developed

country in ASEAN. This is due to the relatively small population of Singapore. This situation is in line with research conducted by Cull (2001) which shows that financial development can grow rapidly in countries with low inflation, high population density, conducive government regulations, and the existence of an Effective Development Assistance policy.

Stability for the economy is a condition that must be achieved by a country to improve welfare in society. When a country experiences instability, there are many negative things that will have an impact on the country's economy. One of the factors that cause instability is inflation. Inflation is a process of increasing prices in general and applies on a continuous basis. According to Arini and Bendesa (2012), inflation which will reduce people's purchasing power remains high. The financial sector will also be affected because people are generally reluctant to consume so the amount of money circulating in the community is increasing and there is no money circulation.

Harrod Domar in investment theory views capital formation is considered as an expenditure that will increase the ability of the economy to produce goods and services or it can be said that if one-time capital formation is carried out, the economy will be more effective in the next period. to produce greater goods and services (Sukirno, 2010). Therefore, the real sector will grow if there is the capital formation and the expected capital formation in a country is Foreign Investment (PMA). PMA can have an important place in investment as a whole.

Gezer (2018) in his research shows that China, Ecuador, Mauritius, Peru, Thailand, and Turkey have research results, namely supply leading finance. In addition, Algeria, Botswana, Costa Rica, Gabon, Malaysia, Mexico, and Tunisia are countries that provide research results, namely growth that leads to finance (demand-pull). At the same time, Algeria, Dominican Republic, Gabon, and Turkey have some bidirectional causality which means that feedback effects can be considered.

Ningrum, et al. (2015) analyzed the relationship of financial deepening to economic growth in Indonesia using the ratio of M2 to GDP, the ratio of bank loans to companies (PCS) to GDP, and the ratio of market capitalization (AMC) to GDP. The results of his research found that M2/GDP and PCS/GDP had a negative but not significant effect on GDP. However, only AMC/GDP has a positive and significant effect on GDP. Kusuma's research (2019) explains that M2/GDP has a positive and significant relationship to economic growth (GDP), but PSC/GDP is in line with Ningrum's research. In contrast to the research of Ningrum and Kusuma, Irzam and Setyari (2020) found the results of research that the ratio of credit provided by banks to GDP has a positive and significant effect this arises because of a direct impact, namely an increase in the volume of money circulating can affect consumption and result in economic growth.

Kalsum's research (2017) shows that the inflation variable does not have a significant relationship to economic growth. These results prove that when inflation increases, economic growth will also increase. Kusuma (2019) explains that foreign investment (PMA) has a positive and significant relationship to economic growth (GDP). In line with Kusuma's research, Afrizal (2015) also said that there was a positive and significant relationship between FDI and economic growth in Jambi Province during the last 19 years from 1990 to 2008. This is expected to have an impact on increasing income levels. and quality community welfare through investment flows that will continue to grow.

Based on the problems above, the target to be achieved from this research is to analyze the influence of independent variables consisting of the addition of money in circulation to GDP (M2/GDP),

and private credit by banks to GDP (PCS). / GDP), inflation, and foreign investment (PMA/GDP) on variables that depend on the economy in Indonesia, Malaysia, and Singapore either simultaneously or simultaneously.

METHODOLOGY

The method used is an associative quantitative method. The data used is data obtained from the World Bank (World Bank) in the form of secondary data. This study uses the dependent variable, namely GDP, while the independent variables are the M2/GDP ratio, PCS/GDP ratio, Inflation, and FDI/GDP. The form of data is in the form of panel data that combines cross data with time-series data, from the period 1980-2018 with research locations in Indonesia, Malaysia, and Singapore so that there are 117 observations. The analytical tools used are Granger Causality Test, Panel Data Regression, F test, and t-test.

Granger Causality Test is an analytical technique used to see causality relationships between variables that are not determined a priori by theory. The relationship between Financial Deepening Causality (FD) and Gross Domestic Product (GDP) is as follows:

$$PDB_t = \sum_{i=1}^{m} a_i PDB_{t-i} + \sum_{j=1}^{m} \beta_i FD_{t-j} + \varepsilon_{1t}$$

$$FD_t = \sum_{i=1}^{m} \lambda_i FD_{t-i} + \sum_{j=1}^{m} \delta_i PDB_{t-j} + \varepsilon_{2t}$$

In the Granger Causality test, the F-statistic probability value < alpha = 5%, so there is an influencing relationship. F-statistical probability > alpha = 5%, then there is no influence relationship (Ajija, et al., 2011: 163).

The regression that combines time series data with cross data can be called panel data regression. The semi-log panel data regression model is expressed in the following equation (Baltagi, 2005):

$$LogY_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it}\, \beta_1 X_{1it} + e_{it}$$

where: Yit is Real GDP, is a constant value, X1it is M2/GDP, X2it is PCS/GDP, X3it is Inflation, X4it is FDI/GDP, β1 is the regression coefficient of M2/GDP (X1), 2 is the regression coefficient of PCS/GDP (X2), 3 is the regression coefficient of inflation (X3), 4 is the regression coefficient of FDI/GDP (X4) and e is the error term.

The panel data regression estimation method can be done through three approaches, as follows: (1) Common Effect Model is an approach that does not pay attention to time or individual aspects with the Ordinary Least Square (OLS) approach, (2) Fixed Effect Model assumes that the disparity between individuals can be helped by the intercept disparity with the dummy variable technique with the Least Squares Dummy Variable (LDSV) estimation model. (3) Random Effect Model estimates that disturbance variables may influence each other over time and individuals so the advantage obtained is eliminating heteroscedasticity by using the Error Component Model (ECM) or Generalized Least Squares (GLS) approach. In determining the model used to manage panel data, there are several tests that can be carried out, namely: the Chow test, Hausman test, and Lagrange Multiplier test.

In testing the significance of the influence between variables on the regression model, two tests are needed, namely the F test and the t-test. To test the significance of the effect of exogenous variables on endogenous variables simultaneously, the F test was used, while the t-test was used to partially test the significance of the regression coefficient.

RESULT AND DISCUSSION

The results and discussion in this study are useful for providing information to the reader, so it is necessary to display and review the estimation results. The fol-

Table 1.
Granger Causality Test Results

Null Hypothesis:	F-Statistic	Prob.
M2_PDB does not Granger Cause PDB	0,48839	0,6149
PDB does not Granger Cause M2_PDB	0,48380	0,6177
PCS_PDB does not Granger Cause PDB	0,96351	0,3847
PDB does not Granger Cause PCS_PDB	1,31113	0,2737

Table 2.
Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	*Statistic*	*d.f.*	*Prob.*
Cross-section F	*173.274273*	*(2,110)*	*0.0000*
Cross-section Chi-square	*166.516117*	*2*	*0.0000*

lowing is the result of the estimated Granger causality test with a confidence level of 0.05 (5%) and a lag length of up to lag 2 following table 1.

The results of the Granger causality test show that financial deepening with the M2/GDP and PCS/GDP indicators and the economy with the GDP measuring instrument has no relationship. So, every time there is a change in financial deepening, it will not have an impact on the economy and vice versa, every change in the economy will not have an impact on financial deepening.

The estimation method of panel data regression model can be used with three approaches, namely, the Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM). To determine the appropriate estimation method, it is necessary to carry out the Chow test to find out which effect should be used between the CEM or FEM methods. By using eviews 9 software, the results are obtained following table 2.

The Chow test in table 2 shows that the probability value of Cross-section F is smaller than the degrees of freedom by 5% (0.05), so the model chosen is FEM as the estimation model for the panel data. In this study, it is assumed that the data does not change between time and place, so the method used is the fixed effect model.

Based on the tests carried out, it is known that the effect of exogenous variables on endogenous variables simultaneously can be seen from the F-statistic value in the Fixed Effect Model (FEM) in table 2 which is 71.3232 greater than the value of F-table = 3.45 which means that H1 is accepted so that it can be concluded that all exogenous variables have a significant simultaneous or simultaneous effect on endogenous variables. This is in line with the results obtained based on the probability value of 0.0000. The coefficient of determination R2 = 0.7955 means that 79% of the variation of the endogenous variables is influenced by exogenous variables, while the remaining 21% is influenced by other factors outside the research model.

Table 3.
Fixed Effect Model (FEM)

FEM	M2/GDP	PCS/GDP	Inflation	FDI/GDP
Koefisien	0,0186	0,0058	-0,0088	0,0334
Std. Error	0,0029	0,0027	0,0052	0,0101
t-statistic	6,3553	2,1512	-1,6937	3,3328
Prob.	0,0000	0,0336	0,0931	0,0012
R-squared				0,7955
Adjusted R-squared				0,7844
F-statistic				71,3232
Prob. (F-statistic)				0,0000

The t-test was carried out to find out the variables that had a significant effect on the endogenous variables. Based on Table 3, it is known that the results of the panel data regression of the FEM method on exogenous variables to endogenous variables with a significance level of 5% (0.05) showed that there was a partially significant effect of the variables M2/GDP, PCS/GDP and FDI/GDP on GDP in Indonesia, Malaysia and Singapore, while the inflation variable does not show any individual significant influence on GDP in Indonesia, Malaysia and Singapore.

Based on the tests that have been carried out, the t-statistics value of 6.3553 with a statistical probability of 0.0000 is smaller than 0.05 (alpha value) means that M2/GDP in Indonesia, Malaysia and Singapore has a significant positive effect. to GDP. The regression coefficient value of 0.0186 which has a positive sign indicates that if M2/GDP increases by 1% with the assumption that the other independent variables are constant, the GDP in Indonesia, Malaysia and Singapore will increase by 0.0186. percent. This result is in line with the research conducted by Kusuma (2019) which stated that M2/GDP has a positive and significant relationship to economic growth (GDP). Theoretically, this result is in accordance with Keynes' theory of money demand, which states that economic activity will be influenced by the amount of money if the amount of money affects the interest rate. The interest rate will ultimately have an impact on the willingness to invest and ultimately affect GDP.

M2/GDP is one indicator of the efficiency of the financial system or can measure the depth of the financial sector (financial deepening). The results of this study indicate that M2/GDP has a positive relationship with economic growth so to accelerate economic growth a relatively large M2/GDP ratio is needed so that the financial system performance will be more efficient in mobilizing funds. Agheli and Hadian (2017) investigated the relationship between financial deepening and economic growth in fifteen selected developing and Middle Eastern countries. Empirical evidence shows that a low level of financial development will avoid a causal relationship with economic growth due to a shallow financial sector.

Based on the tests that have been carried out, the t-statistic value is 2.1512 with a statistical probability of 0.0336 which is smaller than 0.05 (alpha value) which means that the PCS/GDP ratio in Indonesia, Malaysia, and Singapore has a positive effect. and significant to GDP. The regression coefficient value of 0.0058 which has a positive sign between the variables PCS/GDP and GDP indicates that if PCS/GDP increases by 1% with the assumption that other independent variables are constant, then GDP in Indonesia, Malaysia, and Singapore will increase by 0.0058 %. This result is in line with research conducted by Irzam and Setyari (2020) finding the

results of research that the ratio of credit provided by banks to GDP has a positive and significant impact. This arises because there is a direct impact, namely an increase in the volume of money in circulation. can affect consumption and result in economic growth.

Theoretically, the results of this study are in accordance with Schumpeter's theory of economic growth which emphasizes the role of entrepreneurs in realizing economic growth. Entrepreneurs need credit to finance their production, so banks are needed as the main party providing financial intermediation. Financial intermediation is expected to make entrepreneurship more productive which in turn will increase the final output of the real sector.

Based on the tests that have been carried out, the t-statistics value is -1.6937 with a statistical probability of 0.0931 greater than 0.05 (alpha value) which means that inflation in Indonesia, Malaysia, and Singapore has no significant effect on GDP. So, not all inflation has a negative impact on a country's economy, especially if there is an inflation rate that is close to zero which can automatically encourage an increase in GDP. Kalsum (2017) also shows that the inflation variable does not have a significant relationship to economic growth, so it can be proven that when inflation increases, economic growth will also increase.

Based on the tests that have been carried out, the t-statistical value is 3.3328 with a statistical probability of 0.0012 less than 0.05 (alp-ha value) which means Foreign Investment to GDP (PMA/GDP) in Indonesia, Malaysia, and Singapore has a significant and positive relationship to GDP. The regression coefficient value of 0.0334 which has a positive sign indicates that if FDI/GDP increases by 1% assuming other exogenous variables are constant, then GDP in Indonesia, Malaysia, and Singapore will increase by 0.3334. percent. This result is consistent with a study conducted by Kusuma (2019) which confirmed that FDI was positively and significantly related to economic growth. The theory of economic growth put forward by Adam Smith states that the rate of economic growth is determined by the accumulation of capital.

Afrizal (2015) also confirms that there is a significant positive relationship between FDI and economic growth in Jambi Province for the last 19 years from 1990 to 2008. This is expected to have an impact on increasing income levels and welfare. quality community through investment flows that will continue to grow. Theoretically, the results of this study support the investment theory put forward by Harrod-Domar which states that capital formation is considered an expenditure that will increase the ability of an economy to produce goods and or services, as well as an expenditure that will increase the effective demand of the whole community where if at a certain period a certain amount of capital formation is carried out, then in the next period the economy has the ability to produce greater goods and or services (Sukirno, 2010).

CONCLUSIONS

Based on the tests that have been carried out and the discussion in this study, the following conclusions are obtained: 1) there is no causal relationship between financial deepening and Gross Domestic Product (GDP); (2) M2/GDP ratio, PCS/GDP ratio, inflation, and FDI/GDP ratio have a significant simultaneous effect on GDP in Indonesia, Malaysia, and Singapore; 3) M2/GDP has a partial positive and significant effect on GDP in Indonesia, Malaysia, and Singapore. 4) PCS/GDP has a positive and partially significant effect on GDP in Indonesia, Malaysia, and Singapore. 5) Inflation has no partial significant effect on GDP in Indonesia, Malaysia, and Singapore. 5) FDI/GDP has a positive and partially significant effect on GDP in Indo-

nesia, Malaysia, and Singapore. These results are a record for the Indonesian government to continue to increase the country's financial deepening. The government can try to support the acceleration of the circulation of money, increase consumption in the community, maintain the inflation rate, maintain loan interest rates and provide ease of credit terms so that in the end this can improve the investment climate.

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