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The Effect of Macro Economic Variables upon Bali's Economic Growth Moderated by Inflation in COVID-19 Pandemic

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ABSTRACT

Economic growth comes with the increasing growth of consumption and investment. This element is beneficial since it provides inputs for national income. Controlled inflation can maintain economic stability and increase economic growth. However, due to Covid-19, Bali's economic growth has gone into decline. This study aims to determine the effect of consumption and investment on economic growth in Bali moderated by inflation. The data were analyzed by moderated regression analysis, in which consumption and investment demonstrably have a positive and significant effect on economic growth. In addition, inflation moderates the effect of consumption on economic growth, while the effect of investment on economic growth cannot be limited by inflation.

Keywords: Consumption, Covid-19 Pandemic**,** Economic Growth, Inflation, Investment

INTRODUCTION

Advanced economic activity is reflected in economic growth where the development of goods and services, in which the industrial goods production, infrastructure development grow, and schools, service sector production and capital goods production increase in number. Production data on various types of products is highly difficult to provide a picture of the economic growth. Thus, countries make use of growth rate of national income to measure their economic growth.

Economic growth is related to the process of increasing the production of goods and services in people's economic activities (Sukirno, 2011). Growth involves single-dimensional development and is measured by increasing production output and income. Consumption and investment are the most essential elements for an economy. Many reasons suggest that macroeconomic analysis should pay attention to household consumption in depth. First, household consumption provides input to national income. Most countries consume about 60-75 percent of national income. The second reason is that household consumption has an impact on determining fluctuations in economic activity from one time to another. Moreover, as investment has an impact on economic growth, the higher the investment, the more economic growth will also increase and open up jobs and indirectly absorb labors. This condition will support the government to facilitate investors.

Inflation is an undesirable economic event which frequently occurs. It arises at an increase in general price level and threatens production activities since it makes investment activities shift to activities which do not encourage national production. However, it does not mean that inflation must be reduced to zero percent. Government policies will make an impact on economic activity if they could maintain the inflation rate at a very low level, which is ideally, below 5 percent (Ardiansyah, 2017).

Bali's economic growth amidst the Covid-19 pandemic in the first quarter of 2020 was decreased of -1.14 percent. This condition occurs due to the decline in the number of tourists visiting Bali, declining the performance of service exports. On business sector, the decline stemmed from the contraction of tourism-supporting sectors such as accommodation and food and drink, transportation, industry, and trade, making dramatic impacts on consumption and investment (Dampak Covid-19, 2020). Based on the foregoing, the purpose of this study is to determine the effect of consumption and investment on Bali's economic growth moderated by inflation.

Economic growth is a quantitative measure which describes economic development of in a certain year compared to previous year (Sukirno, 2011). Economy presumably experiences economic growth if the number of goods and services increase interpreted as the value of Gross Domestic Product. This value is used in measuring the percentage of a country's economic growth.

Consumption discusses household's expenditure on final goods and services to meet the needs of those making the purchase. Spending on food, clothing, and other goods for their needs is classified into consumption expenditure (Sukirno, 2011). Investment is the purchase of various capital equipment, inventories, and business structures. It also includes the purchase of new houses. Along with interest and exchange rates, it has major impacts on how business activities work (Muniadi, et al., 2020). Gross fixed capital formation of an area is the procurement, manufacture, and purchase of new capital goods from within the region and includes new or used capital goods from outside the region.

Capital goods refers to goods with a service life of one year or more used as a permanent tool in the production process (Mankiw, 2003). Inflation is a process of increasing prices for goods continuously during a certain period (Nopirin, 2014). Increased inflation will have an adverse effect on the level of purchasing power, making the society will decline and reduce the level of welfare. Based on the concept of the variables above in the relationship between variables, this study formulates the following hypothesis.

H1: Consumption has a positive effect on Bali's economic growth.
H2: Investment has a positive effect on Bali's economic growth.
H3: Inflation moderates the effect of public consumption on Bali's economic growth.
H4: Inflation moderates the effect of investment on Bali's economic growth.

RESEARCH METHOD

This study was conducted in Bali Province examining data on the economic conditions of Bali for the monthly period in 2015 to the third quarter of 2020, allegedly providing growth contraction due to the monetary crisis in 2018 and the occurrence of the Covid-19 outbreak. The research data were secondary data published by Bali Provincial Statistics Agency, including data on economic growth, household consumption, investment, and inflation. The analysis technique used is Moderated Regression Analysis (MRA) as an application of multiple linear regression (multiplication of two or more independent variables) with interaction element. The feasibility test of the model proves the accuracy of the sample regression function in determining the accrual value by measuring the coefficient of determination, the F statistics value, and the t statistics value. In this study, the coefficient of determination is measured by *Adjusted R Square,* Simultaneous testing with F test by comparing the significance level of 0.05. If the probability value <0.05 then H1 is accepted, but if the significance value> 0.05 then H1 is rejected.

RESULTS AND DISCUSSION

This section provides the result summary of several tests conducted to amass the required data. Table 1 below presents the result of hypothesis testing.

Table 1. Hypothesis Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig
	B	Std Error	Beta		
Constant	20.850	7.105		3.104	0.003
Consumption	0.587	0.128	0.356	3.685	0.030
Investments	0.632	0.175	0.371	3.014	0.042
Inflation	0.410	0.185	0.374	2.952	0.032
Inflation * Consumption	0.392	0.109	0.343	3.485	0.035
Inflation * Investments	0.282	0.124	0.264	1.006	0.346

Source: Processed Data, 2020

The model of the regression equation as follows.

Growth = 20.850 + 0.587 consumption + 0.632 Investment + 0.392 Inflation * consumption + 0,282 Inflation * Investment..................(1)

Table 2. Coefficient Determination Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.675	0.805	0.849	3.57231

Source: Processed Data, 2020

Table 2 show the value of coefficient of determination (Adjusted R Square) is 0.849 or 84.9 percent. This signifies that 84.9 percent of economic growth is explained by private consumption, investment, and reinforced by inflation. The remaining 15.1 percent was explained by other factors outside the model.

Table 3. F Test Results (Simultaneous Test)

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	425,180	5	156,072	15,064	0,000
Residual	559,324	64	14,170		
Total	986,456	69			

Source: Processed Data, 2020

Based on Table 3, the F test value is 15.064 with a significance of 0.000 less than 0.05. This implies that simultaneously public consumption, investment coming with the inflation affect Bali's economic growth.

The Effect of Consumption on Bali's Economic Growth

Table 1 shows that consumption has a positive and significant effect on economic growth with a significance value of 0.030 <0.05. This conveys that consumption increase of one percent increases Bali's economic growth by 0.587 percent ceteris paribus. This finding supports the hypothesis that consumption has a positive effect on economic growth (H1). During Covid-19 pandemic, Balinese consumption affected economic growth supported by the agricultural sector and small businesses. As consumption is one of the important components in macroeconomic variables related to savings and income, the increase in it increases production and demands for goods and services, eventually increasing economic growth (Ichvani & Sasana, 2019; Padli et al., 2020; Sudirman & Alhudhori, 2018).

Effect of Investment on Economic Growth in Bali

Table 1 confirms that investment has a positive and significant effect on economic growth with significance value of 0.042 <0.05. This means one percent increase in investment increases Bali's economic growth by 0.632 percent ceteris paribus. This finding corroborates the hypothesis that investment has a positive effect on economic growth (H2). During the Covid-19 pandemic, investment has decreased and affected economic growth supported by the primary commodity sector. This underlines the role of state-owned capital in increasing economic growth. Domestic and foreign capital will lend a hand to the economy and stimulate the economic growth (Kambono & Marpaung 2020; Malik & Kurnia 2017).

Inflation Moderates the Effect of Consumption on Bali's Economic Growth

This study suggests that inflation has a positive impact and a negative impact based on the severity of the inflation. Low inflation encourages an increase in economic growth, and boost national income since people are enthusiastic to consumption their consumption. Conversely, high inflation decreases the purchasing power which at last decrease economic growth (Ardiansyah, 2017; Kefi & Sutopo, 2020; Hasibuan, 2020). This study contended that inflation moderates the effect of consumption on Bali's economic growth, as its significance value is 0.035 <0.05 and the coefficient value is 0.392 (see Table 1). This signifies the level of consumption during low inflation increases economic growth. During the pandemic, the government policy was to provide the people with subsidy to maintain their purchasing power.

Inflation Moderates the Influence of Investment on Bali's Economic Growth

Inflation is an indicator to determine the rate of price changes, where a process of price increases takes place continuously and affects each other. This study finding suggests that inflation is unable to moderate the effect of the relationship between investment on economic growth (H4) since the significance value is 0.346> 0.05, and the coefficient value is 0.282. This concludes that inflation does not have a significant effect in increasing or weakening the relationship of investment to economic growth. Inflation is not significant in moderating the effect of investment relations on economic growth for during the inflation, companies will boost the production. They will continue to develop businesses with government direct cash subsidies, especially for micro, small and medium enterprises. However, as people's purchasing power has not increased during the pandemic, and inflation is not fully absorbed by people's consumption, it does not affect economic growth (Pratami, 2018; Saputra, 2018; Wahyuni et al., 2014).

CONCLUSIONS

The analysis results and discussion draw us to conclusions that that public consumption and investment have a positive and significant effect on Bali's economic growth. Inflation as a moderating variable can strengthen the relationship of consumption effect on economic growth, while the relationship between the effect of investment on economic growth cannot be moderated by inflation. Therefore, the government should continue to carry out policies to control inflation, especially in Bali, to increase the volatile economic growth during Covid-19 pandemic, to improve an investment climate, to increase employment opportunities, to maintain public consumption, and to support domestic economy stability.

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