

## **DETERMINANTS OF INFLATION IN BALI**

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### **Abstract**

*Inflation in Bali is high compared with other countries. This study is an investigation of the determinants of inflation in Bali for the period 2000-2014. To analyse the influence of the determinant factors of inflation authors have applied regression analysis by Eviews 6.*

*Our study has found that such factors, as foreign exchange, bank interest rate, the size of government expenditure, the size of public expenditure have no influence on inflation.*

*Researchers have suggested the government to focus not only on monetary policy but also on other techniques and policies that would encourage the supply of goods, would avoid deficit and would contribute to maintaining stable oil prices in Bali.*

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**Keywords:** *inflation, exchange rate, government expenditure, interest.*

### **1. Introduction**

Bali is a famous tourist destination in the world with the level of foreign tourist arrivals with an average growth from 2010-2014 year amounted to 9.6 percent (BPS Bali, 2015) [24]. Bali rely on the tourism sector to improve the welfare of the community through tourist visits, performing arts and culture, and art products in export sales. Bali has only relatively small area of 5636.66 km<sup>2</sup> with a population in 2014 amounted to 4.1049 million people, but do not have the economic resources to rely on to prop up the economy of Bali. Bali Tourism sector is the primary key that causes the Bali regional income continued to rise and unemployment declines significantly.

Bali is very dependent on the economic resources that come from outside Bali that are at risk of high inflation. In a period of 15 years (2000-2014), the inflation that occurred in Bali between 3.8 % and 12.49 % (BPS Bali, 2015) [24]. The economic growth the last 15 years more dominant low compared with inflation of between 3.05 % and 6.72 %. Fluctuations in the exchange rate against the US dollar exchange rate during the last 15 years that tend to depreciate the exchange rate could potentially lead to higher inflation. Trigger high inflation in Bali foreseeable from government spending in the last 15 years has increased from 0.10 % to 125.72 %. Changes in public expenditures of Bali in the last 15 years between 2 % up to 195 % can be expected to trigger inflation driver in Bali. Provision of lending rates in the last 15 years has the tendency to decrease from 18.43 % per to 12.79 % per year. Bank Indonesia as the Central Bank has made an effort to control inflation by setting interest rates.

Bali has a Regional Inflation Control Team under the control of Bank Indonesia to control inflation in Bali. Inflation Control Team use an Inflation Targeting Framework (ITF). Inflation Control Team consists of various local governance institutions that continue to monitor and try to react quickly in controlling inflation in Bali. Inflation that occurred from 2000-2014 high likelihood that it is very interesting to do research on the determinants of inflation that occurred in Bali.

## **2. Literature Review on Determinant of Inflation**

The quantity theory was discussed by the famous 18th-century philosopher and economist David Hume and has been advocated more recently by the prominent economist Milton Friedman. This theory can explain moderate inflations, such as those we have experienced in the United States, as well as hyperinflations. Hume and his contemporaries suggested that economic variables should be divided into two groups. The first group consists of nominal variables—variables measured in monetary units. The second group consists of real variables—variables measured in physical units. The real interest rate is, after all, a real variable. For the real interest rate not to be affected, the nominal interest rate must adjust one-for-one to changes in the inflation rate. Thus, when the Fed increases the rate of money growth, the long-run result is both a higher inflation rate and a higher nominal interest rate. This adjustment of the nominal interest rate to the inflation rate is called the Fisher effect, after economist Irving Fisher (1867–1947), who first studied it (Mankiw, 2009) [15]. Before the advent of rational expectations in monetary economics, Milton Friedman and Edmund Phelps proposed, in the late 1960s, the expectations augmented Phillips curve, which showed that if inflation rose above expected inflation, then output and employment would rise above normal (Taylor in Siegfried, 2010) [21].

Laryea & Sumaila (2001) [13] estimates an inflation equation for Tanzania based on quarterly data, for the period 1992:1 to 1998:4. The results from the econometric regression analysis shows that inflation in Tanzania, either in the short run or the long run, is influenced more by monetary factors and to a lesser extent by volatility in output or depreciation of the exchange rate.

Kim (2001) [12] using co-integration and error models, this paper analyses the relative impacts of the monetary, labour and foreign sectors on Polish inflation from 1990 to 1999. We use a structural system approach in which co-integration relationships are used to derive deviations from steady-state levels. The results suggest that the labour and external sectors dominated the determination of Polish inflation during the above period, but their effects have been opposite since 1994. The appreciation of the domestic currency contributed to reducing inflation, while excessive wage increases prevented inflation from decreasing to a lower level. The monetary sector appears not to have exerted influence on inflation, suggesting monetary policy has been passive.

Andersson, et al (2009) [2] examined the determinants of inflation differentials and price levels across the euro area countries. Dynamic panel estimations for the period 1999-2006 show that inflation differentials are primarily determined by cyclical positions and inflation persistence. The persistence in inflation differentials appears to be partly explained by administered prices and to some extent by product market regulations. In a co-integrating framework we find that the price level of each euro area country is governed by the levels of GDP per capita.

Greenidge dan DaCosta (2009) [8] examines the determinants for inflation in the Caribbean. This paper uses annual data over the period 1970 to 2006 for Barbados, Guyana, Jamaica and Trinidad

and Tobago. Data are obtained from the International Financial Statistics Database, Economic and Financial Statistics publications (Barbados) and Annual Statistical Digest publications from several central banks in the Caribbean. The findings indicate that the determinants for inflation in the Caribbean are both cost-push and demand-pull.

Khan & Gill (2010) [11] focuses on the determinants of inflation in Pakistan using four price indicators, i.e. CPI, WPI, SPI, and GDP Deflator for the long-run (time period of 1971-72 to 2005-06). It is found that depreciation of exchange rate and increase in the value of imports has contributed shooting up of CPI, WPI, SPI and GDP deflator. The support prices of sugar-cane, rice, wheat, and cotton (collectively) have affected all the indicators positively, however, the support price of wheat independently has affected only GDP deflator. Expectation effect has also contributed positively towards all the indicators.

Bayo (2011) [6] investigates the determinants of inflation in Nigeria between 1981 and 2003. The Nigerian economy had faced with inflationary trends over the years and the various government policies to deal with it eluded long-term solution needed to bring about increased living standard of the Nigerian citizenry. Hence, the need for an investigation into the multi-dimensional and dynamic factors that affect inflation with the view to make appropriate recommendations to curbing it. From the study, it was revealed that explanatory variables (fiscal deficits, money supply, interest and exchange rates) significantly and positively impacted on the rate of inflation in Nigeria during the period under review.

Bashir, et al (2011) [5] focuses to examine demand side and supply side determinants of inflation in Pakistan on economic and econometric criterion and also to investigate causal relationships among some macroeconomic variables. For that purpose, study has undertaken time series data for the period from 1972 to 2010. Long run and short run estimates have been investigated using Johansen Co-integration and Vector Error Correction approach. Causal relationship have been observed using Granger causality test. The findings of the study reveal that in the long run consumer price index has found to be positively influenced by money supply, gross domestic product, imports and government expenditures, on the other side government revenue is reducing overall price level in Pakistan.

Imimole B & Enoma A (2011) [10] examined the impact of exchange rate depreciation on inflation in Nigeria for the period 1986–2008, using Auto Regressive Distributed Lag (ARDL) Co-integration Procedure. The research found that exchange rate depreciation, money supply and real gross domestic product are the main determinants of inflation in Nigeria, and that Naira depreciation is positive, and has significant long-run effect on inflation in Nigeria.

Aurangzeb & Haq (2012) [4] investigates the determinants of inflation in Pakistan. The data used in this study were collected from the period of 1981 to 2010. Unit root test confirms the stationarity of all variables at first difference. The multiple regression analysis technique is used to identify the significance of different factors. Results indicate that gross domestic production is having negative relationship with inflation, while exchange rate, interest rate, fiscal deficit and unemployment have positive relationship inflation. It is recommended that the policy makers should critically evaluate and analyze the exchange rate, remittances, gross domestic production and foreign direct investment on continuous basis to reduce the trade deficit.

Tafti (2012) [23] measures and analyzes the determinants of inflation in Islamic Republic of Iran. After briefly reviewing the theoretical background, we use Johansen and Juselius maximum likelihood method. Additionally, we use the VAR method. For this purpose, Impulse Response Functions (IRF) and Forecast Error variance Decomposition (FEVD) are also used. Our analysis is

based on time series quarterly data from 1971:1-2005:4 and our results show that the response of the consumer price index (CPI) to shock in GDP is too weak and the response of CPI to shocks in import price index and liquidity is initially positive.

Ndidi (2013) [17] employs time series econometric technique, using Augmented Dickey Fuller (ADF) and Philips Perron (PP) tests (test for ascertaining the presence of unit root and stationarity of the series) and co-integration tests, which is used to explore the presence of long-run relationship amongst the series. It uses yearly data between 1970 and 2010, and found that expected inflation, measured by the lagged term of inflation, money supply, significantly determine inflation, while trade openness, capturing the tendencies of imported inflation, income level, exchange rate and interest rate are found not to be significant with all showing signs that conform with a priori in the short run in Nigeria.

Salem, et al (2013) [20] examines the impact of unemployment, exchange rate, gross domestic product, interest rate and fiscal deficit on inflation rate in Pakistani economy Annual data collected from Asian Development Bank and State Bank of Pakistan website from 1990-2011 for Pakistan has been used. Regression analysis has been employed through SPSS statistical package. The result shows that there is negative relationship between inflation rate with unemployment and fiscal deficit while positive relationship is examined between inflation rate with exchange rate, GDP and interest rate in Pakistan.

Ong & Chang (2013) [18] identify the macroeconomic determinants of house prices in Malaysia from year 2000 until middle of 2012. The study also explores the relationship between the characteristics and house price then will forecast the house price index for the next 3 years. There are total of three macroeconomic variables, such as inflation rate, gross domestic product rate and income increment rate were taken into study with the house price index. The design of this study comprises of 50 secondary data of each variables from year 2000 until middle of year 2012 which are in quarterly basis. In the process of findings, there are few types of analysis which were tested by using SPSS Version 20.0, there are Pearson correlation coefficient, multiple regression analysis, multicollinearity statistics and finally scenario analysis to forecast the future trend of house price index in next three years. The result indicates that there are not all predictors in this study are significantly related to house price, but only gross domestic product rate is significant determinants of the movement of house price index.

Hossain & Islam (2013) [9] examine the determinants of inflation using the data from 1990 to 2010 in Bangladesh. The Ordinary Least Square (OLS) method has been used to explain the relationships. The empirical results show that money supply, one year lagged value of interest rate positively and significantly affect inflation. Results also indicates that one year lagged value of money supply and one year lagged value of fiscal deficit significantly and negatively influence over inflation rate. There is an insignificant relationship between interest rate, fiscal deficit and nominal exchange rate. The explanatory variables accounted for 87 percent of the variation of inflation during the study period.

Sola & Peter (2013) [22] examines money supply and inflation rate in Nigeria. Secondary data that ranged from 1970 to 2008 were sourced from the CBN Statistical Bulletin. The study used Vector Auto Regressive (VAR) model. The stationary properties of the model were also explored. The results revealed that money supply and exchange rate were stationary at the level while oil revenue and interest rate were stationary at the first difference. Results from the causality test indicate that there exists a unidirectional causality between money supply and inflation rate as well as interest

rate and inflation rate. The causality test runs from money supply to inflation, from the interest rate to inflation and from interest rate to money supply.

Mirchandani (2013) [16] examines the relationship between Exchange rate and Macro-economic variables such as, interest rate, Balance of trade, Inflation rate, Foreign Direct Investment, GDP etc. which have been analyzed with the help of statistical tool. The research is based on secondary data, to compile the report with some variables twenty years annual data for the period of 1991 to 2010 were collected. It has been found that Exchange rates is correlation with many variables such as interest rate, inflation rate & GDP Growth rate in either direct or indirect manner in India.

Lim & Sek (2015) [14] examines factors affecting inflation in two groups of countries (high inflation group and low inflation group) using annual data from 1970 to 2011. An Error Correction Model based on the Autoregressive Distributed Lag (ARDL) modeling has been used to explain the short run and long run impacts of each variable on inflation. The results respectively indicate that GDP growth and imports of goods and services have the significant long run impact on inflation in low inflation countries. Results also indicate that money supply, national expenditure and GDP growth are the determinants of inflation which impose long run impact on inflation in high inflation countries. In the short run likewise, none of the variables is found to be significant determinants in high inflation countries.

Ashwani (2014) [3] identifies the key determinants of inflation in India. Meanwhile it tries to empirically investigate the recently boasted argument that India's inflation is mainly attributed to higher purchasing power of the people due to better economic growth amid increased social sector spending. To serve the purpose, annual time series data is utilized ranging from 1981 to 2011. Co-integration method is used to identify the long-run relationship followed by error correction model for short-run relationship among the inflation and other macro-economic indicators. It is found that there is presence of long-run relationship between inflation, money supply, private and social spending and exchange rate in India. Money supply, exchange rate and private final consumption expenditure contribute the inflation significantly.

Alexander, et al (2015) [1] investigated the main determinants of inflation in Nigeria for the period 1986 – 2011. The Augmented Dickey-Fuller unit root statistics test revealed that all the variables are stationary after first and second difference at 5% level of significance. The co-integration result reveals long-run equilibrium relationship between the rate of inflation and its determinants. The Granger causality test revealed evidence of a feedback relationship between inflation and its determinants. The estimated VAR result showed that fiscal deficits, exchange rate, import of goods and services, money supply and agricultural output have a long run influence on inflation rate in Nigeria. Only lending rate influenced inflation in the short and long run horizon. The variance decomposition and impulse response results show that "own-shocks" were significantly responsible for the variation and innovations in all the variables in the equation. Obviously, inflation in Nigeria is fiscal and monetary policy influence. While this study discourages excessive waste of public funds through fiscal deficit, it recommends that the monetary authority should encourage a lending rate policy that promotes investment as well as retention of a desired level of money supply and interest rates that reduce inflation rate in Nigeria.

Ghumro & Memon (2015) [7] examine the main sources of inflation in the economy of Pakistan using an autoregressive distributed lag model for the period from 1980 to 2012. Findings of this study reveal that the one percent rise in the long run money supply, exchange rate, total reserve, and the gross national expenditure change inflation by 0.16, 2.12, 0.36, and 1.78 % points respectively. The Error Correction model with negative sign remains statistically significant with

approximate 81% speed of adjustment to restore the equilibrium in the long run, which shows the quick convergence.

Paudyal (2015) [19] examines short term and long term effects of the macroeconomic variables on the inflation in Nepal during 1975-2011. The variables considered are budget deficits, Indian prices, broad money supply, exchange rate and real GDP. The regression results from Wickens-Breusch Single Equation Error Correction model suggest that all variables considered are significant in long run implying that these variables are the determinants of inflation in Nepal.

### 3. Research Methodology

This study uses Bali as research objects. The data used comes from the time series data for 15 years beginning in 2000-2014. Variable data were taken from BPS Bali and Bank Indonesia. Variable data were analyzed by Eviews 6 to test the effect of independent variables with the dependent variable. There are four variables used in this study to find the determinants of inflation in Bali. Inflation variable is used as the dependent variable while the independent variables are exchange rates, interest rates, government spending, and public spending. The dependent variable used in this study is inflation (Y). The models in this study are as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4, \quad (1)$$

where:

X1 = rupiah against the US dollar in Rupiah;

X2 = the central bank interest rate in percent;

X3 = government spending in Rupiah;

X4 = public expenditure in Rupiah.

Research Hypothesis:

The exchange rate significantly affect inflation

Central bank interest rate significantly to inflation

Government spending significantly affect inflation

Public spending significantly affect inflation.

### 4. Results and Discussion

#### 1. Serial Correlation Test

To detect the presence of serial correlation by comparing the count value X2 with X2 table, namely:

- If the value of X2 count > X2 table (5.99), then the hypothesis that the model is free of the problem of serial correlation is rejected
- If the value of X2 count < X2 table (5.99), then the hypothesis that the model is free of the problem of serial correlation accepted

Value Obs \* R-squared (X2 count value) 3.409 < 5.99 X2 table so that the free model of serial correlation problem. Value Obs \* R-squared (X2 count value) can be found in appendix 1.

#### 2. Normality Test Data

To detect whether the residual distribution is normal or not by comparing the value of Jarque Bera (JB) with X2 table is:

- If the value JB > X2 table, then the residual distribution is not normal
- If the value JB < X2 table, then the residual normal distribution

Analysis of the output, that JB value of 0.592 < 5.99 X2 table it can be concluded that the residuals were normally distributed. JB value can be found in appendix 2.

### 3. Test linearity

To detect whether or not a linear model by comparing the value of the F-Statistic with F-Table are:

- a. If the value of F-Statistic > F-table, then the hypothesis that the linear model is rejected
- b. If the value of F-Statistic < F-table, then the hypothesis that the linear model is accepted

Analysis of output results, that the value of F-Statistic amounted to 0.366 < 3.49 F-table so that the linear model can be accepted. F-Statistic value can be found in Appendix 3.

### 4. Test Multicollinearity

Stages testing via Eviews 6 program with partial correlation approach with the following steps.

- 1) The regression equation:

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4$$

- 2) Estimates for regression:

$$X_1 = b_0 + b_1X_2 + b_2X_3 + b_3X_4$$

$$X_2 = b_0 + b_1x_1 + b_2X_3 + b_4X_4$$

$$X_3 = b_0 + b_1x_1 + b_2X_2 + b_3X_4$$

$$X_4 = b_0 + b_1X_2 + b_2X_2 + b_3X_3$$

Conditions:

If the value of  $R^2_1 > R^2_{11}, R^2_{12}, R^2_{13}, R^2_{14}$  then the model is not found their multicollinearity

If the value of  $R^2_1 < R^2_{11}, R^2_{12}, R^2_{13}, R^2_{14}$  then the model is found some multicollinearity

The analysis of output results show that  $R^2_1 = 0.347 < R^2_{11} = 0.566, R^2_{12} = 0.498713, R^2_{13} = 0.0944, R^2_{14} = 0.933$  so the model found their multicollinearity. The  $R^2$  can be found in appendix 4.

### 5. Test Heteroskedasitas

Heteroskedasitas test using white test with the following conditions:

If the value of X2 count (value Obs \* R squared) > value X2 table it can be concluded that the model does not pass the test heterokedasitas

If the value of X2 count (Obs \* R squared value) < value X2 table it can be concluded that the model passes the test heterokedasitas

X2 count value 0.356 < 5.99 value X2 table it can be concluded that the model passes the test heterokedasitas. Value Obs \* R-squared (X2 count value) can be found in Appendix 5.

### 6. Multiple Linear Regression Test Results

Multiple regression equation as follows.

$$Y = -4.062860 + 0.001441X_1 + 0.058886X_2 + 3.87E-13X_3 - 1.10E-07X_4$$

The results showed that the  $X_1$  does not significantly affect Y where significant level of 0.2531 above 5%. This means that the exchange rate does not significantly affect inflation. Inflation in Bali was not caused by the fluctuation of the rupiah against the US dollar. Values Values significant level of research can be found in appendix 6.

The results showed that the  $X_2$  does not significantly affect Y where significant level of 0.8528 above 5%. This means that interest rates do not significantly affect inflation. Inflation in Bali was not caused by fluctuations in interest rates of the central bank. Bank Indonesia policy by playing the interest rate banks are not able to control inflation that occurred in Bali. The value of a significant level of research can be found in appendix 6.

The results showed that the  $X_3$  does not significantly affect Y where significant level of 0.8769 above 5%. This means that government spending does not significantly affect inflation. Inflation

in Bali is not caused by government spending. The results of this study will not make the concerns of the government against government spending will have an impact on the increase in inflation in Bali. The value of a significant level of research can be found in appendix 6.

The results showed that the X4 does not significantly affect Y where significant level of 0.4525 above 5%. This means that public expenditure does not significantly affect inflation. Inflation in Bali is not caused by public spending. The results of this study will not make the concerns of the government to increase public spending on inflation. The value of a significant level of research can be found in appendix 6.

Control of inflation that occurred in the period 2000-2014 is difficult to do by the local government of Bali because Bali does not have the economic resources to meet community needs. Economic resources needed by Bali such as agricultural products, animal husbandry, fisheries, energy and mineral resources are very dependent on various Provinces. Dependence on the economic resources to trigger the difficulty of controlling inflation as a result of excess demand while supply of the goods less. Bali is often in a shortage of product offerings due to delays in the supply of goods from the various Provinces that meet the needs of goods in Bali. Delays in the supply of goods to be one of the biggest triggers of inflation in Bali. Delays items that are often caused by bad weather and poor transport system.

During the years 2000-2014 have been frequent increase in oil prices in response to changes in world oil prices. The increase in oil prices which often happens to be the trigger inflation due to higher transport costs and the price of electricity tariffs. Energy resources for the province of Bali from Java Island and the determination of electricity rates are determined by the Government of Indonesia. Provincial Government of Bali has been several times proposed the application of alternative energy geothermal, but the proposal of the government was rejected by the majority of Balinese society. Their energy dependence of Java makes the high cost of electricity is borne by the people of Bali so it is pushing up inflation.

## **5. Conclusions and Recommendations**

Bali has a big chance of tourism economic base the rise in inflation. Values T Statistic on a variable exchange rate of 1.212723 to 0.2531 probability gives the sense that the exchange rate has no effect on inflation in Bali. Increasing the number of foreign tourists visiting Bali does not have an impact on inflation in Bali.

The central bank has attempted to conduct monetary control by changing interest rates. The results found that the value of the variable T Statistics on central bank rate of 0.190345 to 0.8528 probability gives the sense that the interest rate has no effect on inflation in Bali. The central bank's monetary policy has not been effective in conducting monetary control in Bali.

Bali Provincial Government each year to make changes to the financing of regional development expenditure. The study found that government spending has no effect on inflation in Bali. Value T statistics on government expenditure variable probability of 0.158907 to 0.8769 gives the sense that government spending has no effect on inflation in Bali. Inflation in Bali is not caused by government spending.

Changes in public expenditures of Bali in the last 15 years between 2 percent up to 195 percent very fluctuating. The study found that public expenditure does not affect the inflation in Bali.



Value T Statistics on public expenditure variables for -0.387646 with probability 0.7064 gives the sense that public spending has no effect on inflation in Bali. Public expenditure is not to be triggered from the high inflation in Bali.

#### Recommendations.

Local governments should not just concentrate on making monetary policy in controlling inflation, but keep other economic policies that are more technical like to maintain the supply of goods in order to avoid shortages and maintain the stability of oil prices in Bali.

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### Appendix 1. Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.176856	Prob. F(2,8)	0.3564
Obs*R-squared	3.409953	Prob. Chi-Square(2)	0.1818

Test Equation:

Dependent Variable: RESID

Method: Least Squares

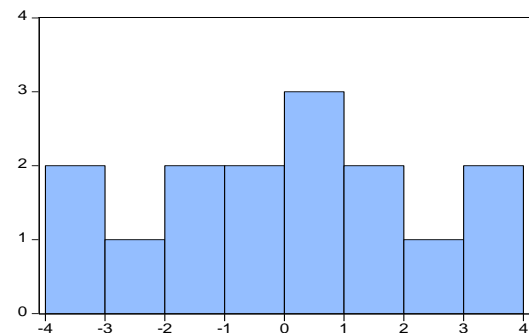
Sample: 1 15

Included observations: 15

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.000961	0.001359	-0.706828	0.4997
X2	0.558381	0.478095	1.167929	0.2765
X3	1.17E-12	2.53E-12	0.462239	0.6562
X4	1.53E-08	1.39E-07	0.109862	0.9152
C	1.204200	10.50117	0.114673	0.9115
RESID(-1)	-0.776157	0.506051	-1.533752	0.1636
RESID(-2)	-0.399165	0.415802	-0.959987	0.3652
R-squared	0.227330	Mean dependent var	1.11E-16	
Adjusted R-squared	-0.352172	S.D. dependent var	2.368724	
S.E. of regression	2.754422	Akaike info criterion	5.169017	
Sum squared resid	60.69474	Schwarz criterion	5.499441	
Log likelihood	-31.76763	Hannan-Quinn criter.	5.165498	
F-statistic	0.392285	Durbin-Watson stat	1.538996	
Prob(F-statistic)	0.864742			

### Appendix 2. Normality Data Test



Series: Residuals	
Sample 1 15	
Observations 15	
Mean	1.11e-16
Median	0.049848
Maximum	3.877452
Minimum	-3.896863
Std. Dev.	2.368724
Skewness	0.025307
Kurtosis	2.027701
Jarque-Bera	0.592454
Probability	0.743619

### Appendix 3. Linearity test

Ramsey RESET Test:

F-statistic	0.366452	Prob. F(1,9)	0.5599
Log likelihood ratio	0.598646	Prob. Chi-Square(1)	0.4391

Test Equation:

Dependent Variable: Y

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.001395	0.004842	-0.288059	0.7798
X2	-0.074140	0.387906	-0.191129	0.8527
X3	-2.11E-13	2.70E-12	-0.078106	0.9395
X4	9.02E-08	3.62E-07	0.249252	0.8088
C	11.28315	27.56678	0.409302	0.6919
FITTED^2	0.131914	0.217913	0.605352	0.5599
R-squared	0.372598	Mean dependent var		7.462667
Adjusted R-squared	0.024042	S.D. dependent var		2.931403
S.E. of regression	2.895950	Akaike info criterion		5.253678
Sum squared resid	75.47872	Schwarz criterion		5.536898
Log likelihood	-33.40258	Hannan-Quinn criter.		5.250661
F-statistic	1.068976	Durbin-Watson stat		2.672549
Prob(F-statistic)	0.437143			

**Appendix 4. Multicollinearity Test**

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4$$

$$R^2_1 = 0,347$$

Dependent Variable: Y

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.001441	0.001188	1.212723	0.2531
X2	0.058886	0.309366	0.190345	0.8528
X3	3.87E-13	2.43E-12	0.158907	0.8769
X4	-1.10E-07	1.41E-07	-0.781757	0.4525
C	-4.062860	10.48084	-0.387646	0.7064
R-squared	0.347053	Mean dependent var		7.462667
Adjusted R-squared	0.085874	S.D. dependent var		2.931403
S.E. of regression	2.802713	Akaike info criterion		5.160254
Sum squared resid	78.55197	Schwarz criterion		5.396271
Log likelihood	-33.70191	Hannan-Quinn criter.		5.157740
F-statistic	1.328793	Durbin-Watson stat		2.533365
Prob(F-statistic)	0.324631			

$$X_1 = b_0 + b_1X_2 + b_2X_3 + b_3X_4$$

$$R^2_{11} = 0,566$$

Dependent Variable: X1

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8101.370	1053.838	7.687495	0.0000
X2	50.69777	77.02227	0.658222	0.5239
X3	1.20E-09	4.99E-10	2.412320	0.0345
X4	-4.16E-05	3.35E-05	-1.241484	0.2402
R-squared	0.566456	Mean dependent var		9435.133

Adjusted R-squared	0.448216	S.D. dependent var	957.6939
S.E. of regression	711.3956	Akaike info criterion	16.19551
Sum squared resid	5566921.	Schwarz criterion	16.38433
Log likelihood	-117.4663	Hannan-Quinn criter.	16.19350
F-statistic	4.790751	Durbin-Watson stat	1.867676
Prob(F-statistic)	0.022625		

$$X_2 = b_0 + b_1X_1 + b_2X_3 + b_4X_4$$

$$R^2_{12} = 0.498713$$

Dependent Variable: X2

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.431748	10.02898	0.641317	0.5345
X1	0.000747	0.001136	0.658222	0.5239
X3	-4.22E-13	2.37E-12	-0.178346	0.8617
X4	-1.08E-07	1.34E-07	-0.807872	0.4363
R-squared	0.498713	Mean dependent var	9.520000	
Adjusted R-squared	0.361998	S.D. dependent var	3.419787	
S.E. of regression	2.731555	Akaike info criterion	5.070797	
Sum squared resid	82.07531	Schwarz criterion	5.259611	
Log likelihood	-34.03098	Hannan-Quinn criter.	5.068786	
F-statistic	3.647840	Durbin-Watson stat	1.566120	
Prob(F-statistic)	0.047920			

$$X_3 = b_0 + b_1X_1 + b_2X_2 + b_3X_4$$

$$R^2_{13} = 0.944$$

Dependent Variable: X3

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.48E+12	1.06E+12	-2.331883	0.0397
X1	2.87E+08	1.19E+08	2.412320	0.0345
X2	-6.83E+09	3.83E+10	-0.178346	0.8617
X4	52602.16	7366.348	7.140873	0.0000
R-squared	0.944862	Mean dependent var	1.74E+12	
Adjusted R-squared	0.929824	S.D. dependent var	1.31E+12	
S.E. of regression	3.47E+11	Akaike info criterion	56.20812	
Sum squared resid	1.33E+24	Schwarz criterion	56.39694	
Log likelihood	-417.5609	Hannan-Quinn criter.	56.20611	
F-statistic	62.83326	Durbin-Watson stat	1.886652	
Prob(F-statistic)	0.000000			

$$X_4 = b_0 + b_1X_2 + b_2X_2 + b_3X_3$$

$$R^2_{14} = 0.933$$

Dependent Variable: X4

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
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C	35480017	19673906	1.803405	0.0988
X1	-2951.057	2377.040	-1.241484	0.2402
X2	-518846.5	642238.3	-0.807872	0.4363
X3	1.56E-05	2.19E-06	7.140873	0.0000
<hr/>				
R-squared	0.933811	Mean dependent var	29913227	
Adjusted R-squared	0.915760	S.D. dependent var	20632857	
S.E. of regression	5988508.	Akaike info criterion	34.27176	
Sum squared resid	3.94E+14	Schwarz criterion	34.46057	
Log likelihood	-253.0382	Hannan-Quinn criter.	34.26975	
F-statistic	51.73059	Durbin-Watson stat	1.914984	
Prob(F-statistic)	0.000001			

**Appendix 5. Heterokedasitas**

Heteroskedasticity Test: White

F-statistic	1.383652	Prob. F(4,10)	0.3074
Obs*R-squared	5.344139	Prob. Chi-Square(4)	0.2538
Scaled explained SS	1.220484	Prob. Chi-Square(4)	0.8747

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.067723	10.19249	0.006644	0.9948
X1^2	2.30E-08	1.17E-07	0.196877	0.8479
X2^2	0.033487	0.023572	1.420606	0.1859
X3^2	-1.03E-24	9.22E-25	-1.114406	0.2912
X4^2	3.45E-15	3.56E-15	0.969332	0.3552
R-squared	0.356276	Mean dependent var		5.236798
Adjusted R-squared	0.098786	S.D. dependent var		5.495167
S.E. of regression	5.216687	Akaike info criterion		6.402804
Sum squared resid	272.1383	Schwarz criterion		6.638821
Log likelihood	-43.02103	Hannan-Quinn criter.		6.400290
F-statistic	1.383652	Durbin-Watson stat		1.784375
Prob(F-statistic)	0.307439			

**Appendix 6.**

$$Y = -4.062860 + 0.001441X_1 + 0.058886X_2 + 3.87E-13X_3 - 1.10E-07X_4$$

Dependent Variable: Y

Method: Least Squares

Sample: 1 15

Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.001441	0.001188	1.212723	0.2531
X2	0.058886	0.309366	0.190345	0.8528
X3	3.87E-13	2.43E-12	0.158907	0.8769
X4	-1.10E-07	1.41E-07	-0.781757	0.4525
C	-4.062860	10.48084	-0.387646	0.7064

R-squared	0.347053	Mean dependent var	7.462667
Adjusted R-squared	0.085874	S.D. dependent var	2.931403
S.E. of regression	2.802713	Akaike info criterion	5.160254
Sum squared resid	78.55197	Schwarz criterion	5.396271
Log likelihood	-33.70191	Hannan-Quinn criter.	5.157740
F-statistic	1.328793	Durbin-Watson stat	2.533365
Prob(F-statistic)	0.324631		

### **Rezumat**

*Inflația în Bali este mai mare decât în alte țări. Acest studiu reprezintă o investigație a factorilor determinanți ai inflației în Bali pentru perioada anilor 2000-2014. Pentru examinarea influenței factorilor determinanți ai inflației autorii au utilizat analiza de regresie prin Eviews 6.*

*Studiul efectuat a constatat că factorii, după cum urmează: cursul valutar, rata dobânzii bancare, mărimea cheltuielilor guvernamentale, mărimea cheltuielilor publice, nu influențează asupra inflației.*

*Cercetătorii au sugerat guvernului să se concentreze nu numai asupra politicii monetare, ci și asupra altor tehnici și politici care ar încuraja livrările de bunuri, ar permite evitarea deficitului și ar contribui la menținerea prețurilor stabile la petrol în Bali.*

**Cuvinte-cheie:** inflație, rată de schimb, cheltuieli publice, dobândă.

### **Аннотация**

*Инфляция в Бали значительно превышает инфляцию других стран. Данное исследование заключено в изучении факторов, которые определяли инфляцию в Бали на период 2000-2014 г.г. Для выявления влияния факторов, лежащих в основе инфляции, авторы применили регрессионный анализ с помощью Eviews 6.*

*Проведенное исследование показало, что конкретные факторы как: обменный курс, процентная ставка банка, государственные расходы не влияют на инфляцию.*

*Исследователи предложили правительству сосредоточить внимание не только на денежно-кредитную политику, но и на другие, более технические политики, способствующие росту поставок товаров, избежанию дефицита и поддержанию стабильности цен на нефть на Бали.*

**Ключевые слова:** инфляция, обменный курс, государственные расходы, проценты.

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