Granger Causality of GDP with Interest Rate and Money Supply

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Abstract

This paper investigates the Granger-causality among GDP, Interest rate and money supply over the period 1988 to 2012. The findings imply that the -causality is bidirectional in majority of cases. In one-way causality, the pattern is not homogenous: import has higher effect on economic growth instead of export. Evolution of Interest rate, money supply and gross domestic product are in close relationship. This study examines the relationship between Interest rate, money supply and economic growth in India. This paper examines the various research studied conducted with reference to Indian and International context. This paper tries to find out the important factors those are affecting the Gross Domestic Product directly or indirectly. Data of 24 years was collected from the website of Data.gov.in, yahoo finance.com and Investing.com and Johansen Co integration test is applied. This paper is divided into four sections. First section covers review of literature, second section covers objective of the study and methodology, third section is on result and findings and fourth section covers conclusion.

Keywords: *GDP, Interest Rate, Money Supply, Co- Integration*.

Introduction: The gross domestic product (GDP) is one among the first indicators to live the health of country economy. It represents country total price of all merchandise and repair made over specific period. Value conjointly acts as sign of country production and growth. Economic variables like state, rate and government disbursal are the independent variables that influence the ever-changing of gross domestic product as variable during this study.

GDP will show the stabilization of the country economy. The economic variables are the necessary issue that influences the value has to be compelled to be management by the government to attain the stabilization of the economy. Higher percent can contribute to lower value as a result of it indicates the slower growth of the economy by having an excessive amount of idle attributable to the unproductive economy. Basically rate of interest is divided into 2 classes rate of interest charge on the loaning and rate of interest on the deposit. During this study it shows that there's no significance relationship between rate of interest and GDP. Rate of interest won't have an effect on the GDP directly it rather an element that influence the rate of inflation within the economy. Higher inflation shows the economy at the boom stage 2 the price of products and repair can increase and inflation conjointly can influence the money offer within the economy.

Government defrayal is additionally another issue that influences the GDP. There is a positive relationship between government defrayal and GDP that is the higher government defrayal can foster the growth of the country. Government spending (or government expenditure) includes all government consumption and investment but excludes transfer payments made by a state. Government defrayal on infrastructures and instrumentation to build a faculty, a replacement route and hospital can absolutely contribute to the economy.

During this paper it provides associate empirical analysis of the moot relationship between GDP and state, rate of interest and government defrayal. Following a review of recent studies during this space, we have a tendency to use thirty years of Asian nation information and through empirical observation explore the correlation between pct, rate of interest and government defrayal towards GDP. The entire stock of currency and alternative liquid instruments during a country's economy as of a specific time. Normally money supply consist cash, coins and balances control in checking and savings accounts. Economists analyze the money provide and develop policies revolving around it through stake rates and increasing or decreasing the quantity of cash flowing within the economy. Funds information is collected, recorded and revealed sporadically, usually by the country's government or financial organization. Public and personal sector analysis is performed due to the money supply's potential impacts on index, inflation and therefore the variation. First section covers review of literature, second section covers objective of the study and methodology, third section is on result and findings and fourth section covers conclusion.

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Literature Review:

Obamuyi and Olorunfemi (2011) examined the implications of financial reform and interest rate behavior on the economic growth in Nigeria. Study results revealed that financial reform and interest rates have significant impact on economic growth in Nigeria; also, results implied that the interest rate behavior is important for economic growth.

Lang and capital of Michigan (2010) expressed that 'the economy recession led to June 2009 since once the U.S. economy has recorded four consecutive quarters of positive real gross domestic product growth'. By reducing rate to zero and shopping for unhealthy assets, the Fed has enforced a series of accommodative financial policy to stabilize quality worth and also the whole economy. No matter the argument aroused by defrayment tax income to save lots of Fannie Mae and FHLMC, the reaction of the Fed throughout this distinctive amount and its impact wasn't to be unheeded.

Feldstein and Stock (1994) studied the likelihood of exploitation M2 to focus on the quarterly rate of growth of nominal gross domestic product in their paper in 1994. The study proven that the central bank might in all probability build use of M2 that reduces each the long average rate and also the variance of annual gross domestic product rate of growth. Similarly, our project would examine the possibly existing relationship of however the financial directions eventually have an effect on the output by applying econometrical models.

Estrella and Hardouvelis (1991) Tested information over the amount 1955 to 1988, they discerned that the unfold between the yield on the 10 year Treasury bond and also the three-month Treasury obligations may be a helpful predictor of each accumulative economic process up to four years within the future and marginal economic process rates up to seven quarters within the future. They additionally found that the unfold contains info for future economic process. Unfold wasn't a really smart predictor of economic activity over the amount 1985 to 1995.

Friedman (1986) whereas discussing regarding finances and inflation same that cash ought to not be confused with credit. He same that underneath the principle of reflux (debt repayment) money supply and its growth may be a operate of demand for credit. unexpected rise in credit demand leads to one in cash growth however unexpected and temporary increase in finances could also be removed by debt compensation whereas talking regarding inflation he same that each related to i.e. money supply Associate in Nursing inflation and this correlation among finances and inflation is an important factor.

Teriba (1974) dole out a study that he enclosed completely different interest rates thus on throw additional light on the interchangeability between cash and different monetary assets, and to spot the nearest substitute for cash. He contended that estimating associate mixture demand operate wasn't adequate in itself; however that demand for its parts ought to be specified and calculable additionally. using the Co integration technique and also the long linear relationship between real balance (or its components) and its determinants, Teriba specified and calculable a brief term demand for cash operate that connected real balance to mixture real value, lagged real balances and a spread of rate of interests -federal government semi permanent rate of interest financial institution short rate of interest certificate of deposit rate and savings deposit interest rate.

Objective of the Study: The primary objective of this study is to identify the factors affecting the economic growth of India. In this study the main objective is to analyze the factors like Interest rate and money supply impact on GDP.

The Study: The gross domestic product (GDP) is one among the first indicators to live the health of country economy. It represents country total price of all merchandise and repair made over specific period. Value conjointly acts as sign of country production and growth. Economists analyze the money provide and develop policies revolving around it through stake rates and increasing or decreasing the quantity of cash flowing within the economy. Funds information is collected, recorded and revealed sporadically, usually by the country's government or financial organization.

Sample: The study uses yearly data of 24 years. The time duration was 1988 to 2012.

Hypotheses:

H_0 1.1 LR does not Granger Cause GDP

H_0 1.2 GDP does not Granger Cause LR

H_0 2.1 MS does not Granger Cause GDP

H_0 2.2 GDP does not Granger Cause MS

H_0 3.1 MS does not Granger Cause LR

H_0 3.1 LR does not Granger Cause MS

Results & Findings:

Series: GDP D(IR) D(MS)

SECTION IV

Pairwise Granger Causality Tests

Sample: 1988 2012

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
D(LR) does not Granger Cause GDP	30	0.47300	0.02859
GDP does not Granger Cause D(LR)		3.53342	0.04452
D(MS) does not Granger Cause GDP	30	1.37019	0.27249
GDP does not Granger Cause D(MS)		7.81360	0.00231
D(MS) does not Granger Cause D(LR)	30	2.11763	0.14139
D(LR) does not Granger Cause D(MS)		0.14993	0.86154

H_O 1.1 LR does not Granger Cause GDP

Hypothesis is rejected. Since the probability value is 2% in table no. 1 which is LESS than 5 percent, hence the hypothesis is rejected.

H_O 1.2 GDP does not Granger Cause LR

Hypothesis is rejected. Since the probability value is 4% in table no. 1 which is less than 5 percent, hence the hypothesis is rejected.

H_O 2.1 MS does not Granger Cause GDP

Hypothesis is not rejected. Since the probability value is 27% in table no. 1 which is greater than 5 percent, hence the hypothesis is not rejected.

H_O 2.2 GDP does not Granger Cause MS

Hypothesis is rejected. Since the probability value is 0% in table no. 1 which is less than 5 percent, hence the hypothesis is rejected.

H_O 3.1 MS does not Granger Cause LR

Hypothesis is not rejected. Since the probability value is 14% in table no. 1 which is greater than 5 percent, hence the hypothesis is not rejected.

H_O 3.2 LR does not Granger Cause MS

Hypothesis is not rejected. Since the probability value is 86% in table no. 1 is which is greater than 5 percent, hence the hypothesis is not rejected.

Conclusion: The present study covers the analysis in respect to volatility of GDP. The data used in this study were collected from the period of 1982 to 2012. The granger causality test is used to study the cause and effect relationship among GDP Interest Rate and Money Supply. From Granger causality test it can be reveal that GDP affects Interest rate and also interest rate also affects GDP. Result also reveals that GDP affects Money Supply. Money Supply does not affect GDP and Interest rate.

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