The Effect of Monetary Policy on Economic Growth of selected SAARC countries

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Abstract

The study intended to examine the effect of monetary policy on economic growth of selected SAARC countries. Inorder to fulfill these objectives analysis is based on panel data over 25 years of period from 1996 to 2020 of selected five SAARC nations. Economic growth is measured by GDP per capita growth where exchange rate, inflation, broad money to GDP, external reserve are used as monetary policy variables. The Descriptive and casual relationship research design has been used using secondary data. Hausman test is run to select between the fixed and random effect model and correlation matrix is used in this study to summarize the relationship between variables. Among the variables, external reserve, broad money was found to have positive significant effect on GDP while exchange rate has negative significant effect. Also, inflation was found to have negative insignificant effect on economic growth at 5% level of significance. This study concludes that the inability of monetary policies to effectively maximize their policy objectives most of the time is due to flaws in the policy instruments used, which limits their contribution to growth even though monetary policies have made impressive contributions over the years.

Key words: Monetary Policy, Economic Growth, Panel Data, OLS

I. Introduction

Monetary policy is formulated by a nation's central bank. Every nation in the world would like to see economic growth. It calls for an ambitious and strategic economic strategy that anticipates the required future economic conditions, including an increase in income, low unemployment, low inflation, and a balanced public and external balance. This economic policy needs tools, such as a strong and effective monetary policy that aims to accomplish its goals. The power of monetary authorities (central bank governors) to influence certain economic variables has made monetary policy become a vital part of the modern economy (Guenichi & Khalfaoui, 2019). Monetary policy is a key component of macroeconomic management in an open economy and to promote economic stability and development through its impact on economic variables. It is generally assumed that monetary policy influences macroeconomic variables such as employment generation, price stability, GDP growth, and balance of payment equilibrium in developing countries (Anowor & Okorie, 2016; Precious & Palesa, 2014). Monetary policy is one of the most important economic tool used by central bank to promote sustainable economic growth (Akalpler & Duhok, 2018). Most governments now prioritize monetary policy's ability to affect economic growth due to its growing importance. In the study of monetary economics, the connection between monetary policy and economic growth has become a focused point (Broten & Collins, 2017). Although monetary policy cannot be anticipated to directly increase long-term economic development, it can promote sustainable growth by preserving an environment of price stability (Papademos, 2003). According to the need of the central government, Banks conducts monetary policy to control money supply and the rate of interest.

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The primary concept is that it investigates the effect of monetary policy on economic growth, which sets it apart from earlier studies the findings of the study raise a number of questions, including whether increasing the money supply adequately explain country's economic growth and whether monetary stability may help maintain price stability (Folawewo & Osinubi, 2006). The significance of monetary policy as the most important economic tool used by central governments cannot be overstated (Akalpler & Duhok, 2018). Even the small change in countries' annual growth rates can cause large difference in economic activity over the long period of time. Therefore, it is in the best interest of every policy maker to understand the factors that influence output dynamics and to achieve higher and long-term economic growth.

This research can be used by the policy makers to make necessary monetary policy every year. This research is critical for understanding the impact of monetary policy and economic growth which will add to the value of previous studies. The results of this study will provide the budget office with information about the connection between monetary policy and economic growth in selected SAARC countries. The results will help state and federal governments in understanding how monetary policy affects economic growth. They will benefit from having a better understanding of the monetary policy initiatives that will boost economic growth.

Modern central banking has one of the prime objectives of macroeconomic stability. For maintaining macro-economic stability, formulating monetary policy is one of the major function of modern central banking (Nepal & Gupta, 2020). The goal of the monetary authorities is to create a sound financial system and an effective monetary system. Ineffective monetary policy is undoubtedly a major cause to the economic crisis, and management has often been one of the obstacles to achieving the anticipated economic growth (West & Macduff, 2013).

Akalpler and Duhok (2018) made a study on does monetary policy affect economic growthand found that monetary policy has a positive relationship with economic growth where, inflation, and money supply all have a positive relationship with economic growth which supports the literature: (Kamaan, 2022). However, it is contrary to the empirical findings by (Hameed & Amen, 2011), (Madurapperuma, 2016; Srithilat & Sun, 2017) there is negative and significant relation of Inflation on economic growth in a study the impact of monetary policy on gross domestic product (GDP) whose studies revealed differences in the extent of the effects that money supply can have on economic growth in a country. The results of various tests show that independent variables are the factors in determining economic growth, and policymakers should take these factors into account for the nation's economic development (Joshi, 2022).

The results of various authors contradict to each other. Though there are evidences in the context of other countries and in SAARC countries. No such evidence using more recent date exists in context of SAARC country. Based on this, the research question for this study is: Does inflation, exchange rate, broad money and external reserve has any effect on economic growth in SAARC?

Research Objectives

To examine the effect of monetary policy on economic growth of selected SAARC countries.
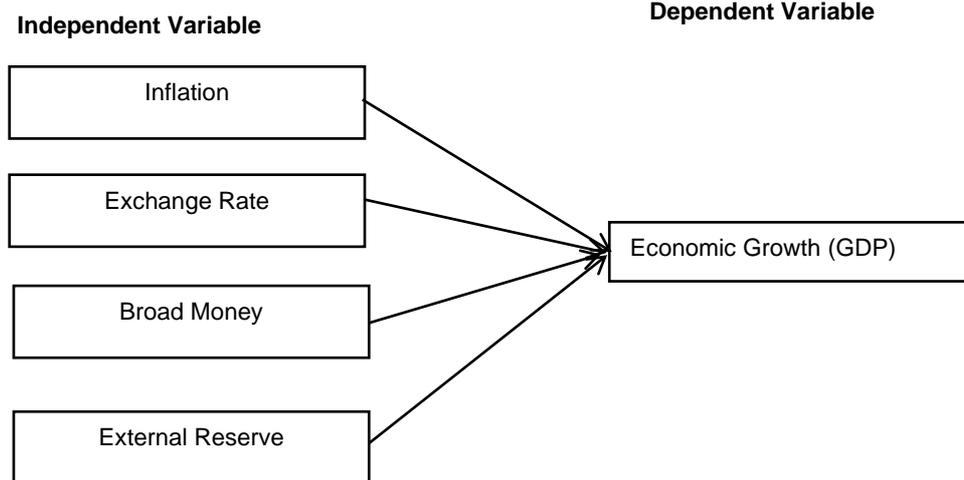
To analyze the effect of inflation, exchange rate, broad money, external reserve on economic growth of selected SAARC countries.

II. Theoretical Framework

Research Framework

Figure 1

Research Framework

Independent Variable   **Dependent Variable**

Note. Fasanya et al. (2013); Noman & Khudri (2015)

Hypotheses

Based on the reviews and above research framework, following hypotheses are formulated for the study:

H1: There is significant effect of inflation on economic growth.

H2: There is significant effect of exchange rate on economic growth.

H3: There is significant effect of broad money on economic growth.

H4: There is significant effect of external reserve on economic growth.

Theoretical Review

Monetarism is an economic theory that says the money supply is the most important driver of economic growth. Monetarists say that central banks are more powerful because they control the money supply. The premise of monetarism lies in the idea that the total amount of money in circulation in an economy determines the rate of economic growth of that economy. The basic notion of monetarism is that money supply controls the economy (Amadeo, 2021). In simple words, monetarists believe that controlling money supply influences inflation and that the inflation can influence interest rate in future so the money supply should be determined considering the need of the economy. Keynesian economists believe that manipulating demand for goods and services is the best way to control the economy. However, these economists do not simply ignore the role of the money supply in the economy and its impact on GDP (GDP). They do, however, believe that it takes a long time for the economic market to adjust to any monetary influence (Lioudis & Nick, 2022).

Empirical Review

Ahmad et al. (2016) analyzed the relationship between monetary policy and economic growth using annual time series data from 1973 to 2014. The Autoregressive Distributive Lag (ARDL) model was used in the study to identify short-run and long-run empirical estimation among economic variables. The findings indicate that money supply and exchange rate have positive significant impact on economic growth. Inflation has positive insignificant impact on economic growth. Monetary policy is based on monetary instruments such as the money supply, exchange rate, and interest rate, which are used to stabilize and effectively implement monetary policy for healthy economic growth. The study recommends that a stable exchange rate policy be maintained in order to boost the country's economic growth and that monetary policy be used to create an agreeable venture environment that stimulates both internal and external investors, thereby stimulating economic growth.

Tandan and Paudel (2021) examined the relationship among the inflation, broad money (M2) and economic growth during 20312075B.S by using time series econometric tools. The stationary of all variable has been examined to determine the order of integration, for this ADF test has been applied. Variables are found to be stationary at level (0) and first I(1) difference. Johnsen Co-integration and vector error correction model (VECM) have been applied to show the relation among the variables. It has been found there is a here is long run association among inflation, broad money and economic growth in Nepal.

Noman and Khudri (2015) evaluated the effects of monetary and fiscal policies on economic growth of Bangladesh. The primary objective of the study was to assess trends in policy variables and investigate how fiscal and monetary instruments affect economic growth (RGDP). The information was gathered on a yearly basis during the years of 1979–1980 and 2012–2013. The study used trend analysis, multiple linear regression models, correlation matrices, line diagrams, and monetary and fiscal (i.e., government revenue and spending) variables (i.e. exchange rate, interest rate, inflation, broad money, and narrow money). According to the study's findings, Bangladesh's economic growth is significantly influenced by important variables such as the exchange rate, interest rate, inflation rate.

Starr (2005) used the Granger causality test to analyze the impact of monetary policy in the four core CIS countries (Russia, Ukraine, Belarus, and Kazakhstan) from 1995 to 2003. The results showed that there is little evidence of a real impact of monetary policy in the four core CIS countries. The results supported Uhlig's 2005 study, which shows that monetary policy has no clear impact on real GDP in the United States.

Adejare and Omodara (2013) examined the impact of monetary policy on economic growth of period 1970 to 2010 from the Central Bank of Nigeria's statistical bulletin. Multiple regressions were used to analyze data on variables such as money supply, inflation, exchange rate, interest rate, and gross domestic product, all of which were found to have significant effects on economic growth. Inflation and exchange rate is found to have negative relation while, interest rate and money supply has negative relation on economic growth. As a result, it is concluded that exchange rate stability has played a key role in keeping inflation low, and that the range of monetary policy instruments available to the authorities has widened in recent years, which has been associated with more stable and predictable changes in money supply and price level.

Agbonlahor (2014) used the vector error correction model (VECM) for the empirical estimation of the study and analyzed the impact of monetary policy on economic growth in the United Kingdom using data from 1940 to 2012. Results suggested a relationship

between the money supply and the inflation rate, which is a significant instrument to economic growth in the United Kingdom.

Gnawali (2019) investigated the relationship between Nepal's money supply and economic growth from 1975 to 2016 using the Augmented Dickey-Fuller (ADF) unit root test, Vector Error Correction Model (VECM). The researcher came to the conclusion that money supply has a positively significant impact on economic growth and foreign aid has a negatively significant impact on Nepal's economy and the lack of this coordination leads to a sharp downturn of overall economic performance, even can hurt the economy.

Hameed (2011) examined the impact of monetary policy on GDP of Pakistan adopting regression analysis technique. The conclusion was based on data from the previous 30 years in Pakistan. The study aims to determine how much the money supply, interest rates, and inflation affect Pakistan's overall GDP growth. The study found that while interest rates have a minor relationship with GDP, the growth in money supply has a significant impact on an economy's GDP. Obviously, various unknown factors also have an impact on GDP. Money supply growth has a significant impact on GDP.

III. Research Methodology

The research design used in this study is descriptive and analytical research design. This research study is based on the secondary data collected from following authorized sources: World Bank for all the variables. For this article, it has used inflation, exchange rate, broad money and external reserve as the independent variables. The model is concerned with the relationship between economic growth (GDP) and monetary policy variables as depicted by the following:

$Y = \beta_0 + \beta_1 INF + \beta_2 LNER + \beta_3 LNBM + \beta_4 LNE + e$ ………………. (1)

Where,

Y= Real Gross domestic product,

INF= Inflation rate

LNER= Natural logarithm of exchange rate

LNBM= Natural logarithm of broad money to GDP

LNE= Natural logarithm of external reserve B0 =Constant term, B1, B2, B3, B4,   e = Error term

IV. Results and Conclusion

Table 1

Descriptive statistics

Particulars	GDP	LNER	LNE	INF	LNBM
Mean	3.484353	4.29619	2.879585	6.740551	3.954144
Median	3.553359	4.264	2.825844	6.5133	3.952874
Maximum	17.03122	5.223554	3.9007	22.5645	4.768559
Minimum	-11.06903	3.567648	-0.0000288	-18.10863	3.243915
Std. Dev	3.050147	0.372276	0.428062	4.203885	0.281569

Note. Output of E-views 8 (LBC digital library)

Table 1 shows the descriptive statistics of the dependent and independent variables. GDP is the dependent variable which is fluctuated between-11.06903% to maximum 17.03122% with average of 3.484353 with a deviation by 8.529749 respectively. The average natural log of exchange rate is 4.29619%, it fluctuates between minimum 3.567648 % to maximum 5.22355% with the variation of 0.372276. Similarly, the average natural log of external reserve is 2.879585%, which fluctuates between minimum 0.0000288% to maximum 3.9007% with the standard deviation of 0.428062. Similarly, the average of inflation is 6.74055%. It fluctuates between 18.10863% to 22.5645% with the standard deviation of 4.203885. Likewise, the average natural log of broad money is 3.954144%, it fluctuates between minimum 3.243915% to maximum 4.768559% with standard deviation of 0.281569.

Table 2

Pearson correlation matrix

Correlation Profitability	GDP	LNER	LNE	INF	LNBM
GDP	1				
LNER	-0.15872	1			
	(0.0771)				
LNE	0.364808	-0.009568	1		
	(0.0000)	(0.9157)			
INF	-0.08375	0.107345	0.100534	1	
	(0.3531)	(0.2334)	(0.2646)		
LNBM	0.110887	0.335191	-0.28297	0.10744	1
	(0.2183)	(0.0001)	(0.0014)	(0.2330)	

Note. Output of E-views 8 (LBC digital library)

Table 2 shows the correlation matrix concerning the monetary policy variables and shows that none of the variables have very high correlation coefficients. The highest correlation is 0.364808. The result indicates that LNE, LNBM have a positive association with GDP. Similarly, in contrast the LNER and INF have negative association with GDP. All the correlation matrix variables value is less than 0.8, therefore there is no presence of multi-collinearity. Therefore, the coefficient of the variables is well suited for the regression analysis.

Table 3

Breushman pagen test

	Cross-section	Time	Both
Breusch-Pagan	260.2213	0.057411	260.2787
P-value	(0.0000)	(0.0106)	(0.0000)

Note. Output of E-views 8 (LBC digital library)

Here, the p-value is 0.0000< 0.05 so, the POLS model is rejected.

Table 4

Hausman Test

Correlated Random Effects - Hausman Test Equation

Test cross-section random effects

Test Summary	Chi-Sq. StatisticChi-Sq. d.f.	Prob.
Cross-section random	231.62634	0.0000

Note. Output of E-views 8 (LBC digital library)

The Hausman test is then used to determine which method should be employed when selecting between a fixed effect model and a random effect model. P-value of Hausman test is 0.0000<0.05, hence alternative hypothesis is accepted which signifies that Fixed effect model is appropriate for this study. Chaitip et al. (2015) used the similar process.

Table 5

Analysis of output

Variables	Beta Coefficients	Std. Error	t-Statistic	Prob.
LNER	-3.304824	0.722922	-4.571478	0.0000
LNE	7.008685	0.433609	16.16360	0.0000
INF	-0.037655	0.035500	-1.060721	0.2910
LNBM	4.071046	0.849447	4.792585	0.0000
C	-18.34328	2.901570	-6.321847	0.0000

Model Summary	
R-squared	0.749377
Adjusted R-squared	0.732092
S.E. of regression	1.578750
F-statistic	43.35577
Prob (F-statistic)	0.00000
Durbin-Watson stat	1.705762

Note. Output of E-views 8 (LBC digital library)

The result of the panel regression analysis based on the fixed model as presented in table 5 shows that exchange rate, external reserve and broad money are found among the monetary policy variables to have statistically significant effects on GDP, whereas inflation is found to have a statistically insignificant effect on GDP at the 5% level of significance.

Growth in exchange rate negatively and significantly impacts the growth in GDP. The coefficient value of -3.304824 indicated that a unit change in exchange rate would result to negatively -3.404% growth in real GDP; growth in reserve positively and significantly impacts the growth in GDP. The coefficient value of 7.008685 indicated that a percentage growth in reserve would result to 7.0086 % growth in GDP. Growth in inflation negatively and insignificantly impacts the growth in GDP. The coefficient value of -0.037655 implies that as the inflation grows by a percentage, the real GDP would decline by 0.037655 units; growth in broad money positively and significantly impacts the growth in GDP.

The null form of the test is DW>R^2, which states that the Durbin-Watson result should not be greater than the R-squared figure. As seen in the analysis's results, DW = 1.70576 and R^2 = 0.7494, rejecting the null hypothesis, indicating that the regression estimate result is valid. R-squared for the regression is 0.7494 which implies that the variables in the current study can explain 74.94 percent of the variations in the GDP can be explained by explanatory variables and remaining 25.06 percent of variations of the GDP under investigation can be explained by other factors not included in the model. Furthermore, regarding the statistical significance of the model it's p value= 0.0000 is less than 5% level, indicating that the estimated model has a high statistical significance, which increases the model's reliability and validity.

Discussion

In the study, the effect of monetary policy on economic growth of selected SAARC countries from 1996 to 2020 was evaluated. The findings of this study shows that exchange rate has negative significant effect to economic growth (GDP). The result in line with Joshi (2022), Fasanya et al. (2013), Adejare and Omodara (2013), Hameed and Amen (2011). The result contradicts with Ahmad et al. (2016), Srithilat and Sun (2017). The explanatory variable external reserve is found to be statistically significant and displayed a positive relationship to economic growth as measured by GDP which supports the literature: Kaphle (2021),

Fasanya et al. (2013), Akinboyo et al. (2016). It contradicts with the literature: Osabuohien and Egwakhe (2008). Similarly, inflation shows negative insignificant effect on economic growth. The result in line with the literature: Ekinci et al. (2020), Robert (1995), Hameed and Amen (2011). It contradicts with the literature: Srithilat and Sun (2017), Fasanya et al. (2013), Madurapperuma, (2016), Hossin (2015), Saaed (2007), Ahmad et al. (2016). The

explanatory variable broad money is found to be statistically significant and has a positive effect to economic growth as measured by GDP where the result in line with literature: Patricia and Izuchukwu (2016), Nouri and Samimi (2011), Joshi (2022), Gnawali (2019), Hameed and Amen (2011), Ahmad et al. (2016), Ibrahim (2019). However, the result contradicts with: Sulaiman and Migiro (2014), Tadesse and Melaku (2019).

Conclusion and Implication

The study used panel data from 1996 to 2020 to examine the effect of monetary policy on economic growth of selected SAARC countries. Thus, above discussion and statistical evidences, this research conclude that, monetary policy variables have significant effect on the economic growth of selected SAARC countries. With regard to monetary policy variables: exchange rate, external reserve and broad money to GDP are found to be statistically significant determinants of economic growth of selected SAARC measured by GDP but inflation is statistically insignificant i.e. inflation don't influence economic growth significantly. Inflation, exchange rate has negative relationship to economic growth. Broad money supply and external reserve is displayed as positive relationship to economic growth. The findings of this study revealed that increase in broad money supply and external reserve increases the growth of economy of selected SAARC countries. This study concludes that the inability of monetary policies to effectively maximize their policy objectives most of the time is due to flaws in the policy instruments used, which limits their contribution to growth even though monetary policies have made impressive contributions over the years.

It is advised that regulators and policymakers take into account monetary policy variables in order to improve the economic growth of selected south Asian countries. More attention must also be paid by other professionals to in order to effectively use resources and have a beneficial impact on the economic growth of nation. This study limited to specific monetary policy variables. The growth of the economy should be the top- most consideration when implementing monetary policy measures.

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