# Growth Imperatives of Monetary Policies in Pakistan: Historical Analysis

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## Abstract

Monetary policy is the major tool with the government authorities in a market economy to monitor the direction and pace of economic activities in relation to employment and aggregate output coupled with rise and fall of price level. This study focused on the key issue of growth imperative in the context of Pakistan's monetary policy, examining its evolution, effectiveness, challenges, and implications for sustainable economic growth. The core objectives of this research are to evaluate the efficiency of Pakistan's monetary policy to promote growth of the economy, to identify the fundamental challenges and limitations of these policies, and to propose informed policy recommendations. It provides a comprehensive historical analysis spanning from 1980 to 2023, utilizing data from the World Development Indicator, International Financial Statistics and the State Bank of Pakistan. The analysis employs E-Views software to ensure robust data handling and applies ARDL. The explanatory variables include investment, money supply, inflation, interest rate, and exchange rate, while the Gross National Product serves as the dependent variable. The analysis indicates that the exchange rate, interest rate, and inflation negatively impact on GNP, whereas money supply and investment have a positively influence on GNP. This study suggests that lower interest rates could reduce borrowing costs, increasing investment and consumer expenditure. High inflation has been demonstrated to reduce real income, resulting in reduced consumer spending and slower GNP development. The research emphasizes the need for a balanced method to monetary policy that reflects both immediate economic stabilization and long-term growth objectives.

**Keywords:** Monetary Policy; Economic Growth; Pakistan; Gross National Product; Historical Analysis

# Introduction

Monetary policy is the engine of a country's economy, managing the flow of money, credit, and interest rates to achieve specific economic goals. It is the strategic control that is in central banks that determines the availability and cost of money within an economy (Goodhart, 1988). This policy has had an

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effect on inflation rates and employment levels to the overall rate of economic expansion (Olusola et al., 2022). Monetary policy seeks to maintain an appropriate equilibrium within stimulating economic activity and regulating inflationary pressures or addressing recessions by employing a variety of tools and mechanisms (Bernanke, 2020). Regulating the money supply, and establishing reserve requirements. Which influence from individual purchasing power to economic stability (Stein, 2012). Central banks utilize monetary policy to regulate the money supply with in a country's economy. A central bank employs monetary policy to raise or reduce the quantity of money and credit in circulation to maintain inflation

and growth (Friedman, & Kuttner 2010). Monetary policy is critical for regulating economic conditions and promoting growth for the general public. Evaluation of how changes in interest rates influences key economic indicators such as GDP growth, investment, and inflation is an effective way to evaluate their effect (Zakhidov, 2024). Central bank manages the money supply to achieve specified goals like restricting inflation and stabilizing the economy (Chugunov et al., 2021). It is a demand-side economic policy that is used to achieve the macroeconomic objectives. Implementation of monetary policy, central banks use a wide range of methods, such as changing reserve requirements and conducting open market operations (Vayid, 2013). Monetary policy strategies include expansionary and contractionary policies are used to either stimulate economic growth or control inflation (Aliu, 2022). Monetary policy's ultimate objective is to maintain price stability, high employment, and economic expansion over the long run.

Monetary policy has developed over time in accordance with the growth of the economy. Monetary policy has its roots in classical gold standard, when value of money was determined by gold (Taylor, 1999). The Bretton Woods system replaced the gold standard, which linked the value of the US currency to gold and other currencies with the US dollar (Giovannini, 1988). The Bretton Woods system collapsed in 1970 and countries implemented floating exchange rates. Since then, monetary policy has become more focused on inflation control and economic stabilization (Rose, 2007). Persistently low demand for products and services can cause deflation, especially if consumers expect prices to fall much more. Monetary policy influences total demand for goods and services compared to increase in productive capacity, and hence plays an essential role in stabilizing inflation and the economy as a whole (Precious & Palesa, 2014). Furthermore, monetary policy is most successful when the public believes that the central bank will act to keep inflation low and steady.

Historical foundations of Pakistan's monetary policy journey as the primary years after Pakistan independence. The nation building efforts and the establishment of economic foundations monetary policy decisions associated with the imperative of development economy and developing

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industries (Stiglitz, 2002). The 1960s accompanied in period of economic planning and industrialization, with monetary policy determined to support these (Cargill et al., 2003). However, external shocks, For instance the oil crises of 1970s, emphasized the weakness of Pakistan's economy to global dynamics monetary policy, in such illustrations (Khan, & Ahmed, 2014). It was organized to moderate the adverse effects of external factors and stabilize domestic economic conditions. The successive decades observed the flows of economic liberalization and structural transformations. The 1980s saw modifications in monetary policy to address fiscal deficits and inflationary pressure (Roberts, 2004). The 1990s financial sector reforms, changing the landscape of monetary policy management (Yap, & Teng, (2013).

The role of monetary policy has a comprehensive to balancing growth imperatives with the need for macroeconomic stability (Richters, O., & Siemoneit, 2017). The fluctuation between inflationary pressures and growth objectives imposed a careful adjustment of policy instruments, further emphasizing the dynamic nature of monetary policy decisions (Mishkin, & Schmidt-Hebbel, 2007). In the comprehensive global background, the evolution of monetary policy models had equally dynamic. The 20<sup>th</sup> century observed rise of Keynesianism, which encouraged for active government intervention in economic affairs (Eatwell, & Milgate, 2011). This approach progressively gave way to the monetarist school of thought. Emphasizing the role of monitoring the money supply .Late 20<sup>th</sup> and early centuries observed the rise of inflation directing, forward guidance, and progressive monetary policies in response to financial crises and economic recessions (Kallianiotis, 2017).

The interlinking between Pakistan's monetary policies developments with these global trends facts deeper investigation (Chandio et al., 2020). By supporting Pakistan historical experiences with the broader image of international monetary policy modifications (Reinhart, & Trebesch, 2016). We can gather visions into the effectiveness of various approaches to identify areas of meeting and separation, and position Pakistan's monetary policy route within the mixture of global strategies (Fatima, & Zafar, 2020).

In principle, the growth imperative of monetary policy in Pakistan requires a complete review of historical analysis with global framework (Twinoburyo, & Odhiambo, 2018). This study have happenings to understand the history of Pakistan's monetary policy journey while simultaneously the mixture of global monetary policy trends (Ziring, 2019). We seek to understanding links via monetary policy and GNP contributing to knowledgeable policy reflections and shaping a path of sustainable economic development (Assenmacher et al., 2021).

In Pakistan, monetary policy must prioritize growth in order to promote economic progress, stability, and prosperity (Khursheed et al., 2019). The SBP is primarily liable for developing and implementing monetary policy, affecting

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As a result, the SBP uses monetary measures in order to maintain prices stable within a particular range, thus creating an environment conducive to long-term economic development and investment (Ahmad, 2012). Furthermore, maintaining financial stability is essential. A stable financial system enables effective distribution of resources, encourages investment, and reduces systemic risks (Borio et al., 2001). Monetary policy protects financial stability by regulating banking operations, monitoring systemic risks, and enforcing prudential measures to avoid excessive risk taking (Allen et al., 2016).

Furthermore, it is imperative of Pakistan's monetary policy within the global context. The evolution of monetary policy strategies on a global measure had a significant impact on individual economies, determining policy frameworks and its economic outcomes (Rey, 2015). This study purposes to draw equivalents between Pakistan's monetary policy developments and global trends to identify patterns and suggestions for growth (Malik et al., 2020). In determination, the growth imperative of monetary policy in Pakistan is a multidimensional subject that demands a historical to understand its evolution, challenges, and arrangement with global illustrations (Yasin, 2023). Analysis will contribute to considerate of how monetary policy decisions have shaped Pakistan's economic growth path and provide visions into enhancing policy measures for sustainable development (Khan, & Rehman 2021).

# Methodology and Model Specification

The data framework and sources for investigating Pakistan's monetary policy framework are organized to achieve the objectives of the study. This study covers the historical background of Pakistan. Annual data from 1980 to 2023 is collected on variables including GNP, inflation rate, exchange rate, money supply, interest rate and investment from World Development Indicators, International Monetary Fund and State Bank of Pakistan.

Study model is based on the natural logarithm which is used for modifying the variables. The data is first converted from nominal to real values, and then to logarithmic form. Logarithmic transformation is frequently used to deal with data skewness, minimize variance, as well as transform nonlinear functional forms into linear forms.

When studying time series data, it is necessary to ensure that all of the data is steady in order to prevent associated data issues. The stationary of the data was tested by applying Augmented Dicky Fuller. Finally, ARDL

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bounds testing technique is used in the analysis to determine both long run and short-run relationships that exist among variables. ARDL is fit for analyzing datasets.

# **Model Specification**

Exploring the influence of monetary policy on economic factors in Pakistan involves evaluating the relationships between key variables using a model that includes Gross National Product (GNP) as the explained variable and various economic indicators as explanatory variables. The model may be expressed in the following way:



 $Ln(GNP)t = \beta 0 + \beta 1 Ln(INF)t - i + \beta 2 Ln(IR) t - 1$  $+ \beta 3 Ln(ER) t - i + \beta 4 Ln(MS) t - i$  $+ \beta 5 Ln(INV) t - i + ut$ 

By estimating the coefficients in this model, the magnitude and direction of the variables' impacts on the Gross National Product may be estimated, providing insight into the efficiency of monetary policy in influencing economic outcomes in Pakistan. Whereas, Y denotes growth, that is the Gross National Product (GNP) measured in RS in Million, and the explanatory variables contains as follow as.

Variable	Symbols	Symbols Unit	
Gross National Product	GNP	RS in Millions	SBP
Investment	INV	RS in Millions	SBP
Money Supply	M2	RS in Millions	SBP
Inflation	INF	Ratio	IFS
Interest Rate	IR	Ratio	IFS
Exchange Rate	ER	Ratio	WDI

Variables, Units and data source

**Source:** Authors Computation

This table illustrates the variables used in this investigation. This table includes included the unit of measurement to demonstrate the relationship via variables. Data was collected from the WDI, IFS and SBP

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from1980-2023. Gross National Product is the explained variable in this study, whereas the other factors serve as explanatory variables. This table shows the estimated impact of all indicators on GNP.

## **Procedure of estimation**

Estimation involves multiple steps. E-Views is used for data estimates and stationarity testing. The bound test evaluates long and short-term relationships between variable. The unit root test was used to assess the stationary of variables. The data can be stationary at (I, I, 0, 0, 0, I) to ensure data is consistent, verify it at the level and first difference. The ADF test must be performed to determine whether variables are stationary. Data must be measured at the first difference level and second difference.

## Hypothesis

H0: Series is non-stationary in the data

Hi: Series is stationary in the data

Auto Regressive distribution Lag Approach

$$\Delta GNP = \alpha_0 + \sum_{\substack{i=1\\k=4}}^{k=1} \alpha_1 \, i \Delta (INF)_{t-1} + \sum_{\substack{i=1\\k=5}}^{k=2} \alpha_2 \, i \Delta (IR)_{t-1} + \sum_{\substack{i=1\\k=5}}^{k=3} \alpha_3 \, i \Delta (ER)_{t-1} + \sum_{\substack{i=1\\k=5}}^{k=5} \alpha_5 \, i \Delta (INV)_{t-1} + \varepsilon_t$$

After constructing the ARDL table, use the bound test to express the relationship between variables. To achieve outcomes, compare computed and significant values. Now estimation long term and short term associations via variables. If a long-run connection exists, the equation below can be used to measure its parameters.

Estimation for long term of model as follow as

$$GNP = \alpha_0 + \sum_{j=1}^{k} \alpha_1 j (INF)_{t-1} + \sum_{j=1}^{k} \alpha_2 j (IR)_{t-1} + \sum_{j=1}^{k} \alpha_3 j (ER)_{t-1} + \sum_{j=1}^{k} \alpha_4 j (MS)_{t-1} + \sum_{j=1}^{k} \alpha_5 j (INV)_{t-1} + \varepsilon_t$$

Estimation for short term of model as follow as

$$\Delta GNP = \alpha_0 + \sum_{j=1}^k \alpha_1 j \Delta (INF)_{t-1} + \sum_{j=1}^k \alpha_2 j \Delta (IR)_{t-1} + \sum_{j=1}^k \alpha_3 j \Delta (ER)_{t-1} + \sum_{j=1}^k \alpha_4 j \Delta (MS)_{t-1} + \sum_{j=1}^k \alpha_5 j \Delta (INV)_{t-1} + \varepsilon_t$$

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#### **Results and Discussion**

#### Data Analysis

Data are examined through EViews, which isquite suitable for this data analysis. The data was accessible until 2023, thus the mean value is assigned to this year. All other variables have a time range of 1980-2023, the observation is generalized for 43 years. Descriptive analysis may identify previous trends and forecast future values for variables.

	LÔG	LOG INV	LOG M2	LOG INF	LOG IR	LOG ER
	GNP	· ·				
Mean	15.32116	13.48427	14.37579	2.047545	9.028864	3.867129
Median	15.35738	13.59683	14.39038	2.124290	8.900000	4.060518
Maximum	18.22755	16.28566	17.12153	3.374169	23.00000	5.634790
Minimum	12.42311	10.58091	11.43414	0.927943	2.000000	2.292535
Std. Dev.	1.724227	1.684155	1.705472	0.544871	3.386142	0.871741
Skewness	0.013359	-0.101125	-0.093915	-0.070951	1.507230	-0.112940

## **Table 1: Descriptive Statistics**

#### **Source:** EVIEWS-12

Descriptive statistics provide a statistically accurate overview of variable in the data set. The mean values show the average levels of LOG GNP (15.32116), LOG INV (13.48427), LOG M2 (14.37579), LOG INF (2.047545), LOG IR (9.028864), and LOG ER (3.867129). The median values, which are less affected by outliers with LOG GNP at 15.35738, LOG INV at 13.59683, LOG M2 at 14.39038, LOG INF at 2.12429, IR at 8.9, and LOG ER at 4.060518. Furthermore, in all instances, Jarque-Bera probability values exceed the significance the limit. As a result, with sufficient proof, the null hypothesis (the data are normally distributed) can be accepted.

## **Unit Root Test Analysis**

Variables	Level		1 <sup>st</sup> Difference		Intermetion Tost
	t-Statistic	Prob.	t-Statistic	Prob.	integration rest
LOG GNP	-2.9606	0.1553	-10.3164	0.0000	I(1)
LOG INV	-2.9454	0.1592	-6.2651	0.0000	I(1)
LOG M2	-5.8597	0.0001	-	-	I(0)
LOG INF	-4.7347	0.0027	-	-	I(0)
LOG IR	-4.4097	0.0062	-	-	I(0)
LOG ER	-2.2177	0.4669	-3.7634	0.0287	I(1)

# Table 2: Augment Dickey-Fuller Test

## Source: EVIEWS-12

According to the Augmented Dickey-Fuller test results, LOG M2, LOG INF, and LOG IR are stationary at level and integrated of order zero, I(0), but LOG GNP, LOG INV, and LOG ER are integrated of order one, I(1). The table show us some variables are stationary at level and some variables are stationary at first difference. So, we apply the ARDL model.

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#### **Bound Test (F-Statistics)**

The bound test is used to determine the long-run relationship between the variables. This test is calculated using the computer software E-Views12 for Model.

Test Statistics	Value	K
<b>F-Statistics</b>	8.7228	5
Significance	Lower Bound	Upper Bound
10%	2.75	3.97
5%	3.12	4.25
2.5%	3.49	4.67
1%	3.93	5.23

**Source:** EVIEWS-12

The value of F-statistic 8.7228 is larger than upper bound. Thus, cointegration occurs between variables, and based on these findings, reject null hypothesis and accept alternative hypothesis. Hypothesis tells there is an absence of co-integration in the model and accept the alternative hypothesis **Estimation of short run and long run coefficient of Model** 

The estimate of the short term and long-term associations via variables is now explained. To measure long-run parameters, refer to the tables below. **ARDL Short Run Estimates** 

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (LOG_GNP (-	0.336258	0.095032	3.538350	0.0023
1))				
D(LOG_M2)	-0.002211	0.011371	-0.194404	0.8480
D(LOG_M2(-1))	0.117856	0.025898	4.550803	0.0002
D(LOG_M2(-2))	0.201283	0.029231	6.885933	0.0000
D(LOG_INF)	0.024540	0.008759	2.801758	0.0118
D (LOG_INF (-1))	0.090461	0.015452	5.854403	0.0000
D (LOG_INF (-2))	0.072246	0.015513	4.657111	0.0002
D (LOG_INF (-3))	0.034322	0.013280	2.584426	0.0187
D(IR)	0.002790	0.002072	1.346727	0.1948
D(IR (-1))	-0.026985	0.003980	-6.780049	0.0000
D(IR(-2))	-0.014451	0.003127	-4.620822	0.0002
<b>D</b> ( <b>IR</b> (-3))	-0.008868	0.002308	-3.841762	0.0012
D(LOG_ER)	0.492702	0.073813	6.675005	0.0000
D(LOG_ER(-1))	-0.242836	0.114320	-2.124186	0.0478
CointEq(-1)*	-0.772068	0.094411	-8.177724	0.0000
С	9.191571	1.112734	8.260345	0.0000
@TREND	0.104645	0.012846	8.145903	0.0000

#### **Source:** EVIEWS-12

The dependent variable shows a positive and significant trend. Shortrun dynamics indicate that lagged GNP, money supply, inflation, and exchange rates all have a favorable influence on the explained variable, but lagging

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interest rates have adverse influence. These findings provide insights into short term dynamics of the model's variables and can be utilized to recommend policy decisions or forecast future values of the dependent variable.

Variable	Symbols	Coefficient	Std. Error	t-Statistic	Prob.
Investment	LOG	0.2394	0.0754	3.1718	0.0053
	INV				
Money	LOG	-0.1668	0.0818	-2.0390	0.0564
Supply	M2				
Inflation	LOG	-0.0848	0.0346	-2.4494	0.0248
	INF				
Interest Rate	IR	0.0422	0.0091	4.5962	0.0002
Exchange	LOG	-0.1669	0.0598	-2.7887	0.0121
Rate	ER				
Intercept	С	9.1915	2.3110	3.9772	0.0009
Trends	@TREN	0.1046	0.0267	3.9130	0.0010
	D				
	$EC = LOG_GNP - (0.2395*LOG_INV - 0.1668*LOG_M2 - 0.166*LOG_M2 - 0.1668*LOG_M2 - 0.166*LOG_M2 -$				
	0.0848*LOG_INF + 0.0422*IR -0.1669*LOG_ER)				

#### **ARDL Long Run Estimates**

**Source:** EVIEWS-12

The coefficient of 0.1046 shows that the dependent variable (LOG GNP) has a positive trend over time, increasing by around 0.1046% during each period. The EC term indicates long term equilibrium. The EC term is determined as LOG GNP minus (0.2395LOG INV - 0.1668LOG M2 - 0.0848LOG INF + 0.0422IR - 0.1669\*LOG ER). This factor is not included in the results, but it indicates how rapidly the system reacts to deviations from the long-run equilibrium.

# Conclusion

In Pakistan, monetary policy primarily aims to achieve and maintain price stability, promote economic expansion and financial stability. The establishment of an inflation targeting context signifies the SBP's dedication to managing inflation within a designated range. This includes collaborating with the government to establish annual inflation targets.

Data was collected from the World Development Indicator, International fund statistics and State Bank of Pakistan from period 1980 to 2023.The explanation of the key economic methods used by SBP is monetary policy. Maintaining price stability, lowering inflation, and raising economic production are the goals of the implications of policy. The explanatory variables in this study were investment, money supply, inflation, interest rate and exchange rate while explained variable was GNP. The study's conclusion demonstrates that the exchange rate, interest rate, and inflation all have adverse influence on GNP as well as money supply and investment have a favorable influence on GNP. Lower interest rates can stimulate investment and consumption, resulting in increased GNP growth, whereas higher rates can help

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control inflation. The study suggested that by lower inflation in the economy, the targeted level of output and employment can be reached. Reducing spending is another way the government can fulfill its requirement.

# **Policy Recommendation**

- Implement flexible inflation targeting structure to maintain prices stable while changes based on economic conditions. A flexible approach to inflation targeting can help to balance price stability with the demands of economic growth, allowing for unexpected economic shocks whereas maintaining long-term development.
- A well-developed financial market infrastructure enables more efficient monetary policy implementation and transmission, which leads to increased accessibility to credit and opportunities for investment.
- Moreover, investment can also encourage innovation and technical improvements, hence boosting long-term economic growth. Furthermore, investment decisions can have a multiplier effect on additional elements of GNP, such as consumption and government expenditure.

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