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A Study on The Impact of The Policies of Reserve Bank of India and Federal Reserve System of The United States on Their Respective Economies

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Abstract

This abstract summarizes a study that investigates the impact of various policy changes made by central banks on the economies of India and the USA. The focus is on the Reserve Bank of India and the Federal Reserve System of the US. The primary objective is to analyze the relationships between different economic factors and the country's economic indicators, such as GDP, WPI, SLR, PPP, PCI, BOP, CRR, OMO, Repo, Reverse Repo, and interest rates.

Data was collected from reliable sources, including the World Bank and RBI, covering a 12-year period from 2010 to 2021. The statistical analysis involved correlation and regression using SPSS software.

In India, the study finds that Bank Lending Rate, Cash Reserve Ratio, Statutory Liquidity Ratio, Repo Rate, and Reverse Repo Rate exhibit negative correlations with GDP, PPP, WPI, PCI, and BOP. Conversely, Open Market Operations in India show positive correlations with these economic indicators. In the United States, Bank Lending Rate is positively correlated with GDP, PPP, WPI, and PCI, but negatively correlated with BOP. The Discount rate in the US shows negative correlations with GDP, PPP, WPI, and PCI but positive correlation with BOP. Open Market Operations in the US exhibit positive correlations with GDP, PPP, WPI, and PCI but negative correlation with BOP. Finally, the Reserve Ratio Requirement in the US is negatively correlated with GDP, PPP, WPI, and PCI but positively correlated with BOP.

The study's findings offer valuable insights into the connections between monetary policy tools and economic indicators in both countries. These insights can aid policymakers and economists in understanding the effects of policy decisions on their respective economies.

Keywords: Central banks, Economic indicators, Policy changes, Correlation analysis, Reserve Bank of India, Federal Reserve System, Monetary policy tools, Economic performance

1. Introduction (Basic and Specific Idea about the paper) –

The following study delves into the intricate relationship between policy changes made by central banks and their impact on the economies of India and the United States. Focusing on the Reserve Bank of India and the Federal Reserve System of the US, the research aims to comprehensively understand the fundamental operations of these pivotal institutions. Through a meticulous analysis of crucial economic variables, including GDP, WPI, SLR, PPP, PCI, BOP, CRR, OMO, Repo, Reverse Repo, and interest rates, the study uncovers interconnections and dependencies among these factors. By exploring correlations between various monetary policy tools and economic indicators, such as GDP, PPP, WPI, PCI, and BOP, the investigation sheds light on how changes in one aspect may ripple through the entire economic landscape of each country. Utilizing data collected from reputable sources over a 12-year period, the research employs statistical tools such as correlation and regression analysis using SPSS software. The findings hold valuable insights for policymakers and economists, enabling a deeper understanding of the implications of policy decisions on the respective economies of India and the United States.

2. Statement of the Problem –

The Central Banks of the world come up with various policy measures to deal with different economic conditions that are encountered by the respective countries in particular and the economies of the world in general. This study will help to bring into light on the policies brought about by the RBI in India affecting the Indian economy and the policies of the Federal Reserve System impacting the US economy.

3. Objectives of the Study –

1. To understand the basic functioning of the Reserve Bank of India and the Federal Reserve System of US
2. To find out the relations between various economic factors and the economic indicators of the country
3. To find out the impact of the policy changes introduced by the Central Banks of India and US on their respective economies

4. Review of Literature –

a. **Mandeep Kour Bansal (2017)** attempts to explore into the role, functions, and contribution of RBI in Indian Economy. It also assess the monetary control methods of RBI. The success of these tools is limited by the existence of alternative sources of credit in the economy, working of the Non-Banking Financial Institutions (NBFIs), profit motive of commercial-banks and undemocratic nature of these tools. But a right mix of both the general and selective tools of policy can give the desired results. (Bansal, 2017)

b. **Dasari Rajesh Babu , Dr.D.Jakir Hussain , and Dr.B.R.Manasa (2020)** examines and identifies the key functions of RBI, its role towards banking system and study the quantitative methods and qualitative methods to monitor the policies. It examines the significant considerations of RBI to the welfare of business operations in terms of price stability, economic growth, employability, financial stability, and balance of payment. (Dasari Rajesh Babu, 2020)

c. **Glenn T. Potts and Dudley G. Luckett (2022)** aims to shed some light on the objective function of the Federal Reserve by measuring intended monetary policy directly and to shed light on the question of Federal Reserve's independence. Full employment appears on the whole to have been given the highest priority. Federal Reserve's ordering of priorities does appear to be influenced by the political temper of the times. (Luckett, 2022)

d. **Pami Dua (2020)** examines the evolution and effectiveness of the monetary policy framework in India. It focuses on the key developments and reforms in India's monetary policy over the years. It evaluates the impact of inflation targeting on the Indian economy and analyzes the effectiveness of monetary policy transmission mechanisms. Dua also explores the challenges and limitations faced by the Reserve Bank of India (RBI) in implementing the monetary policy framework. (Dua, 2020)

e. **Vaishali Garga, Aeimit K. Lakdawala, and Rajeswari Sengupta (2022)** explores the credibility of the RBI in implementing inflation targeting as a monetary policy framework. It employs a unique methodology that utilizes financial market expectations to gauge the credibility of the RBI's commitment to achieving its inflation targets. It analyzes the relationship between market-based inflation expectations and actual inflation outcomes. They examine how deviations between these two variables are influenced by changes in the central bank's communication and policy actions. (Vaishali Garga, 2022)

f. **David Gordon (2012)** explores the introduction of a new monetary policy tool by the Federal Reserve Bank (Fed). The concept of open market operations is elucidated, along with an examination of the significant role played by the discount rate. Furthermore, the paper explores the exploration of legally mandated reserve ratios. The Fed has recently introduced a novel tool—the payment of interest on demand deposit accounts at the Fed. This tool is comprehensively explained, and its potential implications are examined. (Gordon, 2012)

g. **Corinne Crawford (2010)** explores the evolving role of the Federal Reserve Bank (Fed) in response to the global financial crisis and its aftermath. Crawford highlights the traditional responsibilities of the Fed, such as controlling inflation and maintaining stability in the financial system, but argues that the crisis necessitated a broader role for the central bank. Some argue that these interventions exceed the Fed's mandate and risk distorting market forces. Others contend that the crisis demanded such actions and that the Fed played a crucial role in preventing a more severe recession. (Crawford, 2010)

h. **M. Labonte (2010)** provides a comprehensive review of the monetary policy framework employed by the Federal Reserve and the prevailing economic conditions during that time. Labonte examines the various tools and strategies used by the Federal Reserve to influence the economy, such as OMO, discount window lending, and RRR. It highlights the importance of the Fed's dual mandate of price stability and maximum employment. It discusses the unconventional monetary policy measures undertaken by the Federal Reserve in response to the global financial crisis, including quantitative easing and forward guidance. (Labonte, 2010)

i. **Oleksandr Dziubliuk (2022)** examines the monetary policy actions taken by the US Federal Reserve in response to the economic fallout caused by the COVID-19 pandemic. It delves into the response of the US Federal Reserve, analyzing the central bank's policy tools and their effectiveness in addressing the crisis. It highlights the key monetary policy actions undertaken by the Federal Reserve, such as interest rate cuts, large-scale asset purchases, and liquidity provision to financial institutions. It evaluates the impact of these measures on financial markets, credit conditions, and economic indicators. (Dziubliuk, 2022)

j. **Michael Debabrata Patra and Partha Ray (2010)** examines the relationship between inflation expectations and monetary policy in India. The authors emphasize the importance of inflation expectations as a key determinant of actual inflation and understanding these expectations is crucial for effective monetary policy formulation. It focuses on the Indian context, discussing previous studies on inflation expectations and monetary policy in the country & the challenges faced by the Reserve Bank of India (RBI) in managing inflation. They examine the factors influencing inflation expectations in India, such as fiscal deficits, exchange rate movements, and global commodity prices. (Ray, 2010)

k. **Smigic-Miladinovic, Jasmina. (2016)** focuses on determining the appropriate monetary policy to be followed by the Central bank in new market circumstances. Credibility of the Central bank's monetary policy is crucial for macroeconomic stabilization. The Central bank's influence extends to financial markets, the financial system, and the broader economy, making it essential to consider the Central bank's role and analyze financial market instruments and institutions when assessing the impact on monetary and investment policies. (Smigic-Miladinovic, 2016)

l. **Akhter, Javaid & Tandon, Deepak & Kulshreshtha, Gaurav. (2022)** says that in India, the countercyclical capital buffer (CCCB) has not been activated by the Reserve Bank of India (RBI) as the current indicators, including the credit-to-GDP gap, do not warrant its activation. The authors of the report have calculated the credit-to-GDP gap as the main indicator for India and found it to be reliable. Implementing CCCB based on the credit-to-GDP gap alone may hinder beneficial financial deepening. The authors recommend considering the attribution of the credit-to-GDP gap to changes in GDP growth and credit growth when deciding to activate CCCB. (Akhter, 2022)

m. **Amaral, A.; Dyhoum, T.E.; Abdou, H.A.; Aljohani, H.M. (2022)** analyzes the impact of monetary policy by the Fed on the United States' economic growth. The study uses various methods like Vector Autoregressive (VAR) analysis, Granger causality test, and Impulse Response Function (IRF) to examine the relationship between variables and predictability. The findings suggest that if the Fed wants to stop expansionary monetary policy in the short term, it should be done carefully and accompanied by fiscal surplus to maintain trust in the US dollar. The study warns that continuous expansion of the Money Supply can result in long-term inflation issues. (Amaral, Dyhoum, Abdou, & Aljohani, 2022)

n. **Pallavi Kiran Ingale (2014)** suggests that changes in central bank policy rates have a significant influence on inflation. Lowering policy rates can stimulate economic growth by reducing the cost of borrowing, increasing consumer spending, and boosting investment. This expansionary monetary policy may lead to higher inflationary pressures due to increased money supply. It also highlights the importance of considering other factors such as fiscal policy, exchange rates, and global economic conditions in understanding the complex dynamics between policy rates and inflation. (Ingale, 2012)

o. **Amol Agrawal (2010)** describes when during the second quarter review for FY 2010-11, the RBI Governor provided forward guidance regarding future policy actions, which caught the markets off guard. Market participants had diverse opinions on the necessity of such a statement in the Indian context. This study examines international central banking practices in terms of central bank communications and analyzes the recent changes in RBI's communication policies. It highlights the increased transparency in RBI's communication during recent monetary policies and considers the recent forward guidance as a part of this ongoing transparency initiative. (Agrawal, 2010)

p. **Sarad Chandra Kafle (2019)** aims to provide guidance on utilizing Correlation and Regression Analysis using Statistical Package for Social Science (SPSS). The findings emphasize the importance of acquiring appropriate skills and understanding for analyzing quantitative data. The study's implications are directed towards disseminating knowledge on correlation and regression analysis, specifically the analytical process utilizing the popular software package SPSS. (Kafle, 2019)

q. **Arkkelin, Daniel (2014)** explores the significance of the statistical software package SPSS (Statistical Package for the Social Sciences) in the realm of research and data analysis. The author emphasizes the widespread use of SPSS in various disciplines, highlighting its capabilities in handling large datasets and performing complex statistical analyses. It provides an introduction to how to use the Statistical Package for the Social Sciences (SPSS) for data analysis and helps understand and interpret the results of research. (Arkkelin, 2014)

r. **D.K. Yadav (2016)** investigates the factors influencing the money supply in India after economic reforms. The authors aim to identify the key determinants and their impact on the country's money supply. It discusses research that has examined variables such as bank credit, foreign exchange reserves, government expenditure, inflation, and interest rates as potential drivers of money supply. It brings into light the role of financial sector reforms in influencing the money supply dynamics. It discusses the impact of liberalization policies, changes in reserve requirements, and the role of the central bank in controlling money creation. (Yadav, 2016)

s. **Goodhart, C. (2011)** examines the changing interpretations of central banks' role in pursuing price and financial stability throughout history. It identifies three distinct epochs: the Victorian era (1840s-1914), characterized by stable interpretations; the decades of government control (1930s-60s), marked by a shift in interpretation; and the triumph of the markets (1980s-2007), highlighting another change in approach. It emphasizes the need for additional instruments to ensure financial stability, and highlights the importance of controlled variations in systemic liquidity and the central bank's balance sheet. (Goodhart, 2011)

t. **Anthony Ilegbinosa Imoisi, Lekan Moses Olatunji & Bosco Itoro Ekpenyong (2013)** aims to analyze the relationship between Nigeria's Balance of Payments position and the country's monetary policy. The research utilizes statistical time series data from 1980-2010 and employs Ordinary Least Squares (OLS) regression models. The findings indicate a positive relationship between the Balance of Payments (dependent variable) and the independent variables of Money Supply, Exchange Rate, and Interest Rate. Study recommends that government should focus on promoting the exportation of

Nigerian non-oil products to increase foreign exchange inflows, stimulate productive activities, and improve the country's Balance of Payments position. (Anthony Ilegbinosa Imoisi, 2013)

5. Hypotheses –

H0: Bank Lending Rate has no significant relation with the Economic Indicator
H1: Bank Lending Rate has a significant relation with the Economic Indicator
H0: OMO has no significant relation with the Economic Indicator
H1: OMO has a significant relation with the Economic Indicator
H0: CRR has no significant impact with the Economic Indicator
H1: CRR has a significant impact with the Economic Indicator
H0: SLR has no significant relation with the Economic Indicator
H1: SLR has a significant relation with the Economic Indicator
H0: Repo has no significant relation with the Economic Indicator
H1: Repo has a significant relation with the Economic Indicator.
H0: Reverse Repo has no significant relation with the Economic Indicator
H1: Reverse Repo has a significant relation with the Economic Indicator

6. Methodology –

The study is performed on the functioning of the Central Banks of India and US and its impact on the respective economies. For the study we require data related to rates and economic factors and other economic indicators like GDP, PPP, WPI, PCI and Balance of Payments to find the relationship among them. The data is collected from secondary sources like Websites of RBI, World Bank and FRED. The collected data was presented and analysed with the help of Excel and SPSS by using the statistical techniques of Correlation and Regression Analysis. The data related to economic factors and indicators are collected for a period of 12 years from 2010 to 2021 from websites of RBI, World Bank and FRED.

7. Results and Discussions –

India: Given the negative correlation between monetary policy tools (such as Bank Lending Rate, Cash Reserve Ratio, Statutory Liquidity Ratio, Repo Rate, and Reverse Repo Rate) and key economic indicators, policymakers in India could consider adjusting these tools strategically to stimulate economic growth. Lowering interest rates and reserve requirements, for instance, may encourage borrowing and investment, thereby positively impacting GDP, PPP, WPI, PCI, and BOP. On the other hand, Open Market Operations have shown a positive correlation with these indicators, suggesting that the central bank could utilize this tool to further support economic expansion.

United States: Considering the positive correlation between Bank Lending Rate and key economic indicators (GDP, PPP, WPI, and PCI), policymakers in the US could explore strategies to maintain favorable lending conditions to support economic growth. Conversely, the negative correlation between the Discount rate and these indicators suggests that careful adjustments to the discount rate may be necessary to balance economic expansion and inflationary pressures. Open Market Operations also demonstrate a positive correlation with economic indicators, indicating their potential for further stimulating the economy. Finally, policymakers may need to assess the impact of Reserve Ratio

Requirement on economic indicators, recognizing its negative correlation with GDP, PPP, WPI, and PCI but positive correlation with BOP.

8. Major Findings –

- **a.** In India, Bank Lending Rate is negatively correlated with GDP, PPP, WPI, PCI and BOP.
- **b.** In India, Open Market Operations is positively correlated with GDP, PPP, WPI, PCI and BOP.
- **c.** In India, Cash Reserve Ratio is negatively correlated with GDP, PPP, WPI, PCI and BOP.
- **d.** In India, Statutory Liquidity Ratio is negatively correlated with GDP, PPP, WPI, PCI and BOP.
- **e.** In India, Repo Rate is negatively correlated with GDP, PPP, WPI, PCI and BOP.
- **f.** In India, Reverse Repo Rate is negatively correlated with GDP, PPP, WPI, PCI and BOP.
- **g.** In USA, Bank Lending Rate is positively correlated with GDP, PPP, WPI, PCI and negatively correlated with BOP.
- **h.** In USA, Discount rate is negatively correlated with GDP, PPP, WPI, PCI and positively correlated with BOP.
- **i.** In USA, Open Market Operations is positively correlated with GDP, PPP, WPI, PCI and negatively correlated with BOP.
- **j.** In USA, Reserve Ratio Requirement is negatively correlated with GDP, PPP, WPI, PCI and positively correlated with BOP.

9. Conclusion –

In conclusion, analyzing the impact of the Reserve Bank of India and the Federal Reserve System on their respective economies provides valuable insights into the functioning of central banks and their role in maintaining monetary stability, financial regulation, and crisis management. By evaluating their policies and coordination efforts, researchers can enhance our understanding of how central banks influence economic outcomes and contribute to sustainable growth. This research can inform policymakers and central bank officials in both countries and contribute to the development of effective monetary and financial strategies for the future.

10. Limitations of the Study and Scope for further research –

The study focuses on the central banks of India and the USA, which may not fully represent the complexities and diversities of all economies worldwide.

The data collection and analysis cover a 12-year period from 2010 to 2021. While this time frame may be adequate for initial insights, long-term economic trends and patterns could be missed or not fully captured within this relatively short period.

The study analyzes correlations between different economic indicators and monetary policy tools. However, correlation does not necessarily imply causation. There could be other hidden or external factors influencing both the monetary policy decisions and the economic indicators studied.

Although the data is collected from official and reliable sources, there might be limitations and inaccuracies in the data sets used. Variations in data collection methods, reporting discrepancies, or errors in official records could impact the accuracy of the analysis.

The study focuses on the impact of central bank policy changes, but it may not fully account for the influence of fiscal policies, global economic trends, or other external factors that can also significantly affect the economy.

The study is done to find the reaction of policy changes by the RBI on the economy of India and by the Federal Reserve on the US economy. The analysis is done only on the factors and economic indicators on Indian economy and the US economy with the data available on the RBI, World Bank and Fred Websites.

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