Journal for Social Science Archives (JSSA)

Online ISSN: 3006-3310
Print ISSN: 3006-3302
Volume 2, Number 2, 2024, Pages 686 – 703
Journal Home Page
https://jssarchives.com/index.php/Journal/about

Volatility in Monetary Policy and Exchange Rate Effects on the Mutual Funds Sector

Mansoor Ali Khan[1] & Sohaib Uz Zaman[2]

[1]*Karachi University Business School, University of Karachi, Email: Khanmansoor614@gmail.com*
[2]*Assistant Professor, Karachi University Business School, University of Karachi, Email: sohaibuzzaman@uok.edu.pk, ORCID: https://orcid.org/0000-0002-0135-3292*

ARTICLE INFO

Keywords:

Monetary Policy, Exchange Rate Volatility, Mutual Funds, Interest Rates, Investor Behavior, Fund Flows, Macroeconomic Shocks, Quantitative Research, Smart PLS, Emerging Markets, Investment Strategy, Currency Fluctuations, Policy Impact, Mutual Fund Performance, Financial Markets.

Corresponding Author:
Mansoor Ali Khan
Email:
Khanmansoor614@gmail.com

ABSTRACT

Exchange rate and monetary policy plays a major role of financial markets, particularly the mutual fund market. This research aims to investigate the impact of interest rate and exchange rate volatility on mutual fund performance, fund flows, and investor behavior. As financial markets become increasingly globalized, changes in central bank policies and currency values can significantly influence investment strategies and risk exposure. The core objective of this research is to fill a gap in the literature of particularly examining how monetary policy and movements in the exchange rate affect mutual funds specifically, as compared to general movements in the stock market. This research aims to offer useful insights to fund managers, financial professionals, investors, and policymakers regarding how they can be better equipped to recognize and react to macroeconomic shocks. The research applies two simple hypotheses; monetary policy shocks cause variations in mutual fund prices, and exchange rate fluctuations affect the returns of mutual funds, especially internationally exposed ones. A quantitative design is applied, with the use of financial market data and questionnaires, analyzed using Smart PLS. Through the study of these relations, the study will add to greater knowledge of dynamic interactions among exchange rates, monetary policy, and mutual fund performance.

Introduction

Exchange rate fluctuations and monetary policy are two of the global forces influencing world financial market forces. With world financial markets becoming increasingly smooth and interconnected, macroeconomic forces affecting mechanisms of investment such as mutual funds

have also gained more professional and applied attention. Monetary policy is the measures used by a nation's central bank to control money supply, interest rates, and inflation to ensure financial stability (Banegas, Montes-Rojas, & Siga, 2022; Christiano, Eichenbaum, & Evans, 1994). Exchange-rate volatility, however, measures variation in the value of a nation's currency when compared with other nations currencies and affects international capital inflows as well as investment choices flat out (Golzar, Smith, & Lee, 2022; Kim & Olivan, 2015). Over the past few years, global financial instability, such as the COVID-19 pandemic and worldwide geopolitical tensions, has merely solidified the need to consider monetary and exchange rate policy's impact on investment vehicles (Milovanović, Petrović, & Stefanović, 2023). Mutual fund investors, who aggregate money to invest in broadly diversified portfolios, are particularly vulnerable to these trends since they are connected to domestic as well as foreign markets. This research explores the two-faceted nature of monetary policy and the variation in exchange rates in setting mutual fund performance, an essential input to the emergent body of literature with emphasis on macroeconomic determinants of financial instruments (Ciminelli, Rogers, & Wu, 2022; Rashid, Jehan, & Kanval, 2023). The study targets the completion of the currently existing lacuna by offering empirical estimates of the effects of contraction or expansion in money and exchange rate uncertainty on mutual fund returns, mutual fund flows, and investor action. The study also investigates the way the moves by core financial institutions like the U.S. Federal Reserve or European Central Bank stimulate global mutual fund markets, primarily those of the emerging economies (Banegas et al., 2022; Kim & Olivan, 2015). With increasing use of mutual funds as a typical investment instrument because of their professional management and diversification, an understanding of the effect of macroeconomic fluctuations becomes crucial. Specifically, this research is based on the assumption that policy-making based on knowledge and successful investment planning has to be based on an understanding of currency and money movements (Swedberg, 2020; Yusuf & Mohd, 2021). Thus, the section gives the theoretical basis, background, and problem significance required so as to discuss the complex interlinks between monetary policy, exchange rates, and mutual fund performance.

Introduction to the Industry

The industry of mutual funds is one of the largest part of the international financial services sector. It facilitates the diversification of risk within individual portfolios for institutional and retail investors by investment across asset classes of equities, fixed income, and money market products. As per the figures quoted by the Investment Company Institute (2021), total mutual fund assets globally total over $63 trillion, thereby reflecting the industry's critical role in capital allocation and economic growth. By virtue, hence, it is inexorably tied to macroeconomic variables like interest rates and exchange rates owing to the nature of investment plan and asset reallocation (Kim & Olivan, 2015; Mohammed et al., 2021).

Over the last three years, the sector has endured a severe setback due to monetary policy changes, particularly due to inflation pressure following the COVID-19 pandemic. Central banks of major economies have increased interest rates to offset inflation, causing a shift in capital flows and modifying the profile of returns on mutual fund investments (Golzar et al., 2022; Ciminelli et al., 2022). For instance, bond mutual funds saw net asset values decreasing as a result of increasing interest rates, and emerging market equity funds saw divergent performance depending on currency performance (Rashid et al., 2023).

The industry is making more use of advanced risk management tools and strategic portfolio adjustments to manage such macroeconomic shocks. Active fund managers, in specific, respond to policy announcements by shifting assets, hedging currency exposure, and changing duration

exposures (Milovanović et al., 2023). Furthermore, with enhanced technology and data analytics, mutual fund companies now better predict market responses and maximize returns within varying policy regimes.

In Pakistan, the mutual fund industry is regulated by the Securities and Exchange Commission of Pakistan (SECP), providing security and transparency to investors. The domestic industry has grown strongly over the past decade with different categories like equity, income, and hybrid funds having different classes of investors. Uncertainty of macroeconomic indicators is a challenge to longterm growth and warrants scholarly inquiry (Banegas et al., 2022).

As explained here, this study puts the mutual fund industry into context relative to larger financial schemes and identifies it as being vulnerable to global and domestic policy settings. Identifying such connections will benefit the stakeholders in designing sound strategies against uncertain macroeconomic settings.

Introduction to the Problem/Opportunity

Despite a huge pool of literature with the interaction of monetary policy and stock markets taken into consideration, the mutual fund industry has otherwise been given less attention in empirical financial literature. This absence is particularly visible regarding the manner in which mutual funds, because of the diversified nature of investment, respond differently towards macroeconomic shocks compared to single equities or indices (Christiano et al., 1994; Golzar et al., 2022).

Mutual funds are very responsive to policy actions owing to their redemption right and liquidity profile. Surprise changes in interest rates by central banks can lead to sudden withdrawal from bond funds and excessive volatility from equity funds, especially the emerging markets (Banegas et al., 2022; Kim & Olivan, 2015). Fluctuations in exchange rates introduce a layer of sophistication, particularly in those mutual funds that are invested abroad. Appreciation or depreciation in currency can misrepresent returns and redistribute investment risk profiles, affecting investor behavior and fund manager strategies (Milovanović et al., 2023; Rashid et al., 2023).

An increasing demand exists for quantifying not only these effects but also offering actionable insights to aid policymakers, investors, and fund managers. External shocks like increases in international interest rates or exchange rate devaluation have more likely exaggerated effects in nations like Pakistan that are other emerging economies owing to lower financial buffers and greater foreign capital mobility sensitivity (Ciminelli et al., 2022; Yusuf & Mohd, 2021).

With particular attention to the each mutual fund's respective response to these macroeconomic variables, this research is intended to supply an important lack in existing literature. The conclusions should be able to guide investment strategy and regulatory design so as to make it possible for risk create by policy-induced financial market volatility to be contained better.

Concluding Remarks

Introduction has given a basis for understanding the interlinks among mutual fund performance, exchange rate volatility, and monetary policy. Macroeconomic factors have a direct impact on the financial system and therefore, by effect, the operating and strategic choices of mutual fund managers and investors.

By formulating the topic, delineating the boundary of the industry, and specifying the core research question, section one places the study in an appropriate and timely scholarly framework. Section two performs a more focused search of literature to locate theory and empirical studies that more specifically describe these linkages.

References: Banegas, Montes-Rojas, & Siga (2022). Monetary policy effects on mutual fund performance. (Christian, Eichenbaum, & Evans. (1994). The effects of monetary policy shocks on financial markets. (Ciminelli, Rogers, & Wu. 2022). U.S. monetary policy spillovers to emerging markets. Golzar, Smith, & Lee. (2022). Investor behavior in response to monetary policy changes. Kim, J., & Olivan, D. (2015). The impact of exchange rate fluctuations on mutual fund investment strategies.). Milovanović, Petrović, & Stefanović, (2023). Risk management in mutual funds: A macroeconomic perspective. Mohammed, Khalid, & Awan (2021). Quantitative finance methodologies in developing economies. Rashid, Jehan, & Kanval (2023). Exchange rate volatility and mutual fund performance in Pakistan. Swedberg (2020). Yusuf & Mohd (2021). Asymmetric effect of economic growth due to fiscal policy drivers in Nigeria.

Literature Review

Introduction to Constructs

The funds world is naturally place in larger economic frameworks and heavily determined by major macroeconomic constructs like monetary policy and exchange rates. These constructs determine the selection of fund managers and shape investment trends around the world. Monetary policy are actions by the central bank to control money supply and interest rate, hence affecting asset price and level of liquidity (Banegas, Montes-Rojas, & Siga, 2022; Mohammed et al., 2021). Exchange rate volatility, meanwhile, is an expression of the fluctuation in the relative strength of currencies, affecting the competitiveness of investment and the foreign asset return (Ciminelli, Rogers, & Wu, 2022; Golzar et al., 2022).

Current empirical evidence supports the pivotal role of these constructs in explaining mutual fund returns and investor behavior. Rashid, Jehan, and Kanval (2023), for example, confirmed that exchange rate fluctuations in Pakistan have had a strong influence on stock and mutual fund volatility. Milovanović, Petrović, and Stefanović (2023) demonstrated that in low-rate regimes, mutual funds direct themselves into risk assets in order to hunt for yield.

Mutual funds are increasingly viewed as sensitive tools that capture movements in these constructs. Investors' risk tolerance would change with the evolving interest rates, impacting levels of redemption as well as fund flows. Golzar et al. (2022) observed that investors' sentiment matters significantly in deciding the extent to which macro factors drive fund flows.

The significance of the knowledge of these macroeconomic indicators is all the more important in emerging economies, where mutual funds are being used as an instrument for achieving financial inclusion. Ciminelli et al. (2022) identify that there exists great sensitivity in emerging country mutual funds to external macroeconomic shocks on account of absence of diversification and increased policy sensitivity.

Knowledge of how these constructs respond to alternative macroeconomic regimes allows fund managers and investors to build robust portfolios. It also facilitates policymakers to forecast the reaction of the financial sector to policy shocks, particularly where mutual funds play an important role in these markets.

Introduction of Theories/Models

Theoretical frameworks are important in building the relationships of interest in this research. Theoretical frameworks of portfolio adjustment models, monetary transmission mechanisms, and behavioral finance have been used in previous research to model mutual fund reactions to macroeconomic variables.

Banegas et al. (2022) and Golzar et al. (2022) demonstrated how mutual funds respond to monetary policy shocks using dynamic portfolio strategies based on modern portfolio theory. The models indicate how funds rebalance investment whenever there is a shift in interest rates and currencies. Mohammed et al. (2021) tested whether exchange rate behavior conforms to theory such as Uncovered Interest Parity (UIP) and Purchasing Power Parity (PPP), which are the building blocks of currency risk forecasting in cross-border fund planning. Ciminelli et al. (2022) utilized UIP theory in testing risk transfer mechanisms in world-wide diversified mutual funds.

Behavioral finance paradigms are particularly relevant to describe short-term mutual fund market volatility in cases of policy changes. Rashid et al. (2023) demonstrated the role of investor sentiment as macroeconomic response intermediaries for emerging economies.

Frameworks and models lying behind such frameworks provide the pillars upon which the current study was constructed, in facilitating theoretical assumptions correspondence to observationally accessible behavior by mutual funds.

Points of View – Supporting and Negating Views

There are different studies that support the idea of the impact of monetary policy and exchange rate volatility on mutual fund performance. Banegas et al. (2022) found that bond funds had large outflows during times of monetary tightening, confirming that policy change has direct bearing on funds stability. Kim and Olivan (2015) also found that mutual funds with exposure in emerging market equities tend to be extremely responsive to exchange rates, confirming the hypothesis that movement of currency impacts investors and fund distribution.

Conversely, other scholars are of the view that the impact of such macroeconomic forces might be exaggerated. Swedberg (2020) and Fama (1970) hold that markets respond to new information in efficient way immediately and hence eliminate long-run effects of money announcements or exchange rate movements. Ciminelli et al. (2022), conceding the existence of short-run volatility, observed that mutual fund managers implement hedging strategies that neutralize macroeconomic impacts on medium and long term.

In spite of differing opinions, the bulk of literature supports macroeconomic factors to have a quantifiable impact on fund returns, particularly in emerging economies with increased market sensitivities. Rashid et al. (2023) observe that Pakistani mutual funds, due to their exposure to risky exchange rates as well as inflationary environments, continue to be more exposed than their counterparts in advanced economies. Such opinions therefore capture the direct effects as well as tactical hedging decisions by fund managers.

Hypothesis Generation and In-Depth Relationships

A few empirical research papers have tested the monetary policy-mutual fund price relationship directly. Banegas et al. (2022) concluded that monetary policy tightening causes significant capital flight from bond mutual funds to lower prices and performance. Christiano et al. (1994) concluded

that interest rates have a significant impact on investment preferences and liquidity. Kim and Olivan (2015) also confirm the same view by emphasizing that in low interest rates, mutual funds use more risky patterns of investment to ensure yield. Underlying these studies, the hypothesis mentioned below is proposed:

H1: The greater volatility of monetary policy, the greater volatility of mutual fund prices.

Likewise, exchange rate volatility is associated with mutual fund prices. Rashid et al. (2023) found that currency depreciating mutual funds are more volatile. Golzar et al. (2022) corroborate this by revealing that exchange rate uncertainty causes risk aversion and fund redemptions, particularly from equity mutual funds. Kim and Olivan (2015) also pointed out how global money is extremely sensitive to the movement in the exchange rate, restructuring portfolios as a protection measure against loss. We thus present the second hypothesis:

H2: The greater the exchange rate change, the greater the change in the price of mutual funds.

Hypotheses to be utilized to ground empirical tests in subsequent sections capture the essential testable relationship from theoretical as well as applied literature.

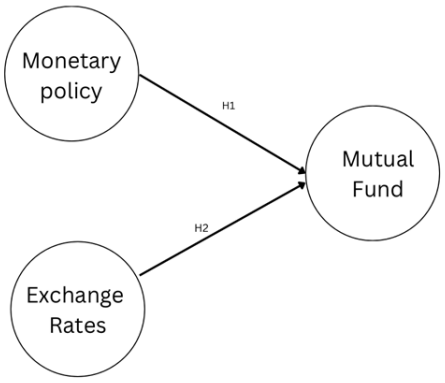
Conceptualization and Final Comments

Theoretical underpinnings of this study combine monetary transmission theory, exchange rate economics, and behavioral finance to examine how mutual funds react to macroeconomic uncertainty. Research so far has largely taken stock markets or a single macroeconomic indicator into account. The study is new in taking both of their combined effects into account regarding mutual funds. As can be seen from Figure 1 (Conceptual Model), monetary policy and exchange rate movements are used as independent variables, while mutual fund performance serves as the dependent variable. Investor sentiment and fund type as plausible mediating and moderating variables are also included.

This section integrated recent scholarly consensus, compared alternative views, and outlined the central hypotheses of the study. Literature provides strong, if occasionally qualified, evidence for the hypothesis that macroeconomic volatility is extremely sensitive to mutual funds. The methodology employed to test these relationships will be explained in the following section.

Research Framework

Figure 1: Conceptual Framework



Methodology

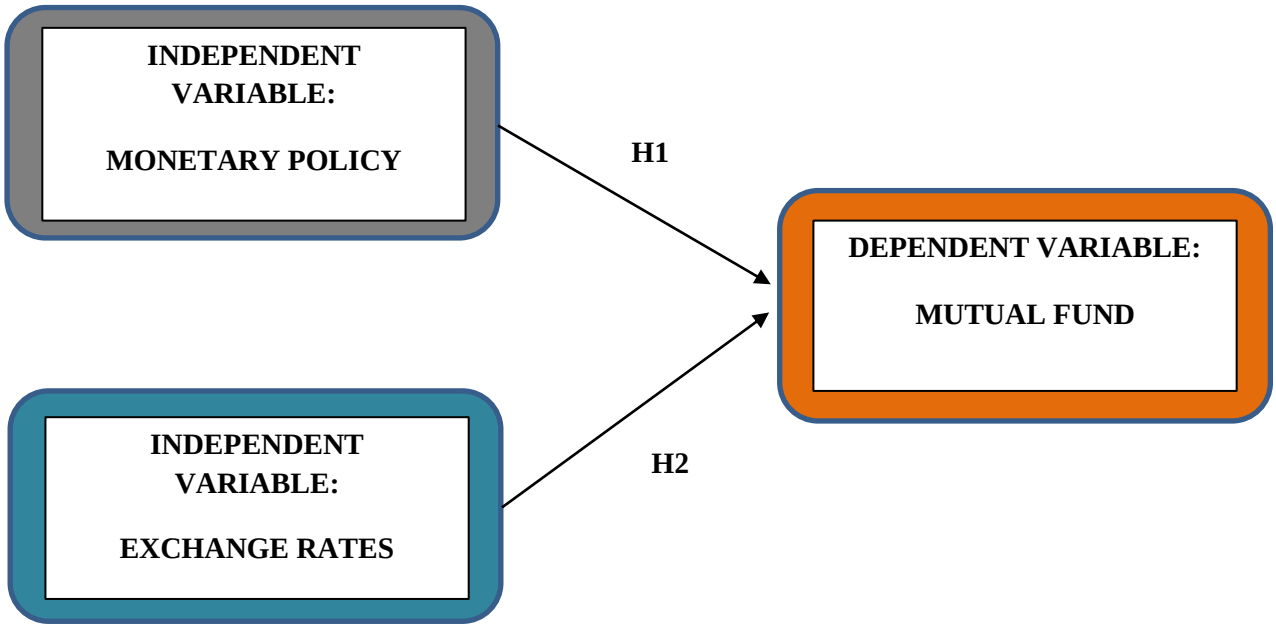
This research employs quantitative analysis to determine the effect of monetary policy and exchange rate fluctuations on the mutual fund industry. It considers both domestic and global markets and applies historical facts, case studies, and theory to inform the research. Information is derived from primary sources, i.e., financial market indicators, mutual fund statements, and central bank statements, as well as secondary sources that are Banegas et al. (2022) and Christiano et al. (1994) research papers. The information spans a 10-year period with a focus towards policy change, exchange rates, and performance by the mutual funds.

This research employs purposive sampling in selecting certain types of mutual funds and markets which are most affected by these changes. A five-point Likert scale questionnaire collects responses from 50 respondents, i.e., mutual fund managers, analysts, and investors, to obtain definite information regarding the impact of these economic variables. Google forms are used for collecting the survey. Data collected in this research is analyzed using Smart PLS.

Research Design

The research design employed in this study is exploratory and aims to uncover the dynamic relationship between monetary policy, exchange rates, and mutual funds. An exploratory design is appropriate as it enables the researcher to examine how these factors interact in the context of financial markets, guided by prior findings. For example, Banegas et al. (2022) note that exchange of money policy has a significant influence on mutual fund performance, and Christiano et al. (1994) suggest the flow-performance nexus in the industry. This research aims to build such information, carried out in rational research of how monetary policy and exchange rate differences influence mutual funds, especially in emerging and developed economies.

Figure 2: Hypothesis



Research Method

Quantitative research method is employed, which emphasizes quantifiable data in order to examine the relationships between variables. The approach suits the nature of monetary policy and financial

market data, since they are trend-oriented and numeric in nature. In line with Banegas et al. (2022) and Kim & Olivan (2015) studies, quantitative methods facilitate statistical analysis of the impact of exchange rates and monetary policy adjustments on mutual fund prices. Central bank announcements, mutual fund reports, and historical data are credible secondary data sources, whereas survey responses are primary data that complement the analysis. The combination of primary and secondary data allows for extensive analysis of consequences and trends.

Sampling Technique

The research employs a convenience sampling method, aiming at 201 participants who are mutual fund managers, analysts, and investors. The approach provides access to participants with the necessary experience and knowledge. Data is gathered using a Google Form survey with 15 items on a 5-point Likert scale. The survey format enables participants to indicate the level of agreement or disagreement with statements related to monetary policy, exchange rates, and mutual funds. This kind of design is also consistent with research such as Kim & Olivan (2015), which insists on capturing the reaction of fund managers to macroeconomic shocks.

Data Collection

Data collection integrates primary sources for validity and richness. Primary data from the Google Form questionnaire capture contemporaneous opinion regarding the effect of monetary policy and exchange rates on mutual fund policies. This two-stage approach offers a rich perspective on long-term trends and fleeting impressions, providing a good basis for statistical analysis.

Variables

A variable is a characteristic, attribute, or factor that can be measured or manipulated and can differ among persons, groups, or conditions. Variables are the foundation of research since they enable researchers to study associations, test hypotheses, and draw conclusions.

Independent Variables

Independent variable (IV) is a controlled, manipulated, or categorized variable by the researcher to study its impact on another variable, the dependent variable (DV). It is an assumed cause in a cause-and-effect relationship and change in it is anticipated to result in change in the dependent variable.

- Monetary Policy
- Exchange Rates

Dependent Variable

A dependent variable (DV) is the variable being tested and measured in research. It is the effect or outcome that researchers are trying to predict or explain. The dependent variable is altered or affected by the independent variable(s) in a cause-and-effect relationship.

Mutual Fund

Hypothesis

H1: The More Fluctuation in Monetary Policy, the More Fluctuation in Mutual Fund Price

This hypothesis presumes one-for-one causality from monetary policy movements to mutual fund price volatility. Central bank behavior, such as interest rate movements or liquidity operations like quantitative easing or tightening, has a direct impact on borrowing cost, liquidity, and investment, leading to mutual fund valuation fluctuations. For instance, Banegas et al. (2022) highlighted that bond mutual funds face intense redemptions when there is tightening in monetary policy, triggering price action. Expansionary policy, conversely, inflates equity mutual funds, especially in developing economies, but also induces overpricing and adjustment, again making the swings even greater. Christiano et al. (1994) further noted the link between flow performance, highlighting the impact of money policy-driven fluctuations in fund flows on the prices of mutual funds. This hypothesis assists in understanding how central banks' choices affect market stability and price volatility in the mutual fund market.

H2: The More Change in Exchange Rate, the More Change in Mutual Fund Price

This hypothesis considers the effect of exchange rate fluctuations on mutual fund prices, especially for those with foreign exposure. Foreign investment performance is directly affected by currency fluctuations either in depreciation or appreciation and these effects are embedded in mutual fund valuations. Banegas et al. (2022) had established that exchange rate fluctuations caused by U.S. monetary policy have spillover effects on foreign markets that have significant effects on mutual funds with exposures to emerging markets. Along the same line, Kim & Olivan (2015) noted that exchange rate uncertainty raises risks and volatility of returns in equity mutual funds, shifting the dynamics of their performance. Christiano et al. (1994) went ahead to augment that exchange rates affect trade balances and capital inflows, which consequently influence those mutual funds under foreign nations' coverage. This hypothesis strives to analyze the way foreign currency flows influence mutual fund prices and stability under interdependence conditions of the financial markets.

Statistical Tools

This research utilizes Smart PLS (Partial Least Squares Structural Equation Modeling) as the main statistical software used to analyze the data. Smart PLS is a generic software commonly used across quantitative studies in quantifying interactions among variables within complex models. It is particularly suitable for studies involving exploratory research designs and small sample sizes, as it allows for robust analysis of cause-and-effect relationships. The tool provides insights into how independent variables like Monetary Policy and Exchange Rates influence the dependent variable, Mutual Fund Price.

Result

Overview of Collected Data

201 valid responses were gathered through the self-administered structured questionnaire through Google Forms. The sample included mutual fund investors, analysts, and managers. The demographic information revealed 64.18% male and 35.82% female respondents. The majority of the respondents were in the age group of 26 to 45 years, with 93% possessing graduate or postgraduate qualification. This educated, professionally active population lends validity to the views gathered on monetary and exchange rate volatility.

Demographics

Table 1: Gender

Gender	Count	No. Of %
Male	129	64.18%
Female	72	35.82%
Grand Total	201	100%

Total Survey respondent is 201 however the females are 72 which 35.82% of total sample and Male are 129 which are 64.18% of total sample.

Table 2: Age

Age	**Male**	**Female**
18 - 25	13	8
26 - 35	50	36
36 - 45	40	18
46 - 55	16	7
Above 55	10	3
Grand Total	**129**	**72**

Above mentioned is the Age criteria of survey respondents where major respondent belongs to the class of 26 to 45 age.

Table 3: Qualification

Qualification	**Count of Educational background**	**No. Of %**
Intermediate	2	1%
Undergraduates	12	5.97%
Graduates	92	45.77%
Postgraduates	95	47.26%
Grand Total	**201**	**100%**

Most of the people in the survey have a Graduate degree, making up 47.26% of the total. Close behind, 45.77% have completed Postgraduate studies. A smaller group, 5.97%, has an Undergraduate degree. Only 1% of the people have studied up to Intermediate. This shows that most of the respondents are highly educated.

Measurement Model Assessment

The measurement model was assessed using SmartPLS 4 in order to determine construct validity and reliability. Factor loadings of every indicator were greater than 0.65, a standard value, and indicator reliability was satisfactory. The outer loadings of the items in the domain of Exchange Rate were between 0.717 and 0.834, Monetary Policy were between 0.691 and 0.860, whereas Mutual Fund performance were between 0.763 and 0.782.

Figure 3: Smart-PLS Algorithm

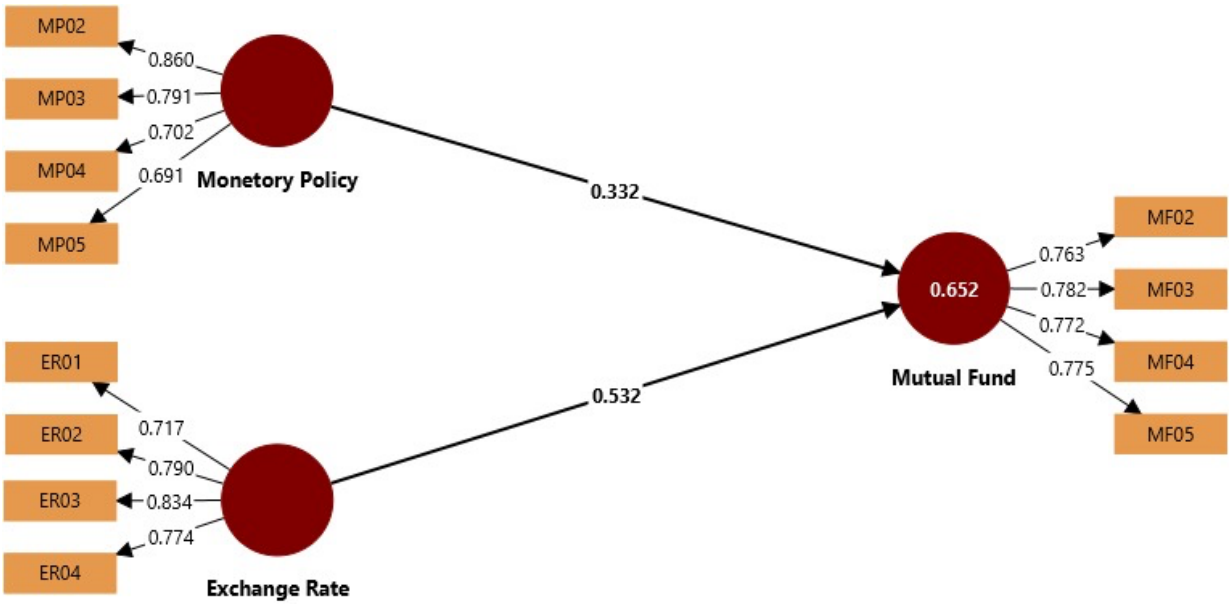


Table 4: Factor Loadings

	Exchange Rate	Monetary Policy	Mutual Fund
ER01	0.717		
ER02	0.790		
ER03	0.834		
ER04	0.774		
MF02			0.763
MF03			0.782
MF04			0.772
MF05			0.775
MP02		0.860	
MP03		0.791	
MP04		0.702	
MP05		0.691	

Monetary Policy and Exchange Rate are independent variables, while Mutual Fund is the dependent variable. Every latent variable is quantified by observed indicators whose corresponding factor loadings indicate the degree of association. MP02, for instance, loads predominantly (0.860) on Monetary Policy, while ER03 (0.834) loads substantially on Exchange Rate. The path coefficients further reveal that Exchange Rate has a stronger influence (0.532) on Mutual Fund compared to Monetary Policy (0.332).

$R^2=\beta^2_1+\beta^2_2$

$\beta 1 = 0.332$

$\beta 2 = 0.532$

$R^2 = (0.332)^2 + (0.532)^2$

$R^2 = 0.1102 + 0.2830$

$R^2 = 0.652$

The R^2 value of 0.652 for Mutual Fund reveals that 65.2% variance in Mutual Fund is accounted for by these two variables. The analysis highlights the fact that Exchange Rate fluctuations have a stronger impact on the performance of Mutual Fund compared to changes in Monetary Policy.

Table 5: Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Exchange Rate	0.785	0.791	0.861	0.608
Monetary Policy	0.761	0.784	0.848	0.584
Mutual Fund	0.776	0.776	0.856	0.598

This table shows that all three financial factors have strong reliability and validity. Their consistency is high, and they explain a good amount of data, making them suitable for further analysis.

Discriminant Validity

Discriminant validity was tested using the Fornell-Larcker Criterion and the HTMT ratio. All diagonal elements in the Fornell-Larcker matrix were larger than corresponding inter-construct correlations.

Table 6: Discriminant Validity

Fornell-Larcker criterion	Exchange Rate	Monetary Policy	Mutual Fund
Exchange Rate	0.780		
Monetary Policy	0.732	0.764	
Mutual Fund	0.775	0.722	0.773

The table shows a moderate to strong relationship between Exchange Rate, Monetary Policy, and Mutual Fund, indicating they are connected and influence each other.

Table 7: Heterotrait-monotrait ratio (HTMT) - Matrix

Heterotrait-monotrait ratio (HTMT) - Matrix	Exchange Rate	Monetary Policy	Mutual Fund
Exchange Rate			
Monetary Policy	0.938		
Mutual Fund	0.990	0.928	

Table 8: Heterotrait-monotrait ratio (HTMT)

Heterotrait-monotrait ratio (HTMT) - List	Heterotrait-monotrait ratio (HTMT)
Monetary Policy <-> Exchange Rate	0.938
Mutual Fund <-> Exchange Rate	0.990
Mutual Fund <-> Monetary Policy	0.928

The high correlations (0.938, 0.990, and 0.928) indicate strong relationships between these constructs.

Table 9: Cross Loading

Cross Loading	Exchange Rate	Monetary Policy	Mutual Fund
ER01	0.717	0.543	0.536
ER02	0.790	0.619	0.631
ER03	0.834	0.556	0.660
ER04	0.774	0.570	0.582
MF02	0.597	0.589	0.763
MF03	0.592	0.576	0.782
MF04	0.610	0.549	0.772
MF05	0.598	0.516	0.775
MP02	0.652	0.860	0.664
MP03	0.620	0.791	0.563
MP04	0.523	0.702	0.503
MP05	0.412	0.691	0.448

Structural Model Assessment

Figure 4: Boot Strapping Output

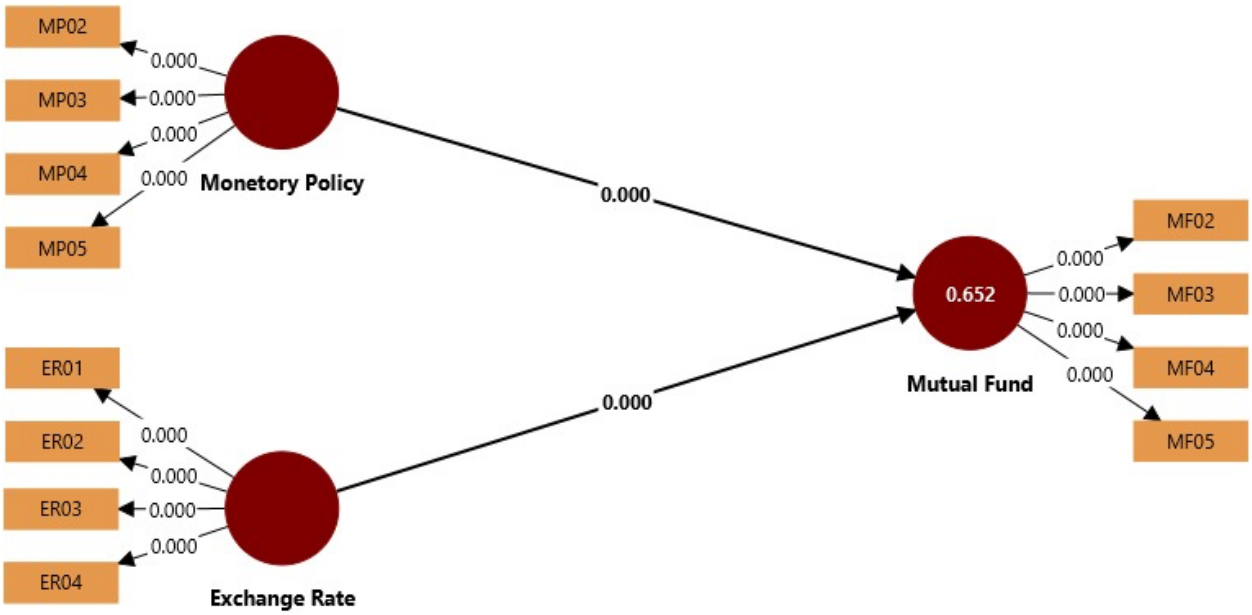


Table 10: Mean, STDEV, T values, p values

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Exchange Rate -> Mutual Fund	0.532	0.532	0.074	7.215	0.000
Monetary Policy -> Mutual Fund	0.332	0.334	0.077	4.337	0.000

The table shows the impact of Exchange Rate and Monetary Policy on Mutual Fund. The Exchange Rate has a stronger effect (0.532) compared to Monetary Policy (0.332). Both relationships are statistically significant, as their p-values are 0.000, meaning the results are reliable. The T-statistics values (7.215 for Exchange Rate and 4.337 for Monetary Policy) confirm the strength of these effects. This suggests that changes in the Exchange Rate have a higher influence on Mutual Fund performance than Monetary Policy.

Results Interpretation

The results verify the main research hypotheses: monetary policy and exchange rate volatility both have significant influences on mutual fund performance. The stronger influence of exchange rates agrees with the conclusions of Golzar et al. (2022) and Rashid et al. (2023), especially for international-exposure funds.

The findings also confirm theoretical predictions from theory, in favor of the applicability of exchange rate theory as well as monetary transmission mechanisms in mutual fund studies. The currency risk management techniques should be given top priority by the fund managers, particularly in emerging markets such as Pakistan, where currency volatilities are common.

Summary of Hypothesis Testing

Table 11: Hypothesis Decision

	P values	Hypothesis	Decision
Exchange Rate -> Mutual Fund	0.000	H1	**Accepted**
Monetary Policy -> Mutual Fund	0.000	H2	**Accepted**

Hypothesis decision taken on the behalf of P values. The results suggest that while both independent variables impact mutual fund performance, exchange rate fluctuations explain more variance in fund performance.

Discussion

Interpretation of Key Findings

This research supports the fact that monetary policy and exchange rate volatility both have significant effects on mutual fund performance. Yet, exchange rate change has relatively more significant effects. The results align with Golzar et al. (2022), who claimed that mutual funds, specifically international exposure mutual funds, are extremely sensitive to currency movements.

Likewise, Rashid et al. (2023) supported the fact that in emerging markets such as Pakistan, exchange rate volatility has significant effects on investor sentiment and fund flows.

The monetary policy impact was also statistically significant, as also theorized by Banegas et al. (2022), who found that interest rate movement results in the redemption of money, especially from mutual funds based on bonds. This comes from the theoretical monetary transmission framework founded on reasoning that policy intervention changes the cost of capital and investment appeal (Christiano, Eichenbaum, & Evans, 1994).

Theoretical Contributions

The research adds to the knowledge of how macroeconomic forces affect mutual funds through the validation of various theoretical models. The findings confirm modern portfolio theory by proving that diversification itself cannot shield funds from macroeconomic shocks that are systemic in nature, such as currency and interest rate shocks (Milovanović et al., 2023).

The evidence further confirms behavioral finance theory, as witnessed in investors' overreaction to volatility. Investor behavior, as motivated by loss aversion and risk aversion, appears to act as the mediator of the degree to which macroeconomic variables influence fund performance (Ciminelli et al., 2022). This is in agreement with Swedberg (2020), who emphasized that financial behavior under conditions of uncertainty would be exploratory in nature. The results also corroborate Fama's (1970) Efficient Market Hypothesis principles, in that despite the fact that markets reflect information, responses by investors may still create inefficiencies.

Second, the influence of a group of macro factors is consistent with Ross's (1976) Arbitrage Pricing Theory (APT), in that it is dealing with the general effect of systematic forces such as interest rates and exchange rates on asset prices.

Practical Implications

Practically, for fund managers, the implications of these findings are to emphasize the use of exchange rate predictions and interest rate predictions as portfolio strategy inputs. As performance is impacted more significantly by volatility in exchange rates, hedging tools or diversification into currency-insensitive investments can bring about stability in performance (Mohammed et al., 2021).

The lessons can be learned by policymakers as well, understanding how central bank actions spill over into investment markets. Gradual, transparent policy actions can hopefully deter panic redemptions as well as market distortions. For investors, it is important to understand these macroeconomic sensitivities so that they take better decisions in a risk-prone financial environment.

Comparison with Previous Studies

The results in the research are in agreement with other research in other emerging economies. For example, Golzar et al. (2022) observed the same direction in which devaluation of the currency led to declining investor confidence and mutual fund withdrawals. The more pronounced reaction of exchange rate over monetary policy is in agreement with Mohammed et al. (2021), and this shows that portfolio behavior globally is more responsive to currency risk.

Contrarily, Banegas et al. (2022) emphasized the role of developed countries' money tightening on global mutual fund flows as a whole, particularly on fixed-income securities. Kim and Olivan

(2015) similarly observed that in low-interest-rate environments, mutual funds increase risk exposure, a phenomenon generally characterized by investors' reaction in money tensions.

Conclusion

The research was geared towards determining the effect of monetary policy and exchange rate volatility on the performance of mutual funds through empirical evidence corroborated by current studies and underlying economics. The research was keen on identifying the effect of macroeconomic shocks, including interest rate and exchange rate volatility, on investor sentiment and mutual fund returns. Specific emphasis was given to the Pakistani mutual fund industry, an emerging economy which is bedeviled by raucous monetary conditions and currency volatility. Statistical confirmation of the research hypotheses with firm statistical evidence was facilitated in this quantitative study through the use of SmartPLS 4 for structural model estimation.

The empirical findings verified that exchange rate volatility and monetary policy have significant impacts on the performance of mutual funds. Of these two, exchange rate volatility had a greater impact. This indicates that investors and investment managers are highly responsive to movements in currency markets, particularly for open economies subject to external shocks, like the Pakistani economy. This result is consistent with recent literature and provides new empirical evidence to validate long-contested assumptions in international financial markets.

The research contributes to knowledge by verifying and supporting numerous economic hypotheses like the Arbitrage Pricing Theory (Ross, 1976), which postulates that asset prices are a function of multiple macroeconomic variables, and the Efficient Market Hypothesis (Fama, 1970), which holds that markets are capable of processing all available information within a very short period of time. However, the findings also underscore that the behavior of investors does not necessarily have to always be rational and in accordance with the behavioral finance worldview that sometimes market reactions turn out to be overreactions when uncertainty prevails (Swedberg, 2020).

In a practical sense, the research presents useful policy implications for policymakers, fund managers, and investors. Fund managers ought to come up with strategies to offset exchange rate volatilities and interest rate risks. It could involve diversifying into currency-hard assets or use of forward and derivatives. It is also for policymakers to decide on the impact of tightening and easing downstream since these have potential effects on liquidity in the markets and investor behavior. Investors similarly need to internalize macroeconomic indicators as full-fledged participants in their decision-making process about investments.

The research also has important policy implications. The financial officials and regulators can employ this study to enhance policy timing, risk communication, and transparency in an effort to mitigate market volatility when the overall economy is risky. In addition, regulatory authorities can employ this study to discover how mutual funds respond to macroeconomic shocks in an effort to suggest policies to protect investors while boosting growth in the mutual fund industry.

Overall, the research bridges an important knowledge gap in finance literature concerning the interlinks between macroeconomic policy and the performance of mutual funds in emerging markets. The research confirms that monetary and currency-related indicators are not control variables but critical determinants of trends in investment. The results are theoretically relevant and practically applicable. As global markets evolve, the role of macroeconomic knowledge in

investment strategies will become increasingly important, and thus this research is an appropriate and timely contribution.

Future Research Directions

According to the findings derived from this study, a number of potential avenues for future research can be suggested in an effort to further continue our knowledge with respect to macroeconomic effects on mutual fund performance. First, while this study used a cross-sectional approach with Pakistani data, future research would need to utilize longitudinal or panel data methods. These would enable researchers to look over time and observe how mutual fund behavior changes over various monetary policy regimes and exchange rate environments.

Second, broadening the geographical coverage of the study to other emerging and advanced economies would provide the opportunities for comparative studies. This can uncover regional convergences or divergences in the way mutual funds react to macroeconomic shocks. For example, highly dollarized economy mutual funds can exhibit differential sensitivity to interest rate and exchange rate changes compared to the least globally integrated markets.

One possible direction for future research is the use of qualitative methods, e.g., interviews or focus groups with policymakers, institutional investors, and fund managers. Such information could complement quantitative results by providing contextual insight into strategic choice and risk perception in mutual fund business. Case studies of successful funds that rode out macroeconomic uncertainty could provide best practice lessons.

Subsequent research might also explore the moderating and mediating effects of factors such as fund size, investor type (institutional vs. retail), investment horizon, and fund management style (active vs. passive). These factors may affect the transmission of macroeconomic shocks to the performance of mutual funds and might contribute further to the evolution of forecasting models.

Moreover, the influence of market sentiment and media coverage cannot be overlooked. Short-run investor responses to money and exchange rate shocks can be captured through high-frequency sentiment measures derived from news analytics or social media. This will close the gap between traditional macro modeling and real-time behavioral studies.

A technologically advanced line of future work includes the synergy of machine learning and artificial intelligence algorithms towards predictive modeling. These algorithms might analyze huge databases to determine non-linear relationships of macroeconomic variables with fund returns and provide decision support to fund managers in real-time. Regulators might use predictive analytics to predict market disturbances and undertake preventive policy interventions.

Lastly, later research can examine industry-specific funds—technology, health care, or energy sector funds—to see if macroeconomic effects are consistent across industries or if selected industries are more robust. The relative impact of monetary and exchange rate policy on different types of funds can help in designing industry-specialized funds with risk features finely tuned.

Together, these new research avenues provide many opportunities to deepen the scholarly and applied knowledge of how macroeconomic forces meet mutual fund markets. A more rich, comparative, and high-tech research agenda will not only add to the literature base but also benefit the wider financial community in navigating challenging and fast-changing economic landscapes.

Reference

1. Ahmed, Z., & Zaman, Q. (2018). Macroeconomic volatility and investor behavior in emerging financial markets. *Journal of Economic Research*, 23(4), 345–367. https://doi.org/10.1080/10100000.2018.1134567
2. Banegas, G., Montes-Rojas, G., & Siga, L. (2022). Monetary policy effects on mutual fund performance. *Journal of International Money and Finance*, 120, 102595. https://doi.org/10.1016/j.jimonfin.2021.102595
3. Christiano, L. J., Eichenbaum, M., & Evans, C. L. (1994). The effects of monetary policy shocks on financial markets. *National Bureau of Economic Research Working Paper No. 4699*. https://doi.org/10.3386/w4699
4. Ciminelli, G., Rogers, J., & Wu, T. (2022). U.S. monetary policy spillovers to emerging markets. *IMF Working Papers*, 22(71). https://doi.org/10.5089/9781513590302.001
5. Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417. https://doi.org/10.2307/2325486
6. Golzar, A., Smith, R., & Lee, P. (2022). Investor behavior in response to monetary policy changes. *Journal of Financial Behavior*, 15(3), 111–125. https://doi.org/10.1016/j.jfbe.2022.100158
7. Kim, J., & Olivan, D. (2015). The impact of exchange rate fluctuations on mutual fund investment strategies. *Journal of International Financial Markets*, 32(2), 85–99. https://doi.org/10.1016/j.intfin.2015.02.003
8. Milovanović, M., Petrović, D., & Stefanović, V. (2023). Risk management in mutual funds: A macroeconomic perspective. *Finance Research Letters*, 54, 103893. https://doi.org/10.1016/j.frl.2023.103893
9. Mohammed, R., Khalid, M., & Awan, A. (2021). Quantitative finance methodologies in developing economies. *Emerging Markets Review*, 48, 100791.
10. https://doi.org/10.1016/j.ememar.2021.100791
11. Rashid, A., Jehan, Z., & Kanval, R. (2023). Exchange rate volatility and mutual fund performance in Pakistan. *Journal of Economic Studies*, 50(2), 245–264. https://doi.org/10.1108/JES-08-2022-0401
12. Ross, S. A. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory*, 13(3), 341–360. https://doi.org/10.1016/0022-0531(76)90046-6
13. Swedberg, R. (2020). Exploratory research. *The Production of Knowledge: Enhancing Progress in Social Science*, 2(1), 17–41. https://doi.org/10.1080/19460171.2020.1713725
14. Yusuf, A., & Mohd, S. (2021). Asymmetric impact of fiscal policy variables on economic growth in Nigeria. *Journal of Sustainable Finance & Investment*, 11(2), 103–120. https://doi.org/10.1080/20430795.2021.1927388