KASBIT BUSINESS JOURNAL

Journal homepage: www.kbj.kasbit.edu.pk

Impact of Foreign Debt and Foreign Exchange Reserves on the Monetary Rate in Pakistan

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ARTICLE INFO

ABSTRACT

Since the beginning of the 1990s, Pakistan's foreign reserves have increased extremely quickly. The impact of Pakistan's foreign indebtedness on currency rates has yet to get much focus in the scientific literature despite the media spotlight accompanying those obligations. This research examines the impact and relation of foreign debt and foreign exchange reserves on the monetary rate in Pakistan. The data in this research is taken for 14 years (2008-2022). Ordinary Least Square (OLS) indicates that foreign debt has a negative significant impact on the monetary rate in Pakistan ($p<0.05$). At the same time, foreign exchange reserves have a positive significant impact on the monetary rate in Pakistan ($p<0.05$). In the future, the government should not rely on debt more and more as it affects the economy negatively because of the monetary rate increase. Apart from that, the State Bank of Pakistan should also focus on fewer reserves because it reduces the interest rate, which can cause more inflation in the economy of Pakistan.

1. **Introduction**

Foreign debt and external aid are major sources of revenue for developing countries to stabilize the country's economy (Didia & Ayokunle, 2020). Foreign debt is debt international organizations lend to countries to manage their economy; in 2007, Pakistan's debt was $37.36 billion, and currently, the external debt of Pakistan is $91.8 billion. It is authorized by the International Monetary Fund's organization to lend to countries and charge certain interest. There are many factors which are responsible for the growth of a particular region, but external debt is both positive and negative. The positive side is that foreign debt helps developing countries because the money lent to them can be utilized for different projects like infrastructure projects, projects related to power points or the agriculture industry (Annisa & Taher, 2022). Apart from that, it depends on the usage of debt. If it is used on a higher margin, it has positive socio-economic effects, but if the debt is used on a higher margin, then economic growth can turn negative (Reboul et al., 2021). Pakistan is one of the Highly Indebted Countries (HICs), and the reason behind this is that Pakistan's current and future debt situation is very severe. It always remains questionable for policymakers to analyze the effects of foreign debt because there is no particular consensus on the impact of external debt on growth (Awan & Qasim, 2020).

Considering Pakistan there have been many political and economic issues and fluctuations in the economy up and down since 1970 in Pakistan. Economic conditions affect the growth of the economy. The government's income is less than its total expenses because of fiscal insufficiency (Song & Zhou, 2020). In Pakistan, foreign debt plays a negative role because of other economic issues. Pakistan is one of the rising countries, and it is facing many issues. When the condition of the country becomes worse, the country is unable to reimburse debt (Ud-Din et al., 2020). Pakistan's majority income is paid for debt, which is approximately 65%, whereas the remaining 35% is used for development, defence and other features like education (Awan & Waqas, 2022). During the previous fifty years, the foreign debt issue has been one of the main challenges handled by developing countries such as Pakistan. Foreign debt and its refunds act as a difficulty to the economic growth of developing countries (Mohsin et al., 2021). For many years, considering the economy of Pakistan, the economic situation in the country has gotten worse. Many problems like partition and financial fluctuation up and down in the economy since the 1970s, Pakistan's foreign debt plays a positive role because it is increasing every year, so Pakistan is paying more to foreigners for the money borrowed (Awan & Waqas, 2022).

Foreign exchange reserves are comprised mainly of national banks' deposits with foreign banks and national banks' assets of foreign bonds (Ponomarenko, 2019). Additionally, it contains national banks' gold stock and different drawing rights and reserve positions with the International Monetary Fund (IMF). The national banks' future buying or selling, for example, future delivery, is not part of the reserve. There is higher liquidity and higher credit quality of counterparties (Broby, 2021). Reserves are the major pillar of macro-economic tools. Countries which use partially fixed or fixed foreign exchange rate systems need to keep close to the authorized target or equality level (Ilzetzki et al., 2022). In this concern, the highest stock of external reserves is important to reduce sovereign risk and get good credit ratings for internal and external liabilities. In return, these states acquire a lower borrowing rate. External reserves are considered the main pillar for the power of an economy, mainly for its import-export industries. Considering international trade, external reserves are an important obligation to finance the import of goods and services, enable international transactions, and boost the speed at which trading deals are finalized (Ly, 2020).

Furthermore, these reserves will contribute to the effectiveness of global supply chains. IMF explains that external reserves are a foreign stock of assets that one's country's monetary authorities can hold. They comprise external bank notes, deposits in external currencies in treasury bills, foreign bonds and many other government securities (Shaibu &Izedonmi., 2020). Nonetheless, the size of its economy. Saudi Arabia holds the largest external reserves in terms of increasing the external reserves (Razek & McQuinn, 2021). Also, being a major financial indicator of the solvability and strength of the economy, countries which implement a fixed exchange rate system decide to gather more external reserves. So, if the US dollar rises, then automatically, the currency of other countries rises too and vice versa (Mason, 2021).

The addition of foreign exchange reserves has been recognized for its huge importance to an economy. Foreign exchange reserves donate to the GDP of a nation, thus generating jobs and enhancing the contentment of its citizens. State Bank of Pakistan manages its monetary policy by adjusting the policy rate, which is the target Rate for the overnight money market repo rate; changing this policy rate affects the demand in the economy through several channels(Prakash et al., 2020). Initially, changes in the policy rate affect the interest rate of the interbank market on which different financial institutions borrow or lend from each other. This change in the market interest rate affects the cost of borrowing for businesses and consumers and the return on deposits for savers. Due to lower interest rates, people

invest/consume more and save less, and by increasing interest rates, they prefer to save rather than invest or consume it (Sekścińska et al., 2021; Minesso et al., 2022).

1.1.   Problem Statement:

The stability of a nation's monetary rates and general economic health are greatly influenced by managing its foreign debt and foreign exchange reserves. It is imperative to look into how Pakistan's foreign debt and foreign exchange reserves affect its monetary rates because the nation faces particular economic difficulties. The challenge is comprehending the complex interactions between these elements and how nationwide interest rates and monetary policies are impacted by them. There is an imperative for a thorough analysis to determine if Pakistan's budgetary shortfalls, borrowing from abroad, and shifting foreign exchange reserves have a beneficial or detrimental impact on the monetary rate and how they impact the nation's capacity to handle its economic obstacles successfully. The study that has been done on the precise effects of foreign debt and foreign exchange reserves on Pakistan's monetary rates needs to be revised despite the issue's importance. There needs to be more study that examines Pakistan's particular economic circumstances, even though there are studies that address the larger implications of these elements in the context of rising economies. The complex dynamics at work, such as the rate and amount of debt buildup, the role foreign exchange reserves play in preserving exchange rate stability, and the implications for monetary policy decisions, need to be thoroughly examined in the literature currently in publication (Akinci & Queralto, 2024).

Research Gap:

The dynamic nature of the global economy and Pakistan's shifting economic circumstances highlight the necessity for current, situation-specific research incorporating the most recent advancements in this field. This research gap highlights how crucial it is to carry out an extensive investigation to improve policy decisions in Pakistan and to obtain a deeper understanding of the influence of foreign debt and foreign exchange reserves on monetary rates (Akinci & Queralto, 2024).

Research Objectives:

This research study aims to focus on these two objectives:
- To examine the impact of foreign debt on the monetary rate in Pakistan.
- To examine the impact of foreign exchange reserves on the monetary rate in Pakistan.

This research would help us academically, and the result of this study can be useful for the researchers of the future, government, policymakers and other financial institutions to make effective decisions by understanding the impact of foreign debt and foreign exchange reserves on the monetary rate.

2. Literature Review

2.1. Theoretical links

Numerous economic frameworks and models can be used to analyse the connection between foreign debt, foreign exchange reserves, and monetary rates. The Mundell-Fleming model, which incorporates elements of both the IS-LM and Mundell-Fleming models, is one of the basic concepts that aid in understanding this connection (Azar et al., 2020). The Mundell-Fleming model, sometimes referred to as the IS-LM-BP model, is an open-economy econometric model with an emphasis on how a country's production (income) interacts with its rate of interest and foreign exchange rates. It can be used to examine how a nation's monetary rates are affected by external variables such as foreign debt and foreign exchange reserves, as well as by fiscal and monetary policy (Devi & Sarma, 2023). One could view a large amount of foreign debt as an instrument for fiscal policy. A nation's aggregate demand may rise due to accruing foreign debt to cover its budgetary shortfalls (shift in the IS curve). This may then impact exchange rates and interest rates. In order to attract foreign capital, a high amount of foreign debt may necessitate higher interest rates, which could impact the monetary rate (Yusu & Mohd, 2023; Yusuf & Mohd, 2023). The amount of foreign exchange reserves influences the central bank's capacity to intervene in the foreign exchange market. Exchange rates can be stabilized (BP curve shift) by using reserves. The central bank can stop excessive exchange rate movements with adequate reserves, which could affect the monetary rate (Dedola et al., 2021). The Mundell-Fleming model facilitates comprehension of how monetary and fiscal policy changes, in addition to external factors such as foreign debt and foreign exchange reserves, can impact the monetary rate of a country's economy (Okotori & Ayunku, 2020).

2.2. Impact of Foreign Debt on Monetary Rate

The objective of this study is to research the relations among the two variables, foreign debt and export performance; the data used in this study selected annual time series from 1972 to 20. According to the cointegration survey, there was an important negative relationship between exports and foreign debt in Pakistan (Azar et al., 2020). It is also recommended that the government should manage mechanisms to control supply and trade. Budgets must be particular to the trade handling regions;

these are the initial amounts that must be reserved to reduce the negative impact of foreign debt on export performance in the country. The next test of consistency of analysis checks that the lengthy model is stable; however, the causality test claims a unidirectional one-sided relationship between foreign debt and the export performance of the economy. The finding of this study is that the impulse response of the result confirmed a negative relationship between foreign debt and export performance (Shamim et al., 2017; Devi & Sarma, 2023).

Many researchers studied foreign debt, and this study examined the impact of short-run and long-run foreign debt on economic growth. The author used data from 40 years, starting from 1970 to 2010; for the short run, the author used the Vector Error Correction Model, and for the long run, the Johansen cointegration test was used. Empirical results suggest that foreign debt plays a negative role in economic growth. It is mentioned in the study that higher foreign debt reduces economic growth. From the policy point of view, increased revenue from exports and domestic savings can increase the expected growth of the country, and the country does not rely on foreign debt. The main issue in the country is when it has to refund these in future along with certain charges. Because these funds' debts are denominated in solid currencies, mostly in US dollars, arranging and managing these dollars create issues for countries (Dritsaki, 2013; Ali et al., 2020; Ahmed et al., 2024).

In this study, the author found that foreign debt plays a main role in the country in determining economic activity. The objective of this research is to define the role of foreign debt in Pakistan's economic growth. Gross Domestic Products (GDP) were used to represent the economic growth and to represent external debt 3 variables were used: Gross Capital Formation (GCF), External Debt Stock (EDS) and Gross Domestic Savings (GDS). This research used time series data of 39 years (1972 to 2010); OLS regression and descriptive statistics were used to analyze the data. External debt stock and GCF have an important positive effect on Pakistan's GDP, whereas GDS does not have a major effect on the GDP of Pakistan (Awan & Qasim, 2020).

This study was conducted to analyze the impact of external and domestic debt on the economic growth of Pakistan by using data dating from 1980 to 2010.To analyze the data, the ordinary least square method, unit root testing, and serial correlation testing were used. The finding shows that both variables, external debt and domestic debt, had a negative relation to economic growth; both of the

relations were found to be significant as well. The result is that foreign debt slows growth compared to domestic debt (Zafar & Zafar, 2022; Ahmed et al., 2024).

H1: foreign debt has a negative significant impact on the monetary rate in Pakistan

2.3. Impact of foreign exchange reserves on monetary rate

In this study, the author researches the relationship and impact between foreign reserves, economic growth, public debt, money supply and imports from the Nigerian economy. In this research, the author used the Johansen Test, Vector Error Correction Model (VECM) and Granger causality by taking the annual data from 1980 to 20. The study's findings were that Economic Growth is improved by foreign reserves as well, and less import also increases the foreign reserves. Global transactions mostly depend on External reserves, which results in the function of Gross Domestic Production. These are the reserves which define a country's ability to import and also the power of money. There is a need for certain developments on external reserves and extension of Gross Domestic Production. Government should need to make some policies that can boost international investment. Governance costs should be less, and corporate authority practices should be greatly immersed (Ayinde et al., 2019).

In this research, the author has tried to analyze the relationship between financial depth, capital control and demand for foreign reserves from the Chinese economy by using the quarterly data from 1997 to 2013. Using the unit root and Johansen test to analyze the impact and relationship, the results were that demand for foreign reserves is decreased through a deeper financial system and strong capital control. Considering that the demand had previously surpassed the optimal amount or China needed a sufficient quantity of external reserves and other things by, different scholars. When there was the time of considerably hypothetical capital, famous for the name hot money, which was the reason for economic chaos (Das & Ordal, 2022; Olawale & Obinna, 2023), considering the outcome of hot money, it would also be reflected as a model of external reserves. There is stronger control of capital and a deeper monetary structure, which decreases the demand for foreign exchange reserves. The ratio of GDP is more noteworthy than the foreign direct investment as a substitution of external reserves to secure demand (Bianchi & Lorenzoni, 2022). There is a significant and positive relationship between the accumulation of foreign exchange reserves and GDP and oil prices. It also shows the insignificant and negative relation between foreign reserves on one side and debt to GDP, Real effective exchange rate on the other side, using the yearly data from (1996 to 2015). Accumulation of external reserves in

countries like Saudi Arabia, Oman, Qatar and UAE is not sensitive to insignificant real exchange rates, not to the proportion of imports to GDP and not the US dollar interest rates.

Additionally, there is a link between external reserves. Oil prices on the one side and economic growth on the other side. The higher the reserve, the higher the market stability, which results in an improvement in economic growth. One extra new point of opinion is an analysis of the effects of foreign debt on the level of external reserves, as government authority can be regulated to complete the budget limit (Gereziher & Nuru, 2021; Olawale & Obinna, 2023).

Jena & Sethi (2022) and Syukri (2020) analyzed that when external reserves rise, it results in a rise in GDP. If there is more accumulation of external reserves, then the exchange rate will depreciate. It is not due to inflation, but it is one period of non-determined shock contrasting the rapid devaluation of the exchange rate that happens as an outcome of sustaining an overestimated exchange rate in the long term and causes currency issues. For the analysis, data from 1993 to 2012 was collected for the variables GDP, share of investment on GDP, population and foreign exchange reserves; the data was collected for the countries Brazil, China and Russia. Collecting external reserves results in inflation if the rate of foreign reserves is, at most, the rate of economic growth. However, higher inflation is not destructive, especially for the rising economy. When you have resolute the financial variables such as credit and money supply, then the condition will be quite changed. The greater the stock of foreign exchange reserves to developing countries, the more trustworthiness the constancy of their locations abroad, falling the risk of hypothetical occurrences settlement of foreign debt and reducing financial cost. The collection of external reserves not only protected the ratio of investment or GDP but also the stocks of trade and exports in GDP. The ratio of trade or GDP has a positive relationship with the collection of external reserves and a negative relationship with the ratio of domestic and foreign prices.

Monamodi (2019) researched the relationship between inflation and the monetary policy interest rate of Swaziland by taking the quarterly data for the years (2010-20) so that proper monetary and fiscal policies should be implemented in order to run the economy efficiently, finding the research by using Descriptive approach on Microsoft excel were that inflation and interest rate have the positive relationship among them because when interest rate rises, it causes the decline in aggregate demand and controls the demand for money.

Awan et al. (2020) examined the relationship between multiple variables, which were inflation, fiscal debt, interest rate and the fiscal deficit of Pakistan. The researchers used the time series data, and the years taken were 1981-2011. Researchers used the cointegration approach to analyze the long-run relation between the variables. The findings of the research concluded that public debt, fiscal deficit and inflation have a positive impact on the interest rate changes in Pakistan, and it must be controlled so that the Interest rate and its fluctuations can be decreased.

Tuna & Almahadin (2021) examined the relationship between the interest rate and general profit rate of the commercial banks of China by choosing the years (1990-20). In this regard, the researcher used the Structural Vector autoregressive (SVAR) model. The research findings showed that any change in the lending rate has a direct and significant effect on the profitability of the commercial banks; the researcher recommended the adjustment of the interest rate policy so that general profit can increase, which will ultimately boost the economic growth of the country.

Sarwar et al. (2020) investigated how the stock market gets affected by the Monetary policy of the country by getting the data for the years 2004-20; the researcher used the random effect model along with the panel vector error correction model and found the stock return has the negative relation with the interest rate. It was also found that money supply and stock returns are directly related; these results can be useful for the short term as well as for the long term.

Şen et al. (2020) researched how the interest rate and inflation in the economy influence the exchange rates. The data for all these 3 variables was shown in percentage, and the years taken for the research purpose were 2007-2012. A multiple linear regression model was used to analyze the relationship among these variables, and the findings were that the exchange rate can be controlled with the increase/decrease in the interest rate as well, and inflation can be controlled.

H2: foreign exchange reserves have a positive significant impact on the monetary rate in Pakistan.

3. Research Methodology

This research is quantitative and causal. Historical data of selected variables is collected from the website (State Bank of Pakistan), and analysis has been done using the secondary data analysis technique ordinary least square technique. Other supportive literature is gathered from previous studies and meta-analyses by different authors. We have taken the time series data of years from (2008 to

2022) as it is available on the State Bank of Pakistan's website. For our study, we have two independent variables, foreign debt and foreign exchange reserves, and the dependent variable is the monetary rate. We measure the foreign debts by merging the percentage of external debt and government debt of the country. Foreign exchange reserves are measured by total reserves in percentage and monetary rate measured by interest rate presented in Table 1.

Table 1: Data Description

Variable	Abb.	Measurement Unit	Source
Foreign debt	FD	External debt and Government debt (%)	State Bank of Pakistan
Foreign exchange reserves	FER	Total reserves (%)	State Bank of Pakistan
Monetary rate	MR	Interest rate	State Bank of Pakistan

Source: Annual reports of State Bank of Pakistan. Data is retrieved from the State Bank of Pakistan https://www.sbp.org.pk/reports/annual/index.htm.

We have proposed the research model.

$$MR = \beta_0 + \beta_1 FD + \beta_2\ FER + e$$

MR is the Monetary rate, β_0 is intercepted, FD is foreign debt, β_1 is the slope of foreign debt, FER is foreign exchange reserves, β_2 is the slope of foreign exchange reserves, and e presents the error terms in the model.

3.1. Stationary test and Co integration test:

Time series analysis relies on unit root estimations to ascertain if a given variable is subject to a unit root process, which is a type of non-stationary stochastic process. A unit root in an autoregressive equation indicates that the corresponding variable has a root of 1 (a unit root). Non-stationary time series with a unit root sometimes exhibit undesired features, including false regression and fluctuating mean and variance. Numerous statistical tests can be performed to evaluate whether a unit root is present in a time series. The Dickey-Fuller test is widely used as a unit root test. The presence of a unit root in a time series can be determined using the Dickey-Fuller test or its modified form, the ADF test (Dickey & Fuller, 1979). Multiple time series variables can be tested for the presence and number of cointegrating relationships using the Johansen cointegration test. If two variables are cointegrated, they are in long-term equilibrium with one another and will continue to move together despite their independent short-term variations (Johansen, 1988). In econometrics and time series analysis, the Johansen cointegration test is frequently employed. Specifically, the Johansen cointegration test entails the following procedures and ideas:

The model incorporates all of the necessary time series variables. Specifically, Y_t is calculated as follows: _1 * Y_(t-1) + _2 * Y_(t-2), where Y_t is a vector of time series variables, _I (for i = 1 to p) are coefficient matrices, and _t is the error term at time t.

3.2.   Ordinary Least Square (OLS)

The Ordinary Least Squares (OLS) approach is used to estimate the parameters of a linear regression model in statistics and econometrics. It is a standard method for analyzing and modelling the connection between an outcome dependent variable and a set of predictions (or independent variables). The goal of ordinary least squares analysis is to determine which linear combination of independent and dependent variables provides the "best-fitting" explanation for the observed data (Ibrahim, 2021). When trying to grasp and quantify a connection between two or more variables, OLS is the method of choice. OLS could be used to examine the effects of varying advertising budgets on product sales, the effect of educational attainment on income, or the correlation between demographic variables like age and gender and health outcomes. Given that OLS is designed for linear regression, it presupposes a linear relationship between the variables. Finding the best straight line to suit the data is the goal (Lee et al., 2015). The objective of ordinary least squares (OLS) is to find the value of the dependent variable that minimizes the sum of the squared differences between the observed and predicted values of that variable. The OLS technique minimizes the sum of squares of these deviations, known as residuals. The "ordinary" in Ordinary Least Squares refers to the fact that it minimizes the sum of squares of the vertical distances between data points and the line (Farahani et al., 2010). OLS is an effective and popular method for analyzing data, predicting future outcomes, and generating meaningful conclusions. It is a staple of statistics and finds application across disciplines when trying to understand the interplay of variables (Dismuke & Lindrooth, 2006).

4. Data Analysis and Interpretation

The normality estimation of the model is presented in Figure 1. The graphic illustrates that the model adheres to established norms and conventions. The obtained p-value of 0.7 exceeds the predetermined significance level of 0.05, indicating that the model exhibits skewness and normality. The kurtosis value of 2.60 indicates that the distribution is platykurtic, exhibiting negative kurtosis, as it is lower than a normal distribution. The calculated skewness value of -0.11 indicates a leftward tail elongation, indicating a negative skewness. In addition, the model has exhibited dispersion with a standard deviation of 2.48.
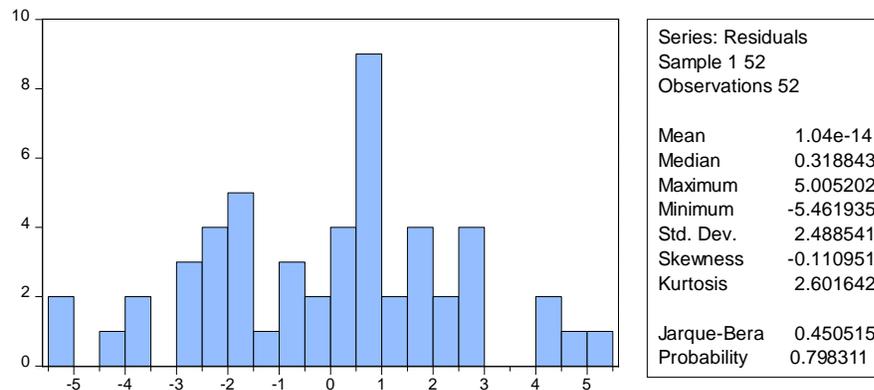
Series: Residuals	
Sample 1 52	
Observations 52	
Mean	1.04e-14
Median	0.318843
Maximum	5.005202
Minimum	-5.461935
Std. Dev.	2.488541
Skewness	-0.110951
Kurtosis	2.601642
Jarque-Bera	0.450515
Probability	0.798311

Figure 1 Normality estimations of foreign debt, foreign exchange reserves and monetary rate of Pakistan

Unit root test is used by conducting the Augmented-Dickey Fuller (ADF) to see the stationary in the data for all of the 3 variables. The unit root test of the foreign reserves is found to be 0.0151 at the first difference. The unit root test of the interest rate is 0.0369 at the first difference. The unit root test results for the foreign debt are 0.0816 at the second difference, and in this research, it is taken because there is no way to run the unit root on the [third] difference. It is the result which still shows that data has a trend. (See Table 2).

Table 3 provides the Johnson estimations outcomes. Based on the study framework, estimate is an analytical approach widely used to analyze the causal connection between factors. Given the lack of proof of a cointegration problem, the probability value 0.000 suggests a long-term relationship among the parameters.

Table 2: Unit root estimations of variables

Variables	T-Statistics	Level	1st Dif.	2nd Dif.		Unit root No unit root
Foreign Debt	-4.2224	0.2334	0.0369	-	I (1)	No Unit root
Foreign Exchange reserves	-2.2431	0.5092	0.0151	-	I (1)	No Unit root
Monetary rate	-0.3434	0.6454	0.3296	0.0423	I (2)	No Unit root

Table 3 Johnson estimations

Hypothesized No. of CE (s)	Eigen Value	Trace Statistics	0.05 Critical Value	Prob.**
None *	0.23408	43.4534	34.45463	0.0100
At most, 1*	0.34445	3.43435	39.45457	0.0003
At most, 3*	0.45345	1.34545	4.865456	0.0348

Table 4 presents the connections between the independent variables, namely foreign debt and foreign exchange reserves (liquid), and the dependent variable, the monetary rate. The foreign debt exhibits a moderate positive correlation of 52.1%, statistically insignificant at 8.3%. Conversely, the foreign exchange reserves (liquid) display a moderate negative correlation of -41%, which is also statistically insignificant at 18.6%. The determination of significance is based on a threshold of less than 5%. There exists a weak positive correlation of 0.261 between foreign debt and foreign exchange reserves.

Table 4 Pearson Correlation Analysis

Variables	Foreign debt	Foreign exchange reserves	Monetary rate
Foreign debt	1.00		
Foreign exchange reserves	0.261	1.00	
Monetary rate	0.521	-0.410	1.00

We used OLS to test our hypotheses for the study. Since the p-value of foreign debt is 0.02 and below the 5% significance level, we fail to reject H1 that there is a negative significant impact of foreign debt on the monetary rate in Pakistan because the coefficient is -0.523. Foreign debt negatively impacts the monetary rate in Pakistan. If 1% changes in foreign debt, then the monetary rate will be decreased by 52%. The p-value of foreign debt is 0.01, and it is below the 5% significance level, so we will fail to reject H2 that there is a positive impact of foreign exchange reserves on the monetary rate in Pakistan, the coefficient is 0.8667 means that if 1% changes in foreign exchange reserves than the monetary rate will be increased by 86%. R-squared is 69.34 per cent. It depicts that 69.34 per cent of the variance in the monetary rate is predictable from the foreign exchange reserves and foreign debt.

Table 5 OLS Assumptions

Variable	Coefficients	t-Stat	P-Value
Foreign debt	-0.523503	-2.648647	0.0265
Foreign exchange reserves	0.867785	3.047734	0.0138
C	-0.159526	-2.525251	0.0325
R-Square	0.42343		

5. Discussions

In this study, it has been observed that as the ratio of foreign debt increases, it also increases the money supply in the country. People will spend more, and the central bank increases the monetary rate

to halt the price hike because the money supply directly increases the rate of commodities. If prices of general commodities increase, it will shrink the currency's value. On the other hand, it was perceived that as foreign exchange reserves increase, it uplifts the worth of currency. If reserves increase, the central bank will lend money to borrowers and business-minded people, reducing the interest rate. As we know, as interest rates decline, people borrow more money at cheaper rates and benefit from the existing opportunities. If foreign reserves increase country's exchange rate will increase and reputation will also increase, as we live in a developing country. Mostly we trade in dollars so if reserves increase then the value of the dollar will decline, thereby increasing the standard and worth of home currency. This is a positive symbol for any country.

Our research is in line with (Anissa and Taher, 2022; Raza et al., 2024), when a country's local debt markets do not fulfil its funds requirements, for developing and low-income nations, it is possible to get funds from renowned institutions, namely, the World Bank, in concurrence with IMF, to acquire short-term and long-term debts. It is observed that excessive debt slows down the ability of the government to invest in future economic activities. Higher foreign debt has contributed to the most horrible crises in recent decades in the country. Significant levels of external debt can exert adverse effects on a nation's monetary rates through various channels. To begin with, the accumulation of foreign debt might result in a devaluation of the domestic currency due to apprehensions over the nation's capacity to meet its debt obligations. In response, central banks have the option to boost interest rates as a means to attract capital and stabilize the exchange rate. Consequently, this action may result in an escalation in domestic borrowing costs for firms and consumers. Moreover, the devaluation of a currency might increase the prices of imported commodities, generating inflationary tendencies.

Consequently, central banks may find it necessary to implement additional interest rate hikes. In addition, it is important to note that a government's foreign debt commitments can exert pressure on its budget, leading to a possible diversion of resources away from essential public services and expenditures in infrastructure. The degradation of market confidence and the increase in risk premiums can potentially result in elevated interest rates, hence complicating the execution of autonomous monetary policy. Additionally, nations that own significant levels of foreign debt are susceptible to external economic disturbances, which can potentially exacerbate the adverse effects on interest rates and overall economic stability. Hence, it is imperative to exercise judicious management of levels of

foreign debt to reduce these detrimental consequences and sustain economic stability. The government should focus on other resources like exports if the export of country is increasing government will have sufficient funds and it will help in demanding low foreign debt. Many products can be exported like readymade garments, leather shoes and even agricultural products like rice, wheat, corn and onions.

Our results also resemble the study of (Awan et al., 2020; Bayram et al., 2024) shows the relationship between fiscal deficit and economic growth evidence from Pakistan. Foreign reserves are also equally important; these reserves are counted as assets held by the central bank in Pakistan. It is also observed that foreign exchange reserves declined up to 3.5 % in 2017, which is also an alarming condition; as these assets decrease, monetary policy is revised, and interest rate is increased in the State Bank of Pakistan to control the money and spending. Further industrial units should be opened and even supported so that the income of the country will be increased and it will boost foreign currency, thereby increasing the foreign reserves as and when the trust of foreigners will be obtained.

Our study is also in line with the study of (Ayinde et al., 2019; Raza et al., 2022) When successfully managed, foreign exchange reserves can provide various positive benefits to a nation's monetary rate or exchange rate stability. To begin with, it is important to note that ample foreign exchange reserves serve as a protective measure against external economic disruptions and speculative assaults on the domestic currency. This measure aids in preserving trust in the currency and mitigates the necessity for significant increases in interest rates as a means to safeguard the exchange rate. Furthermore, ample reserves can enhance the efficiency of global trade by guaranteeing a consistent influx of foreign currency for entities engaged in importing activities. This phenomenon, in turn, provides support for maintaining price stability and serves as a deterrent against excessive depreciation of currency, which has the potential to result in inflation. In addition, sufficient reserves can bolster a nation's credibility and creditworthiness within the global financial markets, enabling it to get loans at reduced interest rates.

 In brief, foreign exchange reserves act as a protective mechanism, foster stability in exchange rates and contribute to the overall economic stability of a nation by mitigating the necessity for forceful monetary interventions, guaranteeing the availability of foreign currency, and enhancing the international financial standing of a country. Forex reserves have four components, and all are crucial for central banks as well as financing institutions. These are gold, special drawing rights and the

reserve position in the IMF. These all help the central bank provide loans and funds to local banks and other institutions and also help the central bank in supporting the government, as Pakistan is a low-income generating country. It is also revealed that foreign exchange reserves have a negative relationship with the monetary rate. Our study also resembles the study of (Azar et al., 2020), foreign exchange reserves are like backbones for the central bank in developing countries like Pakistan. As foreign exchange reserves increase, the country's monetary policy will be expansionary, and the central bank will start lending money to several borrowing institutions and local businesses at cheaper interest rates; hence, reserve increases, interest rate declines, which means these two have a negative relationship with each other. Our studies also resemble the findings of (Broby et al., 2021; Raza et al., 2023). After all foreign debt and foreign reserves both are essential elements for discussion. First and foremost thing is that government and the business men, young entrepreneurs and philanthropists can play the vital role in helping the country like Pakistan in getting rid of foreign debt which severely impacts the health of country. Future of youngsters and all stakeholders. All these above-mentioned problems can be solved with the synergy, unity and general consensus of all the people of the country

5.1 Conclusion

This study examined the impact and relationship between 3 variables, of which 2 variables, foreign debt and foreign exchange reserves were independent, and one variable, monetary rate, was dependent. The OLS model was used to find the relationship between these variables. Pearson Correlation tests were run. A unit root test was also conducted, and 2 variable foreign exchange reserves and monetary rate were found to be stationary at the first difference. Foreign debt has stationarity as the second difference.

From the findings, we came to know that foreign debt has a positive impact on the interest rate, and the correlation between these two variables is insignificant; it suggests that when foreign debt increases, it also increases the money supply, and with that, Inflation increases and to control that monetary rate must be increased. The foreign exchange reserves have a positive impact on the interest rate, and the correlation found between these 2 variables is also insignificant. It is because when the foreign exchange reserves increase, the central bank wants to lend out those reserves and because of that, the monetary rate is reduced. From the researcher's point of view, it was a great opportunity to learn and find the impacts of these variables and the relation between them; this was new research because no other person/organization had done research on this topic, and we identified that it was the

gap in the market and must be identified because these macro variables also impact a lot on any economy which can be identified in the literature review like debt affects the growth of the country.

5.2. Theoretical Implications

Theoretical implications demonstrate how our research is relevant to previous research. Our research reveals that foreign debt positively impacts interest rates as there is a positive relationship between the two. It is also observed that as foreign debt increases in local markets, the central bank increases interest to control the money supply and inflation. State Bank of Pakistan increases interest rates. According to Mundell Fleming's model, under a fixed exchange rate and perfect capital mobility, a country cannot move out of with those prevailing in the capital market. In this model, it is also observed that to maintain the exchange rate, the central bank will intervene to sell foreign currency reserves in the foreign exchange market. The most important thing is that both are focused on central bank intervention, and the results support each other that the central bank plays a vital role in controlling foreign debt, increasing foreign reserves, and moving interest rates accordingly. Another important variable is foreign debt, which impacts exports, imports, appreciation and depreciation of currency.

5.3. Practical Implications

This study proposes a model for explaining how foreign debt and foreign exchange reserves impact central banks' activities, further suggesting increasing the ratio of foreign exchange reserves and decreasing foreign debt. Based on the findings, the study makes several specific contributions. The first study revealed that as foreign debt increases, it creates problems for the central banks, governments and policymakers because they will have to pay heavy amounts in the form of interest rates on maturity to lenders. Second, it creates problems for local borrowers as foreign debt increases and the central bank increases interest rates. Second, this foreign debt plays a vital role by helping local borrowers, investors and debtors on a short-term basis; on the other hand, in the long run, it is not suitable. Third, foreign exchange reserves are highly important for Pakistan because annually, these reserves decline up to 7 %, which is alarming for all the stakeholders. This study leads to the conclusion that the government, policymakers and economy should revise the policy and make efforts to lower the rate of foreign debt, help local businesses access foreign markets and launch e-business-type concepts in the country to reduce external debt and also try to lower down the monetary rate and

also increase foreign exchange reserves for increasing the value currency and by this way interest rate will decline as there is negative relationship between foreign exchange reserves and interest rate.

Policy makers should focus on decreasing the foreign debt and stress on increasing the foreign trade in all products and even service sector also important if the trained doctors, engineers, teachers, politicians and lawyers are involved in revising the country's external the trade, education, agriculture, handicrafts and the most important sector technology is utilized properly production can be increased a lot

5.4. Limitations, Recommendations and Future Directions

This research has several limitations and suggestions. In this research, the data was taken for 14 years, so in order to get better results; other researchers can use the data for more than 14 years. This research comprises 3 variables, so in order to find out better relations and impact; other researchers can use different variables as well, like Inflation, GDP, growth, cost of holding foreign exchange reserves, foreign integration and others. Researchers from other countries should refrain from taking this data to justify their country's situation because this data is specifically for Pakistan. This research can be helpful for future research because this is the first time any person/organization has researched this topic so it may be a great guide for them. Further for better and clear results correctional data can also be used to determine the impact of above-mentioned variables on sectors wise, even provincial level too.

This research analyses ordinary least squares that could be better nowadays. Since many models come, such as FMOLS, DOLS, ARDL, fixed effects, random effects and generalized method of moments and CS ARDL, this model can be tested by adding two more variables by these techniques, such as measuring the short-run and long-run effects of foreign debt and foreign exchange reserves on monetary rate use ARDL.

In the future, the government should focus on less foreign debt because debt is actually liability that we have to pay in future along with the interest rate and if the interest rate is not paid timely, it is like the catastrophe for the nation it increases inflation, poverty, living standard, literacy rate and it has severe consequences for any nation. which plays a negative role in economic growth, so the government should reduce the foreign debt as much as possible. State Bank of Pakistan should also focus on fewer foreign reserves because when they increase the foreign reserves, they have to reduce

the interest, and it can play a negative role in the economy as money supply and inflation will be increased.

Government should encourage the young entrepreneurs to boost the forex and open new and innovative industrial units and also SMES are equally important to increase forex and these industrial units will help the country in getting rid of foreign debt and if foreign debt will be decreased foreign trust will be maintained, growth of the country will be increased and it will have positive impact on society and country and through this way country can get rid of these calamities and can face the challenges which are mentioned above. By doing so poverty will be decreased because unemployed youth will be deployed by opening new units and country will grow.

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