Monetary policy and profitability of bank; with special reference to State Bank of India

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Abstract

The paper analyses the effect of monetary policy instruments on the bank's profitability of the largest public sector bank state bank of India. The independent variable used for the study is statutory liquidity ratio (SLR), cash reserve ratio(CRR), credit deposit ratio, cash deposit ratio, and bank rate. The dependent variable used for the study is operating profit before provision and contingencies and income on investment. The data is collected from the period 2018 to 2021. The tools used for the study are descriptive statistics, correlation coefficient, and regression analysis. The study found that the monetary policy instruments affect the profitability of the bank and the study suggested that the central bank should take care while framing monetary policy. It should be following the present economic condition of the country otherwise it will lead to an inappropriate money supply within the market.

Keywords: Bank rate, cash reserve ratio, monetary policy, statutory liquidity ratio.

Introduction

The banking sector plays an important role in the smooth functioning of the business world and thereby enhancing the capacity of the economy. They accept deposits from the public for lending. But the money supply in the economy is not under the control of the domestic banks, it is under the control of the RBI. For that RBI uses a monetary policy and it controls the quantity of money available in the economy. Through that RBI aims to influence the macro-economic factors like the rate of consumption, inflation, and economic growth. RBI has a greater role in the supply of money in the economy. Monetary policy can be categorized as expansion and contraction. If a country facing a recession the monetary authority will adopt expansion and if a country facing inflation the monetary authority will adopt contraction and which will bring down the inflation. RBI uses monetary policy instruments to control the money supply in the economy. The monetary policy instruments are SLR, CRR, bank rates, credit deposit ratio, cash deposit ratio, the marginal standing ratio, etc.,

The cash reserve ratio (CRR) is the part of the deposit that a bank needs to keep as cash reserve with RBI. If the money supply is high in the market, RBI increases the CRR. When the cash reserve ratio increases the bank needs to keep more balance with RBI. It will lead to reduced liquidity of the bank and reduces the supply of money to the economy. If the money supply is law in the economy the RBI reduces the cash reserve ratio. Then the statutory liquidity ratio (SLR) is the ratio at which a bank needs to keep liquid assets like cash, gold, and government security as a reserve before providing credit to the customers. These are not reserved with RBI but with the bank themselves. The cash deposit ratio is the ratio of balance with RBI as a percentage of the aggregate deposit. The credit deposit ratio means how much a bank can lend out of the deposit mobilized. Then the bank rate is the interest rate at which RBI lends money to the domestic bank. These are some tools that are used by the RBI to regulate the money supply. In addition, the RBI may buy or sell the government securities and regulate the foreign exchange rate for controlling the money supply. The monetary policy instruments used by the RBI affect the bank's liquidity and profitability. The RBI uses the monetary policy instrument as a tool for controlling the circulation of money in the market. The present study is to find the link between the monetary policy instrument and the profitability of the State Bank of India, which is the largest public sector bank in India.

Objectives of the study

- Evaluate the impact of monetary policy on the profitability of the bank
- To analyze the relationship between the monetary

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policy instruments and the operating profit of the state bank of India.

- To find the change in operating profit in terms of SLR, CRR and cash deposit ratio.

Hypothesis

H_0; there is no significant relationship between the monetary policy instrument and the profitability of the bank

H_1: there exists a relationship between the monetary policy instrument and the profitability of the bank

Review of literature

Wu & Xia, 2016 employs an approximation that makes a nonlinear term structure model extremely tractable for analysis of an economy operating near the zero lower bound for interest rates. Researchers show that such a model offers an excellent description of the data compared to the benchmark model and can be used to summarize the macroeconomic effects of unconventional monetary policy. The estimates imply that the efforts by the Federal Reserve to stimulate the economy since July 2009 succeeded in making the unemployment rate in December 2013 1% lower, which is 0.13% more compared to the historical behavior

Ayodeji & Oluwole, 2018 The paper examined the impact of monetary policy on economic growth in Nigeria by developing a model that can investigate how the monetary policy of the government has affected economic growth through the use of multivariable regression analysis. The variables of monetary policy instruments include Money Supply (MS), Exchange Rate (ER), Interest Rate (IR), and Liquidity Ratio (LR). Economic growth was represented by Gross Domestic Product (income) at constant prices. The results showed the existence of a uni-directional causality between money supply and economic growth, economic growth granger causing liquidity ratio and exchange rates while a bi-directional causality exists between interest and economic growth.

Kearns & Manners, 2018 investigated the impact of monetary policy on the exchange rate using an event study with intraday data for four countries. The study shows that the impact depends on how the surprise affects expectations of future monetary policy. If expectations of future policy are revised by the full amount of the surprise, then the impact on the exchange rate is larger (0.4 percent) than if the surprise only brings forward an anticipated change in policy (0.2 percent).

Fischer et al., 2021 used a factor-augmented vector autoregressive model to examine the impact of monetary policy shocks on housing prices. To simultaneously estimate the model parameters and unobserved factors, we rely on Bayesian estimation and inference. Policy shocks are identified using high-frequency surprises around policy announcements as an external instrument. Impulse response functions reveal differences in regional housing price responses, which in some cases are substantial. The heterogeneity in policy responses is found to be significantly related to local regulatory environments and housing supply elasticities. Moreover, housing price responses tend to be similar within states and adjacent regions in neighbouring states.

Bianchi & Bigio, 2022 analyzed how monetary policy affects the banking system by altering the trade-off between profiting from lending and incurring greater liquidity risk. We consider two applications of the theory, one involving the connection between the implementation of monetary policy and pass-through to loan rates, and another considering a quantitative decomposition behind the collapse in bank lending during the 2008 financial crisis. The analysis underscores the importance of liquidity frictions and the functioning of interbank markets for the conduct of monetary policy.

Research Methodology

The study is based on secondary data collected from various websites, articles, and newspapers. The information with regards to the profitability of the SBI is collected from the quarterly result published by the SBI and the information related to the monetary policy to instruments is collected from the website of RBI. To achieve the objectives the study used uses statutory liquidity ratio (SLR), cash reserve ratio (CRR), credit deposit ratio, cash deposit ratio, and bank rate as the independent variable. Operating profit before provision & contingencies and income on investment as dependent variables. Then the data for the study is collected for the period from 2018 to 2021.

Results and Discussion

Table 1: Shows the descriptive statistics

	Minimum	Maximum	Mean	Std. Deviation
CRR	3.00	4.00	3.7500	.44721
SLR	18.00	19.50	18.6094	.65808
Cash deposit ratio	3.63	5.14	4.5704	.44042
Credit deposit ratio	70.24	78.59	74.6138	2.68250
Bank rate	4.25	6.75	5.2625	1.05601
Operating profit	11973.13	19700.15	16079.0981	2469.60573

Table 1 shows the mean and standard deviation of different ratios and operating profit. The mean value of CRR is 3.75, SLR is 18.60, Cash deposit ratio is 4.57, credit deposit ratio is 74.61, bank rate is 5.262, and mean value of operating profit is 16079.09. Then the standard deviation of CRR is .44, SLR is .65, Cash deposit ratio is .44, credit deposit ratio is 2.6, bank rate is 1.05 and the standard deviation of operating profit is 2469.60.

Table 2: Shows the correlation between CRR and Operating profit

Correlation			
		CRR	Operating profit
CRR	Pearson Correlation	1	-.344
	Sig. (2-tailed)		.192
	N	16	16
Operating profit	Pearson Correlation	-.344	1
	Sig. (2-tailed)	.192	

Table 2 shows the correlation between the cash reserve ratio and operating profit. It shows a weak negative correlation. Then the significance value is .192 which means there is no significant relationship between the cash reserve ratio and operating profit.

Table 3: Shows the correlation between SLR and Operating profit

Correlation			
		CRR	Operating profit
SLR	Pearson Correlation	1	-.781**
	Sig. (2-tailed)		.000
	N	16	16
Operating profit	Pearson Correlation	-.344	1
	Sig. (2-tailed)	.192	

Table 3 shows correlation between the statutory liquidity ratio and operating profit. There is a negative correlation between them. Then the significant level is .000 so there is a significant relationship between them.

Table 4: Shows the regression analysis of SLR and operating profit

Regression analysis					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.781a	.610	.582	1596.41383	2.084

Table 4 shows the regression analysis; it shows R square value of .610. That means 61% of the variation in the operating profit is explained by the liquidity ratio.

Table 5: Shows the correlation between operating profit and cash deposit ratio

Correlation			
		Operating profit	Cash deposit ratio
Operating profit	Pearson Correlation	1	-.118
	Sig. (2-tailed)		.663
	N	16	16
Cash deposit ratio	Pearson Correlation	-.118	1
	Sig. (2-tailed)	.663	
	N	16	16

Table 5 shows the correlation between operating profit and cash deposit ratio. It shows a weak negative correlation between them. Then the level of significance is .663. So there is no significant relationship between them.

Table 6: Shows the correlation between operating profit and credit deposit ratio

Correlation			
		Operating profit	Credit deposit ratio
Operating profit	Pearson Correlation	1	-.673**
	Sig. (2-tailed)		.004
	N	16	16
Credit deposit ratio	Pearson Correlation	-.673**	1
	Sig. (2-tailed)	.004	
	N	16	16

Table 6 shows the correlation between operating profit and credit deposit ratio. It shows a negative correlation between them. Then the table shows a .004 level of significance. That means there is a significant relationship between the operating profit and credit deposit ratio.

Table 7: Shows the regression analysis between operating profit and credit deposit ratio

Regression analysis					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.673a	.453	.414	1890.91637	1.673

Table 7 shows the regression analysis between the operating profit and credit deposit ratio. The R-value is .673 and the R square value is .453. That means 45 % of the variation in the operating profit is explained by the credit deposit ratio.

Table 8: Shows the correlation between bank rate and income on investment

Correlation			
		Bank rate	Income on investment
Bank rate	Pearson Correlation	1	-.583*
	Sig. (2-tailed)		.018
	N	16	16
Income on investment	Pearson Correlation	-.583*	1
	Sig. (2-tailed)	.018	

Table 8 shows the correlation between bank rate and income on investment. It shows a negative correlation between them. Then it also shows that there is a significant relationship between the bank rate and income on investment and it shows a .018 level of significance.

Table 9: shows the regression analysis between bank rate and income on investment

Regression analysis					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.583a	.339	.292	1302.49842	.381

Table 9 shows the regression analysis between the bank rate and income on investment. The R Square value is .339. Which means a 33 % variation in income on investment is explained by the bank rate.

Summary of findings

- There is no significant relationship between the cash reserve ratio and the operating profit of the bank.
- There exist a significant relationship between statutory liquidity ratio and operating profit and 61 % of the variation in the operating profit is explained by the liquidity ratio.
- A weak negative correlation exists between the cash deposit ratio and operating profit.
- 45 % of the variation in the operating profit is explained by the credit deposit ratio.
- The bank rate and income on investment have a significant relation.

Suggestions

- The study found that SLR has a significant relation with the operating profit of the bank. Because it is the ratio at which the bank needs to keep liquid assets with themselves before providing credit to the customers. Even if it harms profit it should be there to ensure the security of the customers who have deposits in the bank.
- The credit deposit ratio above 75 % is not a better decision here the Mean value of the credit deposit ratio is 74.6%. So it should be taken into consideration by the bank.
- When the bank rate increases the banks borrowing cost will increase and it will reduce the supply of money to the economy. If the monetary policy is not following the economic condition it will adversely affect the market. So the authority should take care while framing monetary policy.
- The monetary policy adopted by the RBI must be for controlling the money supply within the economy. They will take any decision following the economic condition. So even if there is any small change in the profit of the bank that will not be a crucial problem.

Conclusion

The present study is about how the monetary policy influences the profitability of the state bank of India. For that here some monetary policy instruments were selected and found the relationship of them with the operating profit of the bank. From the study, we can understand that some relationships exist between the instruments and the operating profit. So the overall suggestion is that the framing of monetary policy should be based on the present economic condition otherwise it will adversely affect the economy overall.

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