

The Impact of Statutory Liquidity Ratio as an Instrument of Indian Monetary Policy on the rate of Inflation: An Analytical Study (January 2014 to December 2018)

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Abstract - The monetary policy refers to an instrument that regulates the circulation of money in the economy. It is set out with the main objective of “Maintaining Price Stability”. The instruments of monetary policy are revised by Monetary Policy Committee (RBI) every month for achieving this motive.

The inflation is a situation in which value of money decreases with the increase of money supply in an economy, or increase in the money supply will lead to the increase in general price level.

The study focuses on the examination of the impact of Statutory Liquidity Ratio, SLR (Instrument of Indian Monetary Policy), on the rate of inflation both (Rural and Urban) based on combined consumer price index (CPI) during the period of January 2014 to December 2018.

The analysis is based on the Simple Linear Regression Model, with the help of SPSS. The publications of Reserve Bank of India are the main source for secondary data of last five years since January 2014.

The study finds that the SLR hasn't had much impact on the rate of inflation (based on combined CPI) during the period under review although the theoretical relationship states that lowering SLR would increase money supply and hence inflation.

Keywords: Statutory Liquidity Ratio, Combined Consumer Price Index (CPI), Rural/Urban Inflation rate based on combined CPI.

I. INTRODUCTION

Price stability has always been one of the most important objectives of the Government. Monetary policy plays significant role in tackling the rate of inflation in the economy. The RBI, since its establishment, has been formulating monetary policy for achieving the objective of price stability.

Monetary policy is an instrument or tool by which circulation of money in the economy is regulated and thus maintaining price stability. The monetary policy consists of different key rates like bank rate, repo rate, reverse repo rate, statutory liquidity ratio, and marginal standing facility etc. and other instruments to regulate the supply of money in the economy.

The key rate statutory liquidity ratio is important monetary ratio which is to be maintained by all the commercial banks in India, in the form of cash, gold or Government

authorised securities against providing of credit to its customers. This rate is determined or decided by the central bank of India i.e. RBI. The upper limit of SLR is 40%, while its lower limit is 0% in India. It was at 18.50% in December 2019.

Statutory Liquidity Ratio (SLR) is determined as a percentage of total demand and time liabilities of the Bank. It is commonly used to curb the inflation rate by decreasing or increasing the money supply.

The basic reason for fixing SLR is, controlling the expansion of bank credit, which ultimately affects the price stability i.e. rate of inflation.

Formula for calculating SLR:

$$SLR = \frac{\text{Liquid Assets}}{(\text{Demand} + \text{Time Liabilities})} \times 100$$

Inflation is the situation in which the general price level increases due to increase in the circulation of money. In other words, it can be said that due the increase in the quantity of money in the economy through any source, decrease in the value of money, is known as the situation of inflation.

Inflation is calculated with the help of Combined Consumer Price Index, Whole Sale Price Index and Index of Industrial Production in India. The Combined Consumer Price Index is a commonly using base for determining price stability in India, because this index touches the last player (i.e. price level at retailers` store) in the economy.

The study analyses the impact of Statutory Liquidity Ratio on Rural and Urban Inflation rate based on Combined Consumer Price Index.

The combined Consumer Price Index consists of Wholesale Price Index (WPI) + Transportation cost + Margin of Retailers. It means that CPI reflects average price level changes in goods and services that are being bought and sold in the retail market. It is related to the following particular consumer groups:

- CPI – Urban Non Manual Employees (UNME)
- CPI - Agricultural Labourer (AL)
- CPI – Rural Labourer (RL)
- CPI – Industrial Workers (IW)

Rural basket of combined consumer price index has 448 items in it, while urban basket has 460 items.

The key rates of monetary policy are having inverse relationship with price stability. These key rates always play with the rate of inflation by increasing or decreasing the money supply in the economy.

Importance of the Study:

The paper covers a period of five years starting January 2014. It examines the impact of Statutory Liquidity Ratio (SLR) on both Rural and Urban Inflation Rate separately based on Combined Consumer Price Index (CPI). This study will be useful for policy makers, researchers, Government and other institutions.

II. REVIEW OF LITERATURE

Deepak Mohanty (2011) concluded in his paper title “Monetary Policy Response to Recent Inflation in India” the relation between the Policy framed by the reserve bank of India and the Inflation situation in the country. India, though initially somewhat insulated from the global developments, was eventually impacted significantly by the global shocks through all the channels – trade, finance and expectations channels. In response, the Reserve Bank swiftly introduced a comprehensive range of measures to limit the impact of the adverse global developments on the domestic financial system and the economy. The Reserve Bank, like most central banks, took a number of conventional and unconventional measures to augment

domestic and foreign currency liquidity, and sharply reduced the policy rates. In a span of seven months between October 2008 and April 2009, there was unprecedented policy activism. As growth took hold and inflation became more generalized, monetary policy response was strengthened. Initially, monetary transmission was weak as systemic liquidity was in surplus. But once liquidity turned into deficit in July 2010, monetary transmission improved.

Dr. D. Subbarao (2012) in his Second Quarter Review of Monetary Policy 2012-13 of Reserve Bank of India puts a light on the Developmental and Regulatory Policies. In India, in the face of a challenging global environment and a difficult growth-inflation dynamic, developmental and regulatory policies have focused on building a sound, efficient and vibrant financial system that ensures the effective provision of financial services to the widest sections of society. Financial sector reforms have moved in step with evolving international best practices, but with a country-specific orientation. In the Monetary Policy Statement of April 2012, it was noted that while interest rates on deposits are predominantly fixed, most of the retail loan products, especially home loans, are sanctioned on a floating interest rate basis, thereby exposing the borrowers to the uncertainties of interest rate movements and associated interest rate risk.

Subir Gokarn (Deputy Governor Reserve Bank of India) had explained in his article “Monetary Policy: Key factors Shaping Trajectory” the objectives of Monetary Policy are a low and stable inflation. The first critical factor is the maximum rate of growth that the Indian economy can generate without provoking inflationary pressures. It is important to highlight the fact that the central bank is the only component of the policy establishment that has an explicit mandate for price stability or inflation management. Consequently, whatever other goals it may pursue, these must be aligned to this primary mandate. This uniqueness will continue to determine the future trajectory of monetary policy. However, other components of the policy establishment have mandates that may indirectly impinge on inflation. This means that any given inflation rate will now be consistent with faster growth, or alternatively, any given growth rate will be consistent with a lower inflation rate.

Objectives:

The following are the objectives of this study:

- To examine the impact of Statutory Liquidity Ratio on Rural Inflation rate based on Combined CPI in India.
- To examine the role of SLR in the Urban Inflation rate based on Combined CPI in India.

III. RESEARCH METHODOLOGY

- **Sources of Data and Method of Analysis:**

The data has been collected from the RBI publications i.e. key rates database of Indian Economy. The impact of SLR on Rural and Urban Inflation has been calculated for the cumulative period from January 2014 to December 2018. For the analysis and interpretation of data SPSS has been used and tables have been imported from this statistical software.

Hypothesis Formulation:

Independent Variable Dependent Variable

Statutory Liquidity Ratio Rural Inflation Rate based on Combined CPI

Urban Inflation Rate based on Combined CPI

Thus the two assumptions are-

H Statutory Liquidity Ratio has an impact on rate of Rural Inflation.

H Statutory Liquidity Ratio has an impact on rate of Urban Inflation.

Statistical Model:

For the analysis, the **Simple Linear Regression** model has been used.

$$Y = \beta_0 + \beta_1(X) + E$$

Where,

Y = Dependent Variable i.e. Rural/ Urban Inflation rate based on Combined CPI

β_0 = Intercept

β_1 = Regression Coefficient

X = Predictor i.e. Statutory Liquidity Ratio

E is disturbance or error term which is a random (stochastic) variable.

Presentation Of Data:

Line diagram has been used for graphical presentation of analytical data.

Analysis and Interpretation:

I -- Impact of Statutory Liquidity Ratio on Rural Inflation rate:

Correlation

		Statutory Liquidity Ratio	Rural Inflation Rate based on CPI
Statutory Liquidity Ratio	Pearson Correlation	1	.731**
	Sig. (2-tailed)		.000
	N	60	60
Rural Inflation Rate based on CPI	Pearson Correlation	.731**	1
	Sig. (2-tailed)	.000	
	N	60	60

** . Correlation is significant at the 0.01 level (2-tailed)

Table no. 1.1

The above correlation table shows that there is high degree of correlation i.e. 0.731 and $p < 0.001$. It shows that statutory liquidity ratio highly affects and best predicts the rate of rural inflation.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.731 ^a	.535	.527	1.20471

a. Predictors: (Constant), Statutory Liquidity Ratio

Table no. 1.2

In the above model, the value of R shows that statutory liquidity ratio is taken as predictor, which is the simple correlation between Statutory Liquidity Ratio and Rural inflation rate (0.731). In this model the value of R Square is 0.535, which means that SLR accounts for 53.5% of the variation in rural inflation rate.

The difference for the final model is small (in fact the difference between the values of R Square and Adjusted R Square is $0.535 - 0.527 = 0.008$, this shrinkage means that if the model were derived from the population rather than a sample, there could be only 0.8% change in outcome.

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	96.768	1	96.768	66.675	.000 ^b
	Residual	84.177	58	1.451		
	Total	180.945	59			

a. Dependent Variable: Rural Inflation Rate based on CPI

b. Predictors: (Constant), Statutory Liquidity Ratio

Table no. 1.3

This ANOVA table shows the degree of freedom (df). It is the number of observations (60) minus the number of coefficients in the regression model. In the table, the model has 59 degrees of freedom.

In the above table the model shows the F Ratio is 66.675, which is very unlikely to have happened by chance which is significant.

Coefficient^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-19.206	2.969		-6.469	.000
	Statutory Liquidity Ratio	1.155	.141	.731	8.165	.000

a. Dependent Variable: Rural Inflation Rate based on combined consumer price index.

Table no. 1.4

$$Y = \beta_0 + \beta_1(X) + E$$

Where,

Y = Dependent Variable i.e. Rural Inflation rate based on Combined CPI

β_0 = Intercept i.e. -19.206

β_1 = Regression Coefficient i.e. 1.155

X = Predictor i.e. Statutory Liquidity Ratio

E is disturbance or error term which is a random (stochastic) variable.

Final Model:

Rural Inf. Rate Based on CPI = -19.206+ (1.155×SLR)

In the Final model b-value tells us about the relationship between rural inflation rate and the predictor i.e. statutory liquidity ratio (SLR). If the b-value is positive, there is a positive relationship between the predictor and the outcome.

So, as SLR decreases, rural inflation rate also decreases, which means that SLR has not had the desired impact on the rural inflation rate.

Findings:

Statutory Liquidity Ratio (SLR) (B= 1.155):

This value indicates that as SLR decreases by one unit, rural inflation rate based on combined consumer price index decreases by 1.155units. (according to theoretical relationship SLR and rate of Inflation should move in opposite direction).

From the above, it can be seen that, the SLR $p < 0.001$ which is a significant predictor of rural inflation rate based on CPI. From the magnitude of t-statistics, it can be said that the SLR has no desired impact on rural inflation rate.

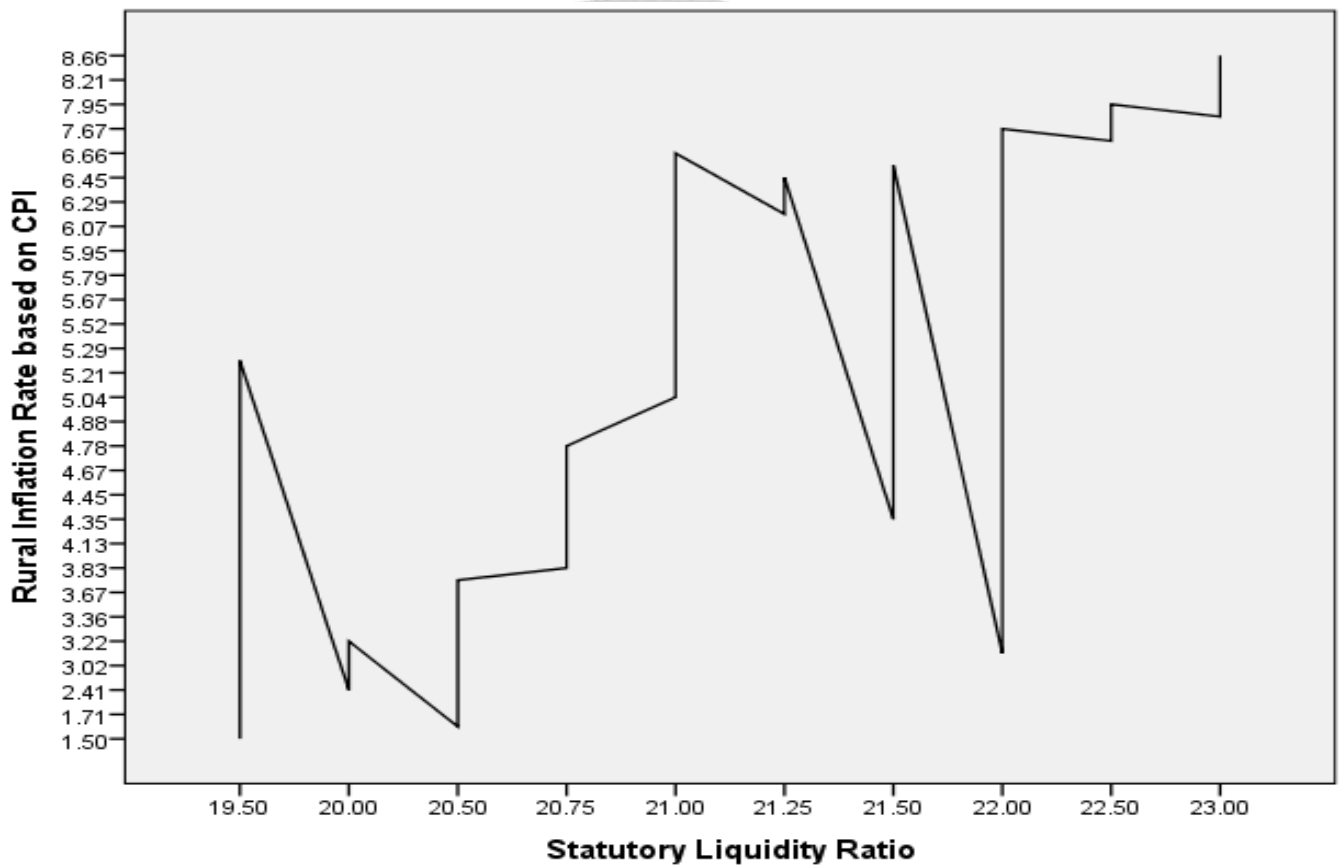


Fig. no. 1

The above line graph in Figure 1 shows that with the fluctuations in the rate of SLR, the Rural Inflation Rate (RIR) based on combined CPI fluctuates similarly. In the month of January 2014 the rural Inflation rate (RIR) was at 8.66%, when the SLR to be maintained by Banks was fixed at 23%. The rural Inflation rate kept falling continuously even with the decrease in SLR. By the end of December 2014, RIR reached at 4.16%, while the SLR had been lowered to 22%.

In the year 2015, the impact of SLR could be seen as favourable (as per theoretical relation) as with reduction in the SLR to 21.5%, the RIR had gone up to 6.32% in December 2015.

However, in the years 2016 and 2017, the RIR continued with its downward trend even with the reduction in the SLR to 19.5%. and by October 2017 it had slid to 3.36%. Since from October 2017 till December 2018, there was no

change in the rate of SLR (19.5%), its impact on RIR cannot be ascertained for this period.

II--Impact of Statutory Liquidity Ratio on Urban Inflation rate:

Correlation

		Statutory Liquidity Ratio	Urban Inflation Rate based on CPI
Statutory Liquidity Ratio	Pearson Correlation	1	.605**
	Sig. (2-tailed)		.000
	N	60	60
Urban Inflation Rate based on CPI	Pearson Correlation	.605**	1
	Sig. (2-tailed)	.000	
	N	60	60

** . Correlation is significant at the 0.01 level (2-tailed)

Table. No. 2.1

The above correlation table 2.1 shows high degree of correlation i.e. 0.605 and $p < 0.001$ between SLR and Urban Inflation Rate based on Combined CPI. It shows that statutory liquidity ratio best predicts the rate of urban inflation.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605 ^a	.367	.356	1.22845

a. Predictors: (Constant), Statutory Liquidity Ratio

Table no. 2.2

In the above model summary 2.2 it is reflected with the value of R, that statutory liquidity ratio is a significant predictor, which is the simple correlation between Statutory Liquidity Ratio and urban inflation rate (0.605).

The value of R Square is 0.367, which means that SLR accounts for 36.7% of the variation in urban inflation rate.

The difference for the final model is small (in fact the difference between the values of R Square and Adjusted R Square is $0.367 - 0.356 = 0.011$, this shrinkage means that if the model were derived from the population rather than a sample, it would account for approximately 1.10% variance in the outcome.

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	50.657	1	50.657	33.568	.000 ^b
	Residual	87.528	58	1.509		
	Total	138.185	59			

- a. Dependent Variable: Urban Inflation Rate based on CPI
- b. Predictors: (Constant), Statutory Liquidity Ratio

Table no. 2.3

This ANOVA table shows the degree of freedom (df). It is the number of observations (60) minus the number of coefficients in the regression model. In the table, the model has 59 degrees of freedom.

In the above table 2.3 the F Ratio is 33.568, which is very unlikely to have happened by chance, which is significant.

Coefficient^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13.008	3.027		-4.297	.000
	Statutory Liquidity Ratio	.836	.144	.605	5.794	.000

a. Dependent Variable: Urban Inflation Rate based on CPI

Table no. 2.4

$$Y = \beta_0 + \beta_1(X) + E$$

Where,

Y = Dependent Variable i.e. Urban Inflation rate based on Combined CPI

β_0 = Intercept i.e. -13.008

β_1 = Regression Coefficient i.e. 0.836

X = Predictor i.e. Statutory Liquidity Ratio

E is disturbance or error term which is a random (stochastic) variable.

Final Model:

Urban Inf. Rate Based on CPI = -13.008+ (0.836×SLR)

In the Final model b-value tells us about the relationship between Urban inflation rate and the predictor i.e. statutory liquidity ratio (SLR). If the b-value is positive, there is a positive relationship between the predictor and the outcome.

So, as SLR decreases, urban inflation rate also decreases, which means that SLR has not had the desired impact on the urban inflation rate.

IV. FINDINGS

Statutory Liquidity Ratio (SLR) (B= 0.836):

This value indicates that as SLR decreases by one unit, urban inflation rate based on combined consumer price index decreases by 0.836 units. (according to theoretical

relationship SLR and rate of Inflation should move in the opposite direction).

From the above, it can be seen that, the SLR $p < 0.001$ which is a significant predictor of rural inflation rate based on CPI. From the magnitude of t-statistics, it can be said that the SLR has no desired impact on rural inflation rate.

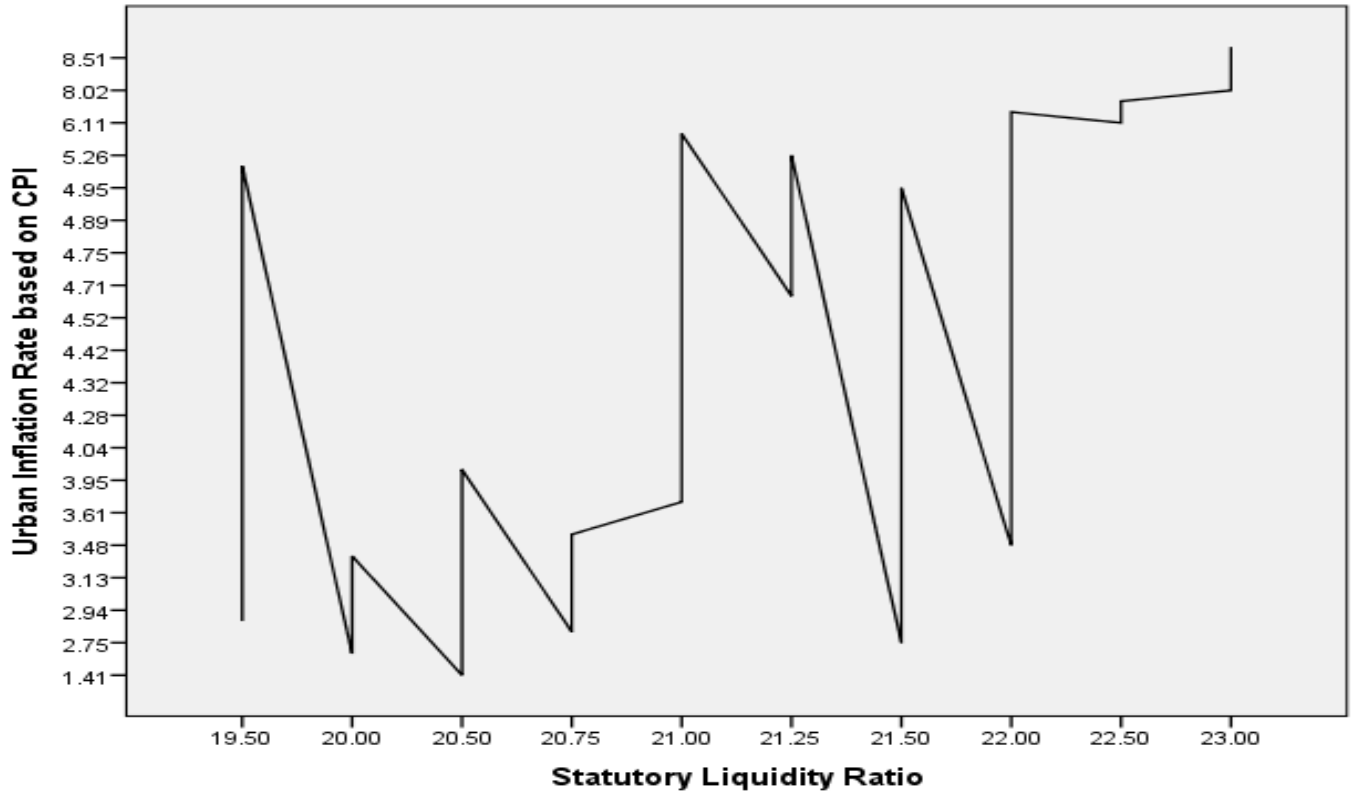


Fig. no. 2

The above line graph in Fig 2 shows the cumulative impact of SLR on Urban Inflation Rate (UIR) for the period January 2014 to December 2018, i.e. with the fluctuations in the rate of SLR, the UIR based on combined CPI fluctuates similarly.

During the period from January 2014 to October 2017, the urban inflation rate (UIR) was going down continuously, even with the decrease in rate of SLR from 23% to 19.5%. From October 2017 till December 2018, SLR remained constant at 19.5% hence the effect on UIR cannot be ascertained for this period.

V. CONCLUSION

The present study is an attempt to analyse the relevance of SLR (Instrument of Indian Monetary Policy), and its impact on the rate of inflation in India. It can be seen here that SLR has not played a key role in tackling inflation rate (Rural/Urban based on Combined Consumer Price Index) during the period from January 2014 to December 2018. The inflation rate kept going down despite the lowering of SLR i.e. with increase in money supply inflation rate did not rise. Both the hypotheses are rejected because the SLR has not had the desired impact on rural and urban inflation based on combined consumer price index.

It can be said that other Government measures were effective in bringing down rate of inflation and the contribution of SLR could not be seen on both rural and urban rate of inflation during the period under study.

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