Trend of Money Supply in Pre-Corona and Corona Period in India

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Abstract: In this paper we discuss the trend of money supply (M3) in pre-Corona and Corona period (from 4th January, 2019 to 4th December,2020). We find an overall increasing trend with slight decline in a few periods in both pre-Corona and Corona period as shown by the M3 data obtained from the Reserve Bank of India Website. We find that ARIMA (1,1) model fits the money supply data for this sample period.

Keywords: M3, ARIMA

I.INTRODUCTION

In this paper we are going to discuss the trend of money supply in pre-Corona and Corona period and trying to find out a suitable empirical model to describe the behaviour of the fortnightly money supply (M3) data from 4th January, 2019 to 4th December, 2020.

II. DESCRIPTION OF MONEY SUPPLY IN INDIA

There are various definitions of money supply. Narrow money or M1 is the sum of coins and paper currency in circulation outside the bank plus deposits withdrawable by cheques. Coins and paper currency are called fiat money.

Broad money M2 is equal to M1 plus near monies such as savings deposits and small denominations of time deposits and non - institutional holdings of money market mutual funds (MMMFs).

Within M2, the deposits in M1 are most liquid and earn the lowest return.

An additional monetary aggregate is called M3. It contains M2 and other assets such as large denominations time deposits, MMMFs held by institutions and repurchase (Repo) agreement. In a repo agreement a bank borrows from non- bank customer by selling a security such as a government bond to the customer and promising to buy the security back.

Many of the assets included in M2 and M3 are not money in the sense that they are not directly acceptable in payment. They can be quickly converted into currency or chequeable deposits, they are included in broader measure of money.

Commercial banks only keep a portion of their total deposits as reserve, they can lend the excess reserve which adds to the country's money supply.

Money supply is determined not only by monetary policy but also by behaviour of the households holding money and of banks where money is held. In India money supply in a narrow sense includes both currency in the hands of people and deposits at banks which households can use on demand for transaction such as chequing accounts.

The money supply rises as the central bank provides more unborrowed reserves and falls as free reserves increase. Open market operations have a significant role in controlling money supply. When the central bank sells government securities, money supply in the country gets reduced.

Money supply is determined by high powered money, currency ratio, required reserve ratio, market rate of interest and bank rate.

Cash reserve ratio (CRR) is the percentage of total deposits a bank must have in cash. RBI decides this amount. The bank cannot use this amount for lending and cannot get any interest on this amount from RBI. When CRR is increased, money supply in the country is reduced.

Statutory Liquidity Ratio (SLR)

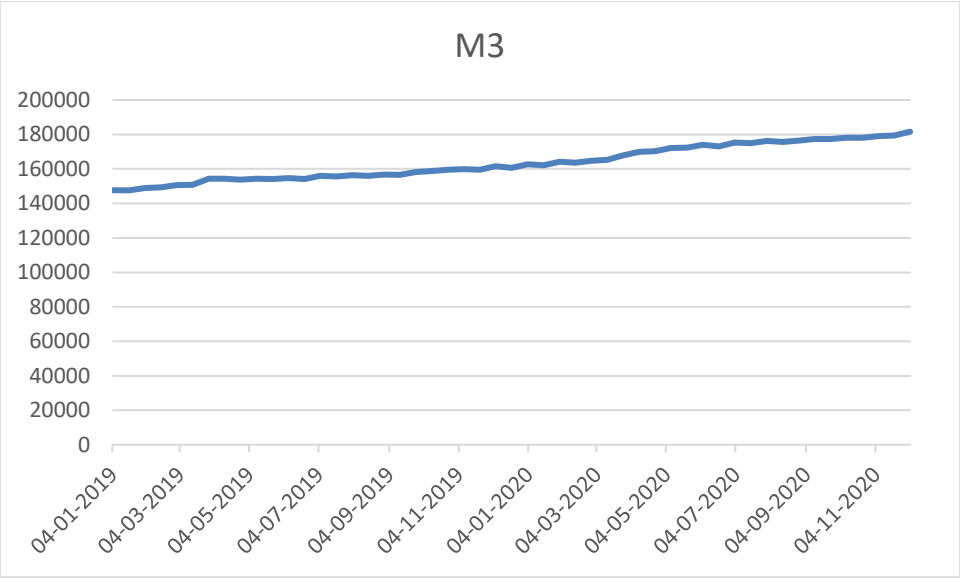
SLR is the minimum percentage of deposits that a commercial bank has to maintain in the form of liquid cash, gold or other securities, before offering credit to customers. When SLR is increased, money supply in the country is reduced.

Bank rate is the rate of interest at which commercial banks borrow money from the central bank. When bank rate is increased, commercial banks borrow less money from the RBI and money supply in the country is reduced.

Money supply and interest rates have an inverse relationship. A larger money supply lowers market interest rate and thus it becomes less expensive to borrow money. On the contrary, smaller money supplies tend to increase interest rate and it becomes expensive to borrow money.

III. DATA

We have taken fortnightly data on M3 from 4th January , 2019 to 4th December, 2020 from the Reserve Bank of India website (www.rbi.org.in). During the above mentioned period , we see an overall increasing trend of M3 both in pre-Corona and Corona period. We see a slight decline in M3 in a some periods and then again an increase in M3(as shown in the graph). The sample period covers both pre-Corona and Corona period and also the lock down period, (starting from 25th March, 2020 and ending at the end of May, 2020).



M3 figures are expressed in billions of rupees.

Data source: www.rbi.org.in

A study by Rakesh Mohan, Ex-Dy Governor of RBI, former Chief Economic Adviser & President, CSEP shows that the Monetary Policy Committee (MPC)

laid a triple objective of mitigating negative effects of the virus, reviving growth and preserving financial stability. RBI slashed interest rates, keeping the policy Repo rate at a low of 4%. The Cash Reserve Ratio (CRR) was lowered which provided additional liquidity to help aid the banking system. The goal was to ensure that no part of the financial system faced liquidity concerns or credit constraints.

IV. EMPIRICAL MODELLING of M3

In an Autoregressive Moving Average (ARMA) model a variable is explained by its own lags and also by the past white noise terms. When a variable is non stationary in levels but stationary at its first difference , we use Autoregressive Integrated Moving Average (ARIMA) model where the first difference of the variable is the dependent variable.

We have used unit root test to check for stationarity in money supply(M3).

The Null hypothesis of unit root test is presence of unit root or non stationarity. Results of unit root test shows that M3 is stationary at its first difference

V. RESULTS

Unit root test for M3 (Using fortnightly data from 4th January,2019 to 4th December, 2020

		5% Critical Value	10% Critical Value
ADF Test Statistic (level)	-3.1648	-3.5207	-3.1912
ADF Test Statistic (First difference)	-8.6182	-3.5236	-3.1929

Results of the Autoregressive Integrated Moving Average [ARIMA(1,1)] fitted to M3 data (fortnightly data from 4th January, 2019 to 4th December 2020)

Dependent Variable D(M3)

Method :Least squares

Variable	Coefficient	Std. Error	t-statistic	Prob
C	0.028539	0.004886	5.840519	0.0000
AR(1)	0.549438	0.174988	3.139860	0.0039
MA(1)	-0.980000	0.144319	-6.910857	0.0000

R-squared 0.513464

VI. CONCLUSION

We find an overall increasing trend with a slight decline in a few periods in M3 data for the sample period and we find that ARIMA (1,1) model fits the fortnightly M3 data from 4th January, 2019 to 4th December, 2020.

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