

Treasury Bills Market : A Comparative Study of 91 Days, 182 Days and 364 Days Treasury Bills in India

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Abstract

The money market operations are generally short-term in nature. Treasury bill is one of the widely used money market instrument. These bills help in meeting the short-term deficit needs of the Government. The Government, with the help of RBI, absorbs or injects the liquidity by selling or purchasing treasury bills. Treasury bills rate keep on fluctuating due to number of reasons such as inflation, change in bank rate, money supply in the economy, exchange rates etc. This paper tries to explore the behaviour and fluctuations in interest rates of three kinds of treasury bills, namely 91 days T-bills, 182 days T-bills and 364 days T-bills for the period from April 2016 till July 2018. It has used descriptive statistical tools, such as mean and standard deviation to analyse the data. The paper made use of graphs as well. The results indicate that these bills are strongly related with each other during the period of study and has shown lesser variations that reflects efficient market.

Key Words

T-Bills, RBI, Interest Rates

INTRODUCTION

Treasury Bills : A Non-Inflationary Tool of Government to Raise Short-Term Funds

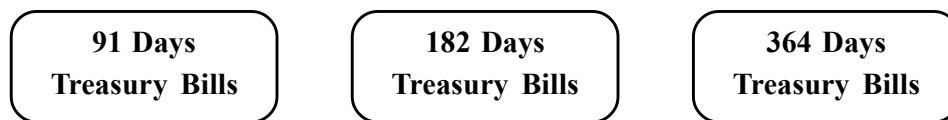
Treasury bill is one of the money market instruments that provides funds for up to one year. These were issued in 1917 in India for the first time. This instrument helps the Government of India to raise money for short-term. These are issued by the RBI on behalf of Government of India. These are issued by way of

auctions which are conducted at regular intervals by RBI. This is the dominant segment of Indian money market.

These bills are always issued on discount to face value. The investors will get the face value on the date of maturity. This difference between the issue price and the maturity value or face value is the return to the holder. We can say that return on T-Bills is based on auctions. The returns are higher when the liquidity in the economy is squeezed and the returns are lower when there is surplus liquidity in an economy.

KINDS OF TREASURY BILLS

Treasury bills are of different types on the basis of their maturity period. At present, the 3 most prominent types of treasury bills are as :



91 Days Treasury Bills : These bills have the smallest maturity period. These are issued by RBI by conducting weekly auctions.

182 Days Treasury Bills : These bills are issued for a period of 6 months. The auctions of these bills is conducted on Wednesday preceding Non-reporting Friday

364 Days Treasury Bills : These bills are issued for a period of upto one year. These are auctioned by RBI on Wednesday preceding the Reporting Friday. The rate of return increases with the increase in period of maturity.

Facets and Benefits of Treasury Bills

- These are issued for a minimum denomination of Rs. 25000 or in multiples thereof.
- These give the support to the Government in raising short-term funds. This is the non-inflationary measure available to the Government for raising money.
- It helps the investors to park their short-term idle funds without any market risk. These have zero degree of risk as they are issued by the Government.
- Interest on the treasury bills is determined by market forces of demand and supply. It leads to better pricing of these securities.
- Higher transparency as the auctions details, bid price, cut off price and related data is continuously published by the RBI on its website.

REVIEW OF LITERATURE

Puri (2012) in her paper examined the importance of money market in the development of the nation. It highlighted that money market helps in balancing out short-term liquidity imbalances and makes provision of funds at an affordable price. Further, it helps in proper execution of the country's monetary policy. The study also highlighted the importance of treasury bills as one of the safest security to invest idle funds. It was identified that RBI generally issues treasury bills in order to absorb excess liquidity from the market and vice-versa.

Sharma (2013) in her research paper made an attempt to study the relationship between 3 months treasury bills and 6 months treasury bills in India. The study made use of secondary data covering the period from April 1996 to June 2012. The study identified that the two bills are strongly linked to each other in the long run. The findings highlighted 0.31 of the deviation in the rates in last month gets eliminated in current month to restore the equilibrium in two treasury bills.

Das (2014) in his research paper made an attempt to study the investment pattern of banks in treasury bills in Bangladesh. The study was based on secondary data covering the period of 2013 and 2014. The study identified that banks started investing more in treasury bills due to excess liquidity and to earn some profits. It was highlighted that banks in Bangladesh considered treasury bills safer than loans and advances that led to increase in their investment. The study found that Government raised money by selling treasury bills to banks that amounted to BDT 77875 crore in 2013 that increased to BDT 80000 crore in 2014.

Dua and Raje (2014) in their research paper tried to explore various determinants of Government yields in India. The study made use of secondary data covering the period from April 2001 till June 2012. The study used the data for 91 days treasury bills, Government securities having maturity of 1 year, 5 years and 10 years. The study found that interest rate or yield on these securities is influenced by determinants such as policy rate, money supply in the economy, inflation, interest rate spread and also by foreign interest rates.

RESEARCH OBJECTIVE

The paper aims to analyse the fluctuations and behaviour of interest rates of 3 types of treasury bills having different maturity period namely 91 days T-bills, 182 days T-bills and 364 days T-bills.

RESEARCH METHODOLOGY

This paper uses the monthly data of 91 days T-bills, 182 days T-bills and 364 days T-bills. The study makes use of secondary data which is collected from the website of RBI for the period April 2016 till July 2018. Descriptive statistics, such as mean and standard deviation, have been used to analyse the data. The behaviour of interest rates can be easily traced from the graphs plotted in the paper.

Data Analysis and Findings

The following Table shows the monthly interest rates of 91 days T-bills, 182 days T-bills and 364 days T-bills from April 2016 till July 2018. The mean rate and the standard deviation across different months as well as among the 3 types of treasury bills is also shown below.

Table 1

Year		91Days T-Bills	182 Days T-Bills	364 Days T-Bills	Mean	Standard Deviation
2016-17	Apr.	6.8121	6.9083	6.9137	6.878	0.057
	May	6.8536	6.9513	6.9595	6.921	0.059
	Jun.	6.7292	6.8225	6.9022	6.818	0.087
	Jul.	6.5634	6.694	6.7421	6.667	0.092
	Aug.	6.5634	6.6725	6.6736	6.637	0.063
	Sep.	6.5219	6.6297	6.5824	6.578	0.054
	Oct.	6.3563	6.4587	6.4573	6.424	0.059
	Nov.	5.9428	6.0748	5.9598	5.992	0.072
	Dec.	6.2735	6.3519	6.3438	6.323	0.043
	Jan.	6.2322	6.2239	6.2532	6.236	0.015
	Feb.	6.1495	6.2665	6.2985	6.238	0.078
	Mar.	5.8189	6.0535	6.1401	6.004	0.166
2017-18	Apr.	6.1908	6.3092	6.4459	6.315	0.128
	May	6.3149	6.3946	6.4686	6.393	0.077
	Jun.	6.2735	6.3305	6.3778	6.327	0.052
	Jul.	6.1495	6.2452	6.2872	6.227	0.071
	Aug.	6.1081	6.2239	6.2532	6.195	0.077
	Sep.	6.1081	6.2239	6.2419	6.191	0.073
	Oct.	6.1081	6.1812	6.2192	6.170	0.056

Contd.

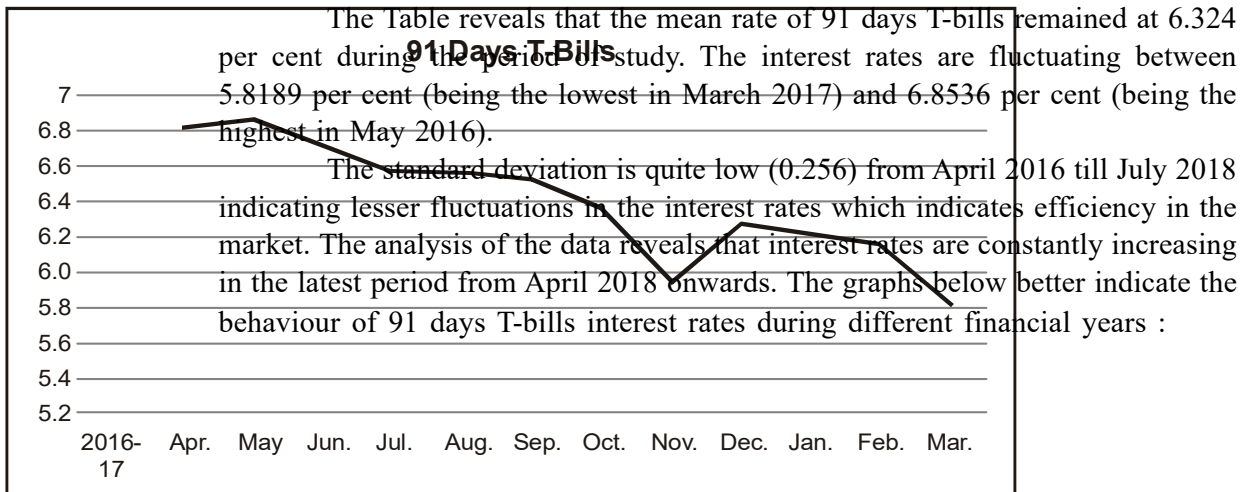
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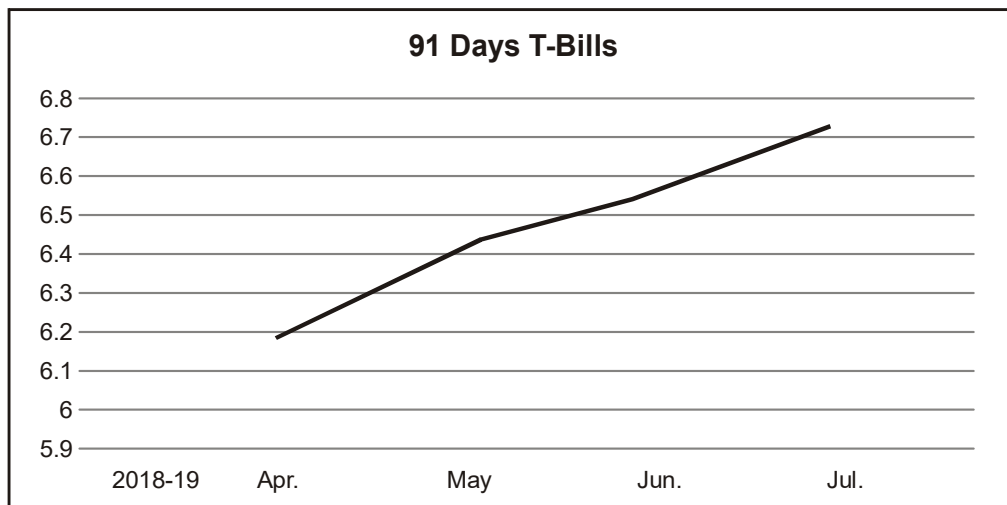
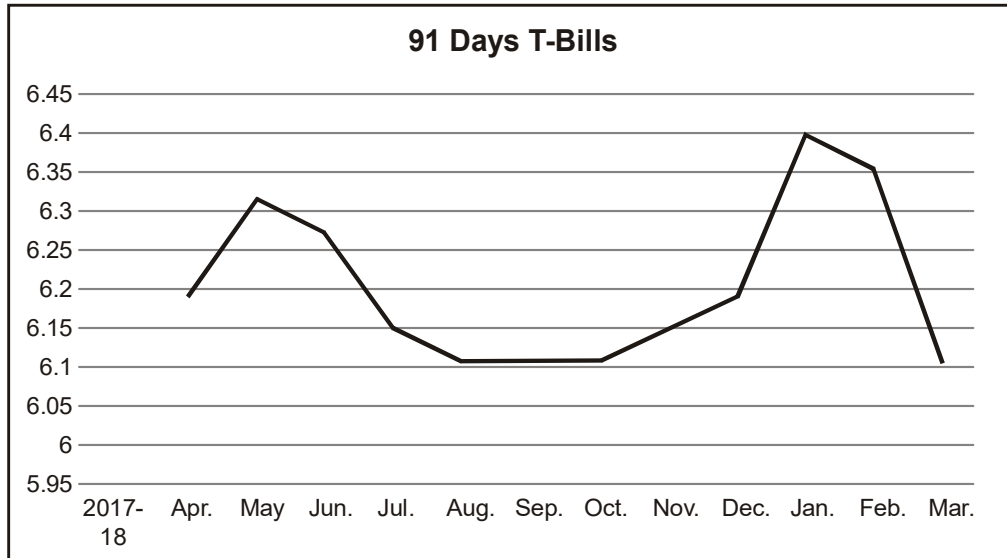
	Nov.	6.1495	6.2452	6.2758	6.224	0.066
	Dec.	6.1908	6.3305	6.4232	6.315	0.117
	Jan.	6.3977	6.5014	6.5824	6.494	0.093
	Feb.	6.3563	6.5014	6.6622	6.507	0.153
	Mar.	6.1081	6.3305	6.4914	6.310	0.192
2018-19	Apr.	6.1908	6.4159	6.628	6.412	0.219
	May	6.3977	6.8011	6.9251	6.708	0.276
	Jun.	6.5219	6.8869	7.1318	6.847	0.307
	Jul.	6.6877	6.9727	7.27	6.977	0.291
Mean		6.324	6.464	6.532		
Standard Deviation		0.256	0.275	0.317		

Source : RBI, Handbook of Statistics on Indian Economy, Various issues

Data Interpretation

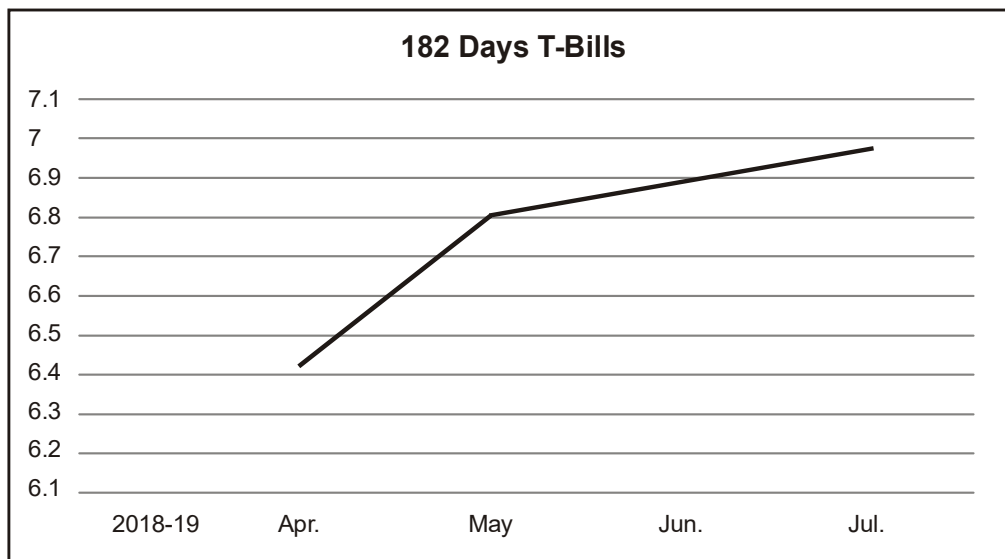
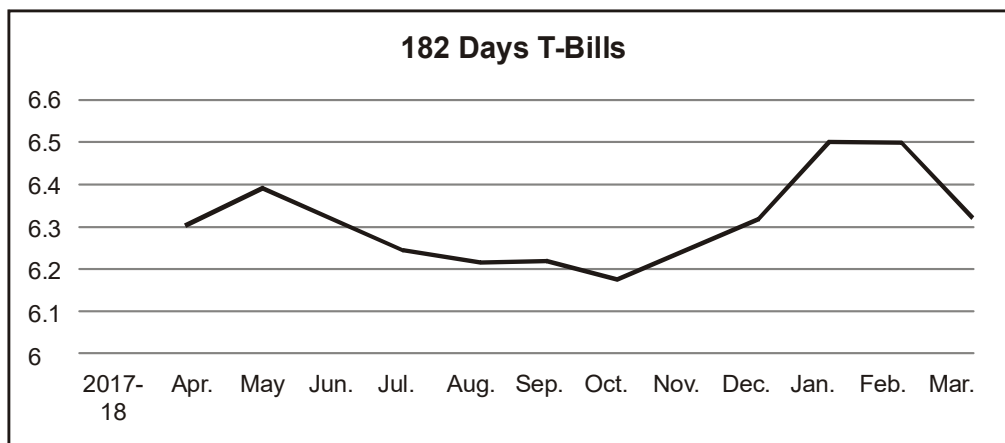
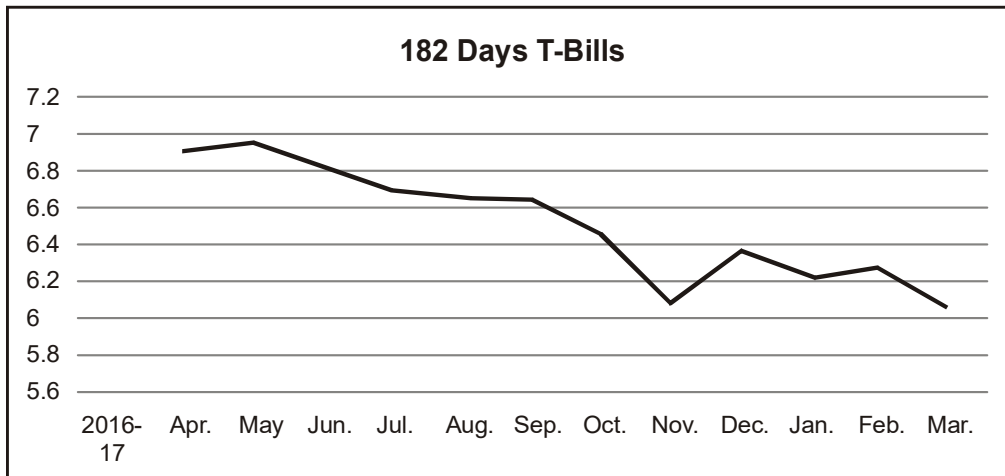
91 Days T-Bills





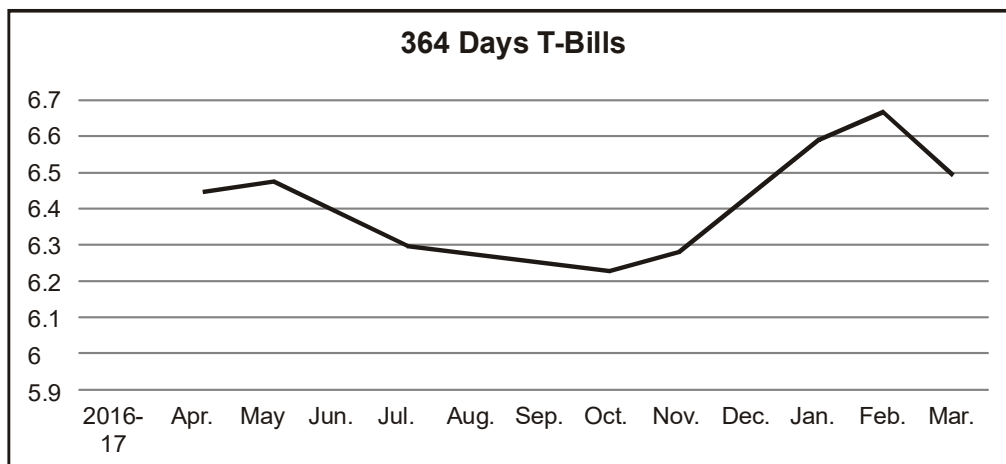
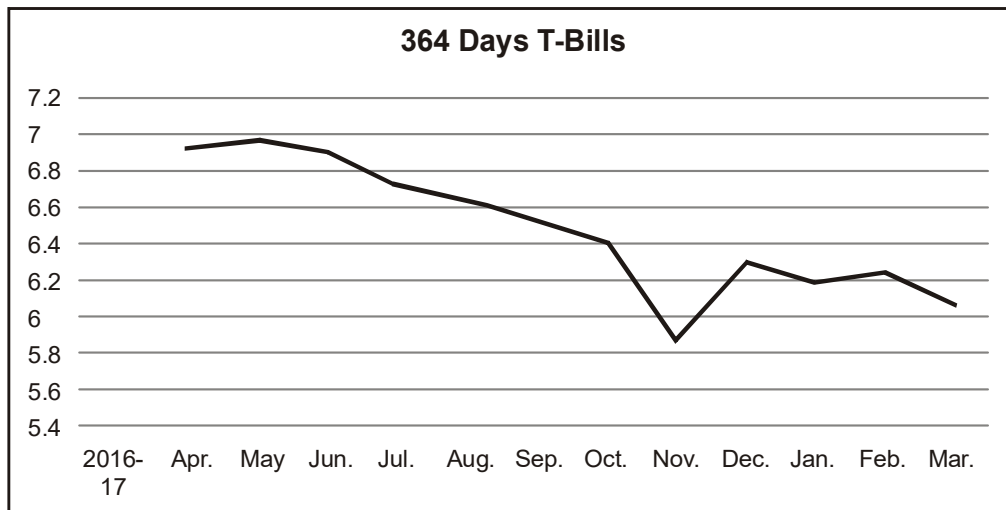
182 Days T-Bills

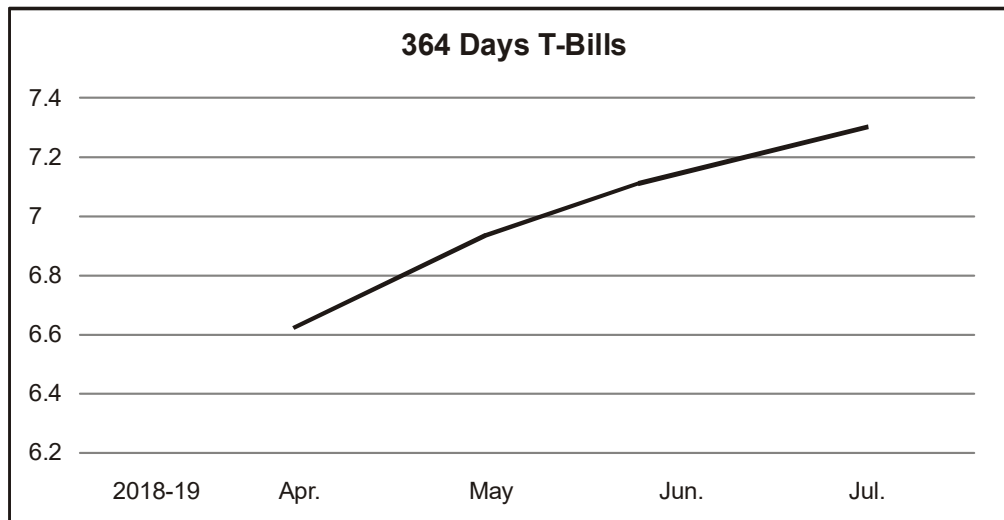
The range of fluctuation between interest rates of 182 days T-bills is between 6.0535-6.9727 per cent during the period of study. The rate was highest in the recent month of July 2018 (6.9727) and lowest in March 2017. The mean rate remains at 6.464 per cent for these years. The standard deviation is also less that is 0.275 indicating mild fluctuations during the period of study which is a good sign of efficient market. These rates are also increasing from March 2018 onwards and became highest in July 2018. The graphs below better indicate the behaviour of 182 days T-bills interest rates during different financial years :



364 Days T-Bills

The average rate of these type of bills remains at 6.532 per cent during these months. The interest rate was highest in the month of July 2018 being at 7.27 per cent and lowest in November 2016 being at 5.9598. Thus standard deviation is also low that is 0.317 which is again a good indication. Same as 182 days T-bills these rates are also increasing from March 2018 onwards and became highest in July 2018. The graphs below better indicate the behaviour of 364 days T- bills interest rates during different financial years :





91 Days, 182 Days and 364 Days Treasury Bills Analysis

The mean rate of all types of treasury bills ranges between 5.992-6.977 per cent in the period of study. It was lowest in November 2016 (5.992) and highest in July 2018 (6.977).

The standard deviation which reveals the fluctuations in the interest rates among three types of treasury bills ranges between 0.015 (being lowest in January 2017) and 0.307 (being highest in June 2018). However, standard deviation is quite low in all the months of study which indicates that these 3 categories of treasury bills are strongly integrated with each other.

It can also be analysed from the data that interest rates are increasing with the maturity period of T-bills.

Also, if interest rates fall in any month, it falls for each category of treasury bills at varying degrees indicating the strong relationship among these 3 types of treasury bills.

CONCLUSION

The analysis of the paper concludes that 91 days T-bills, 182 days T-bills and 364 days T-bills are strongly integrated to each other. The standard deviation which reveals the fluctuations in the interest rates among three types of treasury bills ranges between 0.015 and 0.307. This analysis of interest rates in different months indicates that there are lesser fluctuations in all the segments which is a sign of efficiency in these markets. Also, interest rates are strongly related to each other as if interest rates fall in one segment the same is the case with other

segments and vice versa. The study favours the point that interest rates rise with the increase in period of maturity of treasury bills.

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