

Growth, Risk and Return on Short Debt Instrument in India with Reference to 364 Days Treasury Bills

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Abstract:

Central government has to perform more welfare activities for the sake of people. It has various monetary sources namely individual tax, tax levied on goods and services, and other taxes. The money collected by the government has not proven to be sufficient to discharge all its duties. Under such circumstances, it issues long term as well as short term securities to raise funds. Treasury bill is one of the short term instruments issued by government in the money market to fulfill its financial requirements on a short term basis. In India, Treasury bills are classified into 14 days treasury Bills, 91 days treasury bills and 364 days treasury bills. Among the treasury bills, 364 days treasury bills have more duration and investors who wish to retain their money at least for a year prefer these bills. This paper analyze 364 days treasury bills traded in the secondary market in terms of number, volume and outstanding amount of trade, return and risk during the study period.

Keywords: Risk, Inflation, Return, Standard Deviation, Annual Compound Growth Rate

1. Introduction

The government needs money to fulfil its financial commitments for the sake of country. It may be either on long term basis or short term basis. In order to fulfil the short term requirements, the governments and corporates issue many securities many securities in the money market. Treasury bills especially 364-Days Treasury Bills is also one among them. It was introduced in April 1992 and the auctions were conducted on fortnightly basis. After October 1998, auctions have been conducted on monthly basis. 364 Days Treasury bill has liquidity, safety and reasonable return too.

Objectives

The following are the main objectives of the study.

1. To study the growth of 364 Days treasury Bills in the secondary market.
2. To analyse the risk and return on 364 Days Treasury Bills during the study period.

2. Methodology

The study is purely based on secondary data. Secondary data collected relating to 364 Days treasury bills in terms of outstanding at the end of each year were RBI website. For knowing trading of 364 days Treasury Bills in secondary market, data collected from wholesale debt market, NSE. 364 Days treasury Bills for 11 consecutive financial years were taken and analysed by using percentage, standard deviation, coefficient of variation, Compound Growth Rate, Average Annual Compound Growth Rate, Trend analysis, line chart.

Scope and Period of the Study

Yearly based data related to the 364 Days Treasury Bills were taken for the study. Trend in 364 Days treasury Bills were studied along with growth over the years along with return in each year were analysed with risks connected with them. This study helps the investors who wish to invest money in 364 Days Treasury bills on a regular basis. The study period covers 11 financial years from 2005-06 to 2016-17.

3. Result and Discussion

The number of 364 Days T- Bills traded in the Wholesale Debt market during the study period, the expected trend in trading of 364 Days Treasury Bills, Growth of Trade Over the Previous Year, Average Annual Growth Rate and Compound Annual Growth Rate are shown in Table 1.

Table 1. 364 Days treasury bills traded in the market

Year	Number of Trade	Trend	Changes Over the Previous Year (in Percentage)
2005-06	3129	1525	-
2006-07	1349	1424	-57
2007-08	434	1322	-68
2008-09	469	1221	8
2009-10	475	1119	1
2010-11	418	1018	-12
2011-12	1253	916	200

2012-13	1028	815	-18
2013-14	1380	713	34
2014-15	991	612	-28
2015-16	440	510	-56
2016-17	239	409	-46
AAGR	0%	CAGR	19%

Source: RBI Data base Websites.

It is observed from Table 1 that the number of 364 Bills traded in the market is in between 239 to 3,129 times. The percentage growth over the years varies from -68 to 200. Average Annual Growth Rate is zero; but the constant growth throughout the study period is 19 per cent.

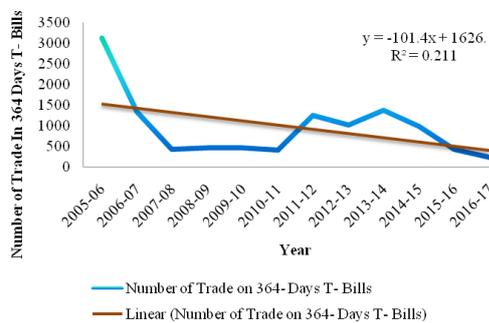


Figure 1. Number of traded in 364 - days treasury bills

Source: Drafted based on data from table 1

Figure 1 shows the relationship between actual and estimated trend on the number of 364 Days T-Bills traded during the study period, R² value is 0.211 and the constant value and bin a trend equation. It can be inferred that the number of 364 Days T-Bills traded in the market has 21 per cent variability over the trend value

Volume of 364 Days Treasury Bills traded in the market its Expected trend, Growth over the Years is given in Table 2.

Table 2. Volume of 364 days treasury bills traded in the market trend and growth

Year	Volume (in Millions)	Trend	Changes Over the Previous Year (in Percentage)
2005-06	68,044.95	34,537.85	
2006-07	33,777.56	39,972.91	-50.4
2007-08	12,438.82	45,407.96	-63.2
2008-09	17,281.36	50,843.02	38.9
2009-10	24,179.61	56,278.07	39.9
2010-11	29,475.43	61,713.13	21.9
2011-12	1,28,146.04	67,148.18	334.8
2012-13	1,07,401.7	72,583.24	-16.2
2013-14	1,52,644.5	78,018.29	42.1
2014-15	1,04,330.9	83,453.34	-31.7
2015-16	55,697.86	88,888.4	-46.6

2016-17	39,749.11	94,323.45	-28.6
AAGR	0%	CAGR	-4%

Source: CMIE and RBI websites

Table 2 reveals that volume of 364 Days Treasury Bills traded in the market varies between ₹34537.85 million to ₹ 94323.45 million. The percentage growth over the years varies from -63. to 334.8. AAGR is zero; CAGR decreases exponentially at the rate of -4 per cent. The actual volume of 364 Days Treasury Bills traded in the years 2005-06, 2011-12, 2012-13 and 2013-14 is more than the estimated value.

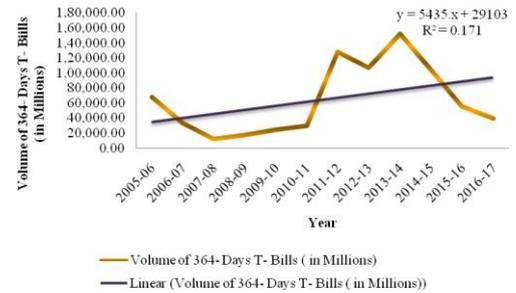


Figure 2. Volume of 364 days treasury bills traded in the market

Source: Drafted based on data from table 2

Figure 2 shows the relationship between actual and estimated trend on Volume of 364 Days T-Bills traded during the study period, R² value is 0.1711 and the constant value of a and b in a trend equation. It can be inferred that the volume of 364 Days T-Bills traded in the market has 17 per cent variability over the trend value.

Table 3. Outstanding of 364 - days treasury bills – growth and trend

Year	Outstanding (in millions)	Changes over the previous year (in percentage)	Trend
2006-07	18,84,050		11,16,794
2007-08	22,98,880	22	16,30,030
2008-09	21,78,510	-5	21,43,267
2009-10	17,17,730	-21	26,56,503
2010-11	17,33,710	1	31,69,740
2011-12	28,34,570	63	36,82,976
2012-13	47,81,070	69	41,96,213
2013-14	53,53,360	12	47,09,449
2014-15	57,24,810	7	52,22,686
2015-16	59,15,980	3	57,35,923
2016-17	60,90,070	3	62,49,159
AAGR	30%	CAGR	11%%

Source: CMIE and RBI websites.

It is observed from Table 3 that the AAGR is 30 per cent and CAGR is 11 per cent. The outstanding of 364 Days Treasury Bills during the study period ranges from ₹17, 17,730 to ₹60, 90,070. The Actual Outstanding of 364 Days Treasury Bills held by participants is more in the years 2006-07, 2007-08, 2012-13, 2013-14 and 2015-16 is more than the estimated value.

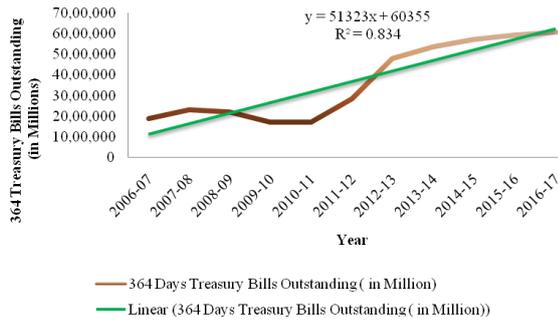


Figure 3. Outstanding of 364 - days treasury bills – growth and trend

Source: Drafted based on data from table 3.

Figure 3 shows the relationship between actual and estimated trend on Outstanding Amount of 364 Days T- Bills held during the study period, R^2 value is 0.834 and the constant value of a and b in a trend equation. It can be inferred that the outstanding amount of 364 Days T- Bills held during the period 83.4 per cent variability over the trend value.

Table 4 shows the average yield earned by the investors, inflation and the real return earned by the investors during the study period. Real return is the difference between average yield and inflation.

Table 4: Real return on 364 days treasury bills

Year	Average yield	Inflation	Real return	Changes of real return over the previous year
2005-06	6	4.5	1.5	-
2006-07	7	5.5	1.5	0
2007-08	7	5.0	2.0	0.33
2008-09	8	4.5	3.5	0.75
2009-10	4	3.5	0.5	-0.86
2010-11	6	5.0	1.0	1.00
2011-12	8	7.8	0.2	-0.80
2012-13	8	7.0	1.0	4.00
2013-14	9	7.2	1.8	0.80
2014-15	9	6.0	3.0	0.67
2015-16	7	5.0	2.0	-0.33
2016-17	7	5.4	1.6	-0.20
AAGR	5%	4%	49%	
S.D.	1.40	1.26	0.94	1.33
Mean.	7.16	5.53	1.63	0.49
C.V.	19.6%	15.84%	8.93%	17.68%

Source: RBI and CMIE websites.

Table 4 shows that the average yield for 364 Days Treasury Bills lies in between 4 to 9 per cent; growth over the year is in between -50 to 50 per cent; Mean value is 7; standard deviation is 1.4 and the co-variation is 19.6 per cent. Investment in 364 Days Treasury Bills has 19.6 per cent volatility. The inflation during the study period varies from 3.5 to 7.8 and the Real return varies from 0.2 to 3.5 and the changes of real return over the previous year varies from -0.86 to 4 that reflects the high volatility in getting real return in 364 Days Treasury Bills.

4. Conclusion

Money Market holds a crucial role in helping the Banks, Governments, Financial Institutions and Corporates to fulfill their short term requirements. 364 days Treasury Bills is also one of the money market instrument that satisfy the needs of the government on the one side and it helps the cautious investors to invest their money in securities on the other. The Policy makers and Regulatory bodies should recognize the role of 364 Days Treasury Bills in monetary system and take every step to

develop 364 days Treasury Bills by understanding the deficiencies in the present system help the corporate and others involving themselves in trading of 364 days treasury bills at any time through money market eventually help the country to develop economically at a steady pace.

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