



REACTION OF SHARE PRICES FOR THE IMPLEMENTATION OF T+0 TRADING SETTLEMENT AT BSE

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ABSTRACT

The implementation of same-day settlement is going to bring about a dramatic upheaval in the Indian stock market. Indian exchanges have historically used a T+2 settlement cycle. This was reduced to T+1 in January 2023, with a gradual implementation beginning in January 2022. Within a year of completely implementing T+1 settlement, the market is already moving toward same-day trade settlement. With T+0 settlement, deals are settled the same business day they are executed, and sellers receive their money on the same day the trade is executed—a paradigm change. This increases portfolio liquidity and agility by allowing investors to reallocate funds without waiting for the settlement cycle. There will be a T+0 settlement applied to 25 stocks on 28th March 2024. In the present study, an attempt is made to investigate the impact of the introduction of T+0 settlement on price behaviour of the shares of the company for which this new system was implemented. It is an event study and the date of introduction of this new settlement system in BSE is being considered as the date of event. The event window is 31 days; event study methodology is being used for the analysis. The entire study is based on secondary data.

KEY WORDS: AAR, CAAR, settlement, stock market.

INTRODUCTION

Trade settlement is a bidirectional procedure wherein the buyer and seller exchange cash and securities. A real transaction is one in which the securities that have been bought and sold, as well as the trade price, are agreed upon by both parties. Following transaction execution, the exchange of cash and securities is finalized and the settlement procedure is initiated to guarantee that the terms of the deals are fulfilled. The day the trade is settled and ownership of the securities is passed from the seller to the buyer is known as the settlement date. It is the day that the securities are delivered and the cash is paid. Trade settlement is the process of making sure everything is squared away and both parties involved in the trade have fulfilled their obligations. In the financial sector, trade settlement procedures have evolved over time. Transactions used to take weeks to complete in the past. However, as a result of advancements in technology and procedure, settlements now occur far more quickly. Here is history of how trade settlements took time in India:

- Pre-2001 (exact year unknown): T+5 settlements for most stocks in India.
- December 2001: T+5 settlements apply to all stocks in India.
- April 2002: Settlement cycle reduces to T+3 for stocks in India.
- April 2003: T+2 settlements become the standard for stocks in India.
- January 2022 (optional): Stock exchanges in India allowed offering T+1 settlements for certain securities.
- March 2024: Stock exchanges in India allowed offering T+0 settlements for certain securities.

In addition to the current T+1 settlement cycle, the SEBI proposed in December 2023 to add an optional facility for the clearing and settlement of money and securities on T+0 (same day). Trade settlement would take place the day following the T+0 market's closure in a T+0 trade cycle. This implies that if investors sell a share, the buyer would also receive the shares in their demat account on the day of the transaction itself, and investors would have the money credited to their account on the same day. This is the fastest stock settlement system in the world. By contrast, the existing T+1 methodology causes a one-business-day delay between the date of transaction execution and the settlement date. Under this arrangement, vendors only get paid 80% of their total cash amount on the day of sale; the remaining 20% is available on the next day. The new T+0 settlement method, on the other hand, would remove the need for sellers to wait until the next day to receive the remaining amount because they would have immediate access to 100% of their cash on the day of the transaction.

A shorter settlement cycle will improve investor transparency, save costs and time, and improve clearing companies' and the securities market ecosystem's risk management. It is anticipated that the T+0 trade cycle will offer flexibility in terms of quicker payments to sellers of funds secured by securities and quicker payments to buyers of securities secured by funds. It will enable investors to have more control over their money and assets. A shorter settlement cycle will further free up capital in the securities market, improving overall market efficiency for the securities market ecosystem. Due to the deals' upfront funding and securities backing, Clearing Corporations (CCs) will be able to better manage their overall risk.

LITERATURE REVIEW

Abobaker, Awadalba Gafer Elhussin (2023) found that application of the new settlement mechanism (T + 2) under consideration led to an increase in the efficiency and revitalization of the Saudi financial market, which helped launch the trading index for financial derivatives, especially futures and options contracts, which will depend on the MSCI Tadawul index 30 and MT30.

Manoj Dalvi, James F. Refalo and Golak C. Nath (2010) found in their study that impact cost has a stronger relationship to the indicators of market efficiency under rolling settlement. However, it was also found two structural inefficiencies related to the day-of-the-week on which trades are conducted: 1) under rolling settlement, trades conducted earlier in the week (and settled by Thursday) have lower impact costs, and 2) there is an impact cost premium for Friday trades.

It is observed from the literature review that there are no studies found on the impact of T+0 trade settlements on the share market behaviour of the companies for which the new regime is implemented. Therefore, to understand the impact of new trade settlement regime on the share price behaviour, the current study is being undertaken.

SCOPE OF THE STUDY

The study covers all the companies for which the T+0 trade settlement is implemented. It is an event study, the event window is 61 day, and estimation window is 250 working days. Event window is divided into three parts: post-event window (30 working days), pre-event window (30 working days) and the date of the event window. T+0 settlement was implemented on 28th March 2024 for 25 stocks traded on BSE and this date is considered as the event day. 30 working days prior to this date is treated as pre-event window and 30 working days after the event date are treated as post-event window.

OBJECTIVE OF THE STUDY

The aim of the study is to test the impact of implementation of T+0 settlements on the price behaviour of underlying shares.

HYPOTHESIS OF THE STUDY

Following is the hypothesis of the study:

H₀: T+0 settlements have no impact on the price behaviour of underlying shares.

H₁: T+0 settlements have an impact on the price behaviour of underlying shares.

RESEARCH METHODOLOGY

It is an event study (analytical in nature). The entire study is based on secondary data extracted from various sources like; books, journals and websites. The share price data and the SENSEX prices are downloaded from BSE website. Sample size of the study is 25 companies for which the new settlement regime has been implemented on 28th March 2024.

As it is an event study; pre-event days are denoted by minus (-) signs and post-event days are denoted by plus (+) signs. Table, charts, averages, One Way ANOVA and paired comparison t test are being used for analysis and to test the hypothesis. Various event study models used in the study are:

$$1. \text{ Daily stock return} = \ln\left(\frac{P_1}{P_0}\right)$$

Where P_1 = Closing stock price and P_0 = Opening stock price

$$2. \text{ Daily SENSEX return} = \ln\left(\frac{P_1}{P_0}\right)$$

Where P_1 = Closing SENSEX price and P_0 = Opening SENSEX price

$$3. \text{ Daily expected stock return} = \alpha + \beta \times R_m$$

α and β are the constants of regression model and are calculated based on the stock returns and market returns of the estimation window R_m is the stock market return

$$4. \text{ Daily abnormal of the stock} = \text{Daily stock return} - \text{Daily expected stock return}$$

$$5. \text{ Cumulative Abnormal Return} = \sum_{i=1}^N \text{CAR}_i$$

LIMITATIONS OF THE STUDY

- As the data is based on secondary source, reliability of the data depends upon the purity of the secondary data collected.
- It is assumed that all other factors affecting share price movements during the study period remains constant.

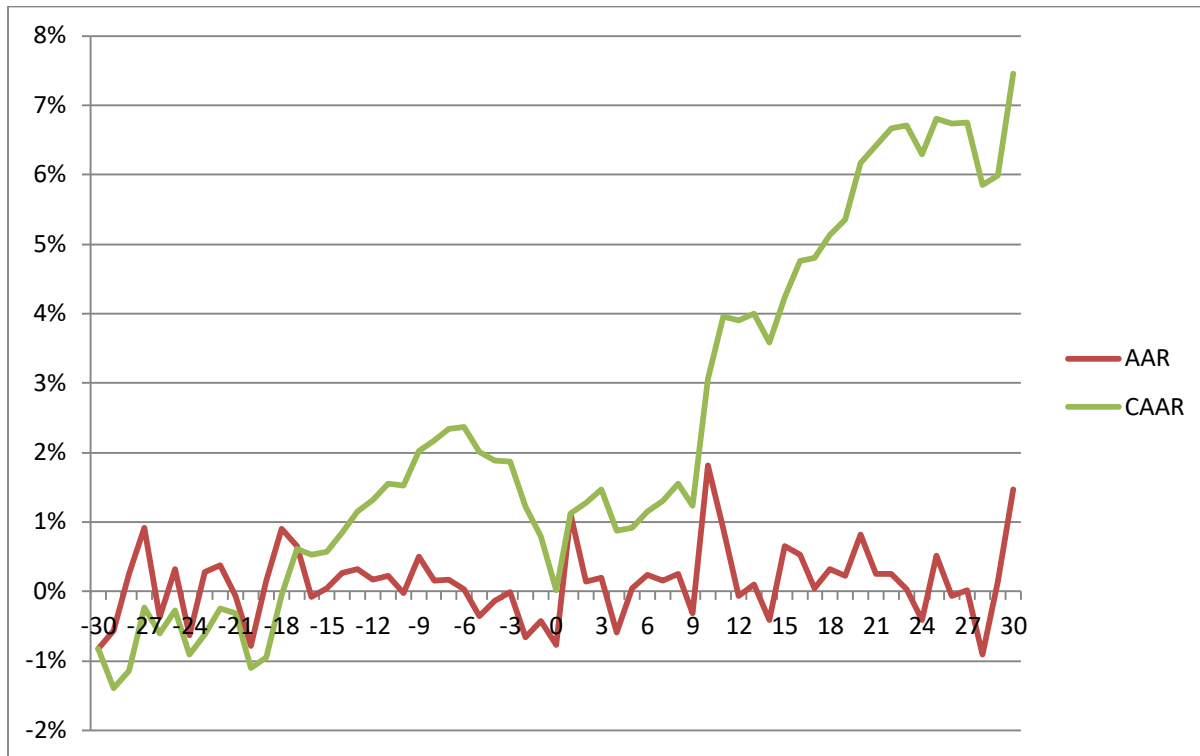
DATA ANALYSIS AND INTERPRETAION

Table 1: AAR, CAAR, t value, p value of the event window

Day	AAR (%)	t	p	CAAR (%)	Day	AAR (%)	t	p	CAAR (%)
-30	-0.821	-1.400	0.163	-0.821	0	-0.770	-1.312	0.191	0.017
-29	-0.569	-0.969	0.333	-1.390	1	1.107	1.887	0.060	1.124
-28	0.246	0.419	0.676	-1.144	2	0.147	0.250	0.803	1.271
-27	0.911	1.553	0.122	-0.234	3	0.197	0.336	0.737	1.467
-26	-0.368	-0.627	0.531	-0.601	4	-0.594	-1.013	0.312	0.873
-25	0.324	0.553	0.581	-0.277	5	0.042	0.072	0.942	0.916
-24	-0.629	-1.073	0.284	-0.906	6	0.238	0.405	0.686	1.153
-23	0.286	0.488	0.626	-0.620	7	0.148	0.253	0.800	1.302
-22	0.371	0.632	0.528	-0.249	8	0.252	0.429	0.668	1.553
-21	-0.069	-0.117	0.907	-0.318	9	-0.316	-0.539	0.591	1.237
-20	-0.788	-1.343	0.180	-1.106	10	1.818	3.100	0.002	3.056
-19	0.161	0.275	0.784	-0.945	11	0.902	1.538	0.125	3.958
-18	0.898	1.530	0.127	-0.047	12	-0.061	-0.104	0.917	3.897
-17	0.659	1.124	0.262	0.612	13	0.103	0.176	0.860	4.000
-16	-0.085	-0.144	0.885	0.528	14	-0.416	-0.709	0.479	3.585
-15	0.047	0.081	0.936	0.575	15	0.647	1.103	0.271	4.232
-14	0.265	0.451	0.652	0.840	16	0.527	0.898	0.370	4.759
-13	0.316	0.539	0.591	1.156	17	0.044	0.074	0.941	4.802
-12	0.167	0.285	0.776	1.323	18	0.326	0.556	0.579	5.128
-11	0.223	0.380	0.704	1.546	19	0.227	0.387	0.699	5.355
-10	-0.029	-0.049	0.961	1.518	20	0.814	1.387	0.167	6.169
-9	0.501	0.854	0.394	2.018	21	0.249	0.424	0.672	6.418
-8	0.153	0.260	0.795	2.171	22	0.253	0.431	0.667	6.671
-7	0.162	0.277	0.782	2.333	23	0.035	0.060	0.952	6.706
-6	0.034	0.058	0.954	2.367	24	-0.412	-0.702	0.483	6.294
-5	-0.352	-0.601	0.549	2.015	25	0.515	0.879	0.380	6.809
-4	-0.129	-0.219	0.827	1.886	26	-0.069	-0.118	0.906	6.740
-3	-0.017	-0.029	0.977	1.869	27	0.014	0.023	0.981	6.754
-2	-0.654	-1.115	0.266	1.215	28	-0.903	-1.539	0.125	5.851
-1	-0.428	-0.731	0.466	0.787	29	0.140	0.238	0.812	5.991
0	-0.770	-1.312	0.191	0.017%	30	1.471	2.508	0.013	7.461

Source: Compiled from BSE

Chart 1: AAR and CAAR of the event window



Source: Authors' compilation

Table 1 and Chart 1 show the AAR and CAAR of the 61 day event window. Accordingly, there are 19 positive AARs during the pre-event window and 23 positive AARs during the post-event window. It is also observed that the AAR of the event date is negative (-0.77%). The CAAR of the event window is 7.461%. According to the t test result, none of the daily AAR is significant.

TESTING OF HYPOTHESES

For testing the null hypothesis, we have used two parametric testing tools; paired-comparison t test and One Way ANOVA tests. Both the tests were conducted at 5% level of significance. Table 2 presents the result of paired-comparison t test and Table 3 shows the result of One Way ANOVA tests. According to Table 2 and 3, the calculated t value and F value is insignificant at the given level of confidence and hence the hypothesis is accepted.

Table 2: Paired Comparison t test

Pre and Post event window	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
	-.0022	.00801	.00144	-.0051	.00079	-1.493	30	.146

Source: Authors' compilation

Table 3: One Way ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Pre and Post AARs	7.27E-05	1	7.27E-05	2.762927	0.101867	4.006873
Error	0.001527	58	2.63E-05			
Total	0.001599	59				

Source: Authors' compilation

FINDINGS AND SUGGESTIONS

The current study was being undertaken to test the existence of abnormal returns around the implementation of T+0 trading settlement in Indian stock market, with special reference to BSE. Daily abnormal returns were calculated for each of the 25 stocks for which the new settlement regime was implemented and then the average abnormal returns

were calculated for the given event window. During the 30 day post-event window, 23 positive abnormal returns were observed. More than that, the CAAR for the event window is positive, i.e., 7.46%. It indicates that the event has improved the liquidity of the stock market with regard to those underlying shares. We can also interpret that the new settlement system has resulted in positive trend of the share prices during the event window. Even though the AARs and CAAR indicates that the event has a positive impact on the price behaviours of the underlying shares, the result of t test conducted for the daily average abnormal returns reveals that none of the abnormal return is significant. It is also supported by the result of hypothesis tested. As under both the parametric testing tools used in the study, the hypothesis is accepted, we conclude that the introduction of T+0 trading settlement had a positive impact on the price movement of the sample shares but the impact was insignificant.

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