

CHAPTER IV : RESULTS & DISCUSSIONS

This chapter presents and analyses the findings from the comparative evaluation of four RSI models (namely Traditional RSI, RSI_M, TN-RSI and RSI_{MC}) applied across 20 selected Malaysian stocks over a 10-year period. Two trading conditions were tested: 'Without Stop Loss' and 'With Stop Loss'. The performance was assessed based on key metrics including net profit, average profit per trade, annualised profit, win rate, average holding period and complete trade frequency, with extra two metrics for 'With Stop Loss' condition, stop loss frequency and stop loss percentage. In addition to these, statistical significance was examined using paired t-tests and one-sample p-values to validate model performance on profitability.

In addition to the variant performance, the analysis highlights top-performing and outlier stocks, followed by statistical testing to assess the significance of observed differences. Particular attention is given to the behaviour of the alternative RSI_{MC} variant in the presence of corporate actions and its potential advantage in interpreting market capitalisation-adjusted price movements. The discussion integrates both numerical findings and contextual interpretation, aiming to connect the results to broader implications for technical analysis and market participants.

4.1 Description of Selected Stocks and Dataset

The dataset for this study comprises 20 Malaysian stocks, selected using a proportional allocation method as mentioned in Chapter 3.3 Data Sampling Method.

This deliberate selection approach ensures that the analysis focuses on companies most likely to experience price distortions from structural changes, making them suitable for evaluating the robustness of different RSI variants. Table 4.1 summarises the selected

stocks, their sectors, number of corporate actions, market capitalisation categories and brief volatility classification using Coefficient of Variation (CV) for price and volume. While price and volume volatility are noted, they serve only as supplementary indicators and are not the primary focus of this analysis.

Table 4.1: Profile of Selected Stocks by Sector and Corporate Actions

No.	Stock Name	Sector	No. of Corporate Actions	Market Cap Category	Price Volatility	Volume Volatility
1	IJM	CONSTRUCTION	772	Mid	Moderate	Low
2	BESHOM	CONSUMER PRODUCTS & SERVICES	813	Small	High	Moderate
3	PARKSON		484	Small	High	High
4	PWROOT		424	Small	Low	Low
5	SEM		412	Small	Low	Moderate
6	YINSON		ENERGY	665	Mid	Moderate
7	MAYBANK	FINANCIAL SERVICES	686	Large	Low	Low
8	KPJ	HEALTH CARE	430	Mid	Low	Low
9	UNIMECH	INDUSTRIAL PRODUCTS & SERVICES	942	Small	Low	Moderate
10	ANCOMNY		902	Small	High	Moderate
11	SUNWAY		835	Mid	Moderate	Low
12	KFIMA		818	Small	Low	Low
13	FIMACOR		621	Small	Low	Moderate
14	PANTECH		587	Small	Moderate	Moderate
15	BKAWAN		PLANTATION	653	Small	Low
16	TROP	PROPERTY	988	Mid	Low	Moderate
17	LBS	PROPERTY	868	Small	Moderate	Moderate
18	GLOMAC	PROPERTY	733	Small	Moderate	Moderate
19	INARI	TECHNOLOGY	373	Small	Moderate	Low
20	SYGROUP	TRANSPORTATION & LOGISTICS	909	Small	Moderate	High

Notes:

Market Cap Category: Small (<RM2 Bil), Mid (between RM2 Bil and RM10 Bil), Large (>RM10 Bil)

Price Volatility: Low (<0.2), Moderate (between 0.2 and 0.5), High (>0.5)

Volume Volatility: Low (<1.5), Moderate (between 1.5 and 2.5), High (>2.5)

A review of Table 4.1 shows that corporate actions are not evenly distributed across the sample, with certain sectors exhibiting higher frequencies. This skew is intentional, as it increases the likelihood of observing price distortions that may test the resilience of RSI-based signals. For example, stocks with more frequent corporate actions present an ideal environment to assess whether RSI_{MC} can more accurately interpret adjusted price movements compared to traditional RSI variants.

While market capitalisation categories and volatility classifications are included, their role here is primarily contextual. Larger-cap stocks in the sample tend to have fewer corporate actions, while some small- and mid-cap companies showing more corporate actions. This aligns with the practical observation that corporate restructuring activities are often concentrated among mid-tier firms seeking growth or liquidity adjustments.

By establishing this composition upfront, the subsequent comparative analysis can be interpreted with an understanding that differences in RSI variant performance may, in part, be driven by the structural price impacts of corporate actions in the selected stocks.

4.2 Overall Performance Comparison of RSI Variants

This section presents the comparative performance of the four RSI variants, namely Traditional RSI, RSI_M , TN-RSI, and RSI_{MC} , under two trading scenarios: without stop loss and with stop loss. The aim is to evaluate how the variants perform across key performance metrics including net profit, average profit per trade, annualised profit, win rate, profit and loss index, average holding period, complete trade frequency, stop loss frequency and stop loss percentage. Table 4.2 presents a comprehensive comparison of the four RSI variants across key performance metrics.

Table 4.2: Performance Metrics Summary for Without and With Stop Loss

Category	Trad. RSI	RSI _M	TN-RSI	RSI _{MC}
Without Stop Loss				
Net Profit (%)	(2.1%)	0.8%	12.4%	18.3%*
Avg Profit per Trade (%)	(0.4%)	2.8%*	1.5%	2.4%
Annualised Profit (%)	(2.1%)	(0.3%)	(0.3%)	0.1%*
Win Rate (%)	58.2%*	12.5%	46.6%	43.1%
Profit and Loss Index (%)	8.6%	(9.3%)	13.5%*	10.1%
Avg Holding Period (Days)	143.8	341.9*	140.5	96.1
Complete Trade Frequency	8.3	0.4	9.5	22.9*
With Stop Loss				
Net Profit (%)	8.6%	(5.2%)	15.6%*	14.9%
Avg Profit per Trade (%)	0.6%	0.0%	0.8%*	0.7%
Annualised Profit (%)	(0.7%)	(1.8%)	0.3%*	(0.4%)
Win Rate (%)	32.7%	23.6%	48.2%*	43.7%
Profit and Loss Index (%)	10.9%*	(5.2%)	10.6%	5.1%
Avg Holding Period (Days)	43	14	55*	38
Complete Trade Frequency	28.1	143.2*	22.5	44.6
Stop Loss Frequency	19.7	142.8*	13.1	22.2
Stop Loss (%)	67.3%	99.7%*	56.9%	52.1%

Note: * represent the highest for each key performance

4.2.1 Without Stop Loss

RSI_{MC} emerged as the most profitable model, delivering the highest net profit (18.3%) and annualised profit (0.1%), alongside strong values in average profit per trade (2.4%) and the profit and loss index (10.1%). These results may be attributed to RSI_{MC}'s

adjustment for structural changes in market capitalisation due to corporate actions, which allows it to generate more accurate and timely trading signals. Traditional RSI and RSI_M underperformed substantially, particularly RSI_M, which recorded the lowest win rate (12.5%). This suggests that a large number of RSI_M generated signals resulted in losses, likely due to infrequent sell signals and delayed trade exits.

Notably, RSI_M failed to complete sell trades in 14 out of 20 stocks over the 10-year period. In these instances, RSI values remained persistently below the overbought threshold (70 unit), meaning the system never triggered a sell condition, thereby leading to prolonged holding and unrealised losses. This is reflected in its average holding period of 341.9 days, the longest among all models and its extremely low complete trade frequency (0.4). Conversely, RSI_{MC} demonstrated the shortest holding period (96.1 days) and the highest complete trade frequency (22.9), indicating its signals were more responsive. While this could appeal to short-term traders seeking faster entry and exit cycles, it may also result in higher transaction costs.

4.2.2 With Stop Loss

In the 'With Stop Loss' scenario, TN-RSI outperformed all variants in terms of net profit (15.6%), average profit per trade (0.8%) and annualised profit (0.3%), showcasing strong adaptability under risk-managed conditions. RSI_{MC} remained competitive with similar results (14.9% net profit), reinforcing its robustness even when subject to forced exits via stop loss triggers. It also recorded the lowest stop loss percentage (52.1%), indicating fewer trades were reversed prematurely due to losses breaching the defined threshold. RSI_M, on the other hand, continued to struggle, showing the highest stop loss percentage (99.7%) and generating negative profits despite the presence of a risk-control mechanism. TN-RSI and RSI_{MC} also demonstrated

balanced trade completion rates and holding periods, supporting their reliability across different market dynamics.

4.2.3 Critical Evaluation

Critically, the results reinforce the strengths and weaknesses of each variant. RSI_{MC} consistently excelled under both trading scenarios, affirming that incorporating market capitalisation allows RSI to better account for structural price changes from corporate actions like bonus issues, stock splits and rights issues. This advantage aligns with the observations of Pandey et al. (2022) and Woolridge (1983), who emphasised the need to adjust for corporate actions in technical analysis. RSI_{MC} 's relatively balanced win rate and trade frequency also reflect its efficiency in avoiding unnecessary signals while still capturing short-term trading opportunities. Although not always the absolute top performer in every metric, its broad reliability supports its use in both aggressive and conservative strategies.

In contrast, RSI_M 's underperformance, especially its failure to generate sufficient sell signals, raises important methodological concerns. While the integration of volume (as proposed by Țăran-Moroșan (2011)) was intended to improve signal quality, the data suggests that volume alone does not account for structural distortions in price. In fact, the absence of timely signal generation in RSI_M highlights a critical flaw: without adequate consideration of market structure, even technically sound enhancements may fail. TN-RSI's superior performance in the stop loss scenario confirms the value of trend adjustment in managing risk, as discussed by Sahin and Ozbayoglu (2014). However, its slightly lower profitability than RSI_{MC} in the absence of stop loss suggests that trend-based filters alone are insufficient in addressing deeper inefficiencies tied to non-sentiment-based price movements.

These findings offer practical insight into the limitations of the EMH. While none of the variants demonstrated statistically significant outperformance across all conditions (to be discussed in Table 4.4 and Table 4.5), RSI_{MC} 's empirical strength suggests that some market inefficiencies (particularly those caused by corporate actions), can be systematically exploited. This aligns more closely with the AMH, which argues that market predictability is conditional and that technical models must adapt to different regimes. RSI_{MC} appears to offer that adaptability, positioning it as a meaningful evolution of traditional RSI methodologies.

4.3 Top-Performing and Outlier Stocks

This section presents a cross-sectional view of the net profit generated by each of the 20 selected stocks under the four RSI variants, for both without stop loss and with stop loss scenarios. The objective is to identify top-performing stocks, which consistently deliver high profitability across variants, as well as outlier stocks, whose performance deviates significantly from the rest (either positively or negatively).

By examining these results at the individual stock level, deeper insights can be drawn into how each RSI variant interacts with different price behaviours, corporate action frequencies and volatility characteristics. Table 4.3 summarises the findings, highlighting the best-performing variant for each stock (in green) and the weakest performance (in red) for quick visual reference. The averages, rank positions, variance and standard deviation are also included to offer additional context on the overall distribution of results.

Table 4.3: Cross-Sectional Net Profit for Without and With Stop Loss

Net Profit (%)	RSI	RSI _M	TN-RSI	RSI _{MC}
Without Stop loss				
1. IJM	(29.7%)	(53.5%)	19.3%	(15.4%)
2. BESHOM	(49.7%)	-	(9.9%)	16.4%
3. PARKSON	(104.7%)	-	(93.9%)	(5.0%)
4. PWROOT	14.3%	-	(13.8%)	93.1%
5. SEM	4.6%	(27.7%)	28.1%	(4.2%)
6. YINSON	62.6%	108.7%	45.2%	29.1%
7. MAYBANK	8.5%	(3.8%)	0.1%	(10.3%)
8. KPJ	51.9%	-	64.0%	80.1%
9. UNIMECH	52.0%	-	31.9%	32.2%
10. ANCOMNY	(90.9%)	-	148.0%	215.6%
11. SUNWAY	20.4%	-	12.8%	58.3%
12. KFIMA	(6.6%)	-	8.1%	8.8%
13. FIMACOR	(7.8%)	-	14.7%	3.9%
14. PANTECH	48.9%	-	65.2%	8.0%
15. BKAWAN	(12.3%)	-	18.9%	(0.1%)
16. TROP	4.5%	(34.5%)	(55.9%)	(53.8%)
17. LBS	(21.1%)	26.4%	(22.7%)	4.2%
18. GLOMAC	(58.8%)	-	(59.2%)	(106.9%)
19. INARI	37.3%	-	52.0%	61.9%
20. SYGROUP	34.9%	-	(4.9%)	(49.3%)
Average	(2.1%)	0.8%	12.4%	18.3%
Rank	4	3	2	1
Var	0.22	0.09	0.27	0.43
SD	0.47	0.30	0.52	0.66
Net Profit (%)	RSI	RSI _M	TN-RSI	RSI _{MC}
With Stop loss				
1. IJM	(53.8%)	(47.1%)	28.9%	(52.3%)
2. BESHOM	(11.5%)	105.6%	26.8%	46.6%
3. PARKSON	(32.5%)	(8.5%)	(66.9%)	(114.9%)
4. PWROOT	32.4%	108.0%	11.7%	95.0%
5. SEM	37.6%	(82.6%)	2.1%	(13.4%)
6. YINSON	51.1%	94.1%	29.8%	17.7%
7. MAYBANK	12.3%	(30.1%)	(6.7%)	(19.2%)
8. KPJ	40.9%	58.2%	63.5%	84.7%
9. UNIMECH	38.1%	(190.3%)	38.6%	35.8%
10. ANCOMNY	(1.7%)	156.0%	93.9%	179.2%
11. SUNWAY	13.9%	(14.5%)	107.7%	76.1%
12. KFIMA	1.7%	(42.3%)	39.1%	40.2%
13. FIMACOR	(10.3%)	(108.9%)	20.5%	1.9%
14. PANTECH	65.4%	(40.7%)	44.9%	34.5%
15. BKAWAN	(2.4%)	62.0%	3.1%	7.6%
16. TROP	9.9%	(54.6%)	(62.6%)	(53.8%)
17. LBS	(14.7%)	21.0%	(10.0%)	(7.4%)
18. GLOMAC	(102.3%)	(131.5%)	(83.0%)	(89.2%)
19. INARI	38.3%	175.9%	42.9%	38.4%
20. SYGROUP	59.1%	(134.0%)	(12.1%)	(8.7%)
Average	8.6%	(5.2%)	15.6%	14.9%
Rank	3	4	1	2
Var	0.16	1.02	0.24	0.45
SD	0.41	1.01	0.49	0.67

Note: green (red) represent the highest (lowest) net profit of the stock

4.3.1 Without Stop Loss

In the 'Without Stop Loss' scenario, RSI_{MC} demonstrated strong cross-sectional profitability, recording the highest net profit in 7 out of 20 stocks. Notable performances were observed in ANCOMNY (215.6%), PWROOT (93.1%), KPJ (80.1%) and INARI (61.9%), which stocks that are often associated with significant corporate actions or structural price changes. This suggests that RSI_{MC}'s ability to incorporate market capitalisation enables it to better interpret price movements distorted by such events. Conversely, RSI_M was unable to complete full trade cycles for several stocks, highlighting issues in signal generation and responsiveness. Traditional RSI showed intermittent success, particularly in stocks like YINSON (62.6%) and UNIMECH

(52.0%), but suffered major losses in stocks affected by structural shifts, such as PARKSON (-104.7%) and ANCOMNY (-90.9%). TN-RSI exhibited moderate yet consistent profitability across multiple stocks, particularly those with trending behaviour, such as AMCOMNY (148.0%) and PANTECH (65.2%).

4.3.2 With Stop Loss

When 'Stop Loss' was applied, TN-RSI outperformed the other models with the highest average net profitability (15.6%), achieving strong returns (above 30%) in 7 of the 20 stocks, including SUNWAY (107.7%), ANCOMNY (93.9%) and KPJ (63.5%). RSI_{MC} remained highly competitive, ranking first in 3 stocks, notably in KPJ (84.7%), ANCOMNY (179.2%) and KFIMA (40.2%). These results indicate that RSI_{MC}'s structure remains effective under stop loss conditions, as it continued to outperform in event-driven stocks. RSI_M, while occasionally achieving isolated strong returns, showed overall weak profitability and suffered from incomplete trade cycles. Traditional RSI yielded minor gains in a few instances, such as PANTECH (65.4%) and SYGROUP (59.1%), but overall remained less competitive than the other two enhanced variants.

4.3.3 Critical Evaluation

The distribution of results across stocks highlights RSI_{MC}'s practical edge in interpreting structurally distorted price movements. Its consistent outperformance in companies known for frequent corporate actions implies that the use of market capitalisation within the RSI formula helps to correct the misleading signals that traditional RSI models often generate. The model's responsiveness and reliability, especially in high-volatility environments, reinforce its versatility in practical applications.

On the other hand, TN-RSI performed better in stocks that exhibited clear directional trends following interventions. This is particularly evident in its results for AMCOMNY and KPJ, where these stocks' price momentum appeared to continue post-catalyst. The improved results under 'Stop Loss' conditions align with Sahin and Ozbayoglu's (2014) view that trend-normalised models are effective in trending markets. However, TN-RSI did not achieve comparable performance in stocks affected by abrupt price adjustments due to structural events (evident from the two stocks mentioned above). RSI_M 's inconsistent and often incomplete trades raise questions about the usefulness of volume as a standalone enhancer, especially in the absence of structural price adjustments. These outcomes highlight the limitations of volume-based enhancements when used without other contextual considerations.

Taking a broader perspective, the overall findings from Table 4.3 reaffirm that RSI_{MC} 's advantage stems not only from its ability to generate higher returns, but also from its methodological design. Its consistent performance across structurally affected stocks suggests a more robust approach to technical analysis in the presence of corporate actions. Nevertheless, the model's effectiveness appears to diminish in sentiment-driven or low-liquidity stocks, where potentially price movements are more likely to be influenced by speculative trading than structural changes. These results are in line with the AMH, which the proposal is that market behaviour and model performance vary across different regimes. RSI_{MC} , while not universally dominant across all stocks, demonstrates adaptability in structurally complex environments, positioning it as a valuable tool for navigating evolving market conditions.

4.4 Net Profit Statistical Testing and Model Significance

This section evaluates the statistical significance of the observed performance differences between the four RSI models. The analysis applies two complementary approaches. The first involves paired t-tests, which are used to determine whether the net profit differences between model pairs are statistically significant across the sample as a whole. The second approach involves per-stock t-tests, which assess whether each model's net profit differs significantly from a null benchmark of zero, thereby providing insight into the consistency of profitability at the individual stock level.

4.4.1 Paired t-test: Model-to-model Statistical Significance

With reference to Table 4.4, in the 'Without Stop Loss' condition, RSI_{MC} showed the largest positive mean difference compared to Traditional RSI (20.4%) and RSI_M (17.5%), indicating clear performance improvements in profitability. However, the corresponding p-values (0.29 and 0.27) did not reach conventional levels of statistical significance ($p < 0.05$), suggesting that these differences could be due to variability rather than consistent outperformance. Other model comparisons, such as RSI_{MC} vs TN-RSI and RSI vs RSI_M , also showed modest mean differences but were similarly statistically insignificant. These findings suggest that although the observed profitability gaps are meaningful in practice, they do not hold up statistically (not statistically different than zero) across the 20-stock sample. Therefore, from hypothesis testing perspective, between all four RSI models against each other, paired t-test unable to reject the null hypothesis and profitability-wise, among each model are not significantly different than zero.

Table 4.4: Model-to-model Statistical Significance for
Without and With Stop Loss

Comparison	Mean Difference	t-statistics	p-value
Without Stop loss			
RSI _{MC} vs RSI	20.4%	1.09	0.29
RSI _{MC} vs RSI _M	17.5%	1.13	0.27
RSI _{MC} vs TN-RSI	5.9%	0.58	0.57
RSI vs RSI _M	(2.9%)	(0.26)	0.80
RSI vs TN-RSI	(14.5%)	(1.07)	0.30
RSI _M vs TN-RSI	(11.6%)	(0.90)	0.38
With Stop loss			
RSI _{MC} vs RSI	6.4%	0.46	0.65
RSI _{MC} vs RSI _M	20.2%	1.01	0.32
RSI _{MC} vs TN-RSI	(0.7%)	(0.08)	0.94
RSI vs RSI _M	13.8%	0.58	0.57
RSI vs TN-RSI	(7.0%)	(0.64)	0.53
RSI _M vs TN-RSI	(20.8%)	(0.96)	0.35

Note:

Significance Level: represent <1% represent <5% represent <10%

Under the ‘With Stop Loss’ condition, the mean differences narrowed considerably. RSI_{MC} maintained an edge over RSI (6.4%) and RSI_M (20.2%), yet again with p-values of 0.65 and 0.32, failing to demonstrate statistical significance. Therefore, it is fair to conclude that between all four RSI variants against each other, paired t-test unable to reject the null hypothesis and among each model are not significantly different (in terms of net profit). Notably, RSI_{MC} vs TN-RSI recorded a near-zero mean difference (-0.7%), reflecting the close competition between these two variants under risk-managed conditions. This narrowing gap highlights how the application of stop loss compresses performance differences between models, reducing the likelihood of any one model achieving statistically distinct returns over the sample set.

While the absence of statistical significance might appear to diminish the strength of RSI_{MC} 's outperformance, this result needs to be interpreted within the context of small sample size and high cross-sectional variability. In fact, the lack of consistent superiority returns across the samples aligns with the core argument of the RWH, which asserts that future price movements are not predictable based on past data (Umoru et al., 2020). If price paths are indeed stochastic and driven by new information, the inability of any RSI model to deliver statistically significant outperformance reinforces the RWH's perspective on the limitations of technical indicators.

Moreover, these findings also echo the theoretical limitations of EMH in its semi-strong form, which claims that prices adjust to all publicly available information and that neither fundamental nor technical analysis should consistently yield excess returns. Yet, despite the statistical insignificance, RSI_{MC} 's higher average returns relative to RSI and RSI_M (as per Table 4.2), particularly in structurally affected stocks, point toward market imperfections that technical models can partially exploit, despite being inconsistent. This supports the AMH framework, which allows for periods where certain strategies may temporarily outperform depending on market regime, investor adaptation and structural anomalies like corporate actions. RSI_{MC} 's comparative performance in specific contexts suggests that while its advantage may not generalise across all stocks, it remains valuable as a regime-sensitive enhancement to RSI.

4.4.2 Individual t-test: Per-Stock Statistical Significance

Under the 'Without Stop Loss' condition, the p-values generated across all four models indicate a general lack of statistical significance. Of the 80 variant-stock combinations (20 stocks x 4 variants) tested, only a handful yielded p-values below the conventional threshold of 0.10 (at 90% confidence). RSI_{MC} showed relatively stronger

outcomes in structurally active stocks, notably in GLOMAC ($p = 0.00$) and TROP ($p = 0.08$), suggesting some promise in event-sensitive environments. Similarly, TN-RSI posted p -values below 0.10 for TROP ($p = 0.05$), though many others remain statistically inconclusive. Traditional RSI's most notable outcome was in YINSON ($p = 0.03$) and KPJ ($p = 0.07$), but this result stems from a dataset containing only few completed trades (12 and 6 completed trade respectively), which severely limits the reliability of the inference.

Table 4.5: Per-Stock Statistical Significance for Without and With Stop Loss

P-value	RSI	RSI _M	TN-RSI	RSI _{MC}	P-value	RSI	RSI _M	TN-RSI	RSI _{MC}
Without Stop loss					With Stop loss				
1. IJM	0.61	0.69	0.21	0.81	1. IJM	0.48	0.53	0.61	0.50
2. BESHOM	0.58	-	0.87	0.83	2. BESHOM	0.85	0.31	0.72	0.57
3. PARKSON	0.21	-	0.18	0.97	3. PARKSON	0.77	0.96	0.38	0.00
4. PWROOT	0.82	-	0.81	0.33	4. PWROOT	0.61	0.21	0.88	0.25
5. SEM	0.78	0.43	0.35	0.84	5. SEM	0.40	0.08	0.95	0.72
6. YINSON	0.03	-	0.57	0.72	6. YINSON	0.37	0.13	0.61	0.75
7. MAYBANK	0.68	-	1.00	0.74	7. MAYBANK	0.71	0.47	0.66	0.33
8. KPJ	0.07	-	0.64	0.51	8. KPJ	0.29	0.50	0.38	0.20
9. UNIMECH	0.28	-	0.55	0.58	9. UNIMECH	0.38	0.00	0.43	0.46
10. ANCOMNY	0.67	-	0.33	0.21	10. ANCOMNY	0.98	0.49	0.35	0.21
11. SUNWAY	0.52	-	0.78	0.23	11. SUNWAY	0.72	0.78	0.09	0.11
12. KFIMA	0.79	-	0.82	0.80	12. KFIMA	0.97	0.27	0.50	0.49
13. FIMACOR	0.76	-	0.67	0.91	13. FIMACOR	0.86	0.00	0.72	0.97
14. PANTECH	0.31	-	0.52	0.91	14. PANTECH	0.17	0.61	0.22	0.60
15. BKAWAN	0.54	-	0.82	1.00	15. BKAWAN	0.94	0.06	0.96	0.74
16. TROP	0.92	-	0.05	0.08	16. TROP	0.79	0.35	0.06	0.08
17. LBS	0.71	-	0.70	0.92	17. LBS	0.69	0.74	0.82	0.83
18. GLOMAC	0.46	-	0.29	0.00	18. GLOMAC	0.02	0.00	0.03	0.01
19. INARI	0.50	-	0.48	0.38	19. INARI	0.68	0.26	0.47	0.57
20. SYGROUP	0.24	-	0.96	0.57	20. SYGROUP	0.44	0.41	0.90	0.92

Note:

Significance Level: represent <1% represent <5% represent <10%

Under the 'With Stop Loss' condition, statistical significance improved for several stocks and models, but mostly remained inconsistent. RSI_{MC} recorded strong results for GLOMAC ($p = 0.01$) and PARKSON ($p = 0.00$), while RSI_M posted

significant results for UNIMECH ($p = 0.00$), FIMACOR ($p = 0.00$) and GLOMAC ($p = 0.00$). TN-RSI and Traditional RSI occasionally registered borderline p -values, but the bulk of the dataset reflects values well above 0.10, indicating a lack of robust significance. The addition of stop loss appeared to reduce the variance of returns but did not uniformly elevate any model to statistical reliability.

These findings reveal that even structurally adjusted indicators such as RSI_{MC} may struggle to produce consistently significant trading outcomes at the stock level. Moreover, the irregular p -value outcomes contradict the findings by Diamanta and Pardomuan (2020), who demonstrated significant abnormal return before and after stock splits. Nevertheless, seemingly difficult to conclusively compare with this study as their focus is more inclined towards pre- and post-corporate action, while this study measures overall profitability within 10-year window.

For the studies by Gurrib and Kamalov (2019), whom proposed an Adjusted RSI tailored to improve signal consistency in currency pairing and Țăran-Moroșan (2011), whom introduced volume element into RSI (RSI_M), able to demonstrated higher positive return (than other strategies like Traditional RSI), but were silent about their statistical significance. Therefore, unable to determine if their studies are in line with this study's outcome of being profitable but not statistically different than zero.

Taken together, the per-stock statistical tests in Table 4.5 suggest that while RSI_{MC} offers theoretical advantages in interpreting structurally distorted price signals, its ability to deliver statistically significant outcomes across a diverse sample remains limited. These limitations are not necessarily flaws of the model but rather reflect the challenges identified in the literature regarding RSI adaptability, volume sensitivity and event-specific signal interpretation (such as corporate actions).

4.5 Observations on RSI_{MC} and Market Capitalisation Behaviour

This section provides a focused evaluation of the RSI_{MC} variant, with particular attention to how its incorporation of market capitalisation influences trading outcomes. The discussion explores RSI_{MC}'s performance both in general terms and within the specific context of corporate actions, aligning these observations with the overarching research objectives. For a comprehensive perspective, the analysis also includes an evaluation of the other three RSI variants, enabling a clearer understanding of the comparative strengths and weaknesses of each model.

4.5.1 Evaluation on RSI_{MC}

In the 'Without Stop Loss' scenario, RSI_{MC} delivered the strongest overall performance among the four RSI models. Based on Table 4.2, it achieved the highest net profit (18.3%), average profit per trade (2.4%) and annualised profit (0.1%), along with among the most favourable profit and loss index (10.1). The model also recorded a high complete trade frequency (22.9) and the shortest average holding period (96.1 days), highlighting its ability to identify profitable trades more efficiently than other models. From Table 4.3, these results were particularly pronounced in strong profit stocks such as ANCOMNY, PWROOT and KPJ, where RSI_{MC} successfully performed better than other variants. Its win rate (43.1%) is slightly poor but overshadowed by a strong trade completion suggest that RSI_{MC} is capable of consistently capturing high-probability setups across a range of stock behaviours.

Under the 'With Stop Loss' condition, RSI_{MC} continued to perform competitively, achieving the second-highest net profit (14.9%) and maintaining top-tier results in average profit per trade (0.7%) and win rate (43.7%). It also recorded the lowest stop loss percentage (52.1%) among all variants, which points to more robust

signal generation and lower susceptibility to premature trading. This variant's ability to preserve profitability while reducing drawdowns indicates that its signals remain valid even under tighter risk constraints. RSI_{MC} 's trade frequency and holding period remained relatively stable, suggesting that the integration of stop loss relatively did not disrupt its overall execution pattern.

The consistently high performance of RSI_{MC} highlights the practical value of incorporating market capitalisation into RSI calculations. By replacing closing price with capitalisation-adjusted values, RSI_{MC} offers a structural enhancement that improves for 'disturbance' introduced by corporate actions such as stock splits, rights issues and bonus issues. This is in line with study by Meylita & Yasa (2015), where pre- and post-stock split result in market reaction, thus impacting the movement of share price. RSI_{MC} 's superior outcomes in event-driven stocks support the argument that technical indicators should be considered to remain valid in the presence of corporate actions.

Furthermore, RSI_{MC} 's performance reinforces the relevance of applying quantitative filters that reflect both price dynamics and underlying share structure. The model's resilience across different market phases and its ability to maintain profitability under stop loss constraints reflect a degree of robustness not observed in other models tested. Unlike models that rely solely on historical price patterns or volume data, RSI_{MC} introduces a hybrid logic that captures value shifts driven by both market sentiment and structural changes.

Despite the lack of statistical significance in paired t-tests and per-stock p-values, the practical advantage demonstrated by RSI_{MC} across most metrics and stocks cannot be overlooked and deserve commendable value. While it may not offer universal predictive accuracy, its context-specific strength in structurally affected environments

marks a meaningful advancement in technical indicator development and room for potential future discovery. RSI_{MC} 's overall profile positions it as a useful tool for analysts seeking to improve trade timing and reduce false signals in event-sensitive trading contexts.

4.5.2 Evaluating RSI_{MC} Performance in the Context of Corporate Actions and Research Objectives

This section consolidates the key findings of the study in relation to the research objectives, with particular focus on the influence of corporate actions on RSI-based trading performance, namely RSI_{MC} .

The first research objective sought to introduce an alternative RSI formula (RSI_{MC}) that accounts for corporate actions through the integration of market capitalisation and Normalised closing price from TN-RSI. The findings throughout Chapter 4 strongly support the rationale for this alternative variant. Traditional RSI and TN-RSI rely solely on price-based indicators while RSI_M includes volume-based, which do not adjust for theoretical price adjustments such as stock splits, bonus issues, rights issues or ESOS. These corporate actions result in mechanical changes to share price that are not necessarily reflective of market sentiment. In such instances, RSI can produce false signals in identifying oversold or overbought conditions (where some might not even exist) due to a drop (or increase) in nominal share price rather than a genuine shift in investor behaviour. RSI_{MC} addresses this issue by recalibrating RSI calculations using market capitalisation, which remains unaffected (or bear some contributions) in nominal changes when corporate actions occur, thereby separating the impact of structural changes and market sentiments that drive the movement in closing price.

The literature review identified several studies that support this notion.

Diamanta & Pardomuan (2020) observed significant abnormal returns in the post-split period that contradicted RSI signals, highlighting the risk of misinterpretation.

Similarly, Catranti (2011) and Pandey et al. (2022) emphasised that movements in prices due to corporate actions could undermine the reliability of technical indicators, evident from the potential returns from their studies. The consistent outperformance of RSI_{MC} in stocks such as ANCOMNY and UNIMECH, of which among the highest number of corporate actions recorded, further confirms that RSI variants can be enhanced with market capitalisation element to deliver valid trading signals in the presence of corporate actions.

The second objective focused on evaluating the profitability and consistency of RSI_{MC} relative to established RSI variants. Although RSI_{MC} did not achieve statistical significance in model-to-model comparisons or per-stock statistical tests, it delivered superior empirical outcomes in both Net Profit and trade efficiency. It was the top performer in 7 out of 20 stocks in 'Without Stop Loss' (the highest among all the variants) and remained competitive under risk-managed conditions. These findings align with Woolridge (1983), who advocated for the integration of fundamental structural changes into technical trading strategies. RSI_{MC} 's use of market capitalisation functions in a similar manner, which aim to serve as a proxy for underlying economic valuation while correcting for superficial pricing anomalies caused by corporate actions.

The third objective involved comparing the performance consistency of RSI_{MC} 's signals across diverse stocks. Results from Table 4.3 demonstrated that RSI_{MC} was notably perform closely as RSI_{MC} and the other 3 variants were not statistically significant than each other. This distinction is important: while TN-RSI is built to handle directional trends, RSI_{MC} 's advantage lies in its ability to stabilise signals in the face of corporate actions' impacts.

Taken together, these findings affirm the conceptual framework underpinning RSI_{MC} and its relevance in dynamic markets. Although traditional RSI continues to be widely used due to its simplicity, it lacks the robustness required for modern trading environments characterised by frequent corporate actions. The study's results suggest that alternative variants such as RSI_{MC} offer a significant step forward by enabling RSI to improve accuracy in event-driven contexts. While further research may be necessary to validate its application across broader datasets or alternate markets, the evidence from this study indicates that RSI_{MC} fulfils the aims set out in this research and contributes meaningfully to the advancement of RSI-based technical analysis.

4.5.3 Evaluating on Traditional RSI

From the perspective of 'Without Stop Loss' scenario, Traditional RSI recorded the lowest overall performance among all four variants. It delivered an average of net loss of -2.1%, with an average return per trade of -0.4% and a relatively weak annualised return of -2.1% (Table 4.2 as reference). While its win rate of 58.2% appears strong on the surface, further analysis suggests this was skewed by a small number of successful trades in a few stocks (such as UNIMECH at 83.3% and PANTECH at 72.6% from Tabel 4.3). The model also displayed a relatively long average holding period of 143.8 days, with a modest complete trade frequency of 8.3, suggesting that signals were infrequent and often late in capturing profitable movements.

When evaluated with 'Stop Loss', the Traditional RSI showed moderate improvement in net profitability (8.6%), but it remained the second-lowest performer behind RSI_M . Its annualised profit rose to -0.7% (from -2.1%) and its trade frequency increased significantly to 43 completed trades, due in part to the inclusion of stop loss mechanisms which forced more frequent exits. The model's stop loss percentage

(67.3%) was relatively high, suggesting that a significant portion of trades were terminated due to signals provided tend to reverse back to oversold region quickly.

The inconsistent performance of the Traditional RSI (net profit ranging from -104.7% to 62.6% for 'Without Stop Loss' and -102.3% to 65.4% for 'With Stop Loss' from Table 4.3) highlights its inability to differentiate between genuine market sentiment and structural price adjustments triggered by corporate actions. Perhaps Traditional RSI might be reflecting optimal accuracy performance if within short timeframe (Daniswara et al., 2022) instead of 10-year period. Stocks undergoing corporate actions such as stock splits or rights issues tend to exhibit price adjustments that the RSI misclassifies as trading signals, which leads to mistimed entries or exits.

In addition, potential underperformance of Traditional RSI might be related to unit threshold being used this study locked at 30/70 units threshold. Threshold of 20/80 units was used in highly volatile markets (Hari & Dewi, 2019; Taran-Moroşan, 2011) and different result might be yielded. While RSI's core logic is rooted in momentum oscillation, its inability to factor in changes to nominal share value compromises its reliability. The relatively long holding periods seen in this study further support (Daniswara et al., 2022), who argued that RSI performs better in short term period (February 2021 to July 2021), when compared to other technical indicators.

Given these limitations, Traditional RSI may no longer be suitable as a standalone decision-making tool, particularly in markets characterised by high event frequency and diverse stock behaviour. Its simplicity, is viewed as a strength, might be difficult to perform in more modernised trading complexity, without the help of other indicators to complement its weaknesses. The findings in this study support the need for technically updated variations (such as RSI_{MC}) that incorporate corporate action awareness and produce more context-relevant signals. In practical terms, traders relying

solely on traditional RSI risk overexposure to misleading signals, especially in structurally dynamic or sentiment-neutral price environments.

4.5.4 Evaluating on RSI_M

In the 'Without Stop Loss' setting, RSI_M produced a marginally positive average net profit of 0.8%, placing it third among the four variants. Although this represented an improvement over Traditional RSI, its profitability remained inconsistent and heavily concentrated in a small number of stocks, such as YINSON and LBS. The model recorded a very low complete trade frequency of 0.4, highlighting a major shortcoming: in most stocks, RSI_M failed to complete full buy-sell cycles due to an inability to generate timely sell signals. This was also reflected in its average holding period of 341.9 days, the longest among all variants. These extended holding durations suggest that RSI_M's volume-adjusted calculations often did not yield overbought conditions, resulting in prolonged exposure to market risks without meaningful exits, especially for stocks with occasional low volume.

When 'Stop Loss' was introduced, RSI_M's performance declined further, profitability wise. The model registered a negative net profit of -5.2%, with a reduced annualised profit to -1.8% and the highest stop loss frequency (99.7%) among all models. This implies that the majority of RSI_M's trades were exited prematurely due to directions breaching the stop loss threshold. Despite its high trade frequency (142.8 trades), the inability to sustain profitable trades contributed to a low Profit and Loss Index of -5.2%. This outcome suggests that while the model became more active under stop loss, the underlying signals it generated were weak and often not profitable.

These performance results challenge the relevance of incorporating volume into RSI signals in isolation. Țăran-Moroșan (2011) had argued that volume could improve

the strength of trading signals by validating price movements. However, this study's findings suggest that volume-based enhancements may generate noisy or incomplete signals, especially during low volume trading days or highly fluctuated trading volumes. In several stocks, RSI_M 's signals were effectively trapped in prolonged holding or subject to immediate stop loss, reducing its practical value.

Furthermore, the underwhelming performance of RSI_M supports concerns raised by Țăran-Moroșan (2011) and mentioned by Panigrahi et al., (2021) as well, who highlighted RSI_M can result in much larger losses when using the same interpretation from Traditional RSI. The results observed in this study show that RSI_M 's signal strength is weakened by its inability to effectively manage infrequent but sharp price changes, particularly those that arise from corporate actions or thin liquidity. While volume may add depth to trend interpretation, its standalone use appears insufficient to reliably drive profitable trades.

Taken together, these observations reveal that RSI_M , though conceptually promising, lacks the adaptability required to function effectively in structurally diverse stock environments and complexity. Its failure to outperform even Traditional RSI under both 'With Stop Loss' and 'Without Stop Loss' conditions highlight a fundamental flaw in its design, namely, an overreliance on trade volume. For RSI enhancements to be meaningful, they must integrate not only technical momentum features but also market-aware adjustments. In the case of RSI_M , this integration appears incomplete, resulting in reduced signal accuracy and trading effectiveness.

4.5.5 Evaluating on TN-RSI

In the 'Without Stop Loss' scenario, TN-RSI demonstrated a solid performance with a net profit of 12.4%, the second highest among all models, trailing only behind

RSI_{MC}. It also recorded decent average profit per trade (1.5%), indicating acceptable signal efficiency. The model performed particularly well in stocks such as PANTTECH and SEM, where it strongly leading than other three models. With a Complete Trade Frequency of 9.5, TN-RSI offered a balanced number of trades while maintaining relatively stable results across a variety of market conditions. This consistency confirms the model's strength in filtering out noise in trend-driven price action and reinforces its suitability for steady momentum environments.

When evaluated 'With Stop Loss', TN-RSI emerged as the top-performing model in terms of net profit (15.6%) and annualised profit (0.3%), while maintaining the second-lowest stop loss frequency (53.6%). The model completed about 22 trades, the lowest in terms of trade activity and this infrequent complete trading is evident by the highest average holding period (55 days). Its ability to retain profitability under risk-managed conditions marks the effectiveness of its trend-normalisation adjustment. The lower incidence of stop loss activation also indicates that TN-RSI's entry signals are relatively well-timed, allowing trades to reach intended profit zones more frequently than its counterparts.

The strength of TN-RSI in this study aligns with the findings of Sahin and Ozbayoglu (2014), who introduced the model as a solution to the Traditional RSI's weaknesses in trending markets. By adjusting RSI readings based on trend conditions, TN-RSI minimises the premature or delayed signals that often disturb the standard oscillators during strong directional moves. This feature is especially valuable in mid-to long-term trends, where consistent price progression would otherwise cause RSI values to remain outside traditional threshold levels for extended periods. Though this can be managed with using a different RSI's unit threshold like Hari and Dewi (2019), and Țăran-Moroşan (2011), but as for this study is concern, the outcomes are the result

of blanket assumptions of 30/70 unit threshold.

Moreover, TN-RSI's stability across scenarios reflects the adaptability required for a general-purpose technical tool. While not always the top performer in every metric, its consistent low volatility, strong average profit and moderate trade activity indicate that it strikes a practical balance between practicality and reliability. In this sense, TN-RSI represents a successful application of signal conditioning that enhances traditional frameworks without overcomplicating their implementation, to the extent it is more understandable than comparing with Machine Learning.

Despite its consistent returns, TN-RSI was still occasionally outperformed by RSI_{MC} , particularly in stocks heavily influenced by structural changes or corporate actions. This suggests that while TN-RSI improves signal clarity under directional market movements (so as RSI_{MC} as it also uses Normalised Price like TN-RSI), it may still be limited in its responsiveness to non-trend-related events like corporate actions. As such, TN-RSI may serve best in portfolios oriented toward momentum strategies or when applied to securities with strong trend characteristics. For broader applicability especially in structurally complex or event-driven markets, models like RSI_{MC} may offer additional advantages.

4.6 Summary of Key Insights

This chapter provided a detailed comparative analysis of four RSI-based trading variants, which are Traditional RSI, RSI_M , TN-RSI and the RSI_{MC} , across two trading conditions: 'With Stop Loss' and 'Without Stop Loss'. The results were examined using multiple performance metrics, stock-level profitability and statistical significance tests, allowing for a distinctive evaluation of each model's effectiveness. Special attention was given to how each variant responded to structural changes in price caused by

corporate actions.

RSI_{MC} consistently emerged as a practically effective variant, mostly outperforming its counterparts in both profitability and signal responsiveness. It was especially dominant in the selected stocks, suggesting that its use of market capitalisation allows it to filter out misleading signals caused by theoretical price changes. TN-RSI proved to be a strong alternative in trending markets, particularly under 'Stop Loss' conditions, due to its ability to normalise RSI values during prolonged directional movements. In contrast, RSI_M struggled due to an overreliance on volume, while Traditional RSI remained constrained by its simplicity yet missing out other key factors like volume, trend-related and market capitalisation elements.

Despite RSI_{MC} 's empirical strength, statistical significance tests did not support its consistent superiority. This highlights the challenge of achieving universal outperformance through technical models and underscores the role of context in real world application. The chapter also demonstrated how different RSI models are suited to different market environment, reinforcing the need for adaptive approaches that incorporate other variables as well. In summary, while no model proved dominant in all scenarios, RSI_{MC} showed strong potential in addressing a key limitation of traditional technical indicators, namely their inability to account for corporate actions that has the ability change nominal share prices, even with no market sentiment influence).