

The Impact of Mergers and Acquisitions on Capital Structure of Firms: Empirical Justification of Theory

Raghawendra Kumar,

Research Scholar,
FMS, MRIIRS,
Faridabad, Haryana

Dr. Meghna Chhabra,

Associate Professor,
FMS, MRIIRS,
Faridabad, Haryana

Abstract

Purpose: Modern corporates operate in an altogether different landscape characterized by intense competition, where firms find it difficult to survive. Whether they aim for survival or growth, they mostly resort to M&As. The purpose of this paper is to find the justification of a merger's impact on the capital structure of acquiring firms by revisiting the theory and analysis of the data.

Methodology: Capital Structure ratios such as Debt/Equity and Debt/Asset of acquiring firms in the year of acquisition and a year after the acquisition have been compared to find out post-acquisition impact. Further profitability ratios such as Return on Capital Employed, Return on Asset, and Return on Net Worth have been compared between a year of acquisition and a year after acquisition to determine stock market response. K-S and S-W test show data is non-normally distributed for 30 acquirers. Statistical tools used to perform data analysis are Wilcoxon Signed Rank Test, Mann Whitney U-test, Two-Sample K-S Test, and Sign Test.

Findings and conclusions: At 95 % confidence level, test statistics failed to reject Null Hypothesis for all ratios. Therefore, this study did not find any evidence to justify the theory of target capital structure. Also, increasing leverage in capital structure in the post-acquisition period did not help firms improve valuation.

Research Limitations: Unavailability of financial data mainly for the unlisted firm and small sample size would have limited the scope of justification of theory in general.

Type: Research Paper

Value: This is the original work, has not been published anywhere and has not been presented on the literary platform.

Key Words: Capital structure, shareholder's value, Intense competition. Return on Capital Employed, Return on Asset, Return on Net Worth, Valuation, Leverage, Free Cash-Flow.

Introduction

The maximization of shareholder wealth has been the prime motive of modern corporates, characterized by divorce between management and ownership where owners are claimants of residual only, not subject

to any minimum. The theory of capital structure states that there exists a target capital structure every firm aims to achieve. Any deviation from the target capital structure triggers the wave of mergers and acquisitions, which ultimately help in achieving the target capital structure to maximize shareholder's wealth.

What theory of capital structure state?

Net Income Approach of capital structure states that only the net income realized by all contributors of capital

$$WACC, (r) = \frac{\text{Earning to all every supplier}}{\text{market value of firm}} = \frac{EBIT}{D + E}$$

The Net Operating Income approach states that a firm's overall cost of capital will not be affected if debt replaces stocks. According to Modigliani and Miller (1958), the proportion of debt and equity in capital structure does not affect valuation and is irrelevant. Cheaper debt will reduce the cost of capital. Still, an increase in debt component will make the firm riskier, and shareholders will increase their expectations and rate of discounting, thus nullifying cheaper debt, making the overall cost constant.

$$r = r_e \frac{E}{E + D} + r_d \frac{D}{E + D}$$

On the other hand, the traditional theory of capital structure states that Shareholders are immune to rising debt up to an extent until it reduces the overall cost of capital. Beyond a limit, they start increasing their expectations, presuming the debt riskier and overall cost start rising. The cost first starts decreasing with growing debt and then starts rising with further debt; in between, there comes the point where the overall cost of capital becomes minimum. The D/E ratio at which overall cost becomes minimum is optimum capital structure, and this capital structure maximizes the shareholder's value.

The trade-off theory of capital structure assumes a trade-off between tax shield due to debt and increasing insolvency and agency cost to arrive at the desired capital structure. The point where the value of the tax shield remains more significant than the insolvency cost is the point of optimum capital structure. Value of levered firm = Value of non-levered firm + PV of tax saved - PV of distress and agency

matters in capital structure. Since debt is a cheaper source of capital than common stock, increasing the debt component in capital structure would decrease the overall cost of capital and result in higher net income derived by capital contributors. This implies that at 100% debt, the firm's value will be maximum:

cost.

Donaldson's (1961) Pecking order theory arrived at specific observations and concluded that shareholders think of raising capital through new equity only as a last option. Myers and Majluf (1984) also supported Donaldson's Theory. Firms prefer to finance the assets first through internally generated funds, raise debt, and dilute their ownership by issuing fresh equity.

Literature Review

Leverage and Acquisition Decision

Leveraged firms generally have better valuation due to debt financing as debt is a cheaper source of financing due to related tax-shield advantage. But raising further debt to finance the acquisition deals may not be so easy for firms already overleveraged. Therefore, firms anticipating acquisition opportunities reduce leverage deficits just before acquisition and re-leverage after the acquisition deal

is completed. This allows acquirers to improve valuation in the post-acquisition period (Lewellen, 1971; Kumar et al., 2020). By doing so, overleveraged acquirers can adjust their capital structure through acquisition as they generally have to accommodate the target firm's debt, which ultimately helps them leverage appropriately (Leary and Roberts, 2005; and Harford et al., 2009). Jensen (1986) believes that firms in industries with subsidized growth may generally use their surplus cash to retire debt or finance the acquisition deals with freecash available and thus reduce the leverage.

On the other hand, under-leveraged firms raise debt to finance acquisition deals that help owners have effective monitoring over manager's activities indirectly through lenders, mainly through banks due to their professional acumen (Jensen and Meckling, 1976). Monitoring by debt holders ensures better compliance of managers' expending behavior and provides better corporate governance norms (Agarwal and Knoeber, 1996). Over-leveraged firms, due to increased risk of insolvency, lose the ability to raise further debt. It also affects how they finance the deal as paying cash is virtually ruled out, and the only option is to finance the deal through equity (Bharadwaj and Shivdasani, 2003). The firm's size also matters in financing the deals. Generally, large firms will prefer to achieve appropriate leverage by debt financing due to their high debt-raising capacity. In this way, they nullify the solvency risk by a trade-off with a tax shield (Brigham and Houston, 2007). The timing of adjustment to the capital structure is also affected by the adequacy of leverage. Over-leveraged firms are likely to adjust their capital structure more quickly than others as they want to keep themselves ready for any impending acquisition opportunity (Kumar and Chhabra, 2021; Frank and Goyal, 2009; and Leary and Roberts, 2005). Issue of equity to finance the deal gives signals to the market that the firm is overleveraged and may undervalue the deal outcomes (Stulz, 1996). Gugler and Konrad (2002) observed that acquirers generally take Mergers and Acquisitions as an opportunity and a solution to arrive at the optimum capital structure.

Leverage and Profitability

Billet and Ryngaert (1997) stated that increasing leverage by raising debt from the market or financial institutions ensures better economic outcomes during and after acquisition. Issue of debt by firms is taken as a sign of confidence about a better quality of assets held by them. If firms utilize the debt to finance the acquisition, the market responds favorably, and shareholders gain significantly at acquisition (Myers and Majluf, 1984). According to Chow and Lee (2008), there was a significant improvement in firms' profitability that increase leverage by raising debt to

finance the acquisition of assets indicating that leverage help in improving financial performance. Margaritis and Psillaki (2010) also concur with Chow and Lee (1984) and find the positive linkage between profitability and leverage, and conclude that increase in debt component in capital structure led to better financial performance. Yang (2011) observed that by narrowing down the leverage deficit, acquirer firms achieved better valuation for their deal during and after acquisition. According to Uysal (2011), although under-levered firms have better chances to finalize acquisition deals, the market reacts negatively to such deals in the short term. Overleveraged firms are unlikely to raise debt to finance acquisition deals because of fear of financial distress. Still, they should aim for long-term performance and should not worry about the short-term adverse reaction of the market (Geodhart Koller and Rehm, 2006).

Research Gaps Identified

Theoretical analysis of research under consideration is missing in the majority of research works.

The empirical analysis is generally not done to justify the theory.

Recent researchers have ignored capital structure-Mergers and Acquisitions-Financial performance link.

Objective and Related Hypothesis development

The main objectives of this paper are:

To find out whether acquirers adjust their capital structure in the post-acquisition period to achieve desired capital structure.

To access market reaction to such adjustments, if any.

Based on the objectives mentioned above, the following hypotheses have been developed:

H01: There is no difference in the capital structure of Acquirer Firms between a year of acquisition and a year later (Ong and Phing, 2012; Uysal; Clayton and Ravid, 2002; Morellec, and Zhdanov, 2008).

An increase in debt issuance in the post-merger period by the acquirer indicates an attempt by them to increase leverage to utilize the benefits of cheaper debt, which adds up to better valuation for them. It also demonstrates that the acquirer firm had retired debt in the pre-acquisition period in anticipation of the acquisition opportunity to reduce leverage. Overleveraging reduces their ability to acquire another firm.

H02: There is no difference in the Profitability of Acquirer Firms between a year of acquisition and a year later (Ong

and Phing, 2012; Uysal 2009; Clayton and Ravid, 2002).

An increase in profitability indicates synergic benefits of the acquisition, operational and managerial, and market acceptance of the capital structure of acquirers as appropriately leveraged. If the market shows a negative response, it is assumed that such synergy has not been achieved through acquisitions. Firms have failed to achieve their capital structure or were not sure about the target capital structure. It also indicates that the firm's acquisition strategy is not to achieve an appropriate capital structure but

something else.

Description of variables for analysis

Table (1) contains the list of variables under consideration for statistical analysis along with their formulae and short description.

Table-1: Variable Description

S. No.	Ratio	Definition	Formulae
1.	D/E	Debt Equity Ratio	$D/E = \frac{\text{LongTermDebt}}{\text{TotalEquity}}$
2.	D/A	Debt Asset Ratio	$D/A = \frac{\text{LongTermDebt}}{\text{TotalAsset}}$
3.	ROCE%	Return on Capital Employed	$\text{ROCE \%} = \frac{\text{EBIT}(1-T)}{\text{NETAssets}} * 100$
4.	ROA%	Return on Assets	$\text{ROA \%} = \frac{\text{PAT}}{\text{Assets}} * 100$
5.	RONW%	Return on Net Worth	$\text{RONW \%} = \frac{\text{PAT}}{\text{NETWORTH}}$

Source: Self-compilation by Author.

Methodology

Data Collection of Sample Firms

Secondary data related to capital structure (D/E and D/A) and Profitability (ROCE, ROA, and

RONW) of sample firms have been collected from the Money Control database for listed firms. The data was manually calculated from the balance sheet of unlisted firms on the firms' website and auditors' reports on Google. There was a total of 1257 M&A deals in India in 2019, out of which 255 were domestic deals. Out of 255 domestic deals, 156 were acquisitions. 33 start-up deals were not considered, and deal value was not available for 55 deals. Out of the remaining 71 deals, 23 had a deal value of less than 10 million USD. Out of the remaining 48 deals

majority of them (28) had a deal value between 10 to 50 million USD, and the remaining 20 deals had values of 100 and more million USD. Out of 255 domestic mergers and acquisitions deals, 30 acquirers have been considered as a sample which constitutes 11.76 % of domestic deals and 2.38 % of total 1257 deals in India in 2019 subject to the condition that:

All deals being domestic.

The deal value was more than or equal to 1 million and less than 50 million USD.

The acquisition is for the majority stake.

Sample firms were selected randomly, subject to the availability of data.

Tabel-2: List of Sample Firms and Deals Details

Acquirers	Targets	Sector	Value million USD	% Stake
Aditya Birla Fashion & Retail Ltd.	Jaypore E-Commerce Pvt. Ltd.	E-Commerce	15.80	100
Reliance Industrial Investment and Holdings Ltd.	Grab A Grub Service Pvt. Ltd.	E-Commerce	14.90	83
Individual Learning Pvt. Ltd.- Embibe	e-Dreams Edusoft Pvt. Ltd.	Education	10	91
Sterling and Wilson Pvt. Ltd.	Unitech Power Transmission Ltd.	Energy/Natural Resource	14.29	100
ICICI Lombard General Insurance	Unbox Technologies Pvt. Ltd.	IT& ITES	31.80	100
Larsen & Toubro Infotech Ltd.	Powerup Cloud Technologies Pvt. Ltd.	IT & ITES	15	100
APL Apollo Tubes Ltd.	Shankara Buildings Products Ltd.	Manufacturing	10	100
PI Industries Ltd.	Isagro (Asia) Agro-chemicals Ltd.	Agriculture/Forestry	49	100
Mahindra CIE Automotive Ltd.	Aurangabad Electricals Ltd.	Automotives	125	100
IIFL Wealth Management Ltd.	L & T Capital Market Ltd.	Banking & Finance	32.29	100
Muthoot Finance Ltd.	IDBI Asset & IDBI Mutual Fund	Banking and Finance	30.28	100
Info Edge India Ltd.	HighorbitCareer Pvt. Ltd.	Professional	11.60	100
Texmaco Rail & Engineering Ltd.	Simlex Castings Ltd.	Manufacturing	12.68	100
Ipca Laboratories Ltd.	Ramdev Chemicals Pvt. Ltd.	Pharma/Health	15.50	100

Mahindra and Mahindra	Meru Mobility Tech Pvt. Ltd.	Retail and Consumer	14.51	55
Strides Pharma Science Ltd.	Stelis Biopharma Pvt. Ltd.	Pharma/Health	40	100
HT Media Pvt. Ltd.	Next Media Works Ltd.	Media/Entertainment	7	51
Nazara Technologies Pvt. Ltd.	Absolute Sports pvt. Ltd.	Media/Entertainment	6.16	67
Indostar Capital Finance Ltd.	India Infoline Finance Ltd.	Banking/Finance	517	100
Wipro Ltd.	Vara Infotech Pvt. Ltd.	IT % ITES	45.21	100
HCL Technologies Ltd.	Sankalp Semiconductors	I.T.& ITES	25.35	100
MindaIndustriesLtd.	KPIT Technologies	I.T.& ITES	3.5	100
Kansai Nerolac Paints Ltd.	Perma Construction Aids Ltd.	Manufacturing	4.16	100
SalzerElectronics Ltd.	Koycee Industries Ltd.	Manufacturing	2.28	72
CESC Ventures Ltd.	Herbolab India Pvt. Ltd.	Pharma/ Health	4.66	65
Metropolis Healthcare Ltd.	Yash Clinical Laboratory	Pharma/ Health	1.06	100
Foods and Inns Ltd.	Kusum Spices	Retail/ Consumer	2	100
SIS (India) Ltd.	SPARMS	Professional	2.9	50
Dr. Lal Path Labs	Central Labs& Kothari Pharma	Pharma/ Health	7	70
Setco Automotive Ltd.	Lava Cast Pvt. Ltd.	Manufacturing	1.07	100

Source: Grant Thornton Deal Tracker, 2020 Annual Report.

Table (2) shows a list of sample acquirer firms and the sector in which the deals belong, the value of acquisition deals in million USD (million US Dollar), and the percentage of stakes acquired. Out of 30 sample firms; manufacturing, IT & ITES and pharma/health sectors constituted 5 each, banking and finance constituted 3 firms each, e-commerce, professional, retail and consumer and media/entertainment constituted 2 firms each and, education, energy, and, natural resources, agriculture and forestry and automotive sectors constituted 1 firm each.

Normality Test of Sample Firms Data

Table (3) shows the output of the K-S and S-W normality test generated through SPSS. S-W test of normality is considered as the sample size includes only 30 firms (\leq

30). D/E(CUR), D/A(CUR), ROCE(CUR), ROA(CUR), and RONW(CUR) represent data of acquisition year, whereas D/E(POST), D/A(POST), ROCE(POST), ROA(POST) and RONW(POST) represent data of a year after the acquisition. Variables such as D/E(CUR), D/E(POST), D/A(CUR), D/A(POST), ROA(CUR) and RONW(CUR) have p-value 0.000, 0.000, 0.000, 0.000, 0.012 and 0.000 respectively which are significant as these values are less than 0.05. Whereas variables such as ROA(POST) RONW(POST), ROCE(CUR), and ROCE(POST) have p values 0.392, 0.513, 0.335, and 0.090, respectively which are greater than 0.05 and therefore not significant. Since the majority of variable ratios are less than 0.05, we assume data to be non-normally distributed.

Table-3: Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
D/E (CUR)	.340	30	.000	.449	30	.000
D/E (POST)	.319	30	.000	.519	30	.000
D/A (CUR)	.328	30	.000	.499	30	.000
D/A (POST)	.290	30	.000	.596	30	.000
ROA (CUR)	.170	30	.026	.907	30	.012
ROA (POST)	.113	30	.200 [*]	.964	30	.392
RONW (CUR)	.258	30	.000	.631	30	.000
RONW (POST)	.105	30	.200 [*]	.969	30	.513
ROCE (CUR)	.091	30	.200 [*]	.961	30	.335
ROCE (POST)	.105	30	.200 [*]	.940	30	.090
*. This is a lower bound of true significance.a. Lilliefors Significance Correction						

Source: Output generated from SPSS Statistics 22

Data Analysis, Results, and Discussion

Normality test outcomes suggest non-normality of data distribution. Therefore, non-parametric tests have been found more relevant to be used for data analysis and testing of hypothesis. The non-parametric test used in this paper is Wilcoxon Signed Rank Test, Mann-Whitney U-test, Two-Sample K-S Test and Sign Test. Data analysis has been done using SPSS.

Wilcoxon Signed-Rank Test

1 Hypothesis

H01: There is no difference in Capital Structure (D/E and D/A) of acquiring firms in the post-acquisition period compared to the acquisition year period.

H02: There is no difference in the Profitability position (ROCE, ROA, and RONW) of acquiring firms in the post-acquisition period compared to the acquisition year period.

Table-4: Test Statistics

	D/E (POST) - D/E (CUR)	D/A (POST) - D/A (CUR)	ROA (POST) - ROA (CUR)	RONW (POST) - RONW (CUR)	ROCE (POST) - ROCE (CUR)
Z	-1.350 ^b	-1.658 ^b	-3.733 ^c	-3.054 ^c	-2.232 ^c
Asymp. Sig. (2-tailed)	.177	.097	.000	.002	.026
a. Wilcoxon Signed Ranks Test b. Based on negative ranks. c. Based on positive ranks.					

Source: Output generated from SPSS Statistics 22

2 Testing of Hypothesis:

Table (4) shows Test Statistics of Wilcoxon Signed Ranks Test. Sig. (2-tailed) values of variables viz., D/E, D/A, ROCE, ROA and RONW are 0.177, 0.097, 0.000, 0.002 and 0.026 respectively. Z values of ROA, RONW and ROCE are -3.733, -3.054, and -2.232, respectively, less than -2.000, and the p-value are 0.000, 0.002, and 0.026, respectively, which are statistically significant as they are less than 0.05. Therefore, a significant negative difference was found in the profitability of acquirers. This means to say that profitability declined in the post-acquisition period in comparison to acquisition year profitability. Whereas Z values of D/E (-1.350) and D/A (-1.658) ratios are greater than -2.000 and respective p-values 0.177 and 0.097 are greater than 0.05, indicating a difference in capital structure ratios as insignificant. Therefore, statistical outcomes accepted null hypothesis H01. No significant

difference has been found in capital structure. In contrast, a significant negative difference has been found in profitability ratios of acquiring firms under analysis in the post-acquisition period compared to the acquisition period.

Mann-Whitney U-test

Hypothesis

H01: There is no difference in Capital Structure (D/E and D/A) of acquiring firms in the post-acquisition period compared to the acquisition year period.

H02: There is no difference in Profitability position (ROCE, ROA, and RONW) of acquiring firms in the post-acquisition period in comparison to the acquisition year period.

Table-5: Test Statistics^a

	DE	DA	ROA	RONW	ROCE
Mann-Whitney U	405.000	393.500	340.000	348.000	406.000
Wilcoxon W	870.000	858.500	805.000	813.000	871.000
Z	-.685	-.863	-1.626	-1.508	-.651
Asymp. Sig. (2-tailed)	.493	.388	.104	.132	.515
a. Grouping Variable: phase					

Source: Output generated from SPSS Statistics 22

Testing of Hypothesis:

Table (5) shows Mann-WhitneyU-test statistics of variables generated from SPSS output. Z values of D/E, D/A, ROA, RONW and ROCE respectively are -0.685, -0.863, -1.626, -1.508 and -0.651, all values greater than -2.000, and insignificant. Whereas, p-values of D/E, D/A, ROA, RONW and ROCE are 0.493, 0.388, 0.104, 0.132 and 0.515 respectively, all values greater than 0.05, and hence insignificant. Therefore, statistical output analysis fails to reject the Null Hypotheses H01 and H02. Therefore, no significant change was identifiable in either capital structure or the profitability of acquirer firms in the post-

merger period compared to the acquisition year.

Two Sample K-S Test

Hypothesis

H01: There is no difference in Capital Structure (D/E and D/A) of acquiring firms in the post-acquisition period compared to the acquisition year period.

H02: There is no difference in the Profitability position (ROCE, ROA, and RONW) of acquiring firms in the post-acquisition period compared to the acquisition year period.

Table-6: Test Statistics^a

		DE	DA	ROA	RONW	ROCE
Most Extreme Differences	Absolute	.167	.167	.233	.267	.167
	Positive	.167	.167	.000	.000	.067
	Negative	.000	-.033	-.233	-.267	-.167
Kolmogorov-Smirnov Z		.645	.645	.904	1.033	.645
Asymp. Sig. (2-tailed)		.799	.799	.388	.236	.799
a. Grouping Variable: phase						

Source: Output generated from SPSS Statistics 22

Testing of hypothesis:

Table (6) shows Two Sample K-S Test statistics of selected variables under analysis when ratios have been compared between the period of acquisition and a year after acquisition using SPSS. Z values of D/E, D/A, ROA, TONW and ROCE are 0.645, 0.645, 0.904, 1.033 and 0.645 respectively which are greater than -2.000. Similarly, p-values of D/E, D/A, ROA, RONW and ROCE, are 0.799, 0.799, 0.388, 0.236 and 0.799 respectively which are greater than 0.05 and insignificant. Therefore, the output of the statistical analysis failed to reject null hypotheses (H01 and H02). Therefore, no significant difference is found in the capital structure of acquiring firms in the post-acquisition period compared to the capital structure of the acquisition year. Also, there is no difference in the profitability of acquiring firms in the post-acquisition period compared to acquisition year profitability.

Sign Test

Hypothesis

H01: There is no difference in Capital Structure (D/E and D/A) of acquiring firms in the post-acquisition period compared to the acquisition year period.

H02: There is no difference in the Profitability position (ROCE, ROA, and RONW) of acquiring firms in the post-acquisition period compared to the acquisition year period.

Table (7) shows sign test for difference of variable parameters and help to find out the number of firms that went for increasing leverage in the post-acquisition period and how the market responded to such measures. The sign test shows that 12 firms out of 30 considered for the sample have increased their leverage in proportion to their equity, whereas 11 firms increased leverage ratio to assets. This constituted nearly 40 % of sample firms. On the other hand, 6 firms decreased their debt component in proportion to both equity and assets. 12 firms did not change their capital structure in proportion to equity, and 13 firms also remained neutral to any change required in debt/asset ratios, if any, which constitute roughly 40 % of sample firms. This shows that only 40 % of acquirers increased their leverage in the post-acquisition period, which is sufficient to defeat the assumption that acquirers reduce their leverage in the pre-acquisition period to take benefits of acquisition opportunities available. They also increase leverage in the post-acquisition period to take advantage of cheaper debt to augment their working capital. Considering the market reaction to change in capital structure through mergers and acquisitions to achieve target capital structure, the sign test shows more than 20 acquirers faced a decrease in their profitability in the post-acquisition period. This indicates that the market responded negatively to capital structure rejections in mergers and acquisitions events.

Table-7: Sign Test

Difference between Parameters	Positive Difference	Negative Difference	Ties	Total
D/E (POST) – D/E (CUR)	12	6	12	30
D/A (POST) – D/A (CUR)	11	6	13	30
ROA (POST) – ROA (CUR)	8	22	0	30
RONW (POST) – RONW (CUR)	10	20	0	30
ROCE (POST) – ROCE (CUR)	10	20	0	30

Source: Output generated from SPSS Statistics 22

Table (8) provides test statistics of sign tests. It reveals that except for ROA whose z value (-2.373) is less than -2 and the p-value is 0.018, which is less than 0.05, which is significant, means a significant difference in ROA is found. Still, this difference is negative; that is, profitability has

significantly decreased. RONW and ROCE also reduced but were not significantly since their z values -1.643 and -1.643 are greater than -2, and their p values of 0.100 and 0.100 are greater than 0.05, which are not significant.

Table-8: Test Statistics^a

	D/E (POST) - D/E (CUR)	D/A (POST) - D/A (CUR)	ROA (POST) - ROA (CUR)	RONW (POST) - RONW (CUR)	ROCE (POST) - ROCE (CUR)
Exact Sig. (2-tailed)	.238 ^b	.332 ^b			
Z			-2.373	-1.643	-1.643
Asymp. Sig. (2- tailed)			.018	.100	.100
a. Sign Test b. The binomial distribution used.					

Source: Output generated from SPSS Statistics 22

Conclusions and Recommendations

Table (9) summarises hypothesis testing outcomes related to the analysis of D/E, D/A, ROCE, ROA, and RONW. Since only 40 % of acquirer firms increased debt component in their capital in the post-acquisition period, findings of this study did not approve the theoretical assumption that acquirers either reduce their debt component in the pre-acquisition phase to grab acquisition opportunities or increase their debt component of capital in post-acquisition period or both to achieve target capital structure. All values related to the capital structure are statistically insignificant since values are greater than 0.05. Therefore, our research did not find any significant change in the capital structure of acquirers signifying that the purpose of mergers and acquisition were not primarily intended to achieve target capital structure but may be different. Even though 12 firms increased leverage in the post-acquisition period, this did not favor investors, or the

market as their profitability decreased instead of increasing. This implies that these firms either failed to achieve a target capital structure or they were not sure about what actually should be their target capital structure as the efficient market hypothesis assumes discounting of all information through stock market indices. This paper concludes that no significant relation was found between capital structure and profitability position (contrary to Ong and Phing, 2012) of acquiring firms in the post-acquisition period compared to an acquisition year position. Outcomes of our study did not justify the theory of target capital structure (in conformity with Ong and Phing, 2012 but contrary to Uysal, 2009), which acquiring firms aimed to achieve through acquisition. The study failed to acknowledge that acquirers change their capital structure in the post-acquisition period to achieve a target capital structure and improve valuation.

Table-9: Summary of Hypotheses testing

Parameters	Hypothesis (H0)	Wilcoxon Signed-Rank Test		Mann Whitney U Test		Two Sample K-S Test	
		Value	Result	Value	Result	Value	Result
D/E	There is no difference in D/E of acquiring firms in the post-acquisition period compared to the acquisition year period.	.177	Failed to Reject H0 ($>.05$)	.493	Failed to Reject H0 ($>.05$)	.799	Failed to Reject H0 ($>.05$)
D/A	There is no difference in D/A of acquiring firms in the post-acquisition period compared to the acquisition year period.	.097	Failed to Reject H0 ($>.05$)	.388	Failed to Reject H0 ($>.05$)	.799	Failed to Reject H0 ($>.05$)
ROCE	There is no difference in ROCE of acquiring firms in the post-acquisition period compared to the acquisition year period.	.000	Reject H0 ($<.05$)	.104	Failed to Reject H0 ($>.05$)	.388	Failed to Reject H0 ($>.05$)
ROA	There was no difference in ROA of acquiring firms in the post-acquisition period compared to the acquisition year period.	.002	Reject H0 ($<.05$)	.132	Failed to Reject H0 ($>.05$)	.236	Failed to Reject H0 ($>.05$)
RONW	There was no difference in RONW of acquiring firms in the post-acquisition period compared to the acquisition year period.	.026	Reject H0 ($<.05$)	.515	Failed to Reject H0 ($>.05$)	.799	Failed to Reject H0 ($>.05$)

Source: Self-compilation by Author from the output generated through SPSS 22.

Theoretical and Practical Implications: The study failed to establish the theory that acquirers of less leveraged firms make profits in the post-acquisition phase (free-cash-flow hypothesis by Jensen, 1986) because less leveraged firms are more preoccupied with agency issues than appropriately leveraged firms. Insignificant improvement in profitability could also be attributed to the passing of profits to debt holders of target firms because of over-leveraging. The practical implication of outcomes may be due to target firms being small (as deal value suggest), which might not be creating operational synergy for acquirers. Decrease in profitability in the post-acquisition period after the change in capital structure may also be justified as firms might not be eyeing profitability in the short-run and might have been targeting efficiency in the short-run and profitability in the long run 3 to 4 years down the line (Geodhart et al., 2006).

Limitations of study and Scope of further research: Unavailability of financial data, particularly of un-listed firms in the public domain in India, is a significant obstruction in the field of research work. Another limitation is the limited literature available on M&A in the Indian context. To make outcomes more objective and rational, a larger sample size should be considered by future researchers.

References:

- Agrawal, A. & Knoeber, C. (1996). Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders. *Journal of Financial and Quantitative Analysis*, 31, 377-397.
- Bharadwaj, A. & Shivdasani, A. (2003). Valuation Effects of Bank Financing in Acquisitions. *Journal of Financial Economics*, 67(1), 113-48.
- Billett, M. & Ryngaert, M. (1997). Capital Structure, Asset Structure, and Equity Takeover Premiums in Cash Tender Offers. *Journal of Corporate Finance*, 3, 141-165.
- Brigham, E.F., Joel, F., & Houston, J.F. (2007). *Essentials of Financial Management*. Singapore: Cengage Learning Asia Pvt. Ltd.
- Chou, S.R. & Lee, C.H. (2008). The Research on the Effects on Capital Structure on Firm Performance and Evidence from the Non-financial Industry of Taiwan 50 and Taiwan Mid-Cap 100 from 1987 to 2007. The 2008 International Conference on Business and Information (BAI 2008), Seoul, July 07-09.
- Clayton, M.J. & Ravid, S.A. (2002). The Effect of Leverage on Bidding Behaviour: Theory and Evidence from the FCC Auctions. *Review of Financial Studies*, 15, 723-750.
- Donaldson, G. (1961). *Corporate Debt Capacity: A Study of Corporate Debt Policy and the Determination of Corporate Debt Capacity*. Division of Research, Graduate School of Business Administration, Harvard University, Boston. https://www.worldcat.org/search?q=au%3ADonaldson%2C+httpsGordon%2C&qt=hot_author
- Frank, M., & Goyal, V.K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, 38, 1-37.
- Geodhart, M., Koller, T., & Rehm, W. (2006). Making capital structure support strategy. *The McKinsey Quarterly*. Retrieved from: <http://www.uic.edu/classes/actg/actg516rtr/Readings/Capital-Structure/DebtMcKinsey.pdf>
- Grant Thornton. (February 2020). Annual deal list 2020. https://www.grantthornton.in/globalassets/1-member-firms/india/assets/pdfs/grant_thornton_annual_deallist_2020.pdf
- Gugler, K. & Konrad, K. (2002). Merger target selection and financial structure. Working Paper. The University of Vienna. Retrieved from <http://www.wu.ac.at/sm/iqv/mitarbeiter/gugler/rio.pdf>
- Harford, J., Klasa, S., & Walcott, N. (2009). Do Firms Have Leverage Targets: Evidence from Acquisitions? *Journal of Financial Economics*, 93, 1-14.
- Jensen, M. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76, 323-329.
- Jensen, M. & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3, 305-360.
- Kumar, R., & Chhabra, M. (2021). DECODING SCALE AND SIZE OF THE ACQUIRED AND THE ACQUIRER: AN EMPIRICAL ANALYSIS. Raghawendra Kumar and Meghna Chhabra, *Decoding Scale and Size of The Acquired and The Acquirer: An Empirical Analysis*, *International Journal of Management*, 11(12), 2020.
- Kumar, R., Chhabra, M., & Gera, R. (2020). Cultural Congruence and Shared Mindset Creating a Strategic Fit in Mergers and Acquisitions. In

- Performance Management (pp. 91-102). CRC Press.
- Leary, M.T.& Roberts, M.R. (2005). Do Firms Rebalance Their Capital Structures? *Journal of Finance*, 60, 2575-2619.
- Lewellen, W.G. (1971). A pure financial rationale for the conglomerate merger. *Journal of Finance*, 26, 521-37.
- Margaritis, D.&Psillaki, M. (2010). Capital Structure, Equity Ownership, and Firm Performance. *Journal of Banking and Finance*, DOI: 10.1016/J.JBANKFIN.2009.08.023. Corpus ID: 153678359
- Modigliani, F.& Miller, M. (1958). The cost of capital, corporation finance, and the theory of investment. *American Economic Review*, 48(3), 261-297.
- Morellec, E.&Zhdanov, A. (2008). Financing and Takeovers. *Journal of Financial Economics*, 87(3), 556-81.
- Myers, S.C.&Majluf, N. (1984). Corporate Financing and Investment Decisions when Firms have Information that Investors do not have. *Journal of Financial Economics*, 13, 187-221.
- Ong, T.S.&Phing, N.F. (2012). Capital Structure Before and after Merger and Acquisition: Banking Industry in Malaysia. *International Journal of Management Sciences and Business Research*. Available at SSRN: <https://ssrn.com/abstract=2705687>
- Stulz, R. (1988). Managerial Control of Voting Rights: Financial Policies and the Market for Corporate Control. *Journal of Financial Economics*, 20, 25-54.
- Uysal, V. (2011). Deviation from the target capital structure and acquisition choices. *Journal of Financial Economics*, 102(3), 602-620.
- Yang, T. (2011). The adjustment of capital structure in mergers and acquisitions: a revisit of the optimal capital structure. Working Paper. Retrieved from <http://www.docin.com/p-401931361.html>