Analysing Bankruptcy Models in Corporate Restructuring: A Study of Financial Stability

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ABSTRACT

"Change is the law of life. And those who look only to the past or present are certain to miss the future." — John F. Kennedy. [1]

In the increasingly dynamic business world of today, driven by technological disruption, changing consumer behavior, and competitive forces, corporate restructuring has emerged as a key strategy for organizational revival and expansion (Porter, 1996). Market failures, operational inefficiencies, and increasing debt have been the time-tested drivers of firms toward financial distress or bankruptcy. As a response, mergers, acquisitions, and realignments of the enterprise structure exist as strategic mechanisms to reestablish competitiveness and financial vitality. This research analyzes five large corporate restructuring cases of 12 Indian companies from industries like IT, pharma, media, infrastructure, and energy. Analyzing the financial positions of acquirer and target companies before and after restructuring using four well-known bankruptcy forecasting models which are Altman Z-Score, Grover, Springate, and Zmijewski, the model-based analysis accounts for different levels of recovery, pointing to successful turnarounds as well as persistent financial weaknesses. The results highlight strategic planning and model-based evaluation's role in guaranteeing sustainable post- restructuring performances.

***Key Words*:** Corporate Restructuring, Bankruptcy, Altman Z-score, Zmijewski Model, Financial Distress, Competitive Advantage.

1. INTRODUCTION

1.1 The Era of Structural Change

Corporate restructuring picked up momentum in the wake of dynamic changes in the domestic and global economic environment. Globalization, technological progress, and liberalization made the competition fiercer and conventional business models irrelevant. In India, the 1991 economic liberalization opened markets and led to the widespread deregulation, necessitating restructuring for companies to survive and thrive. Companies need to have leaner organizations and nimble management styles to remain competitive. In addition, the advent of the digital economy and shocks such as the 2008 global financial crisis also served to underscore the imperative for strategic reorientation. Corporate restructuring thus became a forward-looking mechanism not only for crisis resolution but also for value creation in the long term and responsiveness to a changing market landscape.

1.2 Defining Corporate Restructuring

Corporate restructuring refers to a comprehensive process through which companies strategically modify their internal or external structures to improve their overall performance, adapt to market changes, or address financial and operational challenges (DePamphilis, 2017). It involves reconfiguring the business setup, be it financial, operational, legal, or managerial to align with the firm's current and future objectives.

At its core, corporate restructuring is not merely about survival during crises—it is equally about repositioning a company for growth, optimizing business portfolios, and enhancing long-term shareholder value. The need for restructuring often arises when companies face challenges such as declining profitability, excessive debt, inefficiencies in operations, outdated business models, or underperforming business units. However, even healthy companies may undergo restructuring to seize new opportunities, achieve economies of scale, or unlock hidden value.

1.3 Key Reasons Why Firms Adopt Restructuring Strategies

Company restructurings are prompted by a range of strategic, financial, and operational reasons aimed at making a business more sustainable over the long run. Financially distressed is by far the most frequent factor under which companies will restructure

themselves to cope with debt, liquidity, or staying in business environment. Strategic reshaping is yet another significant incentive, allowing for companies to shift out of ancillary activities, grow, or consolidate dis-aggregated businesses.
Operational inefficiencies tend helps the restructuring to condense processes, implement new technology, and eliminate redundancies. Mergers and acquisitions also serve to capture the synergies, penetrate into new markets and create competitive advantage. Regulatory pressures and market disruptions for e.g., policy alterations or industry reformations, also induces companies to restructure in order to remain compliant and current. Lastly, creating shareholder value from asset optimization, enhanced governance, and enhanced capital structure further renders restructuring as an active business initiative.

8.1 Importance of Corporate Restructuring in Business Dynamics

Corporate restructuring is a critical factor in improving the operational effectiveness, financial health, as well as the strategic competitiveness of a company. It enables organizations to realign themselves with evolving market forces, resolve financial distress, and release shareholder value through mergers, acquisitions, divestitures, or internal restructuring. Restructuring not only facilitates cost optimization and asset utilization but also enables companies to capture growth opportunities and react to regulatory or technological changes. In the current context of changing world markets, it has emerged as an important strategy for long-term viability and stakeholder trust.

2. RESEARCH GAP

While corporate restructuring has been widely debated in strategic and qualitative terms, little empirical research on its efficacy using quantifiable financial metrics has been undertaken, particularly in the Indian scenario. Most research concentrates on isolated case studies or overall post-merger implications without using structured financial diagnostic tools.

This study addresses such gaps by:

- Establishing a fixed temporal boundary (2010–2015) to analyze corporate restructuring events in India.
- Employing a comparative model-based framework using four established bankruptcy prediction models- Altman Z-Score, Grover's Model, Springate Model, and Zmijewski Model.
- Conducting a Pre- and Post-restructuring analysis to determine the extent to which these interventions have influenced bankruptcy risk and overall financial viability.

3. OBJECTIVE STUDY

The present study tries to empirically assess the financial performance of corporate restructuring, largely mergers and acquisitions of Indian firms between 2010 to 2015. It creates a dataset for 12 such companies and uses four prominent bankruptcy forecasting models which are Altman Z-Score, Grover's Model, Springate Model, and Zmijewski Model, to carry out comparative pre and post-restructuring analysis. The goal is to measure changes in financial well-being and solvency in both acquiring and target companies, and whether the resulting restructuring actions caused quantifiable reductions in risk of bankruptcy. With a model-driven, quantificational focus, the study hopes to cover some research deficiency and provide illumination about the long-run financial health and strategic consequence of corporate restructuring for the Indian business environment.

4. LITERATURE REVIEW

Corporate restructuring, specifically through mergers and acquisitions (M&A), is an important tool for companies facing operational, financial, and regulatory issues. **Kaur (2017)** provides a case-based analysis of Tata Steel's takeover of Bhushan Steel, employing ratio analysis to demonstrate improvements in financial performance following the merger.

Fahdil et al. (2024) examine restructuring in downturn situations such as the COVID-19 pandemic, demonstrating its function in restoring solvency through legal and operational reform.

With a specific focus on Indian companies, **Bansal and Bansal (2016)** undertake a detailed analysis of Adani Enterprises' vertical demerger to demonstrate the value addition in shareholder value and transparency through strategic alignment with sectoral reforms. **Kumar and Rao (2015)** examine Reliance Industries' restructuring actions similarly, presenting them as pre-emptive strategies for growth and competitiveness. **Vishwakarma (2024)** follows up by classifying M&A types and correlating them with industry trends and government policies such as the PLI scheme.

Joshi (2022) estimates restructuring from the perspective of shareholder value and measures mixed results with firm-specific implementation. **Lama and Dasgupta (2023)** mirror this with EVA-based tests and observe scant evidence of value creation post-merger to dispel expectations of synergy implementation without effort.

A few researches compare the predictive effectiveness of financial distress models in contexts of restructuring. **Singh and Mahajan (2024)** compare Altman Z, Springate, Grover, and Zmijewski models in distressed Indian companies and hold that model sensitivity is not constant and advocates the use of multiple models.

Anoop et al. (2006) suggest an India-centric modification of Altman's model for enhanced predictive performance at a local level. **Malhotra and Kamal (2022)** cross-check the Grover and Zmijewski models on Indian companies and discover that Grover is more consistent with empirical insolvency results, showing its pragmatic value in M&A analysis.

Behera (2021) situates the evolution of M&A in India with reference to liberal economic reforms, distressed asset markets, and shifting sectoral priorities.

The research identifies nascent trends like consolidation in technology and pharma, as well as cross-border takeovers motivated by competitive pressures. On balance, the literature indicates that restructuring can improve financial performance but is case-sensitive and optimally assessed with a combination of qualitative observations and quantitative model-based estimates.

5. RESEARCH METHODOLOGY

This study adopts a quantitative research methodology to assess the effectiveness of corporate restructuring initiatives, specifically mergers and acquisitions which is undertaken by Indian companies during the period 2010 to 2015. The approach centers on a comparative, model- based analysis of financial performance before and after the restructuring events, with a focus on evaluating changes in bankruptcy risk using established prediction models.

5.1 Research Design

The study follows a descriptive and analytical research design, aimed at documenting and analyzing corporate restructuring outcomes using objective financial indicators. A longitudinal approach is employed to assess changes over time, thereby capturing the restructuring's short- and long-term financial implications.

5.2 Sample Selection

To undertake a data-driven and targeted analysis, the current study analyses 5 prominent corporate restructuring instances that took place in India from 2010 to 2015. In total, the sample consists of 12 firms, both acquiring and target firms which is examined with financial performance data based on four bankruptcy forecasting models. The companies chosen are a cross-section of industries such as manufacturing, infrastructure, telecommunications, pharmaceuticals, IT, and banking. The acquiring companies and target firms, the strategic rationale behind every restructuring, as well as the respective reference year, are highlighted below in a tabular form.

Table 1. List of Corporate Restructuring Cases

S.No.	Acquiring Company	Target Company	Reason for Restructuring	Sector	Year
1	Tech Mahindra	Mahindra Satyam	Recovery from accounting scandal and IT services consolidation	IT and Telecom	2013 [2]
2	Sun Pharmaceuticals	Ranbaxy Laboratories	Expansion in global generics and cost synergies	Pharmaceuticals	2014
3	Reliance Industries	Network18 Media	Strategic entry into digital media and content delivery	Media, Telecom, Oil & Gas	2014
4	Adani Enterprises	Adani Ports, Adani Power, Adani Transmission	Business vertical separation and value unlocking through demerger	Infrastructure, Ports, Energy	2015
5	Vedanta Ltd	Cairn India	Entry into oil & gas sector	Oil & Gas	2011

5.3 Data Collection

The study is based on secondary data, collected from reliable financial information platforms including:

- Capitaline [3]
- Moneycontrol [4]
- Screener.in [5]
- Company-specific documents such as annual reports, stock exchange disclosures, and public announcements.

Financial data is collected for the pre-restructuring period (2006–2010) and the post-restructuring period (2015–2024), subject to availability for each company. This allows for a robust examination of the long-term financial implications of restructuring decisions.

5.4 Analytical Tools

To evaluate the financial impact of restructuring, the following four bankruptcy prediction models are applied:

- **Altman Z-Score Model:** A multivariate model using five financial ratios to assess a company's likelihood of bankruptcy, widely applied to public manufacturing and industrial firms.
- **Grover's Model:** A refined version of the Z-Score model that employs a simplified structure, better suited for modern, diversified firms and emphasizing predictive clarity.
- **Springate Model:** Developed through linear discriminant analysis, this model combines profitability, liquidity, and leverage measures to assess financial distress potential.
- **Zmijewski Model:** A statistical model that estimates bankruptcy probability based on return on assets, financial leverage, and current ratio, with a focus on long-term solvency.

Each model is applied to both pre- and post-restructuring financial data to identify whether restructuring actions led to improvements or deterioration in bankruptcy risk levels.

5.5 Data Analysis Technique

The study employs a comparative evaluation of bankruptcy scores derived from each model, examining changes before and after restructuring events. The interpretation focuses on identifying trends in financial health and determining the effectiveness of restructuring strategies based on model-based outcomes.

6. TOOLS AND TECHNIQUES USED

In order to estimate the level of financial health and distress of firms that are restructuring their corporations, the present study uses four well- known bankruptcy forecasting models. These models utilize multivariate financial ratios and have been chosen based on their empirical performance, cross-industry generalizability, and capacity to forecast corporate insolvency risk with reasonable accuracy. All four models offer a diagnostic tool for the assessment of financial viability before and after the restructuring exercise.

6.1 Altman Z-Score Model

The Altman Z-Score, which was established in 1968, is a commonly applied measure for gauging the probability of corporate bankruptcy. It takes several financial ratios and condenses them into one score, which determines the financial health of a firm. The model is especially effective for manufacturing and industrial companies and is applied within this study to analyze the financial effect of corporate restructuring (Altman, 1968).

Altman's Z-Score Model Formula

$Z = (1.2 \times A) + (1.4 \times B) + (3.3 \times C) + (0.6 \times D) + (1.0 \times E)$

Where,

A=Working Capital ÷ Total Assets, B=Total Retained Earnings ÷ Total Assets, C=Earnings Before Interest and Taxes ÷ Total Assets, D=Market Value of Equity ÷ Total Liabilities and E= Total Sales ÷ Total Assets.

What Z-Scores Mean

Altman Z-score is one of the most common indicators of a firm's risk of going bankrupt. A value less than 1.8 suggests serious financial distress, more than 3.0 suggests outstanding financial health, and between 1.8 and 3.0 suggests moderate risk. Investors tend to use the Z- score to make good equity choices, with higher values indicating stability and lower values that there is a possible insolvency and capital risk.

6.2 Grover's G-Score Model

Grover's Model, established in 2001, further develops the Altman Z-Score using a streamlined format and is more appropriate for contemporary diversified companies. Grover's Model concentrates basically on the three financial ratios: working capital as a proportion of total assets, EBIT to total assets, and return on assets (ROA). Grover's Model offers an easily understandable sign of financial distress where lower scores imply greater risk of bankruptcy. This model supplements the rest by offering an outlook on financial stability after restructuring (Grover, 2001).

Grover's G-Score Model Formula

G-Score = (1.6508×X1) + (3.404×X3) – (0.016×ROA) + 0.057

Where,

X1= Working Capital ÷ Total Assets, X3= Earnings Before Interest & Taxes ÷ Total Assets, ROA (Return on Assets) = Net Income ÷ Total Assets and Constant= 0.057.

What G-Scores Mean

The G-score is calculated from important financial ratios measuring a company's risk of bankruptcy. A G-score ≤ -0.02 shows high risk of insolvency, while ≥ 0.01 implies financial health. Scores in between -0.02 and 0.01 indicate moderate risk. The G-score serves as an early warning indicator, helping investors, creditors, and managers make strategic and financial decisions.

6.4 Springate S-Score Model

The Springate Model, created in 1978, is another popular bankruptcy forecasting model, which uses four financial ratios. It categorizes firms into three groups: financial distress, uncertain, and healthy, depending on the score calculated. The model is especially helpful for companies with sparse financial information and provides a straightforward yet effective method of evaluating post-restructuring financial well-being (Springate, 1978).

Springate S-Score Model Formula

S = (1.03×A) + (3.07×B) + (0.66×C) + (0.4×D)

Where,

A= Working Capital ÷ Total Assets, B= Net profit before interest and taxes ÷ total assets, C= Net profit before taxes ÷ current liabilities and D= Sales ÷ total assets.

What S-Scores Mean

The Springate Model classifies companies according to S-scores: below 0.862 indicates financial distress, 0.862–1.062 shows moderate risk, and over 1.062 indicates financial stability. It possesses high predictive power, assisting investors and managers in identifying early evidence of financial issues and facilitating pre-emptive decision-making.

6.4 Zmijewski Score Model-

The Zmijewski Model, developed in 1984, uses a probit regression model to assess the probability of bankruptcy based on three financial ratios: return on assets (ROA), debt ratio, and current ratio. A positive score is a indicator of distress, whereas a negative score represents financial health. This model is utilized in the research to analyze the long-term solvency of firms, providing a new layer to the examination of restructuring results (Zmijewski, 1984).

Zmijewski Score Model Formula

X = -4.336 – (4.513×X1) + (5.679×X2) – (0.004×X3)

Where,

X1= Return on asset, X2= Debt ratio, X3= Current ratio and Constant= -4.336.

What X-Scores Mean

The Zmijewski Model employs three financial ratios—profitability, leverage, and liquidity—to calculate an X-score that would forecast bankruptcy risk. Financial distress is indicated by > 0 and stability by < 0. Its binary nature makes it a useful tool for the identification of distressed firms and the assessment of financial performance over time, particularly in post-restructuring analysis.

7. IN-DEPTH ANALYSIS OF COMPANIES CHOSEN

This section provides a comprehensive analysis and interpretation in terms of financial health and bankruptcy risk of 12 Indian firms undergoing corporate restructuring. The analysis uses four commonly accepted predictive models which are Altman Z-score, Springate, Grover, and Zmijewski, across three different time horizons: 2006–2010 (the pre-restructuring phase), 2016–2020, and 2021–2024 (the post- restructuring phase). Each of these models is used according to the given thresholds to categorize firms into financial security, distress, or bankruptcy. The purpose of this analysis is to analyze changes in the financial health of these firms over time, evaluate the effectiveness of restructuring, and derive meaningful insights through quantitative results supplemented by model-based interpretations.

Case 1: Adani Enterprises and Adani Ports, Power and Transmission

Company Background & Restructuring Case-

Companies Involved- Adani Enterprises, Adani Ports, Adani Power and Adani Transmission (Adani Energy Solutions Ltd)

Year of Corporate Restructuring- 2015

Reason for Restructuring-

- The objective was to unlock shareholder value and to specialize operational focus.
- Adani Enterprises demerged its ports, power, and transmission businesses into separate entities (Adani Ports and SEZ, Adani Power, Adani Transmission or Adani Energy Solutions Ltd).

Outcome-

- Each entity began functioning independently.
- Investors could selectively invest in the verticals of interest.
- The move increased transparency and helped in better valuation of individual businesses.

Visual Representation of the Acquiring & Target Company for four Bankruptcy models

Table 2. Acquiring Company: Adani Enterprises

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	3.649	1.724	1.068	-2.870
2007	3.452	1.582	1.203	-1.749
2008	4.177	1.520	1.054	-1.986
2009	3.228	1.263	0.658	-3.228
2010	4.125	0.955	0.404	-3.704
2010-2015 (Cr time) [6]				
2016	1.727	0.671	0.544	-3.587
2017	1.681	0.508	0.331	-3.669
2018	1.916	0.480	0.274	-3.769
2019	2.328	0.737	0.341	-4.066
2020	2.552	0.859	0.405	-4.095
2021	7.055	0.772	0.413	-3.854
2022	8.029	0.856	0.419	-3.952
2023	5.481	1.022	0.397	-4.361
2024	5.598	0.836	0.541	-4.149

Table 3. Target Company 1: Adani Ports

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	NA	0.163	-0.058	-2.426
2007	NA [7]	0.258	0.054	-2.289
2008	3.443	0.568	0.416	-2.771
2009	2.042	0.689	0.474	-2.964
2010	1.383	0.491	0.242	-3.587

2010-2015 (Cr time)				
2016	2.164	0.762	0.459	-2.634
2017	2.334	0.930	0.635	-2.173
2018	2.633	1.544	0.794	-1.922
2019	2.153	0.781	0.565	-2.347
2020	1.589	0.564	0.428	-1.693
2021	2.437	0.748	0.442	-1.438
2022	2.061	0.252	0.243	-1.238
2023	1.703	0.007	0.141	-1.125
2024	2.623	0.418	0.262	-1.412

Table 4. Target Company 2: Adani Power

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	NA	-0.115	-0.127	-4.338
2007	NA	-0.301	-0.410	-3.072
2008	NA	-0.019	0.031	-2.325
2009	NA	0.051	0.145	-0.721
2010	1.360	0.222	0.223	-1.153
2010-2015 (Cr time)				
2016	0.556	0.076	-0.104	-2.041
2017	-0.078	-0.670	-0.690	-1.079
2018	1.176	0.247	0.023	-3.672
2019	0.743	-0.003	-0.006	-2.658
2020	0.395	-0.382	-0.183	-3.312
2021	0.832	-0.249	-0.279	-4.002
2022	1.557	0.921	0.566	-1.858
2023	1.906	1.036	0.607	-2.371
2024	3.821	2.203	1.179	-3.379

Table 5. Target Company 3: Adani Transmission or Adani Energy Solutions Ltd [8]

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	NA	NA	NA	NA
2007	NA	NA	NA	NA
2008	NA	NA	NA	NA
2009	NA	NA	NA	NA
2010	NA	NA	NA	NA [9]
2010-2015 (Cr time)				
2016	2.861	-0.320	-0.457	-2.307
2017	4.192	0.048	0.034	-0.652
2018	1.228	-0.016	-0.036	-1.323
2019	1.204	0.015	-0.032	-1.996
2020	1.304	0.198	0.284	-1.123
2021	4.984	-0.026	-0.039	-1.105
2022	12.402	-0.007	0.034	-1.003
2023	6.309	0.244	0.163	-3.621
2024	4.862	0.528	0.228	-3.040

Model based Comparison and Evaluation

Table 6. Adani Enterprises – Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Strong safe zone throughout	Declining till 2017, slight recovery post- 2018	Strong safe zone from 2021	Financial stress post-2015, followed by strong recovery
Springate	Healthy zone throughout	Constant below threshold (risky zone)	Still in risky zone, minor uptick in 2023	Weak earnings power despite Altman Z improvement

Grover	Consistently above threshold	Below 0.5	Gradual recovery; borderline in 2024	Mild improvement, nearing safety
Zmijewski	Always negative (safe)	Continuously negative and improving	More negative in recent years	Strong solvency (more negative = lower bankruptcy risk)

Adani Enterprises' Model-Based Evaluation

Adani Enterprises reflected good financial wellness between 2006 and 2010 in all four models, with Altman Z, Springate, and Grover scores being in the safe zone, and Zmijewski reflecting low probability of bankruptcy. After restructuring, especially in 2016–2017, financial metrics came down, depicting operating and credit pressures. Since 2018, Altman Z and Grover scores reflect a consistent turnaround, achieving safe zones at 2021 and 2024, respectively. Springate continues to be volatile, referencing ongoing earnings pressure. Zmijewski continues to be strongly negative, indicating ongoing solvency strength. Generally, the models suggest a rebound in financial stability after 2020, with some issues regarding profitability.

Table 7. Adani Group Companies (Ports, Power, Transmission)- Financial Distress Model Summary

Company	Altman Z	Springate	Grover	Zmijewski	Key Insight
Adani Ports	Transitioned from distress Zone (2006–2010) to stable zone post-2020	Struggled below threshold until 2018, healthy afterward	Consistently strong, especially post-2016	Negative throughout, indicating low bankruptcy risk	Strong improvement over the years, now financially stable across all models
Adani Power	Distress zone for most of the period; minor improvement post-2021	Persistently below threshold; weakest among the three	Unstable, with some years close to cut-off but mostly in distress	Moved from risky (positive values) to stable (negative) after 2021	High-risk company historically, but some signs of recovery in recent years
Adani Transmission	Moderate zone early on, moved into safe zone post-2020	Below threshold for most years, slight improvement recently	Was in distress zone till 2020, moved to safe zone recently	Negative and improving over time	Showed distress until 2020 but now signaling strong recovery and solvency

Adani Ports, Power & Transmission- Model-Based Evaluation

Adani Ports displays a strong and stable financial recovery, where both Altman Z and Springate models strengthen after 2018 and reach safe levels by 2020. Grover's model always remains robust, while Zmijewski scores confirm low risk of bankruptcy, showing overall financial improvement. Adani Power, on the other hand, has experienced ongoing distress, as Altman Z and Springate scores continue to be weak, and Grover tends to approach the danger zone. Whereas Zmijewski went negative post-2021, implying pending solvency, the financial turnaround of the company looks to be more sluggish and unstable, making cautious optimism appropriate. Adani Transmission presents a belated but consistent financial turnaround. While Altman Z found itself in the safe zone by 2020, Springate and Grover models were still predominantly in the risk zone, although Grover improved after 2021. Zmijewski continued to report low bankruptcy risk, with impressive solvency against relatively poor earnings indicators. Overall, the firm presents improving financial health led by solvency improvement and nascent earnings recovery.

Overall Restructuring Evaluation

The restructuring in Adani group firms has produced broadly favorable outcomes, although results are entity-specific. Adani Ports and Adani Enterprises were success stories, with Altman Z and Grover scores continuing to improve steadily and Zmijewski reflecting steady solvency. Adani Transmission exhibits delayed recovery but eventual stability, now registering stability in all Zmijewski and Altman Z models. Adani Power is still the most troubled, with Altman Z and Springate scores remaining in distress levels, although there are small improvements in Zmijewski. Generally, restructuring improved financial well-being in the majority of units, although some operational frailties remain.

Final Verdict

The restructuring in the Adani Group can be considered a **success**, albeit a qualified one, particularly for Enterprises, Ports, and Transmission. Although Power still remains vulnerable, the overall direction of the group post-restructuring indicates successful financial and strategic restructuring.

Case 2: Tech Mahindra and Mahindra Satyam

Company Background & Restructuring Case-

Companies Involved- Tech Mahindra and Mahindra Satyam

Year of Corporate Restructuring- 2009-2010

Reason for Restructuring-

- Following the infamous accounting scandal at Satyam in 2009, which led to its near-collapse and major bankruptcy risks, the Indian government intervened and orchestrated a strategic sale.
- Tech Mahindra acquired a majority stake in Satyam, marking one of India's most prominent turnaround cases.

Outcome-

- **Successful Financial Turnaround**: After the acquisition, Tech Mahindra improved steadily in all four models of financial distress, which reflects a good and sustainable recovery. The consolidation of Mahindra Satyam really boosted Tech Mahindra's financial health in the long run.
- **Effective Restructuring Strategy:** The acquisition effectively revived a collapsing company (Satyam), restored market confidence, and created long-term value—making it a benchmark case of successful corporate restructuring in India.

Visual Representation of the Acquiring & Target Company for four Bankruptcy models

Table 8. Acquiring Company: Tech Mahindra

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	NA	1.738	1.076	-5.095
2007	9.305	2.792	1.773	-5.654
2008	6.144	2.579	1.693	-5.519
2009	4.810	2.942	1.847	-5.582
2010	3.104	1.332	0.720	-3.836
2010-2015 (Cr time)				
2016	3.599	1.819	1.255	-4.898
2017	3.411	1.636	1.110	-4.734
2018	4.139	1.744	1.176	-4.795
2019	4.611	1.707	1.212	-4.871
2020	3.925	1.960	1.325	-4.783
2021	3.832	1.909	1.314	-4.758
2022	4.202	1.877	1.153	-4.799
2023	4.635	1.450	0.874	-4.674
2024	4.819	1.140	0.686	-4.517

Table 9. Target Company: Mahindra Satyam (Satyam Computers) [10]

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	7.005	3.687	2.615	-5.396
2007	6.783	3.159	2.380	-5.202
2008	5.095	2.966	2.275	-5.169
2009	-142.618	-182.986	-236.755	233.443
2010	5.287	1.133	0.513	-4.165
2010-2015 (Cr time)				
2016	NA	NA	NA	NA
2017	NA	NA	NA	NA
2018	NA	NA	NA	NA
2019	NA	NA	NA	NA
2020	NA	NA	NA	NA
2021	NA	NA	NA	NA
2022	NA	NA	NA	NA
2023	NA	NA	NA	NA
2024	NA	NA	NA	NA

Model based Comparison and Evaluation

Table 10. Tech Mahindra – Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Exceptionally strong (9.30 in 2007, gradual decline to 3.10 in 2010), always in the Safe Zone	Stable with slight ups and downs but remains well within Safe Zone (3.41–4.61)	Strengthens further (4.20 to 4.81) maintaining Safe Zone	Strong and consistent financial position across all years. Company is far from distress risk.
Springate	Healthy throughout (1.33–2.94), comfortably above 0.862	Maintains good financial health with all values consistently above threshold (1.63–1.96)	Continues trend of financial stability (1.14–1.88)	No financial distress indicated across the years. Strong solvency maintained.
Grover	Stable and healthy, slight dip in 2010 (0.72) but above distress threshold	All values well above 0.01 (1.11–1.32), indicating strong financials	Consistent performance (0.68–1.15), mostly in safe zone	Marginal dip in recent years but still well above distress levels. Operationally resilient.
Zmijewski	All values deeply negative (-3.83 to -5.65), implying no bankruptcy threat	Maintains same trend (-4.73 to -4.89)	Improves slightly (-4.51 to -4.67)	Negative values consistently—indicating extremely low probability of bankruptcy across time periods.

Tech Mahindra- Model-Based Evaluation

Altman Z-Score puts Tech Mahindra solidly in the Safe Zone across, even with a drop from 9.3 in 2007 to 3.1 in 2010, and flat values between 3.4 and 4.8 after 2016, showing consistent financial health. Confirming this, Springate and Grover models show consistent solvency and profitability, with values well above distress levels. Zmijewski scores continue to be strongly negative, supporting a low risk of bankruptcy. Together, the models affirm Tech Mahindra's long-term financial stability, robustness, and sound risk management.

Table 11. Mahindra Satyam (Satyam Computers)– Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Strongly safe zone till 2008 (green), major collapse in 2009 (red), recovery in 2010 (green)	NA	NA	Severe financial fraud in 2009 led to massive distress; signs of recovery post-crisis.
Springate	Stable and healthy till 2008 (green), massive drop in 2009 (red), partial recovery in 2010 (green)	NA	NA	Earnings power crashed during the crisis; bounced back moderately post- 2009.
Grover	Above threshold till 2008 (green), deep red in 2009, mild recovery in 2010 (green)	NA	NA	Model confirms 2009 collapse; performance rebounded to solvency levels.
Zmijewski	Strong solvency through all years (values < 0), except 2009 (value > 0 = red zone)	NA	NA [11]	Zmijewski detects 2009 as critical bankruptcy risk; other years show healthy signals.

Mahindra Satyam (Satyam Computers)– Model-Based Evaluation

Altman Z, Springate, and Grover models signaled robust financial health between 2006 and 2008 and then an immediate collapse in 2009 from the accounting scandal. Altman Z dropped to –142.6, Springate to –182.9, and Grover to –236.8, all signaling extreme risk of bankruptcy. After the acquisition in 2010, all three models reported improvement, getting back to safe or stable values. Zmijewski was negative in all but 2009, when it peaked at 233.4, also verifying the crisis. Overall, the models indicate pre-crisis strength, 2009 distress, and post-restructuring recovery.

Overall Restructuring Evaluation

The merger following the 2009 Satyam accounting scandal stands as a landmark corporate recovery. Prior to the crisis, Mahindra Satyam showed financial stability across all four bankruptcy models. In 2009, model scores reflected severe distress (Altman Z: –142.6; Grover: – 236.8; Zmijewski: +233.4), signaling near-collapse due to fraud. The 2010 acquisition by Tech Mahindra

triggered a swift financial rebound, with Altman Z rising to 5.3 and other models also returning to stable zones, indicating a successful post-crisis restructuring and restoration of solvency.

Final Verdict

The corporate restructuring of Satyam into Tech Mahindra has been a resounding success. Not only did the merger avert the collapse of a major IT company, but it also established Tech Mahindra as a robust, well-governed, and financially sound organization in the long term. The turnaround was rapid (evident by 2010 recovery metrics) and sustained (with a decade-long period of consistent health from 2016–2024), validating the strategic effectiveness and execution of the restructuring process.

Case 3: Reliance Industries Ltd and Network 18 Media & Investments

Company Background & Restructuring Case-

Companies Involved- Reliance Industries Ltd and Network 18 Media Investments

Year of Corporate Restructuring- 2014

Reason for Restructuring-

- In 2014, Reliance Industries Ltd (RIL) bought out Network18 Media in a ₹2,200 crore takeover by its Independent Media Trust (IMT) to take control and restructure promoter debt.
- As Network18 was in serious financial trouble owing to overexpansion and high cost of operations, RIL used this as a strategic entry into the digital content space in alignment with its forthcoming telecom venture, Reliance Jio.

Outcome-

- The deal assisted in Network18 debt reduction and the acquisition of access to capital to facilitate expansion on OTT platforms. Strategically, it blended content creation and delivery, further consolidating RIL's digital ecosystem. However, financial model scores indicate incongruent outcomes for both the entities after restructuring.

Visual Representation of the Acquiring & Target Company for four Bankruptcy models

Table 12. Acquiring Company: Reliance Industries Ltd

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	2.653	1.055	0.496	-3.697
2007	3.065	1.145	0.520	-3.781
2008	3.414	1.172	0.584	-3.669
2009	2.120	0.815	0.402	-3.020
2010	2.647	0.915	0.440	-3.322
2010-2015 (Cr time)				
2016	1.845	0.554	0.197	-3.619
2017	1.787	0.494	0.170	-3.757
2018	1.967	0.462	0.130	-3.817
2019	2.004	0.469	0.160	-3.664
2020	1.286	0.186	-0.066	-3.313
2021	2.017	0.293	0.163	-3.365
2022	2.645	0.535	0.278	-3.386
2023	2.638	0.608	0.316	-3.647
2024	2.567	0.576	0.291	-3.537

Table 13. Target Company: Network 18 Media & Investments

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	NA	-3.563	0.087	-2.309
2007	NA [12]	-0.284	0.150	-3.468
2008	1.626	2.376	0.621	-1.716
2009	1.034	-0.131	0.267	-2.773
2010	1.265	-0.696	0.464	-2.540

2010-2015 (Cr time)				
2016	0.867	-0.387	-0.430	-4.255
2017	0.502	-0.493	-0.609	-4.241
2018	0.952	-0.499	-0.690	-4.282
2019	0.057	-0.962	-1.115	-3.850
2020	0.003	-0.993	-1.259	-3.932
2021	-0.114	-0.857	-1.227	-4.219
2022	0.708	-0.831	-1.231	-4.257
2023	-0.323	-0.920	-1.299	-4.176
2024	0.661	-0.573	-0.940	-3.999

Model based Comparison and Evaluation

Table 14. Reliance Industries Ltd– Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Mostly in Moderate Zone (except 2008-Safe Zone)	Majority Moderate Zone, 2020 fell into Distress Zone	Recovered back to Moderate Zone with improving scores	No bankruptcy risk but vigilance required; financial stress slightly increased during aggressive expansion but recovery post-pandemic was good.
Springate	Mostly Healthy, slight dip in 2009 & 2010 (marginally below threshold)	Consistently Bankrupt Zone (<0.862) across all years	Remained in Bankrupt Zone (<0.862) despite slight improvements	Operational profitability stress observed post- restructuring; likely due to high investments and integration costs.
Grover	All years Healthy (>0.01)	Healthy except 2020 (Bankrupt, Grover score -0.066)	Back to consistent Healthy status (>0.01)	Stable financial health, short-term shock in 2020 (COVID effect) but good recovery shows resilience.
Zmijewski	Continuously Safe (<0)	Continuously Safe (<0)	Continuously Safe (<0)	Very low bankruptcy risk throughout, restructuring did not materially weaken core solvency.

Reliance Industries Ltd - Model-Based Evaluation

Altman Z-scores consistently place RIL in the Safe Zone, reflecting strong profitability, liquidity, and low leverage. Despite macroeconomic fluctuations, RIL maintained financial stability, supported by diversification into telecom and digital services. Springate and Grover models confirm robust earnings and operational strength, while Zmijewski's consistently negative scores indicate minimal bankruptcy risk. Collectively, the models depict RIL as financially resilient with effective risk management.

Table 15. Network 18 Media & Investments- Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Bankrupt Zone Mostly below 1.81, signaling financial distress	Bankrupt Zone consistently	Bankrupt Zone consistently	Network 18 has remained in the high bankruptcy risk zone throughout, showing no financial improvement.
Springate	Mostly Bankrupt Zone, slight recovery in 2008 only	Bankrupt Zone consistently	Bankrupt Zone consistently	Very weak financial stability throughout all periods, with no entry into healthy zone.
Grover	Healthy Zone during 2006-2010 (values > 0.01)	Shifted to Bankrupt Zone from 2016 onwards	Bankrupt Zone continues	Good financial health earlier, but significant deterioration post-2016 and still struggling.
Zmijewski	Healthy Zone throughout 2006-2010 (values < 0)	Healthy Zone during 2016-2020	Healthy Zone maintained till 2024	This model suggests strong financial health overall, contradicting others — may require deeper investigation.

Network 18 Media & Investments- Model-Based Evaluation

Altman Z, Springate, and Grover models all put Network18 in the distress zone between 2006 and 2024, reflecting ongoing financial weakness and risk of insolvency. Only Grover reflected temporary strength prior to 2010. Conversely, the Zmijewski model reflects solvency stability, probably because leverage is manageable and accounting profitability is present. This

discrepancy means that although Network18 is not structurally insolvent, operational and market issues still pose a threat to its long-term sustainability, requiring immediate corrective action.

Overall Restructuring Evaluation
RIL's takeover of Network18 represents diverging financial paths. Network18 stayed in the distress range across Altman Z, Springate, and Grover models between 2006–2024, with minimal financial rehabilitation after the takeover. Zmijewski alone reported solvency, citing debt stability but poor profitability. RIL had high scores across all models, however, signifying a strategic, growth-focused restructuring that ensured its financial robustness while absorbing weaker assets. The rescue stabilized Network18 but not its financial health.

Final Verdict
In conclusion, the restructuring journey produced two divergent outcomes: Reliance Industries Limited successfully leveraged restructuring as a growth catalyst, maintaining financial strength and expanding strategically, while Network 18, despite operational support and financial stabilization, continues to struggle with the core financial weaknesses. Based on the four model insights and overall performance, the restructuring effort can be deemed a **major success for RIL**, but only a **partial and incomplete recovery for Network 18**.

Case 4: Sun Pharmaceutical Industries Ltd and Ranbaxy Laboratories

Company Background & Restructuring Case-

Companies Involved- Sun Pharmaceutical Industries Ltd and Ranbaxy Laboratories

Year of Corporate Restructuring- 2014

Reason for Restructuring-

- Sun Pharmaceutical's acquisition of Ranbaxy in 2014 was necessitated by the latter's worsening financial and operational condition coupled with repeated US FDA sanctions against it for failure in quality controls. Ranbaxy's global image had suffered due to violations, lapses in manufacturing, and limited access to markets. For Sun Pharma, the deal offered a chance to extend its global reach, capitalize on Ranbaxy's reach in emerging markets, and benefit from cost and operational synergies. The revamp was designed to regain regulatory credibility, consolidate market share, and build a more formidable global generics player.
- After the takeover, Sun Pharma faced regulatory challenges, supply chain issues, and legal risks, which imposed short-term financial pressure. This was reflected in poorer Springate and Grover scores after 2015. Nevertheless, concerted efforts on compliance, cost management, and integration resulted in gradual recovery. By 2021, the company demonstrated significant improvement on all financial models, with profitability regained and enhanced global footprint. The turnaround success demonstrated the strategic resilience of Sun Pharma and its leadership in the pharma industry.

Outcome-

- After the takeover, Sun Pharma faced regulatory challenges, supply chain issues, and legal risks, which imposed short-term financial pressure. This was reflected in poorer Springate and Grover scores after 2015. Nevertheless, concerted efforts on compliance, cost management, and integration resulted in gradual recovery. By 2021, the company demonstrated significant improvement on all financial models, with profitability regained and enhanced global footprint. The turnaround success demonstrated the strategic resilience of Sun Pharma and its leadership in the pharma industry.

Visual Representation of the Acquiring & Target Company for four Bankruptcy models

Table 16. Acquiring Company: Sun Pharmaceutical Industries Ltd

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	15.266	2.167	1.409	-2.073
2007	16.830	2.822	1.440	-3.355
2008	16.655	1.817	1.292	-4.877
2009	13.734	2.028	1.242	-5.006
2010	19.363	1.714	0.820	-4.809
2010-2015 (Cr time)				
2016	4.337	-0.186	-0.211	-3.920
2017	3.847	-0.051	-0.168	-4.209

2018	3.061	0.132	0.037	-4.121
2019	2.977	0.245	0.139	-4.183
2020	2.973	0.602	0.376	-4.398
2021	3.730	0.576	0.410	-3.789
2022	4.609	0.323	0.218	-3.573
2023	5.377	0.894	0.771	-3.277
2024	8.035	1.248	0.782	-2.858

Table 17. Target Company: Ranbaxy Laboratories

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	3.054	1.041	0.742	-1.332
2007	2.464	1.261	0.888	-1.455
2008	1.565	-0.515	-0.428	-0.818
2009	1.872	1.078	0.826	-2.249
2010	2.896	1.459	1.265	-2.295
2010-2015 (Cr time)				
2016	NA	NA	NA	NA
2017	NA	NA	NA	NA
2018	NA	NA	NA	NA
2019	NA	NA	NA	NA
2020	NA	NA	NA	NA
2021	NA	NA	NA	NA
2022	NA	NA	NA	NA
2023	NA	NA	NA	NA
2024	NA	NA	NA	NA

Model based Comparison and Evaluation

Table 18. Sun Pharmaceutical Industries Ltd- Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Mostly Safe Zone (13–19)	Grey Zone (2.9–4.3), slight dip but safe	Safe Zone (3.7–8.0), strong recovery	No bankruptcy risk; slight stress post-acquisition, strong recovery post-pandemic.
Springate	Healthy (1.7–2.8), slight weakening 2009–10	Bankrupt Zone (below 0.862) across period	Improving but still Bankrupt Zone (<0.862)	Operational pressure visible post-merger; profitability recovery still gradual.
Grover	Healthy (>0.82) all years	Mostly healthy; slight drop in early years (0.03)	Fully healthy (>0.21) after 2020	Minor post-merger weakness; good resilience and quick recovery.
Zmijewski	Continuously Healthy (-2 to -5)	Continuously Healthy (-3.9 to -4.4)	Continuously Healthy (-2.8 to -3.5)	No bankruptcy risk throughout; core financials stayed robust even during stress.

Sun Pharmaceutical Industries Ltd- Model-Based Evaluation

Altman Z scores had Sun Pharma in the Safe Zone between 2006–2010, then dropping into the Grey Zone between 2016–2020 owing to integration pressures, but fully recovering after 2021. Springate scores pointed towards post-merger stress, a gauge of operating costs, and Grover reflected slight weakness but returned to normal after 2020. Zmijewski was uniformly safe throughout all intervals, ensuring excellent solvency throughout the restructuring.

Table 19. Ranbaxy Laboratories- Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Mostly Moderate, slipped into Distress Zone by 2009–2010	Data not available post-acquisition (merged into Sun Pharma)	N/A	Financial health weakened significantly pre- acquisition; bankruptcy risk visible by 2010.
Springate	Mostly Bankrupt Zone (<0.862), very low scores	N/A	N/A	Weak profitability and operational inefficiency led to vulnerability before acquisition
Grover	Bankrupt status (Grover scores often negative or very low)	N/A	N/A	Persistent financial distress, unsustainable operating performance pre- merger

Zmijewski	Positive or near-zero scores (>0), indicating distress	N/A	N/A [13]	High bankruptcy risk evident; consistent

Ranbaxy Laboratories- Model-Based Evaluation

Between 2006 and 2010, Ranbaxy's financial situation worsened dramatically. The Altman Z and Springate values remained in the distress zone, although Grover's values remained weak or negative. Zmijewski scores drifted close to or above zero, indicating risk of insolvency. These persistent warning signs indicated operational and regulatory problems, which supported Sun Pharma's acquisition and wise reorganization strategy.

Overall Restructuring Evaluation

Sun Pharma's acquisition of Ranbaxy was complicated by the company's severe financial and regulatory issues. Early setbacks after 2014, compliance and integration expenses created short-term financial pressures, expressed in Springate and Grover scores. Models such as Altman Z and Grover demonstrated improvement by the year 2021–2024. Sun Pharma's remedial action brought back its profitability and compliance, making the restructuring a successful long-term objective.

Final Verdict

Overall, the restructuring was a **long-term success**. While Sun Pharma underwent short-term post-acquisition distress and financial pressures, it was able to successfully consolidate Ranbaxy's problem assets, clean up the regulatory issues, and return to profitability and operational vigour. The return to health in financial performance post-2021 assures us that the deal eventually generated shareholder value and enhanced Sun Pharma's dominance in the global pharma industry.

Case 5: Vedanta Ltd and Cairn India

Company Background & Restructuring Case-

Companies Involved- Vedanta Ltd and Cairn India

Year of Corporate Restructuring- 2015-2017

Reason for Restructuring-

- The takeover of Cairn India by Vedanta in 2011 was a strategic bid to diversify from metals and mining into the oil and gas industry. The acquisition sought to gain stable cash flows, break the cycle of dependence on cyclical commodities, and augment Vedanta's energy base.
- It also pursued operational synergies and upstream consolidation, though the acquisition process was delayed because of regulatory and shareholder apprehensions, especially regarding corporate governance and financial disclosure.

Outcome-

- Following the merger, Vedanta faced short-term financial strain as a result of debt financing and market volatility, as indicated by a few poor financial model scores in 2016–2020. However, from 2021–2024, metrics like Altman Z and Zmijewski indicated that recovery had occurred, indicating higher solvency and financial health. Restructuring eventually diversified Vedanta's resource base and placed the company more competitively within the energy industry, although the issues of governance and integration limited the immediate benefits.

Visual Representation of the Acquiring & Target Company for four Bankruptcy models

Table 20. Acquiring Company: Vedanta Ltd

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	5.570	4.525	2.354	-6.120
2007	4.842	4.653	2.021	-5.924
2008	5.932	7.085	2.660	-6.561
2009	3.015	5.305	2.131	-5.966
2010	1.962	2.923	1.436	-4.110
2010-2015 (Cr time)				
2016	0.198	-0.151	-0.096	-2.978
2017	0.646	0.274	0.069	-3.587

2018	0.602	0.141	-0.152	-3.867
2019	0.414	0.086	-0.124	-3.566
2020	0.195	-0.193	-0.187	-3.104
2021	0.840	0.551	0.213	-3.680
2022	1.360	0.782	0.358	-3.747
2023	1.123	0.797	0.318	-3.623
2024	1.106	0.378	-0.017	-3.432

Table 21. Target Company: Cairn India

Financial Years/ Bankruptcy Model	Altman Z	Springate	Grover	Zmijewski
2006	Not listed	0.082	0.199	-4.336
2007	0.544	-0.229	0.044	-4.331
2008	NA	NA	NA	NA
2009	0.768	0.629	0.209	-4.429
2010	1.048	-0.319	0.060	-4.106
2010-2015 (Cr time)				
2016	0.680	0.331	0.177	-4.256
2017	NA	NA	NA	NA
2018	NA	NA	NA	NA
2019	NA	NA	NA	NA
2020	NA	NA	NA	NA
2021	NA	NA	NA	NA
2022	NA	NA	NA	NA
2023	NA	NA	NA	NA
2024	NA	NA	NA	NA

Model based Comparison and Evaluation

Table 22. Vedanta Ltd- Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Healthy (>3 in most years, slightly Moderate 2010 at 1.96)	Bankrupt Zone (<1.81 across all years)	Still Bankrupt Zone (values far below 1.81 despite minor improvements)	Severe financial stress post-merger, high debt dragging Z-score down.
Springate	Healthy (>0.862 consistently)	Bankrupt (<0.862 in most years)	Recovering (post-2021, e.g., 2021-24>0.862)	Some signs of operational improvement post-2021 but still weak in parts.
Grover	Healthy (>0.01 across years)	Bankrupt (<-0.02 mostly till 2020)	Mixed/Borderline (fluctuates slightly above and below threshold)	Slightly stabilizing operations but still volatility in profitability.
Zmijewski	Healthy (<0 consistently)	Healthy (<0 values throughout)	Healthy (<0 values sustained)	Less risk of bankruptcy from a solvency angle, despite other stress signs.

Vedanta Ltd- Model-Based Evaluation

All four models serially put Vedanta in the high-risk category between 2006 and 2020, with Altman, Springate, and Grover scores reflecting financial distress and Zmijewski reflecting positive values meaning solvency risk. While partial recovery seemed after 2021, scores remained below largely safe levels, indicating long-standing issues of leverage, profitability, and financial stability despite restructuring attempts.

Table 23. Cairn India- Bankruptcy Model Comparison (2006–2024)

Model	2006–2010	2016–2020	2021–2024	Interpretation
Altman Z	Scores mostly below 1.81 (distress zone).	2016 score 0.680 (still distress); NA after that.	NA	Consistently in financial distress; risk never fully improved.
Springate	Mostly weak scores (<0.862), indicating financial distress.	2016 score 0.331 (below threshold); NA after that.	NA	Profitability and efficiency remained poor across periods.

Grover	Positive (>0.01), indicating healthy operations despite other weaknesses.	0.177 in 2016 (healthy); NA after that.	NA	Operations were profitable, providing some cushion.
Zmijewski	Negative values (safe zone), very low bankruptcy risk.	-4.256 in 2016 (safe); NA after that.	NA [14]	Strong liquidity and solvency despite other stress signals.

Cairn India- Model-Based Evaluation

Between 2006–2010, Altman Z and Springate models indicated Cairn in the zone of bankruptcy, while Grover and Zmijewski indicated relative solvency. This difference reflects operational risk with preserved balance sheet stability. In 2016, financial stress remained consistent across models, with Zmijewski also reflecting decline. Data gaps after 2016 constrain further analysis, but initial signs suggest continued financial weakness despite restructuring.

Overall Restructuring Evaluation

The Vedanta–Cairn merger was oriented towards creating a merged natural resources entity. After 2016, Vedanta evidenced gradual financial improvement, and Altman Z and Grover models indicate better solvency and capital structure. Cairn India evidenced ongoing financial strain prior to the merger, and scarce post-merger evidence indicates that its financial health continued to be poor. The restructuring was more visibly beneficial to Vedanta, and Cairn's weaknesses continued.

Final Verdict

The restructuring attempt was **partially successful** overall. As a result of the merger, Vedanta Ltd was able to gradually strengthen its financial stability and consolidate its operations. Nevertheless, some of the expected gains were offset by Cairn India's ongoing financial weakness, suggesting that although the restructuring met operational objectives, the financial turnaround was uneven.

8. EMPIRICAL FINDINGS

This paper provides a model-based financial analysis of 12 companies that were part of 5 large corporate restructuring cases across industries such as IT, pharma, media, infrastructure, and energy. Applying four well-known bankruptcy prediction models like Altman Z- Score, Springate, Grover, and Zmijewski, the research compares pre- and post-restructuring changes in financial health. The analysis identifies firm-specific results, cross-model variation, and the degree to which restructuring enhanced solvency or uncovered continued financial distress.

Table 24. Comparative Model Summary

S.No.	Company name	Altman Z	Springate	Grover	Zmijewski
1	**Tech Mahindra**	Safe zone throughout, strong financials	Consistently above threshold	Healthy zone, stable profitability	Strong solvency, negative throughout
2	**Mahindra Satyam**	Severe collapse in 2009, recovered in 2010	Similar drop-recovery pattern	Deep distress in 2009, bounced back	Positive only in 2009, otherwise safe
3	**Sun Pharmaceuticals**	Strong health throughout	High and stable scores	Strong performance	Very low risk consistently
4	**Ranbaxy Laboratories**	Weak pre-merger, strengthened post-acquisition	Improvement post-merger	Mild recovery trend	Negative, showing safety
5	**Reliance Industries**	Grey zone across most of the years	Solid earnings till 2010, after then it was a fall down	Consistent healthy status	Low bankruptcy risk, negative scores
6	**Network18 Media**	Continuously distressed zone	Red zone persistently	Initially green, but turned red	Remained in green (safe), conflicting with others
7	**Adani Enterprises**	Declined post-2015, strong recovery post-2020	Persistently weak earnings, stays in red zone	Mild recovery trend, safe zone by 2024	Strong solvency, continuously negative
8	**Adani Ports**	From red (2006–10) to safe by 2020	Weak till 2016, improved afterward	Strong, especially post-2016	Safe zone throughout, steady improvement
9	**Adani Power**	Stayed in red zone, minor recent gains	Persistently weak, under threshold	Unstable and mostly near cut-off	Risky earlier, turned negative post-2021
10	**Adani Transmission**	Shift from grey to safe post-2020	Mostly red zone	From red to green zone post-2020	Strong solvency signs and improved gradually

11	**Vedanta Ltd**	Mixed and showed poor trend	Good performance till 2010, but declined gradually	Consistently green	Negative means low risk
12	**Cairn India**	Stable pre-merger, then merged into Vedanta	Poor performance	Generally, in green zone	Safe, negative values

8.1 Consistency and Discrepancies Across Models

There were some companies that exhibited consistent classification across all four models, suggesting unanimous agreement regarding their financial health. Tech Mahindra and Sun Pharma were consistently categorized as financially healthy, while Network18 was consistently identified as distressed. On the other hand, companies such as Adani Power and Ranbaxy indicated model discrepancies—stable as rated by Zmijewski but distressed by Altman or Springate—suggesting variability in model sensitivity and validating the merit of a multi-model framework to evaluate financial stability after restructuring.

8.2 Cross-Model Comparison

The four models differed in their financial distress sensitivity. Altman Z and Grover were most sensitive, frequently picking up early warning signs of risk in companies such as Network18 and Adani Power because of deteriorating profitability and leverage concerns. Springate reflected similar patterns but was more conservative in its handling of marginal cases. Zmijewski always had the rosiest outlook, emphasizing solvency at the expense of near-term earnings stress. They highlight the merit of a multi-model framework for balanced analysis of financial well-being in contexts of restructuring.

8.3 Model Consistency and Conservativeness

Among the four models, the Grover Model emerged as the most consistent in identifying financial distress across companies, often aligning closely with the Altman Z-Score. It effectively captured early signs of instability in distressed firms while maintaining accuracy for financially sound ones. On the other hand, the Zmijewski Model proved to be the most conservative, frequently classifying companies as financially stable—even in cases where other models indicated risk—highlighting its more lenient sensitivity to short-term profitability fluctuations.

9. LIMITATIONS OF THE STUDY

No academic study is without its limitations, and this one is also no different. Even though the findings provide a formalised, fact-based perspective on financial results of corporate restructuring through mergers and acquisitions, some limitations need to be mentioned to present a balanced picture of the extent and usability of the results. These limitations also signal some areas for future research. The key limitations of this study are as follows:

- **Limited Sample Scope:** The study focuses on selected Indian companies involved in mergers and acquisitions between 2010 and 2015. While useful for targeted analysis, it excludes other industries and restructuring forms, limiting the broader applicability and cross-sector insights.
- **Exclusion of Qualitative Factors:** While this research uses sound quantitative models, it fails to consider qualitative aspects like leadership quality, organizational culture, market perception, or regulatory response—factors that can critically influence post- restructuring outcomes. According to Balcaen & Ooghe (2006) and Sudarsanam (2003), statistical measures are not enough to capture the strategic and human complexities that affect the success or failure of corporate restructuring.
- **Time Frame Constraints:** The study is confined to pre-restructuring (2006–2010) and post-restructuring (2016–2024) periods only. This time frame, though helpful in noting short-term trends, could fall short of reflecting the entire life cycle of a company's financial well-being. Corporate restructuring tends to manifest its impact with a lag, especially in capital-intensive sectors, where synergies or burdens long-term may only surface a few years down the line. Hence, the findings must be considered interim in long-term effect.
- **Multiple Causes of Bankruptcy Risk:** This research examines financial changes during M&A restructuring, but risk of bankruptcy is driven by broader factors—market forces, economic cycles, competitive pressures, and external shocks such as financial crises or pandemics. As Altman and Hotchkiss (2006) emphasize, bankruptcy is generally the consequence of a complex set of interlinked variables rather than a single corporate behavior.

10. CONCLUSIONS AND RESULTS

The current study examined the financial performance of five large cases of corporate restructuring of 12 companies from different sectors of India. Employing four standard bankruptcy models—Altman Z, Springate, Grover, and Zmijewski—it evaluated changes in solvency prior to and after restructuring. The findings indicate that efforts at restructuring resulted in sharp financial improvement in companies like Tech Mahindra and Sun Pharma, whereby all models indicated stability after acquisition. Others, like Network18 and Adani Power, still indicated distress signals even after strategic interventions, reflecting sector-specific as well as operational issues. Of the models**, Grover and Altman- Z** were closest to each other in picking up distress, while **Zmijewski** was conservative, frequently missing short-term performance declines. These differences validate the use of a multi-model framework in assessing restructuring effectiveness.

In general, the results indicate that restructuring through M&A can result in substantial financial recovery when underpinned by strategic planning and operational discipline, although results will differ based on industry dynamics and underlying vulnerabilities.

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