APPLICATION OF ALTMAN Z- SCORE MODEL FOR PREDICTION OF BANKRUPTCY OF INDIAN FIRMS

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DECLARATION

I, hereby declared that the presented work in the thesis entitled **"Application of Altman Z-Score Model for Prediction of Bankruptcy of Indian Firms"** in fulfilment of degree of **Doctor of Philosophy (Ph. D.)** is outcome of research work carried out by me under the supervision **Dr. Govind Patra**, working as Professor, in the Mittal School of Business of Lovely Professional University, Punjab, India. In keeping with general practice of reporting scientific observations, due acknowledgements have been made whenever work described here has been based on findings of other investigator. This work has not been submitted in part or full to any other University or Institute for the award of any degree.

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CERTIFICATE

This is to certify that the work reported in the Ph. D. thesis entitled **" Application of Altman Z- Score Model for Prediction of Bankruptcy of Indian Firms"** submitted in fulfillment of the requirement for the reward of degree of **Doctor of Philosophy (Ph.D.)** in the Mittal School of Business, is a research work carried out by **MONIKA SHARMA, 41800827,** is bonafide record of her original work carried out under my supervision and that no part of thesis has been submitted for any other degree, diploma or equivalent course.

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ABSTRACT

In the changing business environment, the prediction of bankruptcy is pivotal in judging the financial solvency of companies in developing countries. Failure prediction although is a difficult task but is being used by almost all the companies in the world. According to Argenti (2003), bankruptcy is a concept of failure which is the incapability of a firm to survive. From the economic point of view, Bibealt (1982) defined bankruptcy as a situation where the expected ROI capital is repeatedly less than ongoing rates on similar investments. Normally financial viability of a company is checked to know the paying capacity of the organization. The thesis is an attempt to check predicting ability of Altman Z-Score for bankruptcy using five ratios under multiple discriminant analysis. Therefore, the organization should make an all-out effort to perform various tests and analyses to understand how company perform in financial terms to avoid the arising of insolvency. Some of the prominent studies such as by Brown et al., (1999) defined the bankruptcy system as a process in which the debtor discloses all of his assets and liabilities as per law. According to Hargreares (2010), bankruptcy is effective instrument for generating rapid cash, regardless of firm going through the legal procedures of bankruptcy. According to Shumway (2001), bankruptcy prediction models are very essential in judging the features of every organization as well as determining the probability of bankruptcy. According to Buchbinder (2009), bankruptcy is used to solve the debtor's financial issues, and most charges are used to solve the debtor's financial issues, which is the major cause of the bankruptcies in countries. Bankruptcy also involves stopping the allocation of money to corporations so that they can establish fresh business ventures by paying not more taxes to sought out their charges prior to bankruptcy. According to Distenfield & Distenfield (2005), bankruptcy is a state in which a company's financial affairs have spiraled out of control and it is unable to plan due to huge debts and financial failure entails the cancellation of some charges on the company which prevents it to move ahead. Altman (1968) formulated the system for bankruptcy prediction model by applying several ratios based on Multiple Discriminant Analysis (MDA) popularly known as the " Altman Z- Score model". This model was developed for explaining the chances of bankruptcy in the manufacturing industry. On the other hand, Ohlson (1980), indicated that the distributional features of the predictors must meet specific

statistical conditions. Because it is essentially an ordinal ranking, the result of an Z model has values with less instinctive interpretation. If the prior probabilistic of the two groups are specified, however, posterior probabilities of failure can be calculated. However, unless the conditions of normalcy, etc. are satisfied, this revision procedure of Bayesian will not work rightly or result in imperfect estimation. There are additional issues with the "matching" processes that have traditionally been utilized in Multiple Discriminant Analysis.The present study focuses on the liquidation and insolvency process of bankrupt firms of NCLT and efforts are made to establish a cut off score for Altman Z Model applicable for Indian corporates. Altman Z- Score Model cut off score matrix might not be true in the Indian context. Here the author has tried to revise the Altman z score as per the Indian context and to re-fix the limits for segregating normal companies, grey areas and abnormal companies. This study also focuses on studying the impact of Altman Z- score on all the ratios included in calculating Altman z-score and thereby developing a common equation for Altman z-score by collecting a data of last 5 years, as two years is a small-time period to change entire working culture of an organisation. The Study contains a sample size of 612 i.e., 306 solvent companies and 306 insolvent companies that were referred to NCLT for insolvency proceedings and their corresponding 306 solvent companies listed in National Stock Exchange to calculate the mean value of solvent companies and mean value of insolvent companies separately. Furthermore, the author has made use of simple linear regression to study the impact of Altman z-score on all the ratios included in calculating Altman z-score and thereby developing a common equation for the objective. Finally, the study attempted to compare the Altman Z-score model with the Ohlson O-score model where the author managed to prove that there is no significant difference between the Altman Z-score & Ohlson O-score model as both the models are effective enough for depicting bankruptcy for the firms.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ANN	Artificial Neural Network
BSE	Bombay Stock Exchange
CFO	Cash Flow Operations
CAMEL	Camel adequacy, asset quality, management, earnings and liquidity
CIRP	Corporate Insolvency Resolution Process
COC	Committee of Creditors
DRT	Debt Recovery Tribunal
DRAT	Debt Recovery Appellate Tribunal
EBIT	Earnings Before Interest and Taxes
FANN	Fast Artificial Neural Network
HPM	Historical Pricing model
IBC	Insolvency and Bankruptcy Code of India
IBBI	Insolvency and Bankruptcy Board of India
IRP	Insolvency Resolution Professional
KPI	Key Performance Indicator
MDA	Multiple Discriminant Analysis
NCLAT	National Company Law Appellate Tribunal
NCLT	National Company Law Tribunal
NSE	National Stock Exchange
PVED	Present value of anticipated dividends
PSU	Public Sector Units
ROA	Return on Assets
ROE	Return on Equity
ROIC	Return on Invested Capital
RP	Resolution Professional
RE	Retained Earnings
SPSS	Statistical Package for Social Sciences
WC	Working Capital

CHAPTER 1

INTRODUCTION

This chapter starts with the information about the bankruptcy. After that Insolvency and Bankruptcy Code 2016 has been discussed, followed by bankruptcy prediction models. The chapter ends with the significance of the thesis.

Predicting bankruptcy may aid in determining whether or not businesses in developing nations will be able to survive financially under the current global economic climate. Predicting who will go bankrupt is a challenging undertaking, yet practically every business uses it. Bankruptcy, as defined by Argenti (2003), is the state of being unable to continue as a business. Bibealt (1982) provided an economic definition of insolvency as a scenario in which the return on investment (ROI) capital was predicted to be lower than the continuing rates on equivalent investments. Checking a company's financial viability is standard practice for determining whether or not it has the resources to provide the desired rate of return. The purpose of the thesis is to use five different ratios to test the reliability of Altman Z-Score as a predictive tool. The 2008 financial crisis has made insolvency an extremely pressing issue for businesses. The Altman Z score, first introduced in the 1960s, is still the gold standard for predicting insolvency. It is impossible to calculate an accurate Altman Z-score without a financial statement. Only a small number of research efforts have attempted to investigate the various techniques of accurately computing Z-scores for use as a bankruptcy predictor (Ahmed, M. A. R., & Govind, D.) (2018). The bankruptcy process was formerly modeled using univariate ratio analysis models like Beaver's, before the introduction of the Altman score. A number of new techniques have emerged recently, with Ohlson's O-Score now dominating the field (Ohlson, 1980). Despite this, Altman's Z-score continues to enjoy widespread acclaim. Personal and public relationships may be damaged when a company declares bankruptcy. Repaying debts on schedule is crucial to a company's reputation so long as solvency is a key component. Predicting insolvency early on may aid businesses in making sensible choices. Keeping tabs on the ever-evolving business climate is an ongoing task for every company. The firm confronts a number of challenges as a result of the ever-changing context in which it works, and finding appropriate answers to these issues is crucial to its continued success. A company's chances of success

diminish if it can not adapt to the ever-shifting economic, social, and technological landscape. Many businesses are struggling as a result of this unstable and ever-changing economic climate, and personal bankruptcy has emerged as a significant problem in emerging economies like India. If businesses stay up with the times and implement new procedures, they may avoid going bankrupt. The company's financial stability is a measure of its success. With an awareness of the interrelationships between the various financial accounts, the company's financial performance may reveal whether or not it is financially stable. In its broadest sense, "financial performance" refers to a measure of an organization's financial well-being during a certain time period based on how well it has met its financial goals. The company's financial performance provides valuable insight into its health relative to that of its rivals. Ratio analysis, comparative statement analysis, cash flow analysis, decision theory, and so on are only a few of the common methods used to examine a company's financial health. Because of an increase in consumer spending, the global economy and business community are expanding quickly. Making a profit is a company's top priority in today's economically challenging environment. It is not enough for a company to just make a profit in today's climate, when foreign competitors have entered the market; rather, it must also ensure the satisfaction of its many stakeholders if it is to survive. In such a situation, the input of the auditors is crucial in determining the likelihood of the business's continued existence. Preparing auditable financial statements is a necessary step for every company that wants to be able to gauge its success. When there are signs of financial trouble, auditors may assist pinpoint the source of the problem and provide solutions. When a company's financial performance fails to adjust to a changing marketplace, the company may experience financial trouble and eventually fail if it is unable to keep up with the competition. A company's risk of bankruptcy is a crucial consideration before making any substantial financial moves. If a business is experiencing financial difficulties, it may soon be forced to declare bankruptcy. Thus, the corporation should exert maximum effort to conduct a variety of tests and studies to comprehend the company's financial performance in order to forestall the occurrence of bankruptcy. Companies may reduce or eliminate their chances of failure through careful research. For a very long time, experts have been interested in trying to predict who would file for bankruptcy. Altman (1966) builds on Beaver's (1966) univariate method to discriminant analysis and provides the first multivariate discriminant analysis (MDA).

Using discriminant analysis (QDA) with log-transformations of variables, Altman et al. (1977) present the Zeta model, commonly known as the Z-Model, which disproves the assumptions of univariate analysis.

1.1 Background

Li and Tang (2007), the large enterprises' superior market share, profitability, solvency, and liquidity, as opposed to those of the small firms. A company may use a number of tools to determine its financial health, but successful businesses are always on the hunt for better ways to foresee insolvency.

In the late 1960s, Beaver (1966) and Altman conducted a research to determine the most effective methods now available (1968). By a wide margin, the Altman Z Score model is the most effective instrument for forecasting the overall performance and bankruptcy risk of the companies.

The purpose of this research is to examine the application of the Altman Z Score in the context of bankruptcy prediction. In order to maximize profits and further their missions, all businesses must ensure that their operations can be maintained as going concerns. Bankruptcy occurs when an organization is unable to properly use its resources, such as money, materials, human labor, and external factors such as the economy, government, society, and culture. This is a well-established reality, as noted by Sajjan (2016). The above-mentioned aspects are crucial to a company's financial health, and if they are not managed effectively and cohesively, the company may eventually go bankrupt.

Predicting whether a company will go bankrupt has been a significant field of study in corporate finance during the last several decades. Lenders' decision making is heavily impacted by bankruptcy forecasting. Predicting when a company will collapse is a crucial business issue to debate. Repeated research is done to improve the accuracy of bankruptcy forecasting. Financial failures, such as bankruptcy and insolvency, are of mutual concern, and this motivates researchers to dig further into the subject of how such calamities may be anticipated. This research focuses on using Altman's Z-score model to assess and forecast business outcomes.

1.2 Bankruptcy

Since it is generally agreed that stakeholders care most about a company's bottom line, it is important to measure and improve economic output. All the accounting data

are used by the outside parties like shareholders and investors to make choices about buying and selling stocks and bonds. Their focus is on maximizing their investment returns. Accordingly, it is important for interested parties to be aware of, or at least somewhat confident in, a company's financial stability. For investors, peace of mind comes from knowing that a company is financially stable. Companies' financial health may be predicted using a number of different methods, but historically, the Z score has shown to be the most accurate (Chen & Shemerda, 1981).

Predicting insolvency early enough to implement preventative steps is crucial in today's fast-paced business climate. Even more worrisome for businesses is the inaccuracy of the current bankruptcy models. There is an inherent risk here for financial institutions to provide loans. When a business goes bankrupt, it not only affects the investors but also the many others who have a stake in it, such as the workers who may lose their jobs and the creditors who may lose their money. Past academic research on the topic has used a wide range of approaches to define insolvency in business. The concept of financial difficulty lacks a universally accepted definition. For some academics, financial stress is defined as the point at which a corporation declares bankruptcy; for others, it is described as "financial stress or the inability to satisfy financial commitments." Insolvency is a sign of severe financial crisis, and the filing of a petition for relief from creditors is an indication that a corporation is in serious trouble. Defaults include both technical and monetary issues. A technical default happens when a debtor fails to comply with the terms of a loan arrangement, and this may have severe financial consequences for the company. When a borrower is unable to meet their financial obligations on a regular basis, this is known as a payment default. Business failure or bankruptcy is handled in a variety of ways across the world, depending on the jurisdiction. Even though bankruptcy is not legally recognized in the United Kingdom, the practice of liquidation is often used to plan for the inevitable collapse of businesses there. In India, there is not one cohesive plan for handling company failures. By creating one comprehensive legislation covering both insolvency and bankruptcy, the Insolvency and Bankruptcy Code of 2016 was proposed to parliament with the goal of streamlining the current system. Bankruptcy is a legal process taken against a company when that company is unable to meet its financial commitments because of excessive costs associated with continuing business as usual. The Latin roots of bankruptcy are the words bankrus,

meaning "bench or table," and ruptus, meaning "broken." The term "bankruptcy" is used to describe the situation in which a firm legally ceases operations in a certain jurisdiction. The worldwide phenomenon of bankruptcy is not a good indicator of a healthy economy; rather than being a matter of law, it is a matter of economics (Dietrich 1984). Every phase of a business's existence is fraught with the possibility of bankruptcy (Rybak, 2006).

There are a variety of variables that might lead to a company's demise, but they can generally be categorized as either internal or external. Internal issues include employees' reluctance to adopt new technologies, a breakdown in communication, and fraudulent transactions; external ones include anything beyond anyone's control, such as political instability, natural disasters, and so on (Dambolena and Khnowy, 1980). Management styles are crucial to a company's long-term viability because they address the internal elements that directly affect the company's operations (Margolis,2008). When a person is insolvent, they are unable to pay their debts because they do not have enough money or property to cover them. When someone declares bankruptcy, they ask a court to declare them bankrupt. When a business is unable to pay its debts, it is forced to shut down and, if it is a limited liability company, it must be liquidated. Everything might be lost in the event of bankruptcy for a sole proprietorship or partnership.

Bankrupt is defined as follows in the 2016 Insolvency and Bankruptcy Code:

1. A debtor who has been revealed bankrupt under section one hundred twenty-six.
2. Each of a firm's partners, or any individual deemed insolvent, if a bankruptcy order has been made under section 126.

A sick firm is one that has had losses that exceed its whole net worth as at the end of its fiscal year. But the introduction of the IBC Code 2016 suggests a unified legal framework for dealing with insolvent and troubled firms. This new legislation will facilitate the prompt closure of insolvent businesses. Liquidation is the last step before a firm is officially dissolved, and the World Bank estimates that this may be accomplished within six years for businesses in most countries outside of India. Liquidation should be time-bound and focused on maintaining stakeholder value, since a lengthy process is undesirable. As there are often warning signs before a firm

goes bankrupt, which may help businesses avoid the worst-case scenario. When a debtor's assets fall short of its commitments, it has a balance sheet bankruptcy. This kind of bankruptcy occurs when the debtor cannot meet its financial obligations because of a lack of cash. There are two main types of bankruptcy: voluntary and involuntary. It takes a long time (about 4-5 years) and only 20% of the debts are recouped by lending banks and other private money lenders in India when enterprises go bankrupt. When compared to the developed world, where lenders typically anticipate a 70% recovery and a completion time of 1-2 years for bankruptcy procedures, the situation here is far more difficult. Given the above, it is clear that investors need up-to-date information on the likelihood of the business filing for bankruptcy inside their investment portfolios. As a result, academics have prioritized studying how to foresee insolvency. The Altman Z score is a prediction method that may serve as an early signal for corrective measures. Financial strain to the organization may be prevented if decisions by the stakeholders are made in a timely manner. Lenders might use the forecasting methods to limit their lending if the firms they are considering investing in, are forecast to experience financial hardship in the near future. With the development of more accurate and up-to-date bankruptcy prediction systems, the process of bankruptcy prediction has undergone significant transformation. Almost 700 years' worth of effort went into this success, which may now be used to forecast financial failure. The Altman Z-score is a useful instrument for predicting insolvency for investors. During the score creation process, Altman looked at 33 insolvent industrial companies in the United States and their matches. Altman's concept is very effective, with the caveat that it is only used by American factories. The original Altman (1968) Z-score has to be adjusted in order to use analysis of the financial climate to forecast the insolvency of other nations. The delay in distributing bankruptcy entitlements is a major issue. Whenever a company is unable to pay its debts in full, its assets must be distributed among its creditors. In their research on insolvency, Aumann and Maschler (1985) recommended a variety of strategies for dealing with the issues that arise as a result of insolvency. There are benefits and drawbacks to each of the proposed strategies. In conclusion, a well-organized plan for the distribution of assets to properly pay off debts is the key to solving the bankruptcy crisis. These are the primary ideas that overlap with insolvency.

1.2.1 Theories of Bankruptcy

Various formal bankruptcy theories have been developed to address the issue of company insolvency. There are a number of factors that might lead to a company's bankruptcy, but massive debts are often a primary contributor. Financial difficulty happens when the corporation has no debt financing service load and the company would have produced positive profitability in the absence of economic crisis. The following are some of the most well-known explanations for financial failure:

a. Maximization of Social Welfare Theory

That theory's central tenet is that society as a whole benefit more from the closure of failing businesses, rather than the restructuring of more financially stable ones. It is in the interest of the company's creditors to have access to the cash that will be used to pay off the debts owed to them. An incomplete liquidation may result, as shown by Ghosal and Miller (2003). If a business becomes bankrupt due only to financial issues, it may be possible to collect the full insolvency-state settlement. Creditors may incur high coordination costs while making joint collection efforts, the idea suggests. Creditor collection efforts are halted until the government determines the fate of the firm and how surpluses will be divided to claimants-creditors, which, according to Adler (2002), may preclude equilibria. It is the responsibility of the liquidator to sell off the company's assets, as stated by Baird and Rasmussen (2003). Liquidating the business in stages is preferable when its economic worth is substantial. The entity shall be sold in accordance with the prescribed process if the price is satisfactory.

b. Absolute Priority Rule

According to the Absolute priority rule, all accessible assets should be distributed in accordance with the law under the most advantageous circumstances possible for the firm. According to the prevailing theoretical framework, this is an essential need for a harmonious financial system. Creditor-company agreements should control settlements and the terms under which the claimant is paid (Aghion, 1998). In the event of bankruptcy, equity investors would get paid last due to the lack of value in their shares. When there is still money left over after paying off all the claims, it becomes a possibility. There may be cases when it makes sense to violate the absolute priority rule. According to Jones' 2007 advice, settling out of court would reduce administrative expenses that might eat into the net amount of claims available for distribution.

c. Creditors' Bargain Theory

Jackson (1982) presented the Creditors Bargain idea, which was further developed by Jackson and Scott (1989), who stated that bankruptcy law is designed to explain the laws in reality. If both sides are amenable to compromise, they will be in a great position to manage well, which will maximize production while decreasing expenses. In the absence of coordination, the creditors would pursue their own options for resolving their claims. The finest illustration of the "common pool conundrum" is a circumstance like this, thus it is preferable to avoid it if at all possible. The hypothesis proposes that centralized administration of the connection, rather than individual efforts, is more likely to provide productive outcomes. It is crucial to get an accurate valuation of the debtor's liquid assets. Transaction costs for creditors in negotiating the debtor's whole capital structure are high, as stated by Jackson (1982). There is an expectation that the creditor will eventually pay more than the face value. Baird and Bernstein (2006) claim that the priority rule renders the option worthless. Warren (1993) presented a critical perspective on the creditors' bargain theory, arguing that the theory's explanation of the bankruptcy system is limited and illusory. The critique posits that bankruptcy law encompasses much more than just economic value improvement. In short, the auditing of the debtor's money before to their distribution among competing claims is of paramount significance in bankruptcy law.

d. Risk-sharing Theory

Risk Sharing Theory is an extension of Creditors' Bargaining Theory. Jackson and Scott (1989) revised the creditors' bargain hypothesis by presenting the risk-sharing theory. The risk-sharing theory was developed to address the problems with the credit negotiation model. The idea is to make all claims liable for the entity's potential financial ruin. Miles (2011) cites a global economic downturn, industry-specific challenges, and government laws as examples of such threats. There are both exogenous and endogenous factors contributing to the unique threats that each organization faces. These types of risk losses may be the consequence of careless decision making by upper management. The creditors may discuss taking whatever risks they choose. Since establishing order in the face of uncertainty is difficult, a claimant who possesses the authority to manage risks should choose instead to bear them himself. Creditors may choose for a risk-sharing agreement if it lessens their exposure to catastrophic losses and increases their potential return on investment.

e. Value-based Theory

Korobkin (1991) provided a value-based explanation for why bankruptcy law affects businesses, debtors, and creditors in such different ways. It is emphasized in the value-based method that the debtor's assets are not inert pieces of property; rather, they are living things with both upside and downside possibilities. Value changes as events and time pass. The concept draws parallels between the debtor's assets and a human life, which grows and ages at varying rates. For this reason, it might be difficult to provide a consistent response to issues that crop up at various phases. Bankruptcy law, according to Korobkin (1991), attempts to resolve issues that arise from insolvency, but these issues are complex, including both legal and financial considerations. To maximize the benefits for all parties involved, the concept requires that a bankruptcy case be treated in its entirety. The study next examine Warren's (1993) proposal for a theory of bankruptcy policy, which lays out the problems with this approach.

f. Bankruptcy-policy Theory

The bankruptcy-policy theory modifies the non-bankruptcy right of the party. This is because there is a possibility that changes to bankruptcy and nonbankruptcy laws might lead to a redistribution of wealth. Warren (1993) distinguishes between single defaults, when just one creditor is concerned about repayment, and wide defaults, where the odds of repaying any creditors are slim. Both bankruptcy law and non-bankruptcy law employ different distribution schemes. The bankruptcy policy framework adequately protects debtors who are adversely impacted by distribution laws. The distributional system is assumed to be appropriate under the bankruptcy policy hypothesis. When a corporation fails, it may have far-reaching repercussions on people who are not owed money, and Warren argued that this was where the focus of bankruptcy law should be. Investors should be protected, even if they have no ownership stake in the company's assets. Using the maximum game is recommended by Aumann (2010) if the number of claims exceeds the value of the property at stake. In this circumstance, some claimants may get compensation that exceeds their legal entitlements. This situation violates the idea of satiation. When there are three or more alternative sets of conflicting claims, Jos'e-Manuel (2011) recommends using various rules at once and advocates for the application of different rules at once using a double recursive approach.

1.3 Insolvency and Bankruptcy Code 2016

The term "insolvency" describes a situation in which a firm does not have enough money to pay off its debts. Due to improper management of finances, lower cash revenues, and higher cash withdrawals, an insolvent may be forced to engage into unofficial adjustments with claimants, i.e., arrange alternate payment mechanisms. When a company's finances are in disarray, creditors might take legal action against it, and the company itself can declare insolvency to clear out any debts. Having delinquent debts restructured into more manageable payments may help a company save money and keep running. Overspending and poor financial management are only two of the numerous problems that contributed to the company's demise. Expenses incurred by suppliers may rise and eventually lead to bankruptcy. If a company lose its customers, it puts adverse impact on returns and company will face difficulty in settling the claims of its claimants. Legal action can potentially result in a company's bankruptcy. If a company is unable to adjust in the business environment and its outflows are more than inflows and dues are unsettled, it will lose money. This code was introduced in 2016 to sought the cases in short time period. Its main objective is to safeguard the insignificant investors and to streamline the process. It is divided into two hundred fifty-five parts and eleven schedules. NCLT has its first case on 14th August 2017 for insolvency proceedings.

In response to the increasing threat of insolvency and the attendant challenges, the IBC law was proposed in parliament and subsequently enacted. Insolvency processes may now be managed formally, with the help of this new technology.

Figure 1.1 Insolvency and Bankruptcy Code 2016
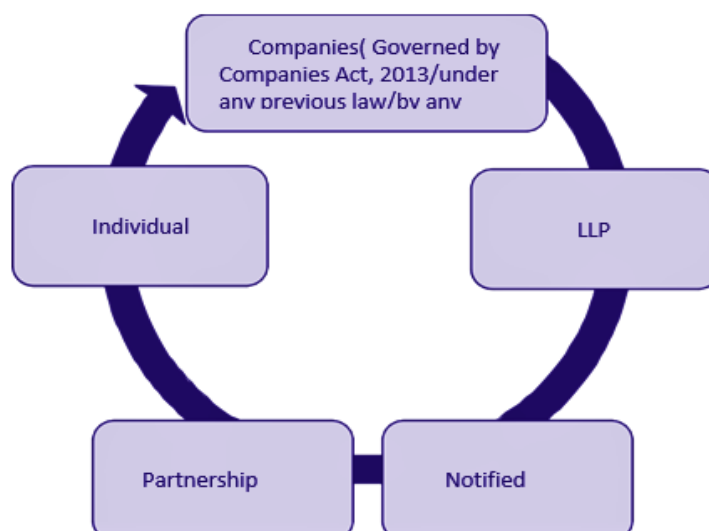
1.3.1 Key features of IBC Code 2016

The key features are as follows:

Resolution of Insolvency: The insolvency resolution processes set out in the Code apply to all persons and legal entities. The procedure may be started either by the debtor or by the creditors. If claimants agree, the deadline might be extended by 90 days, bringing the total time allowed for resolution of bankruptcy to 180 days. For startups and companies with assets under Rs. 1 crore, the insolvency resolution procedure may take as little as 45 days. The maximum number of days has been increased to three hundred by an update to the IBC law. (Amendment 2019).

Bankruptcy regulator: Specifically, the IBBI is the regulatory body. One of its primary functions will be to monitor the Indian insolvency process. There are 10 people on the Board of Directors.

Specialists: Experts who have the necessary credentials will be in charge of the operation. These insolvency professionals will have control over the debtor's assets during the insolvency procedure.

Insolvency arbitrator

I. The NCLAT, which hears cases involving corporations and limited liability partnerships;

and

II. DRT is established for a person and partners in firms.

A financial creditor may file a petition with the NCLT to initiate a corporate insolvency resolution procedure against a corporate debtor in the event of a default.

1.3.2 Initiation of Corporate Insolvency Resolution Process:

1. Make a public notice that the corporate debtor is in the process of being liquidated; and

2. Require that such an order be communicated to the corporate debtor's registration authority.

Figure 1.2 IBC 2016: Salient Features

In default instances, the IBC 2016 Act forbids certain individuals from proposing a settlement plan, including:

1. Intentional defaulters,
2. The company's promoters or management if it has a non-performing debt that has been outstanding for more than a year, and
3. Directors who have been disqualified, among other things.

The diagrammatical representation of the adjudicating process is given as under:

Figure 1.3 Adjudicating Authority under IBC 2016
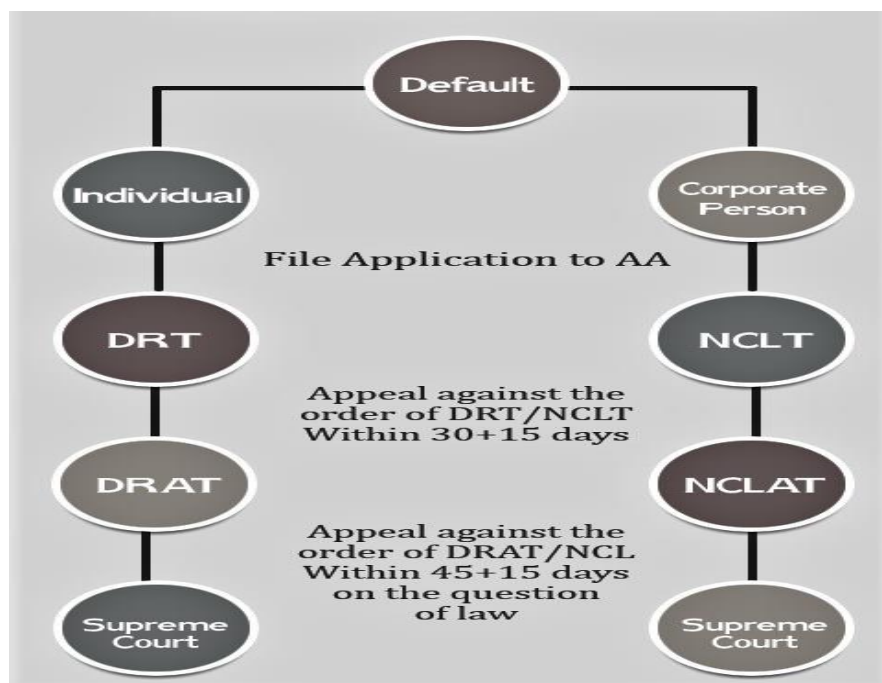
1.3.3 Sections of Offences under Insolvency Code 2016

The Insolvency Code defines a number of offences that are penalized as mentioned below:

- Section seventy sub section one of the Code imposes penalties for misbehavior during the corporate insolvency resolution procedure.
- Insolvency professional offences – Section 70(2) of the Insolvency Code, 2016.
- Penalty for falsifying a firm borrower's books – section 71 of the Insolvency Code, 2016.
- Section 72 of the Insolvency Code of 2016 penalizes willful and material omissions from disclosures about a firm borrower's affairs.
- Section seventy-three imposes penalties for making misleading representations to creditors.
- Penalties for violating the moratorium or the settlement plan - Insolvency Code, Section 74(1), 2016.
- Section seventy-five imposes fine for incorrect information.
- Section seventy-six defines penalty for not revealing of the disputation with creditor.
- Penalty for supplying incorrect information in a corporate debtor's application – Sec 77 of the Insolvency Code, 2016.
- Fine as a residual punishment for violations of the Insolvency Code – Sec 235A of the Insolvency Code, 2016

Altman Z- Score Model

This method of forecasting company failure was developed by economist and Stern School of Business professor Altman in 1960. For this research, researchers used multivariate discriminant analysis (MDA) to compute linear combinations of ratios. Differentiating between financially stable and unstable businesses was simplified using the linear combination of ratios. The Altman Z-score model is a method of multivariate analysis that may accurately predict the likelihood of a company going bankrupt. Companies' financial ratios may be used as a tool for making predictions about their financial health and avoidance of insolvency. Edward Altman proposed a model, now known as the Altman Z-Score, which may be used as a formula to foretell whether or not a firm would go bankrupt. Univariate discriminant analysis was

criticized, although making rather accurate predictions. The Univariate models are shown to provide contrasting interpretations of the data using contrasting ratios. Many variables affect a company's financial stability. As a result, it is possible that a single variable analysis might not pick up on all the potential causes of failure. Altman discovered five financial parameters that firms use to predict the financial collapse of the organization, often referred to as a Z-score.

Edward Altman compared the bankruptcy rates of 33 similar firms with those of 33 similar companies that did not file for bankruptcy. To begin, 22 ratios were chosen for the research and afterwards organized into the following five classes:

1. Profitability

2. Liquidity

3. Leverage

4. Solvency

5. Activity

1.4.1 Calculation of Z- Score

Z-Score = ([*Working Capital/ Total Assets]* x 1.2) + ([*Retained Earnings / Total Assets*] x 1.4) + ([*Earnings Before Interest and Taxes / Total Assets*] x 3.3) + ([*Market Value of Equity / Total Liabilities*] x 0.6) + ([*Sales / Total Assets*] x 0.999).

In general, the lower the score, the higher the chance of bankruptcy

Altman has proposed the following discriminant equation:

Z= 1.2 X1+1.4 X2+3.3 X3+0.6 X4+0.999 X5

Later, Altman included both public and private manufacturers into his original concept.

The Z-Score is an indicator of whether or not a firm is solvent and is created by adding together several financial measures. Ratio analysis is the most often used method for analyzing financial statements, and it includes many other methods, such as common size statement analysis, comparison analysis, trend analysis, and ratio analysis. Several financial ratios will be used in this research for the purpose of analysis.

1.4.2 Other Aspects of Altman Z- Score Model

Some other useful analyses related to the model are as follows:

Multiple Discriminant Analysis is an analytical tool and used in the researches if independent variables are in numerical form and dependent variables are in non-numerical form. Discriminant analysis is a kind of linear combination that is used to distinguish between categories that have already been established. Discriminant analysis works best when the covariance matrices across classes are comparable and the variable has a multivariate normal distribution. If the eigenvalue is high, then the model is very precise. The optimal discriminant coefficient is selected to maximize the eigenvalue. Key assumptions for constructing the discriminant function are that the group's dispersion and covariance matrices are unknown, and that the variables are multivariate normally distributed. The following discriminant function is transformed into a single discriminant score or Z-score based on the values of the independent variables. Financial planners use multiple discriminant analysis to rank assets based on a variety of factors. An analyst looking at many stocks may perform a multiple discriminant analysis to zero down on the most relevant information for making a choice. If the ratio is less than one, it may signal financial trouble for the organization over the next few years if drastic action is not taken to address the situation. Multivariate dimensionality may be minimized with the use of a method called Multiple Discriminant Analysis (MDA). It has been used to predict anything from the fate of individual neurons to the demise of whole businesses.

 MDA cannot be used to classify things by looking at them. Bankruptcy risk is the danger that a company may go bankrupt because it cannot pay its obligations. This risk is often the result of inadequate cash flows or high expenditures. When evaluating a company's financial health, investors and analysts may utilize liquidity indicators that compare assets to liabilities.

 Multiple Discriminant Analysis (MDA) has the following goals:

- Discriminant functions development
- Determine whether there are significant variations in the predictor variables between the groups.
- Determining which predictor variables account for the majority of intergroup differences.

- Assessment of classification accuracy.

Discriminant scores: Values of the variable are multiplied by their respective unstandardized coefficients. These non-standardized coefficients are used to create the discriminant function (equation). Similar to a regression equation, it is used to predict future values. After controlling for all other variables, the coefficients of the discriminant function reveal the relative importance of each variable to the function. They may be used to evaluate the efficacy of exogenous variables in the equation and to highlight the significance of these factors. When they are multiplied together, discriminant scores are obtained.

Group centroid

The average of discriminant scores for a certain class is the centroid (sometimes called the group centroid). There is a balance between the number of groups and centroids in the study. The group centroids of a discriminant function are the means of all dependent-factor categories. In statistics, centroids are used to represent the mean of a set of data. As with factor loadings, the discriminant functions are a kind of latent variable, and the correlations are loadings. Group centroids are the means of all canonical variables in a given class. MDA, Fisher's work, and K-Nearest Neighbors research are all applicable here. In addition to its more common term, Multiple Discriminant Analysis also goes by the titles Discriminant Factor Analysis and Canonical Discriminant Analysis.

Eigenvalue

Eigenvalues are a specific kind of scalar value associated with a system of linear equations, most often matrices. The eigenvectors are also known as the characteristic roots. A non-zero vector that, after being subjected to linear transformations, can only be modified by its scalar component. The eigenvalue, or characteristic roots, represents the fraction of total model variance. Any respectable model will have an Eigenvalue in excess of 1. In discriminant analysis, one eigenvalue represents one discriminant function. By isolating the eigenvalues and eigenvectors, a linear process may be "reduced" to many smaller problems.

Wilks's lambda

In discriminant analysis, the relevance of discriminant functions is evaluated using Wilk's Lambda, where a small value for lambda indicates that the function is crucial.

To compare how well different functions classify situations, statistic called Wilks' lambda are used. It is a measure of how much of the total variance in discriminant values can not be explained by variations between groups. In Wilks's function, lower lambda values indicate more discriminating power.

Wilk's lambda=W/T W=within class total of squares and T= Total of squares

The revised models are given in the table as below:

ALTMAN'S Z- SCORE MODELS OF BANKRUPTCY

Coefficients used	Original 1968 Z-score	Revised 1983 Z- score	Revised 1993 Z -score
X_1	0.012	0.717	6.56
X_2	0.014	0.847	3.26
X_3	0.033	3.107	6.72
X_4	0.006	0.420	1.05
X_5	0.999	0.998	NA

CUT OFF SCORES

Bankrupt firms	< 1.81	< 1.23	< 1.10
Non bankrupt firms	>2.99	> 2.90	> 2.60
Grey area	1.81-2.99	1.23-2.90	1.10-2.60

Numerous investigations have used Altman's three models. Many academics believe that this model has become more important as a means of predicting company insolvency in recent years. In recent years, this approach has acquired recognition as a reliable indicator of financial distress. However, it has been shown that the Altman Z score Z does not appropriately categorize the financial health of businesses. Some research suggests that corporations may decide to declare for bankruptcy based on certain financial statistics that might foretell financial difficulty. The financial parameters that Altman use to foretell a company's demise are, as already shown, crucial. It was suggested by Johnson (1970) that Altman Z-scores are the sole precise equation that cannot predict company failure. Altman claims that there is no predictive value in the various ratios that distinguish solvent from bankrupt enterprises. Instead of devising a method for predicting whether a firm will go bankrupt, Altman devised a statistical method called discriminant analysis, which

uses financial measures to categorize businesses as solvent or insolvent. If a company is not already known to be bankrupt, Altman argued that comparable ratios may be used to predict whether or not it will collapse. Predicting bankruptcy accurately is challenging, yet there are many situations when doing so would be useful. Lending choices will be based on the likelihood of the company filing for bankruptcy before the loan is due. In order to effectively forecast bankruptcies, credit analysts and rating agencies need access to accurate models. Long-term investors and high-frequency traders are both types of shareholders who may be exposed to more or lesser bankruptcy risk than they realize.

Figure 1.4 Altman's Z- Score Model
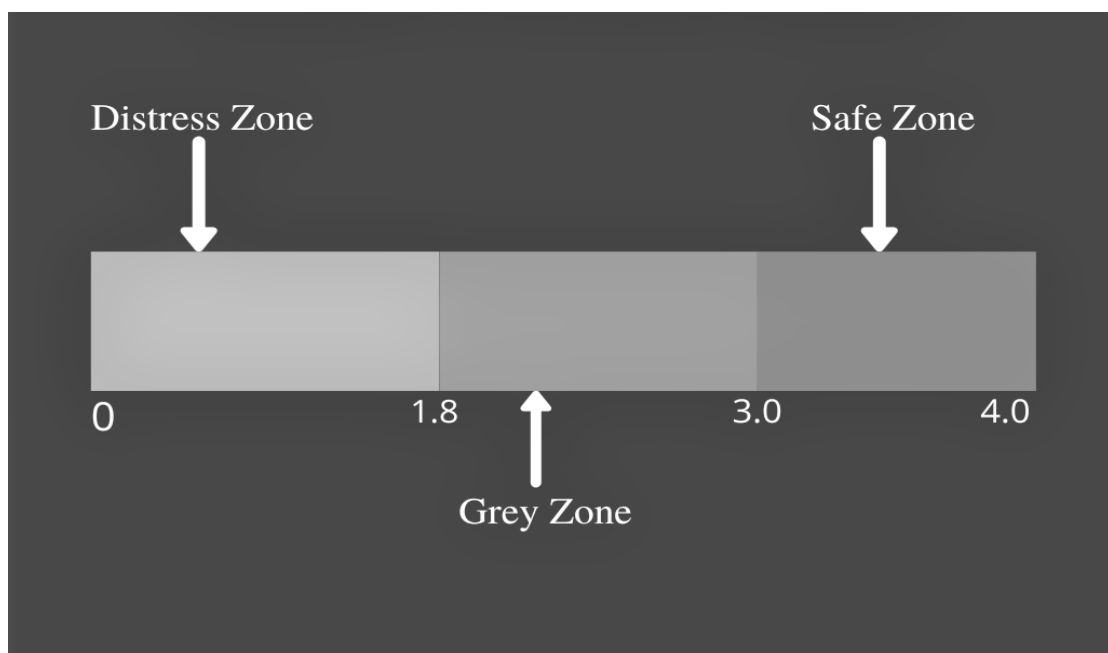
1.5 Ohlson O Score Model

Instead of utilizing the Altman model, which relied on just two factors, Dr. James Ohlson presented the Ohlson model for business failure predicting in 1980. The Altman model has been replaced by this one, which utilizes a multifactor equation to forecast financial distress and insolvency. Despite the fact that 2,000 businesses went into developing the original model, just 66 businesses went into developing the Altman Z score. Since this is the case, the O-Score model has a far higher degree of accuracy than other indicators in predicting company failure within two years. Previous estimates placed the Z model's predictive power at approximately 70%; with the most recent updates, that number has increased to 90%. When compared to the

Ohlson O Score, this is more reliable. Although the Ohlson O Score may reliably forecast insolvency, its accuracy may be affected by a number of internal and external variables (as is the case with any mathematical model). Later, very accurate models for making predictions began to appear, most notably Campbell's risk-based model from 2011. Any Ohlson O Score over 0.5 predicts that a company will be out of business within two years. This score is calculated by using nine variables linear equation consists of coefficients and variables are taken from corporations' normal periodic financial statements. In this model two variables have dummy values due to their negligible effects on overall value. When utilizing this score for forecasting the likelihood of a firm failing, score has to be divided by exponential value of score.

This paradigm was widely adopted in the field of market-based accounting because of the importance placed on economic information. Ohlson (1995) defends the use of the historical pricing model (HPM) in value relevance research since it explains production in terms of returns. Ohlson Model makes use of the Clean Surplus Relation and the Discounted Dividends Model in its accounting and financial analysis. The Clean Surplus Model compares the equity book value of a company in one year to the equity book value the next year. Discounted dividends model was formerly known as PVED (present value of anticipated dividends) and is the opposite of the current surplus model (Ohlson, 1995), which holds that dividends reduce book value but have no impact on current profits. Thus, the firm's financial viability is established by the PV of the predicted dividends. Ohlson (1995) has suggested a model called the dynamic linear information dynamics. Nonetheless, LID accounts for the fact that the Net Present Value of an organization's investment programs is more than zero. Using the adjusted LID model, stock prices are not being undervalued in a systematic way. Ohlson's (1995) framework has been used in a lot of studies, however dividends and other data that affect value have seldom been included into the model. In their overall model, Hand and Landsman included dividends and net capital contributions (1998). With their revised model, the authors were able to account for almost 80% of the variance in share price. This research found that the dividend coefficient is more likely to be positive if the value of other relevant information is set to zero, which runs counter to the hypothesis. The premise is challenged by Ohlson who argues that past profits might affect future residual income if they are utilized as

proxy for expected earnings. It is only because dividends are useful in predicting future residual income that there is a positive correlation between dividends and stock prices, argue Hand and Landsman. They proved that businesses that are now losing money may reverse their fortunes by increasing their dividend payments and enjoying bigger residual profits in the future. This study delves into the practical ramifications of the Ohlson (1995) model, which correlates a firm's valuation with its financial statements and forecasted revenues. This research measures a company's potential expansion by normalizing the final variable with its present (net) operational assets.

1.5.1 Calculation of O- Score

In order to arrive at this score, nine factors are considered. Coefficients and variables in a linear equation are derived from a company's periodic financial statements. Dummies are used for two of the components since their effect on the calculation is Often null.

$$T = -1.32 - 0.407 \log(TA_t/GNP) + 6.03 \frac{TL_t}{TA_t} - 1.43 \frac{WC_t}{TA_t} + 0.0757 \frac{CL_t}{CA_t}$$

$$- 1.72X - 2.37 \frac{NI_t}{TA_t} - 1.83 \frac{FFO_t}{TL_t} + 0.285Y - 0.521 \frac{NI_t - NI_{t-1}}{|NI_t| + |NI_{t-1}|}$$

In contrast to the somewhat small sample size of 66 companies used to develop the Altman Z-score, approximately 2,000 businesses were used to develop this model. As a result, the O-Score model has a far higher accuracy level than other indicators for predicting company failure within two years. Investors agree that both the Altman and Ohlson models may help them anticipate whether or not a firm will go bankrupt. Ohlson and Altman use the accounting-based model to make bankruptcy forecasts, and this is in part due to the methodology's apparent ease of use. Bankruptcy models like Merton's Distance to Default are also used since they are thought to be more accurate in forecasting insolvency risk. A case may be made that the Ohlson O-Score is useful for short selling or finding firms to avoid. This model has certain caveats; like previous models, it does not take into account industry-specific characteristics or the state of the economy.

The Ohlson O Score Model takes into account a number of factors, such as:

Size:

This approach determines a company's size by accounting for inflationary shifts in asset values. The likelihood of indebtedness increases for smaller enterprises.

Measurement of leverage:

As a measure of a company's debt, leverage indicates how susceptible a company is to financial difficulty.

Working Capital Measure:

Even if it is well-capitalized and lucrative, a company may nevertheless go bankrupt if it does not have enough liquid assets to cover its short-term claims and expected working capital requirements. Capital available for operations, or working capital, is an essential measure of a business's viability.

Inverse Current Ratio:

It is a metric for assessing how much cash is available. In this case, assets are weighed against the debts.

Correction of discontinuity for Leverage Measure:

The leverage effect, or the inverse correlation between asset price volatility, is a well-established phenomenon in the world of financial markets. The phrase "leverage effect" is used to explain the influence of debt on ROE. When the interest on the loan exceeds the return on the project as a whole, debt financing results in lower net proceeds. Because of this, the investment's return is diminished. The Dummy variables are equal to one if total liabilities are higher than total assets, and zero otherwise.

1.6 Concluding Remarks

To sum up this introductory material, we may say that Bankruptcy is the idea of failure that describes the inability of a business to continue operations. Although it may be tough, practically every business today uses bankruptcy forecasting in some form.

The option of bankruptcy might encourage responsible decision-making inside a company. In order to keep up with the rapid changes occurring in today's economic climate, companies must do regular environmental scans. In order to thrive in today's competitive market, businesses need timely access to appropriate solutions to the many challenges they encounter. It is challenging for any organization to succeed if it cannot adapt to the ever-evolving economic, social, and technological landscape. There have been a lot of bankruptcies in emerging nations like India as a result of the

unstable and ever-changing nature of the economic climate. The National Company Law Tribunal (NCLT) oversees bankruptcy proceedings in India.

Advantages and Disadvantages of Bankruptcy

Filing for bankruptcy may help a company get out from under its debts and continue operations, depending on the specifics of the petition. A company will have a hard time getting the financing it needs after declaring bankruptcy because of the resulting drop in credit score. Chapter 7 bankruptcy cannot be equated with insolvency. In this case, the two concepts cannot be compared. A firm is considered insolvent if its assets are not adequate to pay off its debts. If insolvency is not addressed, it will develop into bankruptcy and ultimately lead to the company's dissolution. Insolvency is the state of being unable to pay debts because of insufficient funds, and bankruptcy is the process of petitioning the court to be so declared. This status lasts until the debtor is dismissed. The foregoing demonstrates that insolvency is a condition, but bankruptcy is an outcome. A bankrupt is a definitive insolvent, however not all insolvencies lead to bankruptcy. There are often two ways out of financial ruin:

- Resolution
- Recovery or liquidation.

Figure 1.5 Insolvency

- Stock-base insolvency: the value of the firm's assets is less than the value of the debt.

Solvent firm   Insolvent firm

Assets   Debt   Assets   Debt
          Equity

Note the negative equity
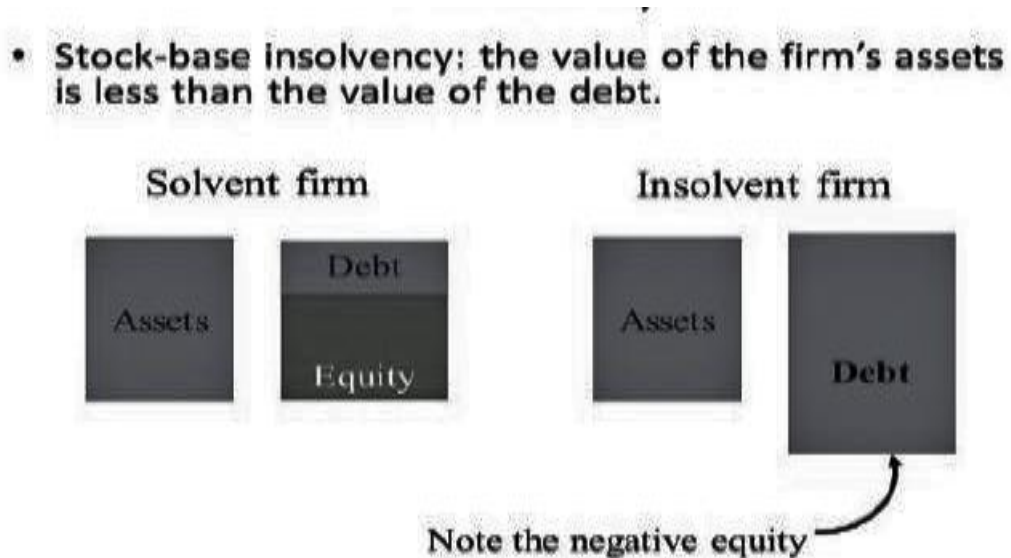
Bankruptcy, Insolvency & Liquidation (Relationship):

- Bankruptcy is a scenario in which a person applies to a court to declare insolvency and be declared bankrupt

- This procedure starts after filing of a petition by either of the one party (debtor or creditors).

- The assets of debtors are audited and assessed, and these are utilized for paying off the outstanding dues.

- In simple words, when a firm is not in a position to pay off its charges, owed to the claimant on time then such a firm is declared as insolvent.

- Whereas Liquidation is the winding up of a corporation. Many firms can initiate proceedings leading to Liquidation such as:

  a) The Regulatory Bodies;

  b) The Directors

  c) The shareholders

  d) Unpaid Creditor of a Company

Basically, insolvency might take the form of either bankruptcy or liquidation. The most typical cause of Liquidation for a natural person is their failure to reimburse charges at the time of payment, which then results in their having to declare bankruptcy.

In order to better comprehend the firm's situation and performance, financial performance analysis helps to pin down the financial capabilities and difficulty of bankrupt organizations by establishing a link between various financial data. It is useful for gaining insight into and assessing the status of the firm. Altman's Z score Model is a multivariate method for analyzing a company's financial performance using standard financial measures and predicting the likelihood of bankruptcy in the near future. If the Z-Score methodology is used and the resulting score is less than 1.8, the firm will most likely fail. This helps the companies to take corrective measures in advance to avoid any financial distress in future. The studies have concluded that Z- Score Model is more correct as compared O- Score Model in forecasting the business failure. However, some studies suggested that later model is more correct than first one in forecasting business failure. Some researchers believe that the Logit approach has more impact as compared to MDA approach in forecasting company problems in financial aspects. In Multiple Discriminant Analysis model, the variable (proportion of Working Capital and Asset) does not has bearing

on economic viability. As according to foregoing conclusion, lenders are helped by it when they take decision regarding investing the funds and decisions are based upon the financial ratios. Investors would utilize any model since both models are significant in forecasting the failure.

Among the various financial measures used to calculate a company's Z-Score, the working capital to asset ratio stands out as particularly significant. How successfully a firm meets its short-term debt commitments, such as its capacity to pay its short-term loans, is shown by this ratio. Thus, this study has the potential to enlighten those with a vested interest in the outcomes of bankrupt publicly listed companies. While the balance sheet details the company's assets and liabilities, the income statement details the company's operational performance. There are two groups to take into account when assessing a company's financial stability. Two groups of people, known as internal and external users, analyze accounting information. A company's stakeholders care about how well it does. External stakeholders might include banks, consumers, creditors, and vendors. Financial information is used by venture capitalists when buying, selling, or holding stocks, bonds, and other instruments. Creditors analyze a company's financial statements in order to determine its solvency and set interest rates and collection policies. Therefore, the financial strength of a corporation may tell outsiders and stakeholders a great deal about its health. They make choices based on how they perceive financial health to be. As a practical matter, the Altman Z score model for forecasting insolvencies is easy to implement and utilize in any circumstance. The literature points out that the model's lack of firm market transactions is its single major flaw. There is no universally accepted definition of insolvency, and proposed definitions change widely and seemingly at will. A lot of statistical issues need to be spoken about. It is possible that any model's predictive quality is sufficient over a wide range of data collection and crucial processes. Most of the studies used to compile this information neglect to address crucial issues with the creation of data for insolvent businesses. It is not simple to compare one set of findings to another. An average of two years elapse between the end of a company's fiscal year and the filing of bankruptcy, with an average inaccuracy of around 5%. There is a possibility that a different method of prediction will prove more reliable. Reasonable analysis/models are expected to provide outcomes that are similar to one another. The accuracy of any model's predictions is directly proportional to the quality

of the data used in their creation, and linear transformations of ratios perform admirably in all phases of the estimation processes. As a result, it is clear that further processes are essential for making meaningful progress. The international reliability of the Altman model has been verified.

1.7   Significance of the Study

As a growing nation, India has seen its share of bankruptcy filings rise in recent years. Due to the widespread difficulties in maintaining stable finances, bankruptcy is a major issue for a growing number of Indian businesses. Bankruptcy prediction models have been the subject of much study among international corporations, although this field has seen very little development in the Indian setting. Therefore, it is important to establish an appropriate threshold for the Altman Z-Score in the Indian context, since this would aid in the early prediction of insolvency among Indian businesses. Altman Z-score analysis was used for this investigation. Results for both solvent and insolvent businesses (a total of 306) are being analyzed. Financial institutions will find this useful when making loans based on a variety of factors. Managers may use this information to make well-informed choices and avoid a tense financial scenario. The government also has a significant impact on the expansion of the manufacturing sector. This research will aid the government in formulating policy. The purpose of this study is to establish cut off Altman Z-scores appropriate for the Indian context so that they may be used as an early warning system by Indian businesses.The goal of this study is to see whether bankruptcy can be predicted based on a company's financial performance using a variety of measures. Probability of insolvency may be estimated using ratios calculated by the bankruptcy model. Companies play an important role in national development, and determining whether their operations are beneficial or problematic may help shed light on areas where improvement is needed. Insights from this research might be useful for businesses that are on the verge of collapse. Taking remedial action to prevent bankruptcy would be easier if management had the data to back it up. This finding not only fills a gap in the current literature but also suggests new avenues for future investigation. The company's success or failure will be determined by how it handles adversity. Bankruptcy prediction using Altman's z-score model is a noteworthy contribution of this study. The ratios will be evaluated using information provided in corporate filings. By adding together all the relevant factors, a score may be determined that reflects the

likelihood of insolvency. Financial trouble may be avoided in the future if organizations can use the study's bankruptcy prediction tools. Lenders and venture investors would also benefit greatly from the study's suggestions for how they might best assist enterprises. This study employs the Altman Z- score model. 306 solvent and 306 insolvent companies are being tested for getting the results. It will help out the lenders while taking lending decision on the basis of various ratios. It will be helpful to the managers in making timely decisions to avoid the situation of financial distress. The government also plays an important role in industrial growth. This study will provide help to the government in designing its strategies.

CHAPTER 2

LITERATURE REVIEW

This chapter has three parts. First part starts with concept of Bankruptcy. In second part, an introduction about bankruptcy prediction models in general is given. Third part has presented the comparison of Altman Z- Score Model and Ohlson O-Score and in the end concluding remarks on literature review is given.

SECTION A- BANKRUPTCY

An entity has entered bankruptcy when it is unable to meet its debt commitments to its creditors **(Sofat & Hiro, 2015; Rao & Shanker, 2013)**. Bankruptcy, according to **Ventura (2004)**, is "the removal of oneself from a credit reference position." Companies that owe more than they earn often declare bankruptcy and begin over from scratch. If a company is having financial difficulties, it may file for bankruptcy protection in order to discharge or restructure its obligations, allowing it to repay its creditors and begin operations again. Bankruptcy, as defined by **Santos et al. (2006),** takes place when a company's commercial activities are unable to meet their commitments and the only way to settle the debts is via the sale of the company's assets. The bankruptcy procedure, as described by **Brown et al. (1999)**, entails the debtor making a full accounting of his assets and obligations. Whether or not a firm has gone through the formal bankruptcy proceedings, bankruptcy may be used as a useful tool for survival and for earning fast cash, as stated by **Hargreares (2010). Shumway (2001)** argues that bankruptcy prediction models are useful for both identifying the characteristics of individual businesses and estimating their likelihood of going bankrupt. **Buchbinder (2009)** states that the primary reason people file for bankruptcy is to discharge debts in order to have a fresh financial start after experiencing financial difficulties. In addition, when a company declares bankruptcy, its funding is halted so that it may reinvest in its business without being subject to the increased taxes that would be required to cover its pre-bankruptcy obligations. Bankruptcy, as defined by **Distenfield (2005)**, occurs when a company's debts have grown so large that it can no longer operate profitably and must file for protection from its creditors in order to survive. This protection is granted by the cancellation of some of the debts that are holding the company back. In spite of the fact that filing for bankruptcy may result in financial losses, **Herman and Bodiford (2003)** note that it

will also provide the chance to discharge certain debts, establish a payment plan, and prevent the closure of the business. **Grammatikos (1984)** argues that bankruptcy prediction models might be effective indicators of a company's financial stability. The value of an investor's portfolio, both now and in the future, is of paramount importance to them. Bankruptcy, as defined by **Shim (2000),** occurs when a company admits it is unable to pay its outstanding obligations and so must cease operations. The bulk of the choices about a company's borrowing needs for growth, progress, or even survival, are made after a financial crisis. For financially unstable companies, bankruptcy represents a remedial action package, as defined by **Ranter et al., 2009**.

Some solutions to bankruptcy issues that were offered in the research are as follows.

a. Some of the company's assets are being sold.
b. Takeover by a competitor.
c. Purchase of new stock.
d. Putting the Works in Capitals.
e. Determination on the part of the creditors.
f. Setting priorities.

When it comes to predicting insolvencies, research did not begin until the 1960s, and it was not until Beaver's work that its value was shown (1966). Insolvency is defined as "a company's inability to pay its debts when they come due." Financial difficulties were mentioned by Beaver for the company. Examples of financial troubles were provided by Beaver, including bankruptcy, overdrawn bank accounts, bond defaults, and preferred stock defaults. Using a comparison of 79 pre-bankruptcy bankrupt and non-bankrupt enterprises, **Beaver W. (1966)** identified 29 financial ratios. It was determined by Beaver that there are six financial ratios that may be used for successful differentiation. Not all financial measures have the same predictive power for bankruptcy, as Beaver found out. The following proportions were found by Beaver to be the most informative for making predictions: Current assets divided by current liabilities, net income plus depreciation and amortization, short-term investments, accounts receivable divided by operating expenses minus depreciation and amortization, and total debt divided by total assets are all examples of financial ratios. Beaver performed univariate analysis for many bankruptcy forecasts, which formed the basis for further multivariate efforts, and revealed a wide variety of distinguishing characteristics between insolvent and solvent enterprises. **Andrade**

and Kaplan (1998), among others, found that a company's financial health may be divided into two phases: "financial health" and "financial sickness." The research identified two types of financial hardship: inability to make debt payments and the need to restructure debt. Another indicator that a business is in financial hardship, according to **Brown et al. (1993)**, is when top management is contemplating a strategy shift in order to stave off imminent default. As **Gordon (1971)** pointed out, corporate financial crises are a common precursor to bankruptcy and reorganization. He utilized the company's stock price and budget to provide a concrete definition. According to Gordon, this happens whenever a company's profits begin to decline and its debt begins to grow faster than its assets. It is difficult for the corporation to get money from outside sources since bond rates are below the market risk free rate. Financial distress is defined by **Denis (1995)** as three consecutive years of losses and inadequate cash flows to pay dividends, indicating that the company is struggling to stay afloat. If the company has negative net income and is unable to pay dividends, it is in a dire financial situation. Bankruptcy is a situation of financial distress, according to **Hendel (1996)**. The research proposed "asset liquidity" and "asset availability" as indicators of corporate financial crises. Asset liquidity and loan availability improve when the probability of financial distress is low since this reduces the chance of rigorous and significant losses that raise liabilities and decrease the value of assets **(Baestaens & Willekens, 2006).** According to **Platt (2002)**, a company is experiencing financial difficulty if it has negative net operating income, is shrinking, is not paying dividends, or is restructuring its finances. As **Whitaker (1999)** points out, the definition of a corporate financial crisis depends on cash flow and market value. When a company's cash flows are inadequate to meet its current commitments, a financial crisis is said to have occurred, according the research. As part of his research, **Purnanandam (2005)** examined the financial health of failing enterprises. They hypothesized that financial hardship represents a third category, alongside solvency and insolvency. According to Purnanandam, if a company's terminal value is less than its face value, it is no longer solvent but bankrupt. If a company is having financial difficulties, it is the first step toward failure or bankruptcy. In order to foresee Chinese business failure, **Ling (2007)** selected financially problematic and non-financially distressed companies. Fifteen financial parameters including profitability, solvency, and liquidity were analyzed. Implementing an MDA model based on the Z-China Score. Additional metrics

analyzed were asset liability, working capital, return on total assets, and retained earnings ratio. **Bhumia (2011)** developed the prediction model in businesses with diverse financial structures in the Indian environment. The information on the failing businesses was gathered during the previous five years. Even though there are other methods for making failure forecasts, the research found that multiple discriminant analysis is the most effective method for doing so. The survey also highlighted the fact that there are a number of conditions that might contribute to a precarious financial position, such as ongoing, substantial fixed expenses. Direct costs include those associated with hiring lawyers and accountants, while indirect costs include changes in how management allocates resources. These categories were proposed by **Warner (1977).** Bankruptcy, Default, Insolvency, and Defeat are the Four Fundamental Terms Described by **Altman and Hochkiss (2006).** The legal process of declaring bankruptcy and then liquidating assets is known as bankruptcy. Organizations and businesses in the "real world" utilize the Z-Score approach to accomplish a variety of objectives. There are a number of reasons why this becomes crucial, including market monitoring and early warning. Many researches have attempted to use the Altman Z-Score to forecast bankruptcy **(Zdemir, 2014)**, one of many bankruptcy prediction models created by Altman. Market-based models and accounting-based models are not significantly different in terms of their predictive accuracy, according to a research by **Agarwal and Taffler (2006).** Utilizing a cross-section of Romanian dairy businesses, **Jakovcevic and Adrasic (2012)** effectively implemented Altman's Z-Score model. Businesses make every effort to prevent going bankrupt by predicting financial difficulties using appropriate tools and models. So, it is crucial that businesses have access to strategies for early bankruptcy prediction. In order to assist enterprises in difficult circumstances, **Bic (2022)** suggested that interventions be made in the business environments of Slovakia and the Czech Republic. The main goal of the study was to identify and assess the changes in insolvency indicators that represented business failures in Slovakia and the Czech Republic between the first quarter of 2017 and the second quarter of 2021. **Hjelseth & Raknerud (2022)** suggested in order to estimate the percentage of bank debt carried by bankrupt enterprises. Data at the firm level include all Norwegian limited liability firms for the years 2010 through 2021. **Manjunath & Kumari (2023)** examined bankruptcy in family owned enterprises, these enterprises plays a significant role in the development of the country.

SECTION B – BANKRUPTCY PREDICTION MODELS

Numerous scholars in the 1930s came up with a variety of ideas, models, and strategies for forecasting insolvency **(Bellovary, Giacomino & Akers, 2007).** In order to foresee financial difficulty, many businesses use one of the many available market-based methodologies for bankruptcy prediction. The Z-score formula was established by Altman (1968) to serve as a useful financial evaluation tool to aid organizations and lenders in the forecast of bankruptcy. Popularly known as the Altman Z-score, the Z-score model was first developed for use by manufacturing companies but was subsequently updated by Altman to be applicable to privately owned companies as well. Organizational kind may have a significant impact on how Altman's Z-score calculations are implemented (Altman, 1968; Altman, 1977; Altman, 1993; Altman, 2000). Multiple discriminant analysis, which Altman used to provide five common accounting ratios, is thought to provide a predictor that is a linear function of various explanatory variables **(Hull & John, 2015)**. The Z-Score Model with Five Ratios, based on Altman's MDA work, is a great example of this. In terms of forecasting the insolvency of industrial companies, this model displays a high degree of discriminating **(Altman I.E, 1968).** Values typical for the current ratio might vary widely from one sector to another. For this reason, the current ratio is an important indicator of a company's health. A high level of trustworthiness (70-80%) has been established for the Z-score in scientific investigations **(Taffler, 2011).** Z-scores have been widely adopted for use in loan appraisal by auditors, management accountants, and computer systems **(Eidleman, 2003).** This concept has been successfully implemented in several countries. The Z Score methodology was used to assess the financial health of startups, factories, and carmakers by **Awais et al. (2015).** A Z-score was shown to be the most accurate predictor of financial distress in the research. According to **Pradhan (2011)**, the Z model may be used to accurately predict a business's cash flow for use in extending loans. It is recommended by **Clure (2004)** that businesses regularly review their Z score using the Z score model. Several researchers, like **Harvankolayee et al. (2003)**, have concluded that multivariate models are the most useful for bankruptcy prediction. Bankruptcy forecasting, according to **Mehrani et al. (2005)**, allows businesses and investors to protect themselves and identify good and bad investment possibilities. According to Altman (1968), standard ratio analysis is not a reliable method for foreseeing insolvency, and

so, a model is needed to aid businesses and corporations in anticipating insolvency. The model's creation required settling on a set of financial measures to use as the basis for a discriminant function that actively searched for the issue of corporate insolvency. The conventional method of sequential ratio comparisons, according to Altman, yields less reliable findings than does analyzing ratios in a multivariate framework.

Based on an analysis of five weighted financial measures and the Altman Z score model, **Mansur and Mulla (2002)** concluded that Indian Cement Limited is in good financial health. **Ramaratnam and Jayaraman (2010)** used the Altman Z-Score to assess and foretell the Steel sector's financial health. Using Altman's Z-Score, **Kavitha & Palanivelu (2013)** analyzed the financial results of an NSE-listed steel company. Although all of the enterprises were determined to be operating in a highly uncertain and potentially harmful zone, the investigation indicated that their short-term solvency situations were adequate. By using the Altman Z score approach, **Kumari (2013)** analyzed the financial performance of public and private sector banks in India, finding that Canara Bank and Kotak Mahindra Bank were in healthy financial standing. Financial health of public sector enterprises in the oil and gas industry was analyzed using Altman's Z-Score model by **Kalaiselvi and Vadivel (2015)** during a 10-year time span. Throughout the study's time frame, oil businesses were shown to have seen a declining tendency. **Khan, Filho, and Madeira (2016)** used the Altman Z Score Model of Corporate Bankruptcy to investigate the financial performance of firms. Research was conducted over the course of five years, from 2010 to 2015. Using the Altman Z Score approach, the company's financial health was determined to be strong with a Z score of 2.7624. The research also showed that Indian Oil Corporation's financial health is secure and will not be declining or otherwise causing investors any reason for worry in the near future.

Financial ratios were used by **Beaver (1966)** to foretell the likelihood of company failure. For this research, he looked at 79 US companies that went bankrupt between 1954 and 1964. In 1980, Ohlson utilized the logistic model to predict company failure. Ohlson looked at data from 2058 US corporations that did not file for bankruptcy and 105 that did in the years 1970-1976. Both **Hanson (2003),** who examined the predicted accuracy of Altman's model for solvent and insolvent enterprises, and **Hillegeist (2004),** who discovered a novel method for forecasting

business failure, contributed to this area of research. Also, **Almwajeh (2004)** utilized the Altman model of bankruptcy to foresee the demise of Western Pennsylvania's rural hospitals. **Jennings (2005)** used the Altman Z model to forecast healthcare organizations' financial difficulty, while **Arnold (2006)** argued that the Altman Z score is a useful tool for obtaining a summary statistic for the composition of ratios. The Altman Z model was used by **Hayes (2010)** to foresee the failure of speciality retailers. An Altman Z model was used by **Aasenin (2011)** to forecast the insolvency of 180 companies listed on the Oslo Stock Exchange and analyze the effects of insolvency on these businesses. **Anjum (2012)** looked at the role of the Altman Z model in foreseeing the insolvency of businesses in sufficient time for preventative steps to be adopted.

 According to **Cerri et al. (2013)**, the Z-score model is a powerful tool for publicly traded corporations if some modest structural adjustments are made. In their research, **Rado and Rao (2013)** adapted the Altman Z score model for insolvency and calibrated it to the UK. To determine which bankruptcy models might work best for Indian businesses, this research compared and contrasted a number of options. **Sulphey (2013)** utilized the Altman Z Score model on BSE-listed businesses and came to the conclusion that it is applicable to the Indian context. When it comes to forecasting business insolvency, Altman (2013) updated the Z score. **Jouzbarkand (2013)** used the Altman Z Model and the Ohlson and Shirata model on the Tehran Stock Exchange to draw comparison between the two. Logistic regression was used to provide a comparison of the models. By applying the Altman model to BSE-listed firms, **Chouhan (2014)** concluded that it is the best predictor of insolvency in the Indian context. **Foteini (2016)** investigated the use of the Altman Z score in the provision of bank loans to SMEs throughout Europe. **Mohammad (2016)** claims that the Altman Z score is an accurate indicator of financial distress. Businesses may use the Altman Z model to predict the likelihood of bankruptcy, and its use in predicting financial issues has been debated. The Altman Model has three parts that all work together. The variables come first, then the coefficients connected with them, and lastly the thresholds for judging the Z-scores that are calculated. This model has not altered since it was first released in 1968. In order to include a sixth independent variable into the original model, **Jeehan Almamy (2016)** combined Beaver's and Altman's research. A systematic risk measure based on the Altman Z score was

established by **Al-Dalaien (2017),** who also examined several methods for measuring time-varying Z scores. The purpose of this research was to examine the accuracy of using the Altman Z score model to foresee financial difficulty in the insurance industry from 2011 to 2016.

The research showed that the Z score model might be a helpful tool for many people in the financial sector. Some of the benefits of filing for bankruptcy are listed in the aforementioned source **(Ibid, 2004):**

a. Applying it to merger analysis: It is useful for spotting red flags in a prospective merger partner.

b. Managing transformation: develop strategies for getting things done and fast fixes in case the situation worsens.

c. Spending money on risk sharing or self-insurance retentions, for example, might assist businesses and financial institutions spot possible credit concerns.

d. Corporate governance: The effect of the review and accounting committee on the company's ability to expand, potential risks, and merger and acquisition analyses are all investigated.

e. Investment analysis: Investors may find it easier to pinpoint company shares. It also assesses the merits of various investment opportunities.

f. Auditing analysis: Analyze the qualified opinion and release the financial statements.

g. Legal analysis: Company's investments and credit awards, which might be utilized to file for compensation for monetary losses.

h. Loan credit analysis: Financial institutions may utilize this information to foresee which of their clients may be in danger of defaulting on their loans.

Akaruzzaman (2019) looked at the banking sectors of three different nations and compared their performances, profits, and failure rates (Finland, China, and Bangladesh). The Altman Z score model of insolvency prediction was also used to examine the financial problems of a few publicly-owned enterprises. Edward Altman, inspired by the work of Beaver (1966), conducted innovative study on the predictability of bankruptcy and advocated the use of multivariate analysis. Altman's Multiple Discriminant Analysis employed working capital, earnings to total assets, earnings before interest, total liabilities, and sales as its five independent variables (MDA). In subsequent years, the Altman Z model was widely used to predict which

businesses will go bankrupt. Z-Score is the common name for the model proposed by Altman.

Altman (1968) chose to focus only on manufacturing enterprises for his sample since it was the only kind of business included in Moody's Industrial Manual.

The equation of the Altman's research is:

$$Z = 1.2\ X1 + 1.4\ X2 + 3.3\ X3 + 0.6\ X4 + 1.0\ X5$$

As compared to the Altman, **Ohlson (1980),** a similar research, with some tweaks, was done on the topic of company insolvency. Ohlson analyzed information gathered between 1970 and 1976. Moody's Manual data was utilized by Altman (1968) and Beaver (1966), whereas Ohlson's (1980) data came from a tax-related financial statement. Ohlson utilized the logit statistical technique to account for the limitations of Altman's Multiple Discriminant Analysis. In Ohlson's model, each of the nine variables is a financial ratio, and they are expressed as follows:

$$O = -1.32 - 0.407\ X1 + 6.03\ X2 - 1.43\ X3 + 0.0757\ X4 - 2.57\ X5 - 1.83\ X6 + 0.285\ X7 - 1.72\ X8 - 0.521\ X9$$

Researchers in the aforementioned research employed Logit regression analysis to examine the impact of independent factors on dependent variables and to make predictions about the value of a dependent variable given the value of the independent variable. Logit analysis is comparable to linear regression in terms of its interpretation.

From Ohlson's model, **(Moghadam, Zadeh, & Fard, 2010)** constructed their own logistic regression model, which is as follows:

$$\text{Ln}\ P\$\ 1 - P\$ = \beta^* + \beta\$\ X\$ + \beta\text{-}\ X\text{-} + \beta.\ X. + \beta/\ X/$$

Similarly, Multiple Discriminant Analysis is used to lower the ratio and improve the representation of the financial ratios as variables. Multiple discriminant analysis is used to:

1) Predict the company's bankruptcy and the company's success.

2) Assess the company's future prospects

3) Evaluate the viability of several options while making a decision.

Moghadam, Zadeh and Fard, (2010) in their study derived the Z score from Altman's Model, which is represented as follows:

Z-Score = a + b1X1 + b2X2 +b3X3 + b4X4

Predicting insolvency and its significance numerous studies, including those conducted by **Aziz and Dar (2004),** brought attention to the issue of bankruptcy prediction, prompting interest from a wide range of stakeholders, including lenders, creditors, and government agencies, all of whom wanted to know the root cause of so many business failures. In order to lower credit risk, the forecast allows for remedial action to be taken. As the world economy worsens, so does the necessity for individuals to fully comprehend the perils of taking on corporate responsibilities. Therefore, it is essential to depend on statistical research and create new techniques and models for forecasting corporate bankruptcy in order to increase the accuracy of predictions. Identifying which businesses are insolvent and which are financially solid is crucial for banks to be able to lend money to the former, as stated by **Caouette (1998).**

According to **Santos et al. (2006),** investors need a thorough grasp of how to foresee corporate bankruptcy since financial hardship caused by debt and lack of capital liquidity symbolizes the financial flaws in the firm, leading to lower credit risk and unsuccessful investments. In contrast to Altman's (1968) use of linear discriminant analysis, Beaver's (1966) proposal of a single-variable prediction model for analyzing firm behavior. Following the publication of these two seminal works, a plethora of research efforts were made to refine Altman's conclusions about the accurate prediction of company insolvency. According to **Mukhopadhyay's (2013)** research, the practice of predicting which firms will go bankrupt began in the late 1930s, when ratio analysis was the only method available. Due to the fact that bad performance results in the company's shareholders bearing direct and indirect expenses, the research attempted to make an accurate evaluation of the financial status of the firms in the future. Equal distribution of the company's assets among its creditors is another important consideration in a reasonable valuation. Various strategies for determining whether or not a company would go bankrupt were discussed in the research. To foresee insolvency, **Anjum and Muhammad (2012)** conducted a comprehensive literature study. **Bernhardsen (2001)** recognized the importance of bankruptcy prediction and recommended that it covers financially sound businesses that are not

liquidated, merged, or reformed in a timely way when certain indicators of bankruptcy are identified**. Dakovic et al. (2007)** highlighted the significance of bankruptcy forecasting by arguing that it is a critically important issue that has attracted the attention of many researchers and business professionals. To assess a business's likelihood of going bankrupt, analysts look at historical data and projections of its future financial health. Prediction models for insolvency have improved over time, allowing for more accurate forecasts over longer time spans. With the use of multiple discriminant analysis, Edward Altman developed a model to predict whether or not a company will go bankrupt within the following five years.

As part of his bankruptcy model, **Anjum (2012)** relied on standard financial measures and Altman's multiple discriminant analysis (Z-Score). The company's financial analysts care about bankruptcies since it helps the company pay its bills or make a choice on whether or not to dissolve. In light of this, **Mizan and Hossain** propose that financial experts in the surrounding area benefit greatly from evaluating a company's financial capacity before making any decisions **(2014).** Stakeholders of the company and the general public both benefit from being able to anticipate when a company will go bankrupt, hence it is crucial to develop strategies for identifying financially troubled businesses. The Z-score approach is reliable for bankruptcy forecasting, as shown by the key work of **Fawad Hussain (2014).** A review of Z-Score model bankruptcies predicted during the preceding four years concluded that the model is a reliable predictor of insolvency. It was determined that the current ratio and Altman's Z-Score Model were both effective in forecasting whether or not a firm will go bankrupt.

According to research by **Alkhatib & Al Bzour (2011),** the Altman model can accurately predict insolvency 95 percent of the time. Z-Score was shown to be more accurate than Kida's Model in predicting liquidity risk, and it was also found to have a higher prediction frequency. By using financial measures, **Bright Kpodoh (2009)** examined topics such a company's internal liquidity, financial risk, growth, and operational performance. Research demonstrated that the Positive Z-Score accurately predicted whether organizations were financially stable. The many bankruptcy prediction models, including the Z-Score and the Current ratio, were shown to be useful for forecasting and assessing businesses' financial health prior to collapse. **Mohammad Mahbobi (2017)** employed MDA techniques to derive a model that was

then compared to the Altman Z model, with the goal of developing a hybrid Forecasted Artificial Neural Network (FANN) model that would perform better. In this study, we found that neither the ANN model nor the LOGIT model performed better than the Z model. When **Affes and Hentati-Kaffel** used logit models as an alternative technique, without comparing to MDA, they got conflicting findings on the relative merits of the two approaches **(2016).** Research like this demonstrates the caveats inherent in each model, and it is clear that firms are still on the hunt for a more accurate method of determining creditworthiness. However, there is no conclusive analysis of which forecast approach is superior for which industry or why any particular approach is preferred. There is no evaluation of competing methods for predicting insolvency in any of the studies.

When a company is unable to pay its obligations to its creditors, it enters bankruptcy, which is a state of insolvency. There are many different methods and technologies in use today, developed and used by a wide range of sectors. The efficiency of prediction models has been the subject of a lot of study. Studies of multinational organizations are the primary topic of the bulk of studies undertaken internationally. The first comprehensive evaluation of statistical prediction models was conducted by **Scott (1981),** although its scope and depth were severely restricted. While **Zavgren (1983)** discussed statistical models, he avoided discussing theoretical models. While **Jones (2004)** made an effort to present a thorough overview of all the prediction models, it lacked a discussion of theoretical techniques and instead focused on investigations conducted in the domain of corporate bankruptcy prediction. The research conducted by **Keasy and Watson (1991)** attempted to shed light on the shortcomings of various statistical models used for making predictions. **Dimitras et al**. conducted a comprehensive literature assessment of bankruptcy prediction models, with a special emphasis on more recent models (1996). Although the research undertaken by **Morris (1998)** was highly thorough, the study failed to cover a few prediction models that emerged in the theoretical domain later on. The empirical uses of the networks for bankruptcy prediction were explored by **Zhang (1999),** however this does not include all the many kinds of models utilized by businesses. While **Crouchy, 2000** did a good job of addressing the many credit risk models available, it did not include any bankruptcy prediction models. With the exception of banking institutions, **Sanesh (2016)** evaluated the Altman Z-score of 50 prominent listed

firms. According on the present state of the company's finances, the Z score was used to forecast which ones will go bankrupt owing to financial difficulties. In order to foresee MMTC's demise, **Kumari's (2013)** research used the Altman Z model. Research indicates that MMTC is in solid financial standing generally, and the prediction model aids in classifying the firm as an investor-friendly one, as was found in this research. **AL-Rawi, Kiani, and Vedd (2008)** used the Altman z-score analysis to foretell a company's bankruptcy. Assuming the findings hold true, management will soon have enough information to make a well-informed bankruptcy decision. The possibility of using Z-score models to foresee insolvencies over the next three years was investigated by **Gerantonis, Vergos and Christopoulos (2009).** Findings indicated that the Altman model was effective in predicting failures. The research showed that the company was able to make crucial managerial and financial choices, as well as stock picks by the portfolio managers.

Chowdhury and Barua (2009) used a Z score model to Z category shares traded on the DSE to determine the financial distress risk associated with each share. According to their analysis, Altman's Z score model demonstrates high validity and accuracy in forecasting the distressed condition of enterprises in the Z category. The Altman Z-score Model was utilized by **Mizan, Amin, and Rahman (2011)** in their analysis of the pharmaceutical industry's financial stability and its prognosis for failure. According to the results of the analysis, two of the businesses are completely solvent and will not go bankrupt any time soon, while the prospects for the other enterprises are far more dire. Findings from the poll also indicate that the stock of most companies does not accurately represent the underlying value of the businesses being analyzed. According to **Drescher (2014)**, the insolvency phase is included in the ultimate stage of the liquidity crisis. When payments are missed and cash flow is tight, the company is said to be in financial trouble, as defined by **Brigham and Houston (2014).** The phrase "financial distress" was used by **Musthafa (2017)** to describe a situation in which a corporation has difficulty meeting both its long-term and short-term financial commitments. It is clear from the several definitions provided above that financial hardship occurs when a corporation is unable to meet its financial commitments. **Iskandar's (2019)** research defines financial hardship as a fall in the company's financial state that lasts until bankruptcy. An extremely severe and potentially deadly level of financial distress is category A, as proposed by **Irham**

Fahmi (2014). For companies in this condition, bankruptcy is declared. The purpose of this is to prevent the sale of the company's assets. In the case of Financial Distress, the firm may be salvaged by raising both internal and external capital. When a business is in the last category of Financial Distress, D, it is only experiencing short-term economic swings as a result of both external and internal factors. Capital shortage, excessive debt, and substantial losses are only few of the causes of financial distress that have been proposed by **Ahmad Rodoni (2014).** Country economic circumstances, inflation, and currency exchange rates are all examples of macroeconomic issues that may have an impact on a household's finances.

To alleviate financial hardship, consider taking the steps indicated by **Hanafi and Halim (2014).** What follows is a selection of measures that have been proposed:

- When the situation is not severe, and the financial strain can be dealt with by requesting an extension or negotiating a lower cost, the internal remedy is adopted.

- Formal remedies, such as rearranging the capital structure and liquidation by selling the company's assets, are utilized when the crisis has reached a critical stage.

Multiple Discriminant Analysis is the basis of E. Altman's original proposal for the financial distress prediction model (MDA). The Z-score is a continuous and broad indicator of a firm's probability of going bankrupt. The Springate Model, developed by economist Gorgon L.V. Springate in 1978, is another method for foreseeing financial disaster. To determine whether a company is bankrupt or not, Springate employed a multi-step discriminating analysis on 19 widely-used financial measures.

In its formal form, the Springate Model looks like this: $S = 1.03X1 + 3.07X3 + 0.66X6 + 0.4X5$. With a cutoff value of S 1.062, it is safe to assume that the firm is not going bankrupt and that its financial difficulty is also unlikely to occur soon. Zmijewski's X-Score Model from 1983 proposes a number of financial ratios and F-test indicators to classify firms based on their financial health, including liquidity, leverage, turnover, fixed payment coverage, business size, and stock return volatility. As an illustration of the Zmijewski model, we have:

X-score = -4.3 - 4.5X7 + 5.7X8 - 0.004X9 with a cutoff point of 0 (zero).

The corporation is in good financial shape if the X-Score is below the cutoff point. However, the X-Score is higher than the minimum threshold, suggesting that the business is in serious financial straits.

In 1980, James A. Ohlson, popularly known as the Ohlson Model (O-Score), developed a Y-score bankruptcy prediction strategy using logistic analysis to mitigate Altman's Multiple Discriminant Analysis (MDA) assumptions. The size of the business is a factor in the Ohlson model.

Ohlson argues that the steady growth and management of larger organizations reduces the likelihood of financial difficulty.

The equation for Ohlson's model, from 1980, is as follows:

$$O = -1.32 - 0.407X1 + 6.03X2 - 1.43X3 + 0.0757X4 - 2.37X5 - 1.83X6 + 0.285X7 - 1.72X8 - 0.521X9$$

Ohlson's (1980) model suggests that a cutoff value of 0.38 represents the point at which a corporation is in financial crisis. If, on the other hand, the O score is less than 0.38, the firm is not likely to be in financial distress. Cash flow cover, cash flow to total assets, and cash position to total assets are all net operational metrics that **Jones (2016)** utilized to construct the cash flow model. According to the research, the Case-based model beats Altman Z Score for predicting financial hardship in sample organizations. Predicting a company's financial woes at least six months before it declares bankruptcy using case-based algorithms. The logit regression analysis conducted by **Fawzi et al. (2015)** confirmed that certain cash flow ratios were strong indicators of future financial hardship. Industry-specific cash flow ratios such as cash flow coverage of interest, operational cash flow margin, and free cash flow on current obligations have been shown to be predictive of insolvency by **Alostaz (2015).** The insolvency of Indonesian pharmaceutical businesses registered on stock exchanges was predicted using Multiple Discriminant Analysis and Logit analysis by **Hidayat et al. (2020)**. Comparative Analysis of the Altman, Springate, Ohlson, Fulmer, CA-Score, and Zmijewski Models in Predicting Financial Distress by **Veronita (2014)** reveals discrepancies across these models. Ohlson's model has the greatest degree of agreement compared to its rivals Altman's, Springate's, and Zmijewski's. Springate has the lowest compliance of the three models mentioned here. Among the Grover and Springate models, the Springate model contains more components, hence it is the

best prediction model for Financial Distress, as stated by **Permana et al., (2017).** Wang and Campbell's (2010), (Pradhan's 2014), (Gunathilaka's 2014), and Malaysian researchers' (2014) works are among the most prestigious examples (Thai, Goh, Teh, Wong and Ong, 2014). The research indicated that the Altman Z-Score (Altman, 1968) is the best model for determining a company's financial health. Studies by Blum (1974), Deakin (1977), Beynon and Peel (2001), and Neophytou et al. (2011), among others, have also used the Z-Score Model to forecast a company's financial health. When it comes to forecasting a business's financial well-being, other academics have turned to logit regression methods (Ohlson, 1980), recursive partitioning analysis **(Frydman et al., 1985),** and artificial neural network models **(Trippi and Turban, 1996).** According to Perez, MDA is still regarded one of the most common methods for bankruptcy prediction (2006). **Aziz and Dar (2006)** found that the most often accepted models were multivariate ones like the Z-Score model. **Koh and Killough** back the accuracy of the Z-Score in forecasting economic hardship **(1990).** The Z-Score model has been around for a while, but it is still useful in today's business environment, identified by **Sherbo and Smith (2013).**

There are several methods available to evaluate the health and success of a business financially. Historically, ROI has been used as a proxy for a company's success. **Damodaran (2007)** defines ROI as the profit made on equity capital, which is determined by dividing net income by the book value of shareholder's equity. Return on investment has always been a trustworthy measure of a company's success, claims **Chen (2005). Pinto and McLeavey (2002)** argue that the ratio of return on investment to the equity investors have in a firm is useful in evaluating the value of such investments. Financial factors such as liquidity, turnover ratios, and financial leverage were examined by **Li & Meric (2014)** using multivariate analysis; however, the research did not examine the connection between corporate performance and financial health. Company Z-scores include enough information to forecast stock market performance two to five years in advance, as shown by research by **Tandiontong and Mathius (2017) and Saji (2018).** One of the key factors that investors look at is how likely it is that the company would go bankrupt. Despite the fact that many different studies have suggested different prediction models, the Altman (1968) model and the Ohlson (1980) model are the two most common types of predictive models that use accounting data. **Cram and Lundstedt (2004) and**

Agarwal and Taffler (2005) suggest bankruptcy prediction models that use option pricing models and market data to predict insolvency. The Altman Z-score is a statistical measure of the deviation from the mean return on an investment and has been used by Altman and **Brenner (1981)** to infer the response of stock prices to "new" information. The Altman Z-score has been shown by **Dichev (1998)** to have inverse correlation coefficients. The Altman Z-score is a useful tool for capturing bankruptcy risk, however research by Altman, Brenner, and Dichev utilizing regression and portfolio analysis tests do not give convincing evidence of a correlation between bankruptcy risk and market returns. Companies with low levels of financial hardship (as evaluated by the Altman Z-score) had greater market returns than companies with high levels of financial distress, according to a research by **Piotroski (2000).** Default probability and market returns were shown to be inversely related in studies by **Campbell et al. (2006)** and **Griffin and Lemmon (2002). Vassalou and Xing (2004)** observed that the measure of default risk has a positive effect on market capitalization, with firms with high default risks generating bigger returns if they are small and have a high book/market ratio.

Research by **Garlappi et al. (2008)** suggests that shareholder bargaining power in debt negotiations accounts for the observed heterogeneity in market returns associated with high default. When everything else is equal, firms with less negotiating power generate better returns than those with more. **Holder-Webb and Wilkins (2000)** find a positive correlation between the Altman Z-score and excess returns close to the time of bankruptcy notice. A causal relationship between the Altman Z-score and stock prices was found when the researchers employed the panel data approach to examine the impact of the Altman Z-score on stock prices. Investors have looked at the price-earnings ratio and the price-to-book value ratio to understand stock returns. Research by **Lakonishok et al.,** among others, has hinted at the existence of a PE impact on stock prices over a variety of time periods **(1994).** As the results show, stocks with a low price to earnings ratio have a better chance of generating positive stock market returns in the future. Investor returns are higher for companies with a low price-to-book value ratio, according to **Fama and French (1992)**. By combining the Altman Z-Score method with the cash flow variable, **Almamy et al. (2016)** developed a unique model. In the wake of the European financial crisis, companies' bottom lines were ultimately decided by the models they had in place. 82.9% of the time, the new

model properly predicted whether a business would succeed or fail, according to the study's findings. Ko et al. (2016) utilized the Altman Z-Score to research the profitability of solar power companies in Taiwan. Organizations experiencing financial difficulties saw a decline in profitability. **Kulal (2016)** analyzed financial data from a number of bankrupt companies using the Altman Z-Score model from 2000 to 2013. Research indicates that the Altman Z-Score model is effective in predicting financial collapse, with a 95% success rate for predictions made one year in advance and a 90% success rate for predictions made two years in advance. Three different Altman Z-Scores were utilized by **Rybárová et al. (2016)**: the Altman Z-Score by Neumaier (Z1), the Altman Z-Score for non-productive and start-up enterprises (Z2), and the Altman Z-Score for other businesses (Z3). In order to validate the outcomes of insolvency models, researcher compare the company's rating by solvency index with its appraisal of financial stability using chosen models of Altman Z-Score. Based on the Altman-Z-Score, **Toraman and Karaca (2016)** suggested a new model for assessing the likelihood of business failure from a financial standpoint. Organizations are placed into one of three categories by the Altman Z-Score Model based on their calculated Z-Scores, with Z-Z3 representing complete financial security. Risks may be broken down into many different groups, as outlined by **Tandelilin (2001).**

1. The danger of rising interest rates
2. Market Risk.
3. Inflation Threat
4. Business Threats
5. Financial Danger
6. Liquidity Concerns
7. Exchange rate risk and
8. The countries' economic risks

The danger of using debt capital to finance operations is known as financial risk. Two sources of potential loss for investors are the company's business operations and its finances **(Brigham et al., 2011).** An investment firm's financial risk can be deduced from its capital structure, which is built on a debt-to-capital ratio. Optimal capital structures reduce the cost of equity, which increases shareholder value. This will lower the cost of capital stock and reduce the tax burden by a certain amount of

interest. Investors are among the third parties who respond to a financially troubled company. For an accurate evaluation of the company's viability, investors require this data **(Foster, 1986)**. Accordingly, it can be concluded that Altman Z-Score indicators are useful for evaluating a company's financial distress, as they have a positive impact on stock return. It is possible to use financial ratios and a multiple discriminant analysis to forecast whether or not a company will go bankrupt by analyzing the firm's balance sheet data and running the necessary statistical analyses. Knowing when to look for warning signs is essential because money problems often lead to insolvency. Individual or corporate insolvency is what is known as a bankruptcy **(Aliakbari, 2009). Aharony, Jones, and Swary** argue that if businesses are given a heads-up about an impending failure, they will be able to take measures to avoid it **(1980).**

Most studies appear to be concerned with not only preventing bankruptcy but also predicting it. Financial ratios are calculated very differently for financially stable businesses and financially troubled ones, as stated by **Winakor and Smith (1935).** When **Beaver (1966)** looked into insolvency using a number of financial metrics, he found that certain ratios could be used to predict insolvency. Beaver is thus considered a pioneer in the development of bankruptcy prediction models. Beaver implied that a company's survival was contingent on its ability to accumulate funds. In an effort to better predict who will go bankrupt, Altman (1968) used ratio analysis to develop a model. Altman (1968) used multiple discriminant analysis to construct his model, but other approaches exist. Using Logistic regression analysis, Ohlson (1980) determined that the size, financial structure, performance, and current liquidity of a company can be used to predict its likelihood of insolvency up to one year in the future. Logistic regression approach indicates the default probability, making it a more appealing statistical method than multiple discriminant analysis, which is derived from historical records, as found by **Lacerda and Moro (2008).** The predictive power of linear, quadratic, and logistic models was studied by **Seaman, Young, and Baldwin (1990),** who found that the logistic model was the most accurate (with a success rate of 78%). The study's authors figured that the value of net assets would fluctuate erratically, with a known probability that it would eventually become negative. Because of this, negative cash flows may persist for a considerable period of time, which could ultimately result in a negative net asset value. According

to **Clark, Foster, Hogan, and Webster (1997),** the analytical hierarchy process model presented in the study is superior to the univariate approach for bankruptcy prediction because it makes better use of available financial data. By comparing the predictive abilities of linear, quadratic, and logistic models, Seaman, Young, and Baldwin (1990) found that the latter provided the best results (78%). The researchers hypothesized that there is a constant probability that a company's net worth will be negative. Therefore, negative cash flows are likely to last for a while, which could result in a negative net asset value. According to Clark, Foster, Hogan, and Webster (1997), the study's model employs an analytical hierarchy process to predict insolvency, and the financial data used in the univariate approach was inaccurate. Researchers with a divergent point of view on Altman's Z-score have critiqued Altman's modeling and variable selections; examples include **Shumway (2001)** and **Campbell, Hilscher, and Szilagyi (2011).**

The work of Altman was criticized in three main ways by **Shumway (2001).** The first concerns the length of time used in the study. The study concludes that single period models are unreliable because the likelihood of a company going bankrupt varies over time and depends on factors such as its age and the most recent financial data available. The second issue that has been criticized concerns the bankrupt firm's finances. Third, Altman (1968) fails to account for the fact that companies' financial situations deteriorate as they approach insolvency. Shumway (2001) came to the conclusion that Altman (1968) does not account for their introduction of the theoretical and econometric underpinnings of advanced models for bankruptcy prediction. And finally, according to Shumway (2001), market-driven variables like market size, past stock returns, and stock standard deviation are strongly related to bankruptcy but were not accounted for in earlier models of bankruptcy. After considering his criticisms, **Campbell et al. (2011)** developed their own model, which proved more effective than Shumway's (2001) original. It was found that distressed companies underperformed safe stocks by a larger margin during times of increased market volatility and risk aversion because of their erratic returns and high market betas. The proposed model does not suggest that Altman's (1968) Z-score model is useless; rather, it shows that better and more acceptable ways of constructing the model have been discovered as time has passed. The Altman (1968) Z-score model is accurate in its own right, even if the aforementioned works focused on improving the

model's predictive power. Avoiding correlations between independent variables was proposed as a solution to the multi-Collinearity problem by **Balcaen and Ooghe (2004).** In response to these concerns, Shumway (2001) built his own model, the Hazard Model, using the suggested variables in conjunction with accounting ratios. According to **Fehle and Tsyplakov (2005),** businesses with a moderate level of financial distress are more likely to implement changes in response to risks than those at either end of the spectrum. The "zone of ignorance" is growing as a result of the widespread adoption of risk management technologies by businesses seeking to improve their financial standing, thus increasing the likelihood of a misclassification issue. To present and analyze the process, **Drotár et al., (2015)** looked into the scientific advances in foreseeing a company's bankruptcy. The goal of the study by **Horak et al., (2020)** was to assess the state of the Indian telecom industry's finances and determine whether or not the sector was in danger of falling into financial distress and declaring bankruptcy. These companies represent the industry leaders in telecom throughout India.

Textual disclosures were used by both **Gachi et al., (2020) and Ogachi et al., (2020)** to augment deep learning models for bankruptcy prediction. Pre-bankruptcy bankruptcy rates were measured in this study for the first two years. The research found that factors such as inventory turnover, asset turnover, debt-equity ratio, debtor turnover, total asset and debt, and current ratio were all significant in predicting insolvency. Linear discriminant analysis was used by **Karas and Reáková (2020)** to study the Bankruptcy model. Linear discriminant analysis is employed by the organizations and industrial sectors being studied. The results provide a criteria for extracting a grey zone that increases model accuracy and drastically cuts down on the number of unanalyzed firms. **Bateni and Asghari (2020)** used logic and genetic algorithm prediction methods to forecast insolvency in typical circumstances. The results show that although both the Logit and Genetic Algorithm models may forecast insolvency, the Genetic Algorithm model is more precise. With data from many companies' books for the same fiscal year, **Shome and Verma (2020)** calculated as many financial ratios as they could and presented the results in a single grayscale graphic. Compared to randomly placing them, assigning nearby pixel spots to connected financial ratios is far more effective, according to a numerical study. The purpose of the research was to identify the optimal x, y-coordinate at which each

financial ratio could be calculated. Companies that have been delisted from stock exchanges including the Osaka Securities Exchange, Hercules Growth, Jasdaq, etc. are insolvent. The research indicates that high levels of debt and the cessation of corporate operations are the main causes of delisting. Textual disclosures were employed by **Mai et al. (2019)** to present deep learning models for insolvency prediction, which is seldom taken into account in financial decision-making models. Using textual input, deep learning algorithms may predict insolvency and create a database of insolvencies using neural networks. Both **Son et al. (2019) and Islam et al. (2019)** proposed a novel bankruptcy prediction model that makes use of financial statement data. Data preprocessing and machine learning methods like the Gradient Boosting Machine provide the basis of the model (**Friedman, 2001**). Bankruptcy prediction from the perspective of learning using label proportions is recommended by **Giannopoulos and Sigbjornsen (2019)** to assess the effectiveness of experimental outcomes on addressing the issue. Bagged-pSVM and Boosted-pSVM are two new types of prediction systems that benefited from this research.

Ohlson (1995) utilized the model to evaluate residual income and then to price shares based on their book value and profits per share at the time. The company's implied valuation was determined by applying a standard set of multiples to comparable companies. **Cheng-Few, et al. (2010)** state that the Ohlson model is a study of the fundamental analysis technique since it uses linear information of book value and period to estimate stock prices. **Piotroski (2000)** created an aggregated evaluation to look at overall performance of the businesses up to two years after the portfolios were established to find the portfolio with financially sound firms, as opposed to those comprising of low-score enterprises. Both technical and fundamental information is recorded to differentiate between insolvent and viable businesses. The financial attractiveness of a company is reflected in its score on an assessment scale devised by Piotroskii (2000), which uses financial performance to distinguish successful businesses (with a score of 9) from unsuccessful ones (with a score of 0). Studies by **Fama and French (1992) and Lakonishok, Shleifer, and Vishny (1994),** among others, support the idea that a company's success is predicated on its financial prowess. A collection of basic heuristic ratios based on financial statements were used to arrive at the Piotroski score, which helps to differentiate between organizations with excellent and negative future prospects. There seems to be a trend of weighing

good and negative news, as shown by the score. **Mohanram (2005)** developed a new fundamental indicator called Gscore to compare value and growth equities based on company-specific data, complementing Piotroski's (2000) value-oriented score. Based on certain criteria in a company's financial accounts, the scale is used to determine whether or not activities lead to higher financial strength. In terms of monetary efficiency, a score of 9 is assigned, with 0 being the worst possible performance and 9 representing the best. Piotroski (2000) suggests a 0 to 9 scale for measuring these nine signals to determine a company's financial health. The sum of these nine indicators might be any value from 0 to 9, with 9 indicating a company with a high volume of positive signals and 0 indicating a low volume of such signals. These nine factors are crucial for companies because they help investors make educated choices about issues like the likelihood of a certain investment's success. The analysis of financial statements should result in a score of 7 or higher for a firm before it is considered for inclusion in an investment portfolio; a score of 7 or below indicates that investing in the company is not a viable option.

Profitability criteria, operational efficiency criteria, and solvency/liquidity change criteria may be used to characterize the overall financial health of high book-to-market businesses.

1. When evaluating a company's profitability, key performance indicators are analyzed. There are four metrics that make up this category: return on assets (ROA), change in ROA, cash flow from operations (CFO), and accrual (difference between ROA and CFO).

2. The metrics and signals for operational efficiency are those that measure the activity's output. Margin (gross margin change) and turnover rate are the key performance metrics for this package (change in asset turnover).

3. For a snapshot of the state of a company's solvency and liquidity, look at the leverage and liquidity ratios.

Dorantes (2013) advocated for the value-explanatory power of accounting variables. Companies may utilize accounting aspects in basic research to look one or two years ahead and predict financial difficulty using these results, the study found. Following this, the literature study transitions to focus on the Ohlson O score. Research papers on the Ohlson model are the most numerous in the global accounting literature, as shown by an analysis by **Duran, Lorenzo, and San Martin (2012).** The model has

been interpreted in a variety of ways, with different authors placing emphasis on its usefulness and on the structural and methodological limitations they impose. As monetary data was shown to be a component of value, it was proposed that the market study be founded on financial accounting studies. Therefore, the owners, creditors, and the general public all bear significant financial costs when a corporation fails. Therefore, all businesses prioritize careful financial planning, since debt financing is often cheaper than equity. Bankruptcy is the greatest risk associated with debt. Financial stability may be maintained rather than lost with the use of a reliable model or instrument for forecasting the future. To address this difficulty, Ohlson made a key contribution to the creation of the Ohlson O score prediction model. Having advanced notice allows companies to make the necessary preparations to lessen the likelihood of insolvency. Loss of confidence in a country's financial system may be detrimental to its development. Recently, ratio analysis has been the subject of much discussion. Around 300 BC, Euclid reportedly began studying the characteristics of ratios, which, according to **Horrigan (1968),** marked the beginning of the development of ratio analysis. A relative ratio criteria may be used in place of the more common absolute ratio criterion, and **Wall (1919)** may have been the first to realize this. Horrigan claims that in his analysis, Wall used seven ratios to measure the relative merits of 981 different enterprises. Based on factors such as industry and geography, the firms were separated into nine distinct groups.

One other early contributor was **Fitzpatrick (1931)**. Fitzpatrick analyzed 13 ratios to see whether they may be utilized as failure predictors. He examined the ratios independently using a univariate method. Beaver (1966a and 1966b) did a univariate analysis, 35 years after Fitzpatrick's failed attempt, and found a strong association between bankruptcy and firm size. This work is now widely regarded as a classic in the area. In the wake of Beaver's research, Altman (1968) switched from a univariate to a multivariate strategy in order to forecast corporate insolvency. Despite the proliferation of bankruptcy prediction models, Altman's Z-Score continues to be widely regarded by academics and business leaders as the most accurate and useful tool for helping firms stay out of the red. Altman modified his model in 1993 to include a "four variable Z-Score" prediction model, despite the fact that it is now considered to be one of the finest (Altman, 1993). He found that his new model vastly increased the forecasting ability of his old Altman Z model. The revised Altman

model was followed by the introduction of Ohlson's bankruptcy prediction model in 1980. Ohlson's model used "Logit," or Multiple Logistic Regressions, to create a bankruptcy prediction model. Ohlson said that his research trumped the Altman Z model because of the Ohlson Model's huge temporal advantage, which enabled businesses to identify whether a firm had gone bankrupt before or after the financial accounts were made public. Ohlson asserts that this temporal problem was ignored in earlier research. According to **Cybinski (2001),** one of the main distinctions that prior study neglected to identify is that the emphasis of these studies was on understanding the bankruptcy phenomenon rather than on anticipating financial difficulties or bankruptcy. A number of studies have shown several fundamental problems with multiple discriminant analysis.

According to **Jones (1987),** MDA treats all possible group memberships as equally likely based on sample size alone, regardless of historical probability. Multiple logistic regression (also known as logit analysis) and probit analysis are two more statistical methods proposed in the study for coping with these challenges. According to **Kleinbaum and Klein (2002),** the logit method is based on a cumulative probability function that does not need the normality of the independent variables. The Logit model uses weights assigned to each component to predict the likelihood that a set of individuals may be classified into one or more categories. Another possibility is the probit method **(Gentry, Newbold, & Whitford, 1985),** which is similar to the logit method but employs a normal cumulative probability function that is almost comparable to the logistical cumulative function. Differentiating between the two methods, **Boritz and Kennedy (1995)** noted that the logit model employs the cumulative logistic function while the probit model employs the cumulative normal distribution**. Martin (1977)** is often cited as the pioneering researcher in the field of bankruptcy prediction using logit analysis. Martin zeroed heavily on the banks, drawing comparisons to another group of institutions that had not collapsed. Using 25 financial measures broken down into asset risk, liquidity, capital adequacy, and profitability, he developed a model that accurately predicted failure banks 87% to 96.0% of the time. **James Ohlson (1980)** is widely acknowledged as the pioneering researcher who systematically examined insolvency using logit analysis. For Ohlson, the method was versatile and easy to implement (Ohlson,1980). The lack of consideration for the firm's market transaction data was recognized as a shortcoming

of Ohlson's model. Ohlson pointed out three major issues that plagued previous research that used the multiple discriminant analysis method.

The three highlighted problems are as follows:

1. Ohlson argued that it was unfair to insist on statistical necessities like a normal distribution for the predictors (ratios) and a necessity for a certain level of variance-covariance between them.
2. Ohlson said, secondly, that the output value of multiple discriminant analysis is a score, which is difficult to grasp intuitively.
3. Last but not least, according to Ohlson, the method employed to pair bankrupt and non-bankrupt individuals is not analytically useful.

Ohlson claims that problems inherent in multiple discriminant analysis may be avoided by using conditional logit analysis. The logit model was used by Ohlson in three distinct series of computations. One model projected insolvency within a year, another within two years provided the firm did not fall over the following year, and a third predicted insolvency within a year or two. According to Ohlson's research, the four criteria derived from financial records are statistically important for purposes of estimating the likelihood of bankruptcy. There are four considerations for determining a company's financial health: size, total liabilities to total assets, net income to total assets, fixed assets to total liabilities, and working capital to total assets, current assets to current liabilities. Ohlson found that the timing of the financial report significantly affected the model's predictive ability. Ohlson claims it is necessary for making more precise predictions. Results were not as strong for Ohlson as they were for Altman, but he still thought his approach was better. The size of the company was the most important factor in his model **(Patterson, 2001).** According to **Khunthong (1997),** Ohlson's model for predicting insolvency within a year provides a correct classification of up to 96% using 9 accounting measures and a cutoff point weighted with type I and type II errors. Accuracy There have been a lot of analyses of different aspects of bankruptcy and business failure prediction. The foundation of the bankruptcy prediction model was built by Altman (1968) using MDA and a variety of ratios (MDA). The Z-score model is the one being used here. This model was first constructed to provide light on the prevalence of insolvency in the industrial sector. The ZETA model, developed by Altman (1977), superseded the traditional Z score model. According to "two discriminant methodologies" used by Altman and **Gritta**

(1984), it is possible to foresee the collapse of the airline industry. The aviation sector has been experiencing financial difficulties, and **Kroeze (2005)** has created a prediction model to investigate the root reasons of this problem. To test hypotheses, **Jones and Hensher (2004)** used Zavgreen's Mixed Logit model (1985). The financial difficulties of major US aviation corporations was analyzed using a neural network model developed by **Davalos, Gritta, and Chow (1999). Barki and Halageri (2014)** used the Altman's Z score model to assess the financial health of a sample of Indian textile firms operating in the current Indian context. According to **Kulkarni (2018),** all of India's airlines were struggling except Indigo. Altman's Z score was used as the predictive model for the study. Bankruptcy predictions for four Indian airlines were made using the Pilarski Model, the Altman's Modified Z score model, the Kroeze Model, and the Fuzzy Logic Model of Shome and Verma (2020). Several financial difficulties were discovered to exist in the market. **Ghosh (2020)** used the Fuzzy Logic Model and Altman's Modified Z Score Model to investigate whether or not a central business area existed inside Indigo Airways. Jet Airways may be experiencing financial difficulties.

Financial ratios were shown to be better predictors of bankruptcy using binary logistic regression and the Cox proportional hazards model than company-specific and corporate factors in a **2011** research by **Treewichayapong et al.** To assess a company's chances of survival in the wake of the Asian financial crisis that started in 1997, **Reynolds et al. (2002)** analyzed their financial capital structure. Statistical techniques like probit and logistic binomial regression are used to calculate the probability of experiencing monetary stress**. Tirapat and Nittayagasetwat (1999)** used logit regression to create a model for investigating macro-related micro-crises. The definition of a troubled business utilized in the research was the one provided by the SET, which states that a company is in distress when it is either closed down by the government or compelled by the stock market to disclose its restructuring plans. The researchers employed a two-stage method in their logit regression that takes into account the impact of changes in macroeconomic conditions and the firm's susceptibility to those factors on the firm's stock return on the likelihood of financial hardship. This research found that a lower expected rate of return was associated with a greater likelihood of financial hardship for a company. Researchers concluded that macroeconomic circumstances had a significant impact on a company's likelihood of

experiencing financial trouble. According to the findings, the company's susceptibility to inflation is a significant macro factor. Only the systemic risk of a business exposed to inflation increases the possibility of the firm's financial trouble, according to Tirapat and Nittayagasetwat. Studies have examined the accuracy of the Ohlson model in predicting future market value; one such study is **Lee et al., 2014.** Extending Ohlson's approach, **Noga and Schnader (2013)** used a hazard model and out-of-sample testing to examine the correlation between unexpected shifts in book-tax differences (BTDs) and insolvency. Credit risk analysis using the Merton model, a variant of the Black-Scholes-Merton framework developed by **Crosbie and Bohn,** is a common practice in the financial industry **(2002).** Analysts and investors use the Merton model to evaluate a company's solvency, debt servicing capacity, and default risk. The Merton model explains what kinds of economic conditions might cause a default. In their opinion, **Hadad et al. (2004)** provide a model that assesses the default probability in three stages, namely:

1. The first step is to use the Merton technique to estimate the market value, volatility, equity volatility, and debt book value of the underlying assets.

2. Second, the market value and volatility of the underlying assets are used to calculate the extent of the default.

3. The third milestone was the expansion of the flight distance distribution from an initial set of 250 companies' data to include more than 4,700 default occurrences.

Previously, the Merton model was tested in the UK by **Marx Tudella and Young (2003)**. Based on the data, it was determined that the default probability from the Merton model well describes the reasons for business failure and success. To foresee bankruptcies in Asian nations and Thailand in particular, **Hadad, Santoso, Besar, and Rulina (2004)** replicated the Merton model developed by Marx Tudela and Gary Young in 2003. Specifically, for credit risk, the results suggest that the Merton model may be used as a default signal. As an added bonus, the model can tell the difference between insolvent and solvent businesses. In addition to the Merton Model, there is another one called CAMEL (which stands for (Capital adequacy, Assets quality, Management, Earnings, and Liquidity.) **Thomson (1991)** developed the CAMEL model for identifying potential economic distress. The research sample included 770 failed financial organizations and 1,732 successful ones between 1984 and 1989.

Thomson used CAMEL ratios and other factors associated with economic choice and context as independent variables. Thomson used CAMEL ratios, which measure capital sufficiency, asset quality, management, earnings, and liquidity. Capital sufficiency is determined by dividing total assets by loans both accruing and not yet due. Asset quality ratios are calculated by dividing a company's net charge by its total loans or its net loans by its total assets. The earnings ratio is calculated by dividing the company's profit after taxes by its total assets. The ratio of a company's non-deposit obligations to its liquid assets is known as its liquidity ratio. Thomson use a dummy variable (whose values vary from 0 to 1), a natural log of total assets, and a natural log of average deposits per banking office to model economic decision factors. Among the economic indicators that Thomson considered were the unemployment rate, the rise of disposable income, and the number of businesses that went out of business. Findings suggest that CAMEL ratios might be used as a viable model for insolvency prediction. Bankruptcy can be predicted using economic-related data, but decision-related variables are less accurate, with the natural log of total assets being the only notable exception. **Wilopo (2001)** used CAMEL ratios to forecast bank failures during the crisis that hit the banking industry from 1997 to 1999. Based on the results, it was determined that CAMEL ratios had an accuracy of 80-90% in predicting bankruptcy.

In order to improve the accuracy of bankruptcy prediction, Wilopo's research recommended using a longer evaluation time in conjunction with financial information that is closer to the liquidation announcement. **Sugiyono (1999)** used a sampling strategy known as purposive sampling, which is defined as the selection of a subset of a population based on a set of criteria. They separate problem banks from healthy banks in their samples. The study claims that banks are not subject to heightened monitoring and are thus available for client use. Insolvent or losing banks for at least three years in a row are considered "problem banks." There are discrepancies between certain financial ratios and those that would be expected to be calculated using standard accounting practices or theoretically-derived algorithms. This inquiry revealed discrepancies between the statements and the account in the financial statements **(Almilia and Herdiningtyas 2005).** Other CAMEL ratio implementations were worked on by **Nasser and Aryati (2000).** Methods include step-by-step statistical analysis and case-by-case analysis. When testing the efficacy

of a prediction model, **Surifah (1999)** compared the same amount of samples across categories, with no distinction made between the estimate sample and the validation sample.

There is a need to look at the limitations of the Multi-discriminant Analysis method. **Ohlson (1980)** states that certain statistical requirements must be met regarding the distributional properties of the predictors. A score generated by an MDA model has little intuitive meaning since it is just an ordinal ranking. However, posterior probability of failure may be computed if the prior probabilistics of the two groups are provided. This Bayesian update procedure, however, will be incorrect or provide poor approximations if the prerequisites of normality, etc. are not met. Furthermore, conventional "matching" procedures used in MDA have their own set of problems. Matching unsuccessful and successful businesses may be subjective, since variables like company size and industry are used (Ohlson, 1980). Another flaw that Ohlson (1980) fixed was the usage of the same amount of samples across categories. Ohlson (1980) analyzed data from 105 companies that went bankrupt between 1970 and 1976 and 2,050 companies that did not. Ohlson's financial ratios were different from Altman's. Ohlson examined measures of scale like total assets, total liabilities as a percentage of total assets, working capital as a percentage of total assets, current liabilities as a percentage of current assets, net income as a percentage of total assets, operating funds as a percentage of total liabilities, and dummy variables. Altman's Z-Score, Ohlson's O-Score, all accounting-based measures, and BSM-PB (Black-Scholes-Merton - Probability of Bankruptcy), a market-based measure, were both evaluated and contrasted by **Hillegeist et al. and Lundstedt (2002).** For objective coefficient estimations, they used a discrete hazard model. The research found that the two scores are ineffective in forecasting insolvency, despite the fact that they include important and additive information. Researchers found that BSM-PB outperformed Altman's Z-Score and Ohlson's O-Score in terms of "explaining power," but it was still an inadequate metric. The information used by BSM-PB to foretell insolvency is not comprehensive. Additional context is offered by comparable market size and excess return. Using a model in which common stock is seen as a down and out call option on a firm's assets, **Hui Hao** estimated the risk of bankruptcy for one-off bankrupt corporations and one-off non-bankrupt enterprises from 1996 to 2000. This research examines and contrasts three widely used methods: Altman (1968),

Shumway (2001), and Merton. Accuracy is measured by the proportion of bankruptcies placed in the top decile and the Area Under the Curve (AUC). The rankings indicate that AUC structural models using data from the year preceding to bankruptcy are more accurate than statistical models using data from the three years prior to bankruptcy, and vice versa. Alternatively to the Altman Z-score, the Ohlson O-score, also a multi-factor financial model, may be used to foretell financial difficulty. Easily gathered or computed from quarterly financial disclosure filings, the Ohlson O-score is a 9-factor linear combination of coefficient-weighted company measures. Due to their little effect on the recipe, two of the ingredients are sometimes called "dummies." For a corporation to have a score higher than.5 means that bankruptcy is a real possibility. There are many different types of enterprises that might benefit from using the Ohlson O-Score to foresee their own demise. However, there are several economic and sector-specific aspects that the Ohlson O-Score does not take into consideration. However, it may still be a highly important indication when analyzing a company's financial difficulties. The Ohlson O-Score is useful for finding firms to short sell or for identifying enterprises at risk of bankruptcy. As has previously been mentioned, the Ohlson O-Score does not take into consideration a variety of economic situations or industry-specific criteria. The ideal result was achieved by analyzing the vast quantity of data available in equities lab, which goes all the way back to 1995. In contrast to the 66 businesses examined by Altman Z-score, the original O-score model was developed from a study of somewhat more than 2000 businesses, as reported by **S.M. Ikhtiar Alam (2002).** Therefore, the O-score serves as a significantly more accurate indicator of insolvency within the following two years. After further refinement, the Z-score was shown to be as accurate as 90% of the time. The O-score cannot compare to this level of precision. Inaccuracies in the O-score may be caused by both internal and external causes; no mathematical model can be guaranteed to be perfect. Variables Component of the Ohlson O-score The Ohlson O-score is a statistical insolvency measure developed from a collection of balance sheets, much like the Altman Z-score. The O-score has been shown in studies to be a more accurate predictor of insolvency than the Z-score. Some of the key factors that go into determining an individual's Ohlson O Score are as follows:

1. Adjusted Size

2. Leverage Measure

3. Working Capital Measure -.

4. WCM = Working capital/Total Assets

5. Inverse Current Ratio - Current liabilities/Current assets

6. Discontinuity Correction for Leverage Measure

7. Return on Assets

8. Funds to Debt Ratio

9. Discontinuity Correction for Return on Assets – (A dummy variable)

10. Change in Net Income.

In a nutshell, **Altman (1968**) stated that conventional ratio analysis is not a sufficient approach for forecasting corporate bankruptcy, which was a central theme throughout the literature reviewed for this research. To better aid in the foreseeing of company failure, a model for doing so is required. A set of financial measures was calculated to build a discriminant function that probed for the issue of corporate insolvency as part of the process of establishing the model. The research concludes that a multivariate analysis framework is superior to the traditional method of sequential ratio comparisons. Financial factors were employed by **Beaver (1966)** to foretell the firm's financial woes. Ohlson predicted corporate insolvencies using a logistic model back in 1980. Ohlson compared 105 defunct businesses with 2058 successful ones in the United States. This time frame covers the years 1970-1976. When trying to anticipate which businesses will remain viable and which will go bankrupt, **Hanson (2003)** analyzes Altman's model. There is a novel method for foreseeing insolvency, which was discovered by **Hillegeist (2004).** For the purpose of foreseeing the demise of rural hospitals in Western Pennsylvania, **Almwajeh (2004)** relied on the Altman model of insolvency. Z score, as discovered by **Arnold (2006),** is a way to provide a summary statistic for the composition of ratios. In **2006, Merkevicius** reignited the battle between the Altman Z score and the Merton model. **Lisnk (2007)** valued enterprises using a number of different methods for foreseeing financial distress. When predicting the demise of niche retailers, **Hayes (2010)** turned to the Altman model. **Aasenin (2011)** looked into the likelihood of financial hardship using the Altman model and found that 180 firms listed on the Oslo Stock Exchange were experiencing some kind of financial trouble. **Pradhan (2011)** used a neutral network

to forecast financial turmoil. Using data from South African stock exchange-traded firms, **Rama (2012)** conducted an empirical evaluation of the Altman model. According to the results, the Altman model is a reliable indicator of future insolvency **(Anjum,2010).** After some tweaks, the Z-score model, as proposed by **Cerri (2013),** becomes a valuable tool for analyzing the European market. The Altman model was used in this analysis of European stock exchanges.

Using data from the UK, **Rado (2013)** refined the classic Altman Z score model. Using Indian enterprises as case studies, **Rao (2013)** compared and contrasted several bankruptcy models and proposed a model that would work well in India. Small cap enterprises were the focus of **Sulphey's (2013)** application of the Altman model, which led him to the realization that the model may be useful in the Indian setting. To evaluate the validity of the Altman model, **Ghosh (2013)** analyzed data from Dunlop India Ltd. The Altman model was shown to be an accurate predictor of bankruptcy in Japan by tests conducted by **Gurau (2013).**

In order to better forecast company failure, **Altman (2013)** revised the Z score and ZETA model. **Pradhan (2014)** claims that a neural network can predict insolvency using data from many loan types (both short- and long-term). **Chouhan (2014)** analyzed BSE-listed firms using the Altman model and found that it is the strongest predictor of bankruptcy in the Indian environment. Based on their analysis of Bursa Malaysia firms, **Thai (2014)** evaluated the predictive power of the Altman model. Whether or whether the Z Score and the Current Ratio may foretell insolvency was investigated by **Awais (2015).** An approach to foreseeing potential dangers was proposed by **Kumar (2015).** A company's likelihood of going bankrupt was predicted using the Altman model by **Makini (2015)** for those listed on the Nairobi Securities Exchange. **Foteini** investigated how the Z score influences Greek banks' willingness to lend to small and medium-sized firms **(2016). Mohammed (2016)** asserts that the Altman Z score is a reliable indicator of future insolvency. The likelihood of a corporation going bankrupt is predicted using this approach. MDA is a powerful resource for researchers in this field. By applying the Altman model to Lithuanian listed enterprises, **Kiaupaite (2016)** showed how it might be utilized to foresee financial distress. Electricity generating and distribution companies are crucial to economic growth, and the Z score is a useful indicator of their financial health, as stated by **Onakoya (2017). Raj (2017)** used the Altman Z score to evaluate a number

of automakers and came to the conclusion that it is a useful financial metric for gauging the financial health of a business. He has analyzed eight automakers for his research. Using the Z-score as a foundation, **Al-Dalaien (2017)** analyzes and contrasts several methods for building time-varying Z-score measurements and creates a standardized methodology to assessing risk. In order to predict which Pakistani businesses will go bankrupt, **Jaffari (2017)** used the techniques of Multiple Discriminant Analysis (MDA) and Logistic Regression. From 2011 to 2016, **Manaseer** investigated the reliability of the Altman Z score model for predicting financial distress in insurance companies listed on the Aman Stock Exchange. Statistics indicate that the Z score model has potential as a helpful resource for a wide range of financial practitioners. In order to foretell which Canadian publicly listed firms will go bankrupt, **Ahmed (2018)** used the Altman model.

Bagnasarian (2019) elucidates the mechanisms at work between the size of the capital buffer and the efficiency of banks throughout the European Union's 27 member states. **Akaruzzaman (2019)** analyzed the financial institutions of three nations and compared their successes, failures, and bankruptcy risks (Finland, China, Bangladesh). **Soni (2019)** used the Altman Z score model of bankruptcy prediction to the financial difficulties of a few PSUs to see how they were faring. The numbers used in Altman's model are taken from the books from the prior year. According to Altman's model, these factors indicate whether or not a firm is in trouble and whether or not bankruptcy will occur within the following two years. Altman's method may provide a favorable result in circumstances when a company's financial results are very changeable; nevertheless, the result and the company's health may rapidly worsen owing to the company's inherent volatility. Many factors may contribute to uncertainty, such as ineffective management or the cyclical nature of businesses. Altman's z-score alone is not the best approach to characterize the riskiness of the firm under these circumstances. Thus, an additional measure is needed that takes into account the variables' inherent volatility and may foresee the likelihood of a significant drop in Altman's z-score. Aside from Sena and Williams' study, no others have used the Altman bankruptcy model to assess the success of oil companies in their research **(Sena and Williams, 1998).** The sample of oil companies used in the 1998 study allowed for the same research approach to be used to a new longitudinal time period. This thesis analyzes the effectiveness of businesses across many time

periods using the Altman z-score model. It was possible to make inferences about the effect of firm size on overall performance and bankruptcy risk due to the time periods studied. Furthermore, it enabled for analysis of why certain businesses of a given size tend to do better than others.

Using ratios and ratio analysis, the bankruptcy model determines a company's global z-score. Easy access to corporate reports may provide the data required to compute the ratios. Elements of the ratios evaluate the profitability, liquidity, productivity, and sales-generating potential of a company's assets **(Carstea et al., 2010).** Each of these factors contributes to an overall score, which is then used to calculate the insolvency risk.

Jagannayaki et al. (2022) recommended Altman Model for forecasting insolvency in earlier stage. A research by **Nimbalkar and Marisetty (2022)** that examines the financial performance of 10 cement businesses was undertaken. For examining financial soundness in particular, it was based on Altman's Z score model. It demonstrated that the majority of businesses are not in sound financial condition. The financial stability of the businesses should be adequately maintained in order to increase the sector's business performance. A research was done by **Das & Sarma** in **2022** to determine the likelihood of bankruptcy. The primary goals of the study were to forecast financial difficulty, or the likelihood of bankruptcy, among Small Cap Pharmaceutical Companies listed on the BSE, as well as to ascertain how Z-Score factors affected stock return. In an effort to close the financial measurement gap caused by the absence of a bankruptcy likelihood indicator, **Delgado, Armino, and Garcia (2022)** suggest the ninth model of the Altman Z-Score Logistic Regression as a predictor. The application of three financial distress prediction models, Altman Z-Score, Springate S-Score, and Zmijewski X-Score, on tobacco companies listed on the Indonesia Stock Exchange was evaluated by **Ulfah & Moin (2022).** The study evaluated how well the three models predicted those firms' insolvency. According to this study, the Springate S-Score model is by far the best at predicting the insolvency of tobacco firms that are listed on the Indonesia Stock Exchange (IDX), with an accuracy rate of 80%. **Elewa (2022)** examined the effects of using Altman Z-Score models on the level of financial distress prediction in the Egyptian registered non-financial institutions. **Somantri & Mudzakar (2023)** institutions applied Altman Z-Score Model on 30 companies indexed in Kompas 100.

INSOLVENCY & BANKRUPTCY CODE 2016

Eduri & Jayaprada (2018) identified that Insolvency and Bankruptcy Code 2016 resulted in a great change in the economy. The first 10 firms recommended by the Reserve Bank of India for insolvency proceedings under the Insolvency and Bankruptcy Code of 2016 were analyzed by **Sharma (2019)**.

Vel & Zala (2019) studied about bankruptcy prediction using multivariate model of analysis for the case of twelve large accounts which were referred to National Company Law Tribunal for insolvency proceedings and throws light on the code, the progress made and challenges faced. This study applied the famous Altman's Z-Score model on the twelve companies on which insolvency proceedings are on.

Satyanarayana et al (2021) applied model of Altman on companies which were referred under IBC 2016 and also identified its (IBC 2016) success in India.

Korath & Nayak (2022) applied Altman Z- Score Model on sample companies which were referred to NCLT for Bankruptcy under the Insolvency and Bankruptcy Board of India.

SECTION C- CUT OFF SCORE FOR ALTMAN Z- SCORE MODEL & INFLUENCE OF INDIVIDUAL RATIO ON Z- SCORE VALUE

Idris et al. (2008) examined the accuracy of financial ratios in predicting an organization's financial health in order to assess the value of financial metrics. Included were measures of financial health such the ratios of liquidity, profitability, cash flow, and long-term solvency. According to the results of the research, cash and liquidity ratios are the most significant indicators of a company's viability or insolvency. **Adiana et al. (2008)** tested MDA, logistic regression, and a hazard model to find businesses that were struggling financially. The results indicate that the debt-to-total-assets ratio is an effective indicator of financial distress in businesses.

Ijaz and Hunjra (2013) evaluated the Z-Score and the Current Ratio to evaluate the financial stability of Malaysian Listed Firms. Research shows that both parameters can accurately differentiate between failing and successful businesses.

Muminovic (2013) found that despite the Z-score model's popularity, keeping the same coefficients and variables while making minor accounting modifications led to

erroneous results, demonstrating the necessity for a revised model with more recent values for the variables and thresholds.

Altman's Z score model was used by **Kumar, Vasu, and Narayana (2016)** to investigate the financial performance of PSUs; they found that, with the exception of the Return on Invested Capital Ratio (ROIC), there is a positive correlation between liquidity and profitability ratios, and that the calculated Z score values indicate the company is in a healthy zone.

Dewi Anggraini and Hadri Mulya (2016) used a binary logistic regression analysis to look at the relationships between various financial metrics, such as the working capital to total assets ratio, the current ratio, the book value of equity to total liabilities, the total debt to total assets ratio, the earnings before interest and taxes (EBIT) to current liabilities ratio, and institutional ownership.

Fardinal and Gandhy (2019) find a strong negative correlation between liquidity and solvency ratios and financial distress, whereas profitability ratios are positively correlated.

Numerous researches have been conducted on the topic of insolvency in Asia, with most of them indicating that the reasons for insolvency in Asian nations are distinct from those in the West **(Sirirattanaphonkun & Pattarathammas, 2012)**. In the West, the ability to keep the doors open financially is the single most telling sign of a company's viability. There are other elements at play, such as a lack of adaptability to shifting environmental conditions. In order to avoid going bankrupt, firms must change to accommodate changing consumer preferences, societal norms, regulatory mandates, and global competitive pressures. In the West, two of the most popular methods for bankruptcy prediction are Altman's Z-score and Ohlson's O-score. Ohlson's Logit model and Altman's four-variance model were evaluated for their ability to forecast insolvency by **Pongsatat, et al. (2004).** Pongsatat looked at the ability of Ohlson's logit model to forecast failure for both financial and non-financial businesses (2004). The study concludes that this approach is important since research undertaken in the West and Europe may not be applicable in Asia.

Colak (2020) conducted a study on 108 Turkish companies and found optimal cut-off value 0.3, a company which has score more than 0.3 is classified as healthy company and which has score less than 0.3 is classified as unhealthy company.

SECTION D- OHLSON MODEL AND ALTMAN MODEL

Businesses and commercial organizations require a model that can assist them foresee bankruptcy in advance, and it is generally agreed that standard ratio analysis is not a useful instrument for doing so. The Altman (1968) model's creation required settling on a set of financial measures to use as the basis for a discriminant function that actively searched for the issue of corporate insolvency. If ratios are examined in a multivariate framework, according to Altman, the findings will be more reliable.

Following Beaver (1966), Edward Altman conducted innovative study into the topic of insolvency and recommended the use of multivariate analysis for this purpose. Altman's Multiple Discriminant Analysis focused on five financial indicators: working capital, earnings/assets, earnings before interest, total liabilities, and sales (MDA). In following years, the Altman Z model became an extremely widely used instrument for forecasting the insolvency of businesses.

Using multiple discriminant analysis, one may reduce the percentage and enhance the graphical depiction of the ratios. It has a wide variety of potential applications, including:

- Predicting Bankruptcy and the firm's success.
- Assess the firm's future prospects.
- Evaluate the viability of several options while planning.

In 1980, Dr. James Ohlson presented the Ohlson model for predicting company failure as a multiple variables financial instrument to use in lieu of the Altman model for forecasting business failure. This model is a successor for the Altman model in that it uses a multifactor equation to foresee financial distress and insolvency. The original model was developed using 2,000 companies, whereas the Altman Z score was developed using just 66.

Pongsatat (2004) compared model of Altman and model of Ohlson on 60 bankrupt and 60 non bankrupt Thailand firms. This study identified that both models can efficiently anticipate the business failure and neither model is superior from another model.

Karamzadeh (2012) took sample of 90 listed companies of Iran and partitioned it into two class solvent and insolvent. The study found that Altman Z- Score Model has

74.4% accuracy rate for prediction of bankruptcy and Olhson O- Score model has 53.3% exactness rate for anticipation of bankruptcy and model of Altman works better in predicting the financial distress among the companies.

Kleinert (2014) examined model of Altman, Model of Ohlson and Zmijewski model on German and Belgium listed companies for the time period 2008-2013. Accuracy rate of model of Altman, model of Ohlson and model Zmijewski for German listed companies are 52.1%, 53.1% and 52.0% respectively. Accuracy rate of model of Altman, model of Ohlson and model of Zmijewski for Belgium listed companies are 68.3%, 68.0% and 67.9% respectively. According to this study there is no significant differences between three models

Pranav et al (2020) applied model of Altman and model of Ohlson on 30 distinctive Indian Organisations and found that Ohlson model works better for bankruptcy prediction and gives indication of bankruptcy infact three years prior. Ohlson model would be recommended to companies and financial experts for bankruptcy prediction.

Tanjung (2020) compared four models: Altman, Springate, Ohlson and Zmijewski. These four models were applied for anticipating failure of pharmaceutical firms and found that Altman Model is most suitable tool for anticipating the solvency position among companies.

Sharma et al. (2022) compared two models. These models were applied for anticipating failure of commercial firms and found that Altman Model is most suitable tool for anticipating the solvency position among companies.

Radovanovic & Haas (2023) compared different bankruptcy models and introduced a socio-economic costs as alternative performance measure.

RESEARCH GAP

In their definition of a research philosophy, Lewis, Saunders, and Thornhill (2012) note that it encompasses "the growth and nature of knowledge". To put it another way, the point of studying is to strengthen one's familiarity with a topic. The purpose of the thesis is to show the reader that they have learned something new. To the best of our knowledge, no prior research was found that sought to extend Altman's study by using confidence limits for Altman's z-score values. This study seeks to fill a crucial gap in the literature by focusing on the limits, which provide incredibly helpful data for risk assessment and prevention. Using the Altman Z score and the

Ohlson o Score as a measure of the lower bound was shown to be accurate to a 99 percent confidence level. Additional testing is needed to make adjustments and validate the bankruptcy model's results. The aforementioned literature review emphasizes the lack of research by pointing out where it exists. Many studies have been conducted on this subject, although they have mostly been conducted in the United States or other Western nations. There is a dearth of academic works in India that deal with bankruptcy forecasting. Altman Z score bankruptcy prediction thresholds developed in the US may or may not hold true in Indian business contexts. To far, there has not been a single research that clarifies the minimum acceptable Altman Z-score for Indian businesses. For this reason, an effort is undertaken to determine an appropriate cutoff score using the Altman Z model for Indian businesses. Helpful for keeping tabs on Indian businesses' financial health and progress over time. While researchers have examined many facets of corporate bankruptcy over the years, there has not been nearly enough in-depth study done on essential components of the IBC since it did not come into existence until 2016 and the first case filed under it was not until December of that year. A unique bankruptcy model will be used to conduct empirical testing and analysis of the aforementioned question. Careful inspection of the generated z-scores enables inferences to be formed. This research was initiated with the hope of determining whether or not the likelihood of a company going bankrupt may be used as a proxy for measuring overall success. Since the bankruptcy model incorporates ratios for measuring the various KPIs of a company, doing so should reveal the state of the company's performance. The success or failure of businesses is crucial to the economy as a whole, therefore understanding how they are doing financially may help pinpoint problem areas. The study examines the correlation between a company's size (as measured by total assets) and its likelihood of filing for bankruptcy. Both factors are very important to any business, and it is hoped that the findings of the study, within the available time frame, will shed light on the insolvency risk faced by the companies. The goal of doing research is to better understand a topic by establishing a problem, collecting data related to that issue, and drawing conclusions. Future academics interested in bankruptcy prediction utilizing the Altman and Ohlson models would be able to use this thesis as a guide. Their understanding of the topic has been deepened, and the aims they set forth at the thesis's conclusion have been met. This would also provide companies a sense of where to focus their efforts as they made contingency plans.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This section portrays the procedure of examination and incorporates laying out the research configuration, examining size, testing strategies utilized in the examination, inspecting procedure followed, instrument of examination, information assortment apparatuses, strategies and procedures utilized for information investigation.

3.1 Need of the Study

There is enormous research on the bankruptcy prediction model at the global level in multinational companies but there is scanty work on bankruptcy prediction models in the Indian context. So, there is a need to develop a cut-off score of Altman Z- Score in Indian condition which helps Indian companies to predict bankruptcy earlier in advance. This study employs the Altman Z- score model. 306 solvent and 306 insolvent companies are being tested for getting the results. It will help out the lenders while taking lending decision on the basis of various ratios. It will be helpful to the managers in making timely decisions to avoid the situation of financial distress. The government also plays an important role in industrial growth. This study will provide help to the government in designing its strategies. Research objective is to determine cut off scores of Altman Z-scores in Indian conditions which can serve as an early warning system to Indian companies. Research Motivation is to find out whether firms' financial performance can be assessed through various tools to predict bankruptcy. The author of this study used the same concept to Indian business enterprises and attempted to derive new metrics based on the Indian context. Bankruptcy prediction using Altman's z-score model is a noteworthy contribution of this study.

3.2 Research Questions

The study is based to deduce the following questions-:

1) What is a cut off score for Altman Z model applicable for Indian corporates?

2) Whether Altman model predicts failure of Indian corporates accurately?

3) What is the influence of each ratio on the value of Z-score?

3.3 Research Objectives

1) To study the liquidation and resolution process of bankrupt firms of NCLT.

2) To establish a cut off score for Altman Z model applicable for Indian corporates.

3) To study the influence of individual ratio on Z-score value.

4) To study the comparison of Altman Z-score model with Ohlson O -score model.

3.4 Research Design

In this study, descriptive research design is utilised as the entire is done on secondary data where author has collected the balance sheet of 306 solvent and 306 insolvent companies to deduce the values of Working Capital, Total assets, Retained Earnings, Earnings before interest and tax, Market value of equity, Total liabilities, Sales and Total assets to calculate ratios namely X1 (Working Capital & assets), X2 (Retained earnings & assets), X3 (Earnings before interest and taxes & assets), X4 (Market value of equity / Total liabilities), X5 (Sales / Total assets). These ratios are thereby used to calculate the values of Z-score of the selected 306 solvent and 306 insolvent companies. Use of financial statement was done to calculate the values.

3.4.1 HYPOTHESIS OF THE STUDY

There are following hypothesis will be taken into consideration based on research objectives.

H01: There is no significant and a positive impact of Working Capital /Total Assets (WC/TA) ratio on Z-Score.

Ha1: There is significant and a positive impact of Working Capital /Total Assets (WC/TA) ratio on Z-Score

H02: There is no significant and positive impact of Retained Earnings/Total Assets (RE/TA) ratio on Z-Score.

Ha2: There is significant and positive impact of Retained Earnings/Total Assets (RE/TA) ratio on Z-Score

H03: There is no significant and positive impact of Earnings Before Interest and Tax/ Total Asset (EBIT/TA) ratio on Z-Score.

Ha3: There is significant and positive impact of Earnings Before Interest and Tax/ Total Asset (EBIT/TA) ratio on Z-Score.

H04: There is no significant and positive impact of Book Value or Market Value of Equity / Total Liability (MVE/TL) on Z-Score.

Ha4: There is significant and positive impact of Book Value or Market Value of Equity / Total Liability (MVE/TL) on Z-Score.

H05: There is no significant and positive impact of Sales / Total assets ratio on Z-Score.

Ha5: There is significant and positive impact of Sales / Total assets ratio on Z-Score.

3.4.2 Data Collection and Sample Size

The data collection and sample size effort involved a search for the names of companies which were referred to NCLT for insolvency proceedings; the sample 306 insolvent companies were chosen on the following main conditions:

1) Financial reports are available from 2016 to 2020 (balance sheets and income statements)

2) Financial year ends on 31 March

3) Companies belong to the service and industry sectors (banks and insurance companies are excluded because the predictors vary in method from one industry to another).

306 solvent organizations were compared with 306 insolvent organizations with 612 as a sample size used for the study. 306 solvent companies listed in National Stock Exchange were chosen. Similar type of organizations that were chosen based on a similar industry, year of information; market capitalization, deals turnover, net benefit and a practically identical size of complete resources.

Therefore, the quantity of firms utilized in the investigation is 306+306=612 organizations followed by a search for the financial data for 306 insolvent companies, and followed by a search for matching 306 non-failed companies.

Table 3.1 Industry of Solvent and Insolvent Companies

Industry	No. of Solvent companies	No. of Insolvent companies
Cement	2	2
Chemicals	11	11
Construction	23	23
Electronic & electrical equipment	24	24
Engineering	19	19
Floriculture/agriculture	12	12
Food & Beverages	29	29
Industrial Machinery	16	16
Metal	28	28
Mining and quarring	16	16
Miscellaneous	34	34
Paper	11	11
Petroleum refining and related industry	6	6
Pharmaceutical	5	5
Rubber & Plastics	16	16
Textiles	28	28
Transport Equipment Industry	21	21
Wood	5	5

3.5 Variables in the review

This study consists of four objectives which includes 14 independent variables under heads named as Altman z model, Ohlson O-score model based on 612 financial statements available of Indian companies. Predictor variables included average z-score of 306 solvent companies, average z-score of 306 insolvent companies and average Ohlson O-score.

Table 3.2 Variables used in the research

Research Questions	Predictor variables	Outcome variables
To study the liquidation and resolution process of bankrupt firms of NCLT.	None	None
To establish a cut off score for Altman Z model applicable for Indian corporates.	Working Capital, Retained Earnings, Earnings before interest and tax, Market value of equity, Total liabilities, Sales and Total assets	Altman z-score of 306 solvent companies, Altman z-score of 306 insolvent companies, Altman z-score upper limit, Altman z-score lower limit, Altman z-score grey area
To study the influence of individual ratio on Z-score value.	Altman z-score of 306 solvent companies, Altman z-score of 306 insolvent companies	Linear regression equation for Altman z-score
To study the comparison of Altman Z-score model with Ohlson O -score model.	Total assets, gross national product price index level, total liabilities, working capital, current liabilities, current assets, net income, funds from operations and net loss	Average Ohlson O -score

3.6 Measurement of Constructs

7 constructs for 612 organisations, moreover 9 more constructs for 306 companies were calculated in total to get the trustworthy and valid results. The concerned items were obtained from the balance sheets of 306+306= 612 organisations.

Table 3.3 Variables used in the research

Variables	Item Code	Statement	Sources
Altman z-score	X1	Working Capital/ Total assets	Balance Sheets
	X2	Retained earnings /Total assets	
	X3	Earnings before interest and taxes /Total assets	
	X4	Market value of equity / Total liabilities	
	X5	Sales / Total assets	
Linear regression equation for Altman z-score	X1	Working Capital/ Total assets	Balance Sheets
	X2	Retained earnings /Total assets	
	X3	Earnings before interest and taxes /Total assets	
	X4	Market value of equity / Total liabilities	
	X5	Sales / Total assets	
	Z	z-score	
Ohlson O - score	TA	Total Assets	Balance Sheets
	GNP	Gross national product	
	TL	Total Liabilities	
	WC	Working Capital	
	CL	Current Liabilities	
	CA	Current Assets	
	NI	Net income	
	FFO	Funds from Operations	
	Y	Net loss from last two years	

3.7 Design of the thesis

This thesis has five sections

Chapter 1: Introduction

First, we will go over some background theory on the Bankruptcy and Altman model and how it stacks up against the Ohlson O score. It compares the Altman Z-Score to the Ohlson O-Score and discusses the Insolvency and Bankruptcy Code. This chapter also covers the numerous Bankruptcy theories that have been applied to different fields of study.

Chapter 2: Literature Review

To better the operational excellence of businesses and the decision-making abilities of lending organizations, this part reviews the literature in light of the Concept of bankruptcy and Bankruptcy prediction tools. Bankruptcy theories, including their facilitators, impediments, and Critical Success factors, will also be discussed in light of the aforementioned findings. A comparison of the Ohlson and Altman forecasting models is also covered in the literature.

Chapter 3: Research Methodology

After creating hypotheses to address the research questions, the study's aims and questions are laid out below. Defining the procedure for the study is the subject of this section. The main data, secondary data, and data collection methods are all explored to some extent. This research will use a sample of 306 bankrupt firms that were granted admission to the National Company Law Tribunal for insolvency proceedings, and a control sample of 306 solvent enterprises. In order to have a grasp on the big picture of bankruptcy in India, we will go through a number of different theoretical frameworks.

Chapter 4: Analysis and Interpretation

This chapter outlines the analysis of data and presents the results and interpretation on the basis of data analysis. First a section about descriptive statistics of data is shown through median, skewness and kurtosis etc of the data followed by normality check of data. Second part presents the data used in the study for calculation of Z- Score of 306 Solvent firms and 306 Insolvent firms for the time period of five years 2016-2020. Z- Score of 306 insolvent firms and 306 solvent firms are calculated by using the five

ratios. In the third part, the average Z- Score value for the 5 years period is being reviewed. It presents the scores of different ratios used in Altman Model and Ohlson Model, followed by hypothesis testing. SPSS 22 (Statistical Package for Social Sciences) and MS Excel has been used in the study for analyzing the data.

Chapter 5: Findings, Limitations, Recommendations & Conclusion

Analysis of the study's findings in light of the existing literature is the focus of this section. The parts of this chapter are clearly labeled. There is a summary of the main results, interpretations, and suggestions made after the research was completed. Findings about the effect of an individual's ratio on a Z-Score are shown below.

The secondary data will be analyzed using both qualitative and quantitative approaches. Findings from the research that can be used to improve bankruptcy prediction are recommended in this chapter. Finally, the study's weaknesses would be explored so that they may be addressed in future studies.

CHAPTER 4

DATA ANALYSIS

This chapter outlines the analysis of data and presents the results and interpretation on the basis of data analysis. First part represents the case processing summary followed by normality check of data. Second part presents the data used in the study for calculation of Z- Score of 306 Solvent firms and 306 Insolvent firms for the time period of five years 2016-2020. Z- Score of 306 Solvent firms and 306 Insolvent firms are calculated by using the five ratios. In the third part, the average Z-score value for the 5 years period is being reviewed. It presents the scores of different ratios used in Altman Model and Ohlson Model, followed by hypothesis testing. SPSS 22(Statistical Package for Social Sciences) and MS Excel has been used in the study for analyzing the data.

4.1 Analysis-:

Initially in data analysis author checks about the cleaning of data, normalization of data and reliability & validity of data, although in the study where secondary data is taken into consideration these parameters are not of much use, but still study will be carried out in the systematic manner.

4.1.1 Case Processing Summary

Summaries of the processed cases, including the total number of good ones, are shown in Table 4.1.

Table 4.1 Case Processing Summary

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
X1 Solvent (2020)	306	100.0%	0	0.0%	306	100.0%
X1 Solvent (2019)	306	100.0%	0	0.0%	306	100.0%
X1 Solvent (2018)	306	100.0%	0	0.0%	306	100.0%
X1 Solvent (2017)	306	100.0%	0	0.0%	306	100.0%
X1 Solvent (2016)	306	100.0%	0	0.0%	306	100.0%

X1 Insolvent (2020)	306	100.0%	0	0.0%	306	100.0%
X1 Insolvent (2019)	306	100.0%	0	0.0%	306	100.0%
X1 Insolvent (2018)	306	100.0%	0	0.0%	306	100.0%
X1 Insolvent (2017)	306	100.0%	0	0.0%	306	100.0%
X1 Insolvent (2016)	306	100.0%	0	0.0%	306	100.0%
X2 Solvent (2020)	306	100.0%	0	0.0%	306	100.0%
X2 Solvent (2019)	306	100.0%	0	0.0%	306	100.0%
X2Solvent (2018)	306	100.0%	0	0.0%	306	100.0%
X2 Solvent (2017)	306	100.0%	0	0.0%	306	100.0%
X2 Solvent (2016)	306	100.0%	0	0.0%	306	100.0%
X2 Insolvent (2020)	306	100.0%	0	0.0%	306	100.0%
X2 Insolvent (2019)	306	100.0%	0	0.0%	306	100.0%
X2 Insolvent (2018)	306	100.0%	0	0.0%	306	100.0%
X2 Insolvent (2017)	306	100.0%	0	0.0%	306	100.0%
X2 Insolvent (2016)	306	100.0%	0	0.0%	306	100.0%
X3 Solvent (2020)	306	100.0%	0	0.0%	306	100.0%
X3 Solvent (2019)	306	100.0%	0	0.0%	306	100.0%
X3 Solvent (2018)	306	100.0%	0	0.0%	306	100.0%
X3 Solvent (2017)	306	100.0%	0	0.0%	306	100.0%
X3 Solvent (2016)	306	100.0%	0	0.0%	306	100.0%
X3 Insolvent (2020)	306	100.0%	0	0.0%	306	100.0%
X3 Insolvent (2019)	306	100.0%	0	0.0%	306	100.0%
X3 Insolvent (2018)	306	100.0%	0	0.0%	306	100.0%
X3 Insolvent (2017)	306	100.0%	0	0.0%	306	100.0%
X3 Insolvent (2016)	306	100.0%	0	0.0%	306	100.0%
X4 Solvent (2020)	306	100.0%	0	0.0%	306	100.0%
X4 Solvent (2019)	306	100.0%	0	0.0%	306	100.0%
X4Solvent (2018)	306	100.0%	0	0.0%	306	100.0%
X4 Solvent (2017)	306	100.0%	0	0.0%	306	100.0%
X4 Solvent (2016)	306	100.0%	0	0.0%	306	100.0%
X4 Insolvent (2020)	306	100.0%	0	0.0%	306	100.0%
X4 Insolvent (2019)	306	100.0%	0	0.0%	306	100.0%

X4 Insolvent (2018)	306	100.0%	0	0.0%	306	100.0%
X4 Insolvent (2017)	306	100.0%	0	0.0%	306	100.0%
X4 Insolvent (2016)	306	100.0%	0	0.0%	306	100.0%
X5 Solvent (2020)	306	100.0%	0	0.0%	306	100.0%
X5 Solvent (2019)	306	100.0%	0	0.0%	306	100.0%
X5 Solvent (2018)	306	100.0%	0	0.0%	306	100.0%
X5 Solvent (2017)	306	100.0%	0	0.0%	306	100.0%
X5 Solvent (2016)	306	100.0%	0	0.0%	306	100.0%
X5 Insolvent (2020)	306	100.0%	0	0.0%	306	100.0%
X5 Insolvent (2019)	306	100.0%	0	0.0%	306	100.0%
X5 Insolvent (2018)	306	100.0%	0	0.0%	306	100.0%
X5 Insolvent (2017)	306	100.0%	0	0.0%	306	100.0%
X5 Insolvent (2016)	306	100.0%	0	0.0%	306	100.0%
Z Solvent (2020)	306	100.0%	0	0.0%	306	100.0%
Z Solvent (2019)	306	100.0%	0	0.0%	306	100.0%
Z Solvent (2018)	306	100.0%	0	0.0%	306	100.0%
Z Solvent (2017)	306	100.0%	0	0.0%	306	100.0%
Z Solvent (2016)	306	100.0%	0	0.0%	306	100.0%
Z Insolvent (2020)	306	100.0%	0	0.0%	306	100.0%
Z Insolvent (2019)	306	100.0%	0	0.0%	306	100.0%
Z Insolvent (2018)	306	100.0%	0	0.0%	306	100.0%
Z Insolvent (2017)	306	100.0%	0	0.0%	306	100.0%
Z Insolvent (2016)	306	100.0%	0	0.0%	306	100.0%

The summary of processed cases demonstrates that the secondary data collection has no missing values. As it is evident from the table 4.1 that there are no missing numbers and the percentage of these missing number is also zero and the value of valid number is 100%.

Descriptive Statistics

Descriptive Statistics is a summary of quantitative presentation of results which helps in readily interpretation of complex data. The data's mean, median, skewness, kurtosis, and other descriptive statistics are shown. Mean, median, skewness, kurtosis, etc. of the data are all calculated and compared to predetermined thresholds to ensure

the data is within acceptable parameters. Nonetheless, results may or may not be within acceptable limits since the data utilized in this research is secondary data (i.e., gathered via the internet). As per theory the acceptable values of skewness and kurtosis is in between -1.98 to +1.98.

4.1.2 Tests of Normality

Tests of Normality are used to verify whether a data set follows a normal distribution. There are two ways to test the normality of data first one is Graphical method and other one is numerical methods. In the current study, Kolmogorov-Smirnov test were conducted to check the data normality.

Table 4.2 Tests of Normality

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
X1 Solvent (2020)	.376	306	.000	.130	306	.000
X1 Solvent (2019)	.179	306	.000	.595	306	.000
X1 Solvent (2018)	.149	306	.000	.733	306	.000
X1 Solvent (2017)	.178	306	.000	.656	306	.000
X1 Solvent (2016)	.194	306	.000	.603	306	.000
X1 Insolvent (2020)	.353	306	.000	.207	306	.000
X1 Insolvent (2019)	.272	306	.000	.379	306	.000
X1 Insolvent (2018)	.367	306	.000	.245	306	.000
X1 Insolvent (2017)	.246	306	.000	.493	306	.000
X1 Insolvent (2016)	.212	306	.000	.513	306	.000
X2 Solvent (2020)	.404	306	.000	.278	306	.000
X2 Solvent (2019)	.381	306	.000	.227	306	.000
X2Solvent (2018)	.344	306	.000	.404	306	.000
X2 Solvent (2017)	.360	306	.000	.258	306	.000
X2 Solvent (2016)	.295	306	.000	.356	306	.000
X2 Insolvent (2020)	.377	306	.000	.334	306	.000
X2 Insolvent (2019)	.394	306	.000	.242	306	.000

X2 Insolvent (2018)	.424	306	.000	.213	306	.000
X2 Insolvent (2017)	.392	306	.000	.299	306	.000
X2 Insolvent (2016)	.379	306	.000	.310	306	.000
X3 Solvent (2020)	.341	306	.000	.285	306	.000
X3 Solvent (2019)	.253	306	.000	.519	306	.000
X3 Solvent (2018)	.302	306	.000	.426	306	.000
X3 Solvent (2017)	.376	306	.000	.161	306	.000
X3 Solvent (2016)	.168	306	.000	.769	306	.000
X3 Insolvent (2020)	.497	306	.000	.034	306	.000
X3 Insolvent (2019)	.450	306	.000	.051	306	.000
X3 Insolvent (2018)	.451	306	.000	.105	306	.000
X3 Insolvent (2017)	.209	306	.000	.623	306	.000
X3 Insolvent (2016)	.211	306	.000	.675	306	.000
X4 Solvent (2020)	.460	306	.000	.194	306	.000
X4 Solvent (2019)	.416	306	.000	.207	306	.000
X4Solvent (2018)	.397	306	.000	.258	306	.000
X4 Solvent (2017)	.335	306	.000	.430	306	.000
X4 Solvent (2016)	.339	306	.000	.393	306	.000
X4 Insolvent (2020)	.426	306	.000	.184	306	.000
X4 Insolvent (2019)	.455	306	.000	.132	306	.000
X4 Insolvent (2018)	.469	306	.000	.134	306	.000
X4 Insolvent (2017)	.430	306	.000	.197	306	.000
X4 Insolvent (2016)	.425	306	.000	.214	306	.000
X5 Solvent (2020)	.224	306	.000	.628	306	.000
X5 Solvent (2019)	.144	306	.000	.808	306	.000
X5 Solvent (2018)	.227	306	.000	.461	306	.000
X5 Solvent (2017)	.183	306	.000	.678	306	.000
X5 Solvent (2016)	.275	306	.000	.445	306	.000
X5 Insolvent (2020)	.417	306	.000	.164	306	.000
X5 Insolvent (2019)	.418	306	.000	.159	306	.000

X5 Insolvent (2018)	.400	306	.000	.218	306	.000
X5 Insolvent (2017)	.187	306	.000	.721	306	.000
X5 Insolvent (2016)	.187	306	.000	.734	306	.000
Z Solvent (2020)	.296	306	.000	.340	306	.000
Z Solvent (2019)	.253	306	.000	.384	306	.000
Z Solvent (2018)	.156	306	.000	.778	306	.000
Z Solvent (2017)	.289	306	.000	.300	306	.000
Z Solvent (2016)	.202	306	.000	.641	306	.000
Z Insolvent (2020)	.470	306	.000	.045	306	.000
Z Insolvent (2019)	.390	306	.000	.124	306	.000
Z Insolvent (2018)	.384	306	.000	.155	306	.000
Z Insolvent (2017)	.220	306	.000	.614	306	.000
Z Insolvent (2016)	.239	306	.000	.583	306	.000

Because the significance level of the Kolmogorov-Smirnov test is less than 0.05, we may conclude that the data we gathered from reputable secondary sources is normally distributed and hence suitable for further analysis. Since the sample size in this case is just 306+306=612, the significant value from the Shapiro-Wilk test is disregarded since that test is typically used when the sample size is more than 2000. Because of this, we may conclude that the information gathered is typical and usable.

4.2 Data Gathered-:

This part focused on the presentation of data collection from the financial statements of companies. The data are collected for the 306 solvent companies and 306 insolvent companies for the years 2016 to 2020. For calculating the figures, Ratio Analysis was used to arrive at the equation of Altman Z- Score Model. Altman used five ratios in his model for computing Z- Scores and these ratios were used in the study for determining the values of Z- Scores. Table 4.4 shows data related to the 306 Solvent Organisations. *Here A stands for X1(Working capital/Total Assets), E stands for X2(Retained Earnings / Total Assets), I stands for X3(Earnings Before Interest and Taxes / Total Assets), M stands for X4(Market Value of Equity / Total Liabilities), Q stands for X5(Sales / Total Assets)and V stands for Z- Score value.*

Table 4.3 306 Solvent Organisations

Name of company		2020	2019	2018	2017	2016
Barak valley cement ltd	A	0.06385993	0.01443	-0.0003	-0.0129	0.14585758
	E	0.37703989	0.40228	0.38683	0.38463	0.35310491
	I	0.06850635	0.07485	0.08356	0.05429	0.06452756
	M	0.12556664	0.14275	0.14421	0.15056	0.11215142
	Q	0.8781165	0.8997	0.97442	0.83252	0.67220001
	V	1.78313707	1.81197	1.87698	1.62416	1.62113558
Burnpur Cement Limited	A	-0.0598375	-0.0355	-0.0208	0.10606	-0.0898943
	E	-0.9885655	-0.408	-0.3347	-0.1377	-1.5204328
	I	0.35133044	-0.04	-0.175	-0.1257	0.10440128
	M	0.37020161	0.35424	0.33311	0.282	0.42350627
	Q	0.33336199	0.35688	0.16269	0.24356	0.60845832
	V	0.25874328	-0.1767	-0.7087	-0.0678	-1.0300011
Par Drugs and Chemicals Limited	A	0.31418847	0.17758	0.16833	0.10172	0.47825373
	E	0.73303552	0.59966	0.2779	0.24299	0.75594945
	I	0.14422463	0.12824	0.11093	0.12862	0.25209257
	M	0.13082323	0.10943	0.1917	0.191	0.1009355
	Q	1.18783238	1.13166	0.96143	1.1024	0.99704579
	V	3.14435567	2.67198	2.03264	2.10258	3.52074922
Mahickra Chemicals Limited	A	0.8869886	0.95262	0.93903	0.98857	0.89774236
	E	0.53185781	0.39102	0.185	0.23483	0.49960159
	I	0.16163649	0.17157	0.08269	0.01319	0.13253652
	M	0.27230047	0.3606	0.3595	0.54266	0.21567065
	Q	3.16163649	3.99252	1.3679	0.37467	2.29721116
	V	5.66424279	6.46164	3.24096	2.25846	4.63841992
Hindprakash Industries Limited	A	0.72600927	0.71539	0.88453	0.86931	0.73831041
	E	0.52856828	0.29781	0.51306	0.47959	0.51237721
	I	0.13280388	0.13222	0.16667	0.17818	0.08428291
	M	0.22986984	0.18775	0.07627	0.08477	0.20471513
	Q	2.316788	2.40687	3.08333	3.37951	1.7697446
	V	4.50185264	4.22884	5.45574	5.72959	3.77223811
Sanginita Chemicals Limited	A	0.93719413	0.92961	0.93088	0.93463	0.9376555
	E	0.29010332	0.27816	0.24366	0.19761	0.32357676
	I	0.10589995	0.13382	0.13216	0.0861	0.0523928
	M	0.23477433	0.26717	0.29993	0.32256	0.25274404
	Q	2.1721044	2.90207	3.87617	2.88999	2.40977609
	V	4.19104432	5.00602	5.94658	4.76299	4.31010303

Sikko Industries Limited	A	0.85023534	0.83886	0.77273	0.75187	0.87149981
	E	0.4766795	0.37032	0.39636	0.17316	0.31031837
	I	0.17030381	0.13223	0.16485	0.0982	0.15151515
	M	0.23962345	0.2381	0.33939	0.29985	0.42961258
	Q	1.34531451	1.11437	1.55576	1.18966	1.49942463
	V	3.73737955	3.21755	3.78402	2.83712	3.73593824
Ushanti Colour Chem Limited	A	0.38008415	0.28913	0.21554	0.14664	0.42028602
	E	0.49256662	0.47075	0.17072	0.4372	0.52966102
	I	0.11332398	0.12067	0.18779	0.20299	0.10407839
	M	0.20504909	0.22389	0.23005	0.03394	0.19332627
	Q	1.2911641	1.23124	1.55826	2.00272	0.93114407
	V	2.93256578	2.76857	2.8121	3.47899	2.63553602
Hindcon Chemicals Limited	A	0.83483002	0.80181	0.8089	0.85959	0.82739106
	E	0.66067992	0.63706	0.58311	0.67187	0.6819468
	I	0.13694676	0.14246	0.21221	0.18822	0.17713639
	M	0.32841565	0.35667	0.38598	0.07549	0.28975665
	Q	1.42014112	1.55068	1.33057	1.7081	1.25608376
	V	3.99444259	4.0873	4.04816	4.34495	3.96082654
Omkar Speciality Chemicals Limited	A	0.06227311	-0.0446	-0.0228	0.3533	0.43279989
	E	-2.5561296	-2.0488	-1.3426	-0.131	-2.5337771
	I	0.08908126	0.03766	-0.9256	-0.6441	0.12349526
	M	0.2873499	0.25	0.18969	0.1153	0.29146013
	Q	0.79419157	0.5181	1.82173	1.77455	0.63900297
	V	-2.2440782	-2.13	-3.0278	-0.043	-1.8071537
Ambani Organics Limited	A	0.63749169	0.62107	0.50712	0.44375	0.65017261
	E	0.26700643	0.2881	0.07692	0.01467	0.22472464
	I	0.10635941	0.13789	0.15776	0.13962	0.09140227
	M	0.1125637	0.13899	0.13568	0.16941	0.08351143
	Q	1.61466873	2.17401	2.3255	2.32815	1.4247904
	V	3.17037735	3.85889	3.64144	3.44125	2.86992158
Prolife Industries Limited	A	0.21233444	0.22217	0.09305	0.18781	0.13116551
	E	0.49337748	0.40824	0.39318	0.3253	0.63207892
	I	0.2611755	0.19014	0.19201	0.15308	0.28900256
	M	0.16928808	0.20793	0.26802	0.28987	0.14943369
	Q	2.08816225	1.50839	1.78965	1.927	2.68871027
	V	3.99505588	3.09722	3.24441	3.28496	4.77169931
Vadivarhe Speciality Chemicals Limited	A	0.20215846	0.34312	0.31959	0.41119	0.27478172
	E	0.12819163	0.29969	0.38699	0.30907	0.05418593
	I	0.27954725	0.02365	0.07772	0.28001	0.03261428

	M	0.33640432	0.26055	0.33783	0.32835	0.32819723
	Q	0.75230324	0.65973	0.67565	0.95139	0.67976374
	V	2.29795788	1.72476	2.05944	2.99761	1.38922779
Shaival Reality Limited	A	0.19698355	0.04397	0.06114	0.10131	0.12668082
	E	-0.0658135	-0.0198	0.05119	0.22776	-0.07431
	I	0.01599634	-0.0833	-0.0186	0.08169	0.02901628
	M	0.52879342	0.2251	0.14769	0.02805	0.4094126
	Q	0.13482633	0.28638	0.37044	0.62631	0.0403397
	V	0.6489968	0.17135	0.54221	1.35251	0.42968365
IL & FS Engineering and Construction Company Limited	A	-1.2386098	-0.4482	0.06206	0.07025	-2.6887625
	E	-3.6483865	-1.6895	0.00113	-0.0013	-6.8488591
	I	0.56898461	-1.4437	0.11212	0.10899	0.61115444
	M	0.19625217	0.10906	0.04799	0.04248	0.32985334
	Q	0.84174999	1.03062	0.52481	0.58873	0.8370607
	V	-3.7577642	-6.5724	0.99913	1.0558	-9.7639726
Madhucon Projects Limited	A	-0.6275776	-0.2314	-0.2489	-0.3255	-0.6644825
	E	0.3764131	0.45525	0.43341	0.45795	0.38220208
	I	0.15169635	0.00932	0.05714	0.07669	0.02894585
	M	0.00470238	0.00417	0.00407	0.00437	0.00508787
	Q	0.34748073	0.37755	0.36504	0.40913	0.44453535
	V	0.62443789	0.7701	0.86383	0.91495	0.2803687
SPML Infra Limited	A	0.45618914	0.40501	0.43177	0.35807	0.59746916
	E	0.18619121	0.19795	0.22627	0.25382	0.12140704
	I	0.072918	0.11723	0.13263	0.13498	0.02043856
	M	0.00403158	0.00437	0.00434	0.00542	0.00374143
	Q	0.40573775	0.7643	0.71781	1.12578	0.28112837
	V	1.45647503	1.91618	1.99228	2.35839	1.23747218
Ansal Housing Limited	A	0.8327548	0.88508	0.94775	0.95248	0.7946808
	E	0.17668821	0.23618	0.3401	0.36199	0.13666123
	I	0.01500377	0.06434	0.04891	0.05958	0.00127236
	M	0.06781383	0.06536	0.05757	0.05784	0.07336446
	Q	0.13351527	0.16339	0.1965	0.2666	0.17174375
	V	1.47025174	1.80751	2.00568	2.14741	1.36473215
Sumit Woods Limited	A	0.5698033	0.52902	0.52241	0.62649	0.48635728
	E	0.44805954	0.55997	0.42723	0.36329	0.26900653
	I	0.07134503	0.09723	0.11277	0.10426	0.13957556
	M	0.32525253	0.15567	0.1306	0.09033	0.3566931
	Q	0.10377459	0.2022	0.20952	0.42506	0.19379664
	V	1.84530824	2.03504	1.88483	2.08329	1.82845592
Giriraj Civil Developers Limited	A	0.76953125	0.66734	0.6656	0.6214	0.33904476

	E	0.50564236	0.49062	0.44625	0.50046	0.56864425
	I	0.07400174	0.13085	0.13564	0.40365	0.11694153
	M	0.0703125	0.07322	0.07411	0.04547	0.06939387
	Q	0.53038194	0.99051	1.26967	1.38664	1.36153352
	V	2.4475816	2.95293	3.18393	4.19091	2.99067102
HEC Infra Projects Limited	A	0.86902773	0.79619	0.68734	0.63294	0.8941843
	E	0.44269963	0.45827	0.46307	0.45518	0.44675887
	I	0.06247912	0.11805	0.16205	0.17515	0.04932511
	M	0.03391246	0.03582	0.03875	0.04417	0.0338277
	Q	0.65536251	1.41309	1.57721	1.82768	0.62589568
	V	2.54384848	3.41974	3.60676	3.82713	2.50682286
W S Industries (I) Limited	A	-0.9007687	-0.6015	0.31426	0.14459	-0.777972
	E	-3.8881901	-0.7714	-0.474	-0.7224	-3.486014
	I	2.11740042	-3.3376	0.14403	-0.0143	0.24358974
	M	1.36303284	0.59376	0.15282	0.11139	1.13665501
	Q	0.00733753	0.00502	0.01015	0.00764	0.00553613
	V	1.28818274	-12.455	0.2906	-0.8105	-4.3226163
Atal Realtech Limited	A	0.59382204	0.57668	0.83483	0.92206	0.71830315
	E	0.52374366	0.49963	0.26634	0.26765	0.62702574
	I	0.12793914	0.12603	0.22023	0.26397	0.11415634
	M	0.10673121	0.11509	0.15667	0.22059	0.11749285
	Q	1.34047948	1.43102	2.30394	3.08456	1.03717827
	V	3.27120447	3.30603	4.49707	5.56611	3.22315253
Gayatri Highways Limited	A	0.02928613	0.01588	0.03802	0.01503	0.03809573
	E	-0.0494652	-0.0154	0.02883	0.06318	-0.0800543
	I	0.01990568	0.02499	0.03577	0.03356	0.0214943
	M	0.47158528	0.45593	0.58823	0.12442	0.49975965
	Q	0.0079281	0.02628	0.0184	0.01726	0.00848098
	V	0.32245218	0.37971	0.57537	0.30915	0.3128984
S.S. Infrastructure Development Consultants Limited	A	0.31418847	0.17758	0.16833	0.10172	0.47825373
	E	0.73303552	0.59966	0.2779	0.24299	0.75594945
	I	0.14422463	0.12824	0.11093	0.12862	0.25209257
	M	0.13082323	0.10943	0.1917	0.191	0.1009355
	Q	1.18783238	1.13166	0.96143	1.1024	0.99704579
	V	3.14435567	2.67198	2.03264	2.10258	3.52074922
C & C Constructions Limited	A	0.8869886	0.95262	0.93903	0.98857	0.89774236
	E	0.53185781	0.39102	0.185	0.23483	0.49960159
	I	0.16163649	0.17157	0.08269	0.01319	0.13253652

	M	0.27230047	0.3606	0.3595	0.54266	0.21567065
	Q	3.16163649	3.99252	1.3679	0.37467	2.29721116
	V	5.66424279	6.46164	3.24096	2.25846	4.63841992
Unity Infra projects Limited	A	0.04809511	0.06977	0.06908	0.06258	0.05470928
	E	0.9109764	0.92976	0.92747	0.92816	0.96004286
	I	0.12549193	0.00868	0.01698	0.02887	0.06278587
	M	0.00967978	0.01086	0.01074	0.01093	0.00962872
	Q	0.24493572	0.28016	0.27127	0.29269	0.34092002
	V	1.99770312	1.70042	1.71484	1.76876	1.96326085
Setubandhan Infrastructure Limited	A	0.45364802	0.71097	0.69369	0.67728	0.4554503
	E	0.39691365	0.59133	0.62033	0.63126	0.28850906
	I	0.23238398	0.04267	0.09414	0.08723	0.18918177
	M	0.0713151	0.06541	0.06872	0.07454	0.08628501
	Q	0.73947577	1.3444	1.5521	1.2104	0.31644701
	V	2.64844922	3.20415	3.60332	3.23829	1.94265445
A B Infrabuild Limited	A	0.78535837	0.70892	0.65895	0.69257	0.89017788
	E	0.31448831	0.15801	0.22842	0.12716	0.2741686
	I	0.12897662	0.19859	0.21474	0.12555	0.01256767
	M	0.24281334	0.20766	0.06579	0.05748	0.24497293
	Q	1.21924109	1.38332	1.58895	1.67372	1.19450889
	V	3.17204638	3.2338	3.44599	3.12994	2.83382096
BSEL Infrastructure Realty Limited	A	0.06908118	0.06906	0.11311	0.118	0.06943165
	E	0.84853095	0.839	0.8363	0.83569	0.84466713
	I	-0.0119504	-0.0393	0.00125	0.00879	0.00265092
	M	0.15143239	0.16096	0.16366	0.16427	0.15533287
	Q	7.3315E-05	0.01013	0.00085	0.00095	5.6403E-05
	V	1.32233721	1.2345	1.40972	1.44009	1.36785608
CMM Infraprojects Limited	A	0.74486615	0.71214	0.66971	0.58987	0.76962457
	E	0.37541254	0.34274	0.35259	0.27152	0.36967846
	I	0.06609828	0.07276	0.17124	0.13379	0.07167235
	M	0.14365603	0.13477	0.14145	0.03049	0.14074008
	Q	0.64475614	0.84545	2.10589	2.21406	0.4664092
	V	2.36784626	2.49997	4.05102	3.7596	2.22800494
International Constructions Limited	A	0.07877462	0.2206	0.18705	0.12906	0.15961244
	E	0.42724289	0.42446	0.51151	0.13807	0.4599694
	I	0.01422319	0.02275	-0.0518	0.03402	0.16828149
	M	0.19857768	0.15579	0.13058	0.18159	0.18510964
	Q	0.00000000	0.06223	0.00468	0.03652	0.23508414

	V	0.85875274	1.08968	0.85266	0.60587	1.73673585
Dhanuka Realty Limited	A	0.32425292	0.27722	0.19396	0.21367	0.2874818
	E	0.63670522	0.66234	0.59291	0.59002	0.57973981
	I	0.11806493	0.0871	0.1294	0.23932	0.11158115
	M	0.12863265	0.15292	0.15493	0.16194	0.09966339
	Q	0.68273352	0.62758	0.57722	1.37258	0.59525109
	V	2.42933547	2.26608	2.15946	3.34056	2.17928557
Tantia Constructions Limited	A	0.71528017	0.77618	0.84469	0.83873	0.64574945
	E	0.10392874	0.10717	0.08551	0.11694	-0.0907701
	I	0.02880114	0.04992	0.03777	0.03439	0.10739769
	M	0.03195926	0.03272	0.01838	0.01866	0.03661893
	Q	0.22850757	0.32472	0.39602	0.5184	0.27611997
	V	1.34633482	1.5902	1.66464	1.81274	1.30004879
Techindia Nirman Limited	A	0.61382651	0.62569	0.58133	0.11798	0.61021313
	E	-0.0082196	0.00075	0.00464	0.02196	-0.0191675
	I	0.0046969	-0.0037	0.00124	-0.0123	0.00672293
	M	0.21033319	0.2143	0.2334	0.53331	0.20497783
	Q	1.41817114	1.66771	4.70515	4.34499	1.38349306
	V	2.28353706	2.53416	5.54868	4.79242	2.23270319
Manav Infra Projects Limited	A	0.53272039	0.60115	0.71584	0.60338	0.43567753
	E	0.003245	0.25576	0.30078	0.40612	-0.5600343
	I	0.25581395	0.07237	0.12779	0.19409	0.46483705
	M	0.36992969	0.28125	0.35532	0.21097	0.58662093
	Q	0.46727961	0.63857	1.08416	1.90717	0.43310463
	V	2.17676366	2.12494	2.99808	3.96497	2.05737136
Websol Energy System Limited	A	-0.0677973	-0.1399	-0.0877	-0.6699	-0.0379322
	E	0.27201858	0.23613	0.26693	0.21622	0.58678823
	I	0.03744402	-0.0943	0.0487	0.50363	0.33700327
	M	0.12684525	0.12039	0.09632	0.13177	0.13392396
	Q	0.81083098	0.28432	0.66162	1.77581	0.66058834
	V	1.3091618	0.20761	1.1479	3.01391	2.62837777
BPL Limited	A	-0.3017382	-0.1738	-0.2033	-0.2245	-0.3315767
	E	0.65665399	0.66094	0.67342	0.59399	0.61192475
	I	0.08169473	0.03127	0.14192	0.31187	0.00913046
	M	0.26556219	0.27642	0.2839	0.26741	0.29958944
	Q	0.51966323	0.79652	0.72446	0.5166	0.26815369
	V	1.50530326	1.7815	2.06125	2.26794	0.93657234
Indo Tech Transformers Limited	A	0.55164852	0.54064	0.57812	0.55206	0.62188944
	E	0.90774532	0.90833	0.9117	0.91665	0.91350022

	I	0.01981361	-0.0478	-0.0103	-0.0428	0.06988526
	M	0.08317018	0.08421	0.07841	0.07631	0.07912383
	Q	1.60803508	1.69209	1.62559	1.06927	1.53479362
	V	3.65453575	3.50357	3.60726	2.91868	3.83652213
Spectrum Electrical Industries Limited	A	0.35284707	0.32708	0.23695	-0.2073	0.39445671
	E	0.40527962	0.45572	0.31722	0.04779	0.40166169
	I	0.07090393	0.11632	0.17307	0.05496	0.09113332
	M	0.10995564	0.13498	0.15338	0.29809	0.09814358
	Q	1.02683441	1.31075	1.64601	0.39367	0.98214981
	V	2.31657189	2.80479	3.03598	0.57165	2.37646819
Kernex Microsystems (India) Limited	A	0.30021764	0.31098	0.42777	0.43521	0.42069521
	E	0.73140443	0.65409	0.63692	0.70042	0.66275322
	I	0.11919088	-0.2483	-0.1179	0.01651	0.01530847
	M	0.16003073	0.16662	0.11487	0.10478	0.14387661
	Q	0.18717194	0.09957	0.12231	0.1031	0.17932781
	V	2.06056049	0.66886	1.20705	1.72319	1.74868117
Kirloskar Electric Company Limited	A	-0.566794	-0.1302	-0.2046	-0.098	-0.7409304
	E	-0.0675201	0.18847	0.28763	0.40209	0.01281721
	I	0.1974016	0.05377	-0.092	0.00874	0.29380133
	M	0.25376385	0.18025	0.13967	0.12569	0.24459504
	Q	1.20141383	0.7991	0.77867	1.08165	1.02235645
	V	1.22921509	1.19147	0.71533	1.63015	1.26646319
Indosolar Limited	A	0.31418847	0.17758	0.16833	0.10172	0.47825373
	E	0.73303552	0.59966	0.2779	0.24299	0.75594945
	I	0.14422463	0.12824	0.11093	0.12862	0.25209257
	M	0.13082323	0.10943	0.1917	0.191	0.1009355
	Q	1.18783238	1.13166	0.96143	1.1024	0.99704579
	V	3.14435567	2.67198	2.03264	2.10258	3.52074922
Wonder Fibromats Limited	A	0.37031319	0.42689	0.66603	0.47402	0.39590323
	E	0.76025584	0.32017	0.25016	0.14393	0.68355995
	I	0.15615351	0.2273	0.22899	0.32374	0.13296839
	M	0.18482576	0.14207	0.04339	0.07664	0.1479781
	Q	6.55646228	7.14414	6.21608	6.19178	5.39519689
	V	8.68484186	8.93284	8.14104	8.07022	7.34945206
Jyoti Structures Limited	A	1.02100783	1.07638	0.47232	0.73598	1.01133173
	E	3.73503338	7.92871	-30.6	-0.7529	2.89641196
	I	-0.3182357	0.69863	-17.28	-0.3431	-0.06703
	M	-0.008508	-0.0237	0.12032	0.01173	-0.0055818
	Q	-0.0008038	-0.1065	1.40132	0.45505	-0.0005172
	V	5.39817068	14.5767	-97.824	-0.8415	5.04351025

Ujaas Energy Limited	A	0.53471857	0.62155	0.59359	0.43851	0.48462973
	E	0.61852315	0.55562	0.5517	0.56551	0.54445289
	I	0.04112967	0.0495	0.1012	0.21408	0.08938933
	M	0.06575487	0.05512	0.05654	0.06329	0.06918348
	Q	0.16728038	0.42997	0.94462	1.53908	0.12120061
	V	1.84988861	2.14969	2.79625	3.59991	1.80136402
Nitiraj Engineers Limited	A	0.34963913	0.43914	0.28022	0.30423	0.27264022
	E	0.7914996	0.87739	0.86515	0.85769	0.85978112
	I	0.05426357	0.12844	0.07055	0.12773	0.07031464
	M	0.13699546	0.12261	0.13485	0.14231	0.14021888
	Q	0.63966854	0.80562	0.63904	1.02482	0.73625171
	V	2.42796231	3.05755	2.49959	3.09655	2.58254692
Surana Solar Limited	A	0.50610763	0.50493	0.52977	0.46684	0.50373134
	E	0.48662925	0.37948	0.35941	0.36305	0.48166775
	I	0.02657643	0.04256	0.04433	0.07693	0.01995457
	M	0.40607461	0.32313	0.31701	0.33029	0.3990915
	Q	0.54754044	0.45632	0.50412	1.163	0.45327709
	V	2.16694998	1.92738	1.97901	2.68236	2.03694127
Delta Manufacturing Limited	A	0.31491525	0.28592	0.14948	0.10227	0.28882634
	E	0.19344633	0.32049	0.5403	0.56382	0.10243544
	I	0.08372881	-0.0017	0.03046	0.0037	0.06535308
	M	0.12259887	0.11297	0.15159	0.15944	0.13278668
	Q	1.02644068	0.59142	0.54475	0.44505	0.86843716
	V	2.02400181	1.44491	1.67148	1.46454	1.65290711
Focus Lighting and Fixtures Limited	A	0.61585058	0.56016	0.6217	0.8041	0.62109879
	E	0.63326603	0.81212	0.76581	0.75902	0.61645602
	I	0.17693084	0.40562	0.42145	0.52623	0.0270828
	M	0.25593135	0.098	0.1416	0.20328	0.26154243
	Q	2.27637557	3.18556	3.8253	6.44836	1.33969564
	V	4.63712292	6.3889	7.1154	10.328	3.19301161
Bright Solar Limited	A	0.56992288	0.57173	0.38315	0.71851	0.55222337
	E	0.45758355	0.45639	0.07809	0.67574	0.45941055
	I	0.03007712	0.10674	0.55506	0.24028	0.01525336
	M	0.52442159	0.53111	0.8427	0.11664	0.52740434
	Q	0.6033419	1.49466	2.2236	1.40202	0.63391934
	V	2.34117044	3.48911	5.12778	4.07177	2.30590693
Goldstar Power Limited	A	0.55625879	0.48139	0.51681	0.42727	0.67455243
	E	0.31434599	0.31552	0.28839	0.42408	0.28804348
	I	0.04184248	0.05418	0.07334	0.12905	0.03612532
	M	0.37623066	0.3944	0.40871	0.05928	0.34207161
	Q	1.26160338	1.34058	1.65126	2.49932	1.34462916

	V	2.73175527	2.77407	3.16076	4.06467	2.88046483
Shri Ram Switchgears Limited	A	0.95289207	0.94502	0.93166	0.90795	0.94989718
	E	0.09347048	0.14246	0.14188	0.07387	-0.1970462
	I	0.04293381	0.12028	0.18593	0.20151	0.18227706
	M	0.14922481	0.15417	0.16767	0.14195	0.18713778
	Q	0.33437686	0.43431	0.9206	1.37111	0.1691905
	V	1.8395881	2.25678	2.95047	3.31284	1.74683025
MIC Electronics Limited	A	0.57695753	0.58348	0.52697	0.49854	0.59202596
	E	0.7977065	0.84316	0.81462	0.72482	0.8377376
	I	0.2639312	0.32208	0.16367	0.23212	0.22794004
	M	0.10016126	0.10628	0.12818	0.13163	0.08669448
	Q	1.62784447	1.49342	1.52417	1.37251	1.17477979
	V	4.36642448	4.49914	3.91248	3.82909	3.86108762
IMP Powers Limited	A	0.71944434	0.69922	0.66048	0.60908	0.65975162
	E	0.33473991	0.414	0.46202	0.47707	0.06688823
	I	0.03547556	0.12437	0.15761	0.14518	0.22291412
	M	0.03226409	0.03441	0.03904	0.04261	0.03022564
	Q	0.98790097	1.64593	2.01365	1.93831	0.32880882
	V	2.45530994	3.49401	3.99456	3.83983	1.96757744
Emco Limited	A	0.37882732	0.42904	0.55593	0.51504	0.30835544
	E	0.33122598	0.31689	0.32928	0.23279	0.38129973
	I	0.10561547	0.15487	0.22434	0.1417	0.05128205
	M	0.18036445	0.19243	0.04491	0.05234	0.16080902
	Q	0.74067187	0.86272	1.24554	1.45142	0.74204244
	V	2.11499008	2.4469	3.13968	2.89294	1.91086273
Easun Reyrolle Limited	A	0.25925893	0.26796	0.34581	0.32791	0.39206935
	E	0.8783189	0.86977	0.8585	0.86967	0.888186
	I	0.08350032	0.09688	0.08403	0.18854	0.10223396
	M	0.0167108	0.01707	0.01779	0.01849	0.01546716
	Q	0.64359837	0.6422	0.67179	0.77092	0.6099427
	V	2.46928949	2.51074	2.57596	3.01443	2.66992876
Pulz Electronics Limited	A	0.66030814	0.55386	0.69559	0.60437	0.75319789
	E	0.56713133	0.74046	0.47641	0.24966	0.55680963
	I	0.20102715	0.32146	0.19787	0.31651	0.02407825
	M	0.39985326	0.23155	0.20776	0.27285	0.41008277
	Q	2.08437271	2.03562	1.37291	1.87722	0.43115124
	V	4.57194351	4.93461	3.65083	4.15829	2.43959895
Neueon Towers Limited	A	0.32831058	0.27138	0.30132	0.28527	0.33633909
	E	0.15210069	0.16738	0.19184	0.19496	0.12912528
	I	0.08907995	0.04344	0.05518	0.05653	0.07621184
	M	0.07777876	0.07366	0.07017	0.08421	0.0803314
	Q	1.52535012	1.4971	1.18169	1.36204	1.42005767

	V	2.47136953	2.24315	2.03486	2.21301	2.30271781
Powerful Technologies Limited	A	0.63352601	0.58701	0.60762	0.48677	0.6475243
	E	0.40092486	0.41484	0.40112	0.22819	0.3621976
	I	0.08971098	0.14787	0.16245	0.13186	0.00972191
	M	0.12716763	0.14523	0.17182	0.19739	0.12434999
	Q	0.83884393	0.9324	1.07029	1.15239	0.62943703
	V	2.53187792	2.79178	2.99912	2.6084	2.0196057
Mold-Tek Technologies Limited	A	0.57695753	0.58348	0.52697	0.49854	0.59202596
	E	0.7977065	0.84316	0.81462	0.72482	0.8377376
	I	0.2639312	0.32208	0.16367	0.23212	0.22794004
	M	0.10016126	0.10628	0.12818	0.13163	0.08669448
	Q	1.62784447	1.49342	1.52417	1.37251	1.17477979
	V	4.36642448	4.49914	3.91248	3.82909	3.86108762
TRF Limited	A	-0.3854849	-0.0849	-0.2324	0.28169	-7.8293333
	E	-3.5905144	-1.925	-1.0295	-0.1579	-33.603333
	I	-1.0594692	-0.6462	-0.8301	-0.1298	-4.348
	M	2.13794233	1.65054	0.0564	0.03162	17.4
	Q	1.51998689	1.49118	1.775	1.45386	7.57933333
	V	-6.1843182	-2.4492	-2.6525	1.15997	-52.776513
Macpower CNC Machines Limited	A	0.42725139	0.76332	0.71373	0.42071	0.17605538
	E	0.83074215	0.83951	0.80129	0.39581	0.84797068
	I	0.06277501	0.27627	0.20313	0.17824	0.0939324
	M	0.14388384	0.1477	0.18083	0.07864	0.13574046
	Q	1.2024054	2.11156	1.97124	9.06684	1.53223836
	V	3.1704315	5.20107	4.7264	10.7521	3.32055274
A2Z Infra Engineering Limited	A	0.40010293	0.34411	0.45154	0.49376	0.40109094
	E	0.24257419	0.47199	0.32098	0.29305	0.13948106
	I	-0.2718948	0.07447	0.01117	0.0249	-0.0469404
	M	0.23240041	0.17625	0.12929	0.09239	0.23838335
	Q	0.508333	0.50772	0.26245	0.40447	0.25426023
	V	0.56973961	1.93242	1.36785	1.54447	0.91871543
Aaron Industries Limited	A	0.39911168	0.39822	0.68627	0.93827	0.32536383
	E	0.33629442	0.31352	0.36166	0.06173	0.11070686
	I	0.16180203	0.12705	0.32244	0.14815	0.15072765
	M	0.33375635	0.3265	0.40959	0.11728	0.52182952
	Q	1.35786802	1.19877	2.56427	2.96296	1.2952183
	V	3.04045685	2.72954	5.20136	4.7316	2.64984823
Atlanta Limited	A	-0.2365347	0.07781	0.11547	0.12589	-0.1883886
	E	0.9064138	0.68243	0.68179	0.62029	0.86803615
	I	0.00392092	0.01371	-0.0155	0.18024	-0.0031007

	M	0.04963061	0.03551	0.03433	0.02869	0.05050897
	Q	0.07123695	0.02662	0.18685	0.27971	0.03337345
	V	1.09902076	1.14192	1.24931	1.91091	1.04259734
Manugraph India Limited	A	0.37559256	0.35979	0.1707	0.06418	0.32532872
	E	0.89352133	0.95337	0.94478	0.95842	0.81716263
	I	-0.1991005	-0.0728	-0.0801	-0.1761	-0.1777855
	M	0.0369515	0.0313	0.02833	0.02593	0.04207612
	Q	0.73550504	1.29216	0.86057	1.10158	0.20546713
	V	1.80154965	2.83575	2.13989	1.95379	1.17823744
Latteys Industries Limited	A	0.72897196	0.69744	0.62353	0.60467	0.73185776
	E	0.33752696	0.34794	0.10235	0.14458	0.35921626
	I	0.07045291	0.08495	0.15353	0.15437	0.07510885
	M	0.16534867	0.17843	0.19882	0.11596	0.16690856
	Q	0.8813803	1.05081	1.92235	2.68825	0.9829463
	V	2.55950683	2.76121	3.4379	4.19257	2.71109978
Power & Instrumentation (Gujarat) Limited	A	0.8006937	0.86876	0.91443	0.89698	0.80963391
	E	0.51387407	0.42517	0.30109	0.37416	0.43776493
	I	0.22118463	0.1911	0.19668	0.18624	0.1539499
	M	0.18783351	0.1801	0.16539	0.03289	0.13564547
	Q	2.3748666	2.24661	2.31865	2.01846	1.64624277
	V	4.89535726	4.6208	4.58344	4.25097	3.8184501
Felix Industries Limited	A	0.58377801	0.59659	0.80063	0.80754	0.52794411
	E	0.24439701	0.29432	0.40823	0.0377	0.16367265
	I	-0.0618997	-0.1102	0.05802	0.0873	-0.0548902
	M	0.54322305	0.57841	0.53692	0.74008	0.50798403
	Q	0.19957311	0.22273	0.55274	1.02579	0.29441118
	V	1.36372785	1.33375	2.59808	2.77874	1.28044411
Zodiac Energy Limited	A	0.91188386	0.94811	0.91023	0.85333	0.89761092
	E	0.54557731	0.52936	0.54733	0.13143	0.32520722
	I	0.16914247	0.19308	0.16431	0.14476	0.17040468
	M	0.24713032	0.29445	0.39826	0.16762	0.35665529
	Q	2.30182309	2.54545	2.08868	3.18095	2.44685519
	V	4.86403849	5.23559	4.72631	4.96406	4.75316017
Mukand Engineers Limited	A	0.51838275	0.57283	0.56532	0.55662	0.4261508
	E	-0.2930458	0.0411	0.24725	0.34759	-0.8288619
	I	-0.1892183	-0.1186	-0.0199	0.04473	-0.2523299
	M	0.13563342	0.11723	0.11615	0.10616	0.17763344
	Q	0.45336927	0.49809	0.70095	1.1162	0.3148828
	V	0.12167062	0.92138	1.72897	2.48096	-1.0605662
Marshall Machines Limited	A	0.37882732	0.42904	0.55593	0.51504	0.30835544

	E	0.33122598	0.31689	0.32928	0.23279	0.38129973
	I	0.10561547	0.15487	0.22434	0.1417	0.05128205
	M	0.18036445	0.19243	0.04491	0.05234	0.16080902
	Q	0.74067187	0.86272	1.24554	1.45142	0.74204244
	V	2.11499008	2.4469	3.13968	2.89294	1.91086273
Nitin Fire Protection Industries Limited	A	0.34963913	0.43914	0.28022	0.30423	0.27264022
	E	0.7914996	0.87739	0.86515	0.85769	0.85978112
	I	-1.0852713	0.63562	0.79987	0.60396	-1.7751026
	M	0.13699546	0.12261	0.13485	0.14231	0.14021888
	Q	3.59182037	6.88337	8.04095	7.9042	0.75499316
	V	1.61669687	10.8029	12.3009	11.5406	-3.4886073
Perfect Infraengineers Limited	A	0.58856683	0.62551	0.60949	0.69917	0.60216049
	E	0.26999463	0.31511	0.28687	0.22863	0.35709877
	I	0.03650027	0.06189	0.07115	0.10124	0.01851852
	M	0.26999463	0.31605	0.30702	0.31992	0.34135802
	Q	0.14573269	0.317	0.32716	0.64564	0.04012346
	V	1.5123073	1.90232	1.87885	2.33014	1.52854012
Premier Limited	A	0.06537112	0.06831	0.30679	0.34864	-53.191283
	E	-0.108637	0.27253	0.36757	0.44907	-55.864407
	I	-0.3527665	-0.1036	-0.0511	0.03808	8.34140436
	M	0.08205128	0.05382	0.04036	0.0363	7.36077482
	Q	0.04453441	0.03553	0.05157	0.11937	2.38983051
	V	-1.1440553	0.18957	0.78977	1.31376	-107.70917
Debock Sales And Marketing Limited	A	0.58335653	0.6164	0.57306	0.57506	0.43302713
	E	0.42276649	0.41237	0.38801	0.0291	0.3706473
	I	0.03395491	0.04259	0.06735	0.06882	0.07968383
	M	0.22877818	0.23655	0.18536	0.04619	0.1756035
	Q	0.51962149	0.58129	0.5434	0.74226	0.65755181
	V	2.0603209	2.1802	2.10721	1.72716	2.06375176
Accord Synergy Limited	A	0.86632391	0.8616	0.80456	0.82726	0.70565553
	E	0.56849064	0.50477	0.44813	0.22942	0.71036847
	I	0.12559677	0.21292	0.18941	0.3556	0.09854327
	M	0.12743298	0.12739	0.14938	0.16869	0.14867181
	Q	2.45574734	2.84655	2.4025	4.32321	1.67352185
	V	4.77969629	5.36338	4.70763	6.90749	3.9275467
Transwind Infrastructures Limited	A	0.56932515	0.55953	0.55783	0.53372	0.53542857
	E	0.52453988	0.52067	0.46838	0.59302	0.436
	I	0.02515337	0.03701	0.08319	0.12674	-0.04
	M	0.41042945	0.41271	0.3812	0.03256	0.38228571

	Q	0.49447853	0.9488	0.9265	1.28488	0.39542857
	V	2.24079387	2.71799	2.75395	3.19209	1.74531886
CCL Products (India) Limited	A	0.33590569	0.23574	0.35346	0.41815	0.33279932
	E	0.61753393	0.5908	0.62906	0.80337	0.67194718
	I	0.25420326	0.17721	0.17436	0.25149	0.16850466
	M	0.02145777	0.02526	0.02947	0.04184	0.01982802
	Q	0.66336857	0.768	0.91322	1.11223	0.59243391
	V	2.78208494	2.47719	2.81021	3.59264	2.49988892
National Fertilizers Limited	A	0.62119412	0.62131	0.45825	0.5102	0.23132938
	E	0.11366958	0.15027	0.18728	0.14891	0.26226556
	I	0.01243693	0.06812	0.06597	0.05776	0.09951631
	M	0.038986	0.04265	0.06138	0.05468	0.07654548
	Q	1.04385667	1.0806	1.11891	0.84709	1.85764706
	V	2.01181665	2.28584	2.18442	1.89038	2.87488756
Tata Coffee Limited	A	0.25925893	0.26796	0.34581	0.32791	0.39206935
	E	0.8783189	0.86977	0.8585	0.86967	0.888186
	I	0.08350032	0.09688	0.08403	0.18854	0.10223396
	M	0.0167108	0.01707	0.01779	0.01849	0.01546716
	Q	0.64359837	0.6422	0.67179	0.77092	0.6099427
	V	2.46928949	2.51074	2.57596	3.01443	2.66992876
Apcotex Industries Limited	A	0.32569958	0.34994	0.34115	0.37565	0.26082175
	E	0.78476724	0.92853	0.87759	0.84672	0.90126776
	I	0.08805421	0.22632	0.21763	0.1881	0.18823889
	M	0.0337818	0.03601	0.03856	0.04148	0.03167863
	Q	1.61572792	2.17277	1.9565	1.54606	1.6515656
	V	3.41447379	4.65892	4.33388	3.82632	3.86487051
Thangamayil Jewellery Limited	A	0.80591236	0.77844	0.78974	0.66675	0.8508587
	E	0.42974914	0.48386	0.38958	0.50548	0.45743534
	I	0.18855002	0.17762	0.1325	0.14961	0.22514446
	M	0.02856251	0.03699	0.03448	0.05114	0.02208309
	Q	3.52234829	3.89138	3.46651	4.84331	2.92716767
	V	5.72692212	6.10735	5.41408	6.87063	5.34190697
Harrisons Malayalam Limited	A	-0.258896	-0.2382	-0.1741	-0.1896	-0.1972366
	E	0.2485943	0.24931	0.33723	0.34054	0.3670665
	I	0.10342705	-0.0418	0.0677	0.07281	0.20517006
	M	0.07572337	0.07641	0.07292	0.0748	0.07003492
	Q	1.58957521	1.46499	1.51488	1.48636	1.71238233
	V	2.01208578	1.43451	2.04374	2.01929	2.70696132

Madhya Bharat Agro Products Limited	A	0.32425292	0.27722	0.19396	0.21367	0.2874818
	E	0.63670522	0.66234	0.59291	0.59002	0.57973981
	I	0.1	0.08	0.1	0.2	0.1
	M	0.12863265	0.15292	0.15493	0.16194	0.09966339
	Q	0.6	0.6	0.5	1.3	0.5
	V	1.3576704	1.35169	1.15579	1.1796	1.21641194
Aries Agro Limited	A	0.76620065	0.7828	0.78588	0.77306	0.7534139
	E	0.47678599	0.44912	0.44968	0.49262	0.5363142
	I	0.14936242	0.15661	0.15693	0.15949	0.1692145
	M	0.03994469	0.0406	0.04389	0.05245	0.03927492
	Q	1.14149639	1.00047	1.06844	1.06645	1.43353474
	V	3.24415886	3.10876	3.18416	3.24049	3.66901057
Agro Phos India Limited	A	0.79552213	0.78018	0.75509	0.69391	0.7483538
	E	0.3174742	0.26659	0.2607	0.28274	0.38049475
	I	0.117894	0.07802	0.08899	0.09892	0.09841609
	M	0.35455659	0.37475	0.38543	0.33812	0.36074035
	Q	0.90851845	1.16343	0.95893	1.07406	0.73393842
	V	2.90848452	2.95402	2.75398	2.8308	2.70513899
Agri-Tech (India) Limited	A	0.50505331	0.49862	0.3096	0.23178	0.60314735
	E	0.9379694	0.93587	0.94221	0.92928	0.79370529
	I	0.0043579	-0.0032	0.18944	-0.1489	-0.0237482
	M	0.0550765	0.05466	0.05687	0.06732	0.05665236
	Q	0.00352341	0.00156	0.00147	0.00045	0.00181211
	V	1.97016801	1.93229	2.35134	1.1285	1.79239685
Norben Tea & Exports Limited	A	0.02631579	0.05888	0.07189	0.09346	0.01638598
	E	0.08910434	0.16078	0.18599	0.19758	0.1411015
	I	-0.0369344	0.00906	0.02041	0.03099	0.08966773
	M	0.54247461	0.53216	0.54499	0.56901	0.53482021
	Q	0.22483841	0.24457	0.21521	0.2276	0.33955394
	V	0.5845397	0.88925	0.956	1.05982	1.17321529
Bohra Industries Limited	A	0.57112172	0.69131	0.72737	0.81302	0.57406496
	E	-0.3235084	0.20158	0.4343	0.43167	-0.367372
	I	0.00560859	-0.0029	0.13775	-0.095	-0.0306348
	M	0.18186158	0.12423	0.10181	0.1102	0.1875
	Q	0.00453461	0.00139	0.00107	0.00029	0.0023376
	V	0.36458974	1.17829	1.99759	1.33283	0.18829737
Som Distilleries & Breweries Limited	A	0.28604463	0.26399	0.41992	0.54733	0.1665441
	E	0.65053208	0.70264	0.63631	0.51802	0.62437376
	I	0.07280769	0.10058	0.26786	0.16008	-0.0208668
	M	0.07294239	0.08194	0.13114	0.12583	0.07466562

	Q	0.72369898	0.81301	1.67081	1.11898	0.41584318
	V	2.26100456	2.49377	4.0265	3.10364	1.4653423
Mcleod Russel India Limited	A	-0.0675615	0.00933	0.30744	0.26154	-0.0961517
	E	0.41963376	0.48409	0.61801	0.65358	0.42152954
	I	0.04922036	0.09751	0.08944	0.05131	0.02771097
	M	0.01378952	0.01559	0.01926	0.02118	0.01405188
	Q	0.22618186	0.39199	0.56174	0.57493	0.29913585
	V	0.90307005	1.41164	2.10201	1.98525	0.87347338
Euro India Fresh Foods Limited	A	0.57214555	0.57938	0.55805	0.6822	0.60913651
	E	0.4468005	0.4633	0.4522	0.33473	0.39417227
	I	0.03726474	0.04425	0.04589	0.03141	0.04376134
	M	0.31116688	0.32567	0.3261	0.25293	0.26470274
	Q	1.1642409	0.93999	0.72413	0.49006	1.04845768
	V	2.7848458	2.62437	2.37325	2.03225	2.63344829
Jayshree Tea & Industries Limited	A	0.26757185	0.26901	0.24043	0.23712	0.26872389
	E	0.32481938	0.32892	0.35872	0.3766	0.49967593
	I	0.03946852	0.05767	0.05007	0.04413	0.15998128
	M	0.02099173	0.01863	0.01979	0.02116	0.02599741
	Q	0.70722063	0.72352	0.75527	0.78887	0.966333
	V	1.62518791	1.70759	1.72235	1.7582	2.5309183
Dhunseri Tea & Industries Limited	A	0.04809511	0.06977	0.06908	0.06258	0.05470928
	E	0.9109764	0.92976	0.92747	0.92816	0.96004286
	I	0.12549193	0.00868	0.01698	0.02887	0.06278587
	M	0.00967978	0.01086	0.01074	0.01093	0.00962872
	Q	0.24493572	0.28016	0.27127	0.29269	0.34092002
	V	1.99770312	1.70042	1.71484	1.76876	1.96326085
KCP Sugar and Industries Corporation Limited	A	0.58964403	0.54017	0.39917	0.4199	0.5284957
	E	0.46012739	0.5152	0.51848	0.61139	0.4751362
	I	0.00803382	0.09004	0.01504	0.20035	0.0649889
	M	0.02169131	0.0231	0.02412	0.02799	0.02080085
	Q	0.67816905	0.64747	0.69164	1.00383	0.54916815
	V	2.06876845	2.32731	1.95993	3.04061	2.07494838
Rana Sugars Limited	A	0.14536392	0.4267	0.45	0.49129	0.17953608
	E	0.04771924	-0.3063	-0.1962	-0.0864	0.32955516
	I	0.57406083	0.03126	0.01374	0.05489	0.31963744
	M	0.40636937	0.24805	0.22727	0.16181	0.36542968
	Q	2.68279779	1.37497	1.1371	1.14957	2.21980637
	V	5.05958101	1.70883	1.58293	1.89527	4.16846844

Company						
Pioneer Distilleries Limited	A	0.01469309	0.10403	0.07615	-0.4848	-0.0512874
	E	-0.6114126	-0.1165	0.02982	-0.2328	-1.0039293
	I	-0.1665117	-0.1433	0.30495	-0.0965	-0.18764
	M	0.04024109	0.0284	0.03291	0.05362	0.04625513
	Q	0.51437824	0.29283	0.33077	0.38539	0.57698273
	V	-0.8498262	-0.2015	1.48965	-0.8089	-1.4820991
Magadh Sugar & Energy Limited	A	0.44270353	0.35392	0.31807	0.28353	0.42413088
	E	0.44180675	0.44724	0.43498	0.44691	0.45577655
	I	0.1319532	0.08945	0.05622	0.16262	0.08185614
	M	0.01192037	0.01009	0.01058	0.01151	0.01181472
	Q	0.77508651	0.74056	0.75379	0.7779	0.79821899
	V	2.36668289	2.09189	1.93557	2.28656	2.2216791
Mawana Sugars Limited	A	0.43061761	0.15353	-0.0459	0.13343	0.44122039
	E	0.33689296	0.53979	0.6232	0.5106	0.51645536
	I	0.0200138	0.14106	0.06825	0.833	0.20758059
	M	0.04736479	0.0587	0.07681	0.06633	0.05727169
	Q	1.40561549	1.74784	2.63912	2.01889	2.15048458
	V	2.48706556	3.18675	3.72517	5.68052	4.12021505
Dangee Dums Limited	A	0.02865571	0.12099	0.14774	0.00044	0.01957364
	E	0.26127265	0.47189	0.12512	-0.3289	0.16802326
	I	0.02893665	0.07625	0.11381	0.10141	-0.1606589
	M	0.14426183	0.19977	0.18167	0.02293	0.19903101
	Q	0.49655851	0.74538	0.8732	0.87698	0.26046512
	V	1.07827855	1.92195	1.70935	0.76456	0.10816977
Umang Dairies Limited	A	0.35732714	0.29	0.37827	0.19268	0.34736655
	E	0.4127967	0.45981	0.3771	0.44739	0.45190514
	I	0.06647747	0.1049	0.0885	0.04808	0.08730793
	M	0.09459924	0.10917	0.09893	0.13457	0.09769962
	Q	2.10491916	2.22956	2.20604	2.56117	2.20206057
	V	3.38565738	3.63073	3.53711	3.65559	3.59610152
Ponni Sugars (Erode) Limited	A	0.26108428	0.15886	0.0363	0.17336	0.22972526
	E	0.8737928	0.8523	0.92606	0.79435	0.95636604
	I	0.14109599	0.04641	0.02022	0.08626	0.08765911
	M	0.03146035	0.0258	0.03014	0.02755	0.02587945
	Q	1.13582821	0.55456	0.68676	0.80341	0.77105715
	V	3.15579642	2.1065	2.11093	2.42394	2.6896716
SKM Egg Products Export (India) Limited	A	0.60924729	0.53698	0.54854	0.54347	0.51297701
	E	0.4382091	0.49195	0.47229	0.47126	0.49192858
	I	0.08612907	0.08283	0.06866	0.04005	0.13575951
	M	0.16060754	0.18998	0.19586	0.19784	0.15019109

	Q	1.66152251	2.06638	2.09827	1.46856	1.4005476
	V	3.38504093	3.78477	3.75972	3.02987	3.24154053
Sakthi Sugars Limited	A	-0.5024595	-0.307	-0.095	-0.1432	-0.379273
	E	-0.3938604	-0.0758	0.11584	0.2291	-0.5372041
	I	0.01990162	0.0118	0.00766	0.00386	0.0322336
	M	0.16751469	0.12218	0.09867	0.08603	0.16096484
	Q	1.13181299	0.51922	0.43902	0.67053	0.85782003
	V	0.14250939	0.15644	0.57124	0.88306	-0.1473013
K.M.Sugar Mills Limited	A	0.25925893	0.26796	0.34581	0.32791	0.39206935
	E	0.8783189	0.86977	0.8585	0.86967	0.888186
	I	0.08350032	0.09688	0.08403	0.18854	0.10223396
	M	0.0167108	0.01707	0.01779	0.01849	0.01546716
	Q	0.64359837	0.6422	0.67179	0.77092	0.6099427
	V	2.46928949	2.51074	2.57596	3.01443	2.66992876
The Grob Tea Company Limited	A	0.31984356	0.13505	0.00613	0.02944	0.45875077
	E	0.77639857	0.80128	0.82567	0.83809	0.9170068
	I	0.07328686	0.04596	0.06111	0.05975	0.35386518
	M	0.01972454	0.02185	0.02371	0.02548	0.01434756
	Q	1.40095222	1.50273	1.57102	1.63379	1.36400742
	V	3.12400289	2.94986	2.94862	3.05329	4.3733175
Golden Tobacco Limited	A	2.31240638	2.43539	2.33709	2.9394	2.33695728
	E	1.12758059	1.11759	1.09967	1.54549	1.13652519
	I	-0.028069	-0.0163	-0.0169	-0.0228	-0.1993867
	M	-0.1145555	-0.1176	-0.0997	-0.1476	-0.1225869
	Q	-0.1525236	-0.5086	-0.464	-0.3102	-0.2912398
	V	4.03976828	3.85463	3.76484	5.21713	3.37300711
The Peria Karamalai Tea & Produce Company Limited	A	0.37882732	0.42904	0.55593	0.51504	0.30835544
	E	0.33122598	0.31689	0.32928	0.23279	0.38129973
	I	0.10561547	0.15487	0.22434	0.1417	0.05128205
	M	0.18036445	0.19243	0.04491	0.05234	0.16080902
	Q	0.74067187	0.86272	1.24554	1.45142	0.74204244
	V	2.11499008	2.4469	3.13968	2.89294	1.91086273
Sarveshwar Foods Limited	A	0.77834768	0.73326	0.88218	0.80229	0.80710596
	E	0.41971973	0.448	0.49086	0.22986	0.39779934
	I	0.04689504	0.08757	0.12567	0.19845	0.04418126
	M	0.11252061	0.12225	0.14724	0.14923	0.1031876
	Q	0.91239238	1.14613	1.29886	1.7116	0.95997648
	V	2.65537081	3.01444	3.54643	3.73887	2.69217345

Rajshree Sugars & Chemicals Limited	A	-0.3678224	-0.1098	0.07011	0.26445	-0.0800954
	E	0.02848482	0.12495	0.17539	0.15247	0.00519096
	I	-0.0316665	-0.0148	0.05597	0.15532	0.02970997
	M	0.0705732	0.05711	0.04775	0.03712	0.06222527
	Q	0.82042289	0.80975	0.93618	0.87831	0.80322944
	V	0.35593877	0.83737	1.47829	1.94304	0.8489571
Sanwaria Consumer Limited	A	0.91814307	0.91331	0.89769	0.87388	0.64773615
	E	0.35417778	0.26524	0.2681	0.2338	-1.8550557
	I	0.17076626	0.12042	0.08288	0.07577	-3.3405468
	M	0.04514151	0.04643	0.02615	0.02851	0.21296109
	Q	3.25256186	3.18826	2.49484	2.20738	8.28792131
	V	5.43754344	5.07761	4.23412	3.84831	-4.436189
Simbhaoli Sugars Limited	A	-0.3535286	-0.3591	-0.2794	-0.2014	-0.3438794
	E	-0.0516595	-0.0285	0.03194	0.16858	-0.0565954
	I	0.00962048	-0.014	-0.1172	0.0696	0.02573234
	M	0.03979294	0.03871	0.03406	0.02911	0.04049679
	Q	0.97307614	0.89286	0.76946	0.66035	1.2388212
	V	0.53116878	0.39816	0.1117	0.90113	0.85490829
Aurangabad Distillery Limited	A	0.41127869	0.25982	0.40495	0.52283	0.31936128
	E	0.38163934	0.39736	0.44884	0.29264	0.42807718
	I	0.12183607	0.15917	0.14913	0.0666	0.11284098
	M	0.10754098	0.13039	0.19884	0.15472	0.1091151
	Q	0.71855738	0.88536	1.21532	0.77132	0.90778443
	V	2.21225193	2.35604	2.93984	2.12027	2.32726254
Shanti Overseas (India) Limited	A	0.56626689	0.59079	0.62777	0.77235	0.55319149
	E	0.29998482	0.30591	0.24445	0.14937	0.33971631
	I	0.05693032	0.18291	0.15056	0.24295	0.03457447
	M	0.16866555	0.09851	0.11243	0.10798	0.19698582
	Q	2.21663883	2.22284	2.04057	3.29634	3.1929078
	V	3.60299059	4.02054	3.6984	5.2955	4.56143475
Dharani Sugars & Chemicals Limited	A	-0.3117065	-0.2675	0.01827	0.16894	-0.3020808
	E	-0.2857543	-0.199	0.08654	0.17653	-0.3850971
	I	-0.0725822	-0.1207	-0.0092	0.07465	-0.0865084
	M	0.0774832	0.07164	0.05081	0.04151	0.07995761
	Q	0.25665142	0.68118	0.73687	0.63661	0.07487597
	V	-0.7107402	-0.2745	0.87925	1.35709	-1.0643348
Ravi Kumar Distilleries Limited	A	0.58102203	0.56512	0.57945	0.56976	0.54956438

	E	0.3762597	0.38777	0.36292	0.36914	0.33775411
	I	0.00686703	0.03778	-0.0009	-0.0088	-0.0712488
	M	0.21403728	0.22169	0.2238	0.21886	0.23233301
	Q	0.71648979	0.76852	0.67316	0.58353	0.00212972
	V	2.09084687	2.24646	2.00712	1.88558	1.0387394
Narmada Agrobase Limited	A	0.75198238	0.74581	0.66538	0.66745	0.77740161
	E	0.03127753	0.26608	0.03231	0.05043	0.05882353
	I	0.09207048	0.06035	0.10462	0.09062	0.07829031
	M	0.5969163	0.33172	0.39923	0.14421	0.57342361
	Q	2.71277533	2.09251	2.85077	2.71316	2.46550994
	V	4.31821233	3.7561	4.27638	3.96758	4.08069149
Thiru Arooran Sugars Limited	A	-0.0390454	0.03133	0.19961	0.29143	-0.311513
	E	0.23156876	0.11715	0.16161	0.27559	0.1344895
	I	0.04658662	-0.0834	-0.0437	0.04992	-0.1131759
	M	0.02808097	0.02988	0.02836	0.02751	0.03511929
	Q	0.57208772	0.53655	0.66887	0.47019	0.61936525
	V	1.0194418	0.48019	1.00666	1.38651	0.0808065
Inox Wind Limited	A	0.48086423	0.57373	0.57978	0.62947	0.45639018
	E	0.6497056	0.64418	0.64998	0.53147	0.55963134
	I	-0.0817574	0.04115	-0.0366	0.13618	-0.0553281
	M	0.0922775	0.07991	0.08069	0.0607	0.09086368
	Q	0.21941686	0.48451	0.07724	0.78319	0.20637995
	V	1.49138945	2.2581	1.61056	2.76766	1.40926118
Shakti Pumps (India) Limited	A	0.61096575	0.64891	0.65062	0.58747	0.6186854
	E	0.52346604	0.57451	0.63776	0.65399	0.71696444
	I	-0.0250336	0.14029	0.16273	0.15171	0.27103182
	M	0.04332555	0.04155	0.05082	0.05786	0.04644816
	Q	0.84140678	1.17825	1.14241	1.28881	2.24151525
	V	2.24996122	3.24795	3.38238	3.44342	4.90772033
Wendt (India) Limited	A	0.20717032	0.18794	0.28805	0.29501	0.22918313
	E	0.98328598	0.98255	0.98166	0.9629	0.97629957
	I	0.10630119	0.16953	0.15933	0.15724	0.13548744
	M	0.01671402	0.01745	0.01834	0.01918	0.01580028
	Q	1.03025238	1.2464	1.18784	1.24161	0.95378417
	V	3.01524921	3.41618	3.44344	3.47283	3.05125826
Dynamatic Technologies Limited	A	0.26127252	0.23182	0.21037	0.17771	0.34227415
	E	0.34642869	0.48147	0.44957	0.46692	0.37508122
	I	-0.1853959	0.11367	0.06986	0.08081	0.10886292
	M	0.00727223	0.00598	0.00594	0.0062	0.00722713
	Q	0.65338778	0.55852	0.45368	0.49418	0.58562553

	V	0.84381846	1.88888	1.56918	1.63101	1.88446653
Kabra Extrusion Technik Limited	A	0.25363317	0.3019	0.27577	0.23214	0.22039929
	E	0.82935597	0.89163	0.90423	0.88719	0.86466364
	I	0.02963898	0.12889	0.09477	0.10561	0.11187982
	M	0.06099893	0.06162	0.06621	0.06714	0.05254662
	Q	0.84209117	0.94711	1.11412	1.1621	0.90347236
	V	2.44111523	3.01902	3.06233	3.07037	2.77830849
United Drilling Tools Limited	A	0.26604286	0.40351	0.56846	0.47471	0.4708747
	E	0.86809538	0.8392	0.79036	0.80778	0.81209028
	I	0.32158165	0.19825	0.11169	0.20066	0.18739464
	M	0.12254754	0.15297	0.07959	0.09144	0.09505525
	Q	0.67461515	1.177	0.57354	0.722	0.66889867
	V	3.34327347	3.58093	2.77796	3.13888	3.04564127
Jash Engineering Limited	A	0.50589159	0.44289	0.44386	0.39083	0.45236771
	E	0.59828053	0.61243	0.63777	0.60029	0.65274909
	I	0.16561927	0.14472	0.09287	0.14894	0.16450818
	M	0.05167147	0.0607	0.07159	0.0721	0.04703639
	Q	0.89975561	1.03317	0.91444	1.09393	0.86091689
	V	2.92106498	2.93501	2.68846	2.937	2.88784479
Hercules Hoists Limited	A	0.23489198	0.19007	0.21418	0.2712	0.10970413
	E	0.9885765	0.99076	0.99036	0.98934	0.99202262
	I	0.04738088	0.0377	0.0282	0.02997	0.01930728
	M	0.00947026	0.00748	0.00841	0.00942	0.00646269
	Q	0.2456348	0.23898	0.19833	0.21507	0.15827527
	V	2.07330571	1.9828	1.93975	2.02992	1.74618526
Gujarat Apollo Industries Limited	A	0.66206845	0.64074	0.6322	0.50538	0.66442673
	E	0.91914383	0.90562	0.91556	0.83027	0.92353834
	I	0.04715673	0.02778	0.06816	0.04392	0.00812453
	M	0.04745661	0.04791	0.04818	0.04376	0.04806378
	Q	0.09929902	0.11289	0.26026	0.21641	0.11074412
	V	2.36457439	2.26994	2.55424	2.15623	2.25654833
Walchandnagar Industries Limited	A	2.86700499	4.23539	6.32069	6.23807	2.1928636
	E	2.28777671	4.34367	5.41995	5.35299	1.31694412
	I	0.1946802	1.05315	0.83565	0.23777	0.14350239
	M	0.066585	0.10086	0.12445	0.11416	0.04910311
	Q	2.60783971	4.82505	6.51529	5.96925	2.10117435
	V	9.9309209	19.5197	24.5138	21.7963	7.077251
Pitti Engineering Limited	A	0.43790175	0.45816	0.45856	0.46114	0.45893994
	E	0.40416026	0.35347	0.32322	0.33583	0.38974695
	I	0.11376425	0.15844	0.09554	0.06939	0.1208838

	M	0.03378364	0.0338	0.03581	0.04583	0.02842551
	Q	1.1155135	1.42199	0.91294	0.97063	0.92484883
	V	2.60139666	3.00837	2.25156	2.2497	2.43626948
Windsor Machines Limited	A	-0.1562073	0.14799	0.16244	0.14	-0.1364106
	E	0.79577902	0.73458	0.73472	0.72931	0.81989296
	I	-0.088144	-0.0316	0.09501	0.07393	0.04941312
	M	0.04031657	0.03598	0.03138	0.03189	0.03950009
	Q	0.75657976	0.91785	0.84923	0.73726	0.87338077
	V	1.41577973	2.04013	2.40429	2.18865	2.04342815
Eimco Elecon (India) Limited	A	0.24984316	0.2684	0.26187	0.26166	0.26673615
	E	0.97280427	0.97577	0.97526	0.97623	0.97624448
	I	0.0336261	0.09895	0.06814	0.10801	0.04564125
	M	0.01809912	0.01842	0.01969	0.02066	0.01768637
	Q	0.33848808	0.58983	0.47796	0.6129	0.3857283
	V	2.12171295	2.61498	2.39377	2.66182	2.23339615
Revathi Equipment Limited	A	0.22792401	0.25371	0.29844	0.2975	0.27771371
	E	0.89137126	0.97545	0.82907	0.81411	0.8286202
	I	0.09822755	0.0744	-0.0095	0.12418	0.09000323
	M	0.01629166	0.01923	0.01738	0.01642	0.01416248
	Q	0.39821694	0.47247	0.2575	0.63281	0.39092125
	V	2.25317321	2.39915	1.7551	2.54857	2.1893632
Emkay Taps and Cutting Tools Limited	A	0.21339514	0.26039	0.20018	0.2644	0.19691252
	E	0.88786765	0.87856	0.94409	0.92318	0.92679245
	I	0.1504156	0.1183	0.23983	0.20165	0.19979417
	M	0.08527813	0.09577	0.01645	0.01987	0.07320755
	Q	0.40920716	0.58523	0.59593	0.59323	0.39176672
	V	2.45542519	2.57495	2.9586	2.87976	2.6284247
Lokesh Machines Limited	A	0.4007924	0.40884	0.40035	0.39684	0.46573995
	E	0.54473009	0.56272	0.52996	0.46698	0.53567151
	I	0.01634325	0.10292	0.09399	0.08557	0.07651839
	M	0.0805907	0.07979	0.07921	0.07297	0.07656116
	Q	0.56656612	0.84889	0.77414	0.56468	0.64251497
	V	1.91185971	2.51398	2.35342	2.02027	2.2491479
Mahamaya Steel Industries Limited	A	0.41223602	0.48087	0.4746	0.3959	0.48481173
	E	0.33892291	0.2889	0.26567	0.26551	0.37306191
	I	0.05894809	0.09513	0.08526	0.079	0.03976374
	M	0.23373204	0.22361	0.23319	0.07646	0.20815315
	Q	2.04744463	2.40497	1.58625	1.43089	1.3232254

	V	3.34934041	3.83217	2.94739	2.58283	2.68207515
Ahlada Engineers Limited	A	0.29316719	0.51169	0.44818	0.6376	0.41880864
	E	0.66630152	0.58891	0.28758	0.37865	0.58896353
	I	0.10557305	0.16544	0.17761	0.14887	0.10153778
	M	0.0884568	0.07911	0.09088	0.06907	0.07172598
	Q	0.75626455	1.27008	1.30906	1.86784	0.88297341
	V	2.44159619	3.30074	2.88882	3.69392	2.58731999
Rama Steel Tubes Limited	A	0.56063761	0.67739	0.65849	0.7215	0.54599855
	E	0.48555628	0.47882	0.50733	0.35998	0.48398211
	I	0.06994144	0.11608	0.17833	0.18618	0.077853
	M	0.05465192	0.0549	0.06693	0.07697	0.05077369
	Q	1.89824333	2.64418	2.66398	2.25403	1.96875
	V	3.51248692	4.54075	4.7904	4.28212	3.58693357
Uttam Galva Steels Limited	A	0.05585652	0.0655	-0.0226	-0.1663	0.05556177
	E	-0.67089	-0.3572	-0.041	0.09264	-0.7530067
	I	-0.1775431	-0.1758	-0.0327	-0.0031	-0.0487083
	M	0.02500598	0.02102	0.01989	0.02233	0.0265011
	Q	0.08629927	0.08224	0.35629	0.68261	0.12055148
	V	-1.356894	-0.9069	0.17539	0.61524	-1.011941
Maan Aluminium Limited	A	0.64153504	0.7396	0.72556	0.79698	0.7344329
	E	0.53529121	0.37927	0.37868	0.26841	0.41633365
	I	0.17003949	0.2155	0.20715	0.11447	0.17263678
	M	0.0834156	0.06994	0.08954	0.03448	0.0491172
	Q	6.64622409	6.7874	5.9657	3.58274	2.96708566
	V	8.77000728	8.95221	8.09788	5.30974	5.02747686
Lloyds Steels Industries Limited	A	0.81206381	0.82045	0.81425	0.79178	0.81959143
	E	0.18710535	0.17061	0.15215	0.13771	0.19345311
	I	0.03165503	0.03027	0.0293	0.01296	0.01197801
	M	0.74667664	0.77951	0.80529	0.82616	0.73730413
	Q	0.95098039	0.8476	1.09301	0.70004	0.5746985
	V	2.73892107	2.63776	2.86189	2.38074	2.3103778
Manaksia Coated Metals & Industries Limited	A	0.31100244	0.24907	0.34914	0.27433	0.3626798
	E	0.3309385	0.33386	0.35152	0.48772	0.33476228
	I	0.07455332	0.06655	0.04322	0.04083	0.09647134
	M	0.02463795	0.02632	0.02781	0.03991	0.02320556
	Q	0.92476961	1.0088	0.97427	1.55335	1.57932403
	V	2.0211704	2.00946	2.04372	2.72247	2.8139064
Visa Steel Limited	A	0.04243997	0.07903	0.12673	-0.1013	0.0608381

	E	-0.0558859	0.0032	0.04273	-0.2451	-0.3252391
	I	-0.0472064	-0.0349	-0.009	-0.0343	-0.2365693
	M	0.08033552	0.07616	0.06954	0.03558	0.10121327
	Q	0.24136041	0.5297	0.51573	0.4519	0.49533225
	V	0.10622697	0.55905	0.73926	-0.1052	-0.6074428
Shiv Aum Steels Limited	A	0.9339654	0.93289	0.92672	0.85659	0.94924922
	E	0.44219894	0.29583	0.29647	0.33668	0.4642228
	I	0.10113107	0.12534	0.12287	0.10663	0.06132036
	M	0.11310712	0.08076	0.09591	0.13229	0.11408439
	Q	2.82127412	3.00218	2.61404	3.20505	2.24049996
	V	4.95988664	4.9949	4.60156	5.13237	4.29807827
Supreme Engineering Limited	A	0.79887752	0.79375	0.72869	0.66304	0.83512847
	E	0.18243819	0.18331	0.08969	0.13123	0.14748248
	I	0.10556976	0.11682	0.14649	0.10029	0.0431482
	M	0.17760727	0.17647	0.16423	0.02865	0.16221126
	Q	1.18570617	1.22517	1.35298	1.14986	0.45412665
	V	2.85353154	2.92447	2.93357	2.47621	1.90201797
Kritika Wires Limited	A	0.7194465	0.72901	0.63166	0.70068	0.75238293
	E	0.48822225	0.42522	0.32464	0.37348	0.48777455
	I	0.08080701	0.1721	0.18312	0.13586	0.04268545
	M	0.1874934	0.16877	0.14998	0.08755	0.18389971
	Q	1.80954896	2.6092	2.96094	2.7793	1.3976378
	V	3.73374554	4.74591	4.86477	4.64106	3.23318587
Hisar Metal Industries Limited	A	0.76099531	0.74159	0.74804	0.74164	0.7753396
	E	0.24064171	0.21302	0.16411	0.12054	0.28129572
	I	0.11131725	0.13605	0.16469	0.10501	0.13281087
	M	0.05893266	0.06158	0.06325	0.06711	0.05642633
	Q	1.94084907	2.36686	2.70306	2.00323	1.59676071
	V	3.59170752	4.03854	4.4092	3.44675	3.39151714
Manaksia Aluminium Company Limited	A	0.50986209	0.49734	0.57963	0.57767	0.58371162
	E	0.54774915	0.55966	0.48353	0.47312	0.45465065
	I	0.09123081	0.07338	0.04685	0.00778	0.03916333
	M	0.03408795	0.03675	0.03425	0.03398	0.02914998
	Q	1.46396045	1.5462	1.19162	1.2369	1.20885625
	V	3.16269425	3.18919	2.73807	2.63731	2.69134121
Sagardeep Alloys Limited	A	0.537297	0.54894	0.67485	0.65833	0.44758186
	E	0.41343242	0.41275	0.38099	0.37602	0.28537098
	I	0.03440683	0.09116	0.04854	0.05755	0.02703515
	M	0.31296449	0.31795	0.33246	0.34257	0.51246621

	Q	0.93036058	1.42869	1.82456	2.1853	1.96695704
	V	2.45431324	3.15545	3.5256	3.89498	3.29830339
Bedmutha Industries Limited	A	0.20163727	0.26847	0.2826	0.26709	0.39750193
	E	-0.5064557	-0.2586	-0.0882	0.08074	0.11497599
	I	-0.0192297	-0.0123	-0.0456	0.04467	0.64275584
	M	0.06738641	0.05598	0.05099	0.05008	0.27563385
	Q	0.98835229	1.1193	1.25536	1.31141	0.96558931
	V	0.49726449	1.07135	1.34983	1.92111	3.88906701
Century Extrusions Limited	A	0.57695753	0.58348	0.52697	0.49854	0.59202596
	E	0.7977065	0.84316	0.81462	0.72482	0.8377376
	I	0.2639312	0.32208	0.16367	0.23212	0.22794004
	M	0.10016126	0.10628	0.12818	0.13163	0.08669448
	Q	1.62784447	1.49342	1.52417	1.37251	1.17477979
	V	4.36642448	4.49914	3.91248	3.82909	3.86108762
Gyscoal Alloys Limited	A	0.59510734	0.61139	0.60717	0.67078	-0.2566496
	E	0.08037943	0.19279	0.31333	0.34671	-1.5391974
	I	-0.0968547	-0.1328	-0.077	0.01639	-2.0107326
	M	0.15806291	0.14084	0.11729	0.09167	0.36934204
	Q	0.64623065	1.31584	0.70505	1.00197	0.29351377
	V	1.24746161	1.96426	1.68794	2.40038	-8.583448
Vaswani Industries Limited	A	0.49332276	0.46234	0.42676	0.36034	0.48989759
	E	0.44823483	0.43554	0.4189	0.43692	0.50069195
	I	0.06902023	0.08924	0.08347	0.0845	0.10067811
	M	0.19833399	0.20883	0.22239	0.23277	0.20758373
	Q	2.32976332	2.21899	1.75923	1.98254	2.17506228
	V	3.89371678	3.80112	3.26493	3.44315	3.91852104
S.A.L. Steel Limited	A	0.14928631	0.27225	0.26273	-0.2737	0.16956002
	E	-0.3941226	-0.5018	-0.32	-0.8906	-0.3346804
	I	0.10394626	-0.0998	0.32214	0.03102	0.07205874
	M	0.47562273	0.4945	0.42033	0.6116	0.48363595
	Q	2.28289952	3.34255	2.20668	2.59562	1.71273265
	V	2.53638489	2.93075	3.38698	1.48714	1.97391479
Oil Country Tubular Limited	A	0.00482658	0.14136	0.14994	0.25156	0.09689182
	E	-0.3850039	-0.0292	0.28731	0.37797	-0.68924
	I	-0.2430127	-0.3008	-0.1349	-0.2893	-0.1691845
	M	0.24856886	0.192	0.16761	0.14822	0.25635238
	Q	0.06201594	0.11007	0.03996	0.0244	0.01290733
	V	-1.1240602	-0.6387	0.27756	-0.0104	-1.2402687
Shah Alloys Limited	A	-0.5224342	-2.5148	-1.9175	-4.0332	-0.5406524
	E	-0.1525154	-1.6077	-1.3165	-2.7496	-0.4568923

	I	0.06784191	-0.1157	0.97872	0.66486	0.33875833
	M	0.09283136	0.18663	0.15212	0.19465	0.13889863
	Q	2.29424727	5.37299	3.68616	3.06115	3.52101017
	V	1.73108753	-0.1707	2.85949	-3.3204	3.4302987
National Steel And Agro Industries Limited	A	-0.4390639	-0.2051	3.09573	5.24941	-0.7361353
	E	-3.3089444	-1.7082	2.23386	3.63618	-5.1500555
	I	-0.1707021	-0.3851	0.35809	-0.4457	-0.2184281
	M	0.13849122	0.09516	-0.3977	-0.3898	0.17627951
	Q	4.0748475	2.31325	-16.829	-34.87	6.25289178
	V	-1.5688483	-1.5404	-9.0269	-25.15	-2.4618463
Surani Steel Tubes Limited	A	0.62435233	0.62952	0.58122	0.57726	0.68201754
	E	0.27305699	0.3763	0.1969	0.12086	0.35185185
	I	-0.0694301	0.01797	0.14237	0.17274	0.14619883
	M	0.21450777	0.20102	0.21961	0.13797	0.20175439
	Q	2.53601036	2.25759	3.81598	4.23124	2.59697856
	V	3.56456244	3.71748	5.38687	5.74174	4.508904
Ankit Metal & Power Limited	A	-0.0241083	0.05269	0.13462	0.26334	-0.1585939
	E	-1.4867191	-1.1372	-0.8437	-0.4815	-2.0083519
	I	-0.0572687	-0.1407	-0.1597	-0.3038	-0.1309226
	M	0.26229112	0.22163	0.18846	0.15085	0.32377303
	Q	1.01912675	0.64258	0.24885	0.02524	0.95879127
	V	-1.1238411	-1.2183	-1.1849	-1.2449	-2.2819537
Prakash Steelage Limited	A	1.3092	1.44667	1.38642	0.92197	1.37600321
	E	11.434	11.4515	7.78767	-0.2825	9.43699839
	I	0.0316	-0.5541	6.45876	-0.6792	-1.7869181
	M	-0.7	-0.7017	-0.4554	0.08466	-0.7022472
	Q	-1.3	-1.7237	-1.1876	0.70211	-0.9819422
	V	15.96422	13.7964	32.4207	-0.7782	7.56386316
Zenith Steel Pipes & Industries Limited	A	-8.3370474	-0.7045	0.4684	0.51729	3.17022308
	E	-51.768802	-6.8543	-1.4054	-0.9469	19.0460718
	I	-3.3509749	-2.1268	-0.1911	-0.1205	0.8700291
	M	18.2841226	2.48166	0.73749	0.59186	-6.900097
	Q	8.58495822	2.62665	0.72221	0.387	-3.1401552
	V	-73.99215	-13.347	-0.8721	-0.3607	26.062791
Grand Foundry Limited	A	1.05614035	-3.5455	-0.7901	0.24941	1.05603448
	E	5.27719298	-16.883	-4.3868	-2.4965	6.55603448
	I	0.81403509	-1.3247	-0.4691	0.07529	0.07758621
	M	-4.2701754	5.41558	1.71605	0.98118	-5.2456897
	Q	-2.4140351	33.2078	5.39918	0.58118	-0.4612069

	V	6.36802807	4.1616	-2.2145	-1.778	7.09356466
Ramsarup Industries Limited	A	-1.5540259	-1.4821	-1.1683	-0.487	-1.6823925
	E	-1.4885253	-1.3697	-0.9929	-0.3572	-1.6658791
	I	-0.0497413	-0.0631	-0.0318	-0.032	-0.0642215
	M	0.07312675	0.06962	0.05937	0.0404	0.0783848
	Q	0.00268744	0.00492	0.00986	0.02109	0.003146
	V	-4.0663519	-3.8577	-2.8516	-1.1449	-4.5128588
Ashapura Minechem Limited	A	0.32567297	1.79356	3.59367	3.14348	0.40166904
	E	-0.0602759	1.20607	2.88665	1.51736	0.07670589
	I	1.00837027	0.1856	0.4841	0.26967	0.25145541
	M	0.04308957	-0.0501	-0.146	-0.0956	0.043475
	Q	0.50979421	-0.9717	-2.0068	-1.2949	1.05311946
	V	4.1691814	3.45245	7.85887	5.43539	2.4973453
AVT Natural Products Limited	A	0.62347782	0.65199	0.49439	0.55024	0.68455231
	E	0.86264118	0.74699	0.84056	0.91239	0.84535799
	I	0.16736072	0.10391	0.125	0.17815	0.16661163
	M	0.0480472	0.04618	0.05498	0.06309	0.04190743
	Q	1.21458767	1.00185	1.0827	1.27305	1.2944527
	V	3.7503628	3.19965	3.29716	3.83518	3.87308505
Gokul Agro Resources Limited	A	0.46746911	0.50639	0.53062	0.56058	0.42894029
	E	0.39156041	0.35101	0.3237	0.34133	0.5036452
	I	0.19980567	0.17375	0.1531	0.17289	0.2399974
	M	0.14154554	0.05053	0.04793	0.05448	0.15487763
	Q	9.42235618	8.17994	7.77566	8.80071	16.6378884
	V	11.2663674	9.87453	9.39182	10.5457	18.7260001
Bcl Industries Limited	A	0.61230723	0.55907	0.54967	0.51712	0.68670893
	E	0.50175421	0.44251	0.32464	0.25559	0.56060064
	I	0.12579823	0.18846	0.12014	0.09993	0.15569783
	M	0.04833539	0.04659	0.04379	0.04331	0.05086031
	Q	2.30540902	2.38013	2.36185	2.01965	3.00577049
	V	4.18446357	4.31801	3.89633	3.35176	5.15597534
Gokul Refoils and Solvent Limited	A	0.35383959	0.34894	0.37683	0.44423	0.25903643
	E	0.89680971	0.89375	0.89223	0.40415	0.90566392
	I	0.05070357	0.01912	-0.0003	0.00227	0.01682726
	M	0.10225995	0.1053	0.1064	0.04465	0.09306698
	Q	0.06818622	0.03213	0.75252	0.39298	0.04714454
	V	1.97693689	1.82834	2.51586	1.52575	1.73724075
South West Pinnacle Exploration Limited	A	0.53823359	0.61866	0.52424	0.3259	0.57603591

	E	0.42743568	0.58546	0.49341	0.26706	0.48121547
	I	0.08911535	0.15639	0.16881	0.15136	0.12976519
	M	0.20164788	0.1206	0.12014	0.05085	0.19267956
	Q	0.6044377	0.71427	0.65317	0.78981	0.7066989
	V	2.2631929	2.86405	2.60153	2.08397	2.61476982
Raj Oil Mills Limited	A	0.00549199	0.15209	0.35884	-0.184	-0.085041
	E	-1.4270023	-1.2418	-3.7447	-0.8941	-1.3816598
	I	0.04897025	-1.3232	-1.0138	-0.1844	0.24129098
	M	0.68604119	0.56996	1.8207	0.69267	0.76793033
	Q	3.79130435	2.71445	1.45092	0.54386	5.3022541
	V	2.36952677	-2.8689	-5.6157	-1.1221	4.51759734
20 Microns Limited	A	0.35398292	0.32555	0.292	0.30166	0.3474447
	E	0.54087089	0.50019	0.44036	0.37958	0.62915193
	I	0.19192305	0.20388	0.17283	0.16022	0.15352611
	M	0.06125425	0.06563	0.06746	0.06718	0.06116081
	Q	1.70168067	1.62092	1.47306	1.36621	1.49913321
	V	3.55207636	3.42241	3.04931	2.82728	3.33871306
Shyam Century Ferrous Limited	A	0.47924784	0.45531	0.41188	0.40663	0.84927184
	E	0.78756564	0.78019	0.67498	0.57579	0.775
	I	0.00237168	0.13504	0.14476	0.07415	0.01755663
	M	0.18820939	0.18649	0.18173	0.17755	0.17977346
	Q	0.739031	1.11884	1.01096	0.72769	1.03252427
	V	2.53673344	3.31389	3.03592	2.37225	3.30141893
Mangalam Global Enterprise Limited	A	0.64517991	0.73694	0.09137	0.14463	0.74849752
	E	0.39888397	0.68673	0.60914	0.00622	0.27188398
	I	0.10255917	0.12926	0.04569	0.02177	0.08146067
	M	0.15451222	0.05293	0.0698	0.00778	0.16390123
	Q	5.51327689	7.48523	3.41244	0.41835	5.93010191
	V	7.27156966	9.78182	4.5641	0.67672	7.57016736
Shree Ram Proteins Limited	A	0.90272374	0.89012	0.87942	0.82042	0.9187806
	E	0.2807452	0.25297	0.21032	0.06641	0.27436582
	I	0.08383445	0.09398	0.07467	0.07315	0.05440587
	M	0.25256456	0.25227	0.24835	0.22485	0.23831776
	Q	1.83822662	1.86244	2.26551	2.36201	1.69737428
	V	3.74089258	3.74439	4.0084	3.81344	3.50485581
M K Proteins Limited	A	0.92493947	0.8874	0.87363	0.78745	0.94205025
	E	0.29822437	0.29926	0.23356	0.04422	0.46158078
	I	0.08010492	0.08814	0.09091	0.10842	0.27764533
	M	0.08414044	0.09622	0.08596	0.07732	0.07647167
	Q	3.91485069	3.58929	3.51268	4.67903	5.70511645

	V	5.75320783	5.41815	5.23609	6.08536	8.43819732
Cubex Tubings Limited	A	0.62064618	0.65214	0.54286	0.54805	0.56610892
	E	0.69408983	0.68612	0.66708	0.68761	0.74425853
	I	0.01907013	0.01967	0.01413	0.01115	0.04199475
	M	0.22474389	0.22435	0.22143	0.23033	0.23392388
	Q	0.94373522	1.17778	0.7913	0.7351	1.14845801
	V	2.85707045	3.11926	2.55534	2.52966	3.14753921
Rohit Ferro-Tech Limited	A	-0.3881075	0.18834	0.26286	0.3568	-0.4609369
	E	-2.9740778	-0.9723	-0.6328	-0.3627	-3.3197499
	I	-0.9693794	-0.1673	-0.1724	-0.1813	-0.1080973
	M	0.16863541	0.08337	0.06867	0.05817	0.18196939
	Q	1.09432201	0.65419	0.43062	0.3375	1.01415389
	V	-6.633981	-0.9838	-0.668	-0.3059	-4.4351738
NK Industries Limited	A	0.04809511	0.06977	0.06908	0.06258	0.05470928
	E	0.9109764	0.92976	0.92747	0.92816	0.96004286
	I	0.12549193	0.00868	0.01698	0.02887	0.06278587
	M	0.00967978	0.01086	0.01074	0.01093	0.00962872
	Q	0.24493572	0.28016	0.27127	0.29269	0.34092002
	V	1.99770312	1.70042	1.71484	1.76876	1.96326085
Impex Ferro Tech Limited	A	-0.7219274	-0.3677	-0.2086	0.19184	-0.9513412
	E	-3.2573764	-2.304	-1.8837	-0.9152	-3.9436057
	I	-0.2655487	-0.1272	-0.4424	-0.4048	-0.1089208
	M	0.93324135	0.71903	0.62402	0.40854	1.097068
	Q	0.56155806	0.81626	0.91711	0.56368	1.24828447
	V	-5.1820092	-2.8399	-3.0568	-1.5786	-5.1168191
Kokuyo Camlin Limited	A	0.50241078	0.53797	0.48729	0.44647	0.4316722
	E	0.62672292	0.55508	0.59749	0.58857	0.71088922
	I	0.04850375	0.07957	0.06415	0.03785	-0.0280983
	M	0.02628269	0.02331	0.02625	0.0271	0.03053365
	Q	1.85739741	1.60067	1.64782	1.77185	1.33261286
	V	3.51167701	3.29832	3.29487	3.271	2.77012771
Mirza International Limited	A	0.45468727	0.58704	0.57085	0.48652	0.41484463
	E	0.55405777	0.59247	0.62693	0.709	0.62322244
	I	0.10090295	0.1112	0.16344	0.19709	0.05230791
	M	0.02207826	0.02426	0.02754	0.03569	0.02445644
	Q	1.15638306	1.16129	1.11263	1.38792	1.06406855
	V	2.82275897	3.07555	3.23013	3.63476	2.62061942
Shalimar Paints Limited	A	0.15453225	0.36116	0.23039	0.39154	0.1594384
	E	0.63669363	0.61793	0.38191	0.47296	0.5701122
	I	-0.0933416	-0.1865	-0.1336	0.02206	-0.0120051
	M	0.02815806	0.02387	0.01234	0.011	0.03156793

	Q	0.99001763	0.71462	0.99818	1.01536	1.04839835
	V	1.77470486	1.41117	1.3747	2.22573	2.016157
Rushil Decor Limited	A	0.12758457	0.21107	0.29687	0.36409	0.11320385
	E	0.32719219	0.41163	0.56059	0.49579	0.36885951
	I	0.04867955	0.07867	0.18571	0.19672	0.04692051
	M	0.02288368	0.03218	0.05292	0.06413	0.02977619
	Q	0.51438468	0.74085	1.23493	1.36338	0.50624047
	V	1.29941358	1.84858	3.01937	3.1807	1.33068556
Tribhovandas Bhimji Zaveri Limited	A	0.83276616	0.88308	0.88321	0.878	0.84325358
	E	0.37479282	0.38597	0.3956	0.39176	0.47763469
	I	0.08012131	0.06901	0.07192	0.06964	0.11391835
	M	0.05883027	0.06026	0.06286	0.06548	0.06825691
	Q	1.60202067	1.60483	1.66315	1.65829	1.37934597
	V	3.42414647	3.46717	3.55022	3.5278	3.4754442
Indo-National Limited	A	0.5055841	0.52656	0.48802	0.50728	0.55455837
	E	0.83014141	0.84325	0.86654	0.88064	0.84743101
	I	0.02772942	0.13348	0.14947	0.16585	0.18622392
	M	0.01592424	0.01548	0.01673	0.0179	0.01402289
	Q	1.40018684	1.30814	1.23021	1.52069	1.44622691
	V	3.26874717	3.56901	3.53105	3.91883	3.9196068
PTL Enterprises Limited	A	-0.0276317	-0.027	0.00904	0.02409	0.04560412
	E	0.84488063	0.86045	0.85891	0.86341	0.81858196
	I	0.11708922	0.10909	0.12488	0.10141	0.13016087
	M	0.02578183	0.024	0.02479	0.02705	0.01861852
	Q	0.12312575	0.11461	0.11281	0.10924	0.08890201
	V	1.67454097	1.66114	1.753	1.6977	1.73025478
Orient Abrasives Limited	A	0.57309476	0.58066	0.50686	0.48842	0.58776692
	E	0.76330726	0.66757	0.69015	0.71405	0.83326095
	I	0.12057867	0.10196	0.09576	0.05855	0.07882736
	M	0.04142729	0.04074	0.04502	0.05024	0.04332248
	Q	1.19696131	1.0651	1.21684	0.91845	1.09363011
	V	3.3748742	3.05634	3.13309	2.72666	3.25054589
Bombay Super Hybrid Seeds Limited	A	0.77183735	0.72116	0.7172	0.66133	0.85709571
	E	0.38830321	0.40928	0.13773	0.07204	0.30429043
	I	0.11822289	0.10899	0.11654	0.12623	0.12244224
	M	0.19754016	0.19014	0.19682	0.2069	0.17310231
	Q	2.59161647	2.16232	3.35371	6.75	2.82755776
	V	4.56751381	4.07227	4.90651	8.17841	4.78717244
Superhouse Limited	A	0.50080125	0.50713	0.49569	0.47334	0.5002546
	E	0.64946511	0.5931	0.56683	0.54767	0.70650225

	I	0.08543029	0.10003	0.08205	0.08391	0.07666763
	M	0.02388583	0.02446	0.02497	0.02542	0.0244194
	Q	1.12685694	1.27235	1.23095	1.30298	1.00502557
	V	2.93219421	3.05475	2.90385	2.92857	2.86108402
Penta Gold Limited	A	0.9951143	0.99061	0.98513	0.97499	0.99410141
	E	0.15061222	0.21341	0.12412	0.10839	0.15744227
	I	0.07563786	0.10221	0.12014	0.11079	0.03093624
	M	0.07678388	0.12857	0.13442	0.14638	0.07988203
	Q	3.35924965	3.70781	3.5321	3.62017	0.96084337
	V	5.05655993	5.60605	5.3616	5.39171	2.52324222
Goenka Diamond and Jewels Limited	A	0.93865529	0.93902	0.93898	0.93811	0.95229616
	E	0.51833796	0.51847	0.51884	0.52145	0.52155576
	I	0.0011962	-5E-05	-0.0044	-0.0051	-0.0148079
	M	0.07154626	0.07154	0.07135	0.07095	0.07427366
	Q	0.02868621	0.01471	0.01454	0.00633	0.00817713
	V	1.92759223	1.91016	1.89608	1.88798	1.87680063
Silgo Retail Limited	A	0.98330097	0.95386	0.86631	0.98438	0.99126437
	E	0.42757282	0.45601	0.30214	0.14063	0.36298851
	I	0.12349515	0.20172	0.47326	0.22656	0.09034483
	M	0.25902913	0.54399	0.00267	0.00781	0.23609195
	Q	1.10330097	2.32511	4.40374	3.89063	0.73310345
	V	3.44371223	5.09789	7.42528	6.0172	2.8698646
Moksh Ornaments Limited	A	0.99227719	0.9733	0.96469	0.95722	0.99537893
	E	0.2633062	0.24816	0.25255	0.12598	0.38909427
	I	0.11323315	0.12165	0.14711	0.1562	0.12595722
	M	0.1119808	0.13387	0.17958	0.11002	0.14166887
	Q	3.58954289	4.75197	5.18343	5.10151	4.44626353
	V	5.58617251	6.74436	7.28267	7.00294	6.68166411
M.R. Organisation Limited	A	0.72002978	0.84234	0.84909	0.78516	0.74713217
	E	0.77736411	0.5248	0.39476	0.32337	0.85087282
	I	0.34847357	0.26277	0.27879	0.28904	0.44937656
	M	0.19210722	0.19097	0.20492	0.28571	0.1286783
	Q	1.48771407	1.4493	1.2089	1.21927	1.36758105
	V	4.70379896	4.17509	3.82222	3.7382	5.01414364
Kanani Industries Limited	A	0.68000588	0.69957	0.69117	0.65626	0.66835094
	E	0.48256584	0.44193	0.44851	0.49043	0.50895728
	I	0.02515816	0.02276	0.02408	0.02526	0.02648905
	M	0.14550537	0.13561	0.1401	0.15516	0.15143163
	Q	1.25996763	1.13986	1.12254	1.23502	1.18159547

Company						
	V	2.92063204	2.75339	2.74227	2.88435	2.87324805
Laxmi Goldorna House Limited	A	0.99800178	0.99719	0.99586	0.99284	0.99694056
	E	0.16829485	0.19065	0.17582	0.38241	0.22858392
	I	0.04240675	0.07002	0.04091	0.14417	0.04501748
	M	0.34080817	0.39228	0.39746	0.06748	0.45607517
	Q	1.77420071	1.87631	1.80658	5.2638	1.67373252
	V	3.55006861	3.80441	3.61943	7.50159	3.61060774
Banaras Beads Limited	A	0.48950902	0.52251	0.49577	0.6411	0.60658451
	E	0.86130927	0.83874	0.81544	0.82759	0.7987861
	I	0.07007973	0.04091	0.05205	0.06619	0.06198271
	M	0.13869073	0.14307	0.14335	0.14781	0.1215744
	Q	0.54091481	0.37468	0.51572	0.61091	0.37649439
	V	2.64809526	2.3964	2.50953	2.84536	2.49980743
Ajooni Biotech Limited	A	0.73374761	0.62043	0.53764	-0.4681	0.70512249
	E	0.35803059	0.35478	0.28596	0.13617	0.25167038
	I	0.03871893	0.03424	0.04719	0.11277	0.0481069
	M	0.40200765	0.36364	0.32921	0.07021	0.44587973
	Q	1.91347992	2.34475	2.38034	6.07021	2.27349666
	V	3.66228346	3.91477	3.77672	6.10733	3.89598931
Karuturi Global Limited	A	0.29644159	0.08465	0.07041	0.06662	0.29640355
	E	0.85547786	0.61313	0.6319	0.63631	0.85535168
	I	-0.0009602	0.01705	0.02204	0.0224	-0.0001391
	M	0.09459827	0.06556	0.0565	0.05764	0.09468499
	Q	0.00641815	0.00916	0.01056	0.01004	0.00546928
	V	1.61340095	1.06473	1.08634	1.08932	1.61499238
Sona Hi Sona Jewellers (Gujarat) Limited	A	0.99118273	0.98961	0.99052	0.97944	0.99296369
	E	0.13347522	0.11518	0.09431	0.31661	0.12693498
	I	0.04834296	0.09214	0.06679	0.07648	0.04446946
	M	0.51048951	0.32927	0.32897	0.06579	0.4725584
	Q	2.86865309	3.03433	2.66381	4.48026	1.75795103
	V	4.7078945	4.8817	4.39959	6.38623	3.55574275
Milton Industries Limited	A	0.77237852	0.78864	0.7879	0.67834	0.74132049
	E	0.34035019	0.32432	0.26316	0.22795	0.40016055
	I	0.13673028	0.09797	0.07168	0.09895	0.11057596
	M	0.33444816	0.32622	0.30342	0.13782	0.34115994
	Q	1.34094039	1.13577	0.7661	1.19818	0.84667871
	V	3.39482274	3.0541	2.49784	2.73935	2.86523801
Archidply Decor Limited	A	0.58015372	0.53545	0.50847	0.47996	0.60517986
	E	0.61199561	0.67528	0.68036	0.69789	0.63338129
	I	0.02305792	-0.0054	-0.011	-0.021	0.01899281
	M	0.07644798	0.00066	-0.0226	-0.0553	0.08014388

	Q	0.55270382	0.73616	0.83923	0.94995	0.46402878
	V	2.22708935	2.30592	2.3512	2.39948	2.18727698
Innovative Tyres and Tubes Limited	A	0.20816949	0.21382	0.21809	0.24351	0.2212651
	E	0.46946473	0.50243	0.57684	0.36891	0.41939025
	I	-0.0517615	0.02191	0.07735	0.10662	-0.0441686
	M	0.14437044	0.13228	0.1541	0.17394	0.15192974
	Q	1.19460717	1.26316	1.19505	1.34264	1.17532303
	V	2.0162759	2.37356	2.61086	2.60618	1.97221375
Lypsa Gems & Jewellery Limited	A	0.91853826	0.90553	0.90428	0.90009	0.93102789
	E	0.04682147	0.03076	0.03807	0.18663	0.04317921
	I	-0.002284	0.00692	0.00562	0.06902	-0.0030569
	M	0.56109631	0.53659	0.53445	0.38049	0.56324035
	Q	0.39398553	1.07317	1.88814	1.38374	0.16068017
	V	1.89050818	2.54658	3.3639	3.17979	1.66606018
Zodiac JRD- MKJ Limited	A	0.90804598	0.91095	0.85629	0.84112	0.94652406
	E	0.92043589	0.92013	0.9188	0.9184	0.92127154
	I	0.0105986	0.02948	0.01088	0.02576	0.00356506
	M	0.07732497	0.07792	0.07936	0.0799	0.07694593
	Q	0.18719212	0.22338	0.30642	0.27857	0.12878788
	V	2.64664069	2.74851	2.70349	2.70635	2.61220039
Party Cruisers Limited	A	0.2778828	0.26883	0.17733	0.04788	0.27884615
	E	0.48865784	0.46582	0.88372	0.8232	0.63728632
	I	0.13327032	0.33488	0.30959	0.1768	0.04326923
	M	0.38563327	0.46929	0.00727	0.00921	0.2991453
	Q	1.42627599	2.12978	2.14535	2.33149	0.47435897
	V	3.11360208	4.48906	4.61922	4.12806	2.0229765
Sri Havisha Hospitality and Infrastructure Limited	A	-0.0211823	0.21249	0.1393	0.13915	-0.027122
	E	-0.5128079	-0.5495	-0.518	-0.4403	-0.542441
	I	0.17635468	-0.0515	-0.0539	-0.445	-0.0195881
	M	1.51280788	1.20621	1.25449	1.19031	1.54244098
	Q	0.000	0.000	0.000	0.000	0.000
	V	0.74630542	0.03963	0.01675	-1.2036	0.06885987
Ace Integrated Solutions Limited	A	0.45521127	0.27327	0.50654	0.55495	0.42527409
	E	0.56169014	0.53171	0.48948	0.10785	0.58338142
	I	0.0856338	0.04801	0.1444	0.1802	0.01327178
	M	0.38309859	0.40308	0.38658	0.3413	0.39238315
	Q	0.76169014	0.3527	1.48607	1.43754	0.44200808
	V	2.60599887	1.82496	3.48618	3.05249	2.04785574

Crown Lifters Limited	A	0.15988946	0.14915	0.10548	0.16577	0.28435738
	E	0.28385314	0.31117	0.33231	0.36982	0.50341348
	I	-0.0023687	0.01827	-0.0369	0.11361	0.15405165
	M	0.04105803	0.0362	0.03365	0.02885	0.06173939
	Q	0.28385314	0.31518	0.24236	0.32612	0.36153161
	V	0.88964903	1.0115	0.73239	1.43467	1.95259187
SecUR Credentials Limited	A	0.4324856	0.54893	-1.3842	1.000	0.43605722
	E	0.55219896	0.78996	0.99507	0.55263	0.55190483
	I	0.14078966	0.17648	1.32512	0.21053	0.06982014
	M	0.06870873	0.11476	0.00493	0.02632	0.06925365
	Q	0.84361388	0.8836	4.82759	11.6053	0.7752443
	V	2.64066264	3.29862	8.93064	14.2779	2.34236312
Omfurn India Limited	A	0.57126404	0.59764	0.51676	0.59415	0.68097666
	E	0.43910164	0.38302	0.42353	0.45505	0.38395492
	I	0.09386697	0.04915	0.09941	0.13825	0.02012342
	M	0.19608408	0.18292	0.20029	0.21204	0.18272069
	Q	1.14224014	1.07548	1.12471	1.28287	0.54869869
	V	2.8687685	2.59976	2.78488	3.21509	2.07889858
Continental Seeds and Chemicals Limited	A	0.35632184	0.38731	0.85685	0.84981	0.06632911
	E	0.10163339	0.33941	0.3159	0.4192	0.10278481
	I	0.07924985	0.10459	0.11562	0.12643	0.05670886
	M	0.60496068	0.40486	0.41294	0.11882	0.50632911
	Q	5.32062916	5.54656	5.63661	5.53137	4.83139241
	V	6.5096824	7.06901	7.73077	7.62099	5.54099139
Rajdarshan Industries Limited	A	0.52044127	0.311	0.24562	0.22611	0.41671248
	E	0.79688514	0.86342	0.86035	0.85851	0.82792743
	I	-0.5081116	0.0348	0.03727	0.01456	0.05057724
	M	0.201817	0.13528	0.13965	0.14149	0.17097306
	Q	0.03893576	0.07003	0.07499	0.05551	0.000
	V	0.22338741	1.84795	1.78093	1.66164	1.92864211
Shree Rama Newsprint Limited	A	0.08946001	0.11165	0.06995	0.03276	0.09143238
	E	0.32037749	0.38466	0.3666	0.42602	0.2317475
	I	-0.0155545	0.08502	-0.01	0.01361	-0.0516903
	M	0.18342099	0.18753	0.20442	0.21354	0.18912093
	Q	0.41842913	0.64047	0.60097	0.56493	0.33955104
	V	1.03261401	1.70541	1.28733	1.37313	0.71627135
Pudumjee Paper Products Limited	A	0.21004735	0.22152	0.18358	0.20352	0.15214441
	E	0.71548372	0.70436	0.72179	0.68967	0.72934335
	I	0.12893839	0.09515	0.12096	0.13317	0.09953962

	M	0.02513161	0.02692	0.02941	0.03042	0.02301914
	Q	1.59911113	1.67036	1.54555	1.64529	1.05858977
	V	3.2918217	3.25075	3.19164	3.3111	2.60347739
Astron Paper & Board Mill Limited	A	0.36387493	0.34211	0.43648	0.41156	0.35757077
	E	0.52008184	0.50051	0.39574	0.0914	0.57900032
	I	0.13405684	0.22067	0.14326	0.14183	0.1122239
	M	0.20682293	0.22463	0.2313	0.23445	0.2126492
	Q	1.59680648	1.80643	1.25811	1.3221	1.9901221
	V	3.3264555	3.77884	2.94619	2.55131	3.72574574
Star Paper Mills Limited	A	0.1203954	0.08158	0.00852	-0.0184	0.1309058
	E	0.93264014	0.92611	0.919	0.89731	0.93737109
	I	0.0982578	0.10991	0.17243	0.18324	0.0490969
	M	0.03079928	0.03288	0.03675	0.04154	0.03009041
	Q	0.67271077	0.79567	0.81585	0.86264	0.44985254
	V	2.46493903	2.57174	2.70292	2.72558	2.09888319
Genus Paper & Boards Limited	A	0.21167953	0.17995	0.15682	0.13704	0.25130877
	E	0.80234264	0.799	0.76701	0.80241	0.83476295
	I	0.03331169	0.04722	0.06672	0.03932	0.03453191
	M	0.06183707	0.06248	0.05992	0.06573	0.06318972
	Q	0.61074633	1.04846	0.80537	0.78155	0.70223904
	V	2.13446153	2.57526	2.32272	2.23781	2.3236446
Ruchira Papers Limited	A	0.37071333	0.38859	0.31784	0.31587	0.32482397
	E	0.70199217	0.66895	0.57569	0.57763	0.68976351
	I	0.09344511	0.21434	0.22504	0.24093	0.03363537
	M	0.07083601	0.07371	0.07641	0.09937	0.06802817
	Q	1.40927148	1.50388	1.5287	1.85392	1.17061744
	V	3.18637772	3.65675	3.50301	3.89446	2.67671812
Shreyans Industries Limited	A	0.02106312	0.06373	0.05583	-0.0012	0.00070755
	E	0.71963282	0.78345	0.67333	0.63315	0.71549865
	I	0.13217818	0.32651	0.24701	0.25385	0.05013477
	M	0.049171	0.05872	0.06612	0.07855	0.04656334
	Q	1.92240091	2.43833	2.21787	2.38748	1.23460243
	V	3.4189308	4.7219	4.08012	4.15491	2.42929774
Ballarpur Industries Limited	A	-0.0874781	0.13399	0.14519	0.18486	-0.334546
	E	0.15092866	-0.0094	0.33455	0.55278	-0.0900521
	I	-0.0611368	-0.1285	0.0276	0.00932	-0.1839339
	M	0.07426726	0.03051	0.0284	0.04899	0.12097506
	Q	0.08701306	0.0503	0.12167	0.16853	0.2129537
	V	0.0360614	-0.2078	0.87226	1.22426	-0.8491842

Worth Peripherals Limited	A	0.33766938	0.39823	0.41996	0.2054	0.43155738
	E	0.68274616	0.74883	0.63192	0.48386	0.74319672
	I	0.16639566	0.20881	0.25374	0.27621	0.18286885
	M	0.14227642	0.18846	0.20123	0.18382	0.12909836
	Q	1.19909666	1.818	1.85984	2.06602	1.32032787
	V	3.19341698	4.14456	4.20468	4.00963	3.55827803
Malu Paper Mills Limited	A	0.28127357	0.27986	0.28113	0.26384	0.30230002
	E	0.11495601	0.11562	0.0594	0.05246	0.05927617
	I	0.07565982	0.16391	0.11229	0.13918	0.01412143
	M	0.14294093	0.1413	0.13529	0.12711	0.14425841
	Q	1.89618768	2.27307	2.21364	1.80791	1.43497379
	V	2.72820017	3.39416	3.08367	2.73173	2.01244123
Magnum Ventures Limited	A	0.21383037	0.22885	0.20215	0.22479	0.24244004
	E	-0.404399	-0.3092	-0.3199	-0.3089	-0.3783188
	I	-0.0383333	0.01202	0.00484	0.3802	0.00782065
	M	0.20445814	0.2323	0.24049	0.23016	0.1971204
	Q	1.01768903	1.03113	0.98563	0.78937	0.70826983
	V	0.70328425	1.05086	0.93964	2.01855	0.61292372
Indian Oil Corporation Limited	A	0.05817865	0.07037	-0.0113	-0.0536	-0.0127844
	E	0.39515029	0.50212	0.58503	0.59874	0.46648853
	I	0.0109022	0.14876	0.2096	0.18775	0.1511988
	M	0.04288904	0.04634	0.05507	0.02987	0.04227094
	Q	2.33165872	2.725	2.52329	2.3178	1.78761781
	V	3.01406253	4.02839	4.05094	3.72687	2.9478915
Hindustan Petroleum Corporation Limited	A	-0.0599032	-0.053	-0.0877	-0.0711	-0.1007283
	E	0.37978996	0.47938	0.49806	0.46261	0.43676696
	I	0.0367401	0.18104	0.21697	0.22869	0.19065205
	M	0.02109762	0.02742	0.03385	0.02432	0.01826367
	Q	3.72017738	4.95044	4.87165	4.47718	2.92987236
	V	4.31018024	6.1669	6.19513	5.80425	4.05765227
Mangalore Refinery and Petrochemicals Limited	A	0.05294118	0.16282	0.13042	0.11436	0.15429284
	E	0.29016906	0.44264	0.47871	0.44549	0.23247511
	I	-0.154805	0.05205	0.19568	0.3241	0.00041217
	M	0.08456172	0.08645	0.09041	0.09387	0.07054553
	Q	2.46072304	3.0611	2.49923	2.31416	1.29535976
	V	2.467909	4.09676	4.02344	4.19863	1.84836843
Gulf Oil Lubricants India Limited	A	0.73343138	0.66966	0.62642	0.70348	0.72063209

	E	0.65765908	0.65949	0.63512	0.64105	0.7908537
	I	0.25330672	0.33185	0.34901	0.35556	0.26080474
	M	0.00877124	0.01139	0.0138	0.01849	0.00925858
	Q	1.43924473	1.95042	1.84959	2.02408	1.52058791
	V	4.07982077	4.77729	4.64862	4.94815	4.3572318
Chennai Petroleum Corporation Limited	A	0.02045262	0.19077	0.15316	0.24216	0.17202834
	E	0.10421788	0.30885	0.43179	0.3521	0.11896806
	I	-0.25982	0.01202	0.20731	0.18233	0.15415972
	M	0.07205964	0.06804	0.07558	0.01658	0.07038053
	Q	3.72605612	4.045	3.78992	3.08081	2.09835946
	V	3.07860794	4.78273	5.30391	4.4729	3.0202058
GP Petroleums Limited	A	0.68347978	0.77459	0.74893	0.68701	0.76090373
	E	0.73711438	0.52937	0.53261	0.59685	0.582627
	I	0.09840618	0.09312	0.10012	0.14795	0.06977266
	M	0.09696071	0.0739	0.07958	0.09596	0.07154084
	Q	1.88371562	1.75858	1.62018	1.80815	1.71147909
	V	4.11688459	3.77909	3.64108	4.01215	3.71170418
Alpa Laboratories Limited	A	0.31127983	0.38859	0.55851	0.73136	0.39826693
	E	0.80612798	0.78933	0.75261	0.7091	0.81964149
	I	0.04772234	0.04814	0.06977	0.09901	0.0925155
	M	0.19016631	0.19518	0.19264	0.19271	0.17874437
	Q	0.77702458	0.72347	0.57013	0.58051	0.82873163
	V	2.54994604	2.5701	2.63924	2.89267	2.86586909
Lyka Labs Limited	A	-0.075998	-0.0349	0.04829	-0.037	-0.0465726
	E	-0.0559539	0.36127	0.33726	0.27426	-0.1354231
	I	-0.204054	-0.0071	-0.0172	0.08499	0.03987952
	M	0.1656033	0.1505	0.14411	0.11722	0.16398014
	Q	0.23002654	0.21341	0.20705	0.41488	0.34725863
	V	-0.5137527	0.74399	0.7667	1.10487	0.3314225
Arvee Laboratories (India) Limited	A	0.18426867	0.41152	0.47018	0.42103	0.43205805
	E	0.58550597	0.37334	0.28633	0.00514	0.34366755
	I	0.18029165	0.14218	0.17298	0.14868	0.13918206
	M	0.2434821	0.18786	0.18155	0.13875	0.36345646
	Q	2.00707026	1.8718	1.5743	1.17917	1.56266491
	V	3.78694565	3.46833	3.21757	2.26432	3.23808113
Ortin Laboratories Limited	A	0.54557552	0.58607	0.53872	0.39317	0.51896475
	E	0.18074961	0.15737	0.14715	0.1214	0.1535029
	I	0.11222	0.09191	0.09271	0.09225	0.08768407
	M	0.37569306	0.37337	0.38588	0.32489	0.37795627

	Q	3.72055888	1.75689	1.40957	1.20733	4.40406069
	V	5.22032025	3.20607	2.79811	2.34726	5.75344958
Syncom Healthcare Limited	A	1.0000	1.0000	1.0000	1.0000	1.0000
	E	-4.8231132	-1.7089	1.00614	2.04876	33.6025641
	I	-1.2983491	-3.7755	-1.8633	-0.0174	7.32692308
	M	4.71698113	2.31481	1.11576	0.68201	-25.641026
	Q	7.56132075	2.40336	1.47392	1.0728	-12.801282
	V	0.54703774	-9.8617	-1.3985	5.49182	44.2493397
Texmo Pipes and Products Limited	A	0.43292625	0.42952	0.41569	0.40945	0.43062531
	E	0.61349108	0.60165	0.57492	0.56556	0.69414082
	I	0.07966797	0.06641	0.05362	0.06025	0.11767602
	M	0.12556054	0.12758	0.12054	0.11292	0.14377154
	Q	1.56449766	1.50141	1.18269	1.23158	2.07612014
	V	3.2795728	3.15333	2.7345	2.78008	4.03718533
Tokyo Plast International Limited	A	0.67502711	0.63903	0.52192	0.47705	0.63934004
	E	0.6487256	0.59688	0.65735	0.63535	0.62451663
	I	0.01586226	-0.026	0.08369	0.1439	0.01134313
	M	0.1287961	0.12062	0.12288	0.12788	0.12245424
	Q	0.82497289	0.67268	0.8453	0.9716	0.81064707
	V	2.67201939	2.26094	2.74096	2.98415	2.56227262
Vikas EcoTech Limited	A	0.8245389	0.80403	0.8232	0.8714	0.82327755
	E	0.39869644	0.38009	0.37163	0.41789	0.35911799
	I	0.07731244	0.1294	0.19257	0.19762	0.01816106
	M	0.09703925	0.0934	0.10359	0.11141	0.09986798
	Q	0.66630842	0.81835	0.86088	1.47719	0.41452885
	V	2.5266184	2.79755	3.06576	3.82543	2.02466486
Tainwala Chemical and Plastic (I) Limited	A	0.13720042	0.134	0.11332	0.09051	0.06467662
	E	0.88479796	0.87284	0.86881	0.8516	0.89948218
	I	0.05082783	0.0235	0.08426	0.10021	-0.0028429
	M	0.10837096	0.12084	0.12304	0.13753	0.09503503
	Q	0.12249624	0.14885	0.15091	0.08478	0.06569195
	V	1.75848582	1.68152	1.85497	1.79874	1.4501526
Somi Conveyor Beltings Limited	A	4.57555178	4.37521	4.26146	3.7657	4.76315789
	E	6.48726655	5.73939	5.61036	4.9202	7.52037351
	I	0.55857385	0.48387	0.43379	0.32937	0.5
	M	4.16298812	3.88285	3.80815	3.71817	4.30560272
	Q	3.9286927	5.14941	5.43548	5.24024	3.97962649
	V	22.8386859	22.3561	22.1147	19.96	24.4533209
Beardsell Limited	A	0.42043327	0.47407	0.49903	0.42385	0.35903208

	E	0.4671035	0.44995	0.45798	0.50534	0.48227349
	I	0.09026478	0.0603	0.06532	0.21977	0.06767023
	M	0.07515378	0.07287	0.07254	0.06497	0.07906584
	Q	1.85811714	2.19943	1.90629	2.32139	1.69710186
	V	3.35768989	3.63874	3.40346	4.2994	3.07217741
Pearl Polymers Limited	A	0.23846154	0.30317	0.32224	0.38505	0.20739666
	E	0.27323077	0.37329	0.39365	0.41861	0.13071066
	I	-0.1275385	-0.0178	0.00235	0.0568	-0.1174764
	M	0.25892308	0.21974	0.198	0.19751	0.3051124
	Q	2.14661538	2.33346	2.12953	2.06959	2.02465555
	V	2.54762262	3.29079	3.19175	3.42159	2.24989703
Balkrishna Paper Mills Limited	A	-0.1011323	-0.1542	0.02314	-0.1173	-0.1129928
	E	-0.6800934	-0.3677	-0.0131	0.29343	-0.9672404
	I	-0.170542	-0.244	-0.1928	-0.0949	-0.1178975
	M	0.81891261	0.29694	0.25117	0.08209	0.87738294
	Q	1.69513355	1.79192	1.47282	1.37201	1.17027577
	V	0.548508	0.46319	0.99531	1.37663	-0.1832543
Kshitij Polyline Limited	A	0.66459075	0.69525	0.6436	0.60722	0.65320941
	E	0.27609727	0.27785	0.16526	0.07556	0.27069416
	I	0.0762159	0.11772	0.15231	0.12049	0.05489399
	M	0.257414	0.27468	0.26381	0.20422	0.25210572
	Q	0.9430605	1.13544	1.35142	1.14704	0.70432762
	V	2.53212337	2.91089	3.01468	2.50049	2.19886001
Tijaria Polypipes Limited	A	0.49204577	0.45356	0.36908	0.34838	0.5136582
	E	-0.1078705	-0.0803	-0.1671	0.10589	-0.2973233
	I	0.05498186	0.18723	-0.2069	-0.1348	-0.1029513
	M	0.39952554	0.35405	0.28926	0.23189	0.39299931
	Q	1.02414178	1.98132	0.93451	0.62444	0.85737817
	V	1.88370932	3.24147	0.63339	0.88428	0.95271846
AVSL Industries Limited	A	0.49284818	0.72576	0.82236	0.80352	0.51825902
	E	0.38845671	0.469	0.32562	0.27901	0.45286624
	I	0.17340025	0.19684	0.16425	0.08253	0.19065817
	M	0.13375157	0.22181	0.19284	0.22329	0.11316348
	Q	2.05545797	3.53933	3.68741	3.28404	1.74203822
	V	3.84113149	5.84594	5.78416	5.04192	3.69328981
R M Drip and Sprinklers Systems Limited	A	0.68103828	0.62756	0.67981	0.51839	0.66652379
	E	0.30136384	0.19718	0.35292	0.08391	0.29832833
	I	0.13066432	-0.1991	0.1283	0.16149	0.05315045
	M	0.29432468	0.32571	0.24879	0.13678	0.28675525
	Q	1.02243731	1.0852	1.58535	1.62874	0.78054008
	V	2.86835724	1.65154	3.46628	2.98165	2.34469739

AVRO INDIA LIMITED	A	0.44821092	0.46351	0.25123	0.40998	0.55279503
	E	0.62900188	0.56914	0.43448	0.16793	0.61283644
	I	0.10734463	0.10115	0.14581	0.08321	0.13923395
	M	0.20401758	0.20807	0.2335	0.23903	0.16821946
	Q	2.76647834	3.14085	2.64926	2.08623	2.75724638
	V	4.65881544	4.94936	4.17765	3.22923	4.83621791
Sanco Industries Limited	A	0.67753922	0.71611	0.7365	0.79701	0.47238856
	E	0.26001239	0.25421	0.28185	0.27532	0.03127079
	I	0.02291495	0.08069	0.14845	0.14646	-0.3093812
	M	0.10611065	0.10487	0.12093	0.14244	0.15316035
	Q	0.36921965	1.14098	2.02235	1.49411	0.03193613
	V	1.68520056	2.68425	3.86117	3.40326	-0.2865123
Niraj Ispat Industries Limited	A	0.83359253	0.83794	0.82257	0.78604	0.84933646
	E	0.68351477	0.5448	0.51734	0.49925	0.71350507
	I	0.07076205	0.07246	0.10265	0.1479	0.03981265
	M	0.0466563	0.03953	0.04079	0.04505	0.04683841
	Q	0.38880249	0.39262	0.44324	0.52928	0.27790788
	V	2.60715397	2.42332	2.51737	2.68603	2.4552256
SMVD Poly Pack Limited	A	0.50591603	0.48081	0.42762	0.37553	0.559819
	E	0.31583969	0.30971	0.37222	0.25107	0.30823529
	I	0.09026718	0.10865	0.1211	0.16724	0.07891403
	M	0.09484733	0.0973	0.13836	0.05689	0.08995475
	Q	1.10496183	0.97592	1.31459	1.52737	1.23638009
	V	2.50792176	2.40245	2.83017	2.914	2.65284507
United Polyfab Gujarat Limited	A	0.28500473	0.27235	0.15624	0.07552	0.28747008
	E	0.23030984	0.19053	0.12892	0.19872	0.16508183
	I	0.0651017	0.06061	0.02892	0.0263	0.08842745
	M	0.04127247	0.03747	0.03345	0.05493	0.13551976
	Q	1.56184957	0.8762	0.61408	0.38284	1.35700886
	V	2.46432628	1.69138	1.09693	0.87106	2.30485297
Celebrity Fashions Limited	A	0.51434644	0.57437	0.53546	0.42744	0.63700991
	E	-0.4048884	-0.6327	-0.648	-0.689	-0.4753339
	I	0.26461211	0.1231	0.0676	-0.0775	0.00247738
	M	0.79181722	0.86976	0.82144	0.51913	0.80525636
	Q	2.47077577	2.71012	2.3283	2.36982	2.50721672
	V	3.86698725	3.43895	2.77725	1.97147	3.09498309
Lagnam Spintex Limited	A	0.2976278	0.27067	0.34893	0.30694	0.37308587
	E	0.1685822	0.20275	0.19594	0.27819	0.18077311
	I	0.04555903	0.05218	0.11375	0.13458	0.08178667
	M	0.08123391	0.10078	0.15471	0.03417	0.0775306

	Q	0.8111438	0.45854	1.11242	1.12946	0.90127682
	V	1.60258624	1.29941	2.27255	2.35073	1.91757531
Nandani Creation Limited	A	0.88395336	0.87112	0.84828	0.87054	0.88798077
	E	0.10216546	0.33556	0.33632	0.53869	0.23461538
	I	0.13492504	0.14529	0.13303	0.1622	0.175
	M	0.45696835	0.17933	0.22048	0.43899	0.48221154
	Q	2.41699056	2.19331	2.5568	2.80506	2.19663462
	V	4.3377829	4.29331	4.61433	5.39972	4.45530337
Priti International Limited	A	0.40980259	0.60508	0.79493	0.76347	0.51170047
	E	0.82368958	0.79461	0.56452	0.32335	0.78939158
	I	0.21443159	0.23315	0.25576	0.06587	0.23556942
	M	0.17631042	0.20539	0.43548	0.56587	0.13468539
	Q	1.58066712	1.91911	2.23733	0.95509	1.92771711
	V	4.03742546	4.64836	5.08463	2.87988	4.50316849
Super Spinning Mills Limited	A	-0.2394762	-0.1596	-0.097	0.0774	-0.0572364
	E	0.68840626	0.65013	0.60591	0.61899	0.69865452
	I	0.95471095	1.12698	1.22203	1.13243	0.34797466
	M	0.03513255	0.02978	0.02576	0.02118	0.03915427
	Q	-0.0092622	-0.0125	-0.0309	0.02938	0.02648252
	V	3.83877004	4.44309	4.74921	4.73856	2.10769759
STL Global Limited	A	0.69145176	0.68879	0.51563	0.42733	0.70114345
	E	-0.509098	-0.7986	-2.0574	-2.6946	-0.0183212
	I	0.33682419	0.55592	0.65317	0.35615	0.49298337
	M	0.35632936	0.34089	0.55962	0.57499	0.35369023
	Q	1.20971331	1.85711	2.14864	1.72645	0.93983888
	V	2.65082589	3.60279	2.37616	-0.0146	3.59368074
Nagreeka Exports Limited	A	0.57914582	0.55159	0.51425	0.52256	0.62228199
	E	0.3531609	0.37163	0.37664	0.333	0.30636119
	I	0.05335119	0.04966	0.06122	0.05605	0.00113419
	M	0.03086898	0.03072	0.03075	0.02159	0.02838718
	Q	1.66438791	2.12714	1.92684	2.1173	1.2476425
	V	3.04670407	3.48953	3.2898	3.40636	2.44281406
Soma Textiles & Industries Limited	A	-1.0644428	-0.771	-0.3336	-0.2492	-1.6559732
	E	-1.2275967	-1.0189	-0.6106	-0.4477	-2.4541537
	I	0.08521607	-0.0383	0.10626	0.07985	-0.2063682
	M	0.56103108	0.49973	0.38653	0.30119	0.8932248
	Q	0.39226687	0.52355	0.87709	1.15399	0.30715825
	V	-1.9862603	-1.6551	0.2036	0.67122	-5.2612121
Laxmi Cotspin Limited	A	0.64434664	0.6341	0.61596	0.57008	0.63882309

	E	0.31310909	0.31871	0.27163	0.26158	0.38598678
	I	0.02368228	0.08225	0.05886	0.0582	0.05061713
	M	0.17971288	0.18391	0.17196	0.17572	0.21381374
	Q	1.58587446	1.90038	1.40168	1.17326	1.44794913
	V	2.98183653	3.48738	2.81714	2.51987	3.04879516
Vera Synthetic Limited	A	0.70047011	0.68433	0.63788	0.30522	0.7239371
	E	0.57421088	0.5	0.15505	0.46787	0.60629004
	I	0.17192747	0.16567	0.18744	0.14458	0.1613279
	M	0.33176629	0.36866	0.35329	0.36145	0.28771112
	Q	2.24311619	2.5403	2.18351	3.6988	1.63657542
	V	4.65175285	4.82686	3.99438	5.41036	4.05747816
Patspin India Limited	A	-0.1044357	0.15757	0.18793	0.25059	-0.1865246
	E	0.01431736	0.11319	0.11352	0.11363	-0.2315457
	I	-0.0477605	0.10839	0.11223	0.15171	-0.0869458
	M	0.25339024	0.18688	0.16315	0.09795	0.3026381
	Q	2.12356151	2.27089	1.9308	1.6839	0.91714144
	V	2.01058377	3.08598	2.78155	2.70144	0.26289262
Shekhawati Poly-Yarn Limited	A	-0.0587772	0.05159	0.06036	0.09989	-0.0607645
	E	-1.2231958	-0.8374	-0.7046	-0.5353	-1.476206
	I	-0.2057694	-0.0732	-0.1034	-0.3734	-0.1219645
	M	0.33937186	0.27961	0.25845	0.23092	0.37536753
	Q	1.60244167	1.19354	1.08158	0.62216	0.31242513
	V	-0.6575835	0.00788	-0.0196	-1.1016	-2.0047554
Mohit Industries Limited	A	0.66023795	0.67011	0.6608	0.62671	0.68296315
	E	0.18522229	0.16156	0.14772	0.14027	0.19431691
	I	0.09492799	0.10608	0.09116	0.09348	0.08301278
	M	0.1773325	0.15712	0.14752	0.14593	0.17570418
	Q	2.18897934	2.12461	1.64507	1.58023	1.85519295
	V	3.65804897	3.59714	3.03251	2.92311	3.3243019
Eastern Silk Industries Limited	A	0.24386623	0.1855	0.22469	0.39144	0.27314053
	E	-0.3051258	-0.3145	-0.2156	-0.2696	-0.2982992
	I	0.01750273	-0.0669	0.15998	0.23972	0.01747786
	M	0.23277075	0.23656	0.21467	0.08321	0.23348225
	Q	0.80621972	0.51807	0.37105	0.33421	0.71063563
	V	0.86829833	0.22093	0.99518	1.26725	0.81784097
Mittal Life Style Limited	A	0.98907104	0.98005	0.97794	0.95405	0.99208704
	E	0.08196721	0.27594	0.19314	0.03816	0.09446093
	I	0.12866369	0.1545	0.14657	0.11916	0.03758655
	M	0.58370591	0.40194	0.34559	0.38551	0.58110781
	Q	4.95529061	5.11631	3.92794	6.11916	2.63204748
	V	7.02678838	7.42459	6.05896	7.93586	4.42486548

Mohota Industries Limited	A	0.19144642	0.27439	0.25638	0.34533	0.17139056
	E	0.61959095	0.67461	0.67524	0.61024	0.57295488
	I	-0.0931812	0.04197	0.06127	0.05977	-0.0363263
	M	0.08122793	0.07264	0.07262	0.06796	0.08627989
	Q	0.44005899	1.07686	1.29563	1.54349	0.03173003
	V	1.27802076	2.53159	2.79309	3.04872	0.97139511
SKS Textiles Limited	A	0.86180031	0.84796	0.81789	0.78808	0.67029863
	E	0.31235767	0.41753	0.41873	0.36852	-1.6670702
	I	-0.0571737	0.10042	0.10707	0.11412	-2.4903148
	M	0.03907467	0.03691	0.0394	0.01334	0.13155771
	Q	2.24967038	1.96638	1.96544	2.03212	0.87126715
	V	3.55365348	3.92002	3.90813	3.87632	-8.7982482
Jet Knitwears Limited	A	0.91112691	0.90116	0.89365	0.86792	0.90580371
	E	0.48027017	0.44852	0.41786	0.37752	0.46095412
	I	0.11944543	0.11606	0.10357	0.11095	0.09358857
	M	0.15677213	0.16511	0.175	0.19597	0.13400182
	Q	1.59722716	1.772	1.73095	2.07829	1.20510483
	V	3.84959367	3.96161	3.83339	4.12996	3.32544333
Eurotex Industries and Exports Limited	A	-0.5151149	-0.0755	0.25807	0.28028	-0.7842787
	E	-0.1348247	0.26444	0.34898	0.46136	-0.7016525
	I	-0.5157195	-0.1706	-0.0795	-0.0436	-0.3921393
	M	0.41535671	0.23624	0.14592	0.08518	0.61366682
	Q	1.27146312	3.38291	2.67683	1.83832	1.05582849
	V	-0.9893609	3.23805	3.29746	2.72607	-1.7945351
Raj Rayon Industries Limited	A	-0.2405109	-0.1803	-0.083	-0.0332	-0.3125241
	E	-4.3690287	-3.2278	-2.2819	-1.6622	-6.1680154
	I	-0.2446962	-0.2724	-0.2294	-0.2281	-0.3350674
	M	0.35106076	0.27475	0.21215	0.17182	0.46868979
	Q	0.00000	0.10256	0.33259	0.96874	2.83526012
	V	-7.0021143	-5.367	-3.5919	-2.0489	-7.0023343
Alps Industries Limited	A	0.05479832	0.07616	0.01614	0.05668	0.13973052
	E	-3.4083001	-1.4172	-1.1797	-0.7209	-4.7171192
	I	-0.3165448	-0.0138	-0.1728	-0.1295	-0.1136721
	M	1.03584885	0.50372	0.48328	0.38335	1.35052322
	Q	1.73537234	1.10111	1.03455	1.20766	1.73791122
	V	-3.3953136	-0.536	-0.879	0.06784	-4.264921
Spentex Industries Limited	A	-0.7407922	-0.1875	0.06243	-0.1305	-1.4299848
	E	-5.3430954	-1.3805	-0.7958	-0.655	-8.5167428
	I	-1.5669612	-0.0663	-0.0104	0.05165	-0.2210046

	M	0.89119428	0.33743	0.23911	0.26988	1.36636225
	Q	4.81544724	2.94756	2.12838	2.67907	3.74398782
	V	-8.1949078	0.77074	1.19618	1.93513	-9.8086755
GTN Textiles Limited	A	0.32831058	0.27138	0.30132	0.28527	0.33633909
	E	0.15210069	0.16738	0.19184	0.19496	0.12912528
	I	0.08907995	0.04344	0.05518	0.05653	0.07621184
	M	0.07777876	0.07366	0.07017	0.08421	0.0803314
	Q	1.52535012	1.4971	1.18169	1.36204	1.42005767
	V	2.47136953	2.24315	2.03486	2.21301	2.30271781
Bhalchandram Clothing Limited	A	0.94850065	0.0041	0.22881	0.57588	0.93232413
	E	0.36636245	0.88525	0.88136	0.88358	0.29118433
	I	0.12190352	0.04508	-0.0191	0.01663	-0.1478183
	M	0.03650587	0.11475	0.11864	0.11642	0.04986643
	Q	0.89504563	0.0041	0.1822	0.78586	0.18343722
	V	2.96944394	1.46598	1.69876	2.83788	1.25182012
Gretex Industries Limited	A	0.76863753	0.75407	0.68616	0.53425	0.97720798
	E	-0.1053985	-0.0366	-0.039	-0.0509	-0.2079772
	I	-0.0488432	0.03455	0.05653	-0.3483	-0.0569801
	M	1.08226221	0.85569	0.82066	0.82387	1.1994302
	Q	2.86632391	2.88821	1.5692	0.46575	2.74074074
	V	4.12643959	4.36642	3.01539	0.37996	4.15110541
Thomas Scott (India) Limited	A	1.00000	1.00000	1.00000	1.00000	1.00000
	E	0.08220721	0.266	0.35893	0.48683	0.09692308
	I	-0.1227477	-0.059	-0.0176	0.0706	0.09384615
	M	0.38175676	0.339	0.3136	0.35722	0.52153846
	Q	2.45045045	2.162	1.89269	1.83351	3.30153846
	V	3.58707658	3.74094	3.72345	4.16055	5.25654462
GB Global Limited	A	-0.8290863	-0.6652	0.48375	0.64529	-1.1030756
	E	-3.3189648	-2.595	0.01272	0.41682	-3.94271
	I	-0.1566246	-2.1112	-0.5471	0.12217	-0.280373
	M	0.13145987	0.1098	0.02983	0.01861	0.01535464
	Q	1.16285624	1.08686	0.46539	0.92545	1.2050842
	V	-4.9177462	-10.247	-0.7242	2.69675	-6.5556236
Talbros Automotive Components Limited	A	0.4276006	0.41875	0.38333	0.38408	0.39337563
	E	0.49347243	0.49949	0.52864	0.50044	0.63913627
	I	0.07195231	0.13071	0.12846	0.10295	0.1823228
	M	0.03681073	0.0359	0.04154	0.0451	0.03766622
	Q	1.14840537	1.40343	1.32187	1.18647	1.35476394
	V	2.61076814	3.05668	2.96949	2.7136	3.34451568
Sintercom India Limited	A	0.15596097	0.19103	0.31881	0.18474	0.25920402

	E	0.52592278	0.54224	0.52608	0.30743	0.61362744
	I	0.0071277	0.10104	0.10168	0.09017	-0.0137373
	M	0.20534578	0.20241	0.20557	0.21153	0.20056519
	Q	0.45413661	0.69204	0.63107	0.72024	0.37051574
	V	1.52385643	2.13459	2.20842	1.79608	1.61527435
Shivam Autotech Limited	A	0.09570111	0.17169	0.19507	0.21398	0.20197805
	E	0.1981999	0.24937	0.28139	0.28913	0.1528225
	I	-0.0020307	0.05721	0.06276	0.02652	0.05308208
	M	0.03441867	0.03267	0.03292	0.03362	0.03285799
	Q	1.0116163	1.03807	0.91648	0.76709	0.80076559
	V	1.41687577	1.80059	1.77045	1.53559	1.45117564
Rane Engine Valve Limited	A	0.39213296	0.40706	0.38202	0.34796	0.41828654
	E	0.42374741	0.44167	0.51573	0.6094	0.416889
	I	-0.0562396	-0.0357	-0.0494	0.34983	-0.0036421
	M	0.02730708	0.02461	0.02581	0.02671	0.0284589
	Q	1.45885652	1.56155	1.45696	1.43146	1.29119553
	V	2.3519972	2.56385	2.48841	3.87119	2.38054932
Hindustan Motors Limited	A	3.26165254	3.32847	1.69827	1.41136	4.66603416
	E	14.3824153	14.0438	4.50587	3.01277	25.0759013
	I	0.08474576	-2.9458	-1.9874	0.07955	-1.199241
	M	-11.060381	-10.887	-2.9197	-1.4495	-19.812144
	Q	-0.0222458	-0.0563	0.0000	-0.0157	-0.2220114
	V	17.6705731	7.34573	0.03582	5.28863	24.6389317
Sundaram Brake Linings Limited	A	0.45387945	0.4822	0.45434	0.42463	0.46848635
	E	0.66625042	0.61326	0.60579	0.59397	0.71331679
	I	0.04545455	0.07079	0.05294	0.04333	0.03151365
	M	0.03271728	0.03088	0.03366	0.03482	0.0325062
	Q	2.14901765	2.24923	2.11564	2.01622	1.95905707
	V	3.79390493	3.93635	3.70174	3.51922	3.6414239
Autoline Industries Limited	A	-0.2369847	0.10518	0.04584	-0.059	-0.168033
	E	-0.0225953	0.19984	0.08735	0.15005	-0.1275461
	I	-0.1650861	0.10948	-0.0474	-0.163	-0.0188603
	M	0.13078189	0.08865	0.06784	0.05579	0.15571091
	Q	1.53009483	1.48275	1.24212	1.24997	1.42906
	V	0.74623457	2.30172	1.3026	0.88366	1.07861419
JMT Auto Limited	A	0.57845941	0.5815	0.54202	0.49175	0.51310697
	E	0.38442318	0.3657	0.35186	0.3434	0.28560029
	I	0.05233915	0.0652	0.08144	0.08266	-0.1130352
	M	0.16563106	0.15349	0.14867	0.14975	0.20101345
	Q	1.18371306	1.05795	0.92705	0.99364	0.70139249

	V	2.68697094	2.57393	2.42713	2.42614	1.46385193
Ndr Auto Components Limited	A	0.72315624	0.81736	0.93137	1.07214	0.64400138
	E	0.94657401	0.97938	1.01908	1.0681	0.91900997
	I	0.00859299	0.06047	0.03409	0.02657	0.06662083
	M	0.04445939	0.04869	0.0538	0.06012	0.04090753
	Q	0.7219607	0.64733	0.55701	0.44549	0.78466827
	V	2.96926235	3.22741	3.24559	3.35072	3.08769247
Pavna Industries Limited	A	0.23365724	0.15182	0.2753	0.37246	0.3623913
	E	0.33613074	0.44899	0.37591	0.32501	0.42956522
	I	0.13707303	0.22965	0.19831	0.1714	0.13271739
	M	0.0381331	0.06202	0.07553	0.08086	0.06619565
	Q	2.00530035	3.30172	3.10965	2.60256	1.86108696
	V	3.22948763	4.90424	4.66292	4.11607	3.37317152
Omax Autos Limited	A	0.43154209	0.24802	0.2608	0.13747	0.27566486
	E	0.44889974	0.55361	0.50364	0.62308	0.4716219
	I	0.0718084	0.08281	0.04922	0.09317	0.13519941
	M	0.04623665	0.05672	0.0541	0.0671	0.04037296
	Q	2.14353033	3.12605	2.63613	3.22132	0.88084408
	V	3.55240664	4.50291	3.84644	4.6031	2.34141356
Remsons Industries Limited	A	0.57124751	0.51743	0.52344	0.46702	0.34669361
	E	0.34455912	0.32875	0.28577	0.23935	0.28831256
	I	0.17997465	0.1452	0.14681	0.0197	0.13405187
	M	0.10338584	0.1171	0.1179	0.13078	0.06410688
	Q	2.88212928	3.06358	2.64567	2.71484	2.19467834
	V	4.70307478	4.69111	4.22645	3.75111	3.49298889
Uravi T and Wedge Lamps Limited	A	0.63352601	0.58701	0.60762	0.48677	0.6475243
	E	0.40092486	0.41484	0.40112	0.22819	0.3621976
	I	0.08971098	0.14787	0.16245	0.13186	0.00972191
	M	0.12716763	0.14523	0.17182	0.19739	0.12434999
	Q	0.83884393	0.9324	1.07029	1.15239	0.62943703
	V	2.53187792	2.79178	2.99912	2.6084	2.0196057
Jullundur Motor Agency (Delhi) Limited	A	0.65374365	0.55131	0.56088	0.59726	0.78257256
	E	0.95920051	0.95525	0.95247	0.9455	0.9644663
	I	0.1088198	0.14048	0.13268	0.15715	0.19124472
	M	0.03781726	0.04072	0.04279	0.0466	0.03165478
	Q	1.92994924	2.23538	2.3088	2.96779	2.23723765
	V	4.43718807	4.72007	4.77654	5.55181	5.17444074
Bharat Gears Limited	A	0.34606084	0.38707	0.45654	0.41796	0.30188679
	E	0.27406396	0.29488	0.30311	0.30135	0.29019142

	I	-0.0123635	0.15201	0.11345	0.06437	0.05948193
	M	0.03631045	0.02987	0.03541	0.04017	0.04253278
	Q	1.80624025	2.18144	2.21041	2.08969	2.29809493
	V	2.58438331	3.57615	3.57605	3.24756	3.28613902
Automotive Stampings and Assemblies Limited	A	-0.1826913	-0.0564	-0.3947	-0.0187	-0.2091687
	E	-0.8060861	-0.5318	-0.5724	0.01484	-1.3978883
	I	0.00636668	0.03584	-0.4485	0.05458	-0.1524993
	M	0.17114492	0.14689	0.20276	0.13849	0.21197541
	Q	3.9106507	4.46115	4.2291	2.65473	4.5326116
	V	2.68268695	3.85088	1.59165	2.91363	1.94397046
ASL Industries Limited	A	0.86761453	0.2294	0.27279	0.26457	0.9819506
	E	0.67077409	0.35149	0.37456	0.31221	0.67004433
	I	0.12606635	-0.0317	-0.001	0.07957	0.0310323
	M	0.32922591	0.18544	0.16779	0.12874	0.32995567
	Q	0.42401264	1.19719	1.13945	0.95371	0.33122229
	V	3.0173643	1.97008	2.08752	2.04718	2.74767384
Ultra Wiring Connectivity System Limited	A	0.45163074	0.49302	0.37992	0.40047	0.44133772
	E	0.41127695	0.38372	0.22257	0.51804	0.45723684
	I	0.08457711	0.10174	0.19462	0.14086	0.09594298
	M	0.28745163	0.30233	0.39648	0.04075	0.28508772
	Q	1.02045329	1.15581	1.83437	1.74156	1.1502193
	V	2.5887529	2.80065	3.48015	3.43493	2.80647039
Castex Technologies Limited	A	-0.1304691	-0.0832	0.09097	0.15535	-0.1458834
	E	-0.1472738	-0.0169	0.19857	0.32066	-0.2574776
	I	-0.126492	-0.178	-0.0853	-0.0497	-0.0948456
	M	0.01544123	0.01352	0.00922	0.00885	0.01724517
	Q	0.07890277	0.08036	0.17886	0.11924	0.05574729
	V	-0.6920815	-0.6226	0.29003	0.59587	-0.7824807
PAE Limited	A	1.74745418	1.87126	2.88933	3.14022	1.65384615
	E	9.9694501	10.977	20.2451	18.2103	9.96153846
	I	-0.1283096	-0.9218	0.41502	1.57565	-0.047619
	M	-2.1221996	-2.3954	-4.1186	-3.845	-1.9084249
	Q	-0.0672098	-0.0115	-0.0356	-0.1734	-0.0018315
	V	14.2902912	13.1225	30.6732	31.9821	14.6267418
The Western India Plywoods Limited	A	0.59733978	0.61268	0.60529	0.61228	0.55895126
	E	0.53869407	0.5007	0.45893	0.43691	0.58999517
	I	0.06967956	0.08521	0.06408	0.07741	0.04777224
	M	0.12832527	0.11958	0.11701	0.11632	0.13656104

	Q	1.39646312	1.38	1.21279	1.11111	1.34228728
	V	3.17298383	3.16776	2.86211	2.78164	3.07726476
Airo Lam limited	A	0.67372935	0.80422	0.80582	0.76529	0.58908598
	E	0.36864674	0.38791	0.36034	0.26688	0.39182013
	I	0.10165216	0.13248	0.13511	0.12143	0.11365947
	M	0.18917896	0.23798	0.26771	0.1246	0.16947238
	Q	1.34178333	1.7782	1.67053	1.60535	1.52231386
	V	3.11398171	3.86452	3.7468	3.37121	3.2530026
Mangalam Timber Products Limited	A	-0.4573723	-0.6983	-0.3194	-0.4917	-0.7023213
	E	-1.6294208	-1.7342	-1.1872	-1.2126	-2.1221913
	I	-0.1723902	-0.2332	-0.0834	-0.2495	-0.2733519
	M	1.07534598	1.27917	1.01429	0.38818	0.62321263
	Q	0.06834102	0.24242	0.40711	0.68742	0.12293408
	V	-2.6854434	-3.0255	-1.3054	-2.1914	-4.2191759
Vasa Retail and Overseas Ltd	A	0.8869886	0.95262	0.93903	0.98857	0.89774236
	E	0.53185781	0.39102	0.185	0.23483	0.49960159
	I	0.16163649	0.17157	0.08269	0.01319	0.13253652
	M	0.27230047	0.3606	0.3595	0.54266	0.21567065
	Q	3.16163649	3.99252	1.3679	0.37467	2.29721116
	V	5.66424279	6.46164	3.24096	2.25846	4.63841992
JIK Industries Limited	A	0.42725139	0.76332	0.71373	0.42071	0.17605538
	E	0.83074215	0.83951	0.80129	0.39581	0.84797068
	I	0.06277501	0.27627	0.20313	0.17824	0.0939324
	M	0.14388384	0.1477	0.18083	0.07864	0.13574046
	Q	1.2024054	2.11156	1.97124	9.06684	1.53223836
	V	3.1704315	5.20107	4.7264	10.7521	3.32055274
Setco Automotive Limited	A	0.58102203	0.56512	0.57945	0.56976	0.54956438
	E	0.3762597	0.38777	0.36292	0.36914	0.33775411
	I	0.00686703	0.03778	-0.0009	-0.0088	-0.0712488
	M	0.21403728	0.22169	0.2238	0.21886	0.23233301
	Q	0.71648979	0.76852	0.67316	0.58353	0.00212972
	V	2.09084687	2.24646	2.00712	1.88558	1.0387394

Table 4.4 306 Insolvent organizations

Name of company		2020	2019	2018	2017	2016
Frog Fone Private Limited	A	0.58102	0.56512	0.57945	0.56976	0.54956
	E	0.37626	0.38777	0.36292	0.36914	0.33775
	I	0.00687	0.03778	-0.0009	-0.0088	-0.0712
	M	0.21404	0.22169	0.2238	0.21886	0.23233
	Q	0.71649	0.76852	0.67316	0.58353	0.00213
	V	2.09085	2.24646	2.00712	1.88558	1.03874
Rainbow Denim Limited	A	0.55032	0.48547	0.29081	1.30948	0.52819
	E	0.30351	0.26354	0.45301	-2.9466	0.25504
	I	0.21133	0.2138	0.54727	0.31075	0.17548
	M	0.07297	0.0745	0.15435	0.44046	0.06502
	Q	1.06407	0.98477	1.33453	1.42351	0.97086
	V	2.8895	2.68554	4.21499	0.15789	2.57886
Bharani Commodities Pvt. Ltd	A	0.88747	0.70415	0.84544	0.60786	0.88095
	E	-2.4405	-2.2775	-0.4114	-0.3064	-3.9055
	I	-0.2645	-1.167	0.00987	0.06824	-0.0499
	M	0.74453	0.67375	0.29315	0.31336	1.0722
	Q	0.0208	2.10569	1.84019	1.51021	0.02688
	V	-2.7572	-3.6868	2.48541	2.22237	-3.9052
Empee Power Company	A	0.1313	0.12223	0.00548	0.22832	-0.044
	E	0.30597	0.5246	0.67444	0.68249	0.08637
	I	-0.0706	-0.009	0.03358	0.15098	-0.121
	M	0.17415	0.12045	0.15076	0.15304	0.21192
	Q	0.13641	0.000	0.20889	0.94727	0.1269
	V	0.59368	0.9237	1.36074	2.76585	-0.0773
Digicontrols Nortern Private Limited	A	7.58661	7.49027	9.77368	10.982	6.98214
	E	14.3346	14.1362	19.0579	21.5449	13.4857
	I	0.0315	0.05058	0.12105	0.13174	0.03571
	M	-6.8189	-6.7393	-9.1158	-10.371	-6.1857
	Q	-0.0394	-0.0389	-0.0526	-0.0599	-0.0357
	V	25.1457	24.8635	33.2869	37.4935	23.6293
SWE Fashions Private	A	0.03151	0.04789	0.11521	0.11202	0.05807
	E	-1.3687	0.03201	0.15184	0.19882	-2.2166
	I	-0.128	-0.1285	-0.03	-0.0331	-0.0537

	M	0.59383	0.25821	0.23584	0.00331	0.81348
	Q	0.10234	0.04535	0.04479	0.06366	0.13895
	V	-1.8421	-0.1216	0.43798	0.36897	-2.584
Delhi Diamonds Pvt. Ltd.	A	0.04244	0.07903	0.12673	-0.1013	0.06084
	E	-0.0559	0.0032	0.04273	-0.2451	-0.3252
	I	-0.0472	-0.0349	-0.009	-0.0343	-0.2366
	M	0.08034	0.07616	0.06954	0.03558	0.10121
	Q	0.24136	0.5297	0.51573	0.4519	0.49533
	V	0.10623	0.55905	0.73926	-0.1052	-0.6074
Harsh Speciality Coating Pvt. Ltd	A	0.3888	0.39135	0.385	0.49303	0.56952
	E	0.12709	0.42466	0.44203	0.15978	-0.3827
	I	-0.1532	0.19369	0.07099	0.32316	-0.2924
	M	0.10495	0.12858	0.17049	0.2643	0.08016
	Q	2.08368	1.25096	2.7235	2.41615	1.22759
	V	2.28339	3.03018	4.13816	4.45407	0.4572
Anish Trading & Mercantile Pvt. Ltd.	A	0.74312	0.78191	0.78851	0.78506	0.74307
	E	0.14739	0.17373	0.15775	0.17136	0.13349
	I	0.07379	0.11194	0.0882	0.09133	0.02654
	M	0.01937	0.01687	0.01662	0.01942	0.01956
	Q	0.13815	0.1996	0.08666	0.10125	0.03952
	V	1.49123	1.76044	1.55468	1.59616	1.21737
Kerala GAIL Gas Limited	A	0.76077	0.83526	0.87823	0.90619	0.6
	E	0.08358	0.03963	0.01427	-0.0022	0.17845
	I	0.09552	0.05429	0.0305	0.01503	0.18451
	M	0.12665	0.09267	0.07306	0.0603	0.2
	Q	2.39915	1.40593	0.83296	0.4601	4.54276
	V	3.8179	2.69707	2.05048	1.62971	6.23694
Jushi India Private Limited	A	0.9336	0.95946	0.90141	0.11809	0.95176
	E	0.15077	0.12716	0.0375	-0.4751	0.1602
	I	0.15813	0.05573	0.0632	-0.3973	0.11602
	M	0.16044	0.1726	0.26817	0.15168	0.1453
	Q	3.38378	5.18802	4.48726	6.0632	3.06907
	V	5.32991	6.79967	5.98641	4.3138	4.90245
Microsun Solar Tech Private Limited	A	0.14929	0.27225	0.26273	-0.2737	0.16956
	E	-0.3941	-0.5018	-0.32	-0.8906	-0.3347
	I	0.10395	-0.0998	0.32214	0.03102	0.07206

	M	0.47562	0.4945	0.42033	0.6116	0.48364
	Q	2.2829	3.34255	2.20668	2.59562	1.71273
	V	2.53638	2.93075	3.38698	1.48714	1.97391
Maharaja Techno Chromes Private Limited	A	0.00483	0.14136	0.14994	0.25156	0.09689
	E	-0.385	-0.0292	0.28731	0.37797	-0.6892
	I	-0.243	-0.3008	-0.1349	-0.2893	-0.1692
	M	0.24857	0.192	0.16761	0.14822	0.25635
	Q	0.06202	0.11007	0.03996	0.0244	0.01291
	V	-1.1241	-0.6387	0.27756	-0.0104	-1.2403
Vandeu International Private Limited	A	0.5243	0.58691	0.45878	0.4301	0.46559
	E	0.32568	0.4016	0.4661	0.68626	0.08114
	I	-0.1027	0.07603	0.1174	-0.0032	-0.2107
	M	0.0309	0.02496	0.02901	0.31335	0.03758
	Q	0.41293	0.56613	1.02051	0.14126	0.24007
	V	1.17735	2.09795	2.6274	1.79556	0.23945
Gena Pharmaceuticals Limited	A	0.56679	0.47124	0.44039	0.41869	0.50566
	E	0.33991	0.42625	0.41752	0.44259	0.22501
	I	0.0581	0.15264	0.16161	0.16713	0.04322
	M	0.02554	0.03363	0.03868	0.0537	0.02772
	Q	0.4473	1.09822	1.17242	1.1978	0.2086
	V	1.80993	2.78324	2.84077	2.9024	1.28944
Tejaswini Engineering Pvt. Ltd	A	0.81815	0.78328	0.73704	0.75715	0.86414
	E	0.05308	0.06959	0.07037	0.09293	0.05125
	I	0.12959	0.1487	0.1393	0.2083	0.14614
	M	0.09202	0.11307	0.161	0.167	0.09024
	Q	0.12148	0.53351	0.79432	1.00894	0.02764
	V	1.66032	2.12888	2.33278	2.8342	1.67274
Astellia Telecom Pvt. Ltd	A	0.70135	0.70917	0.72337	0.68083	0.80683
	E	-0.9856	0.44304	0.62846	1.33727	-1.3947
	I	-0.2908	0.11656	0.21786	0.27343	-0.0708
	M	0.10553	0.02395	0.03657	-0.0031	0.11525
	Q	0.13146	0.09203	0.1456	0.08551	0.10311
	V	-1.3033	1.96222	2.63422	3.67506	-1.0459
Dyno-Enpro Oil Field Chemical Private Limited	A	-0.2246	0.00296	0.19098	0.27359	-0.7371

	E	-0.8449	-0.3812	0.04012	0.05362	-2.0275
	I	-0.083	-0.2125	-0.0706	-0.0796	-0.2298
	M	0.04002	0.0339	0.02726	0.02695	0.05988
	Q	0.18637	0.306	0.35085	0.43676	0.18705
	V	-1.516	-0.9052	0.41926	0.59324	-4.2584
Hi Rise Infratech Pvt. Ltd.	A	1.28473	-24.049	0.88703	0.89556	1.12891
	E	1.12346	-93.268	0.15892	0.22214	1.04573
	I	-0.0175	-93.463	0.03681	0.12259	0.44359
	M	-0.0859	7.31707	0.07616	0.06978	-0.0451
	Q	-0.3738	71.9024	0.93501	0.60037	-0.0653
	V	2.63185	-391.64	2.38817	2.43185	4.19027
Padmavati Intermediates Private Limited	A	0.64704	0.55883	0.46185	0.49597	0.68719
	E	-0.0146	0.32535	0.39209	0.47796	-0.0136
	I	0.01436	0.21391	0.31931	0.5702	0.09612
	M	0.07586	0.00855	0.0133	0.02304	0.07407
	Q	0.23878	1.07505	1.70288	2.80335	0.28744
	V	1.08749	2.9111	3.86605	5.96033	1.45431
RJVS Traders Private Limited	A	0.32425	0.27722	0.19396	0.21367	0.28748
	E	0.63671	0.66234	0.59291	0.59002	0.57974
	I	0.00059	0.0007	0.00071	0.00074	0.00045
	M	0.12863	0.15292	0.15493	0.16194	0.09966
	Q	0.00059	0.0007	0.00071	0.00074	0.00045
	V	1.36019	1.35469	1.15883	1.18278	1.21837
Sunlight Extrusion Private Limited	A	0.03049	0.03285	0.038	0.04202	0.02264
	E	-0.1496	-0.0871	-0.0224	-0.0349	-0.2322
	I	0.04306	-0.0776	-0.1052	-0.1501	0.03373
	M	0.04028	0.03851	0.03676	0.03518	0.04248
	Q	0.09865	0.07297	0.06818	0.05934	0.09482
	V	0.09203	-0.2427	-0.2426	-0.4134	-0.0664
STL Exports Limited	A	0.14577	0.71131	0.68004	0.62488	-0.2783
	E	-1.3029	0.06239	0.17178	0.27502	-5.1452
	I	-1.0614	-0.0983	0.12057	0.10754	-1.063
	M	0.02344	0.01027	0.00477	0.00773	0.05789
	Q	0.43317	0.22833	0.66572	0.91974	0.38339
	V	-4.705	0.85086	2.12233	2.41323	-10.627
Kumaran Hi-Tech Private Limited	A	-0.3714	0.24036	0.49407	0.36864	-0.1094

	E	0.04247	0.59223	0.51711	0.4687	-0.039
	I	-1.3331	0.01568	0.11889	0.10945	-0.0036
	M	0.04668	0.02478	0.02464	0.02297	0.03403
	Q	1.44806	1.13231	1.37871	1.26166	0.60305
	V	-3.3109	2.31533	3.10127	2.7339	0.42519
Sainsons Pulp and Papers Limited	A	-0.0598	-0.0355	-0.0208	0.10606	-0.0899
	E	-0.9886	-0.408	-0.3347	-0.1377	-1.5204
	I	0.35133	-0.04	-0.175	-0.1257	0.1044
	M	0.3702	0.35424	0.33311	0.282	0.42351
	Q	0.33336	0.35688	0.16269	0.24356	0.60846
	V	0.25874	-0.1767	-0.7087	-0.0678	-1.03
Inspan Infotech Pvt. Ltd.	A	0.63749	0.62107	0.50712	0.44375	0.65017
	E	0.26701	0.2881	0.07692	0.01467	0.22472
	I	0.10636	0.13789	0.15776	0.13962	0.0914
	M	0.11256	0.13899	0.13568	0.16941	0.08351
	Q	1.61467	2.17401	2.3255	2.32815	1.42479
	V	3.17038	3.85889	3.64144	3.44125	2.86992
Coimbatore Commodities Limited	A	0.07877	0.2206	0.18705	0.12906	0.15961
	E	0.42724	0.42446	0.51151	0.13807	0.45997
	I	0.01422	0.02275	-0.0518	0.03402	0.16828
	M	0.19858	0.15579	0.13058	0.18159	0.18511
	Q	0.25219	0.06223	0.00468	0.03652	0.23508
	V	1.11069	1.08968	0.85266	0.60587	1.73674
Coastal Energy Private Limited	A	0.77529	0.77489	0.70882	0.81397	0.81558
	E	0.09623	0.10011	0.13671	0.46812	0.08409
	I	0.06288	0.04816	0.05742	0.11179	0.00191
	M	0.38491	0.38095	0.4812	0.30742	0.33636
	Q	0.49481	0.48972	0.24265	1.03668	0.43239
	V	1.99781	1.94675	1.76257	3.22115	1.7365
Siva Industries and Holdings Limited	A	0.71528	0.77618	0.84469	0.83873	0.64575
	E	0.10393	0.10717	0.08551	0.11694	-0.0908
	I	0.0288	0.04992	0.03777	0.03439	0.1074
	M	0.03196	0.03272	0.01838	0.01866	0.03662
	Q	0.22851	0.32472	0.39602	0.5184	0.27612
	V	1.34633	1.5902	1.66464	1.81274	1.30005
Deegee Cotsyn Private Limited	A	0.61383	0.62569	0.58133	0.11798	0.61021

	E	-0.0082	0.00075	0.00464	0.02196	-0.0192
	I	0.0047	-0.0037	0.00124	-0.0123	0.00672
	M	0.21033	0.2143	0.2334	0.53331	0.20498
	Q	1.41817	1.66771	4.70515	4.34499	1.38349
	V	2.28354	2.53416	5.54868	4.79242	2.2327
Icon Commodities Private Limited	A	0.53272	0.60115	0.71584	0.60338	0.43568
	E	0.00324	0.25576	0.30078	0.40612	-0.56
	I	0.25581	0.07237	0.12779	0.19409	0.46484
	M	0.36993	0.28125	0.35532	0.21097	0.58662
	Q	0.46728	0.63857	1.08416	1.90717	0.4331
	V	2.17676	2.12494	2.99808	3.96497	2.05737
Simhapuri Energy Limited	A	-0.0678	-0.1399	-0.0877	-0.6699	-0.0379
	E	0.27202	0.23613	0.26693	0.21622	0.58679
	I	0.03744	-0.0943	0.0487	0.50363	0.337
	M	0.12685	0.12039	0.09632	0.13177	0.13392
	Q	0.81083	0.28432	0.66162	1.77581	0.66059
	V	1.30916	0.20761	1.1479	3.01391	2.62838
Hindusthan Ispat Private Limited	A	-0.3017	-0.1738	-0.2033	-0.2245	-0.3316
	E	0.65665	0.66094	0.67342	0.59399	0.61192
	I	0.08169	0.03127	0.14192	0.31187	0.00913
	M	0.26556	0.27642	0.2839	0.26741	0.29959
	Q	0.51966	0.79652	0.72446	0.5166	0.26815
	V	1.5053	1.7815	2.06125	2.26794	0.93657
Aikya Infrastructure Private Limited	A	0.55165	0.54064	0.57812	0.55206	0.62189
	E	0.90775	0.90833	0.9117	0.91665	0.9135
	I	0.01981	-0.0478	-0.0103	-0.0428	0.06989
	M	0.08317	0.08421	0.07841	0.07631	0.07912
	Q	1.60804	1.69209	1.62559	1.06927	1.53479
	V	3.65454	3.50357	3.60726	2.91868	3.83652
Aster Private Ltd.	A	0.35285	0.32708	0.23695	-0.2073	0.39446
	E	0.40528	0.45572	0.31722	0.04779	0.40166
	I	0.0709	0.11632	0.17307	0.05496	0.09113
	M	0.10996	0.13498	0.15338	0.29809	0.09814
	Q	1.02683	1.31075	1.64601	0.39367	0.98215
	V	2.31657	2.80479	3.03598	0.57165	2.37647
CNN Minerals Private Limited	A	0.30022	0.31098	0.42777	0.43521	0.4207
	E	0.7314	0.65409	0.63692	0.70042	0.66275
	I	0.11919	-0.2483	-0.1179	0.01651	0.01531

	M	0.16003	0.16662	0.11487	0.10478	0.14388
	Q	0.18717	0.09957	0.12231	0.1031	0.17933
	V	2.06056	0.66886	1.20705	1.72319	1.74868
Gupta Exim India Pvt. Ltd	A	-0.1356	0.17856	0.26255	0.33577	7.23827
	E	-1.7196	-0.5705	-0.1264	0.05747	27.7934
	I	-0.376	-0.249	-0.1043	-0.0806	7.99369
	M	0.19586	0.10589	0.07296	0.05353	-1.9709
	Q	0.71859	0.5223	0.36212	0.48405	-5.1913
	V	-2.9757	-0.8207	0.19933	0.73308	67.6072
Cox & Kings Limited	A	-0.5668	-0.1302	-0.2046	-0.098	-0.7409
	E	-0.0675	0.18847	0.28763	0.40209	0.01282
	I	0.1974	0.05377	-0.092	0.00874	0.2938
	M	0.25376	0.18025	0.13967	0.12569	0.2446
	Q	1.20141	0.7991	0.77867	1.08165	1.02236
	V	1.22922	1.19147	0.71533	1.63015	1.26646
Damoh – Jabalpur Toll Roads Limited	A	0.74442	0.85994	0.40559	0.44784	0.75072
	E	0.05938	0.09763	0.38509	0.62535	0.04716
	I	0.05173	-0.1407	0.07289	0.12282	0.01826
	M	0.07341	0.06815	0.07942	0.12871	0.07429
	Q	0.1062	0.70777	0.74815	1.88118	0.15205
	V	1.29729	1.45226	2.06142	3.77473	1.22363
Shree Daksh Jyoti Silk Mills Pvt. Ltd.	A	0.83248	0.82123	0.81005	0.79995	0.84402
	E	0.81376	0.82903	0.84073	0.84707	0.79486
	I	-0.0139	-0.0139	-0.0149	-0.0079	-0.0139
	M	0.11364	0.11202	0.11044	0.10849	0.11525
	Q	0.00156	0.00205	0.00051	0.0005	0.00053
	V	2.16199	2.16953	2.16681	2.18538	2.14936
Avani Impex Private Limited	A	-0.4015	0.10087	0.46797	0.5076	-1.238
	E	-2.6701	-0.7648	-0.0487	0.19843	-5.2764
	I	-0.8071	-0.5683	-0.2102	0.08387	-0.3804
	M	0.51649	0.24584	0.14309	0.10762	0.91553
	Q	0.7934	1.30611	0.98938	1.25279	0.09805
	V	-5.7808	-1.3727	0.87387	2.47981	-9.4807
Fort Projects Pvt. Ltd	A	0.8938	0.88733	0.9675	0.96431	0.89481
	E	0.16019	0.1502	0.17201	0.19789	0.19301
	I	0.10324	0.07506	0.12679	0.13664	0.12629

	M	0.04532	0.04458	0.0489	0.0656	0.04909
	Q	4.80543	4.6665	6.19772	6.39378	5.18485
	V	6.46536	6.21137	8.04108	8.31189	6.96987
Jotesriram Himghar Private Limited	A	0.57112	0.69131	0.72737	0.81302	0.57406
	E	-0.3235	0.20158	0.4343	0.43167	-0.3674
	I	0.00561	-0.0029	0.13775	-0.095	-0.0306
	M	0.18186	0.12423	0.10181	0.1102	0.1875
	Q	0.00453	0.00139	0.00107	0.00029	0.00234
	V	0.36459	1.17829	1.99759	1.33283	0.1883
Kaygee Shoetech Pvt. Ltd.	A	1.00071	1.00071	1.00142	1.00142	1.0007
	E	1.30389	1.30475	1.30605	1.30605	1.30239
	I	0.00283	0.00425	0.00427	0.00356	0.00492
	M	-0.3039	-0.3047	-0.306	-0.306	-0.3024
	Q	-0.0007	-0.0014	-0.0021	-0.0021	0.03
	V	2.85258	2.85727	2.85851	2.85616	2.8583
Raghav Sarees Private Limited	A	0.37263	0.22312	0.01085	0.0377	0.42973
	E	0.17189	0.16448	0.34419	0.63889	0.20405
	I	0.07571	-0.0863	-0.0004	-0.001	0.06946
	M	0.13243	0.14996	0.16163	0.35317	0.14514
	Q	0.53046	0.12706	0.02752	0.07044	0.37054
	V	1.54702	0.43017	0.61807	1.21868	1.48782
Prithvi Multipurpose Cold Storage Pvt. Ltd	A	-0.0676	0.00933	0.30744	0.26154	-0.0962
	E	0.41963	0.48409	0.61801	0.65358	0.42153
	I	0.04922	0.09751	0.08944	0.05131	0.02771
	M	0.01379	0.01559	0.01926	0.02118	0.01405
	Q	0.22618	0.39199	0.56174	0.57493	0.29914
	V	0.90307	1.41164	2.10201	1.98525	0.87347
Khetan Apparels Pvt. Ltd	A	1.46268	-1.5247	-0.5988	-0.2244	1.17883
	E	2.13392	-6.3626	-0.4908	-0.2337	1.62678
	I	0.4248	-1.5713	-0.2409	-0.1596	0.63371
	M	-0.5507	3.15217	0.82862	0.61427	-0.3889
	Q	-0.8117	3.29632	0.83609	0.95845	-0.4115
	V	5.00317	-10.738	-0.8681	0.20293	5.13886
Vardhman Chemtech Limited	A	0.69431	0.69398	0.87335	0.73815	0.61544
	E	0.38538	0.35044	0.39547	0.48129	0.00715
	I	0.13505	0.0838	0.25111	0.3592	-0.3011

	M	0.06776	0.06897	0.08393	0.16064	0.08722
	Q	3.41052	2.52955	2.33193	4.06843	2.86829
	V	5.26615	4.16833	4.81031	6.90568	2.6727
Ganeshom Cereals Private Limited	A	0.7087	0.72871	0.86738	0.88319	0.7082
	E	0.44402	0.55918	0.59595	0.69945	0.27053
	I	0.02427	0.14905	0.17486	0.1531	-0.046
	M	0.10331	0.1126	0.13143	0.01366	0.11013
	Q	0.88321	0.99189	1.1947	1.13028	0.5494
	V	2.49647	3.20764	3.7246	3.68163	1.69162
Jagannath Sponge Private Limited	A	-0.9556	-0.5414	-0.3349	-0.3314	-1.146
	E	0.04298	0.1148	0.12813	0.1845	-0.136
	I	0.80783	1.015	0.97975	1.32513	-0.1871
	M	0.20615	0.118	0.07375	0.07375	0.24471
	Q	0.0028	0.0004	-0.0005	-0.0013	0.00581
	V	1.70573	2.93174	3.05445	4.27656	-2.0303
Shaifali Steels Limited	A	0.52731	0.50521	0.39468	0.39088	0.51602
	E	0.47561	0.43564	0.47476	0.51935	0.50423
	I	0.16067	0.15551	0.19227	0.16913	0.17249
	M	0.01095	0.01086	0.01291	0.01503	0.01076
	Q	0.66367	0.62363	0.69484	0.66956	0.80297
	V	2.4984	2.35888	2.47464	2.43218	2.70297
Segno Ceramics Pvt. Ltd	A	1.0000	1.0000	1.00503	1.00503	1.0000
	E	5.5446	5.63158	5.86432	5.86432	5.42009
	I	0.01878	0.04306	0.04523	0.00503	0.0274
	M	-4.5446	-4.6316	-4.8643	-4.8643	-4.4201
	Q	-4.7653	-2.9139	-4.3769	-2.0503	-27.648
	V	1.53716	3.53641	2.27423	4.46587	-21.394
Maylari Agro Products Ltd	A	0.60703	0.50564	0.36181	0.41047	0.21557
	E	0.1946	0.29614	0.27225	0.23345	-6.7186
	I	-0.0546	0.04332	0.0053	0.0077	-8.5389
	M	0.7307	0.6908	0.68592	0.59723	6.97006
	Q	0.76146	0.57864	0.61992	0.66855	41.9042
	V	2.01977	2.15687	1.86367	1.87101	8.71857
Epitome Petro-Chemical Pvt. Ltd.	A	1.00685	1.00871	1.00687	1.00694	1.00843
	E	10.4623	10.6272	10.4966	10.5955	10.3187
	I	0.01712	0.00871	0.01031	0.0625	0.01518
	M	-2.8099	-2.8589	-2.8196	-2.849	-2.7673
	Q	-1.738	-1.061	-1.4966	-0.7083	-10.211

	V	12.4898	13.342	12.7506	13.8313	3.84546
ABT (Madras) Private Limited	A	0.01469	0.10403	0.07615	-0.4848	-0.0513
	E	-0.6114	-0.1165	0.02982	-0.2328	-1.0039
	I	-0.1665	-0.1433	0.30495	-0.0965	-0.1876
	M	0.04024	0.0284	0.03291	0.05362	0.04626
	Q	0.51438	0.29283	0.33077	0.38539	0.57698
	V	-0.8498	-0.2015	1.48965	-0.8089	-1.4821
RNB Cements Pvt. Ltd.	A	0.24528	0.6126	0.67683	0.55693	0.16463
	E	-2.1122	-0.436	-0.0489	0.21849	-2.6402
	I	-1.1667	-0.3616	-0.1947	0.10592	-0.1817
	M	0.22904	0.11058	0.08278	0.08064	0.26646
	Q	0.2217	0.17763	0.18602	0.59531	0.03415
	V	-6.1538	-0.8247	0.33666	1.96685	-3.9044
S.V.E.C. Constructions Limited	A	0.02866	0.12099	0.14774	0.00044	0.01957
	E	0.26127	0.47189	0.12512	-0.3289	0.16802
	I	0.02894	0.07625	0.11381	0.10141	-0.1607
	M	0.14426	0.19977	0.18167	0.02293	0.19903
	Q	0.49656	0.74538	0.8732	0.87698	0.26047
	V	1.07828	1.92195	1.70935	0.76456	0.10817
Agarwal Steel Structures (India) Private Limited	A	0.06845	0.09806	0.16679	0.10877	0.09106
	E	0.8156	0.8121	0.79711	0.82711	0.83068
	I	0.00401	0.00166	0.00799	-0.0396	-0.0689
	M	0.15395	0.15262	0.1498	0.12741	0.15648
	Q	0.07817	0.06059	0.12807	0.2296	0.07415
	V	1.40766	1.41218	1.56028	1.46347	1.2128
Samyu Glass Private Limited	A	-0.5025	-0.307	-0.095	-0.1432	-0.3793
	E	-0.3939	-0.0758	0.11584	0.2291	-0.5372
	I	0.0199	0.0118	0.00766	0.00386	0.03223
	M	0.16751	0.12218	0.09867	0.08603	0.16096
	Q	1.13181	0.51922	0.43902	0.67053	0.85782
	V	0.14251	0.15644	0.57124	0.88306	-0.1473
Lanco Hoskote Highway Limited	A	-0.3678	-0.1098	0.07011	0.26445	-0.0801
	E	0.02848	0.12495	0.17539	0.15247	0.00519
	I	-0.0317	-0.0148	0.05597	0.15532	0.02971
	M	0.07057	0.05711	0.04775	0.03712	0.06223
	Q	0.82042	0.80975	0.93618	0.87831	0.80323

	V	0.35594	0.83737	1.47829	1.94304	0.84896
UIC Udyog Limited	A	0.70824	0.56633	0.46003	0.52695	0.7525
	E	0.25118	-0.1263	-0.4193	-0.479	0.23465
	I	0.12471	0.31378	0.31523	0.12814	0.14279
	M	0.24294	0.52679	0.62293	0.49461	0.19657
	Q	0.81059	1.31505	1.17195	0.62515	1.39362
	V	2.5686	3.16807	2.54981	1.30584	3.21289
Amrit Fresh Private Limited	A	1.41652	-1.8118	0.03007	-0.0652	1.20168
	E	1.24228	-5.6093	0.05454	0.094	1.01205
	I	0.01616	-4.2392	-0.0738	-0.239	0.18692
	M	-0.0193	0.1105	0.0186	0.02546	-0.0104
	Q	-0.2747	2.67265	0.32961	0.42476	-0.0629
	V	3.20634	-21.28	0.20942	-0.2957	3.40667
Mather Projects Private Limited	A	0.5953	0.51576	0.30164	-0.0926	0.711
	E	0.44402	0.41404	0.2345	-0.0734	0.56237
	I	0.11504	0.25179	0.20451	0.21338	0.22998
	M	0.07848	0.09882	0.13096	0.19541	0.06599
	Q	2.56474	5.69658	4.06176	9.42906	3.86441
	V	4.32487	7.77964	5.50142	10.0272	6.29961
Warana Dairy and Agro Industries Ltd	A	0.74835	0.69855	0.68982	0.70804	0.71596
	E	0.37424	0.41321	0.39037	0.37226	0.43465
	I	0.14395	0.16544	0.15232	0.14619	0.09793
	M	0.03357	0.01804	0.01741	0.01696	0.03745
	Q	1.85738	1.90248	1.87864	1.78195	2.01996
	V	3.77266	3.8741	3.76418	3.64358	3.83123
M Tech Developers Private Limited	A	0.6637	0.69019	0.73628	0.66503	0.71394
	E	0.54109	0.60322	0.66918	0.56304	0.5016
	I	0.11676	0.11152	0.0363	0.15337	0.12306
	M	0.09161	0.10559	0.12569	0.1319	0.08201
	Q	1.14785	1.20795	1.32303	1.5862	1.19678
	V	3.14093	3.31086	3.33732	3.75617	3.20984
Aditya Estates Pvt. Ltd.	A	0.54135	0.77127	0.86277	0.778	0.18521
	E	-0.5694	0.24981	0.31411	0.462	-1.7699
	I	-0.5612	0.11098	0.16607	0.2285	-0.5008
	M	0.18865	0.01025	0.01365	0.0265	0.30247
	Q	4.53144	4.19702	6.66169	9.6835	0.44822

	V	2.64072	5.84047	8.68631	12.0242	-3.279
Pack Tech Systems Private Limited	A	0.44681	0.44738	0.44796	0.44853	0.44623
	E	-0.1576	-0.1576	-0.1576	-0.1576	-0.1576
	I	0.00575	0.00575	0.00575	0.00575	0.00575
	M	0.01438	0.01438	0.01438	0.01438	0.01438
	Q	0.58367	0.3502	0.50086	0.23462	3.48189
	V	0.92627	0.69373	0.84493	0.57964	3.8209
Valaya Clothing Pvt. Ltd	A	0.51822	0.56095	0.58492	0.70193	0.19875
	E	0.24831	0.2304	0.33359	0.38742	-0.5514
	I	-0.0373	-0.0307	0.05725	0.0965	-0.8251
	M	0.0387	0.14416	0.03198	0.03606	0.07063
	Q	1.01746	0.97262	0.67268	0.87487	0.25226
	V	1.886	1.95265	2.04905	2.59878	-2.962
Swastik Fruits Products Ltd	A	1.67074	31.3506	0.52148	0.49652	1.30185
	E	1.36519	18.3086	0.36941	0.43065	1.19385
	I	0.71125	32.5235	0.11902	0.12382	0.3446
	M	-0.0989	-4.2148	0.06508	0.06428	-0.0505
	Q	-0.6859	-75.281	2.21253	2.00279	-0.2317
	V	5.51874	92.8452	3.78508	3.64669	4.10907
Sampan Tradex Pvt. Ltd	A	0.16667	0.05997	0.04545	0.0366	0.16588
	E	0.76508	0.27527	0.20866	0.168	0.76145
	I	-1.1175	-0.4021	-0.3048	-0.2454	-1.1122
	M	0.23968	0.08624	0.06537	0.05263	0.23855
	Q	2.88254	1.03712	0.78615	0.63297	2.86888
	V	0.60696	0.21838	0.16553	0.13328	0.60408
Prius Commercial Projects Private Limited	A	0.50558	0.52656	0.48802	0.50728	0.55456
	E	0.83014	0.84325	0.86654	0.88064	0.84743
	I	0.02773	0.13348	0.14947	0.16585	0.18622
	M	0.01592	0.01548	0.01673	0.0179	0.01402
	Q	1.40019	1.30814	1.23021	1.52069	1.44623
	V	3.26875	3.56901	3.53105	3.91883	3.91961
Swastik Aqua Ltd.	A	1.37838	1.73077	0.41667	0.40426	1.14
	E	6.40541	8.69231	-26.778	-20.277	5
	I	0.32432	1.15385	-0.2222	-0.4255	0.24
	M	-5.4054	-7.6923	27.7778	21.2766	-4
	Q	-57.297	-65.385	33.3333	10.6383	-47.08
	V	-48.791	-51.881	12.2444	-5.9128	-40.273

Pellet Energy Systems Private Limited	A	0.44937	0.54196	0.73773	0.80558	0.32132
	E	0.22077	0.17918	0.15059	0.01448	0.1348
	I	0.17745	0.14069	0.15398	0.12823	0.13426
	M	0.10282	0.12429	0.16667	0.1727	0.0355
	Q	4.82098	5.0082	3.57783	2.43537	2.06253
	V	6.31178	6.44326	5.27849	3.94669	3.09913
Superchem Coating Pvt. Ltd.	A	0.29888	0.44698	0.49938	0.46446	0.29862
	E	0.19242	0.30068	0.41105	0.53456	-0.0477
	I	-0.1155	-0.1002	-0.1141	0.07733	-0.2118
	M	0.08716	0.07707	0.04436	0.03998	0.10349
	Q	0.38737	0.64686	0.90983	1.42329	0.46605
	V	0.68626	1.31908	1.73382	3.00677	0.12025
GRG Infrastructure Pvt. Ltd.	A	0.61538	0.95673	0.95012	0.93333	0.61902
	E	0.19712	0.34856	0.27078	0.24638	0.17647
	I	0.11619	0.1851	0.15677	0.13043	0.12859
	M	0.10817	0.10577	0.10451	0.12754	0.09234
	Q	0.52885	1.72115	1.67458	1.77101	0.87483
	V	1.99106	4.02977	3.7722	3.74113	2.34358
Rainbow Industrial Park Pvt. Ltd.	A	0.34964	0.43914	0.28022	0.30423	0.27264
	E	0.7915	0.87739	0.86515	0.85769	0.85978
	I	0.05426	0.12844	0.07055	0.12773	0.07031
	M	0.137	0.12261	0.13485	0.14231	0.14022
	Q	0.63967	0.80562	0.63904	1.02482	0.73625
	V	2.42796	3.05755	2.49959	3.09655	2.58255
Bacon Vanijya Pvt. Ltd.	A	0.50611	0.50493	0.52977	0.46684	0.50373
	E	0.48663	0.37948	0.35941	0.36305	0.48167
	I	0.02658	0.04256	0.04433	0.07693	0.01995
	M	0.40607	0.32313	0.31701	0.33029	0.39909
	Q	0.54754	0.45632	0.50412	1.163	0.45328
	V	2.16695	1.92738	1.97901	2.68236	2.03694
Shreebhav Polyweaves Pvt. Ltd	A	0.31492	0.28592	0.14948	0.10227	0.28883
	E	0.19345	0.32049	0.5403	0.56382	0.10244
	I	0.08373	-0.0017	0.03046	0.0037	0.06535
	M	0.1226	0.11297	0.15159	0.15944	0.13279
	Q	1.02644	0.59142	0.54475	0.44505	0.86844

	V	2.024	1.44491	1.67148	1.46454	1.65291
Janshank Impex Private Limited	A	0.61585	0.56016	0.6217	0.8041	0.6211
	E	0.63327	0.81212	0.76581	0.75902	0.61646
	I	0.17693	0.40562	0.42145	0.52623	0.02708
	M	0.25593	0.098	0.1416	0.20328	0.26154
	Q	2.27638	3.18556	3.8253	6.44836	1.3397
	V	4.63712	6.3889	7.1154	10.328	3.19301
Decent Laminates Pvt. Ltd	A	0.29644	0.08465	0.07041	0.06662	0.2964
	E	0.85548	0.61313	0.6319	0.63631	0.85535
	I	-0.001	0.01705	0.02204	0.0224	-0.0001
	M	0.0946	0.06556	0.0565	0.05764	0.09468
	Q	0.00642	0.00916	0.01056	0.01004	0.00547
	V	1.6134	1.06473	1.08634	1.08932	1.61499
Ahitri Spinning Mills Private Limited	A	0.0481	0.06977	0.06908	0.06258	0.05471
	E	0.91098	0.92976	0.92747	0.92816	0.96004
	I	0.12549	0.00868	0.01698	0.02887	0.06279
	M	0.00968	0.01086	0.01074	0.01093	0.00963
	Q	0.24494	0.28016	0.27127	0.29269	0.34092
	V	1.9977	1.70042	1.71484	1.76876	1.96326
Telstar Industries Pvt. Ltd.	A	-0.7219	-0.3677	-0.2086	0.19184	-0.9513
	E	-3.2574	-2.304	-1.8837	-0.9152	-3.9436
	I	-0.2655	-0.1272	-0.4424	-0.4048	-0.1089
	M	0.93324	0.71903	0.62402	0.40854	1.09707
	Q	0.56156	0.81626	0.91711	0.56368	1.24828
	V	-5.182	-2.8399	-3.0568	-1.5786	-5.1168
Mithilanchal Glass Industries Pvt. Ltd.	A	0.1933	-0.0378	0.05739	0.52488	0.09773
	E	0.31245	0.37549	0.48139	0.76954	0.15271
	I	-0.0499	-0.1334	-0.2265	0.02963	-0.2088
	M	0.25569	0.23952	0.19453	0.09867	0.31059
	Q	0.16458	0.08263	0.1647	0.55708	0.05156
	V	0.8224	0.26627	0.27663	2.42073	-0.1202
Kankesh Exims Private Limited	A	0.54738	0.45098	0.3127	0.15586	0.64682
	E	0.41705	0.27672	0.22161	0.2764	0.35672
	I	0.1266	0.09798	0.02603	0.00857	0.11278
	M	0.03333	0.03477	0.14068	0.19085	0.02548
	Q	1.9706	2.14556	1.78448	1.22396	1.82189

	V	3.64713	3.4162	2.63847	1.93951	3.48313
Saffron Poly Threads Private Limited	A	0.06386	0.01443	-0.0003	-0.0129	0.14586
	E	0.37704	0.40228	0.38683	0.38463	0.3531
	I	0.06851	0.07485	0.08356	0.05429	0.06453
	M	0.12557	0.14275	0.14421	0.15056	0.11215
	Q	0.87812	0.8997	0.97442	0.83252	0.6722
	V	1.78314	1.81197	1.87698	1.62416	1.62114
Angstrom Biotech Pvt. Ltd.	A	0.34964	0.43914	0.28022	0.30423	0.27264
	E	0.7915	0.87739	0.86515	0.85769	0.85978
	I	-1.0853	0.63562	0.79987	0.60396	-1.7751
	M	0.137	0.12261	0.13485	0.14231	0.14022
	Q	3.59182	6.88337	8.04095	7.9042	0.75499
	V	1.6167	10.8029	12.3009	11.5406	-3.4886
Bajrang Cotgin Pvt. Ltd	A	0.58857	0.62551	0.60949	0.69917	0.60216
	E	0.26999	0.31511	0.28687	0.22863	0.3571
	I	0.0365	0.06189	0.07115	0.10124	0.01852
	M	0.26999	0.31605	0.30702	0.31992	0.34136
	Q	0.14573	0.317	0.32716	0.64564	0.04012
	V	1.51231	1.90232	1.87885	2.33014	1.52854
Aakash Polyfilms Ltd	A	0.06537	0.06831	0.30679	0.34864	-53.191
	E	-0.1086	0.27253	0.36757	0.44907	-55.864
	I	-0.3528	-0.1036	-0.0511	0.03808	8.3414
	M	0.08205	0.05382	0.04036	0.0363	7.36077
	Q	0.04453	0.03553	0.05157	0.11937	2.38983
	V	-1.1441	0.18957	0.78977	1.31376	-107.71
Shivshakti Barrels Private Limited	A	0.58336	0.6164	0.57306	0.57506	0.43303
	E	0.42277	0.41237	0.38801	0.0291	0.37065
	I	0.03395	0.04259	0.06735	0.06882	0.07968
	M	0.22878	0.23655	0.18536	0.04619	0.1756
	Q	0.51962	0.58129	0.5434	0.74226	0.65755
	V	2.06032	2.1802	2.10721	1.72716	2.06375
Alcock Ashdown (Gujarat) Ltd.	A	0.86632	0.8616	0.80456	0.82726	0.70566
	E	0.56849	0.50477	0.44813	0.22942	0.71037
	I	0.1256	0.21292	0.18941	0.3556	0.09854
	M	0.12743	0.12739	0.14938	0.16869	0.14867
	Q	2.45575	2.84655	2.4025	4.32321	1.67352
	V	4.7797	5.36338	4.70763	6.90749	3.92755

Company						
Quality Steel Products Limited	A	0.56933	0.55953	0.55783	0.53372	0.53543
	E	0.52454	0.52067	0.46838	0.59302	0.436
	I	0.02515	0.03701	0.08319	0.12674	-0.04
	M	0.41043	0.41271	0.3812	0.03256	0.38229
	Q	0.49448	0.9488	0.9265	1.28488	0.39543
	V	2.24079	2.71799	2.75395	3.19209	1.74532
Axis Nirman and Industries Limited Company	A	0.33591	0.23574	0.35346	0.41815	0.3328
	E	0.61753	0.5908	0.62906	0.80337	0.67195
	I	0.2542	0.17721	0.17436	0.25149	0.1685
	M	0.02146	0.02526	0.02947	0.04184	0.01983
	Q	0.66337	0.768	0.91322	1.11223	0.59243
	V	2.78208	2.47719	2.81021	3.59264	2.49989
Uttarayan Steel Private Limited Company	A	0.62119	0.62131	0.45825	0.5102	0.23133
	E	0.11367	0.15027	0.18728	0.14891	0.26227
	I	0.01244	0.06812	0.06597	0.05776	0.09952
	M	0.03899	0.04265	0.06138	0.05468	0.07655
	Q	1.04386	1.0806	1.11891	0.84709	1.85765
	V	2.01182	2.28584	2.18442	1.89038	2.87489
Apex Aqua Agencies Private Limited	A	0.25926	0.26796	0.34581	0.32791	0.39207
	E	0.87832	0.86977	0.8585	0.86967	0.88819
	I	0.0835	0.09688	0.08403	0.18854	0.10223
	M	0.01671	0.01707	0.01779	0.01849	0.01547
	Q	0.6436	0.6422	0.67179	0.77092	0.60994
	V	2.46929	2.51074	2.57596	3.01443	2.66993
East Godavari Breweries Private Limited	A	0.24826	0.44459	0.41763	0.37388	-0.0215
	E	0.16787	0.26732	0.25723	0.46873	-0.4173
	I	-0.0143	0.10953	0.0861	0.09759	-0.7042
	M	0.23146	0.24953	0.29148	0.10688	0.37636
	Q	0.62997	1.74744	1.61418	1.58698	0.1687
	V	1.25394	3.1646	2.93287	3.07645	-2.5396
CPR Laboratories Private Limited	A	0.6146	0.61679	0.81369	0.88896	0.52801
	E	0.25402	0.21765	0.21948	0.2726	0.44675
	I	0.21255	0.17257	0.17762	0.17015	0.05725
	M	0.05995	0.05761	0.08276	0.00921	0.11966
	Q	1.90144	2.20575	2.70606	2.76737	0.73982

	V	3.73007	3.85244	4.62286	4.78001	2.25887
Sree Naidu Beverages Pvt. Limited	A	0.59511	0.61139	0.60717	0.67078	-0.2566
	E	0.08038	0.19279	0.31333	0.34671	-1.5392
	I	-0.0969	-0.1328	-0.077	0.01639	-2.0107
	M	0.15806	0.14084	0.11729	0.09167	0.36934
	Q	0.64623	1.31584	0.70505	1.00197	0.29351
	V	1.24746	1.96426	1.68794	2.40038	-8.5834
Voltarc Electrodex Pvt Ltd	A	-1.554	-1.4821	-1.1683	-0.487	-1.6824
	E	-1.4885	-1.3697	-0.9929	-0.3572	-1.6659
	I	-0.0497	-0.0631	-0.0318	-0.032	-0.0642
	M	0.07313	0.06962	0.05937	0.0404	0.07838
	Q	0.00269	0.00492	0.00986	0.02109	0.00315
	V	-4.0664	-3.8577	-2.8516	-1.1449	-4.5129
Jains & Alliance Palms Venture Pvt. Ltd.	A	-0.3881	0.18834	0.26286	0.3568	-0.4609
	E	-2.9741	-0.9723	-0.6328	-0.3627	-3.3197
	I	-0.9694	-0.1673	-0.1724	-0.1813	-0.1081
	M	0.16864	0.08337	0.06867	0.05817	0.18197
	Q	1.09432	0.65419	0.43062	0.3375	1.01415
	V	-6.634	-0.9838	-0.668	-0.3059	-4.4352
Steel Hypermart India Private Limited	A	-18.063	0.76108	0.70633	0.77627	3.5032
	E	-94.638	0.38625	0.3837	0.34684	17.2816
	I	-141.84	0.13402	0.16082	0.16943	1.12973
	M	1.24113	0.00854	0.00942	0.01066	-0.2119
	Q	107.415	2.37839	2.43302	2.69515	-1.3216
	V	-514.2	4.27744	4.35171	4.67505	30.6787
Metrik Infraprojects Private Limited	A	0.88352	1.15747	-0.9118	0.37316	0.80764
	E	0.25878	0.27763	0.13523	0.22366	0.25356
	I	0.14308	0.26519	-0.6572	-0.0844	0.10926
	M	0.03506	0.0164	0.15736	0.06983	0.04023
	Q	1.65129	2.64648	-4.8707	-0.2027	1.37564
	V	3.56536	5.30645	-7.845	0.32179	3.08311
Jewels Garments Private Limited	A	-0.3535	-0.3591	-0.2794	-0.2014	-0.3439
	E	-0.0517	-0.0285	0.03194	0.16858	-0.0566
	I	0.00962	-0.014	-0.1172	0.0696	0.02573

	M	0.03979	0.03871	0.03406	0.02911	0.0405
	Q	0.97308	0.89286	0.76946	0.66035	1.23882
	V	0.53117	0.39816	0.1117	0.90113	0.85491
Shree Ashraya Infra-con Ltd.	A	0.41128	0.25982	0.40495	0.52283	0.31936
	E	0.38164	0.39736	0.44884	0.29264	0.42808
	I	0.12184	0.15917	0.14913	0.0666	0.11284
	M	0.10754	0.13039	0.19884	0.15472	0.10912
	Q	0.71856	0.88536	1.21532	0.77132	0.90778
	V	2.21225	2.35604	2.93984	2.12027	2.32726
Nandlal Kamal Kishore Pvt. Ltd.	A	-0.039	0.03133	0.19961	0.29143	-0.3115
	E	0.23157	0.11715	0.16161	0.27559	0.13449
	I	0.04659	-0.0834	-0.0437	0.04992	-0.1132
	M	0.02808	0.02988	0.02836	0.02751	0.03512
	Q	0.57209	0.53655	0.66887	0.47019	0.61937
	V	1.01944	0.48019	1.00666	1.38651	0.08081
Alaska Fabtech Pvt. Ltd.	A	0.06266	0.65382	0.70948	0.74231	-0.37
	E	-0.9575	0.30027	0.31184	0.32324	-2.0001
	I	-1.7041	0.07461	0.10944	0.11285	-0.4774
	M	0.04468	0.01661	0.01709	0.01862	0.06814
	Q	0.61061	0.55329	0.64036	0.57925	0.26182
	V	-6.252	2.01386	2.29907	2.30555	-4.5169
S. Nanda Industries Private Ltd.	A	0.50276	0.61596	0.70414	0.65482	1.78081
	E	-0.4238	0.06477	0.27535	0.29404	3.9183
	I	-0.4853	-0.1537	0.1004	0.12235	2.26899
	M	0.0974	0.03279	0.028	0.03236	-0.2134
	Q	0.54704	1.36049	0.93919	1.03972	-0.2208
	V	-0.9866	1.70135	2.51683	2.65928	14.7617
Jindal Builtech Private ltd	A	0.56226	0.5631	0.56163	0.589	0.51484
	E	0.31713	0.30627	0.30518	0.31762	0.28758
	I	0.17079	0.16681	0.16731	0.19958	0.15062
	M	0.0526	0.06022	0.07247	0.08412	0.04066
	Q	1.01003	1.02283	1.0544	1.16267	0.95567
	V	2.72289	2.71291	2.75016	3.02207	2.49656
Best Zone Builders and Developers Private Limited	A	0.91443	0.90512	0.89759	0.89705	0.92636
	E	0.37327	0.37745	0.3934	0.41222	0.33426
	I	0.1226	0.15948	0.14144	0.04492	0.09577

	M	0.03446	0.03739	0.04216	0.0478	0.02992
	Q	1.22352	1.52355	1.54484	1.33289	0.90373
	V	3.26745	3.68533	3.66321	3.16205	2.8164
SCM Garments Private Limited	A	1.00000	1.000	1.00000	1.00000	1.00000
	E	0.08221	0.266	0.35893	0.48683	0.09692
	I	-0.1227	-0.059	-0.0176	0.0706	0.09385
	M	0.38176	0.339	0.3136	0.35722	0.52154
	Q	2.45045	2.162	1.89269	1.83351	3.30154
	V	3.58708	3.74094	3.72345	4.16055	5.25654
Real Value Promoters Private Limited	A	-0.8291	-0.6652	0.48375	0.64529	-1.1031
	E	-3.319	-2.595	0.01272	0.41682	-3.9427
	I	-0.1566	-2.1112	-0.5471	0.12217	-0.2804
	M	0.13146	0.1098	0.02983	0.01861	0.01535
	Q	1.16286	1.08686	0.46539	0.92545	1.20508
	V	-4.9177	-10.247	-0.7242	2.69675	-6.5556
ETA Engineering Private Limited	A	0.4276	0.41875	0.38333	0.38408	0.39338
	E	0.49347	0.49949	0.52864	0.50044	0.63914
	I	0.07195	0.13071	0.12846	0.10295	0.18232
	M	0.03681	0.0359	0.04154	0.0451	0.03767
	Q	1.14841	1.40343	1.32187	1.18647	1.35476
	V	2.61077	3.05668	2.96949	2.7136	3.34452
GPR Resouces Private Limited	A	0.15596	0.19103	0.31881	0.18474	0.2592
	E	0.52592	0.54224	0.52608	0.30743	0.61363
	I	0.00713	0.10104	0.10168	0.09017	-0.0137
	M	0.20535	0.20241	0.20557	0.21153	0.20057
	Q	0.45414	0.69204	0.63107	0.72024	0.37052
	V	1.52386	2.13459	2.20842	1.79608	1.61527
Fourpol Electricals Private Limited	A	0.0957	0.17169	0.19507	0.21398	0.20198
	E	0.1982	0.24937	0.28139	0.28913	0.15282
	I	-0.002	0.05721	0.06276	0.02652	0.05308
	M	0.03442	0.03267	0.03292	0.03362	0.03286
	Q	1.01162	1.03807	0.91648	0.76709	0.80077
	V	1.41688	1.80059	1.77045	1.53559	1.45118
JBM Shelters Private Limited	A	0.39213	0.40706	0.38202	0.34796	0.41829
	E	0.42375	0.44167	0.51573	0.6094	0.41689
	I	-0.0562	-0.0357	-0.0494	0.34983	-0.0036

	M	0.02731	0.02461	0.02581	0.02671	0.02846
	Q	1.45886	1.56155	1.45696	1.43146	1.2912
	V	2.352	2.56385	2.48841	3.87119	2.38055
Spacex Furniture Private Limited	A	3.26165	3.32847	1.69827	1.41136	4.66603
	E	14.3824	14.0438	4.50587	3.01277	25.0759
	I	0.08475	-2.9458	-1.9874	0.07955	-1.1992
	M	-11.06	-10.887	-2.9197	-1.4495	-19.812
	Q	-0.0222	-0.0563	-0.0151	-0.0157	-0.222
	V	17.6706	7.34573	0.02074	5.28863	24.6389
B V V Industries Limited	A	0.45388	0.4822	0.45434	0.42463	0.46849
	E	0.66625	0.61326	0.60579	0.59397	0.71332
	I	0.04545	0.07079	0.05294	0.04333	0.03151
	M	0.03272	0.03088	0.03366	0.03482	0.03251
	Q	2.14902	2.24923	2.11564	2.01622	1.95906
	V	3.7939	3.93635	3.70174	3.51922	3.64142
Mega Food Products Madras Private Limited	A	-0.237	0.10518	0.04584	-0.059	-0.168
	E	-0.0226	0.19984	0.08735	0.15005	-0.1275
	I	-0.1651	0.10948	-0.0474	-0.163	-0.0189
	M	0.13078	0.08865	0.06784	0.05579	0.15571
	Q	1.53009	1.48275	1.24212	1.24997	1.42906
	V	0.74623	2.30172	1.3026	0.88366	1.07861
Infiniti Metal Products India Limited	A	0.57846	0.5815	0.54202	0.49175	0.51311
	E	0.38442	0.3657	0.35186	0.3434	0.2856
	I	0.05234	0.0652	0.08144	0.08266	-0.113
	M	0.16563	0.15349	0.14867	0.14975	0.20101
	Q	1.18371	1.05795	0.92705	0.99364	0.70139
	V	2.68697	2.57393	2.42713	2.42614	1.46385
Fomra Sales Private Limited	A	0.72316	0.81736	0.93137	1.07214	0.644
	E	0.94657	0.97938	1.01908	1.0681	0.91901
	I	0.00859	0.06047	0.03409	0.02657	0.06662
	M	0.04446	0.04869	0.0538	0.06012	0.04091
	Q	0.72196	0.64733	0.55701	0.44549	0.78467
	V	2.96926	3.22741	3.24559	3.35072	3.08769
Pondicherry Extraction Industries Private Limited	A	0.23366	0.15182	0.2753	0.37246	0.36239
	E	0.33613	0.44899	0.37591	0.32501	0.42957

	I	0.13707	0.22965	0.19831	0.1714	0.13272
	M	0.03813	0.06202	0.07553	0.08086	0.0662
	Q	2.0053	3.30172	3.10965	2.60256	1.86109
	V	3.22949	4.90424	4.66292	4.11607	3.37317
Thai Summit Autoparts India Private Limited	A	0.43154	0.24802	0.2608	0.13747	0.27566
	E	0.4489	0.55361	0.50364	0.62308	0.47162
	I	0.07181	0.08281	0.04922	0.09317	0.1352
	M	0.04624	0.05672	0.0541	0.0671	0.04037
	Q	2.14353	3.12605	2.63613	3.22132	0.88084
	V	3.55241	4.50291	3.84644	4.6031	2.34141
Harsha Exito Engineering Private Limited	A	0.57125	0.51743	0.52344	0.46702	0.34669
	E	0.34456	0.32875	0.28577	0.23935	0.28831
	I	0.17997	0.1452	0.14681	0.0197	0.13405
	M	0.10339	0.1171	0.1179	0.13078	0.06411
	Q	2.88213	3.06358	2.64567	2.71484	2.19468
	V	4.70307	4.69111	4.22645	3.75111	3.49299
Forza Casting Private Limited	A	0.63353	0.58701	0.60762	0.48677	0.64752
	E	0.40092	0.41484	0.40112	0.22819	0.3622
	I	0.08971	0.14787	0.16245	0.13186	0.00972
	M	0.12717	0.14523	0.17182	0.19739	0.12435
	Q	0.83884	0.9324	1.07029	1.15239	0.62944
	V	2.53188	2.79178	2.99912	2.6084	2.01961
Kapico Motors India Private Limited	A	0.65374	0.55131	0.56088	0.59726	0.78257
	E	0.9592	0.95525	0.95247	0.9455	0.96447
	I	0.10882	0.14048	0.13268	0.15715	0.19124
	M	0.03782	0.04072	0.04279	0.0466	0.03165
	Q	1.92995	2.23538	2.3088	2.96779	2.23724
	V	4.43719	4.72007	4.77654	5.55181	5.17444
Prostar Textile Mills Private Limited	A	0.34606	0.38707	0.45654	0.41796	0.30189
	E	0.27406	0.29488	0.30311	0.30135	0.29019
	I	-0.0124	0.15201	0.11345	0.06437	0.05948
	M	0.03631	0.02987	0.03541	0.04017	0.04253
	Q	1.80624	2.18144	2.21041	2.08969	2.29809

	V	2.58438	3.57615	3.57605	3.24756	3.28614
Baibhav Properties Private Limited	A	-0.1827	-0.0564	-0.3947	-0.0187	-0.2092
	E	-0.8061	-0.5318	-0.5724	0.01484	-1.3979
	I	0.00637	0.03584	-0.4485	0.05458	-0.1525
	M	0.17114	0.14689	0.20276	0.13849	0.21198
	Q	3.91065	4.46115	4.2291	2.65473	4.53261
	V	2.68269	3.85088	1.59165	2.91363	1.94397
Y.Pani and Company Pvt. Ltd.	A	0.86761	0.2294	0.27279	0.26457	0.98195
	E	0.67077	0.35149	0.37456	0.31221	0.67004
	I	0.12607	-0.0317	-0.001	0.07957	0.03103
	M	0.32923	0.18544	0.16779	0.12874	0.32996
	Q	0.42401	1.19719	1.13945	0.95371	0.33122
	V	3.01736	1.97008	2.08752	2.04718	2.74767
MAA Tarini Industries Limited	A	0.45163	0.49302	0.37992	0.40047	0.44134
	E	0.41128	0.38372	0.22257	0.51804	0.45724
	I	0.08458	0.10174	0.19462	0.14086	0.09594
	M	0.28745	0.30233	0.39648	0.04075	0.28509
	Q	1.02045	1.15581	1.83437	1.74156	1.15022
	V	2.58875	2.80065	3.48015	3.43493	2.80647
Tuff Tubes (Orissa) Pvt. Ltd.	A	-0.1305	-0.0832	0.09097	0.15535	-0.1459
	E	-0.1473	-0.0169	0.19857	0.32066	-0.2575
	I	-0.1265	-0.178	-0.0853	-0.0497	-0.0948
	M	0.01544	0.01352	0.00922	0.00885	0.01725
	Q	0.0789	0.08036	0.17886	0.11924	0.05575
	V	-0.6921	-0.6226	0.29003	0.59587	-0.7825
Hariom Rice Mill Pvt. Ltd.	A	1.74745	1.87126	2.88933	3.14022	1.65385
	E	9.96945	10.977	20.2451	18.2103	9.96154
	I	-0.1283	-0.9218	0.41502	1.57565	-0.0476
	M	-2.1222	-2.3954	-4.1186	-3.845	-1.9084
	Q	-0.0672	-0.0115	-0.0356	-0.1734	-0.0018
	V	14.2903	13.1225	30.6732	31.9821	14.6267
Namratha Power Pvt. Ltd	A	0.59734	0.61268	0.60529	0.61228	0.55895
	E	0.53869	0.5007	0.45893	0.43691	0.59
	I	0.06968	0.08521	0.06408	0.07741	0.04777
	M	0.12833	0.11958	0.11701	0.11632	0.13656
	Q	1.39646	1.38	1.21279	1.11111	1.34229

	V	3.17298	3.16776	2.86211	2.78164	3.07726
J S B Entrade Private Limited	A	0.67373	0.80422	0.80582	0.76529	0.58909
	E	0.36865	0.38791	0.36034	0.26688	0.39182
	I	0.10165	0.13248	0.13511	0.12143	0.11366
	M	0.18918	0.23798	0.26771	0.1246	0.16947
	Q	1.34178	1.7782	1.67053	1.60535	1.52231
	V	3.11398	3.86452	3.7468	3.37121	3.253
Kalpataru Cold Storage Private Ltd	A	-0.4574	-0.6983	-0.3194	-0.4917	-0.7023
	E	-1.6294	-1.7342	-1.1872	-1.2126	-2.1222
	I	-0.1724	-0.2332	-0.0834	-0.2495	-0.2734
	M	1.07535	1.27917	1.01429	0.38818	0.62321
	Q	0.06834	0.24242	0.40711	0.68742	0.12293
	V	-2.6854	-3.0255	-1.3054	-2.1914	-4.2192
R. S. H. Agro Products Ltd.	A	0.88699	0.95262	0.93903	0.98857	0.89774
	E	0.53186	0.39102	0.185	0.23483	0.4996
	I	0.16164	0.17157	0.08269	0.01319	0.13254
	M	0.2723	0.3606	0.3595	0.54266	0.21567
	Q	3.16164	3.99252	1.3679	0.37467	2.29721
	V	5.66424	6.46164	3.24096	2.25846	4.63842
Navya Agro Products Private Limited	A	0.42725	0.76332	0.71373	0.42071	0.17606
	E	0.83074	0.83951	0.80129	0.39581	0.84797
	I	0.06278	0.27627	0.20313	0.17824	0.09393
	M	0.14388	0.1477	0.18083	0.07864	0.13574
	Q	1.20241	2.11156	1.97124	9.06684	1.53224
	V	3.17043	5.20107	4.7264	10.7521	3.32055
Fertis India Private Limited	A	-1.0644	-0.771	-0.3336	-0.2492	-1.656
	E	-1.2276	-1.0189	-0.6106	-0.4477	-2.4542
	I	0.08522	-0.0383	0.10626	0.07985	-0.2064
	M	0.56103	0.49973	0.38653	0.30119	0.89322
	Q	0.39227	0.52355	0.87709	1.15399	0.30716
	V	-1.9863	-1.6551	0.2036	0.67122	-5.2612
Lahari Infra Projects (India) Private Limited	A	0.83215	0.8878	0.86742	0.85018	0.76355
	E	-0.3423	0.41186	0.42809	0.40964	-0.9308
	I	-0.8441	0.01203	0.12733	0.09953	-0.4246
	M	0.1643	0.10381	0.08863	0.09036	0.24233
	Q	0.6395	1.1455	0.96488	0.8418	0.59634

	V	-1.5288	2.88831	3.07751	2.81734	-1.0467
Hyderabad Merchem Private Ltd	A	0.38639	0.31632	0.37751	0.38861	0.5351
	E	0.39274	0.41192	0.53268	0.68808	0.30077
	I	0.12986	0.11981	0.12136	0.12426	0.13316
	M	0.0143	0.01817	0.02729	0.04121	0.00898
	Q	0.99722	0.89032	0.88849	0.95096	0.95109
	V	2.44685	2.25198	2.50323	2.81442	2.45816
V R V Textiles Limited	A	0.65454	0.59649	0.45338	0.02885	0.70463
	E	0.37464	0.33383	0.26037	0.03096	0.39378
	I	0.23157	0.22566	0.19761	0.1199	0.24469
	M	0.03807	0.0437	0.06231	0.11563	0.03039
	Q	1.24684	1.26147	1.11666	0.76173	1.34168
	V	3.34257	3.21423	2.71361	1.30399	3.56291
Vivanta Laboratories Private Limited	A	0.75908	0.67243	0.6496	0.56994	2.64795
	E	-0.0093	0.17702	0.19091	0.19151	8.27519
	I	-0.0362	0.09212	0.13591	0.12242	8.13749
	M	0.09271	0.08837	0.09311	0.10432	-0.7088
	Q	0.79326	1.20375	1.36462	1.34877	-4.6142
	V	1.62651	2.61431	2.91441	2.76603	36.5816
Viom Infra Ventures Limited	A	0.23489	0.19007	0.21418	0.2712	0.1097
	E	0.98858	0.99076	0.99036	0.98934	0.99202
	I	0.04738	0.0377	0.0282	0.02997	0.01931
	M	0.00947	0.00748	0.00841	0.00942	0.00646
	Q	0.24563	0.23898	0.19833	0.21507	0.15828
	V	2.07331	1.9828	1.93975	2.02992	1.74619
Cosmos Forgings Limited	A	0.88288	0.85243	0.83157	0.88909	0.73583
	E	0.23481	0.28009	0.26981	0.24863	0.08718
	I	0.15415	0.17524	0.16225	0.14611	-0.0742
	M	0.0343	0.05272	0.05924	0.0664	0.04007
	Q	2.91972	3.25272	2.86623	2.91864	3.05922
	V	4.83426	5.2744	4.80994	4.85274	3.84042
Mantena Laboratories Limited	A	0.93866	0.93902	0.93898	0.93811	0.9523
	E	0.51834	0.51847	0.51884	0.52145	0.52156
	I	0.0012	-5E-05	-0.0044	-0.0051	-0.0148
	M	0.07155	0.07154	0.07135	0.07095	0.07427
	Q	0.02869	0.01471	0.01454	0.00633	0.00818

	V	1.92759	1.91016	1.89608	1.88798	1.8768
BRS Enterprises & Trading limited	A	0.68001	0.69957	0.69117	0.65626	0.66835
	E	0.48257	0.44193	0.44851	0.49043	0.50896
	I	0.02516	0.02276	0.02408	0.02526	0.02649
	M	0.14551	0.13561	0.1401	0.15516	0.15143
	Q	1.25997	1.13986	1.12254	1.23502	1.1816
	V	2.92063	2.75339	2.74227	2.88435	2.87325
Pentacle Infrastructures and Towers Private Limited	A	0.27305	0.52084	0.52894	0.31239	0.05967
	E	-1.6424	0.19529	0.26468	0.36813	-2.5491
	I	-0.5831	0.06753	0.10096	0.18756	-0.3339
	M	0.3772	0.08196	0.11867	0.19743	0.50666
	Q	0.79958	1.22301	1.56981	3.64024	0.95214
	V	-2.8708	2.39222	2.97788	5.26425	-3.3438
Nexus feeds Limited	A	0.70664	0.71099	0.66577	0.69577	0.62133
	E	0.2419	0.43269	0.50456	0.44838	-0.096
	I	-0.2003	0.0464	0.05155	0.05781	-0.4458
	M	0.07257	0.06311	0.06363	0.05329	0.10518
	Q	0.59156	1.48993	1.77311	1.29164	0.12558
	V	1.16026	3.13839	3.48493	2.97575	-0.6715
Suryachakra Energy & Infrastructure Private Limited	A	0.83737	0.84209	0.81714	0.74433	0.8412
	E	-0.543	0.3241	0.29768	0.27606	-0.5501
	I	-0.0069	0.15644	0.16263	0.15842	-0.004
	M	0.06152	0.0447	0.06048	0.08088	0.0618
	Q	6.16348	4.19901	4.3629	4.85864	6.58282
	V	6.41598	6.20211	6.32881	6.70479	6.83938
Buildmate Projects Private Limited	A	0.87324	0.8547	0.84875	0.8419	0.89853
	E	0.10107	0.10891	0.10941	0.11404	0.08887
	I	0.09739	0.09978	0.07773	0.06938	0.08795
	M	0.14452	0.13244	0.13947	0.15435	0.11904
	Q	2.69522	2.43243	3.44035	2.90844	2.26495
	V	4.29	4.01686	4.94876	4.39705	3.82699
EBC Bearings (India) Limited	A	0.67078	0.6697	0.64304	0.64918	0.56221
	E	0.21809	0.35842	0.41918	0.41593	-0.2236
	I	0.03623	0.15812	0.10682	0.10479	-0.3365

	M	0.06303	0.08113	0.10529	0.10611	0.07138
	Q	3.02704	3.1214	2.94477	2.58657	2.56524
	V	4.29165	4.99418	4.71601	4.35478	1.85668
GKC Projects Limited	A	0.24367	0.25122	0.24855	0.25915	-0.0392
	E	0.06267	0.29599	0.40461	0.49711	-0.4701
	I	-0.2207	-0.0462	-0.0386	0.06687	-0.3423
	M	0.02698	0.02095	0.02005	0.02106	0.05086
	Q	0.35442	0.30212	0.25006	0.67411	0.06318
	V	0.022	0.87787	0.99902	1.91366	-1.741
Genesys Biologics Private Limited	A	0.3747	0.37797	0.38482	0.41673	0.34205
	E	0.22578	0.24772	0.24743	0.24907	0.23233
	I	0.04475	0.04669	0.04286	0.02945	0.03949
	M	0.05318	0.05846	0.05845	0.05906	0.05464
	Q	0.7974	0.83763	0.82302	0.81573	0.92146
	V	1.74191	1.82633	1.80689	1.79632	1.81936
Pallorbund Tea Limited	A	0.05287	-0.0768	0.05287	-0.0768	-0.0768
	E	-0.3074	-0.5803	-0.3074	-0.5803	-0.5803
	I	-0.0942	-0.0497	-0.0942	-0.0497	-0.0497
	M	0.19729	0.22946	0.19729	0.22946	0.22946
	Q	0.055	0.00512	0.055	0.00512	0.00512
	V	-0.5044	-0.9259	-0.5044	-0.9259	-0.9259
Anand Distilleries Private Limited	A	0.24984	0.2684	0.26187	0.26166	0.26674
	E	0.9728	0.97577	0.97526	0.97623	0.97624
	I	0.03363	0.09895	0.06814	0.10801	0.04564
	M	0.0181	0.01842	0.01969	0.02066	0.01769
	Q	0.33849	0.58983	0.47796	0.6129	0.38573
	V	2.12171	2.61498	2.39377	2.66182	2.2334
Anjali Waterford Hospitality and Infra Ltd	A	0.22792	0.25371	0.29844	0.2975	0.27771
	E	0.89137	0.97545	0.82907	0.81411	0.82862
	I	0.09823	0.0744	-0.0095	0.12418	0.09
	M	0.01629	0.01923	0.01738	0.01642	0.01416
	Q	0.39822	0.47247	0.2575	0.63281	0.39092
	V	2.25317	2.39915	1.7551	2.54857	2.18936
Devesh Engineering Enterprises	A	0.2134	0.26039	0.20018	0.2644	0.19691

Private Limited						
	E	0.88787	0.87856	0.94409	0.92318	0.92679
	I	0.15042	0.1183	0.23983	0.20165	0.19979
	M	0.08528	0.09577	0.01645	0.01987	0.07321
	Q	0.40921	0.58523	0.59593	0.59323	0.39177
	V	2.45543	2.57495	2.9586	2.87976	2.62842
Gouthami Hatcheries Pvt. Ltd.	A	0.40079	0.40884	0.40035	0.39684	0.46574
	E	0.54473	0.56272	0.52996	0.46698	0.53567
	I	0.01634	0.10292	0.09399	0.08557	0.07652
	M	0.08059	0.07979	0.07921	0.07297	0.07656
	Q	0.56657	0.84889	0.77414	0.56468	0.64251
	V	1.91186	2.51398	2.35342	2.02027	2.24915
ECI Infra Towers Company Private Limited	A	0.41224	0.48087	0.4746	0.3959	0.48481
	E	0.33892	0.2889	0.26567	0.26551	0.37306
	I	0.05895	0.09513	0.08526	0.079	0.03976
	M	0.23373	0.22361	0.23319	0.07646	0.20815
	Q	2.04744	2.40497	1.58625	1.43089	1.32323
	V	3.34934	3.83217	2.94739	2.58283	2.68208
Affluence Engineering and Enterprises Ltd	A	0.29317	0.51169	0.44818	0.6376	0.41881
	E	0.6663	0.58891	0.28758	0.37865	0.58896
	I	0.10557	0.16544	0.17761	0.14887	0.10154
	M	0.08846	0.07911	0.09088	0.06907	0.07173
	Q	0.75626	1.27008	1.30906	1.86784	0.88297
	V	2.4416	3.30074	2.88882	3.69392	2.58732
Agarwal Steel Structures (India) (P) Ltd.	A	0.56064	0.67739	0.65849	0.7215	0.546
	E	0.48556	0.47882	0.50733	0.35998	0.48398
	I	0.06994	0.11608	0.17833	0.18618	0.07785
	M	0.05465	0.0549	0.06693	0.07697	0.05077
	Q	1.89824	2.64418	2.66398	2.25403	1.96875
	V	3.51249	4.54075	4.7904	4.28212	3.58693
Vij Agro Exports Pvt.Ltd	A	0.05586	0.0655	-0.0226	-0.1663	0.05556
	E	-0.6709	-0.3572	-0.041	0.09264	-0.753
	I	-0.1775	-0.1758	-0.0327	-0.0031	-0.0487
	M	0.02501	0.02102	0.01989	0.02233	0.0265

	Q	0.0863	0.08224	0.35629	0.68261	0.12055
	V	-1.3569	-0.9069	0.17539	0.61524	-1.0119
Tradeinox Industries Limited	A	0.64154	0.7396	0.72556	0.79698	0.73443
	E	0.53529	0.37927	0.37868	0.26841	0.41633
	I	0.17004	0.2155	0.20715	0.11447	0.17264
	M	0.08342	0.06994	0.08954	0.03448	0.04912
	Q	6.64622	6.7874	5.9657	3.58274	2.96709
	V	8.77001	8.95221	8.09788	5.30974	5.02748
Shri Govind Realty Pvt. Ltd	A	0.81206	0.82045	0.81425	0.79178	0.81959
	E	0.18711	0.17061	0.15215	0.13771	0.19345
	I	0.03166	0.03027	0.0293	0.01296	0.01198
	M	0.74668	0.77951	0.80529	0.82616	0.7373
	Q	0.95098	0.8476	1.09301	0.70004	0.5747
	V	2.73892	2.63776	2.86189	2.38074	2.31038
Prakriti Power Private Limited Company	A	0.311	0.24907	0.34914	0.27433	0.36268
	E	0.33094	0.33386	0.35152	0.48772	0.33476
	I	0.07455	0.06655	0.04322	0.04083	0.09647
	M	0.02464	0.02632	0.02781	0.03991	0.02321
	Q	0.92477	1.0088	0.97427	1.55335	1.57932
	V	2.02117	2.00946	2.04372	2.72247	2.81391
Jainam Alternate Energy Private Limited	A	0.70856	0.46161	0.63961	0.40612	0.42095
	E	-0.6892	-0.7105	-0.1844	-0.0561	-2.8619
	I	-0.0802	-0.2507	-0.0303	-0.4623	-1.1218
	M	0.23983	0.36776	0.22442	0.27612	0.83537
	Q	2.87567	3.78729	2.31102	3.69121	3.75143
	V	2.63745	2.7362	2.85275	2.73646	-2.9546
Kimaya Industries Private Limited	A	0.69377	0.67568	0.68263	0.62449	0.61934
	E	0.12765	0.54924	0.59231	0.64849	-0.1302
	I	-0.2647	-0.0478	0.05798	0.1451	-0.2977
	M	0.17	0.14164	0.13495	0.15289	0.21937
	Q	0.1221	0.28521	1.70922	2.29617	0.12673
	V	0.36165	1.792	3.62819	4.5217	-0.1631
Baldva Textiles Private Limited	A	-0.8402	-2.2442	6.30486	2.47681	0.05516
	E	0.00692	0.01257	-0.0218	-0.0064	0.00333
	I	0.00036	0.00066	-0.0011	-0.0003	0.00018
	M	0.99308	0.39522	0.19644	0.43127	0.49355

	Q	0.00036	0.00066	-0.0011	-0.0003	0.00018
	V	-0.4011	-2.4354	7.64828	3.22052	0.36774
Adig Jemtex Pvt. Ltd.	A	0.70856	0.46161	0.63961	0.40612	0.42095
	E	-0.6892	-0.7105	-0.1844	-0.0561	-2.8619
	I	-0.0802	-0.2507	-0.0303	-0.4623	-1.1218
	M	0.23983	0.36776	0.22442	0.27612	0.83537
	Q	2.87567	3.78729	2.31102	3.69121	3.75143
	V	2.63745	2.7362	2.85275	2.73646	-2.9546
Aarti Suitings Pvt. Ltd	A	0.74537	0.88189	1.02502	1.17525	0.61502
	E	0.13985	0.22556	0.31541	0.40973	0.05802
	I	0.15248	0.37353	0.60527	0.84852	-0.0586
	M	0.28743	0.29422	0.30134	0.30882	0.28094
	Q	1.97099	3.58673	5.2807	7.05873	0.4282
	V	3.73492	6.36636	9.12523	12.021	1.22227
Grateful Buildinfra Pvt. Ltd	A	0.92699	0.92852	0.9597	0.92528	0.87759
	E	0.06873	0.05199	0.02588	-0.0986	0.08998
	I	0.0953	0.09555	0.11386	0.07711	0.12711
	M	0.16719	0.21661	0.33272	0.71542	0.14591
	Q	2.80977	2.66378	2.82551	3.77107	2.78923
	V	4.43039	4.29339	4.58594	5.42334	4.47254
Tip Top Furniture Pvt. Ltd	A	0.41128	0.25982	0.40495	0.52283	0.31936
	E	0.38164	0.39736	0.44884	0.29264	0.42808
	I	0.12184	0.15917	0.14913	0.0666	0.11284
	M	0.10754	0.13039	0.19884	0.15472	0.10912
	Q	0.71856	0.88536	1.21532	0.77132	0.90778
	V	2.21225	2.35604	2.93984	2.12027	2.32726
Orma Marble Palace Private Limited	A	0.56627	0.59079	0.62777	0.77235	0.55319
	E	0.29998	0.30591	0.24445	0.14937	0.33972
	I	0.05693	0.18291	0.15056	0.24295	0.03457
	M	0.16867	0.09851	0.11243	0.10798	0.19699
	Q	2.21664	2.22284	2.04057	3.29634	3.19291
	V	3.60299	4.02054	3.6984	5.2955	4.56143
Tierra Food India Pvt. Ltd.	A	-0.3117	-0.2675	0.01827	0.16894	-0.3021
	E	-0.2858	-0.199	0.08654	0.17653	-0.3851
	I	-0.0726	-0.1207	-0.0092	0.07465	-0.0865
	M	0.07748	0.07164	0.05081	0.04151	0.07996

	Q	0.25665	0.68118	0.73687	0.63661	0.07488
	V	-0.7107	-0.2745	0.87925	1.35709	-1.0643
Subhlabh Steels Private Limited	A	0.58102	0.56512	0.57945	0.56976	0.54956
	E	0.37626	0.38777	0.36292	0.36914	0.33775
	I	0.00687	0.03778	-0.0009	-0.0088	-0.0712
	M	0.21404	0.22169	0.2238	0.21886	0.23233
	Q	0.71649	0.76852	0.67316	0.58353	0.00213
	V	2.09085	2.24646	2.00712	1.88558	1.03874
Biharilal Greenwood Pvt. Ltd	A	0.75198	0.74581	0.66538	0.66745	0.7774
	E	0.03128	0.26608	0.03231	0.05043	0.05882
	I	0.09207	0.06035	0.10462	0.09062	0.07829
	M	0.59692	0.33172	0.39923	0.14421	0.57342
	Q	2.71278	2.09251	2.85077	2.71316	2.46551
	V	4.31821	3.7561	4.27638	3.96758	4.08069
Kanoi Plantations Private Limited	A	-0.039	0.03133	0.19961	0.29143	-0.3115
	E	0.23157	0.11715	0.16161	0.27559	0.13449
	I	0.04659	-0.0834	-0.0437	0.04992	-0.1132
	M	0.02808	0.02988	0.02836	0.02751	0.03512
	Q	0.57209	0.53655	0.66887	0.47019	0.61937
	V	1.01944	0.48019	1.00666	1.38651	0.08081
Mallick Projects Private Limited	A	0.48086	0.57373	0.57978	0.62947	0.45639
	E	0.64971	0.64418	0.64998	0.53147	0.55963
	I	-0.0818	0.04115	-0.0366	0.13618	-0.0553
	M	0.09228	0.07991	0.08069	0.0607	0.09086
	Q	0.21942	0.48451	0.07724	0.78319	0.20638
	V	1.49139	2.2581	1.61056	2.76766	1.40926
Venus Controls & Switchgear Private Limited	A	0.61097	0.64891	0.65062	0.58747	0.61869
	E	0.52347	0.57451	0.63776	0.65399	0.71696
	I	-0.025	0.14029	0.16273	0.15171	0.27103
	M	0.04333	0.04155	0.05082	0.05786	0.04645
	Q	0.84141	1.17825	1.14241	1.28881	2.24152
	V	2.24996	3.24795	3.38238	3.44342	4.90772
Dulichand Auto Sales Private Limited	A	0.20717	0.18794	0.28805	0.29501	0.22918
	E	0.98329	0.98255	0.98166	0.9629	0.9763
	I	0.1063	0.16953	0.15933	0.15724	0.13549
	M	0.01671	0.01745	0.01834	0.01918	0.0158

	Q	1.03025	1.2464	1.18784	1.24161	0.95378
	V	3.01525	3.41618	3.44344	3.47283	3.05126
Karuna Distributors Private Limited	A	0.26127	0.23182	0.21037	0.17771	0.34227
	E	0.34643	0.48147	0.44957	0.46692	0.37508
	I	-0.1854	0.11367	0.06986	0.08081	0.10886
	M	0.00727	0.00598	0.00594	0.0062	0.00723
	Q	0.65339	0.55852	0.45368	0.49418	0.58563
	V	0.84382	1.88888	1.56918	1.63101	1.88447
Pami Metals Private Limited	A	0.25363	0.3019	0.27577	0.23214	0.2204
	E	0.82936	0.89163	0.90423	0.88719	0.86466
	I	0.02964	0.12889	0.09477	0.10561	0.11188
	M	0.061	0.06162	0.06621	0.06714	0.05255
	Q	0.84209	0.94711	1.11412	1.1621	0.90347
	V	2.44112	3.01902	3.06233	3.07037	2.77831
BST Infratech Limited	A	0.26604	0.40351	0.56846	0.47471	0.47087
	E	0.8681	0.8392	0.79036	0.80778	0.81209
	I	0.32158	0.19825	0.11169	0.20066	0.18739
	M	0.12255	0.15297	0.07959	0.09144	0.09506
	Q	0.67462	1.177	0.57354	0.722	0.6689
	V	3.34327	3.58093	2.77796	3.13888	3.04564
MSP Metallics Limited	A	0.0666	0.1323	0.08401	0.09216	1.65548
	E	-0.6021	-0.3614	-0.6396	-0.5725	2.24595
	I	-0.1246	0.22713	-0.0826	-0.1803	1.76316
	M	0.18019	0.14564	0.1042	0.09915	-0.1437
	Q	0.10334	0.04614	0.07767	0.14608	-0.0917
	V	-0.9628	0.53585	-0.9271	-1.0803	10.7715
Prosperity Steels Limited	A	0.36091	-0.1112	0.66642	0.37478	0.43987
	E	-0.0753	0.00078	-0.1604	0.35923	-0.0757
	I	-0.0406	-0.0443	0.0026	0.01325	0.00285
	M	0.4818	0.46009	0.53333	0.30884	0.6023
	Q	0.16809	0.15886	1.22611	0.1453	1.00788
	V	0.65073	0.15633	2.12866	1.32684	1.79945
Krishna Alex Private Limited	A	0.96092	0.99791	0.96003	0.96217	0.96603
	E	0.06156	0.00418	0.08428	0.07374	0.06265
	I	0.11999	0.00604	0.07753	0.0862	0.08514
	M	0.19069	0.23223	0.21401	0.2082	0.2067
	Q	3.8562	0.59498	5.73871	4.94014	4.16791

	V	5.60202	1.957	7.38725	6.60244	5.81569
Madhushree Industries Pvt. Ltd.	A	0.92861	0.91153	0.91277	0.86861	-7.691
	E	0.67729	0.43161	0.51999	0.53739	0.67252
	I	0.20603	0.11114	0.11984	0.11787	-0.1167
	M	0.17201	0.13586	0.1921	0.19321	0.32748
	Q	7.77015	3.78282	3.34488	2.61879	12.6918
	V	10.608	5.92539	5.67558	4.91574	4.20278
Mohan Motor Dealers Private Limited	A	-0.0116	-7.5574	-7.3672	-4.8304	-0.012
	E	0.04901	0.81479	0.81736	0.87292	-0.0948
	I	0.05358	-0.0208	-0.005	-0.0976	-0.0205
	M	0.01793	0.1851	0.18074	0.12574	0.01853
	Q	0.00079	0.00815	0.00728	8.42117	0.00082
	V	0.24309	-7.8777	-7.5971	3.59179	-0.2029
BIL Infratech Limited	A	0.46239	0.46946	0.89068	0.90849	0.43792
	E	-0.5604	-0.2049	0.03358	0.36439	-1.2994
	I	-0.1308	-0.1015	-0.165	0.12101	-0.2162
	M	0.02511	0.02044	0.01796	0.02187	0.03668
	Q	1.23291	0.93655	3.04243	7.60424	0.35333
	V	0.58539	0.8896	3.62146	9.60941	-1.6321
Citylife Retail Private Limited	A	0.13189	0.78964	0.82958	0.83215	0.91263
	E	0.23564	0.7009	0.60725	0.62381	0.04701
	I	-0.2313	0.20691	0.24089	0.23629	0.02222
	M	0.01882	0.02925	0.02914	0.03736	0.02422
	Q	2.57337	4.16113	3.16687	3.22854	0.15118
	V	2.30703	6.78617	5.82176	5.8994	1.39984
Sampark Land and Builders Private Limited	A	0.92404	0.93264	0.93844	0.94435	0.91816
	E	0.47299	0.21172	0.15165	0.05251	0.45122
	I	0.07831	0.0937	0.1452	0.18384	-0.0021
	M	0.21847	0.10943	0.07252	0.02304	0.22954
	Q	0.96353	0.93734	1.27734	1.4997	0.37618
	V	3.12311	2.72686	3.13718	3.32545	2.24004
Suryodaya Realtors Private Limited	A	0.87662	0.8671	0.84182	0.83031	0.80646
	E	0.46751	0.46731	0.60696	0.60951	-0.394
	I	0.05874	0.07639	0.12869	0.14806	-1.2103
	M	0.02226	0.02174	0.02869	0.03049	0.04699

	Q	1.0755	1.19788	1.64811	1.75482	0.83097
	V	2.98806	3.15658	3.94826	4.10964	-2.7194
P.M. Cold Storage Private Limited	A	0.98621	0.97098	0.96684	0.96234	0.98685
	E	0.06207	0.21569	0.23914	0.23145	0.05949
	I	-0.0227	0.05429	0.08169	0.08859	-0.0026
	M	0.00305	0.00244	0.0025	0.00253	0.00306
	Q	0.02349	0.74977	1.37109	1.75392	0.02592
	V	1.22088	2.39678	3.1358	3.52488	1.2865
Kaygee Shotech Private Limited	A	0.90519	0.95521	0.98362	0.97427	0.8824
	E	0.50371	0.5089	0.57316	0.5159	0.55238
	I	0.11081	0.08416	0.10826	0.05856	0.13253
	M	0.02148	0.02337	0.03061	0.03245	0.02547
	Q	1.57208	1.74302	2.03139	1.6616	1.87145
	V	3.74048	3.89173	4.38775	3.76405	4.15442
Saturn Rings & Forgings Private Limited	A	0.82634	0.84814	0.87175	0.92041	0.80673
	E	0.32735	0.38816	0.5208	0.03277	0.38393
	I	0.16143	0.18202	0.17158	0.07397	0.22318
	M	0.02854	0.03838	0.06066	0.01873	0.02617
	Q	2.48838	2.71053	2.96707	1.897	2.43402
	V	4.48565	4.89268	5.34192	3.30082	4.68934
Swastik Tungsten Private Limited	A	0.51226	0.91095	0.85629	0.84112	0.45315
	E	0.13871	0.92013	0.9188	0.9184	0.12193
	I	0.23129	0.02948	0.01088	0.02576	0.17788
	M	0.14903	0.07792	0.07936	0.0799	0.12193
	Q	3.54323	0.22338	0.30642	0.27857	2.64371
	V	5.20126	2.74851	2.70349	2.70635	4.01573
Shree Mahalaxmi Agro Farms Private Limited	A	0.23489	0.19007	0.21418	0.2712	0.1097
	E	0.98858	0.99076	0.99036	0.98934	0.99202
	I	0.04738	0.0377	0.0282	0.02997	0.01931
	M	0.00947	0.00748	0.00841	0.00942	0.00646
	Q	0.24563	0.23898	0.19833	0.21507	0.15828
	V	2.07331	1.9828	1.93975	2.02992	1.74619
New Steel Trading Private Limited	A	0.79267	0.76586	0.83722	0.74616	0.80092
	E	0.26794	0.25079	0.31288	0.19993	0.2666
	I	0.0787	0.09566	0.11187	0.0644	0.05021

	M	0.15835	0.15829	0.23139	0.43055	0.16793
	Q	4.98884	2.73985	3.14728	1.73942	2.51003
	V	6.6649	4.41792	5.09484	3.38381	4.1083
KH Foges India Private Limited	A	0.589	0.4775	0.51177	0.33982	0.37659
	E	0.02176	0.05636	0.08337	0.11917	-0.1667
	I	0.06092	0.0664	0.09996	0.1528	-0.1003
	M	0.07951	0.08781	0.07758	0.11858	0.11592
	Q	1.71994	1.17213	1.77267	2.2118	1.32065
	V	2.70421	2.09468	2.87816	3.35962	1.2763
Shimita Trading Private Limited	A	0.20817	0.21382	0.21809	0.24351	0.22127
	E	0.46946	0.50243	0.57684	0.36891	0.41939
	I	-0.0518	0.02191	0.07735	0.10662	-0.0442
	M	0.14437	0.13228	0.1541	0.17394	0.15193
	Q	1.19461	1.26316	1.19505	1.34264	1.17532
	V	2.01628	2.37356	2.61086	2.60618	1.97221
Surya Landmark Developers Private Limited	A	0.91854	0.90553	0.90428	0.90009	0.93103
	E	0.04682	0.03076	0.03807	0.18663	0.04318
	I	-0.0023	0.00692	0.00562	0.06902	-0.0031
	M	0.5611	0.53659	0.53445	0.38049	0.56324
	Q	0.39399	1.07317	1.88814	1.38374	0.16068
	V	1.89051	2.54658	3.3639	3.17979	1.66606
Jawaria Enterprises Private Limited	A	0.79267	0.76586	0.83722	0.74616	0.80092
	E	0.26794	0.25079	0.31288	0.19993	0.2666
	I	0.0787	0.09566	0.11187	0.0644	0.05021
	M	0.15835	0.15829	0.23139	0.43055	0.16793
	Q	4.98884	2.73985	3.14728	1.73942	2.51003
	V	6.6649	4.41792	5.09484	3.38381	4.1083
Radiance Properties (India) Private Limited	A	1.02536	1.03148	1.05009	1.16774	1.02488
	E	1.44949	1.47368	1.52985	1.97375	1.43813
	I	0.03912	-0.0428	-0.1479	0.01303	-0.0124
	M	-0.0928	-0.0971	-0.0985	-0.1164	-0.0929
	Q	-0.1429	-0.238	-0.2476	-0.3206	-0.0291
	V	3.19035	2.86362	2.60735	3.81739	3.11742
Vag Buildtech Limited	A	0.68737	-0.9549	-1.076	-1.1686	0.56087
	E	0.37578	-0.5639	-0.6608	-0.7349	0.24496

	I	0.05767	-0.1729	-0.2456	-0.3012	-0.2379
	M	0.08899	0.21805	0.1696	0.13256	0.12733
	Q	5.68424	0.60903	0.5848	0.56628	4.16169
	V	7.2732	-1.7667	-2.3409	-2.7798	4.46496
TV Products India Private Limited	A	0.8927	0.9017	0.89349	-0.4771	0.6741
	E	0.34309	0.35728	0.33858	-0.1817	0.26858
	I	0.02184	0.02297	0.02017	0.11372	-0.0382
	M	0.02943	0.02836	0.02807	0.40915	0.03207
	Q	0.95136	1.30444	1.3103	0.70457	0.54686
	V	2.5917	2.97819	2.93859	0.49772	1.62446
Miltech Industries Pvt. Ltd.	A	0.45521	0.27327	0.50654	0.55495	0.42527
	E	0.56169	0.53171	0.48948	0.10785	0.58338
	I	0.08563	0.04801	0.1444	0.1802	0.01327
	M	0.3831	0.40308	0.38658	0.3413	0.39238
	Q	0.76169	0.3527	1.48607	1.43754	0.44201
	V	2.606	1.82496	3.48618	3.05249	2.04786
Cubatics Industries Private Limited	A	0.15989	0.14915	0.10548	0.16577	0.28436
	E	0.28385	0.31117	0.33231	0.36982	0.50341
	I	-0.0024	0.01827	-0.0369	0.11361	0.15405
	M	0.04106	0.0362	0.03365	0.02885	0.06174
	Q	0.28385	0.31518	0.24236	0.32612	0.36153
	V	0.88965	1.0115	0.73239	1.43467	1.95259
Clear Channel India Private Limited	A	0.2241	0.02023	0.10074	0.10451	0.32568
	E	-3.2745	-0.9872	-0.8143	-0.7941	-4.0572
	I	-1.2131	-0.0042	-0.0063	-0.0295	0.20368
	M	0.28082	0.13607	0.12513	0.12461	0.36396
	Q	0.02363	0.03073	0.02931	0.02132	0.03063
	V	-8.1265	-1.2593	-0.9357	-0.9878	-4.3681
Meta Arch Private Limited	A	-0.5407	-0.0522	0.31999	0.39527	4.89525
	E	-0.0588	-0.0174	0.1932	0.2528	3.16486
	I	0.0000	0.0000	0.0000	0.0000	0.0000
	M	0.3186	0.02198	0.02106	0.04167	-0.6673
	Q	0.00477	0.01175	0.01169	0.01689	-0.01
	V	-0.5353	-0.0621	0.67878	0.87012	9.89476
Moli Merchant Traders Private Limited	A	0.52044	0.311	0.24562	0.22611	0.41671

	E	0.79689	0.86342	0.86035	0.85851	0.82793
	I	-0.5081	0.0348	0.03727	0.01456	0.05058
	M	0.20182	0.13528	0.13965	0.14149	0.17097
	Q	0.03894	0.07003	0.07499	0.05551	0.03299
	V	0.22339	1.84795	1.78093	1.66164	1.96159
Shivam Steels and Tubes Private Limited	A	0.66258	0.73636	0.77978	0.80838	0.50943
	E	0.05521	0.04091	0.03249	0.02695	0.08491
	I	0.03681	0.01364	0.00722	-0.009	0.08491
	M	0.54601	0.40455	0.3213	0.26647	0.83962
	Q	1.41718	1.01364	0.77617	0.61976	2.25472
	V	2.73723	2.24126	1.97323	1.75716	3.76661
Mack Star Marketing Private Limited	A	0.92833	0.89142	0.86787	0.8929	0.94234
	E	0.13878	0.2218	0.23401	0.12885	0.06081
	I	0.09879	0.19682	0.22259	0.12964	0.00701
	M	0.01485	0.02235	0.02813	0.00596	0.0133
	Q	5.42391	12.9474	15.9017	11.0928	3.12505
	V	7.06168	14.9775	18.0063	12.765	4.36899
Warana Diary and Agro Industries Ltd	A	-0.1011	-0.1542	0.02314	-0.1173	-0.113
	E	-0.6801	-0.3677	-0.0131	0.29343	-0.9672
	I	-0.1705	-0.244	-0.1928	-0.0949	-0.1179
	M	0.81891	0.29694	0.25117	0.08209	0.87738
	Q	1.69513	1.79192	1.47282	1.37201	1.17028
	V	0.54851	0.46319	0.99531	1.37663	-0.1833
Sai - Tech Pharmaceuticals Private Limited	A	0.85611	0.88874	0.88106	1.0202	0.87903
	E	0.22264	0.20119	-0.031	-5.0236	0.30349
	I	0.1344	0.17319	0.15378	0.10438	0.16574
	M	0.51647	0.44227	0.60289	3.24916	0.40658
	Q	1.08851	1.02713	1.365	7.78788	0.91486
	V	3.17985	3.21116	3.24668	4.26528	3.18455
VGS Realty Construction Private Limited	A	0.49205	0.45356	0.36908	0.34838	0.51366
	E	-0.1079	-0.0803	-0.1671	0.10589	-0.2973
	I	0.05498	0.18723	-0.2069	-0.1348	-0.103
	M	0.39953	0.35405	0.28926	0.23189	0.393
	Q	1.02414	1.98132	0.93451	0.62444	0.85738
	V	1.88371	3.24147	0.63339	0.88428	0.95272

Company						
Dhanlaxmi Electricals Private Limited	A	-0.2002	0.61327	0.52927	0.49973	0.38683
	E	-0.5985	0.57417	0.6504	0.62696	-1.8074
	I	-0.3478	0.10385	0.14298	0.13272	-0.5953
	M	0.02527	0.01645	0.01972	0.02072	0.023
	Q	4.80063	3.7791	4.82839	5.43441	1.62704
	V	2.58486	5.66767	6.85292	7.3568	-2.3916
Pandhe Infracons Private Limited	A	0.1372	0.134	0.11332	0.09051	0.06468
	E	0.8848	0.87284	0.86881	0.8516	0.89948
	I	0.05083	0.0235	0.08426	0.10021	-0.0028
	M	0.10837	0.12084	0.12304	0.13753	0.09504
	Q	0.1225	0.14885	0.15091	0.08478	0.06569
	V	1.75849	1.68152	1.85497	1.79874	1.45015
PNK Space Development Pvt. Ltd.	A	0.20177	0.14598	0.14197	0.41138	-0.0283
	E	-0.2876	-0.1866	-0.037	0.06416	-1.0213
	I	-0.0724	-0.1992	-0.1401	-0.0965	-0.3692
	M	0.76959	0.66139	0.69881	0.70733	1.07607
	Q	0.59653	0.56604	0.73845	0.69038	1.0219
	V	0.65827	0.21898	0.81336	1.37912	-1.0156
Ammanarul Spinners Pvt. Ltd.	A	0.39245	0.26357	0.4651	0.47115	0.43026
	E	0.28749	0.18483	0.28265	0.27465	0.23748
	I	0.05274	0.04559	0.07602	0.07597	0.06705
	M	0.21122	0.184	0.30684	0.32432	0.17559
	Q	0.52792	0.8392	1.09537	1.21695	0.74232
	V	1.70159	1.67425	2.48308	2.61091	1.91699
Anuradha Real Estate Private Limited	A	-0.021	0.15678	0.12616	0.12636	-10.103
	E	-0.6601	-0.3881	-0.29	-0.1268	-13.582
	I	-0.0339	0.02851	-0.0048	-0.0868	-3.8323
	M	0.18328	0.14809	0.14759	0.14036	2.0716
	Q	0.76583	0.76472	0.61996	0.17865	2.42287
	V	-0.1862	0.59168	0.43734	-0.0497	-40.122
Kasata Hometech (India) Private Limited	A	0.57081	0.56944	0.61335	1.29534	0.38397
	E	0.13394	0.11099	0.11846	-0.3444	0.25708
	I	0.19059	0.11099	0.09681	-0.0225	0.1399
	M	0.15939	0.07864	0.08419	-0.1855	0.16441

	Q	1.77916	1.70775	1.5923	3.19135	1.15445
	V	3.37446	2.95819	2.86257	4.07493	2.53431
Marveledge Realtors Private Limited	A	0.21168	0.17995	0.15682	0.13704	0.25131
	E	0.80234	0.799	0.76701	0.80241	0.83476
	I	0.03331	0.04722	0.06672	0.03932	0.03453
	M	0.06184	0.06248	0.05992	0.06573	0.06319
	Q	0.61075	1.04846	0.80537	0.78155	0.70224
	V	2.13446	2.57526	2.32272	2.23781	2.32364
Synergytech Automation Private Limited	A	0.37071	0.38859	0.31784	0.31587	0.32482
	E	0.70199	0.66895	0.57569	0.57763	0.68976
	I	0.09345	0.21434	0.22504	0.24093	0.03364
	M	0.07084	0.07371	0.07641	0.09937	0.06803
	Q	1.40927	1.50388	1.5287	1.85392	1.17062
	V	3.18638	3.65675	3.50301	3.89446	2.67672
S R (MCB) Engineers Pvt. Ltd	A	0.02106	0.06373	0.05583	-0.0012	0.00071
	E	0.71963	0.78345	0.67333	0.63315	0.7155
	I	0.13218	0.32651	0.24701	0.25385	0.05013
	M	0.04917	0.05872	0.06612	0.07855	0.04656
	Q	1.9224	2.43833	2.21787	2.38748	1.2346
	V	3.41893	4.7219	4.08012	4.15491	2.4293
Radius Estates and Developers Private Limited	A	-0.0875	0.13399	0.14519	0.18486	-0.3345
	E	0.15093	-0.0094	0.33455	0.55278	-0.0901
	I	-0.0611	-0.1285	0.0276	0.00932	-0.1839
	M	0.07427	0.03051	0.0284	0.04899	0.12098
	Q	0.08701	0.0503	0.12167	0.16853	0.21295
	V	0.03606	-0.2078	0.87226	1.22426	-0.8492
Deserve Construction Private Limited	A	0.33767	0.39823	0.41996	0.2054	0.43156
	E	0.68275	0.74883	0.63192	0.48386	0.7432
	I	0.1664	0.20881	0.25374	0.27621	0.18287
	M	0.14228	0.18846	0.20123	0.18382	0.1291
	Q	1.1991	1.818	1.85984	2.06602	1.32033
	V	3.19342	4.14456	4.20468	4.00963	3.55828
Kumar Urban Development Private Limited	A	0.28127	0.27986	0.28113	0.26384	0.3023
	E	0.11496	0.11562	0.0594	0.05246	0.05928

	I	0.07566	0.16391	0.11229	0.13918	0.01412
	M	0.14294	0.1413	0.13529	0.12711	0.14426
	Q	1.89619	2.27307	2.21364	1.80791	1.43497
	V	2.7282	3.39416	3.08367	2.73173	2.01244
Vyas Mercantile Private Limited	A	1.07584	1.07955	-0.1954	-0.176	1.00176
	E	79.5918	80.3759	-0.5259	-0.513	75.0555
	I	0.11798	53.0559	0.00485	0.00116	0.16211
	M	-77.659	-78.542	1.51196	1.50384	-73.075
	Q	-195.7	-170.54	2.75396	2.41119	-123.36
	V	-128.99	71.4072	2.7037	2.3855	-60.264
Shivaji Cane Processors Limited	A	-0.1633	-0.1332	0.03857	0.02887	-0.1603
	E	0.0212	0.02378	0.02425	2.4E-06	0.01875
	I	0.10764	0.10139	-0.0062	-0.0087	0.10757
	M	0.26017	0.28576	0.28082	0.25098	0.23556
	Q	0.32773	0.31016	0.25567	0.31332	0.19876
	V	0.67238	0.68928	0.48361	0.46965	0.52872
Vashistha Mercantile and Trading Pvt. Ltd.	A	0.004391	0.004157	0.004230	0.002600	0.002069
	E	0.018748	0.021199	0.023782	0.024252	0.000002
	I	0.107574	0.107638	0.101386	-0.006223	-0.008663
	M	0.235557	0.260175	0.285762	0.280820	0.250984
	Q	0.198762	0.327727	0.310158	0.255674	0.313322
	V	0.726406	0.873375	0.854248	0.440447	0.437495
Royal Polyurethane (India) Private Limited	A	0.88169	0.87343	0.85626	0.82432	0.91803
	E	0.26316	0.30751	0.29123	0.29103	-0.0535
	I	0.14525	0.14463	0.15084	0.16187	-0.0996
	M	0.01766	0.02066	0.02278	0.02609	0.01175
	Q	3.57333	3.60154	3.39714	3.42552	1.59291
	V	5.48614	5.56623	5.34043	5.36855	2.29647
Altech Infrastructure Private Limited	A	1.68436	0.84706	0.85871	0.82098	1.53421
	E	7.63555	-0.2257	0.44987	0.50441	6.96324
	I	5.12003	-0.4914	0.24606	0.22533	0.03843
	M	-0.2285	0.04289	0.0365	0.05054	-0.2071
	Q	-6.016	4.58683	4.26076	4.22677	-5.7887
	V	23.46	3.68692	6.75066	6.68783	5.80924
Unibera	A	-10.151	3.5902	1.20854	1.12589	-10.239

Developers Private Limited						
	E	-40.732	-3.8897	-0.2336	0.39082	-41.589
	I	-10.954	0.02486	-0.4146	0.26122	-0.7001
	M	1.36257	0.11594	0.06549	0.08836	1.43486
	Q	24.6977	8.76604	3.76118	8.93207	1.18134
	V	-79.865	7.77152	3.5518	11.7364	-70.781
Mystic Monk Designs Private Limited	A	-1.0644	-0.771	-0.3336	-0.2492	-1.656
	E	-1.2276	-1.0189	-0.6106	-0.4477	-2.4542
	I	0.08522	-0.0383	0.10626	0.07985	-0.2064
	M	0.56103	0.49973	0.38653	0.30119	0.89322
	Q	0.39227	0.52355	0.87709	1.15399	0.30716
	V	-1.9863	-1.6551	0.2036	0.67122	-5.2612
Sanyog Healthcare Limited	A	-0.0667	0.11111	0.15789	1.07692	-0.2308
	E	-9.2667	-7.4444	-6.7895	1.60096	-11.077
	I	-0.4	-0.2778	-0.5789	-0.0048	-0.3846
	M	9.000	7.5	7.10526	-0.601	10.3846
	Q	6.66667	5.55556	0.31579	-0.024	7.69231
	V	-2.3133	-1.1556	-6.6477	3.1332	-3.1385
Fashion Flare International Private Limited	A	0.67754	0.71611	0.7365	0.79701	0.47239
	E	0.26001	0.25421	0.28185	0.27532	0.03127
	I	0.02291	0.08069	0.14845	0.14646	-0.3094
	M	0.10611	0.10487	0.12093	0.14244	0.15316
	Q	0.36922	1.14098	2.02235	1.49411	0.03194
	V	1.6852	2.68425	3.86117	3.40326	-0.2865
Shree Om Enterprises Pvt. Ltd.	A	0.83359	0.83794	0.82257	0.78604	0.84934
	E	0.68351	0.5448	0.51734	0.49925	0.71351
	I	0.07076	0.07246	0.10265	0.1479	0.03981
	M	0.04666	0.03953	0.04079	0.04505	0.04684
	Q	0.3888	0.39262	0.44324	0.52928	0.27791
	V	2.60715	2.42332	2.51737	2.68603	2.45523
Shivansh Diamond Private Limited	A	0.50592	0.48081	0.42762	0.37553	0.55982
	E	0.31584	0.30971	0.37222	0.25107	0.30824
	I	0.09027	0.10865	0.1211	0.16724	0.07891
	M	0.09485	0.0973	0.13836	0.05689	0.08995

	Q	1.10496	0.97592	1.31459	1.52737	1.23638
	V	2.50792	2.40245	2.83017	2.914	2.65285
VHV Beverages Private Limited	A	-0.0556	0.13636	0.03659	0.04348	-0.1875
	E	-27.944	-22.636	-2.6159	-2.646	-31.75
	I	-0.2778	-3.1364	-0.0183	-0.0248	-0.3125
	M	28.8889	23.6364	3.17073	3.22981	32.5
	Q	2.22222	1.36364	0.12195	0.06211	3.125
	V	-20.552	-26.333	-1.6544	-1.7342	-23.084
Mak Medicals Private Limited	A	0.22089	0.08587	0.05577	0.15905	-0.3052
	E	0.00531	0.05965	0.05463	0.05092	-0.8308
	I	0.03508	0.09107	0.08801	0.04642	-0.677
	M	0.32708	0.34528	0.3272	0.31036	0.6275
	Q	0.89515	0.95616	0.98824	1.05362	0.73627
	V	1.47876	1.64946	1.61741	1.65411	-2.6514
Genexis India Pvt. Ltd. Company	A	0.68457	0.66142	0.4769	0.3285	0.79518
	E	0.28418	0.17913	0.11413	0.02738	0.15361
	I	0.20215	0.1998	0.16712	0.13043	0.16325
	M	0.16992	0.17126	0.23641	0.22061	0.29337
	Q	3.76855	3.31398	3.11413	1.26248	2.52108
	V	5.75317	5.11726	4.53642	2.25655	4.4026
VSP Udyog Private Limited	A	0.41942	0.39724	0.36647	0.52011	0.43221
	E	-0.3981	-0.2991	0.10548	0.39244	-0.4822
	I	-0.0679	-0.3506	-0.2734	0.06118	-0.0451
	M	0.15715	0.14468	0.10621	0.09231	0.16774
	Q	0.32773	0.46413	0.31447	0.62367	0.38632
	V	0.14355	-0.5485	0.06311	2.0539	0.18136
Trikalp Laminates Private Limited	A	0.98907	0.98005	0.97794	0.95405	0.99209
	E	0.08197	0.27594	0.19314	0.03816	0.09446
	I	0.12866	0.1545	0.14657	0.11916	0.03759
	M	0.58371	0.40194	0.34559	0.38551	0.58111
	Q	4.95529	5.11631	3.92794	6.11916	2.63205
	V	7.02679	7.42459	6.05896	7.93586	4.42487
Chowdhury Rubbers & Chemicals Private Limited	A	0.19145	0.27439	0.25638	0.34533	0.17139
	E	0.61959	0.67461	0.67524	0.61024	0.57295
	I	-0.0932	0.04197	0.06127	0.05977	-0.0363
	M	0.08123	0.07264	0.07262	0.06796	0.08628

	Q	0.44006	1.07686	1.29563	1.54349	0.03173
	V	1.27802	2.53159	2.79309	3.04872	0.9714
Suvidha Parklift Limited	A	0.8618	0.84796	0.81789	0.78808	0.6703
	E	0.31236	0.41753	0.41873	0.36852	-1.6671
	I	-0.0572	0.10042	0.10707	0.11412	-2.4903
	M	0.03907	0.03691	0.0394	0.01334	0.13156
	Q	2.24967	1.96638	1.96544	2.03212	0.87127
	V	3.55365	3.92002	3.90813	3.87632	-8.7982
FCRD India Pvt. Ltd	A	0.91113	0.90116	0.89365	0.86792	0.9058
	E	0.48027	0.44852	0.41786	0.37752	0.46095
	I	0.11945	0.11606	0.10357	0.11095	0.09359
	M	0.15677	0.16511	0.175	0.19597	0.134
	Q	1.59723	1.772	1.73095	2.07829	1.2051
	V	3.84959	3.96161	3.83339	4.12996	3.32544
Artimpianti India Private Limited	A	-0.5151	-0.0755	0.25807	0.28028	-0.7843
	E	-0.1348	0.26444	0.34898	0.46136	-0.7017
	I	-0.5157	-0.1706	-0.0795	-0.0436	-0.3921
	M	0.41536	0.23624	0.14592	0.08518	0.61367
	Q	1.27146	3.38291	2.67683	1.83832	1.05583
	V	-0.9894	3.23805	3.29746	2.72607	-1.7945
Emkay Automobile Private Limited	A	-0.2405	-0.1803	-0.083	-0.0332	-0.3125
	E	-4.369	-3.2278	-2.2819	-1.6622	-6.168
	I	-0.2447	-0.2724	-0.2294	-0.2281	-0.3351
	M	0.35106	0.27475	0.21215	0.17182	0.46869
	Q	0.0000	0.10256	0.33259	0.96874	0.0000
	V	-7.0021	-5.367	-3.5919	-2.0489	-9.8348
AL-Tabarak Frozen Foods Private limited	A	0.0548	0.07616	0.01614	0.05668	0.13973
	E	-3.4083	-1.4172	-1.1797	-0.7209	-4.7171
	I	-0.3165	-0.0138	-0.1728	-0.1295	-0.1137
	M	1.03585	0.50372	0.48328	0.38335	1.35052
	Q	1.73537	1.10111	1.03455	1.20766	1.73791
	V	-3.3953	-0.536	-0.879	0.06784	-4.2649
Sachin Electricals Private Limited	A	-0.7408	-0.1875	0.06243	-0.1305	-1.43
	E	-5.3431	-1.3805	-0.7958	-0.655	-8.5167
	I	-1.567	-0.0663	-0.0104	0.05165	-0.221
	M	0.89119	0.33743	0.23911	0.26988	1.36636

	Q	4.81545	2.94756	2.12838	2.67907	3.74399
	V	-8.1949	0.77074	1.19618	1.93513	-9.8087
Retail Kart Solutions Pvt. Ltd	A	0.32831	0.27138	0.30132	0.28527	0.33634
	E	0.1521	0.16738	0.19184	0.19496	0.12913
	I	0.08908	0.04344	0.05518	0.05653	0.07621
	M	0.07778	0.07366	0.07017	0.08421	0.08033
	Q	1.52535	1.4971	1.18169	1.36204	1.42006
	V	2.47137	2.24315	2.03486	2.21301	2.30272
Raghuveer Metal Industries Ltd	A	0.9485	0.0041	0.22881	0.57588	0.93232
	E	0.36636	0.88525	0.88136	0.88358	0.29118
	I	0.1219	0.04508	-0.0191	0.01663	-0.1478
	M	0.03651	0.11475	0.11864	0.11642	0.04987
	Q	0.89505	0.0041	0.1822	0.78586	0.18344
	V	2.96944	1.46598	1.69876	2.83788	1.25182
Kiran Udyog Private Limited	A	0.76864	0.75407	0.68616	0.53425	0.97721
	E	-0.1054	-0.0366	-0.039	-0.0509	-0.208
	I	-0.0488	0.03455	0.05653	-0.3483	-0.057
	M	1.08226	0.85569	0.82066	0.82387	1.19943
	Q	2.86632	2.88821	1.5692	0.46575	2.74074
	V	4.12644	4.36642	3.01539	0.37996	4.15111
Xion Gems & Jewellers Private Limited	A	1.00000	1.00000	1.00000	1.00000	1.00000
	E	0.08	0.2	0.35	0.48	0.096
	I	-0.1227	-0.059	-0.0176	0.0706	0.09385
	M	0.38176	0.339	0.3136	0.35722	0.52154
	Q	2.45045	2.162	1.89269	1.83351	3.30154
	V	3.58708	3.74094	3.72345	4.16055	5.25654
Adityasamaraj Natural Foods Private Limited	A	-0.8291	-0.6652	0.48375	0.64529	-1.1031
	E	-3.319	-2.595	0.01272	0.41682	-3.9427
	I	-0.1566	-2.1112	-0.5471	0.12217	-0.2804
	M	0.13146	0.1098	0.02983	0.01861	0.01535
	Q	1.16286	1.08686	0.46539	0.92545	1.20508
	V	-4.9177	-10.247	-0.7242	2.69675	-6.5556
Bindal Polymers Pte. Ltd	A	0.36783	0.37838	0.49056	0.51903	0.23384
	E	0.21744	0.30691	0.10906	-0.035	-0.0494
	I	-0.0555	-0.0069	0.00027	0.01054	-0.2458
	M	0.27227	0.25376	0.35733	0.47007	0.35116

	Q	0.02037	0.35899	0.44642	0.64302	0.00175
	V	0.74652	1.37169	1.40262	1.53302	-0.3874
Asterism Pharmaceuticals Private Limited	A	-0.1305	-0.0832	0.09097	0.15535	-0.1459
	E	-0.1473	-0.0169	0.19857	0.32066	-0.2575
	I	-0.1265	-0.178	-0.0853	-0.0497	-0.0948
	M	0.01544	0.01352	0.00922	0.00885	0.01725
	Q	0.0789	0.08036	0.17886	0.11924	0.05575
	V	-0.6921	-0.6226	0.29003	0.59587	-0.7825
Mirco Dynamics Pvt. Ltd	A	1.74745	1.87126	2.88933	3.14022	1.65385
	E	9.96945	10.977	20.2451	18.2103	9.96154
	I	-0.1283	-0.9218	0.41502	1.57565	-0.0476
	M	-2.1222	-2.3954	-4.1186	-3.845	-1.9084
	Q	-0.0672	-0.0115	-0.0356	-0.1734	-0.0018
	V	14.2903	13.1225	30.6732	31.9821	14.6267
Shamik Enterprises Private Limited	A	0.59734	0.61268	0.60529	0.61228	0.55895
	E	0.53869	0.5007	0.45893	0.43691	0.59
	I	0.06968	0.08521	0.06408	0.07741	0.04777
	M	0.12833	0.11958	0.11701	0.11632	0.13656
	Q	1.39646	1.38	1.21279	1.11111	1.34229
	V	3.17298	3.16776	2.86211	2.78164	3.07726
Roharsh Motors Private Limited	A	0.67373	0.80422	0.80582	0.76529	0.58909
	E	0.36865	0.38791	0.36034	0.26688	0.39182
	I	0.10165	0.13248	0.13511	0.12143	0.11366
	M	0.18918	0.23798	0.26771	0.1246	0.16947
	Q	1.34178	1.7782	1.67053	1.60535	1.52231
	V	3.11398	3.86452	3.7468	3.37121	3.253
Jain Shoppers Private Limited	A	-0.4574	-0.6983	-0.3194	-0.4917	-0.7023
	E	-1.6294	-1.7342	-1.1872	-1.2126	-2.1222
	I	-0.1724	-0.2332	-0.0834	-0.2495	-0.2734
	M	1.07535	1.27917	1.01429	0.38818	0.62321
	Q	0.06834	0.24242	0.40711	0.68742	0.12293
	V	-2.6854	-3.0255	-1.3054	-2.1914	-4.2192
Ceebuild Company Private Limited	A	0.60998	0.58378	0.56156	0.63316	0.51879
	E	0.10085	0.09404	-0.022	-0.0201	-0.13
	I	0.09289	0.23332	0.22523	0.14201	-0.1766
	M	0.44332	0.42333	0.5001	0.35401	0.55935

	Q	2.30981	2.39603	2.76828	1.59181	1.9067
	V	3.75321	4.24976	4.45197	3.00285	2.09829
Shree Shankar Saw Mill Private Limited	A	0.39213	0.40706	0.38202	0.34796	0.41829
	E	0.42375	0.44167	0.51573	0.6094	0.41689
	I	-0.0562	-0.0357	-0.0494	0.34983	-0.0036
	M	0.02731	0.02461	0.02581	0.02671	0.02846
	Q	1.45886	1.56155	1.45696	1.43146	1.2912
	V	2.352	2.56385	2.48841	3.87119	2.38055
Hindusthan Small Tools Private Limited	A	3.26165	3.32847	1.69827	1.41136	4.66603
	E	14.3824	14.0438	4.50587	3.01277	25.0759
	I	0.08475	-2.9458	-1.9874	0.07955	-1.1992
	M	-11.06	-10.887	-2.9197	-1.4495	-19.812
	Q	-0.0222	-0.0563	0.0000	-0.0157	-0.222
	V	17.6706	7.34573	0.03582	5.28863	24.6389
Fontana Impex Private Limited	A	-0.1499	-0.1217	0.51269	0.53276	-0.2548
	E	-0.5241	-0.2556	0.27178	0.26457	-0.8215
	I	-0.01	0.27714	0.09191	0.09746	-0.1286
	M	0.3405	0.31842	0.11283	0.10833	0.43241
	Q	0.69177	1.49948	1.006	1.02321	1.71126
	V	-0.0512	2.09961	2.3717	2.41854	0.08877
Airen Copper Pvt. Ltd.	A	0.72601	0.71539	0.88453	0.86931	0.73831
	E	0.52857	0.29781	0.51306	0.47959	0.51238
	I	0.1328	0.13222	0.16667	0.17818	0.08428
	M	0.22987	0.18775	0.07627	0.08477	0.20472
	Q	2.31679	2.40687	3.08333	3.37951	1.76974
	V	4.50185	4.22884	5.45574	5.72959	3.77224
Teja Cement Limited	A	0.93719	0.92961	0.93088	0.93463	0.93766
	E	0.2901	0.27816	0.24366	0.19761	0.32358
	I	0.1059	0.13382	0.13216	0.0861	0.05239
	M	0.23477	0.26717	0.29993	0.32256	0.25274
	Q	2.1721	2.90207	3.87617	2.88999	2.40978
	V	4.19104	5.00602	5.94658	4.76299	4.3101
Chemizol Additives Pvt. Ltd.	A	0.85024	0.83886	0.77273	0.75187	0.8715
	E	0.47668	0.37032	0.39636	0.17316	0.31032
	I	0.1703	0.13223	0.16485	0.0982	0.15152
	M	0.23962	0.2381	0.33939	0.29985	0.42961

	Q	1.34531	1.11437	1.55576	1.18966	1.49942
	V	3.73738	3.21755	3.78402	2.83712	3.73594
Thrive Therapeutic Private Limited	A	0.38008	0.28913	0.21554	0.14664	0.42029
	E	0.49257	0.47075	0.17072	0.4372	0.52966
	I	0.11332	0.12067	0.18779	0.20299	0.10408
	M	0.20505	0.22389	0.23005	0.03394	0.19333
	Q	1.29116	1.23124	1.55826	2.00272	0.93114
	V	2.93257	2.76857	2.8121	3.47899	2.63554
Vascular Therapeutics (India) Pvt. Ltd	A	0.83483	0.80181	0.8089	0.85959	0.82739
	E	0.66068	0.63706	0.58311	0.67187	0.68195
	I	0.13695	0.14246	0.21221	0.18822	0.17714
	M	0.32842	0.35667	0.38598	0.07549	0.28976
	Q	1.42014	1.55068	1.33057	1.7081	1.25608
	V	3.99444	4.0873	4.04816	4.34495	3.96083
STB Export Pvt. Ltd	A	0.06227	-0.0446	-0.0228	0.3533	0.4328
	E	-2.5561	-2.0488	-1.3426	-0.131	-2.5338
	I	0.08908	0.03766	-0.9256	-0.6441	0.1235
	M	0.28735	0.25	0.18969	0.1153	0.29146
	Q	0.79419	0.5181	1.82173	1.77455	0.639
	V	-2.2441	-2.13	-3.0278	-0.043	-1.8072
Bherawa Textile Industries Private Limited	A	0.63749	0.62107	0.50712	0.44375	0.65017
	E	0.26701	0.2881	0.07692	0.01467	0.22472
	I	0.10636	0.13789	0.15776	0.13962	0.0914
	M	0.11256	0.13899	0.13568	0.16941	0.08351
	Q	1.61467	2.17401	2.3255	2.32815	1.42479
	V	3.17038	3.85889	3.64144	3.44125	2.86992
R&M International Private Limited	A	0.21233	0.22217	0.09305	0.18781	0.13117
	E	0.49338	0.40824	0.39318	0.3253	0.63208
	I	0.26118	0.19014	0.19201	0.15308	0.289
	M	0.16929	0.20793	0.26802	0.28987	0.14943
	Q	2.08816	1.50839	1.78965	1.927	2.68871
	V	3.99506	3.09722	3.24441	3.28496	4.7717
Matashree Snacks Private Limited	A	0.4205	0.58651	0.44389	0.51095	0.31434
	E	-4.4999	-2.573	-0.6368	-0.3264	-5.1113
	I	-0.0954	-0.2664	-0.1118	-0.076	-0.057

	M	0.53278	0.34253	0.15626	0.12815	0.59791
	Q	1.95662	1.40138	0.50975	0.76823	2.96549
	V	-3.8356	-2.1719	-0.1248	0.74986	-3.6454
Sri Yadari Life Sciences Private Limited	A	2.52	0.67151	0.18474	0.73795	2.46154
	E	3.2	-0.5349	0.05422	0.2761	3.11538
	I	0.008	-0.4186	-0.1606	-0.3002	0.03846
	M	-2.208	0.80233	0.55422	0.55422	-2.1231
	Q	-105.15	38.2093	10.9659	-4.4618	-101.11
	V	-98.841	37.3281	11.0549	-3.8434	-94.838
Silk Woven Sack Pvt. Ltd	A	0.0548	0.07616	0.01614	0.05668	0.13973
	E	-3.4083	-1.4172	-1.1797	-0.7209	-4.7171
	I	-0.3165	-0.0138	-0.1728	-0.1295	-0.1137
	M	1.03585	0.50372	0.48328	0.38335	1.35052
	Q	1.73537	1.10111	1.03455	1.20766	1.73791
	V	-3.3953	-0.536	-0.879	0.06784	-4.2649
Sky high Infra projects Limited	A	-0.7408	-0.1875	0.06243	-0.1305	-1.43
	E	-5.3431	-1.3805	-0.7958	-0.655	-8.5167
	I	-1.567	-0.0663	-0.0104	0.05165	-0.221
	M	0.89119	0.33743	0.23911	0.26988	1.36636
	Q	4.81545	2.94756	2.12838	2.67907	3.74399
	V	-8.1949	0.77074	1.19618	1.93513	-9.8087
Krishna Knitwear Technology Ltd	A	0.32831	0.27138	0.30132	0.28527	0.33634
	E	0.1521	0.16738	0.19184	0.19496	0.12913
	I	0.08908	0.04344	0.05518	0.05653	0.07621
	M	0.07778	0.07366	0.07017	0.08421	0.08033
	Q	1.52535	1.4971	1.18169	1.36204	1.42006
	V	2.47137	2.24315	2.03486	2.21301	2.30272
Senioreetaa Designer Ensembles Pvt. Ltd.	A	0.9485	0.0041	0.22881	0.57588	0.93232
	E	0.36636	0.88525	0.88136	0.88358	0.29118
	I	0.1219	0.04508	-0.0191	0.01663	-0.1478
	M	0.03651	0.11475	0.11864	0.11642	0.04987
	Q	0.89505	0.0041	0.1822	0.78586	0.18344
	V	2.96944	1.46598	1.69876	2.83788	1.25182
Adkure Technologies Private Limited	A	0.76864	0.75407	0.68616	0.53425	0.97721

	E	-0.1054	-0.0366	-0.039	-0.0509	-0.208
	I	-0.0488	0.03455	0.05653	-0.3483	-0.057
	M	1.08226	0.85569	0.82066	0.82387	1.19943
	Q	2.86632	2.88821	1.5692	0.46575	2.74074
	V	4.12644	4.36642	3.01539	0.37996	4.15111
Shree Murugan Flour Mills Private Limited	A	1.0000	1.0000	1.0000	1.00000	1.00000
	E	0.08	0.26	0.35893	0.486	0.096
	I	-0.12	-0.05	-0.01	0.07	0.09
	M	0.38176	0.339	0.3136	0.35722	0.52154
	Q	2.45045	2.162	1.89269	1.83351	3.30154
	V	3.58708	3.74094	3.72345	4.16055	5.25654
Bony Systems and Technologies Limited	A	-0.8291	-0.6652	0.48375	0.64529	-1.1031
	E	-3.319	-2.595	0.01272	0.41682	-3.9427
	I	-0.1566	-2.1112	-0.5471	0.12217	-0.2804
	M	0.13146	0.1098	0.02983	0.01861	0.01535
	Q	1.16286	1.08686	0.46539	0.92545	1.20508
	V	-4.9177	-10.247	-0.7242	2.69675	-6.5556
Shri Gopal Agro Food Pvt. Ltd	A	0.4276	0.41875	0.38333	0.38408	0.39338
	E	0.49347	0.49949	0.52864	0.50044	0.63914
	I	0.07195	0.13071	0.12846	0.10295	0.18232
	M	0.03681	0.0359	0.04154	0.0451	0.03767
	Q	1.14841	1.40343	1.32187	1.18647	1.35476
	V	2.61077	3.05668	2.96949	2.7136	3.34452
Chairpertech Electronics Private Limited	A	0.15596	0.19103	0.31881	0.18474	0.2592
	E	0.52592	0.54224	0.52608	0.30743	0.61363
	I	0.00713	0.10104	0.10168	0.09017	-0.0137
	M	0.20535	0.20241	0.20557	0.21153	0.20057
	Q	0.45414	0.69204	0.63107	0.72024	0.37052
	V	1.52386	2.13459	2.20842	1.79608	1.61527
Alipurduar Tea Co. Ltd	A	0.0957	0.17169	0.19507	0.21398	0.20198
	E	0.1982	0.24937	0.28139	0.28913	0.15282
	I	-0.002	0.05721	0.06276	0.02652	0.05308
	M	0.03442	0.03267	0.03292	0.03362	0.03286
	Q	1.01162	1.03807	0.91648	0.76709	0.80077
	V	1.41688	1.80059	1.77045	1.53559	1.45118
Hike Leather Private Ltd	A	0.39213	0.40706	0.38202	0.34796	0.41829

	E	0.42375	0.44167	0.51573	0.6094	0.41689
	I	-0.0562	-0.0357	-0.0494	0.34983	-0.0036
	M	0.02731	0.02461	0.02581	0.02671	0.02846
	Q	1.45886	1.56155	1.45696	1.43146	1.2912
	V	2.352	2.56385	2.48841	3.87119	2.38055
Greens Farm Tech Private Limited	A	3.26165	3.32847	1.69827	1.41136	4.66603
	E	14.3824	14.0438	4.50587	3.01277	25.0759
	I	0.08475	-2.9458	-1.9874	0.07955	-1.1992
	M	-11.06	-10.887	-2.9197	-1.4495	-19.812
	Q	-0.0222	-0.0563	0.0000	-0.0157	-0.222
	V	17.6706	7.34573	0.03582	5.28863	24.6389
Nobile Ice Cream Company Private Ltd	A	0.45388	0.4822	0.45434	0.42463	0.46849
	E	0.66625	0.61326	0.60579	0.59397	0.71332
	I	0.04545	0.07079	0.05294	0.04333	0.03151
	M	0.03272	0.03088	0.03366	0.03482	0.03251
	Q	2.14902	2.24923	2.11564	2.01622	1.95906
	V	3.7939	3.93635	3.70174	3.51922	3.64142
Mohan Motor Distributors Pvt. Ltd.	A	-0.237	0.10518	0.04584	-0.059	-0.168
	E	-0.0226	0.19984	0.08735	0.15005	-0.1275
	I	-0.1651	0.10948	-0.0474	-0.163	-0.0189
	M	0.13078	0.08865	0.06784	0.05579	0.15571
	Q	1.53009	1.48275	1.24212	1.24997	1.42906
	V	0.74623	2.30172	1.3026	0.88366	1.07861
Sethuram Spinners Private Limited	A	0.57846	0.5815	0.54202	0.49175	0.51311
	E	0.38442	0.3657	0.35186	0.3434	0.2856
	I	0.05234	0.0652	0.08144	0.08266	-0.113
	M	0.16563	0.15349	0.14867	0.14975	0.20101
	Q	1.18371	1.05795	0.92705	0.99364	0.70139
	V	2.68697	2.57393	2.42713	2.42614	1.46385
Inter Labs (India) Private Limited	A	0.72316	0.81736	0.93137	1.07214	0.644
	E	0.94657	0.97938	1.01908	1.0681	0.91901
	I	0.00859	0.06047	0.03409	0.02657	0.06662
	M	0.04446	0.04869	0.0538	0.06012	0.04091
	Q	0.72196	0.64733	0.55701	0.44549	0.78467
	V	2.96926	3.22741	3.24559	3.35072	3.08769
Windsor Cables Pvt. Ltd	A	0.23366	0.15182	0.2753	0.37246	0.36239

	E	0.33613	0.44899	0.37591	0.32501	0.42957
	I	0.13707	0.22965	0.19831	0.1714	0.13272
	M	0.03813	0.06202	0.07553	0.08086	0.0662
	Q	2.0053	3.30172	3.10965	2.60256	1.86109
	V	3.22949	4.90424	4.66292	4.11607	3.37317
LV Global Pvt. Ltd	A	0.43154	0.24802	0.2608	0.13747	0.27566
	E	0.4489	0.55361	0.50364	0.62308	0.47162
	I	0.07181	0.08281	0.04922	0.09317	0.1352
	M	0.04624	0.05672	0.0541	0.0671	0.04037
	Q	2.14353	3.12605	2.63613	3.22132	0.88084
	V	3.55241	4.50291	3.84644	4.6031	2.34141
Kumar's Metallurgical Corporation Limited	A	0.57125	0.51743	0.52344	0.46702	0.34669
	E	0.34456	0.32875	0.28577	0.23935	0.28831
	I	0.17997	0.1452	0.14681	0.0197	0.13405
	M	0.10339	0.1171	0.1179	0.13078	0.06411
	Q	2.88213	3.06358	2.64567	2.71484	2.19468
	V	4.70307	4.69111	4.22645	3.75111	3.49299
Flora Dyeing House Private Ltd.	A	0.63353	0.58701	0.60762	0.48677	0.64752
	E	0.40092	0.41484	0.40112	0.22819	0.3622
	I	0.08971	0.14787	0.16245	0.13186	0.00972
	M	0.12717	0.14523	0.17182	0.19739	0.12435
	Q	0.83884	0.9324	1.07029	1.15239	0.62944
	V	2.53188	2.79178	2.99912	2.6084	2.01961
Handum Industries Limited	A	0.65374	0.55131	0.56088	0.59726	0.78257
	E	0.9592	0.95525	0.95247	0.9455	0.96447
	I	0.10882	0.14048	0.13268	0.15715	0.19124
	M	0.03782	0.04072	0.04279	0.0466	0.03165
	Q	1.92995	2.23538	2.3088	2.96779	2.23724
	V	4.43719	4.72007	4.77654	5.55181	5.17444
Roshan Fruits India Private Limited	A	0.34606	0.38707	0.45654	0.41796	0.30189
	E	0.27406	0.29488	0.30311	0.30135	0.29019
	I	-0.0124	0.15201	0.11345	0.06437	0.05948
	M	0.03631	0.02987	0.03541	0.04017	0.04253
	Q	1.80624	2.18144	2.21041	2.08969	2.29809
	V	2.58438	3.57615	3.57605	3.24756	3.28614
Arrowline	A	-0.1827	-0.0564	-0.3947	-0.0187	-0.2092

Organic Products Private Limited						
	E	-0.8061	-0.5318	-0.5724	0.01484	-1.3979
	I	0.00637	0.03584	-0.4485	0.05458	-0.1525
	M	0.17114	0.14689	0.20276	0.13849	0.21198
	Q	3.91065	4.46115	4.2291	2.65473	4.53261
	V	2.68269	3.85088	1.59165	2.91363	1.94397
Mehrotra Engineering Works Pvt. Ltd	A	0.86761	0.2294	0.27279	0.26457	0.98195
	E	0.67077	0.35149	0.37456	0.31221	0.67004
	I	0.12607	-0.0317	-0.001	0.07957	0.03103
	M	0.32923	0.18544	0.16779	0.12874	0.32996
	Q	0.42401	1.19719	1.13945	0.95371	0.33122
	V	3.01736	1.97008	2.08752	2.04718	2.74767
Jaibhagwati Texprint Pvt. Ltd.	A	0.45163	0.49302	0.37992	0.40047	0.44134
	E	0.41128	0.38372	0.22257	0.51804	0.45724
	I	0.08458	0.10174	0.19462	0.14086	0.09594
	M	0.28745	0.30233	0.39648	0.04075	0.28509
	Q	1.02045	1.15581	1.83437	1.74156	1.15022
	V	2.58875	2.80065	3.48015	3.43493	2.80647
Shaifali Steels Ltd.	A	-0.1305	-0.0832	0.09097	0.15535	-0.1459
	E	-0.1473	-0.0169	0.19857	0.32066	-0.2575
	I	-0.1265	-0.178	-0.0853	-0.0497	-0.0948
	M	0.01544	0.01352	0.00922	0.00885	0.01725
	Q	0.0789	0.08036	0.17886	0.11924	0.05575
	V	-0.6921	-0.6226	0.29003	0.59587	-0.7825
Gangidi Industries Limited	A	1.74745	1.87126	2.88933	3.14022	1.65385
	E	9.96945	10.977	20.2451	18.2103	9.96154
	I	-0.1283	-0.9218	0.41502	1.57565	-0.0476
	M	-2.1222	-2.3954	-4.1186	-3.845	-1.9084
	Q	-0.0672	-0.0115	-0.0356	-0.1734	-0.0018
	V	14.2903	13.1225	30.6732	31.9821	14.6267
Shivani Trendz Pvt. Limited	A	0.59734	0.61268	0.60529	0.61228	0.55895
	E	0.53869	0.5007	0.45893	0.43691	0.59
	I	0.06968	0.08521	0.06408	0.07741	0.04777
	M	0.12833	0.11958	0.11701	0.11632	0.13656
	Q	1.39646	1.38	1.21279	1.11111	1.34229
	V	3.17298	3.16776	2.86211	2.78164	3.07726
Duckbill Drugs	A	0.67373	0.80422	0.80582	0.76529	0.58909

Private Ltd						
	E	0.36865	0.38791	0.36034	0.26688	0.39182
	I	0.10165	0.13248	0.13511	0.12143	0.11366
	M	0.18918	0.23798	0.26771	0.1246	0.16947
	Q	1.34178	1.7782	1.67053	1.60535	1.52231
	V	3.11398	3.86452	3.7468	3.37121	3.253
Durgashakti Foods Private Limited	A	-0.4574	-0.6983	-0.3194	-0.4917	-0.7023
	E	-1.6294	-1.7342	-1.1872	-1.2126	-2.1222
	I	-0.1724	-0.2332	-0.0834	-0.2495	-0.2734
	M	1.07535	1.27917	1.01429	0.38818	0.62321
	Q	0.06834	0.24242	0.40711	0.68742	0.12293
	V	-2.6854	-3.0255	-1.3054	-2.1914	-4.2192
Nava Bharat Press (Bhopal) Private Limited	A	0.88699	0.95262	0.93903	0.98857	0.89774
	E	0.53186	0.39102	0.185	0.23483	0.4996
	I	0.16164	0.17157	0.08269	0.01319	0.13254
	M	0.2723	0.3606	0.3595	0.54266	0.21567
	Q	3.16164	3.99252	1.3679	0.37467	2.29721
	V	5.66424	6.46164	3.24096	2.25846	4.63842
Barbrick Project Limited	A	0.42725	0.76332	0.71373	0.42071	0.17606
	E	0.83074	0.83951	0.80129	0.39581	0.84797
	I	0.06278	0.27627	0.20313	0.17824	0.09393
	M	0.14388	0.1477	0.18083	0.07864	0.13574
	Q	1.20241	2.11156	1.97124	9.06684	1.53224
	V	3.17043	5.20107	4.7264	10.7521	3.32055
Anjana Strong Doors Pvt. Ltd	A	0.06386	0.01443	-0.0003	-0.0129	0.14586
	E	0.37704	0.40228	0.38683	0.38463	0.3531
	I	0.06851	0.07485	0.08356	0.05429	0.06453
	M	0.12557	0.14275	0.14421	0.15056	0.11215
	Q	0.87812	0.8997	0.97442	0.83252	0.6722
	V	1.7	1.8	1.8	1.6	1.6

This part consists of data processed to achieve the objectives of the study.

Objective 1-: To study the liquidation and resolution process of bankrupt firms of NCLT.

This objective does not include any data to be processed.

Objective 2-: To establish a cut off score for Altman Z model applicable for

Indian corporates.

Based on secondary data, Z-scores for 306 profitable and bankrupt businesses are calculated. The range covered by these z-scores is 2016–2020. To get the minimum acceptable Score for the Altman Z model relevant to Indian corporations, we first compute the average over five years for all 306 solvent firms and all 306 bankrupt companies.

Table 4.5 For 306 Solvent Organisations from 2016 to 2020

Name of company	(Z-Score) 2020	(Z-Score) 2019	(Z-Score) 2018	(Z-Score) 2017	(Z-Score) 2016
Barak valley cement ltd	1.78313707	1.81197	1.87698	1.62416	1.62113558
Burnpur Cement Limited	0.25874328	-0.1767	-0.7087	-0.0678	-1.0300011
Par Drugs and Chemicals Limited	3.14435567	2.67198	2.03264	2.10258	3.52074922
Mahickra Chemicals Limited	5.66424279	6.46164	3.24096	2.25846	4.63841992
Hindprakash Industries Limited	4.50185264	4.22884	5.45574	5.72959	3.77223811
Sanginita Chemicals Limited	4.19104432	5.00602	5.94658	4.76299	4.31010303
Sikko Industries Limited	3.73737955	3.21755	3.78402	2.83712	3.73593824
Ushanti Colour Chem Limited	2.93256578	2.76857	2.8121	3.47899	2.63553602
Hindcon Chemicals Limited	3.99444259	4.0873	4.04816	4.34495	3.96082654
Omkar Speciality Chemicals Limited	-2.2440782	-2.13	-3.0278	-0.043	-1.8071537
Ambani Organics Limited	3.17037735	3.85889	3.64144	3.44125	2.86992158

Prolife Industries Limited	3.99505588	3.09722	3.24441	3.28496	4.77169931
Vadivarhe Speciality Chemicals Limited	2.29795788	1.72476	2.05944	2.99761	1.38922779
Shaival Reality Limited	0.6489968	0.17135	0.54221	1.35251	0.42968365
IL&FS Engineering and Construction Company Limited	-3.7577642	-6.5724	0.99913	1.0558	-9.7639726
Madhucon Projects Limited	0.62443789	0.7701	0.86383	0.91495	0.2803687
SPML Infra Limited	1.45647503	1.91618	1.99228	2.35839	1.23747218
Ansal Housing Limited	1.47025174	1.80751	2.00568	2.14741	1.36473215
Sumit Woods Limited	1.84530824	2.03504	1.88483	2.08329	1.82845592
Giriraj Civil Developers Limited	2.4475816	2.95293	3.18393	4.19091	2.99067102
HEC Infra Projects Limited	2.54384848	3.41974	3.60676	3.82713	2.50682286
W S Industries (I) Limited	1.28818274	-12.455	0.2906	-0.8105	-4.3226163
Atal Realtech Limited	3.27120447	3.30603	4.49707	5.56611	3.22315253
Gayatri Highways Limited	0.32245218	0.37971	0.57537	0.30915	0.3128984
S.S. Infrastructure Development Consultants Limited	3.14435567	2.67198	2.03264	2.10258	3.52074922
C & C Constructions Limited	5.66424279	6.46164	3.24096	2.25846	4.63841992
Unity Infra projects	1.99770312	1.70042	1.71484	1.76876	1.96326085

Limited				
Setubandhan Infrastructure Limited	2.64844922	3.20415	3.60332	3.23829	1.94265445
A B Infrabuild Limited	3.17204638	3.2338	3.44599	3.12994	2.83382096
BSEL Infrastructure Realty Limited	1.32233721	1.2345	1.40972	1.44009	1.36785608
CMM Infra projects Limited	2.36784626	2.49997	4.05102	3.7596	2.22800494
International Constructions Limited	0.85875274	1.08968	0.85266	0.60587	1.73673585
Dhanuka Realty Limited	2.42933547	2.26608	2.15946	3.34056	2.17928557
Tantia Constructions Limited	1.34633482	1.5902	1.66464	1.81274	1.30004879
Techindia Nirman Limited	2.28353706	2.53416	5.54868	4.79242	2.23270319
Manav Infra Projects Limited	2.17676366	2.12494	2.99808	3.96497	2.05737136
Websol Energy System Limited	1.3091618	0.20761	1.1479	3.01391	2.62837777
BPL Limited	1.50530326	1.7815	2.06125	2.26794	0.93657234
Indo Tech Transformers Limited	3.65453575	3.50357	3.60726	2.91868	3.83652213
Spectrum Electrical Industries Limited	2.31657189	2.80479	3.03598	0.57165	2.37646819
Kernex Microsystems (India) Limited	2.06056049	0.66886	1.20705	1.72319	1.74868117
Kirloskar Electric Company Limited	1.22921509	1.19147	0.71533	1.63015	1.26646319
Indosolar	3.14435567	2.67198	2.03264	2.10258	3.52074922

Limited					
Wonder Fibromats Limited	8.68484186	8.93284	8.14104	8.07022	7.34945206
Jyoti Structures Limited	5.39817068	14.5767	-97.824	-0.8415	5.04351025
Ujaas Energy Limited	1.84988861	2.14969	2.79625	3.59991	1.80136402
Nitiraj Engineers Limited	2.42796231	3.05755	2.49959	3.09655	2.58254692
Surana Solar Limited	2.16694998	1.92738	1.97901	2.68236	2.03694127
Delta Manufacturing Limited	2.02400181	1.44491	1.67148	1.46454	1.65290711
Focus Lighting and Fixtures Limited	4.63712292	6.3889	7.1154	10.328	3.19301161
Bright Solar Limited	2.34117044	3.48911	5.12778	4.07177	2.30590693
Goldstar Power Limited	2.73175527	2.77407	3.16076	4.06467	2.88046483
Shri Ram Switchgears Limited	1.8395881	2.25678	2.95047	3.31284	1.74683025
MIC Electronics Limited	4.36642448	4.49914	3.91248	3.82909	3.86108762
IMP Powers Limited	2.45530994	3.49401	3.99456	3.83983	1.96757744
Emco Limited	2.11499008	2.4469	3.13968	2.89294	1.91086273
Easun Reyrolle Limited	2.46928949	2.51074	2.57596	3.01443	2.66992876
Pulz Electronics Limited	4.57194351	4.93461	3.65083	4.15829	2.43959895
Neueon Towers Limited	2.47136953	2.24315	2.03486	2.21301	2.30271781
Powerful Technologies Limited	2.53187792	2.79178	2.99912	2.6084	2.0196057
Mold-Tek Technologies Limited	4.36642448	4.49914	3.91248	3.82909	3.86108762

TRF Limited	-6.1843182	-2.4492	-2.6525	1.15997	-52.776513
Macpower CNC Machines Limited	3.1704315	5.20107	4.7264	10.7521	3.32055274
A2Z Infra Engineering Limited	0.56973961	1.93242	1.36785	1.54447	0.91871543
Aaron Industries Limited	3.04045685	2.72954	5.20136	4.7316	2.64984823
Atlanta Limited	1.09902076	1.14192	1.24931	1.91091	1.04259734
Manugraph India Limited	1.80154965	2.83575	2.13989	1.95379	1.17823744
Latteys Industries Limited	2.55950683	2.76121	3.4379	4.19257	2.71109978
Power & Instrumentation (Gujarat) Limited	4.89535726	4.6208	4.58344	4.25097	3.8184501
Felix Industries Limited	1.36372785	1.33375	2.59808	2.77874	1.28044411
Zodiac Energy Limited	4.86403849	5.23559	4.72631	4.96406	4.75316017
Mukand Engineers Limited	0.12167062	0.92138	1.72897	2.48096	-1.0605662
Marshall Machines Limited	2.11499008	2.4469	3.13968	2.89294	1.91086273
Nitin Fire Protection Industries Limited	1.61669687	10.8029	12.3009	11.5406	-3.4886073
Perfect Infraengineers Limited	1.5123073	1.90232	1.87885	2.33014	1.52854012
Premier Limited	-1.1440553	0.18957	0.78977	1.31376	-107.70917
Debock Sales And Marketing Limited	2.0603209	2.1802	2.10721	1.72716	2.06375176

Accord Synergy Limited	4.77969629	5.36338	4.70763	6.90749	3.9275467
Transwind Infrastructures Limited	2.24079387	2.71799	2.75395	3.19209	1.74531886
CCL Products (India) Limited	2.78208494	2.47719	2.81021	3.59264	2.49988892
National Fertilizers Limited	2.01181665	2.28584	2.18442	1.89038	2.87488756
Tata Coffee Limited	2.46928949	2.51074	2.57596	3.01443	2.66992876
Apcotex Industries Limited	3.41447379	4.65892	4.33388	3.82632	3.86487051
Thangamayil Jewellery Limited	5.72692212	6.10735	5.41408	6.87063	5.34190697
Harrisons Malayalam Limited	2.01208578	1.43451	2.04374	2.01929	2.70696132
Madhya Bharat Agro Products Limited	1.3576704	1.35169	1.15579	1.1796	1.21641194
Aries Agro Limited	3.24415886	3.10876	3.18416	3.24049	3.66901057
Agro Phos India Limited	2.90848452	2.95402	2.75398	2.8308	2.70513899
Agri-Tech (India) Limited	1.97016801	1.93229	2.35134	1.1285	1.79239685
Norben Tea & Exports Limited	0.5845397	0.88925	0.956	1.05982	1.17321529
Bohra Industries Limited	0.36458974	1.17829	1.99759	1.33283	0.18829737
Som Distilleries & Breweries Limited	2.26100456	2.49377	4.0265	3.10364	1.4653423
Mcleod Russel India Limited	0.90307005	1.41164	2.10201	1.98525	0.87347338

Euro India Fresh Foods Limited	2.7848458	2.62437	2.37325	2.03225	2.63344829
Jayshree Tea & Industries Limited	1.62518791	1.70759	1.72235	1.7582	2.5309183
Dhunseri Tea & Industries Limited	1.99770312	1.70042	1.71484	1.76876	1.96326085
KCP Sugar and Industries Corporation Limited	2.06876845	2.32731	1.95993	3.04061	2.07494838
Rana Sugars Limited	5.05958101	1.70883	1.58293	1.89527	4.16846844
Pioneer Distilleries Limited	-0.8498262	-0.2015	1.48965	-0.8089	-1.4820991
Magadh Sugar & Energy Limited	2.36668289	2.09189	1.93557	2.28656	2.2216791
Mawana Sugars Limited	2.48706556	3.18675	3.72517	5.68052	4.12021505
Dangee Dums Limited	1.07827855	1.92195	1.70935	0.76456	0.10816977
Umang Dairies Limited	3.38565738	3.63073	3.53711	3.65559	3.59610152
Ponni Sugars (Erode) Limited	3.15579642	2.1065	2.11093	2.42394	2.6896716
SKM Egg Products Export (India) Limited	3.38504093	3.78477	3.75972	3.02987	3.24154053
Sakthi Sugars Limited	0.14250939	0.15644	0.57124	0.88306	-0.1473013
K.M.Sugar Mills Limited	2.46928949	2.51074	2.57596	3.01443	2.66992876
The Grob Tea Company Limited	3.12400289	2.94986	2.94862	3.05329	4.3733175
Golden Tobacco Limited	4.03976828	3.85463	3.76484	5.21713	3.37300711

The Peria Karamalai Tea & Produce Company Limited	2.11499008	2.4469	3.13968	2.89294	1.91086273
Sarveshwar Foods Limited	2.65537081	3.01444	3.54643	3.73887	2.69217345
Rajshree Sugars & Chemicals Limited	0.35593877	0.83737	1.47829	1.94304	0.8489571
Sanwaria Consumer Limited	5.43754344	5.07761	4.23412	3.84831	-4.436189
Simbhaoli Sugars Limited	0.53116878	0.39816	0.1117	0.90113	0.85490829
Aurangabad Distillery Limited	2.21225193	2.35604	2.93984	2.12027	2.32726254
Shanti Overseas (India) Limited	3.60299059	4.02054	3.6984	5.2955	4.56143475
Dharani Sugars & Chemicals Limited	-0.7107402	-0.2745	0.87925	1.35709	-1.0643348
Ravi Kumar Distilleries Limited	2.09084687	2.24646	2.00712	1.88558	1.0387394
Narmada Agrobase Limited	4.31821233	3.7561	4.27638	3.96758	4.08069149
Thiru Arooran Sugars Limited	1.0194418	0.48019	1.00666	1.38651	0.0808065
Inox Wind Limited	1.49138945	2.2581	1.61056	2.76766	1.40926118
Shakti Pumps (India) Limited	2.24996122	3.24795	3.38238	3.44342	4.90772033
Wendt (India) Limited	3.01524921	3.41618	3.44344	3.47283	3.05125826
Dynamatic Technologies Limited	0.84381846	1.88888	1.56918	1.63101	1.88446653

Kabra Extrusion Technik Limited	2.44111523	3.01902	3.06233	3.07037	2.77830849
United Drilling Tools Limited	3.34327347	3.58093	2.77796	3.13888	3.04564127
Jash Engineering Limited	2.92106498	2.93501	2.68846	2.937	2.88784479
Hercules Hoists Limited	2.07330571	1.9828	1.93975	2.02992	1.74618526
Gujarat Apollo Industries Limited	2.36457439	2.26994	2.55424	2.15623	2.25654833
Walchand nagar Industries Limited	9.9309209	19.5197	24.5138	21.7963	7.077251
Pitti Engineering Limited	2.60139666	3.00837	2.25156	2.2497	2.43626948
Windsor Machines Limited	1.41577973	2.04013	2.40429	2.18865	2.04342815
Eimco Elecon (India) Limited	2.12171295	2.61498	2.39377	2.66182	2.23339615
Revathi Equipment Limited	2.25317321	2.39915	1.7551	2.54857	2.1893632
Emkay Taps and Cutting Tools Limited	2.45542519	2.57495	2.9586	2.87976	2.6284247
Lokesh Machines Limited	1.91185971	2.51398	2.35342	2.02027	2.2491479
Mahamaya Steel Industries Limited	3.34934041	3.83217	2.94739	2.58283	2.68207515
Ahlada Engineers Limited	2.44159619	3.30074	2.88882	3.69392	2.58731999
Rama Steel Tubes Limited	3.51248692	4.54075	4.7904	4.28212	3.58693357
Uttam Galva Steels Limited	-1.356894	-0.9069	0.17539	0.61524	-1.011941

Maan Aluminium Limited	8.77000728	8.95221	8.09788	5.30974	5.02747686
Lloyds Steels Industries Limited	2.73892107	2.63776	2.86189	2.38074	2.3103778
Manaksia Coated Metals & Industries Limited	2.0211704	2.00946	2.04372	2.72247	2.8139064
Visa Steel Limited	0.10622697	0.55905	0.73926	-0.1052	-0.6074428
Shiv Aum Steels Limited	4.95988664	4.9949	4.60156	5.13237	4.29807827
Supreme Engineering Limited	2.85353154	2.92447	2.93357	2.47621	1.90201797
Kritika Wires Limited	3.73374554	4.74591	4.86477	4.64106	3.23318587
Hisar Metal Industries Limited	3.59170752	4.03854	4.4092	3.44675	3.39151714
Manaksia Aluminium Company Limited	3.16269425	3.18919	2.73807	2.63731	2.69134121
Sagardeep Alloys Limited	2.45431324	3.15545	3.5256	3.89498	3.29830339
Bedmutha Industries Limited	0.49726449	1.07135	1.34983	1.92111	3.88906701
Century Extrusions Limited	4.36642448	4.49914	3.91248	3.82909	3.86108762
Gyscoal Alloys Limited	1.24746161	1.96426	1.68794	2.40038	-8.583448
Vaswani Industries Limited	3.89371678	3.80112	3.26493	3.44315	3.91852104
S.A.L. Steel Limited	2.53638489	2.93075	3.38698	1.48714	1.97391479
Oil Country Tubular Limited	-1.1240602	-0.6387	0.27756	-0.0104	-1.2402687
Shah Alloys Limited	1.73108753	-0.1707	2.85949	-3.3204	3.4302987

National Steel And Agro Industries Limited	-1.5688483	-1.5404	-9.0269	-25.15	-2.4618463
Surani Steel Tubes Limited	3.56456244	3.71748	5.38687	5.74174	4.508904
Ankit Metal & Power Limited	-1.1238411	-1.2183	-1.1849	-1.2449	-2.2819537
Prakash Steelage Limited	15.96422	13.7964	32.4207	-0.7782	7.56386316
Zenith Steel Pipes & Industries Limited	-73.99215	-13.347	-0.8721	-0.3607	26.062791
Grand Foundry Limited	6.36802807	4.1616	-2.2145	-1.778	7.09356466
Ramsarup Industries Limited	-4.0663519	-3.8577	-2.8516	-1.1449	-4.5128588
Ashapura Minechem Limited	4.1691814	3.45245	7.85887	5.43539	2.4973453
AVT Natural Products Limited	3.7503628	3.19965	3.29716	3.83518	3.87308505
Gokul Agro Resources Limited	11.2663674	9.87453	9.39182	10.5457	18.7260001
Bcl Industries Limited	4.18446357	4.31801	3.89633	3.35176	5.15597534
Gokul Refoils and Solvent Limited	1.97693689	1.82834	2.51586	1.52575	1.73724075
South West Pinnacle Exploration Limited	2.2631929	2.86405	2.60153	2.08397	2.61476982
Raj Oil Mills Limited	2.36952677	-2.8689	-5.6157	-1.1221	4.51759734
20 Microns Limited	3.55207636	3.42241	3.04931	2.82728	3.33871306
Shyam Century Ferrous Limited	2.53673344	3.31389	3.03592	2.37225	3.30141893

Mangalam Global Enterprise Limited	7.27156966	9.78182	4.5641	0.67672	7.57016736
Shree Ram Proteins Limited	3.74089258	3.74439	4.0084	3.81344	3.50485581
M K Proteins Limited	5.75320783	5.41815	5.23609	6.08536	8.43819732
Cubex Tubings Limited	2.85707045	3.11926	2.55534	2.52966	3.14753921
Rohit Ferro-Tech Limited	-6.633981	-0.9838	-0.668	-0.3059	-4.4351738
NK Industries Limited	1.99770312	1.70042	1.71484	1.76876	1.96326085
Impex Ferro Tech Limited	-5.1820092	-2.8399	-3.0568	-1.5786	-5.1168191
Kokuyo Camlin Limited	3.51167701	3.29832	3.29487	3.271	2.77012771
Mirza International Limited	2.82275897	3.07555	3.23013	3.63476	2.62061942
Shalimar Paints Limited	1.77470486	1.41117	1.3747	2.22573	2.016157
Rushil Decor Limited	1.29941358	1.84858	3.01937	3.1807	1.33068556
Tribhovandas Bhimji Zaveri Limited	3.42414647	3.46717	3.55022	3.5278	3.4754442
Indo-National Limited	3.26874717	3.56901	3.53105	3.91883	3.9196068
PTL Enterprises Limited	1.67454097	1.66114	1.753	1.6977	1.73025478
Orient Abrasives Limited	3.3748742	3.05634	3.13309	2.72666	3.25054589
Bombay Super Hybrid Seeds Limited	4.56751381	4.07227	4.90651	8.17841	4.78717244
Super house Limited	2.93219421	3.05475	2.90385	2.92857	2.86108402
Penta Gold Limited	5.05655993	5.60605	5.3616	5.39171	2.52324222

Goenka Diamond and Jewels Limited	1.92759223	1.91016	1.89608	1.88798	1.87680063
Silgo Retail Limited	3.44371223	5.09789	7.42528	6.0172	2.8698646
Moksh Ornaments Limited	5.58617251	6.74436	7.28267	7.00294	6.68166411
M.R. Organisation Limited	4.70379896	4.17509	3.82222	3.7382	5.01414364
Kanani Industries Limited	2.92063204	2.75339	2.74227	2.88435	2.87324805
Laxmi Goldorna House Limited	3.55006861	3.80441	3.61943	7.50159	3.61060774
Banaras Beads Limited	2.64809526	2.3964	2.50953	2.84536	2.49980743
Ajooni Biotech Limited	3.66228346	3.91477	3.77672	6.10733	3.89598931
Karuturi Global Limited	1.61340095	1.06473	1.08634	1.08932	1.61499238
Sona Hi Sona Jewellers (Gujarat) Limited	4.7078945	4.8817	4.39959	6.38623	3.55574275
Milton Industries Limited	3.39482274	3.0541	2.49784	2.73935	2.86523801
Archidply Decor Limited	2.22708935	2.30592	2.3512	2.39948	2.18727698
Innovative Tyres and Tubes Limited	2.0162759	2.37356	2.61086	2.60618	1.97221375
Lypsa Gems & Jewellery Limited	1.89050818	2.54658	3.3639	3.17979	1.66606018
Zodiac JRD-MKJ Limited	2.64664069	2.74851	2.70349	2.70635	2.61220039
Party Cruisers Limited	3.11360208	4.48906	4.61922	4.12806	2.0229765
Sri Havisha Hospitality and Infrastructure Limited	0.74630542	0.03963	0.01675	-1.2036	0.06885987

Ace Integrated Solutions Limited	2.60599887	1.82496	3.48618	3.05249	2.04785574
Crown Lifters Limited	0.88964903	1.0115	0.73239	1.43467	1.95259187
Sec UR Credentials Limited	2.64066264	3.29862	8.93064	14.2779	2.34236312
Omfurn India Limited	2.8687685	2.59976	2.78488	3.21509	2.07889858
Continental Seeds and Chemicals Limited	6.5096824	7.06901	7.73077	7.62099	5.54099139
Rajdarshan Industries Limited	0.22338741	1.84795	1.78093	1.66164	1.92864211
Shree Rama Newsprint Limited	1.03261401	1.70541	1.28733	1.37313	0.71627135
Pudumjee Paper Products Limited	3.2918217	3.25075	3.19164	3.3111	2.60347739
Astron Paper & Board Mill Limited	3.3264555	3.77884	2.94619	2.55131	3.72574574
Star Paper Mills Limited	2.46493903	2.57174	2.70292	2.72558	2.09888319
Genus Paper & Boards Limited	2.13446153	2.57526	2.32272	2.23781	2.3236446
Ruchira Papers Limited	3.18637772	3.65675	3.50301	3.89446	2.67671812
Shreyans Industries Limited	3.4189308	4.7219	4.08012	4.15491	2.42929774
Ballarpur Industries Limited	0.0360614	-0.2078	0.87226	1.22426	-0.8491842
Worth Peripherals Limited	3.19341698	4.14456	4.20468	4.00963	3.55827803
Malu Paper Mills Limited	2.72820017	3.39416	3.08367	2.73173	2.01244123

Magnum Ventures Limited	0.70328425	1.05086	0.93964	2.01855	0.61292372
Indian Oil Corporation Limited	3.01406253	4.02839	4.05094	3.72687	2.9478915
Hindustan Petroleum Corporation Limited	4.31018024	6.1669	6.19513	5.80425	4.05765227
Mangalore Refinery and Petrochemicals Limited	2.467909	4.09676	4.02344	4.19863	1.84836843
Gulf Oil Lubricants India Limited	4.07982077	4.77729	4.64862	4.94815	4.3572318
Chennai Petroleum Corporation Limited	3.07860794	4.78273	5.30391	4.4729	3.0202058
GP Petroleums Limited	4.11688459	3.77909	3.64108	4.01215	3.71170418
Alpa Laboratories Limited	2.54994604	2.5701	2.63924	2.89267	2.86586909
Lyka Labs Limited	-0.5137527	0.74399	0.7667	1.10487	0.3314225
Arvee Laboratories (India) Limited	3.78694565	3.46833	3.21757	2.26432	3.23808113
Ortin Laboratories Limited	5.22032025	3.20607	2.79811	2.34726	5.75344958
Syncom Healthcare Limited	0.54703774	-9.8617	-1.3985	5.49182	44.2493397
Texmo Pipes and Products Limited	3.2795728	3.15333	2.7345	2.78008	4.03718533
Tokyo Plast International Limited	2.67201939	2.26094	2.74096	2.98415	2.56227262
Vikas Eco Tech Limited	2.5266184	2.79755	3.06576	3.82543	2.02466486

Tainwala Chemical and Plastic (I) Limited	1.75848582	1.68152	1.85497	1.79874	1.4501526
Somi Conveyor Beltings Limited	22.8386859	22.3561	22.1147	19.96	24.4533209
Beardsell Limited	3.35768989	3.63874	3.40346	4.2994	3.07217741
Pearl Polymers Limited	2.54762262	3.29079	3.19175	3.42159	2.24989703
Balkrishna Paper Mills Limited	0.548508	0.46319	0.99531	1.37663	-0.1832543
Kshitij Polyline Limited	2.53212337	2.91089	3.01468	2.50049	2.19886001
Tijaria Poly pipes Limited	1.88370932	3.24147	0.63339	0.88428	0.95271846
AVSL Industries Limited	3.84113149	5.84594	5.78416	5.04192	3.69328981
R M Drip and Sprinklers Systems Limited	2.86835724	1.65154	3.46628	2.98165	2.34469739
AVRO INDIA LIMITED	4.65881544	4.94936	4.17765	3.22923	4.83621791
Sanco Industries Limited	1.68520056	2.68425	3.86117	3.40326	-0.2865123
Niraj Ispat Industries Limited	2.60715397	2.42332	2.51737	2.68603	2.4552256
SMVD Poly Pack Limited	2.50792176	2.40245	2.83017	2.914	2.65284507
United Polyfab Gujarat Limited	2.46432628	1.69138	1.09693	0.87106	2.30485297
Celebrity Fashions Limited	3.86698725	3.43895	2.77725	1.97147	3.09498309
Lagnam Spintex Limited	1.60258624	1.29941	2.27255	2.35073	1.91757531

Nandani Creation Limited	4.3377829	4.29331	4.61433	5.39972	4.45530337
Priti International Limited	4.03742546	4.64836	5.08463	2.87988	4.50316849
Super Spinning Mills Limited	3.83877004	4.44309	4.74921	4.73856	2.10769759
STL Global Limited	2.65082589	3.60279	2.37616	-0.0146	3.59368074
Nagreeka Exports Limited	3.04670407	3.48953	3.2898	3.40636	2.44281406
Soma Textiles & Industries Limited	-1.9862603	-1.6551	0.2036	0.67122	-5.2612121
Laxmi Cotspin Limited	2.98183653	3.48738	2.81714	2.51987	3.04879516
Vera Synthetic Limited	4.65175285	4.82686	3.99438	5.41036	4.05747816
Patspin India Limited	2.01058377	3.08598	2.78155	2.70144	0.26289262
Shekhawati Poly-Yarn Limited	-0.6575835	0.00788	-0.0196	-1.1016	-2.0047554
Mohit Industries Limited	3.65804897	3.59714	3.03251	2.92311	3.3243019
Eastern Silk Industries Limited	0.86829833	0.22093	0.99518	1.26725	0.81784097
Mittal Life Style Limited	7.02678838	7.42459	6.05896	7.93586	4.42486548
Mohota Industries Limited	1.27802076	2.53159	2.79309	3.04872	0.97139511
SKS Textiles Limited	3.55365348	3.92002	3.90813	3.87632	-8.7982482
Jet Knitwears Limited	3.84959367	3.96161	3.83339	4.12996	3.32544333
Eurotex Industries and Exports Limited	-0.9893609	3.23805	3.29746	2.72607	-1.7945351

Raj Rayon Industries Limited	-7.0021143	-5.367	-3.5919	-2.0489	-7.0023343
Alps Industries Limited	-3.3953136	-0.536	-0.879	0.06784	-4.264921
Spentex Industries Limited	-8.1949078	0.77074	1.19618	1.93513	-9.8086755
GTN Textiles Limited	2.47136953	2.24315	2.03486	2.21301	2.30271781
Bhalchandram Clothing Limited	2.96944394	1.46598	1.69876	2.83788	1.25182012
Gretex Industries Limited	4.12643959	4.36642	3.01539	0.37996	4.15110541
Thomas Scott (India) Limited	3.58707658	3.74094	3.72345	4.16055	5.25654462
GB Global Limited	-4.9177462	-10.247	-0.7242	2.69675	-6.5556236
Talbros Automotive Components Limited	2.61076814	3.05668	2.96949	2.7136	3.34451568
Sintercom India Limited	1.52385643	2.13459	2.20842	1.79608	1.61527435
Shivam Autotech Limited	1.41687577	1.80059	1.77045	1.53559	1.45117564
Rane Engine Valve Limited	2.3519972	2.56385	2.48841	3.87119	2.38054932
Hindustan Motors Limited	17.6705731	7.34573	0.03582	5.28863	24.6389317
Sundaram Brake Linings Limited	3.79390493	3.93635	3.70174	3.51922	3.6414239
Autoline Industries Limited	0.74623457	2.30172	1.3026	0.88366	1.07861419
JMT Auto Limited	2.68697094	2.57393	2.42713	2.42614	1.46385193
Ndr Auto Components Limited	2.96926235	3.22741	3.24559	3.35072	3.08769247

Pavna Industries Limited	3.22948763	4.90424	4.66292	4.11607	3.37317152
Omax Autos Limited	3.55240664	4.50291	3.84644	4.6031	2.34141356
Remsons Industries Limited	4.70307478	4.69111	4.22645	3.75111	3.49298889
Uravi T and Wedge Lamps Limited	2.53187792	2.79178	2.99912	2.6084	2.0196057
Jullundur Motor Agency (Delhi) Limited	4.43718807	4.72007	4.77654	5.55181	5.17444074
Bharat Gears Limited	2.58438331	3.57615	3.57605	3.24756	3.28613902
Automotive Stampings and Assemblies Limited	2.68268695	3.85088	1.59165	2.91363	1.94397046
ASL Industries Limited	3.0173643	1.97008	2.08752	2.04718	2.74767384
Ultra Wiring Connectivity System Limited	2.5887529	2.80065	3.48015	3.43493	2.80647039
Castex Technologies Limited	-0.6920815	-0.6226	0.29003	0.59587	-0.7824807
PAE Limited	14.2902912	13.1225	30.6732	31.9821	14.6267418
The Western India Plywoods Limited	3.17298383	3.16776	2.86211	2.78164	3.07726476
Airo Lam limited	3.11398171	3.86452	3.7468	3.37121	3.2530026
Mangalam Timber Products Limited	-2.6854434	-3.0255	-1.3054	-2.1914	-4.2191759
Vasa Retail and Overseas Ltd	5.66424279	6.46164	3.24096	2.25846	4.63841992
JIK Industries Limited	3.1704315	5.20107	4.7264	10.7521	3.32055274
Setco Automotive Limited	2.09084687	2.24646	2.00712	1.88558	1.0387394

The above-mentioned Z scores for 306 Solvent companies are calculated to derive

the average Z- Score. The value of average Z- Score is 2.59083488.

Table 4.6 Z-Scores for 306 Insolvent companies from 2016 to 2020

Name of company	(Z-Score) 2020	(Z-Score) 2019	(Z-Score) 2018	(Z-Score) 2017	(Z-Score) 2016
Frog Fone Private Limited	2.09085	2.24646	2.00712	1.88558	1.0387394
Rainbow Denim Limited	2.8895	2.68554	4.21499	0.15789	2.578861273
Bharani Commodities Pvt. Ltd.	-2.7572	-3.6868	2.48541	2.22237	-3.905172811
Empee Power Company	0.59368	0.9237	1.36074	2.76585	-0.077349275
Digicontrols Nortern Private Limited	25.1457	24.8635	33.2869	37.4935	23.62932143
SWE Fashions Private	-1.8421	-0.1216	0.43798	0.36897	-2.58395649
Delhi Diamonds Pvt. Ltd.	0.10623	0.55905	0.73926	-0.1052	-0.607442763
Harsh Speciality Coating Pvt. Ltd	2.28339	3.03018	4.13816	4.45407	0.457204125
Anish Trading & Mercantile Pvt. Ltd.	1.49123	1.76044	1.55468	1.59616	1.217365112
Kerala GAIL Gas Limited	3.8179	2.69707	2.05048	1.62971	6.236938721
Jushi India Private Limited	5.32991	6.79967	5.98641	4.3138	4.902449272
Microsun Solar Tech Private Limited	2.53638	2.93075	3.38698	1.48714	1.973914793
Maharaja Techno Chromes Private Limited	-1.1241	-0.6387	0.27756	-0.0104	-1.240268739
Vandeu International Private Limited	1.17735	2.09795	2.6274	1.79556	0.239449296
Gena Pharmaceuticals Limited	1.80993	2.78324	2.84077	2.9024	1.289438419
Tejaswini Engineering Pvt. Ltd.	1.66032	2.12888	2.33278	2.8342	1.672738664
Astellia Telecom Pvt. Ltd.	-1.3033	1.96222	2.63422	3.67506	-1.045889231
Dyno-Enpro Oil Field Chemical Private Limited	-1.516	-0.9052	0.41926	0.59324	-4.25843574
Hi Rise Infratech Pvt. Ltd.	2.63185	-391.64	2.38817	2.43185	4.190272864

Padmavati Intermediates Private Limited	1.08749	2.9111	3.86605	5.96033	1.454312849
RJVS Traders Private Limited	1.36019	1.35469	1.15883	1.18278	1.218367449
Sunlight Extrusion Private Limited	0.09203	-0.2427	-0.2426	-0.4134	-0.066393305
STL Exports Limited	-4.705	0.85086	2.12233	2.41323	-10.62744173
Kumaran Hi-Tech Private Limited	-3.3109	2.31533	3.10127	2.7339	0.425187824
Sainsons Pulp and Papers Limited	0.25874	-0.1767	-0.7087	-0.0678	-1.030001131
Inspan Infotech Pvt. Ltd.	3.17038	3.85889	3.64144	3.44125	2.869921585
Coimbatore Commodities Limited	1.11069	1.08968	0.85266	0.60587	1.736735849
Coastal Energy Private Limited	1.99781	1.94675	1.76257	3.22115	1.736500239
Siva Industries and Holdings Limited	1.34633	1.5902	1.66464	1.81274	1.300048787
Deegee Cotsyn Private Limited	2.28354	2.53416	5.54868	4.79242	2.23270319
Icon Commodities Private Limited	2.17676	2.12494	2.99808	3.96497	2.057371355
Simhapuri Energy Limited	1.30916	0.20761	1.1479	3.01391	2.628377774
Hindusthan Ispat Private Limited	1.5053	1.7815	2.06125	2.26794	0.936572339
Aikya Infrastructure Private Limited	3.65454	3.50357	3.60726	2.91868	3.836522128
Aster Private Ltd.	2.31657	2.80479	3.03598	0.57165	2.376468194
CNN Minerals Private Limited	2.06056	0.66886	1.20705	1.72319	1.748681169
Gupta Exim India Pvt. Ltd	-2.9757	-0.8207	0.19933	0.73308	67.6071909
Cox & Kings Limited	1.22922	1.19147	0.71533	1.63015	1.266463187
Damoh – Jabalpur Toll Roads Limited	1.29729	1.45226	2.06142	3.77473	1.223628835
Shree Daksh Jyoti Silk Mills Pvt. Ltd.	2.16199	2.16953	2.16681	2.18538	2.14936122
Avani Impex Private Limited	-5.7808	-1.3727	0.87387	2.47981	-9.480665092
Fort Projects Pvt. Ltd	6.46536	6.21137	8.04108	8.31189	6.969867531
Jotesriram Himghar Private Limited	0.36459	1.17829	1.99759	1.33283	0.188297367

Kaygee Shoetech Pvt. Ltd.	2.85258	2.85727	2.85851	2.85616	2.858298875
Raghav Sarees Private Limited	1.54702	0.43017	0.61807	1.21868	1.487818649
Prithvi Multipurpose Cold Storage Pvt. Ltd	0.90307	1.41164	2.10201	1.98525	0.873473376
Khetan Apparels Pvt. Ltd	5.00317	-10.738	-0.8681	0.20293	5.138856877
Vardhman Chemtech Limited	5.26615	4.16833	4.81031	6.90568	2.672700829
Ganeshom Cereals Private Limited	2.49647	3.20764	3.7246	3.68163	1.691624324
Jagannath Sponge Private Limited	1.70573	2.93174	3.05445	4.27656	-2.030325176
Shaifali Steels Limited	2.4984	2.35888	2.47464	2.43218	2.7029688
Segno Ceramics Pvt. Ltd	1.53716	3.53641	2.27423	4.46587	-21.39426941
Maylari Agro Products Ltd	2.01977	2.15687	1.86367	1.87101	8.71857485
Epitome Petrochemical Pvt. Ltd.	12.4898	13.342	12.7506	13.8313	3.845455312
ABT (Madras) Private Limited	-0.8498	-0.2015	1.48965	-0.8089	-1.482099059
RNB Cements Pvt. Ltd.	-6.1538	-0.8247	0.33666	1.96685	-3.90442439
S.V.E.C. Constructions Limited	1.07828	1.92195	1.70935	0.76456	0.108169767
Agarwal Steel Structures (India) Private Limited	1.40766	1.41218	1.56028	1.46347	1.212803334
Samyu Glass Private Limited	0.14251	0.15644	0.57124	0.88306	-0.147301289
Lanco Hoskote Highway Limited	0.35594	0.83737	1.47829	1.94304	0.848957103
UIC Udyog Limited	2.5686	3.16807	2.54981	1.30584	3.212885293
Amrit Fresh Private Limited	3.20634	-21.28	0.20942	-0.2957	3.406670658
Mather Projects Private Limited	4.32487	7.77964	5.50142	10.0272	6.299609246
Warana Dairy and Agro Industries Ltd	3.77266	3.8741	3.76418	3.64358	3.83123056
M Tech Developers Private Limited	3.14093	3.31086	3.33732	3.75617	3.209842233
Aditya Estates Pvt. Ltd.	2.64072	5.84047	8.68631	12.0242	-3.279023562
Pack Tech Systems Private Limited	0.92627	0.69373	0.84493	0.57964	3.820899942

Valaya Clothing Pvt. Ltd.	1.886	1.95265	2.04905	2.59878	-2.962028678
Swastik Fruits Products Ltd	5.51874	92.8452	3.78508	3.64669	4.109068322
Sampan Tradex Pvt. Ltd	0.60696	0.21838	0.16553	0.13328	0.604082148
Prius Commercial Projects Private Limited	3.26875	3.56901	3.53105	3.91883	3.919606798
Swastik Aqua Ltd.	-48.791	-51.881	12.2444	-5.9128	-40.27292
Pellet Energy Systems Private Limited	6.31178	6.44326	5.27849	3.94669	3.09912687
Superchem Coating Pvt. Ltd.	0.68626	1.31908	1.73382	3.00677	0.120253745
GRG Infrastructure Pvt. Ltd.	1.99106	4.02977	3.7722	3.74113	2.343584815
Rainbow Industrial Park Pvt. Ltd.	2.42796	3.05755	2.49959	3.09655	2.582546922
Bacon Vanijya Pvt. Ltd.	2.16695	1.92738	1.97901	2.68236	2.036941272
Shreebhav Polyweaves Pvt. Ltd	2.024	1.44491	1.67148	1.46454	1.652907111
Janshank Impex Private Limited	4.63712	6.3889	7.1154	10.328	3.193011607
Decent Laminates Pvt. Ltd	1.6134	1.06473	1.08634	1.08932	1.614992381
Ahitri Spinning Mills Private Limited	1.9977	1.70042	1.71484	1.76876	1.963260855
Telstar Industries Pvt. Ltd.	-5.182	-2.8399	-3.0568	-1.5786	-5.116819089
Mithilanchal Glass Industries Pvt. Ltd.	0.8224	0.26627	0.27663	2.42073	-0.120177865
Kankesh Exims Private Limited	3.64713	3.4162	2.63847	1.93951	3.483127538
Saffron Poly Threads Private Limited	1.78314	1.81197	1.87698	1.62416	1.621135584
Angstrom Biotech Pvt. Ltd.	1.6167	10.8029	12.3009	11.5406	-3.48860725
Bajrang Cotgin Pvt. Ltd	1.51231	1.90232	1.87885	2.33014	1.528540123
Aakash Poly films Ltd	-1.1441	0.18957	0.78977	1.31376	-107.7091695
Shivshakti Barrels Private Limited	2.06032	2.1802	2.10721	1.72716	2.063751762
Alcock Ashdown (Gujarat) Ltd.	4.7797	5.36338	4.70763	6.90749	3.927546701
Quality Steel Products Limited	2.24079	2.71799	2.75395	3.19209	1.745318857

Axis Nirman and Industries Limited Company	2.78208	2.47719	2.81021	3.59264	2.499888923
Uttarayan Steel Private Limited Company	2.01182	2.28584	2.18442	1.89038	2.874887555
Apex Aqua Agencies Private Limited	2.46929	2.51074	2.57596	3.01443	2.669928758
East Godavari Breweries Private Limited	1.25394	3.1646	2.93287	3.07645	-2.539566577
CPR Laboratories Private Limited	3.73007	3.85244	4.62286	4.78001	2.258869721
Sree Naidu Beverages Pvt. Limited	1.24746	1.96426	1.68794	2.40038	-8.58344797
Voltarc Electrodex Pvt Ltd	-4.0664	-3.8577	-2.8516	-1.1449	-4.512858809
Jains & Alliance Palms Venture Pvt. Ltd.	-6.634	-0.9838	-0.668	-0.3059	-4.435173797
Steel Hypermart India Private Limited	-514.2	4.27744	4.35171	4.67505	30.67874634
Metrik Infra projects Private Limited	3.56536	5.30645	-7.845	0.32179	3.083105223
Jewels Garments Private Limited	0.53117	0.39816	0.1117	0.90113	0.854908294
Shree Ashraya Infra-con Ltd.	2.21225	2.35604	2.93984	2.12027	2.327262542
Nandlal Kamal Kishore Vyapaar Pvt. Ltd	1.01944	0.48019	1.00666	1.38651	0.080806503
Alaska Fabtech Pvt. Ltd.	-6.252	2.01386	2.29907	2.30555	-4.516906411
S. Nanda Industries Private Ltd.	-0.9866	1.70135	2.51683	2.65928	14.76169099
Jindal Builtech Private ltd	2.72289	2.71291	2.75016	3.02207	2.496556491
Best Zone Builders and Developers Private Limited	3.26745	3.68533	3.66321	3.16205	2.816397778
SCM Garments Private Limited	3.58708	3.74094	3.72345	4.16055	5.256544615
Real Value Promoters Private Limited	-4.9177	-10.247	-0.7242	2.69675	-6.555623603
ETA Engineering Private Limited	2.61077	3.05668	2.96949	2.7136	3.344515676
GPR Resouces Private Limited	1.52386	2.13459	2.20842	1.79608	1.615274354
Fourpol Electricals Private Limited	1.41688	1.80059	1.77045	1.53559	1.451175642

JBM Shelters Private Limited	2.352	2.56385	2.48841	3.87119	2.380549316
Spacex Furniture Private Limited	17.6706	7.34573	0.02074	5.28863	24.63893169
B V V Industries Limited	3.7939	3.93635	3.70174	3.51922	3.641423904
Mega Food Products Madras Private Limited	0.74623	2.30172	1.3026	0.88366	1.078614193
Infiniti Metal Products India Limited	2.68697	2.57393	2.42713	2.42614	1.463851933
Fomra Sales Private Limited	2.96926	3.22741	3.24559	3.35072	3.087692472
Pondicherry Extraction Industries Private Limited	3.22949	4.90424	4.66292	4.11607	3.373171522
Thai Summit Autoparts India Private Limited	3.55241	4.50291	3.84644	4.6031	2.341413563
Harsha Exito Engineering Private Limited	4.70307	4.69111	4.22645	3.75111	3.492988885
Forza Casting Private Limited	2.53188	2.79178	2.99912	2.6084	2.019605697
Kapico Motors India Private Limited	4.43719	4.72007	4.77654	5.55181	5.174440743
Prostar Textile Mills Private Limited	2.58438	3.57615	3.57605	3.24756	3.28613902
Baibhav Properties Private Limited	2.68269	3.85088	1.59165	2.91363	1.943970462
Y.Pani and Company Pvt. Ltd.	3.01736	1.97008	2.08752	2.04718	2.747673844
MAA Tarini Industries Limited	2.58875	2.80065	3.48015	3.43493	2.806470395
Tuff Tubes (Orissa) Pvt. Ltd.	-0.6921	-0.6226	0.29003	0.59587	-0.782480679
Hariom Rice Mill Pvt. Ltd.	14.2903	13.1225	30.6732	31.9821	14.62674176
Namratha Power Pvt. Ltd	3.17298	3.16776	2.86211	2.78164	3.077264758
J S B Entrade Private Limited	3.11398	3.86452	3.7468	3.37121	3.253002599
Kalpataru Cold Storage Private Ltd	-2.6854	-3.0255	-1.3054	-2.1914	-4.219175859
R. S. H. Agro Products Ltd.	5.66424	6.46164	3.24096	2.25846	4.63841992

Navya Agro Products Private Limited	3.17043	5.20107	4.7264	10.7521	3.320552735
Fertis India Private Limited	-1.9863	-1.6551	0.2036	0.67122	-5.261212114
Lahari Infra Projects (India) Private Limited	-1.5288	2.88831	3.07751	2.81734	-1.046709993
Hyderabad Merchem Private Ltd	2.44685	2.25198	2.50323	2.81442	2.458155
V R V Textiles Limited	3.34257	3.21423	2.71361	1.30399	3.562906053
Vivanta Laboratories Private Limited	1.62651	2.61431	2.91441	2.76603	36.5816424
Viom Infra Ventures Limited	2.07331	1.9828	1.93975	2.02992	1.746185257
Cosmos Forgings Limited	4.83426	5.2744	4.80994	4.85274	3.840419042
Mantena Laboratories Limited	1.92759	1.91016	1.89608	1.88798	1.876800633
BRS Enterprises & Trading limited	2.92063	2.75339	2.74227	2.88435	2.873248048
Pentacle Infrastructures and Towers Private Limited	-2.8708	2.39222	2.97788	5.26425	-3.343811096
Nexus feeds Limited	1.16026	3.13839	3.48493	2.97575	-0.6714813
Suryachakra Energy & Infrastructure Private Limited	6.41598	6.20211	6.32881	6.70479	6.83937927
Buildmate Projects Private Limited	4.29	4.01686	4.94876	4.39705	3.82698988
EBC Bearings (India) Limited	4.29165	4.99418	4.71601	4.35478	1.856681826
GKC Projects Limited	0.022	0.87787	0.99902	1.91366	-1.74104348
Genesys Biologics Private Limited	1.74191	1.82633	1.80689	1.79632	1.819361212
Pallorbund Tea Limited	-0.5044	-0.9259	-0.5044	-0.9259	-0.925881165
Anand Distillers Private Limited	2.12171	2.61498	2.39377	2.66182	2.23339615
Anjali Waterford Hospitality and Infra Ltd	2.25317	2.39915	1.7551	2.54857	2.189363196
Devesh Engineering Enterprises Private Limited	2.45543	2.57495	2.9586	2.87976	2.6284247
Gouthami Hatcheries Pvt. Ltd.	1.91186	2.51398	2.35342	2.02027	2.249147904
ECI Infra Towers Company Private Limited	3.34934	3.83217	2.94739	2.58283	2.68207515

Affluence Engineering and Enterprises Ltd	2.4416	3.30074	2.88882	3.69392	2.587319991
Agarwal Steel Structures (India) (P) Ltd.	3.51249	4.54075	4.7904	4.28212	3.586933571
Vij Agro Exports Pvt. Ltd	-1.3569	-0.9069	0.17539	0.61524	-1.011940979
Tradeinox Industries Limited	8.77001	8.95221	8.09788	5.30974	5.027476858
Shri Govind Realty Pvt. Ltd	2.73892	2.63776	2.86189	2.38074	2.3103778
Prakriti Power Private Limited Company	2.02117	2.00946	2.04372	2.72247	2.813906398
Jainam Alternate Energy Private Limited	2.63745	2.7362	2.85275	2.73646	-2.954647922
Kimaya Industries Private Limited	0.36165	1.792	3.62819	4.5217	-0.163134672
Baldva Textiles Private Limited	-0.4011	-2.4354	7.64828	3.22052	0.367742778
Adig Jemtex Pvt. Ltd.	2.63745	2.7362	2.85275	2.73646	-2.954647922
Aarti Suitings Pvt. Ltd	3.73492	6.36636	9.12523	12.021	1.222266892
Grateful Buildinfra Pvt. Ltd	4.43039	4.29339	4.58594	5.42334	4.472535019
Tip Top Furniture Pvt. Ltd	2.21225	2.35604	2.93984	2.12027	2.327262542
Orma Marble Palace Private Limited	3.60299	4.02054	3.6984	5.2955	4.561434752
Tierra Food India Pvt. Ltd.	-0.7107	-0.2745	0.87925	1.35709	-1.064334786
Subhlabh Steels Private Limited	2.09085	2.24646	2.00712	1.88558	1.0387394
Biharilal Greenwood Pvt. Ltd	4.31821	3.7561	4.27638	3.96758	4.080691494
Kanoi Plantations Private Limited	1.01944	0.48019	1.00666	1.38651	0.080806503
Mallick Projects Private Limited	1.49139	2.2581	1.61056	2.76766	1.40926118
Venus Controls & Switchgear Private Limited	2.24996	3.24795	3.38238	3.44342	4.907720325
Dulichand Auto Sales Private Limited	3.01525	3.41618	3.44344	3.47283	3.051258256
Karuna Distributors Private Limited	0.84382	1.88888	1.56918	1.63101	1.884466526
Pami Metals Private Limited	2.44112	3.01902	3.06233	3.07037	2.778308493

BST Infratech Limited	3.34327	3.58093	2.77796	3.13888	3.045641272
MSP Metallics Limited	-0.9628	0.53585	-0.9271	-1.0803	10.77149229
Prosperity Steels Limited	0.65073	0.15633	2.12866	1.32684	1.79944735
Krishna Alex Private Limited	5.60202	1.957	7.38725	6.60244	5.815691184
Madhushree Industries Pvt. Ltd.	10.608	5.92539	5.67558	4.91574	4.202777559
Mohan Motor Dealers Private Limited	0.24309	-7.8777	-7.5971	3.59179	-0.202865838
BIL Infratech Limited	0.58539	0.8896	3.62146	9.60941	-1.632132773
Citylife Retail Private Limited	2.30703	6.78617	5.82176	5.8994	1.399836693
Sampark Land and Builders Private Limited	3.12311	2.72686	3.13718	3.32545	2.240040523
Suryodaya Realtors Private Limited	2.98806	3.15658	3.94826	4.10964	-2.719377476
P.M. Cold Storage Private Limited	1.22088	2.39678	3.1358	3.52488	1.286497215
Kaygee Shotech Private Limited	3.74048	3.89173	4.38775	3.76405	4.15441924
Saturn Rings & Forgings Private Limited	4.48565	4.89268	5.34192	3.30082	4.689341682
Swastik Tungsten Private Limited	5.20126	2.74851	2.70349	2.70635	4.015725257
Shree Mahalaxmi Agro Farms Private Limited	2.07331	1.9828	1.93975	2.02992	1.746185257
New Steel Trading Private Limited	6.6649	4.41792	5.09484	3.38381	4.108303476
KH Foges India Private Limited	2.70421	2.09468	2.87816	3.35962	1.276303345
Shimita Trading Private Limited	2.01628	2.37356	2.61086	2.60618	1.972213749
Surya Landmark Developers Private Limited	1.89051	2.54658	3.3639	3.17979	1.666060183
Jawaria Enterprises Private Limited	6.6649	4.41792	5.09484	3.38381	4.108303476
Radiance Properties (India) Private Limited	3.19035	2.86362	2.60735	3.81739	3.117417722
Vag Buildtech Limited	7.2732	-1.7667	-2.3409	-2.7798	4.464957058
TV Products India Private Limited	2.5917	2.97819	2.93859	0.49772	1.624460095
Miltech Industries Pvt. Ltd.	2.606	1.82496	3.48618	3.05249	2.047855741

Cubatics Industries Private Limited	0.88965	1.0115	0.73239	1.43467	1.952591867
Clear Channel India Private Limited	-8.1265	-1.2593	-0.9357	-0.9878	-4.368126595
Meta Arch Private Limited	-0.5353	-0.0621	0.67878	0.87012	9.894764363
Moli Merchant Traders Private Limited	0.22339	1.84795	1.78093	1.66164	1.961594283
Shivam Steels and Tubes Private Limited	2.73723	2.24126	1.97323	1.75716	3.766613208
Mack Star Marketing Private Limited	7.06168	14.9775	18.0063	12.765	4.368992927
Warana Diary and Agro Industries Ltd	0.54851	0.46319	0.99531	1.37663	-0.183254303
Sai - Tech Pharmaceuticals Private Limited	3.17985	3.21116	3.24668	4.26528	3.184548212
VGS Realty Construction Private Limited	1.88371	3.24147	0.63339	0.88428	0.952718463
Dhanlaxmi Electricals Private Limited	2.58486	5.66767	6.85292	7.3568	-2.39157758
Pandhe Infracons Private Limited	1.75849	1.68152	1.85497	1.79874	1.450152604
PNK Space Development Pvt. Ltd.	0.65827	0.21898	0.81336	1.37912	-1.015550808
Ammanarul Spinners Pvt. Ltd.	1.70159	1.67425	2.48308	2.61091	1.91698818
Anuradha Real Estate Private Limited	-0.1862	0.59168	0.43734	-0.0497	-40.12183662
Kasata Hometech (India) Private Limited	3.37446	2.95819	2.86257	4.07493	2.534306357
Marveledge Realtors Private Limited	2.13446	2.57526	2.32272	2.23781	2.323644604
Synergytech Automation Private Limited	3.18638	3.65675	3.50301	3.89446	2.676718125
S R (MCB) Engineers Pvt. Ltd	3.41893	4.7219	4.08012	4.15491	2.429297743
Radius Estates and Developers Private Limited	0.03606	-0.2078	0.87226	1.22426	-0.849184214
Deserve Construction Private Limited	3.19342	4.14456	4.20468	4.00963	3.558278033
Kumar Urban Development Private Limited	2.7282	3.39416	3.08367	2.73173	2.012441231

Vyas Mercantile Private Limited	-128.99	71.4072	2.7037	2.3855	-60.26360352
Shivaji Cane Processors Limited	0.67238	0.68928	0.48361	0.46965	0.528720576
Vashistha Mercantile and Trading Pvt. Ltd.	17.2005	6.44833	0.98177	1.20571	4024.798361
Royal Polyurethane (India) Private Limited	5.48614	5.56623	5.34043	5.36855	2.29646844
Altech Infrastructure Private Limited	23.46	3.68692	6.75066	6.68783	5.809244548
Unibera Developers Private Limited	-79.865	7.77152	3.5518	11.7364	-70.78081749
Mystic Monk Designs Private Limited	-1.9863	-1.6551	0.2036	0.67122	-5.261212114
Sanyog Healthcare Limited	-2.3133	-1.1556	-6.6477	3.1332	-3.138461538
Fashion Flare International Private Limited	1.6852	2.68425	3.86117	3.40326	-0.286512309
Shree Om Enterprises Pvt. Ltd.	2.60715	2.42332	2.51737	2.68603	2.455225605
Shivansh Diamond Private Limited	2.50792	2.40245	2.83017	2.914	2.652845068
VHV Beverages Private Limited	-20.552	-26.333	-1.6544	-1.7342	-23.084375
Mak Medicals Private Limited	1.47876	1.64946	1.61741	1.65411	-2.65140924
Genexis India Pvt. Ltd. Company	5.75317	5.11726	4.53642	2.25655	4.402599398
VSP Udyog Private Limited	0.14355	-0.5485	0.06311	2.0539	0.181362521
Trikalp Laminates Private Limited	7.02679	7.42459	6.05896	7.93586	4.42486548
Chowdhury Rubbers & Chemicals Private Limited	1.27802	2.53159	2.79309	3.04872	0.971395113
Suvidha Parklift Limited	3.55365	3.92002	3.90813	3.87632	-8.798248184
FCRD India Pvt. Ltd	3.84959	3.96161	3.83339	4.12996	3.32544333
Artimpianti India Private Limited	-0.9894	3.23805	3.29746	2.72607	-1.79453506
Emkay Automobile Private Limited	-7.0021	-5.367	-3.5919	-2.0489	-9.834759152
AL-Tabarak Frozen Foods Private limited	-3.3953	-0.536	-0.879	0.06784	-4.264921004
Sachin Electricals Private Limited	-8.1949	0.77074	1.19618	1.93513	-9.808675495

Retail Kart Solutions Pvt. Ltd	2.47137	2.24315	2.03486	2.21301	2.30271781
Raghuveer Metal Industries Ltd	2.96944	1.46598	1.69876	2.83788	1.251820125
Kiran Udyog Private Limited	4.12644	4.36642	3.01539	0.37996	4.151105413
Xion Gems & Jewellers Private Limited	3.58708	3.74094	3.72345	4.16055	5.256544615
Adityasamaraj Natural Foods Private Limited	-4.9177	-10.247	-0.7242	2.69675	-6.555623603
Bindal Polymers Pte. Ltd	0.74652	1.37169	1.40262	1.53302	-0.387380523
Asterism Pharmaceuticals Private Limited	-0.6921	-0.6226	0.29003	0.59587	-0.782480679
Mirco Dynamics Pvt. Ltd	14.2903	13.1225	30.6732	31.9821	14.62674176
Shamik Enterprises Private Limited	3.17298	3.16776	2.86211	2.78164	3.077264758
Roharsh Motors Private Limited	3.11398	3.86452	3.7468	3.37121	3.253002599
Jain Shoppers Private Limited	-2.6854	-3.0255	-1.3054	-2.1914	-4.219175859
Ceebuild Company Private Limited	3.75321	4.24976	4.45197	3.00285	2.09828544
Shree Shankar Saw Mill Private Limited	2.352	2.56385	2.48841	3.87119	2.380549316
Hindusthan Small Tools Private Limited	17.6706	7.34573	0.03582	5.28863	24.63893169
Fontana Impex Private Limited	-0.0512	2.09961	2.3717	2.41854	0.088773905
Airen Copper Pvt. Ltd.	4.50185	4.22884	5.45574	5.72959	3.772238114
Teja Cement Limited	4.19104	5.00602	5.94658	4.76299	4.310103029
Chemizol Additives Pvt. Ltd.	3.73738	3.21755	3.78402	2.83712	3.735938243
Thrive Therapeutic Private Limited	2.93257	2.76857	2.8121	3.47899	2.635536017
Vascular Therapeutics (India) Pvt. Ltd	3.99444	4.0873	4.04816	4.34495	3.960826542
STB Export Pvt. Ltd	-2.2441	-2.13	-3.0278	-0.043	-1.807153661
Bherawa Textile Industries Private Limited	3.17038	3.85889	3.64144	3.44125	2.869921585
R&M International Private Limited	3.99506	3.09722	3.24441	3.28496	4.771699306
Matashree Snacks Private Limited	-3.8356	-2.1719	-0.1248	0.74986	-3.645367844
Sri Yadari Lifesciences Private Limited	-98.841	37.3281	11.0549	-3.8434	-94.83812308

Silk Woven Sack Pvt. Ltd	-3.3953	-0.536	-0.879	0.06784	-4.264921004
Skyhigh Infraprojects Limited	-8.1949	0.77074	1.19618	1.93513	-9.808675495
Krishna Knitwear Technology Ltd	2.47137	2.24315	2.03486	2.21301	2.30271781
Senioreetaa Designer Ensembles Pvt. Ltd.	2.96944	1.46598	1.69876	2.83788	1.251820125
Adkure Technologies Private Limited	4.12644	4.36642	3.01539	0.37996	4.151105413
Shree Murugan Flour Mills Private Limited	3.58708	3.74094	3.72345	4.16055	5.256544615
Bony Systems and Technologies Limited	-4.9177	-10.247	-0.7242	2.69675	-6.555623603
Shri Gopal Agro Food Pvt. Ltd	2.61077	3.05668	2.96949	2.7136	3.344515676
Chairpertech Electronics Private Limited	1.52386	2.13459	2.20842	1.79608	1.615274354
Alipurduar Tea Co. Ltd	1.41688	1.80059	1.77045	1.53559	1.451175642
Hike Leather Private Ltd	2.352	2.56385	2.48841	3.87119	2.380549316
Greens Farm Tech Private Limited	17.6706	7.34573	0.03582	5.28863	24.63893169
Nobile Ice Cream Company Private Ltd	3.7939	3.93635	3.70174	3.51922	3.641423904
Mohan Motor Distributors Pvt. Ltd	0.74623	2.30172	1.3026	0.88366	1.078614193
Sethuram Spinners Private Limited	2.68697	2.57393	2.42713	2.42614	1.463851933
Inter Labs (India) Private Limited	2.96926	3.22741	3.24559	3.35072	3.087692472
Windsor Cables Pvt. Ltd	3.22949	4.90424	4.66292	4.11607	3.373171522
LV Global Pvt. Ltd	3.55241	4.50291	3.84644	4.6031	2.341413563
Kumar's Metallurgical Corporation Limited	4.70307	4.69111	4.22645	3.75111	3.492988885
Flora Dyeing House Private Ltd.	2.53188	2.79178	2.99912	2.6084	2.019605697
Handum Industries Limited	4.43719	4.72007	4.77654	5.55181	5.174440743
Roshan Fruits India Private Limited	2.58438	3.57615	3.57605	3.24756	3.28613902
Arrowline Organic Products Private Limited	2.68269	3.85088	1.59165	2.91363	1.943970462
Mehrotra Engineering Works Pvt. Ltd	3.01736	1.97008	2.08752	2.04718	2.747673844
Jaibhagwati Texprint Pvt. Ltd.	2.58875	2.80065	3.48015	3.43493	2.806470395

Shaifali Steels Ltd.	-0.6921	-0.6226	0.29003	0.59587	-0.782480679
Gangidi Industries Limited	14.2903	13.1225	30.6732	31.9821	14.62674176
Shivani Trendz Private Limited	3.17298	3.16776	2.86211	2.78164	3.077264758
Duckbill Drugs Private Ltd	3.11398	3.86452	3.7468	3.37121	3.253002599
Durgashakti Foods Private Limited	-2.6854	-3.0255	-1.3054	-2.1914	-4.219175859
Nava Bharat Press (Bhopal) Private Limited	5.66424	6.46164	3.24096	2.25846	4.63841992
Barbrick Project Limited	3.17043	5.20107	4.7264	10.7521	3.320552735
Anjana Strong Doors Pvt. Ltd	1.7	1.8	1.8	1.6	1.62

The above-mentioned Z scores for 306 Insolvent companies are calculated to derive the average Z- Score. The value of average Z- Score is 1.54453.

From this, we can deduce that the minimum acceptable Altman Z-score for Indian corporations is 1.54453 and the maximum acceptable Altman Z-score for Indian corporations is 2.59083488.

Objective 3-: To study the influence of individual ratio on Z-score value.

Here, the author employs Regression analysis to probe the connections between X1, X2, X3, X4, and X5 and the Z score.

The mean and the standard deviation are used to provide descriptive information about the data.

Table 4.7 Insolvent companies for the year 2020

Descriptive Statistics			
	Mean	Std. Deviation	N
Insolvent Z (2020)	-.715678	31.6639630	306
Insolvent X1 (2020)	.368769	1.4069813	306
Insolvent X2 (2020)	.102376	7.9934751	306
Insolvent X3 (2020)	-.508839	8.1405997	306
Insolvent X4 (2020)	-.147390	4.9450428	306
Insolvent X5 (2020)	.466540	14.6893875	306

The data of Insolvent organizations for the year 2020 has a total of 306 values, as shown by Descriptive Statistics. For this reason, we find no missing data. So, it seems like we can go on with Regression.

Table 4.8 Insolvent companies for the year 2020

		Z Insolvent (2020)	X1 Insolvent (2020)	X2 Insolvent (2020)	X3 Insolvent (2020)	X4 Insolvent (2020)	X5 Insolvent (2020)
Correlations							
Pearson Correlation	Z Insolvent (2020)	1.000	.817	.798	.965	-.158	-.552
	X1 Insolvent (2020)	.817	1.000	.763	.786	-.134	-.644
	X2 Insolvent (2020)	.798	.763	1.000	.705	-.664	-.540
	X3 Insolvent (2020)	.965	.786	.705	1.000	-.020	-.701
	X4 Insolvent (2020)	-.158	-.134	-.664	-.020	1.000	.040
	X5 Insolvent (2020)	-.552	-.644	-.540	-.701	.040	1.000
Sig. (1-tailed)	Z Insolvent (2020)	.	.000	.000	.000	.003	.000
	X1 Insolvent (2020)	.000	.	.000	.000	.009	.000
	X2 Insolvent (2020)	.000	.000	.	.000	.000	.000
	X3 Insolvent (2020)	.000	.000	.000	.	.365	.000
	X4 Insolvent (2020)	.003	.009	.000	.365	.	.243
	X5 Insolvent (2020)	.000	.000	.000	.000	.243	.
N	Z Insolvent (2020)	306	306	306	306	306	306
	X1 Insolvent (2020)	306	306	306	306	306	306
	X2 Insolvent (2020)	306	306	306	306	306	306
	X3 Insolvent (2020)	306	306	306	306	306	306
	X4 Insolvent (2020)	306	306	306	306	306	306
	X5 Insolvent (2020)	306	306	306	306	306	306

Table 4.9 Insolvent companies for the year 2020

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Insolvent (2020), X4 Insolvent (2020), X1 Insolvent (2020), X3 Insolvent (2020), X2 Insolvent (2020)	.	Enter

Variable entered and removed box shows all the independent variable i.e., X1, X2, X3, X4, X4, X5 hence the dependent variable is Z score. The method used was the enter method.

Table 4.10 Insolvent companies for the year 2020

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000000	1.920

Durbin Watson test in Model Summary helps to check independence of observation. If the value of Durbin-Watson test is in between 1 to 3 then there is independence of observation in the data collected for Insolvent organisations for the year 2020.

Table 4.11 Insolvent companies for the year 2020

ANOVA						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	306794.998	5	61159.000	4036792768826.211	.000[b]
	Residual	.000	300	.000		
	Total	306794.998	306			

ANOVA table shows that there is a significant relationship between X1, X2, X3, X4, X5 and Z score of insolvent organisations for the year 2020. Hence, we can predict that the linear regression model works for insolvent organisation for the year 2020.

Table 4.12 Insolvent companies for the year 2020

Coefficients					
Model		Unstandardized Coefficients		Standardized Coefficients	T
		B	Std. Error	Beta	
1	(Constant)	-5.126E-6	.000		-.611
	X1 Insolvent (2020)	1.200	.000	.055	93859.935
	X2 Insolvent (2020)	1.400	.000	.362	293119.262
	X3 Insolvent (2020)	3.300	.000	.869	1340364.808
	X4 Insolvent (2020)	.600	.000	.096	122324.483
	X5 Insolvent (2020)	.999	.000	.285	890583.798

Table 4.12 Insolvent companies for the year 2020

Coefficients				
Model		Sig.	95.0% Confidence Interval for B	
			Lower Bound	Upper Bound
1	(Constant)	.542	.000	.000
	X1 Insolvent (2020)	.000	1.200	1.200
	X2 Insolvent (2020)	.000	1.400	1.400
	X3 Insolvent (2020)	.000	3.300	3.300
	X4 Insolvent (2020)	.000	.600	.600
	X5 Insolvent (2020)	.000	.999	.999

The model's behavior may be interpreted via the use of the coefficients. Using this information, we were able to identify the relapse cause. If the large value of the T test (called Sig.) is less than 0.05, then that variable is considered to contribute to the direct relapse and is taken into account for the scenario; otherwise, it is disregarded since it does not contribute to the relapse.

Table 4.13 Insolvent companies for the year 2020

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-514.200073	25.145708	-.715678	31.6639630	306
Residual	.0000000	.0000000	.0000000	.0000000	306
Std. Predicted Value	-16.217	.817	.000	1.000	306
Std. Residual	-2.154	2.423	.000	.992	306

The data is suitable for regression if the value of the standardized residual of Insolvent firms for 2020 falls between the range of -3.29 and +3.29, indicating the absence of outliers.

Figure 4.1 Histogram (Z Insolvent companies 2020)
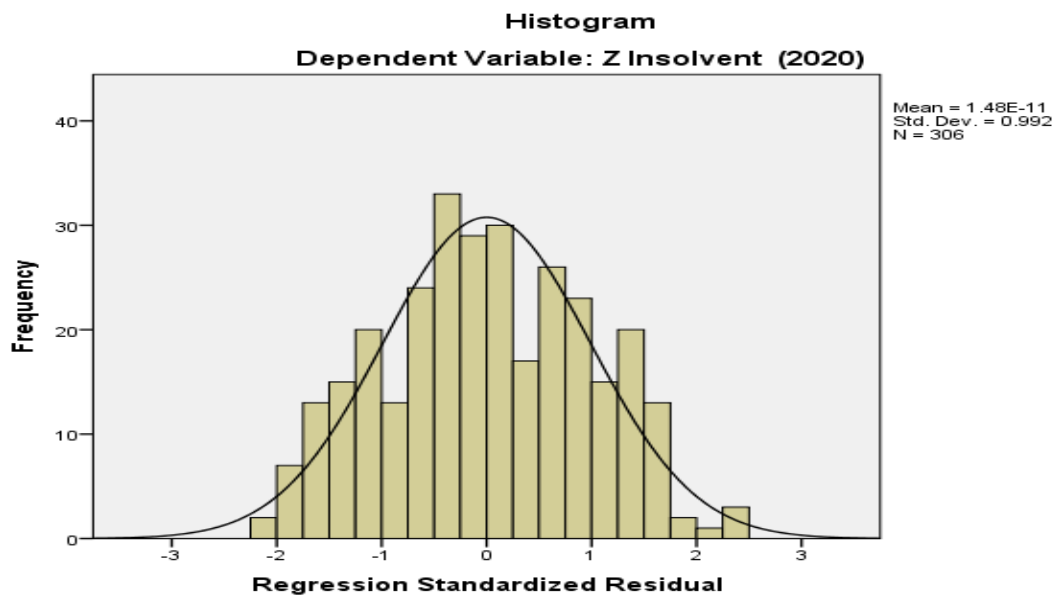
Furthermore, it is clear from the graph dependent variable that the Z score for the year 2020 is similarly regularly distributed.

Figure 4.2 P P Plot (Z Insolvent 2020)
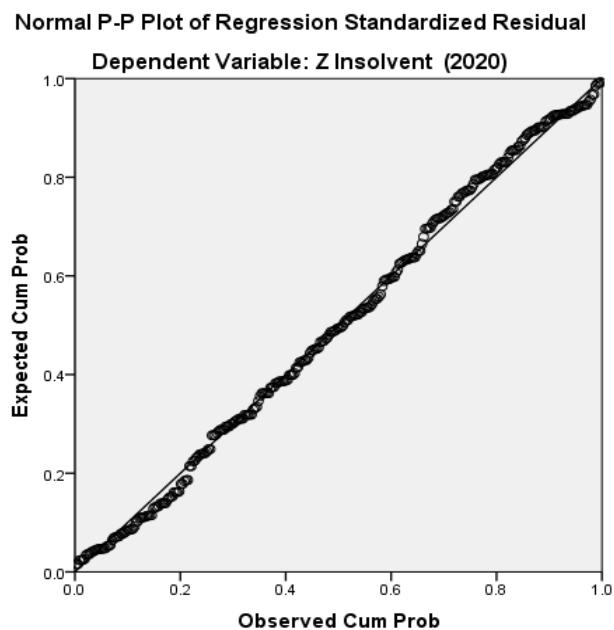
For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.14 Insolvent Companies for the year 2019

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Insolvent (2019)	1.513208	24.0775452	306
X1 Insolvent (2019)	.458750	2.4134249	306
X2 Insolvent (2019)	.401191	7.5984278	306
X3 Insolvent (2019)	-.069924	6.4500635	306
X4 Insolvent (2019)	-.178450	4.9194846	306
X5 Insolvent (2019)	.739601	12.3866889	306

Descriptive Statistics shows that there a total of 306 values available in the data of Insolvent organisations for the year 2019. Hence there are no missing values. Therefore, we can proceed further with Regression.

Table 4.15 Insolvent Companies for the year 2019

Correlations		Z Insolvent (2019)	X1 Insolvent (2019)	X2 Insolvent (2019)	X3 Insolvent (2019)	X4 Insolvent (2019)	X5 Insolvent (2019)
Pearson Correlation	Z Insolvent (2019)	1.000	.661	.950	.983	-.572	-.613
	X1 Insolvent (2019)	.661	1.000	.579	.700	-.152	-.843
	X2 Insolvent (2019)	.950	.579	1.000	.909	-.739	-.550
	X3 Insolvent (2019)	.983	.700	.909	1.000	-.515	-.715
	X4 Insolvent (2019)	-.572	-.152	-.739	-.515	1.000	.106
	X5 Insolvent (2019)	-.613	-.843	-.550	-.715	.106	1.000
Sig. (1-tailed)	Z Insolvent (2019)	.	.000	.000	.000	.000	.000
	X1 Insolvent (2019)	.000	.	.000	.000	.004	.000
	X2 Insolvent (2019)	.000	.000	.	.000	.000	.000
	X3 Insolvent (2019)	.000	.000	.000	.	.000	.000
	X4 Insolvent (2019)	.000	.004	.000	.000	.	.032
	X5 Insolvent (2019)	.000	.000	.000	.000	.032	.
N	Z Insolvent (2019)	306	306	306	306	306	306
	X1 Insolvent (2019)	306	306	306	306	306	306
	X2 Insolvent (2019)	306	306	306	306	306	306
	X3 Insolvent (2019)	306	306	306	306	306	306
	X4 Insolvent (2019)	306	306	306	306	306	306
	X5 Insolvent (2019)	306	306	306	306	306	306

Table 4.16 Insolvent Companies for the year 2019

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Insolvent (2019), X4 Insolvent (2019), X3 Insolvent (2019), X1 Insolvent (2019), X2 Insolvent (2019)	.	Enter

Variable entered and removed box shows all the independent variable i.e., X1, X2, X3, X4, X4, X5 hence the dependent variable is Z score. The method used was the enter method.

Table 4.17 Insolvent Companies for the year 2019

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000004	1.809

Durbin Watson test in Model Summary helps to check independence of observation. If the value of Durbin-Watson test is in between 1 to 3 then there is independence of observation in the data collected for Insolvent organisations for the year 2019.

Table 4.18 Insolvent Companies for the year 2019

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	176817.096	5	35363.419	3378174562024.057	.000
	Residual	.000	300	.000		
	Total	176817.096	306			

ANOVA table shows that there is a significant relationship between X1, X2, X3, X4, X5 and Z score of insolvent organisations for the year 2019. Hence, we can predict that the linear regression model works for insolvent organisation for the year 2019.

Table 4.19 Insolvent Companies for the year 2019

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.300E-7	.000		.076	.940
	X1 Insolvent (2019)	1.200	.000	.106	223382.151	.000
	X2 Insolvent (2019)	1.400	.000	.390	430698.760	.000
	X3 Insolvent (2019)	3.300	.000	.780	988804.625	.000
	X4 Insolvent (2019)	.600	.000	.108	234894.293	.000
	X5 Insolvent (2019)	.999	.000	.238	471527.468	.000

Table 4.19 Insolvent Companies for the year 2019

Coefficients

| Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Insolvent (2019)	1.200	1.200
	X2 Insolvent (2019)	1.400	1.400
	X3 Insolvent (2019)	3.300	3.300
	X4 Insolvent (2019)	.600	.600
	X5 Insolvent (2019)	.999	.999

The model's behavior may be interpreted via the use of the coefficients. Using this information, we were able to identify the relapse cause. If the large value of the T test (called Sig.) is less than 0.05, then that variable is considered to contribute to the direct relapse and is taken into account for the scenario; otherwise, it is disregarded since it does not contribute to the relapse.

Table 4.20 Insolvent Companies for the year 2019

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-391.642578	241.781235	2.279156	27.2802470	306
Residual	-.0003226	.0002776	.0000000	.0001150	306
Std. Predicted Value	-14.440	8.779	.000	1.000	306
Std. Residual	-2.783	2.395	.000	.992	306

It is possible to apply regression to the obtained data if the value of the standardized residual of Insolvent firms for 2019 falls between the range of -3.29 and +3.29, indicating the absence of outliers.

Figure 4.3 Histogram (Z Insolvent Companies 2019)
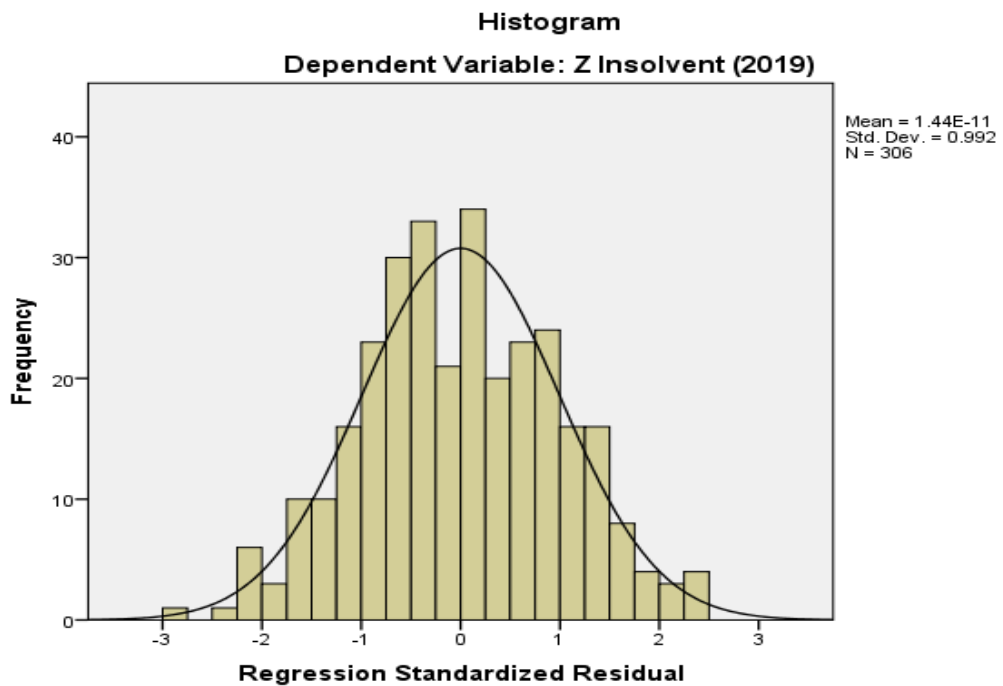
Furthermore, the Z score for 2019 is likewise clearly regularly distributed, as shown by the graph dependent variable.

Figure 4.3 P P Plot (Z Insolvent 2019)
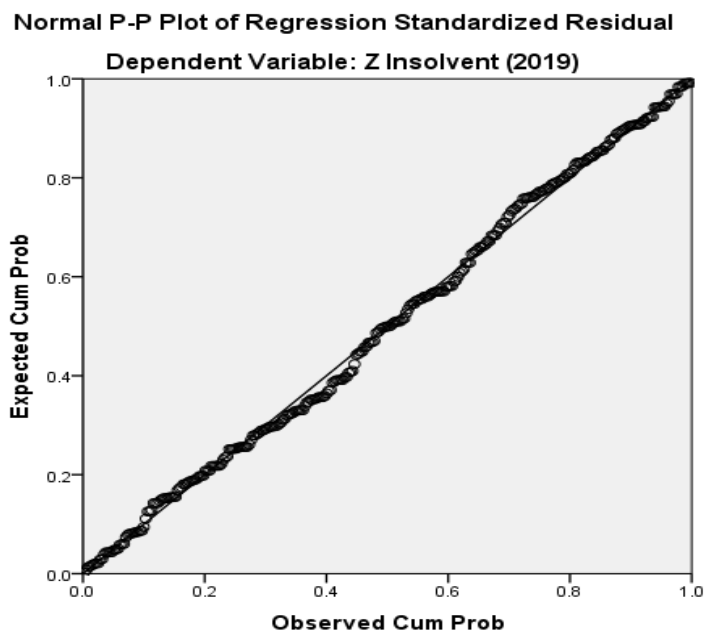
For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.21 Insolvent Companies for the year 2018

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Insolvent (2018)	2.968130	4.1589732	306
X1 Insolvent (2018)	.492740	.8964206	306
X2 Insolvent (2018)	.486434	2.9076377	306
X3 Insolvent (2018)	.029897	.2705519	306
X4 Insolvent (2018)	.160290	1.8420067	306
X5 Insolvent (2018)	1.502501	2.4839531	306

Descriptive Statistics shows that there a total of 306 values available in the data of Insolvent organisations for the year 2018. Hence there are no missing values. Therefore, we can proceed further with Regression.

Table 4.22 Insolvent Companies for the year 2018

Correlations		Z Insolvent (2018)	X1 Insolvent (2018)	X2 Insolvent (2018)	X3 Insolvent (2018)	X4 Insolvent (2018)	X5 Insolvent (2018)
Pearson Correlation	Z Insolvent (2018)	1.000	.633	.825	.381	-.579	.384
	X1 Insolvent (2018)	.633	1.000	.454	.032	-.280	.075
	X2 Insolvent (2018)	.825	.454	1.000	.082	-.824	-.069
	X3 Insolvent (2018)	.381	.032	.082	1.000	.007	.243
	X4 Insolvent (2018)	-.579	-.280	-.824	.007	1.000	.007
	X5 Insolvent (2018)	.384	.075	-.069	.243	.007	1.000
Sig. (1-tailed)	Z Insolvent (2018)	.	.000	.000	.000	.000	.000
	X1 Insolvent (2018)	.000	.	.000	.291	.000	.095
	X2 Insolvent (2018)	.000	.000	.	.077	.000	.115
	X3 Insolvent (2018)	.000	.291	.077	.	.455	.000
	X4 Insolvent (2018)	.000	.000	.000	.455	.	.450
	X5 Insolvent (2018)	.000	.095	.115	.000	.450	.
N	Z Insolvent (2018)	306	306	306	306	306	306
	X1 Insolvent (2018)	306	306	306	306	306	306
	X2 Insolvent (2018)	306	306	306	306	306	306
	X3 Insolvent (2018)	306	306	306	306	306	306
	X4 Insolvent (2018)	306	306	306	306	306	306
	X5 Insolvent (2018)	306	306	306	306	306	306

Table 4.23 Insolvent Companies for the year 2018

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Insolvent (2018), X4 Insolvent (2018), X3 Insolvent (2018), X1 Insolvent (2018), X2 Insolvent (2018)	.	Enter

Variable entered and removed box shows all the independent variable i.e., X1, X2, X3, X4, X4, X5 hence the dependent variable is Z score. The method used was the enter method.

Table 4.24 Insolvent Companies for the year 2018

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000002	2.159

The Model Summary includes a Durbin-Watson test for assessing experimenter bias. There is independence of observation in the 2018 data for insolvent organizations if the Durbin-Watson test score is between 1 and 3.

Table 4.25 Insolvent Companies for the year 2018

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	5275.603	5	1055.121	83733448120.405	.000[b]
Residual	.000	300	.000		
Total	5275.603	306			

Table data from an analysis of variance test reveal a correlation between X1, X2, X3, X4, and X5 and the Z score of failing businesses in 2018. As a result, we have confidence in the linear regression model's ability to estimate the 2018 viability of bankrupt businesses.

Table 4.26 Insolvent Companies for the year 2018

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7.431E-6	.000		-.753	.452
	X1 Insolvent (2018)	1.200	.000	.246	137736.606	.000
	X2 Insolvent (2018)	1.400	.000	.931	301255.212	.000
	X3 Insolvent (2018)	3.300	.000	.204	125601.934	.000
	X4 Insolvent (2018)	.600	.000	.253	89185.205	.000
	X5 Insolvent (2018)	.999	.000	.378	231467.577	.000

Table 4.26 Insolvent Companies for the year 2018

| Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Insolvent (2018)	1.200	1.200
	X2 Insolvent (2018)	1.400	1.400
	X3 Insolvent (2018)	3.300	3.300
	X4 Insolvent (2018)	.600	.600
	X5 Insolvent (2018)	.999	.999

Model behavior may be inferred from the coefficients. Given that we can get the regression equation from this table. The T test's significant value (labeled as Sig.) determines whether a given variable is included in the linear regression equation; if the value is greater than 0.05, the variable is left out of the equation since it does not significantly contribute to the regression.

Table 4.27 Insolvent Companies for the year 2018

| Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-21.055523	33.339638	2.857079	4.3728824	306
Residual	-.0002870	.0003071	.0000000	.0001171	306
Std. Predicted Value	-5.468	6.971	.000	1.000	306
Std. Residual	-2.432	2.602	.000	.992	306

It is possible to apply regression to the obtained data if the value of the standardized residual of Insolvent firms for 2018 falls between the range of -3.29 and +3.29, indicating that there are no outliers in the data.

Figure 4.4 Histogram (Z Insolvent Companies 2018)
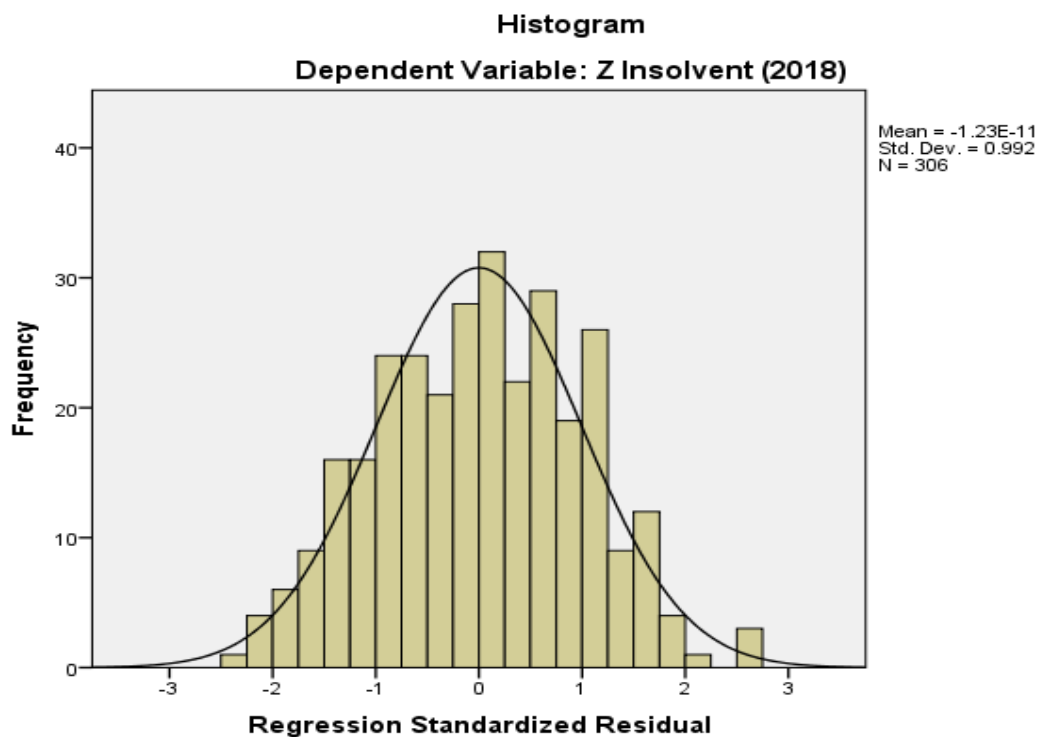
As can be seen from the graph, the Z-score for 2018 follows a normal distribution, which is supported by the data.

Figure 4.4 P P Plot (Z Insolvent Companies 2018)
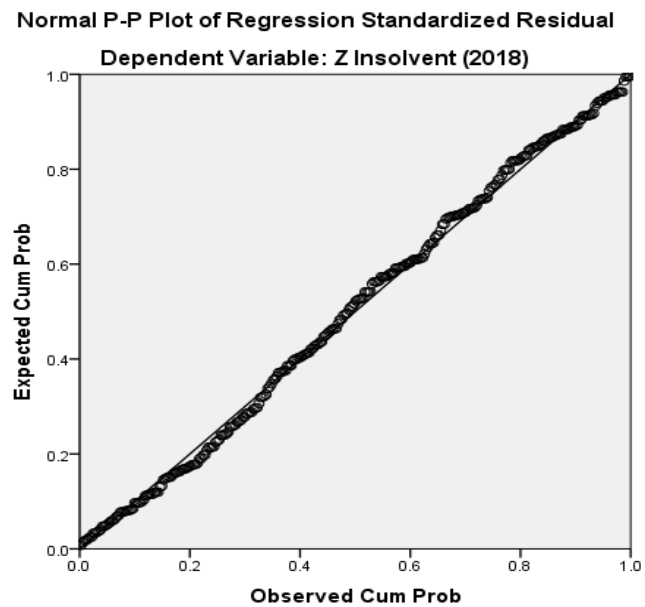
Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Z Insolvent (2018)

For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.28 Insolvent Companies for the year 2017

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Insolvent (2017)	3.233656	4.2693976	306
X1 Insolvent (2017)	.495094	.8272884	306
X2 Insolvent (2017)	.512225	2.6142136	306
X3 Insolvent (2017)	.083661	.2260563	306
X4 Insolvent (2017)	.121141	1.4879264	306
X5 Insolvent (2017)	1.575237	1.9388561	306

According to descriptive statistics, 2017's data on insolvent businesses includes a total of 306 values. For this reason, we find no missing data. So, it seems like we can go on with Regression.

Table 4.29 Insolvent Companies for the year 2017

Correlations		Z Insolvent (2017)	X1 Insolvent (2017)	X2 Insolvent (2017)	X3 Insolvent (2017)	X4 Insolvent (2017)	X5 Insolvent (2017)
Pearson Correlation	Z Insolvent (2017)	1.000	.668	.845	.705	-.609	.360
	X1 Insolvent (2017)	.668	1.000	.596	.310	-.409	-.051
	X2 Insolvent (2017)	.845	.596	1.000	.548	-.825	-.106
	X3 Insolvent (2017)	.705	.310	.548	1.000	-.301	.172
	X4 Insolvent (2017)	-.609	-.409	-.825	-.301	1.000	.041
	X5 Insolvent (2017)	.360	-.051	-.106	.172	.041	1.000
Sig. (1-tailed)	Z Insolvent (2017)	.	.000	.000	.000	.000	.000
	X1 Insolvent (2017)	.000	.	.000	.000	.000	.189
	X2 Insolvent (2017)	.000	.000	.	.000	.000	.032
	X3 Insolvent (2017)	.000	.000	.000	.	.000	.001
	X4 Insolvent (2017)	.000	.000	.000	.000	.	.240
	X5 Insolvent (2017)	.000	.189	.032	.001	.240	.
N	Z Insolvent (2017)	306	306	306	306	306	306
	X1 Insolvent (2017)	306	306	306	306	306	306
	X2 Insolvent (2017)	306	306	306	306	306	306
	X3 Insolvent (2017)	306	306	306	306	306	306
	X4 Insolvent (2017)	306	306	306	306	306	306
	X5 Insolvent (2017)	306	306	306	306	306	306

Table 4.30 Insolvent Companies for the year 2017

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Insolvent (2017), X4 Insolvent (2017), X3 Insolvent (2017), X1 Insolvent (2017), X2 Insolvent (2017)	.	Enter

Variable entered and removed box shows all the independent variable i.e., X1, X2, X3, X4, X4, X5 hence the dependent variable is Z score. The method used was the enter method.

Table 4.31 Insolvent Companies for the year 2017

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000000	1.887

The Model Summary includes a Durbin-Watson test for determining whether or not an observation is independent. Observer independence exists in the 2017 data set for insolvent businesses if the Durbin-Watson test score falls between 1 and 3.

Table 4.32 Insolvent Companies for the year 2017

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5559.466	5	1111.893	99084311339.036	.000[b]
	Residual	.000	300	.000		
	Total	5559.466	306			

The 2017 ANOVA table indicates a substantial correlation between X1, X2, X3, X4, and X5, as well as the Z score of bankrupt businesses. Therefore, we may foresee that 2017 will be a successful year for bankrupt businesses using the linear regression model.

Table 4.33 Insolvent Companies for the year 2017

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.296E-5	.000		-2.443	.05
	X1 Insolvent (2017)	1.200	.000	.226	124566.258	.000
	X2 Insolvent (2017)	1.400	.000	.831	231795.621	.000
	X3 Insolvent (2017)	3.300	.000	.168	88050.776	.000
	X4 Insolvent (2017)	.600	.000	.203	73216.109	.000
	X5 Insolvent (2017)	.999	.000	.422	278036.398	.000

Table 4.33 Insolvent Companies for the year 2017

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Insolvent (2017)	1.200	1.200
	X2 Insolvent (2017)	1.400	1.400
	X3 Insolvent (2017)	3.300	3.300
	X4 Insolvent (2017)	.600	.600
	X5 Insolvent (2017)	.999	.999

The model's coefficients reveal its inner workings. Since the regression equation may be calculated using this table. A variable contributes to the linear regression and is included in the equation if its significant value from the T test (labeled as Sig.) is less than 0.05; otherwise, it is not included in the linear regression since it does not contribute to the regression.

Table 4.34 Insolvent Companies for the year 2017

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-16.540470	37.553234	3.191933	4.4038672	306
Residual	-.0002969	.0002904	.0000000	.0001084	306
Std. Predicted Value	-4.481	7.803	.000	1.000	306
Std. Residual	-2.718	2.658	.000	.992	306

It is possible to apply regression to the obtained data if the value of the standardized residual of Insolvent firms for 2017 falls between the range of -3.29 and +3.29, indicating that there are no outliers in the data.

Figure 4.5 Histogram (Z Insolvent Companies 2017)
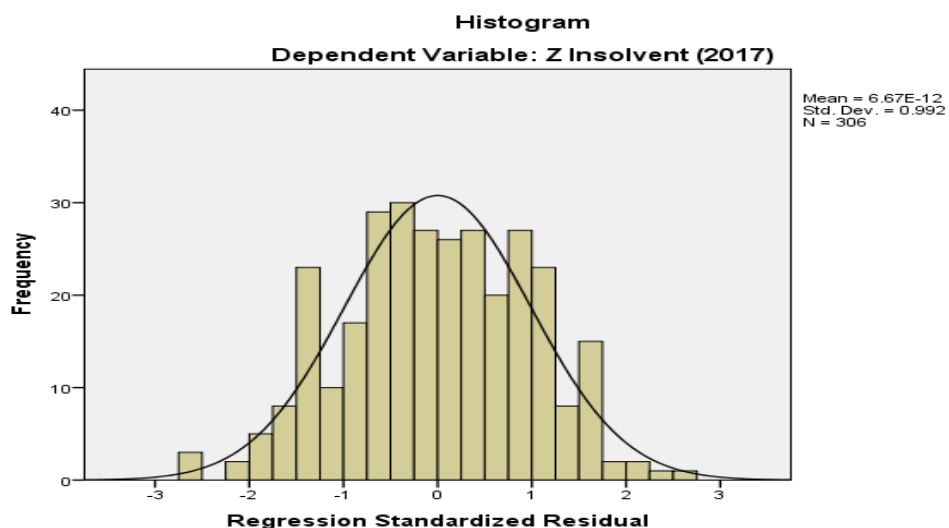
And the 2017 Z score, which is the dependent variable in the graph, is clearly normally distributed, as is seen from the graph.

Figure 4.6 P P Plot (Z Insolvent Companies 2017)
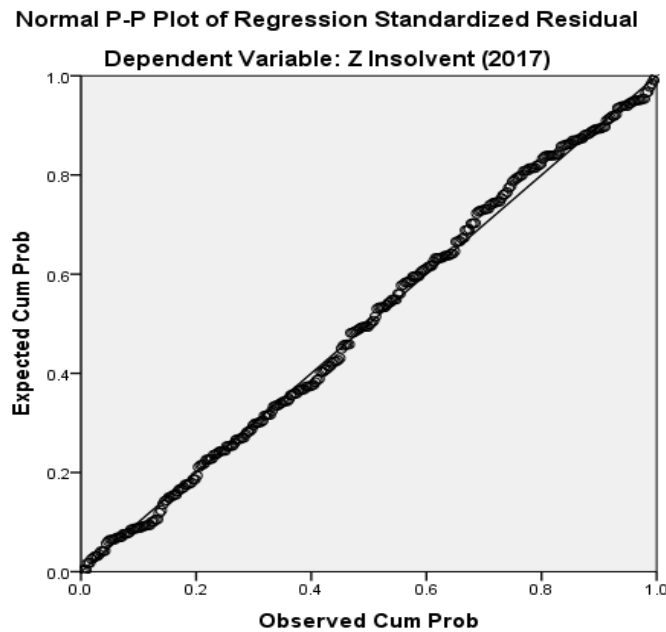
For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.35 Insolvent Companies for the year 2016

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Insolvent (2016)	.723316	12.3915794	306
X1 Insolvent (2016)	.228252	3.3501291	306
X2 Insolvent (2016)	.241224	7.2791390	306
X3 Insolvent (2016)	.000246	1.0410346	306
X4 Insolvent (2016)	-.139055	5.0956784	306
X5 Insolvent (2016)	.194515	10.1291935	306

Descriptive statistics reveal that 2016's insolvent business data has a total of 306 unique values. For this reason, we find no missing data. So, it seems like we can go on with Regression.

Table 4.36 Insolvent Companies for the year 2016

Correlations		Z Insolvent (2016)	X1 Insolvent (2016)	X2 Insolvent (2016)	X3 Insolvent (2016)	X4 Insolvent (2016)	X5 Insolvent (2016)
Pearson Correlation	Z Insolvent (2016)	1.000	.017	-.585	.999	.601	.014
	X1 Insolvent (2016)	.017	1.000	.491	-.024	-.142	-.075
	X2 Insolvent (2016)	-.585	.491	1.000	-.619	-.875	-.062
	X3 Insolvent (2016)	.999	-.024	-.619	1.000	.619	-.010
	X4 Insolvent (2016)	.601	-.142	-.875	.619	1.000	.048
	X5 Insolvent (2016)	.014	-.075	-.062	-.010	.048	1.000
Sig. (1-tailed)	Z Insolvent (2016)	.	.386	.000	.000	.000	.406
	X1 Insolvent (2016)	.386	.	.000	.340	.007	.095
	X2 Insolvent (2016)	.000	.000	.	.000	.000	.139
	X3 Insolvent (2016)	.000	.340	.000	.	.000	.430
	X4 Insolvent (2016)	.000	.007	.000	.000	.	.199
	X5 Insolvent (2016)	.406	.095	.139	.430	.199	.
N	Z Insolvent (2016)	306	306	306	306	306	306
	X1 Insolvent (2016)	306	306	306	306	306	306
	X2 Insolvent (2016)	306	306	306	306	306	306
	X3 Insolvent (2016)	306	306	306	306	306	306
	X4 Insolvent (2016)	306	306	306	306	306	306
	X5 Insolvent (2016)	306	306	306	306	306	306

Table 4.37 Insolvent Companies for the year 2016

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Insolvent (2016), X3 Insolvent (2016), X1 Insolvent (2016), X4 Insolvent (2016), X2 Insolvent (2016)	.	Enter

Variable entered and removed box shows all the independent variable i.e., X1, X2, X3, X4, X4, X5 hence the dependent variable is Z score. The method used was the enter method.

Table 4.38 Insolvent Companies for the year 2016

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000003	1.809

The Model Summary includes a Durbin-Watson test for determining whether or not an observation is independent. There is independence of observation in the 2016 data gathered from insolvent businesses if the Durbin-Watson test score is between 1 and 3.

Table 4.39 Insolvent Companies for the year 2016

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	46833.128	5	9366.626	237327502403578.380	.000
Residual	.000	300	.000		
Total	46833.128	306			

There is a statistically significant correlation between X1, X2, X3, X4, and X5 and the Z score of failing businesses in 2016. For 2016, therefore, we know that the linear regression model is useful for predicting which companies would go bankrupt.

Table 4.40 Insolvent Companies for the year 2016

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients		T
	B	Std. Error	Beta		
1 (Constant)	-6.731E-6	.000			-1.001
X1 Insolvent (2016)	1.200	.000	.018		355491.732
X2 Insolvent (2016)	1.400	.000	.057		551141.758
X3 Insolvent (2016)	3.300	.000	1.024		25068844.246
X4 Insolvent (2016)	.600	.000	.017		205313.449
X5 Insolvent (2016)	.999	.000	.028		964497.178

Table 4.40 Insolvent Companies for the year 2016

Coefficients			
Model	Sig.	95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1 (Constant)	.318	.000	.000
X1 Insolvent (2016)	.000	1.200	1.200
X2 Insolvent (2016)	.000	1.400	1.400
X3 Insolvent (2016)	.000	3.300	3.300

	X4 Insolvent (2016)	.000	.600	.600
	X5 Insolvent (2016)	.000	.999	.999

Model behavior may be inferred from the coefficients. Given that we can get the regression equation from this table. The T test's significant value (labeled as Sig.) determines whether a given variable is included in the linear regression equation; if the value is greater than 0.05, the variable is left out of the equation since it does not significantly contribute to the regression.

Table 4.41 Residuals Statistics (Insolvent companies for the year 2016)

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-107.709167	4000.232910	14.412072	228.9249144	306
Residual	-.0002752	.0002864	.0000000	.0001150	306
Std. Predicted Value	-.533	17.411	.000	1.000	306
Std. Residual	-2.371	2.467	.000	.991	306

Regression may be used to the acquired data if the value of the standardized residual of Insolvent firms for 2016 falls between the range of -3.29 and +3.29, indicating the absence of outliers.

Figure 4.7

Histogram Dependent Variable: Z Insolvent (2016)
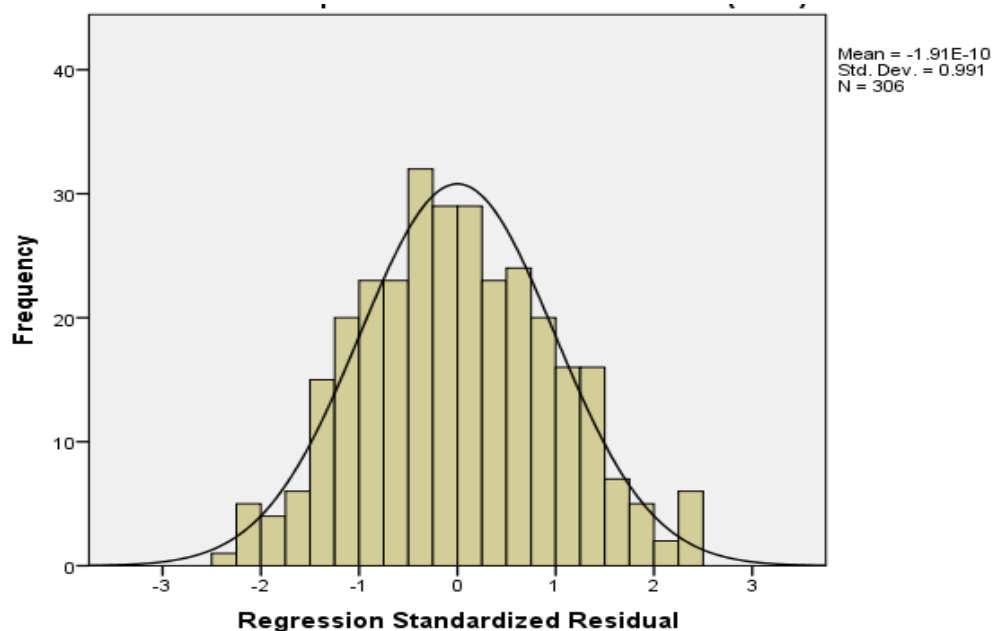
Even more convincingly, the Z score in 2016 is likewise normally distributed, as can be seen from the graph dependent variable.

Figure 4.8

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Z Insolvent (2016)
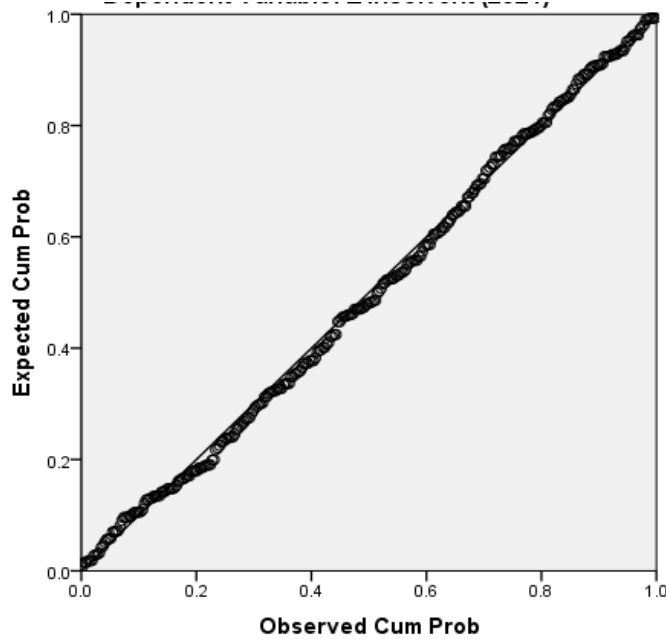
For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Solvent Companies-:

Table 4.42 Solvent Companies for the year 2020

Descriptive Statistics			
	Mean	Std. Deviation	N
Solvent Z (2020)	2.365405	5.2272605	305
Solvent X1 (2020)	.393820	.7347212	305
Solvent X2 (2020)	.201485	3.3728522	305
Solvent X3 (2020)	.041626	.3204613	305
Solvent X4 (2020)	.217268	1.3242655	305
Solvent X5 (2020)	1.344360	1.3412295	305

The data of Solvent organizations in 2020 has a total of 306 values, as shown by descriptive statistics. For this reason, we find no missing data. So, it seems like we can go on with Regression.

Table 4.43 Solvent Companies for the year 2020

		Solvent Z (2020)	Solvent X1 (2020)	Solvent X2 (2020)	Solvent X3 (2020)	Solvent X4 (2020)	Solvent X5 (2020)
		Correlations					
Pearson Correlation	Solvent Z (2020)	1.000	.878	.939	.687	-.751	-.084
	Solvent X1 (2020)	.878	1.000	.809	.490	-.620	-.105
	Solvent X2 (2020)	.939	.809	1.000	.618	-.875	-.360
	Solvent X3 (2020)	.687	.490	.618	1.000	-.546	-.285
	Solvent X4 (2020)	-.751	-.620	-.875	-.546	1.000	.399
	Solvent X5 (2020)	-.084	-.105	-.360	-.285	.399	1.000
Sig. (1-tailed)	Solvent Z (2020)	.	.000	.000	.000	.000	.072
	Solvent X1 (2020)	.000	.	.000	.000	.000	.034
	Solvent X2 (2020)	.000	.000	.	.000	.000	.000
	Solvent X3 (2020)	.000	.000	.000	.	.000	.000
	Solvent X4 (2020)	.000	.000	.000	.000	.	.000
	Solvent X5 (2020)	.072	.034	.000	.000	.000	.
N	Solvent Z (2020)	305	305	305	305	305	305
	Solvent X1 (2020)	305	305	305	305	305	305
	Solvent X2 (2020)	305	305	305	305	305	305
	Solvent X3 (2020)	305	305	305	305	305	305
	Solvent X4 (2020)	305	305	305	305	305	305
	Solvent X5 (2020)	305	305	305	305	305	305

Table 4.44 Solvent Companies for the year 2020

Model	Variables Entered	Variables Removed	Method
	Variables Entered/Removed		
1	X5 Solvent (2020), X1 Solvent (2020), X3 Solvent (2020), X4 Solvent (2020), X2 Solvent (2020)	.	Enter

All of the independent variables, X1, X2, X3, X4, and X5, are shown in the variables input and deleted box; as a result, Z score is the dependent variable. The enter technique was employed.

Table 4.45 Solvent Companies for the year 2020

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
			Model Summary		
1	1.000a	1.000	1.000	.000111	2.182

The Model Summary includes a Durbin-Watson test for determining whether or not an observation is independent. Data gathered from Solvent organizations in 2020 will have independence of observation if the result of the Durbin-Watson test falls between the range of 1 and 3.

Table 4.46 Solvent Companies for the year 2020

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	8306.573	5	1661.315	0.00	0.00
Residual	.000	299	.000		
Total	8306.573	304			

In the table below using ANOVA, we can see that the 2020 Z scores of Solvent organizations are significantly related to X1, X2, X3, X4, and X5. So, looking forward to the year 2020, we can say that the linear regression model is applicable to solvent organization.

Table 4.47 Solvent Companies for the year 2020

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	7.397E-11	.000		.000	.000
X1 Solvent (2020)	1.200	.000	.169	.000	.000
X2 Solvent (2020)	1.400	.000	.903	.000	.000
X3 Solvent (2020)	3.300	.000	.202	.000	.000
X4 Solvent (2020)	.600	.000	.152	.000	.000
X5 Solvent (2020)	.999	.000	.256	.000	.000

Table 4.47 Solvent Companies for the year 2020

Coefficients		
Model	95.0% Confidence Interval for B	
	Lower Bound	Upper Bound
1 (Constant)	.000	.000
X1 Solvent (2020)	1.200	1.200
X2 Solvent (2020)	1.400	1.400
X3 Solvent (2020)	3.300	3.300
X4 Solvent (2020)	.600	.600
X5 Solvent (2020)	.999	.999

Model behavior may be inferred from the coefficients. Given that we can get the regression equation from this table. The T test's significant value (labeled as Sig.) determines whether a given variable is included in the linear regression equation; if the value is greater than 0.05, the variable is left out of the equation since it does not significantly contribute to the regression.

Table 4.48 Solvent Companies for the year 2020

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-73.992149	22.838686	2.365405	5.2272605	306
Residual	.0000000	.0000000	.0000000	.0000000	306
Std. Predicted Value	-14.608	3.917	.000	1.000	306
Std. Residual	.	.	.	.	306

If the value of the standardized residual of Solvent firms in 2020 is between -3.29 and +3.29, then the data is suitable for regression analysis and there are no outliers in the sample.

Figure 4.9 Histogram (Z Solvent Companies 2020)
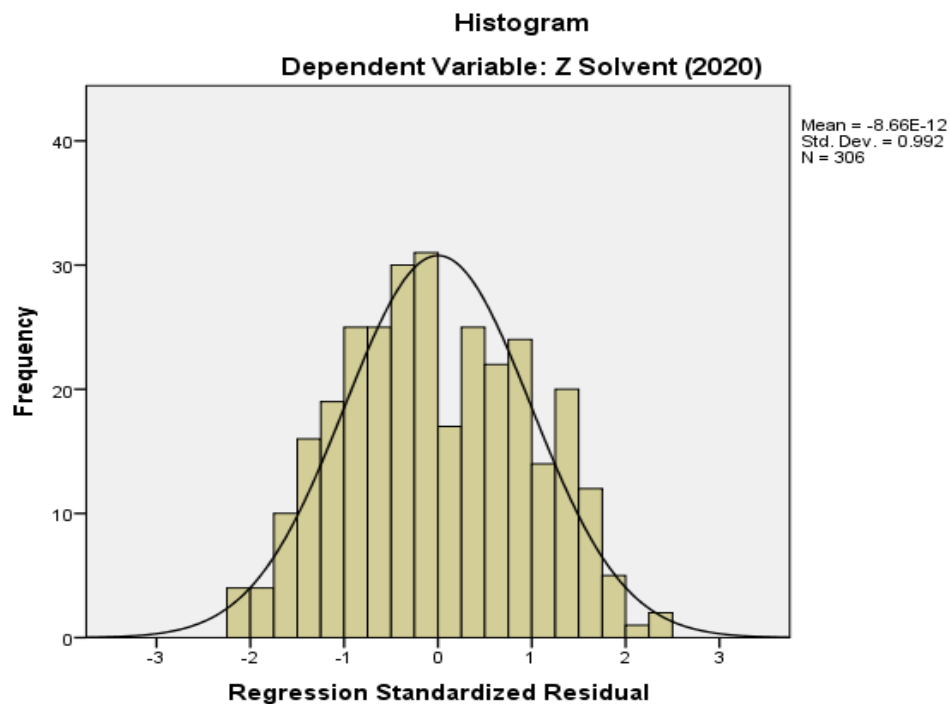
Furthermore, it is clear from the graph dependent variable that the Z score for the year 2020 is similarly regularly distributed.

Figure 4.10 P P Plot (Z Solvent Companies 2020)
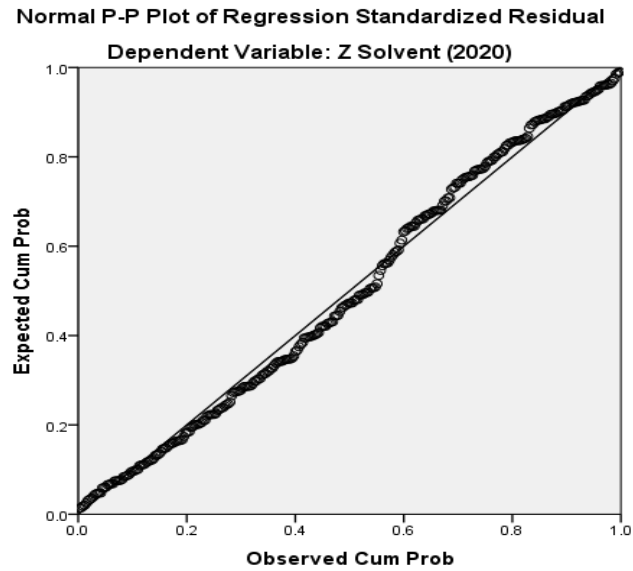
To ensure that the data gathered is normally distributed, a P-P plot may be drawn. For typical data, it is sufficient to see that the points cluster in a line at 450 degrees. Therefore, the gathered information fits the Normal distribution.

Table 4.49 Solvent Companies for the year 2019

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Solvent (2019)	2.787516	3.2154715	306
X1 Solvent (2019)	.435041	.6037216	306
X2 Solvent (2019)	.396200	1.8000074	306
X3 Solvent (2019)	.014630	.4403019	306
X4 Solvent (2019)	.167410	.7946674	306
X5 Solvent (2019)	1.563625	2.2634473	306

Data from Solvent-using businesses in 2019 includes 306 distinct values, as shown by descriptive statistics. as a result, there are no missing values. The next step using Regression is thus possible.

Table 4.50 Solvent Companies for the year 2019

		Z Solvent (2019)	X1 Solvent (2019)	X2 Solvent (2019)	X3 Solvent (2019)	X4 Solvent (2019)	X5 Solvent (2019)
Correlations							
Pearson Correlation	Z Solvent (2019)	1.000	.621	.532	.556	-.129	.300
	X1 Solvent (2019)	.621	1.000	.659	.169	-.316	-.213
	X2 Solvent (2019)	.532	.659	1.000	.110	-.684	-.495
	X3 Solvent (2019)	.556	.169	.110	1.000	.126	-.054
	X4 Solvent (2019)	-.129	-.316	-.684	.126	1.000	.388
	X5 Solvent (2019)	.300	-.213	-.495	-.054	.388	1.000
Sig. (1-tailed)	Z Solvent (2019)	.	.000	.000	.000	.012	.000
	X1 Solvent (2019)	.000	.	.000	.002	.000	.000
	X2 Solvent (2019)	.000	.000	.	.027	.000	.000
	X3 Solvent (2019)	.000	.002	.027	.	.014	.171
	X4 Solvent (2019)	.012	.000	.000	.014	.	.000
	X5 Solvent (2019)	.000	.000	.000	.171	.000	.
N	Z Solvent (2019)	306	306	306	306	306	306
	X1 Solvent (2019)	306	306	306	306	306	306
	X2 Solvent (2019)	306	306	306	306	306	306
	X3 Solvent (2019)	306	306	306	306	306	306
	X4 Solvent (2019)	306	306	306	306	306	306
	X5 Solvent (2019)	306	306	306	306	306	306

Table 4.51 Solvent Companies for the year 2019

Model	Variables Entered	Variables Removed	Method
Variables Entered/Removed			
1	X5 Solvent (2019), X3 Solvent (2019), X1 Solvent (2019), X4 Solvent (2019), X2 Solvent (2019)	.	Enter

All of the independent variables, X1, X2, X3, X4, and X5, are shown in the variables input and deleted box; as a result, Z score is the dependent variable. The enter technique was employed.

Table 4.52 Solvent Companies for the year 2019

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000	1.000	1.000	.00000013	1.743

The Model Summary includes a Durbin-Watson test for determining whether or not an observation is independent. There is independence of observation in the 2019 data gathered from Solvent organizations if the result of the Durbin-Watson test is between 1 and 3.

Table 4.53 Solvent Companies for the year 2019

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3143.134	5	628.627	43478965311.947	.000
	Residual	.000	299	.000		
	Total	3143.134	304			

Data from an analysis of variance table reveals a correlation between the variables X1, X2, X3, X4, and X5 and the Solvent companies' Z scores for 2019. It follows that the linear regression model is valid for solvent organization in 2019.

Table 4.54 Solvent Companies for the year 2019

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.224E-10	.000		-.032	.974
	X1 Solvent (2019)	1.200	.000	.225	209967694.326	.000
	X2 Solvent (2019)	1.400	.000	.784	525618529.769	.000
	X3 Solvent (2019)	3.300	.000	.452	558915688.177	.000
	X4 Solvent (2019)	.600	.000	.148	131495349.256	.000
	X5 Solvent (2019)	.999	.000	.703	779560508.888	.000

Table 4.54 Solvent Companies for the year 2019

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Solvent (2019)	1.200	1.200
	X2 Solvent (2019)	1.400	1.400
	X3 Solvent (2019)	3.300	3.300
	X4 Solvent (2019)	.600	.600
	X5 Solvent (2019)	.999	.999

The model's behavior may be interpreted via the use of the coefficients. Using this information, we were able to identify the relapse cause. If the large value of the T test (called Sig.) is less than 0.05, then that variable is considered to contribute to the direct relapse and is taken into account for the scenario; otherwise, it is disregarded since it does not contribute to the relapse.

Table 4.55 Solvent Companies for the year 2019

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-13.346955	22.356140	2.787516	3.2154715	306
Residual	.0000000	.0000000	.0000000	.0000000	306
Std. Predicted Value	-5.018	6.086	.000	1.000	306
Std. Residual	-.105	.072	.000	.029	306

Standardized residuals for Solvent firms in 2019 with a value between -3.29 and +3.29 indicate that the data is not severely skewed and that regression may be used with confidence.

Figure 4.11 Histogram (Z Solvent Companies 2019)
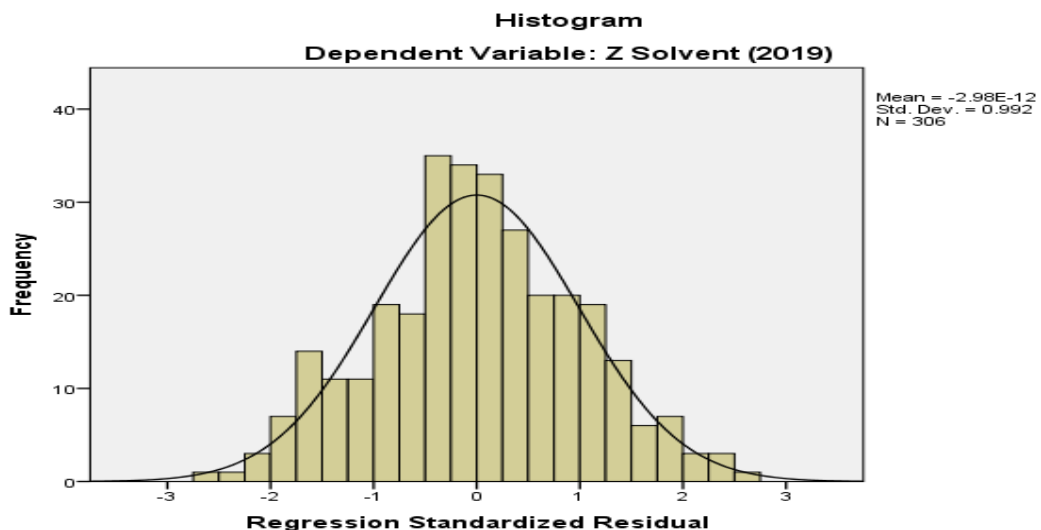
Furthermore, the Z score for 2019 is also clearly shown as a normally distributed variable in the accompanying graph.

Figure 4.12 P P Plot (Z Solvent Companies 2019)
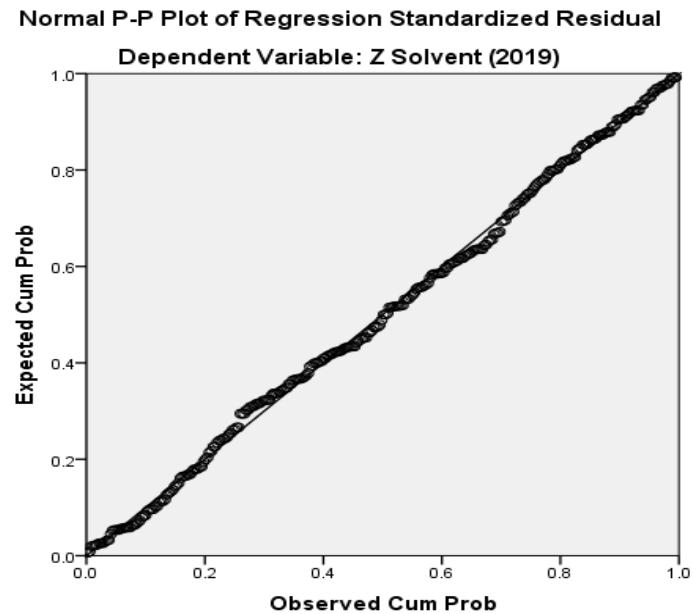
Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Z Solvent (2019)

For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.56 Solvent Companies for the year 2018

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Solvent (2018)	2.716204	6.7692685	306
X1 Solvent (2018)	.478414	.6234576	306
X2Solvent (2018)	.358725	2.2914426	306
X3 Solvent (2018)	.044142	1.0923131	306
X4Solvent (2018)	.158589	.4317052	306
X5 Solvent (2018)	1.400472	1.6772967	306

According to the descriptive statistics, in 2018 there were a total of 306 unique values included in the database of Solvent organizations. hence, there are no missing values. This means that we can continue working with Regression.

Table 4.57 Solvent Companies for the year 2018

		Z Solvent (2018)	X1 Solvent (2018)	X2 Solvent (2018)	X3 Solvent (2018)	X4 Solvent (2018)	X5 Solvent (2018)
		Correlations					
Pearson Correlation	Z Solvent (2018)	1.000	.288	.903	.916	-.095	.228
	X1 Solvent (2018)	.288	1.000	.329	.054	-.044	-.025
	X2Solvent (2018)	.903	.329	1.000	.793	-.362	-.065
	X3 Solvent (2018)	.916	.054	.793	1.000	-.016	.010
	X4Solvent (2018)	-.095	-.044	-.362	-.016	1.000	.209
	X5 Solvent (2018)	.228	-.025	-.065	.010	.209	1.000
Sig. (1-tailed)	Z Solvent (2018)	.	.000	.000	.000	.048	.000
	X1 Solvent (2018)	.000	.	.000	.173	.223	.332
	X2Solvent (2018)	.000	.000	.	.000	.000	.130
	X3 Solvent (2018)	.000	.173	.000	.	.387	.429
	X4Solvent (2018)	.048	.223	.000	.387	.	.000
	X5 Solvent (2018)	.000	.332	.130	.429	.000	.
N	Z Solvent (2018)	306	306	306	306	306	306
	X1 Solvent (2018)	306	306	306	306	306	306
	X2Solvent (2018)	306	306	306	306	306	306
	X3 Solvent (2018)	306	306	306	306	306	306
	X4Solvent (2018)	306	306	306	306	306	306
	X5 Solvent (2018)	306	306	306	306	306	306

Table 4.58 Solvent Companies for the year 2018

Model	Variables Entered	Variables Removed	Method
	Variables Entered/Removed		
1	X5 Solvent (2018), X3 Solvent (2018), X1 Solvent (2018), X4Solvent (2018), X2Solvent (2018)	.	Enter

The Z-score is the dependent variable, and the independent variables (X1, X2, X3, X4, and X5) may be seen in the variables inserted and deleted boxes. The "enter" technique was utilized.

Table 4.59 Solvent Companies for the year 2018

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000001	2.031

The Model Summary includes a Durbin-Watson test for determining whether or not an observation is independent. There is independence of observation in the 2018 data gathered from Solvent organizations if the result of the Durbin-Watson test is between 1 and 3.

Table 4.60 Solvent Companies for the year 2018

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13931.284	5	2786.257	192435979255.398	.000[b]
	Residual	.000	300	.000		
	Total	13931.284	305			

The 2018 ANOVA table for Solvent organizations indicates a substantial correlation between X1, X2, X3, X4, and X5 and the Z score. Therefore, we may foresee that in 2018, the linear regression model will be effective for solvent organization.

Table 4.61 Solvent Companies for the year 2018

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.695E-5	.000		1.594	.112
	X1 Solvent (2018)	1.200	.000	.111	90683.453	.000
	X2Solvent (2018)	1.400	.000	.474	194735.438	.000
	X3 Solvent (2018)	3.300	.000	.532	248919.530	.000
	X4Solvent (2018)	.600	.000	.038	28805.197	.000
	X5 Solvent (2018)	.999	.000	.248	237542.315	.000

Table 4.61 Solvent Companies for the year 2018

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Solvent (2018)	1.200	1.200
	X2Solvent (2018)	1.400	1.400
	X3 Solvent (2018)	3.300	3.300
	X4Solvent (2018)	.600	.600
	X5 Solvent (2018)	.999	.999

An understanding of the coefficients is essential to understanding the model. Since the regression equation may be calculated with the aid of this table. A variable contributes to the linear regression and is included in the equation if its significant value from the T test (labeled as Sig.) is less than 0.05; otherwise, it is not included in the linear regression since it does not contribute to the regression.

Table 4.62 Solvent Companies for the year 2018

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-97.823845	32.420677	2.716204	6.7692685	306
Residual	.0000000	.0000000	.0000000	.0000000	306
Std. Predicted Value	-14.852	4.388	.000	1.000	306
Std. Residual	-.022	.026	.000	.009	306

If the standardized residual of Solvent firms in 2018 falls between the range of -3.29 and +3.29, then the data is not skewed and regression may be used successfully.

Figure 4.13 Histogram (Z Solvent Companies 2018)
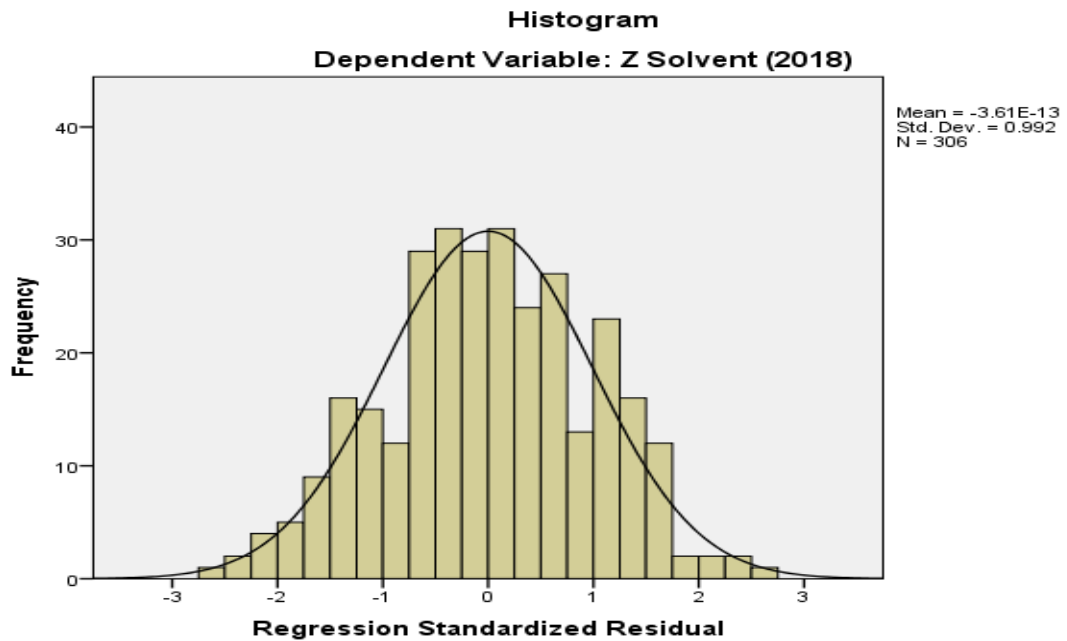
Histogram
Dependent Variable: Z Solvent (2018)

Mean = -3.61E-13
Std. Dev. = 0.992
N = 306

As can be seen from the graph, the Z-score for 2018 follows a normal distribution, which is supported by the data.

Charts 4.18 PP Plot Z Solvent (2018)

Figure 4.14 P P Plot (Z Solvent Companies 2018)
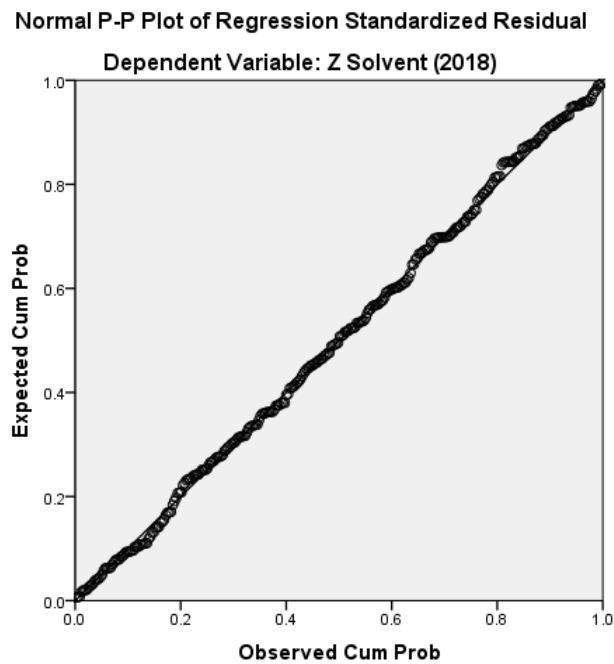
Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Z Solvent (2018)

For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.63 Solvent Companies for the year 2017

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Solvent (2017)	3.047358	3.4641752	306
X1 Solvent (2017)	.476086	.6807089	306
X2 Solvent (2017)	.428935	1.2278086	306
X3 Solvent (2017)	.099952	.1873562	306
X4 Solvent (2017)	.133008	.3617498	306
X5 Solvent (2017)	1.467367	2.6397479	306

According to the descriptive statistics, in 2017 there were a total of 306 unique values included in the data of Solvent organizations. For this reason, we find no missing data. So, it seems like we can go on with Regression.

Table 4.64 Solvent Companies for the year 2017

Correlations		Z Solvent (2017)	X1 Solvent (2017)	X2 Solvent (2017)	X3 Solvent (2017)	X4 Solvent (2017)	X5 Solvent (2017)
Pearson Correlation	Z Solvent (2017)	1.000	.341	.575	.607	-.165	.706
	X1 Solvent (2017)	.341	1.000	.540	.056	-.044	-.222
	X2 Solvent (2017)	.575	.540	1.000	.445	-.532	-.124
	X3 Solvent (2017)	.607	.056	.445	1.000	-.315	.283
	X4 Solvent (2017)	-.165	-.044	-.532	-.315	1.000	.135
	X5 Solvent (2017)	.706	-.222	-.124	.283	.135	1.000
Sig. (1-tailed)	Z Solvent (2017)	.	.000	.000	.000	.002	.000
	X1 Solvent (2017)	.000	.	.000	.166	.220	.000
	X2 Solvent (2017)	.000	.000	.	.000	.000	.015
	X3 Solvent (2017)	.000	.166	.000	.	.000	.000
	X4 Solvent (2017)	.002	.220	.000	.000	.	.009
	X5 Solvent (2017)	.000	.000	.015	.000	.009	.
N	Z Solvent (2017)	306	306	306	306	306	306
	X1 Solvent (2017)	306	306	306	306	306	306
	X2 Solvent (2017)	306	306	306	306	306	306
	X3 Solvent (2017)	306	306	306	306	306	306
	X4 Solvent (2017)	306	306	306	306	306	306
	X5 Solvent (2017)	306	306	306	306	306	306

Table 4.65 Solvent Companies for the year 2017

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Solvent (2017), X2 Solvent (2017), X4 Solvent (2017), X3 Solvent (2017), X1 Solvent (2017)	.	Enter

All of the independent variables, X1, X2, X3, X4, and X5, are shown in the variables input and deleted box; as a result, Z score is the dependent variable. The enter technique was employed.

Table 4.66 Solvent Companies for the year 2017

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000001	1.829

The Model Summary includes a Durbin-Watson test for assessing experimenter bias. When looking at the 2017 data for Solvent organizations, we can say that there is independence of observation if the Durbin-Watson test score is between 1 and 3.

Table 4.67 Solvent Companies for the year 2017

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	3648.155	5	729.631	53739859706.423	.000[b]
Residual	.000	299	.000		
Total	3648.155	304			

Table data from an analysis of variance reveal a correlation between Solvent companies' X1, X2, X3, X4, and X5 scores and their Z-scores this year. Therefore, we may foresee that 2017 will be a successful year for solvent organization using the linear regression model.

Table 4.68 Solvent Companies for the year 2017

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5.608E-6	.000		-.554	.580
	X1 Solvent (2017)	1.200	.000	.236	93013.923	.000
	X2 Solvent (2017)	1.400	.000	.496	157475.580	.000
	X3 Solvent (2017)	3.300	.000	.178	74852.185	.000
	X4 Solvent (2017)	.600	.000	.062	25368.806	.000
	X5 Solvent (2017)	.999	.000	.761	354246.211	.000

Table 4.68 Solvent Companies for the year 2017

Coefficients

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Solvent (2017)	1.200	1.200
	X2 Solvent (2017)	1.400	1.400
	X3 Solvent (2017)	3.300	3.300
	X4 Solvent (2017)	.600	.600
	X5 Solvent (2017)	.999	.999

The information included in the model's coefficients explains its operation. Seeing as how you may use this table to figure out the regression equation. The T test's significant value (labeled as Sig.) determines whether a given variable is included in the linear regression equation; if the value is greater than 0.05, the variable is left out of the equation since it does not significantly contribute to the regression.

Table 4.69 Solvent Companies for the year 2017

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-25.149769	31.981981	3.033761	3.4634621	306
Residual	-.0002907	.0003036	.0000000	.0001157	306
Std. Predicted Value	-8.137	8.358	.000	1.000	306
Std. Residual	-2.491	2.602	.000	.992	306

It is possible to apply regression to the obtained data if the value of the standardized residual of Solvent firms in 2017 falls between the range of -3.29 and +3.29, indicating that there are no outliers in the data.

Figure 4.15 Histogram (Z Solvent Companies 2017)
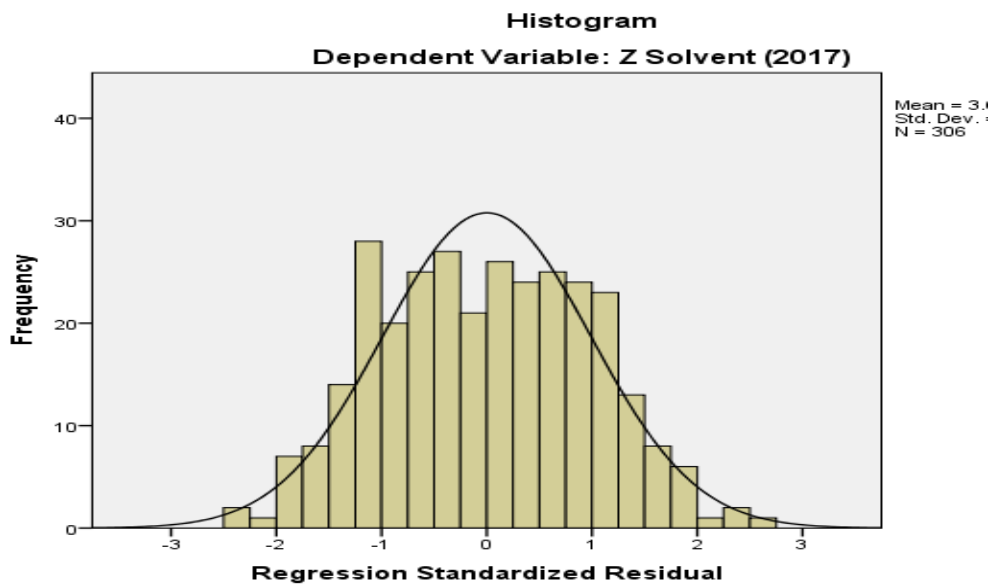
And the 2017 Z score, which is the dependent variable in the graph, is clearly normally distributed, as is seen from the graph.

The P-P plot is a useful tool for determining whether or not the initial data set is normally distributed. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Figure 4.16 P P Plot (Z Solvent Companies 2017)
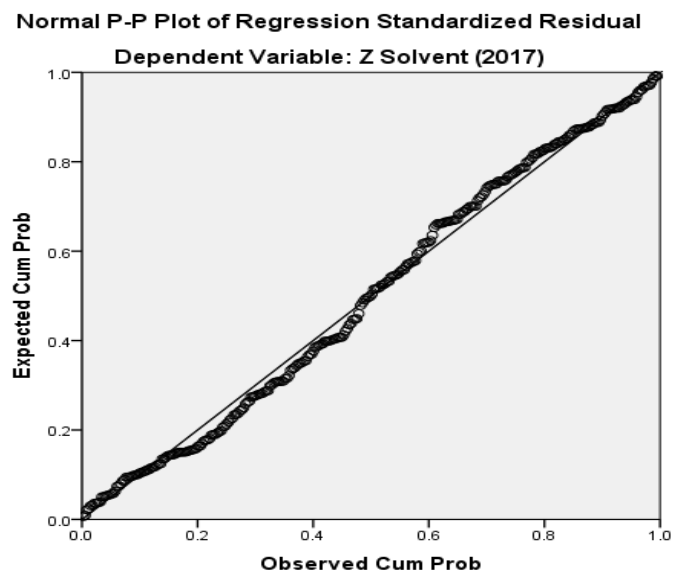
For verification of data normality, a P-P plot may be drawn. Assuming a normal distribution, the data is valid if the points cluster in a line at 450 degrees. As a result, in this instance, we have Normal data.

Table 4.70 Solvent Companies for the year 2016

Descriptive Statistics			
	Mean	Std. Deviation	N
Z Solvent (2016)	2.049774	8.2608692	306
X1 Solvent (2016)	.222949	3.1670896	306
X2 Solvent (2016)	.226915	4.8118257	306
X3 Solvent (2016)	.064835	.7640615	306
X4 Solvent (2016)	.086759	2.2427058	306
X5 Solvent (2016)	1.199744	1.7143912	306

According to Descriptive Statistics, the 2016 data pool for Solvent organizations has a total of 306 values. hence, there are no missing values. This means that we can continue working with Regression.

Table 4.71 Solvent Companies for the year 2016

Correlations		Z Solvent (2016)	X1 Solvent (2016)	X2 Solvent (2016)	X3 Solvent (2016)	X4 Solvent (2016)	X5 Solvent (2016)
Pearson Correlation	Z Solvent (2016)	1.000	.865	.948	-.126	-.614	-.149
	X1 Solvent (2016)	.865	1.000	.781	-.548	-.300	-.073
	X2 Solvent (2016)	.948	.781	1.000	-.069	-.778	-.376
	X3 Solvent (2016)	-.126	-.548	-.069	1.000	-.351	-.315
	X4 Solvent (2016)	-.614	-.300	-.778	-.351	1.000	.489
	X5 Solvent (2016)	-.149	-.073	-.376	-.315	.489	1.000
Sig. (1-tailed)	Z Solvent (2016)	.	.000	.000	.014	.000	.005
	X1 Solvent (2016)	.000	.	.000	.000	.000	.103
	X2 Solvent (2016)	.000	.000	.	.114	.000	.000

	X3 Solvent (2016)	.014	.000	.114	.	.000	.000
	X4 Solvent (2016)	.000	.000	.000	.000	.	.000
	X5 Solvent (2016)	.005	.103	.000	.000	.000	.
N	Z Solvent (2016)	306	306	306	306	306	306
	X1 Solvent (2016)	306	306	306	306	306	306
	X2 Solvent (2016)	306	306	306	306	306	306
	X3 Solvent (2016)	306	306	306	306	306	306
	X4 Solvent (2016)	306	306	306	306	306	306
	X5 Solvent (2016)	306	306	306	306	306	306

Table 4.72 Solvent Companies for the year 2016

Variables Entered/Removed			
Model	Variables Entered	Variables Removed	Method
1	X5 Solvent (2016), X1 Solvent (2016), X4 Solvent (2016), X3 Solvent (2016), X2 Solvent (2016)	.	Enter

Variable entered and removed box shows all the independent variable i.e., X1, X2, X3, X4, X4, X5 hence the dependent variable is Z score. The method used was the enter method.

Table 4.73 Solvent Companies for the year 2016

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	1.000[a]	1.000	1.000	.0000000	2.015

The Model Summary includes a Durbin-Watson test for assessing experimenter bias. There is independence of observation in the 2016 data gathered from Solvent organizations if the result of the Durbin-Watson test is between 1 and 3.

Table 4.74 Solvent Companies for the year 2016

	Model	Sum of Squares	Df	Mean Square	F	Sig.
				ANOVA		
1	Regression	20745.556	5	4149.111	287447095327.912	.000
	Residual	.000	299	.000		
	Total	20745.556	304			

The 2016 ANOVA table reveals a substantial correlation between the X1, X2, X3, X4, and X5 scores of Solvent organizations and the Z score. For this reason, we may assume that the linear regression model is valid for solvent organization in 2016.

Table 4.75 Solvent Companies for the year 2016

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.390E-5	.000		-1.522	.129
	X1 Solvent (2016)	1.200	.000	.459	169475.166	.000
	X2 Solvent (2016)	1.400	.000	.814	234912.847	.000
	X3 Solvent (2016)	3.300	.000	.305	220326.020	.000
	X4 Solvent (2016)	.600	.000	.163	75899.779	.000
	X5 Solvent (2016)	.999	.000	.207	210740.484	.000

Table 4.75 Solvent Companies for the year 2016

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	.000	.000
	X1 Solvent (2016)	1.200	1.200
	X2 Solvent (2016)	1.400	1.400
	X3 Solvent (2016)	3.300	3.300
	X4 Solvent (2016)	.600	.600
	X5 Solvent (2016)	.999	.999

The model's coefficients reveal its inner workings. Since the regression equation may be calculated using this table. A variable contributes to the linear regression and is

included in the equation if its significant value from the T test (labeled as Sig.) is less than 0.05; otherwise, it is not included in the linear regression since it does not contribute to the regression.

Table 4.76 Solvent Companies for the year 2016

Residuals Statistics					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-107.709190	44.249306	2.035766	8.2593019	306
Residual	-.0002722	.0003201	.0000000	.0001193	306
Std. Predicted Value	-13.287	5.111	.000	1.000	306
Std. Residual	-2.262	2.660	.000	.992	306

It is possible to apply regression to the obtained data if the value of the standardized residual of Solvent firms in 2016 falls between the range of -3.29 and +3.29, indicating that there are no outliers in the data.

Figure 4.17

Histrogram Dependent variable Z- Solvent (2016)
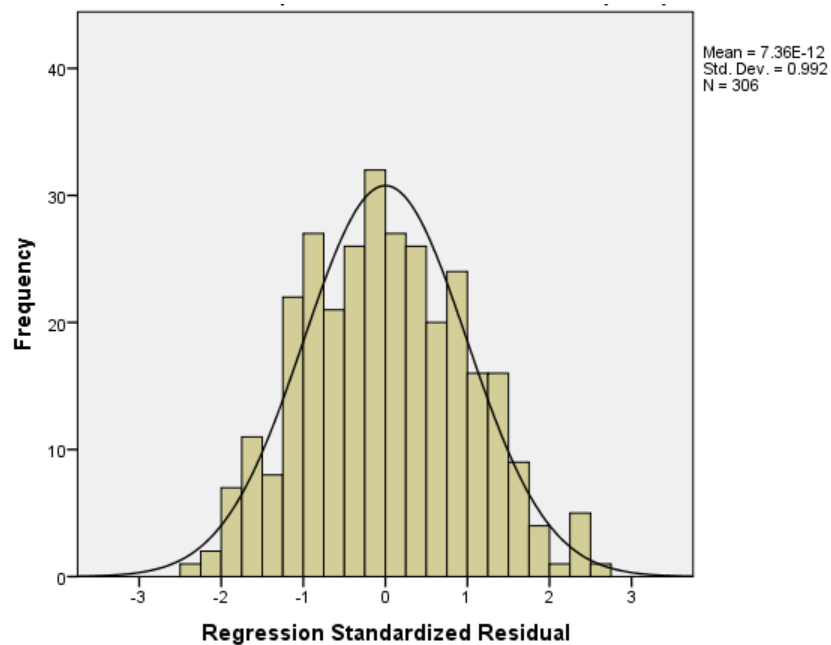
Even more convincingly, the Z score in 2016 is likewise normally distributed, as can be seen from the graph dependent variable.

Figure 4.18

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Z Solvent (2016)
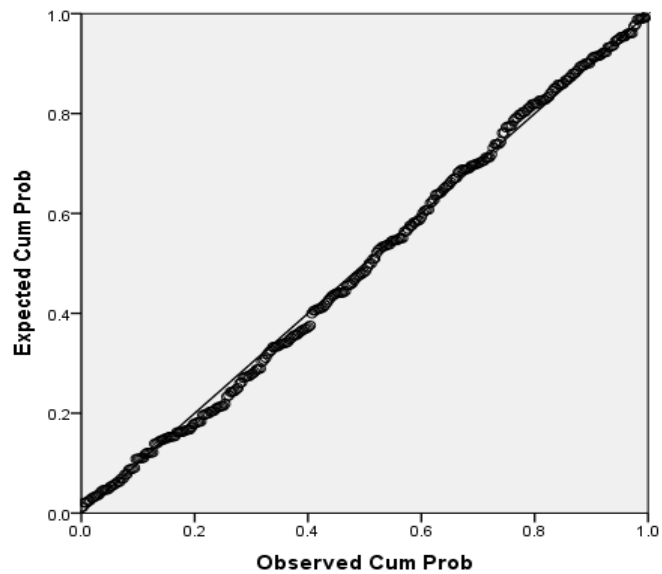
P-P plots are useful for determining whether or not the initial data obtained follow a normal distribution. For typical data, it is sufficient to see that the points cluster in a line at 450 degrees. Therefore, the gathered information fits the Normal distribution.

  Hence the regression equations obtained are as follows-:

For Insolvent Organizations-:

1. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
2. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
3. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
4. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
5. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$

For Solvent Organizations-:

6. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
7. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
8. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
9. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$
10. $Z=1.2X1+1.4X2+3.3X3+0.6X4+0.999X5$

Objective 4-: To study the comparison of Altman Z-score model with Ohlson O-score model

It is evident from the table 4.77 that in this study an analysis of 306 companies was taken into consideration and on the basis of O-score and Z-score of 306 solvent companies it was found that-:

Total Companies	306
Solvent	306
Insolvent	0
Solvent using O-Score	164
Solvent using Z-score	152
Accuracy from O-score	53.59%
Accuracy from Z-score	49.67%

Thus, it is clear that O-Score and Z-Score do not significantly vary in predicting bankruptcy of Solvent companies during the given time period.

Table 4.77 Calculation of Ohlson O-Score

Contents	Constant	log (Total Assets/GNP price index)	Total Liabilities/Total Assets	Working Capital/Total Assets	Current Liabilities / Current Assets	1 if TL > TA, 0 otherwise	Net Income/Total Assets	Cash from Operations/Total Liabilities	1 if a net loss for the last two years, 0 otherwise	NI-NI_t-1/Modulus (NI + NI_t-1)	Ohlson O Score	Altman Z-Score
Coefficients	-1.32	-0.407	6.03	-1.43	0.0757	-1.72	-2.37	-1.83	0.285	-0.52		
Barak valley cement Ltd.	-1.32	0.23990231	0.53472	0.1459	0.542104	0	0.01609	-0.003593	0	-0.14	1.6808	1.621136
Burnpur Cement Ltd.	-1.32	0.25240351	2.09693	-0.0899	1.459412	1	-0.3895	0.000344	1	0.246	10.82	-1.03
Par Drugs and Chemicals Ltd.	-1.32	-0.2710095	0.14312	0.4783	0.292547	0	0.19055	0.226325	0	0.418	-2.092	3.520749
Mahickra Chemicals Ltd.	-1.32	-0.4800757	0.28473	0.8977	0.372447	0	0.0826	0	0	0.02	-0.869	4.63842
Hindprakash Industries Ltd.	-1.32	-0.3491229	0.28291	0.7383	0.114306	0	0.04735	-0.001965	0	-0.17	-0.539	3.772238
Sanginita Chemicals Ltd.	-1.32	-0.2212292	0.42368	0.9377	0.026883	0	0.01112	-0.000293	0	-0.63	0.2894	4.310103
Sikko Industries Ltd.	-1.32	-0.6396996	0.26007	0.8715	0.449212	0	0.09973	-0.011124	0	0.032	-0.936	3.735938
Ushanti Colour Chem Ltd.	-1.32	-0.4788087	0.27701	0.4203	0.250708	0	0.06435	0	0	0.013	-0.196	2.635536
Hindcon Chemicals Ltd.	-1.32	-0.5075741	0.0283	0.8274	0.1867	0	0.12507	0.199774	0	0.182	-2.869	3.960827

Omkar Speciality Chemicals Ltd.	-1.32	-0.2069745	3.24232	0.4328	0.340242	1	0.02847	-0.001983	0	1	15.417	-1.80715
Ambani Organics Ltd.	-1.32	-0.2717229	0.69176	0.6502	0.291473	0	0.0268	0.008384	0	0.035	1.9572	2.869922
Prolife Industries Ltd.	-1.32	-0.6185659	0.21849	0.1312	0.855475	0	0.20095	-0.067227	0	0.153	-0.307	4.771699
Vadivarhe Speciality Chemicals Ltd.	-1.32	-0.4654447	0.61762	0.2748	0.435356	0	-0.0709	0.008218	1	0.562	2.3789	1.389228
Shaival Reality Ltd.	-1.32	-0.6046685	0.6649	0.1267	0.157647	0	-0.0301	-0.026893	1	-0.35	3.3536	0.429684
IL&FS Engineering and Construction Company Ltd.	-1.32	0.54350739	7.51901	-2.6888	2.101378	1	-0.7186	2.52E-05	1	0.174	47.98	-9.76397
Madhucon Projects Ltd.	-1.32	1.10685514	0.61271	-0.6645	5.843147	0	-0.0251	0.002523	1	0.711	3.2863	0.280369
SPML Infra Ltd.	-1.32	1.28440509	0.87485	0.5975	0.197044	0	-0.049	0.008543	0	-1	3.2145	1.237472
Ansal Housing Ltd.	-1.32	0.85238691	0.78997	0.7947	0.701591	0	-0.0546	0	1	0.15	2.3495	1.364732
Sumit Woods Ltd.	-1.32	-0.1225559	0.3743	0.4864	0.250808	0	-0.2225	0.002215	0	-1	1.3546	1.828456
Giriraj Civil Developers Ltd.	-1.32	-0.3866168	0.36196	0.339	0.645385	0	0.05719	0.021846	0	0.443	0.1776	2.990671

HEC Infra Projects Ltd.	-1.32	-0.277617	0.51941	0.8942	0.310057	0	0.00517	0.004333	0	-0.27	0.7906	2.506823
W S Industries (I) Ltd.	-1.32	-0.5202934	3.34936	-0.778	3.291845	1	-0.2436	-0.001166	1	0.758	19.2	-4.32262
Atal Realtech Ltd.	-1.32	-0.4330052	0.25548	0.7183	0.171295	0	0.05005	0.001668	0	-0.07	-0.704	3.223153
Gayatri Highways Ltd.	-1.32	0.70944035	0.27319	0.0381	0.240068	0	-0.0303	0.001013	1	0.065	0.3236	0.312898
S.S. Infrastructure Development Consultants Ltd.	-1.32	-0.3066456	0.10583	0.7198	0.155695	0	0.0538	-0.012827	0	-0.35	-1.497	3.520749
C & C Constructions Ltd.	-1.32	1.12304423	0.87748	0.1543	0.810842	0	0.02749	-0.005597	0	0.068	3.2645	4.63842
Unity Infraprojects Ltd.	-1.32	1.19239996	1.5917	0.1774	0.715459	1	-0.6291	0.000949	1	-0.35	7.828	1.963261
Setubandhan Infrastructure Ltd.	-1.32	0.10755926	0.62521	0.4555	0.170936	0	-0.1921	0.000755	1	0.224	2.3902	1.942654
A B Infrabuild Ltd.	-1.32	-0.3421822	0.48086	0.8902	0.572754	0	-0.0431	-0.014695	0	-1	1.1393	2.833821
BSEL Infrastructure Realty Ltd.	-1.32	0.66998116	0	0.0694	0.01257	0	0.00092	-0.00032	0	1	-2.214	1.367856
CMM Infraprojects Ltd.	-1.32	-0.0091895	0.48958	0.7696	0.189539	0	0.0018	0.000359	0	-0.69	0.9055	2.228005
International Constructions Ltd.	-1.32	-0.7633631	0.35492	0.1596	0.520674	0	0.06221	-0.00357	0	1	0.2801	1.736736

Dhanuka Realty Ltd.	-1.32	-0.7350714	0.57955	0.8156	0.168534	0	0.00048	0.000478	0	1	0.7973	1.7365
Tantia Constructions Ltd.	-1.32	0.83894046	1.05415	0.6457	0.413564	1	-0.2097	-0.000217	1	-0.99	3.382	1.300049
Techindia Nirman Ltd.	-1.32	-0.2113014	0.81419	0.6102	0.000937	0	-0.0067	0.000858	1	0.121	3.0391	2.232703
Manav Infra Projects Ltd.	-1.32	-0.9891421	0.97341	0.4357	0.332457	0	-0.5652	0.023156	1	-0.06	5.9653	2.057371
Websol Energy System Ltd.	-1.32	0.31061964	0.17272	-0.0379	1.212786	0	0.29176	0.00486	0	0.886	-1.421	2.628378
BPL Ltd.	-1.32	0.15685287	0.08849	-0.3316	1.392658	0	-0.1315	0.001532	0	-1	0.5592	0.936572
Indo Tech Transformers Ltd.	-1.32	0.07197656	0.00738	0.6219	0.391529	0	0.04686	0.037923	0	0.532	-2.622	3.836522
Spectrum Electrical Industries Ltd.	-1.32	0.13184922	0.50019	0.3945	0.351095	0	0.03836	0.036674	0	0.116	0.8865	2.376468
Kernex Microsystems (India) Ltd.	-1.32	-0.1169209	0.19337	0.4207	0.247478	0	0.00426	0.04512	0	-0.91	-0.307	1.748681
Kirloskar Electric Company Ltd.	-1.32	0.37794516	0.74259	-0.7409	2.680899	0	-0.3973	0.003646	1	-0.11	5.5451	1.266463
Indosolar Ltd.	-1.32	0	-5.444	2.5717	21.09697	1	3.44698	0.014773	1	-0.53	-45.58	3.520749
Wonder Fibromats Ltd.	-1.32	-0.3027941	0.16846	0.3959	0.86192	0	0.07646	-0.151333	0	-0.01	-0.58	7.349452

Jyoti Structures Ltd.	-1.32	0	-1.8908	1.0113	3.90602	1	0.44799	0.000479	1	0.133	-16.44	5.04351
Ujaas Energy Ltd.	-1.32	0.4058379	0.04096	0.4846	0.047325	0	-0.1051	-0.005216	1	-0.39	-1.181	1.801364
Nitiraj Engineers Ltd.	-1.32	-0.1919233	0	0.2726	0.213496	0	0.04979	-0.039808	0	0.169	-1.749	2.582547
Surana Solar Ltd.	-1.32	-0.265978	0.11924	0.5037	0.046083	0	0.00341	0.000324	0	-0.48	-0.971	2.036941
Delta Manufacturing Ltd.	-1.32	-0.1435655	0.76478	0.2888	0.544841	0	-0.1071	0.000367	1	0.217	3.4035	1.652907
Focus Lighting and Fixtures Ltd.	-1.32	-0.4673449	0.122	0.6211	0.46761	0	-0.0307	0.007996	0	-1	-0.668	3.193012
Bright Solar Ltd.	-1.32	-0.4683542	0.01319	0.5522	0.353707	0	0.00465	-0.029473	0	-0.49	-1.517	2.305907
Goldstar Power Ltd.	-1.32	-0.5605739	0.36988	0.6746	0.132456	0	0.00256	0.061701	0	-0.64	0.4008	2.880465
Shri Ram Switchgears Ltd.	-1.32	-0.3275681	1.00991	0.9499	0.208444	1	-0.3143	-0.050664	1	-0.7	3.3276	1.74683
MIC Electronics Ltd.	-1.32	0	-6.9477	6.1662	2.63669	1	1.40575	0.000587	1	0.069	-56.64	3.861088
IMP Powers Ltd.	-1.32	0.40029753	0.90289	0.6598	0.291734	0	-0.2525	0.002274	1	-0.67	4.2686	1.967577
Emco Ltd.	-1.32	1.03277377	0.74999	0.632	0.340725	0	-0.1306	-0.005855	1	-0.4	2.7173	1.910863
Easun Reyrolle Ltd.	-1.32	0.64434366	0.67148	0.4618	0.252228	0	-0.0359	-0.009234	1	0.087	2.167	2.669929

Company												
Pulz Electronics Ltd.	-1.32	-0.9323157	0.03311	0.7532	0.334441	0	-0.0248	-0.153499	0	-1	-0.932	2.439599
Neueon Towers Ltd.	-1.32	1.00384011	2.04081	-0.0204	1.125275	1	-0.0563	0.004524	1	0.55	9.0957	2.302718
Powerful Technologies Ltd.	-1.32	-0.9962773	1.1177	0.9808	0.350026	1	-2.3505	0.014821	0	-1	8.7936	2.019606
Mold-Tek Technologies Ltd.	-1.32	-0.2448693	0.07557	0.592	0.204527	0	0.15237	0.145882	0	-0.03	-2.209	3.861088
TRF Ltd.	-1.32	-0.8797494	17.2033	-7.8293	1.461037	1	-4.5307	-1.214	1	0.322	125.44	-52.7765
Macpower CNC Machines Ltd.	-1.32	-0.18855	0.01629	0.1761	0.823945	0	0.08185	0.030677	0	0.377	-1.781	3.320553
A2Z Infra Engineering Ltd.	-1.32	0.8126921	0.62214	0.4011	0.732896	0	-0.1125	-0.001516	1	0.555	1.8477	0.918715
Aaron Industries Ltd.	-1.32	-0.7716356	0.36746	0.3254	0.230012	0	0.10031	0.010915	0	0.18	0.4103	2.649848
Atlanta Ltd.	-1.32	0.6345415	0.06028	-0.1884	2.381038	0	-0.0191	0.002672	1	0.042	-0.462	1.042597
Manugraph India Ltd.	-1.32	0.10402718	0.14076	0.3253	0.344626	0	-0.1986	-0.006021	1	0.104	-0.24	1.178237
Latteys Industries Ltd.	-1.32	-0.6155615	0.47388	0.7319	0.289288	0	0.01851	0.007257	0	0.097	0.6558	2.7111
Power & Instrumentation (Gujarat) Ltd.	-1.32	-0.3406733	0.42659	0.8096	0.221708	0	0.06667	0.012717	0	0.071	0.0316	3.81845

Felix Industries Ltd.	-1.32	-1.0549729	0.32834	0.5279	0.227737	0	-0.0599	0.000998	1	-0.35	0.9581	1.280444
Zodiac Energy Ltd.	-1.32	-0.442845	0.31814	0.8976	0.28128	0	0.1097	0.002194	0	0.2	-0.852	4.75316
Mukand Engineers Ltd.	-1.32	-0.2056847	1.65123	0.4262	0.675589	1	-0.437	-0.001553	1	-0.01	7.7725	-1.06057
Marshall Machines Ltd.	-1.32	-0.0992881	0.45789	0.3084	0.567576	0	0.00597	-0.024757	0	-0.69	1.4754	1.910863
Nitin Fire Protection Industries Ltd.	-1.32	0.53972168	1.41012	0.7999	0.284667	1	-0.4872	0.001117	1	-0.22	5.6715	-3.48861
Perfect Infraengineers Ltd.	-1.32	-0.5452957	0.30154	0.6022	0.138631	0	-0.0052	0.006481	0	-1	0.3912	1.52854
Premier Ltd.	-1.32	-1.4398906	49.5036	-53.191	4.316425	1	-16.242	0.004843	1	0.491	410.96	-107.709
Debock Sales And Marketing Ltd.	-1.32	-0.385502	0.45375	0.433	0.270863	0	0.04614	-0.007477	0	0.426	0.6568	2.063752
Accord Synergy Ltd.	-1.32	-0.6877398	0.14096	0.7057	0.201648	0	0.0467	0.105827	0	-0.23	-1.369	3.927547
Transwind Infrastructures Ltd.	-1.32	-0.8128026	0.18171	0.5354	0.365788	0	-0.0526	0.004571	0	-1	0.0058	1.745319
CCL Products (India) Ltd.	-1.32	1.07192479	0.30822	0.3328	0.142185	0	0.11825	0.037644	0	-0.2	-0.607	2.499889
National Fertilizers Ltd.	-1.32	1.7509496	0.66119	0.2313	0.577055	0	0.03895	0.003089	0	1	1.0483	2.874888
Tata Coffee Ltd.	-1.32	1.02612559	0.09635	0.3921	0.208918	0	0.08346	0.045358	0	0.159	-2.065	2.669929

Apcotex Industries Ltd.	-1.32	0.45917168	0.06705	0.2608	0.571429	0	0.1349	-0.024225	0	0.453	-1.944	3.864871
Thangamayil Jewellery Ltd.	-1.32	0.73745369	0.52048	0.8509	0.225189	0	0.13936	0.013375	0	0.309	-0.197	5.341907
Harrisons Malayalam Ltd.	-1.32	0.36484105	0.5629	-0.1972	1.568179	0	0.15355	-0.005352	0	0.626	1.6461	2.706961
Madhya Bharat Agro Products Ltd.	-1.32	0.28626605	0.3206	0.2875	0.384376	0	0.09207	-0.002138	0	0.154	-0.18	1.216412
Aries Agro Ltd.	-1.32	0.46398732	0.42441	0.7534	0.358244	0	0.0684	-9.06E-05	0	0.184	-0.258	3.669011
Agro Phos India Ltd.	-1.32	-0.3061816	0.25876	0.7484	0.264732	0	0.05659	0.002314	0	-0.1	-0.769	2.705139
Agri-Tech (India) Ltd.	-1.32	-0.0352722	0.14964	0.6031	0.003153	0	-0.0306	-9.54E-05	0	-1	-0.672	1.792397
Norben Tea & Exports Ltd.	-1.32	-0.7140106	0.32408	0.0164	0.733333	0	0.05371	0.001365	0	1	0.3061	1.173215
Bohra Industries Ltd.	-1.32	-0.145857	1.17987	0.5741	0.176637	1	-0.0338	-0.011442	1	0.899	3.2441	0.188297
Som Distilleries & Breweries Ltd.	-1.32	0.58278834	0.30096	0.1665	0.643724	0	-0.0415	-0.023326	0	-1	0.7301	1.465342
Mcleod Russel India Ltd.	-1.32	1.51434488	0.56442	-0.0962	2.253516	0	-0.0142	0.019825	0	-1	2.2936	0.873473
Euro India Fresh Foods Ltd.	-1.32	-0.0841474	0.34112	0.6091	0.225929	0	0.01409	0.002668	0	0.581	-0.424	2.633448
Jayshree Tea &Industries Ltd.	-1.32	0.68879648	0.47433	0.2687	0.526595	0	0.1039	0.00036	0	1	0.1475	2.530918

Dhunseri Tea & Industries Ltd.	-1.32	0.80630861	0.03033	0.0547	0.434955	0	0.05026	-0.008956	0	-0.29	-1.462	1.963261
KCP Sugar and Industries Corporation Ltd.	-1.32	0.68069128	0.50406	0.5285	0.099228	0	0.03515	-0.0073	0	1	0.1033	2.074948
Rana Sugars Ltd.	-1.32	0.68494032	0.30502	0.1795	0.85563	0	0.28643	0.031497	0	-0.26	-0.555	4.168468
Pioneer Distilleries Ltd.	-1.32	0.40675197	1.95767	-0.0513	1.155681	1	-0.2984	-0.002516	1	0.266	9.6184	-1.4821
Magadh Sugar & Energy Ltd.	-1.32	1.02064685	0.53241	0.4241	0.291708	0	0.02271	0.000176	0	-0.51	1.1012	2.221679
Mawana Sugars Ltd.	-1.32	0.77861818	0.42627	0.4412	0.704256	0	0.10889	0.063303	0	1	-0.539	4.120215
Dangee Dums Ltd.	-1.32	-0.343191	0.63295	0.0196	0.808989	0	-0.1946	0.002132	1	-0.66	3.7561	0.10817
Umang Dairies Ltd.	-1.32	-0.0043409	0.4504	0.3474	0.540197	0	0.03642	-0.03304	0	0.183	0.8205	3.596102
Ponni Sugars (Erode) Ltd.	-1.32	0.46570274	0.01775	0.2297	0.360744	0	0.07722	0.021305	0	-0.09	-1.877	2.689672
SKM Egg Products Export (India) Ltd.	-1.32	0.18796602	0.35788	0.513	0.19927	0	0.08956	-0.010952	0	0.495	-0.407	3.241541
Sakthi Sugars Ltd.	-1.32	0.81242749	1.37624	-0.3793	1.352682	1	-0.1575	-0.006934	1	0.278	6.0987	-0.1473
K.M.Sugar Mills Ltd.	-1.32	0.53834187	0.45663	0.5158	0.533599	0	0.0668	0.004277	0	0.175	0.26	2.669929

The Grob Tea Company Ltd.	-1.32	-0.1481606	0.06865	0.4588	0.248684	0	0.34657	-0.00334	0	0.889	-2.761	4.373318
Golden Tobacco Ltd.	-1.32	0	-0.0141	2.337	22.98885	1	-0.0532	-0.001742	0	1	-5.118	3.373007
The Peria Karamalai Tea & Produce Company Ltd.	-1.32	0.2285675	0.06219	0.1263	0.325381	0	0.05922	-0.006026	0	1	-1.844	1.910863
Sarveshwar Foods Ltd.	-1.32	0.32093697	0.49901	0.8071	0.13658	0	0.01289	-8.4E-05	0	0.274	0.2415	2.692173
Rajshree Sugars & Chemicals Ltd.	-1.32	0.59997942	1.0801	-0.0801	1.19566	1	-0.037	-0.006583	1	0.493	3.5618	0.848957
Sanwaria Consumer Ltd.	-1.32	0.48279589	2.64209	0.6477	0.103799	1	-3.5267	-0.023232	0	-1	20.699	-4.43619
Simbhaoli Sugars Ltd.	-1.32	0.9524784	1.0161	-0.3439	1.494582	1	-0.0043	-0.006897	1	0.66	3.2682	0.854908
Aurangabad Distillery Ltd.	-1.32	-0.1799117	0.46281	0.3194	0.481746	0	0.04085	0.005722	0	-0.14	1.0919	2.327263
Shanti Overseas (India) Ltd.	-1.32	-0.3045616	0.4633	0.5532	0.209579	0	-0.0106	0.005851	0	-1	1.3579	4.561435
Dharani Sugars & Chemicals Ltd.	-1.32	0.56243759	1.30514	-0.3021	10.22958	1	-0.0916	0.012548	1	-0.12	6.3492	-1.06433
Ravi Kumar Distilleries Ltd.	-1.32	-0.0417403	0.42991	0.5496	0.366548	0	-0.0711	-0.002033	0	-1	1.2244	1.038739

Narmada Agrobase Ltd.	-1.32	-0.6823769	0.36775	0.7774	0.147168	0	0.03174	-0.002962	0	-0.03	0.0185	4.080691
Thiru Arooran Sugars Ltd.	-1.32	0.45246006	0.83349	-0.3115	1.616126	0	-0.1405	-0.00304	1	-0.81	5.1327	0.080807
Inox Wind Ltd.	-1.32	1.33196545	0.3495	0.4564	0.61329	0.00	-0.0802	0.002035	1	0.074	0.0719	1.409261
Shakti Pumps (India) Ltd.	-1.32	0.54153636	0.23659	0.6187	0.471414	0	0.15458	0.029542	0	1	-1.904	4.90772
Wendt (India) Ltd.	-1.32	0.04652442	0.0079	0.2292	0.549534	0	0.10199	0.002449	0	0.16	-1.907	3.051258
Dynamatic Technologies Ltd.	-1.32	0.88728271	0.61769	0.3423	0.234772	0	0.0322	-0.010259	0	1	0.9933	1.884467
Kabra Extrusion Technik Ltd.	-1.32	0.42637526	0.08279	0.2204	0.5831	0	0.07969	0.003624	0	0.528	-1.736	2.778308
United Drilling Tools Ltd.	-1.32	0.27367924	0.09285	0.4709	0.136824	0	0.15312	-0.0236	0	-0.16	-1.77	3.045641
Jash Engineering Ltd.	-1.32	0.34507705	0.30021	0.4524	0.339425	0	0.11004	-0.000675	0	0.119	-0.593	2.887845
Hercules Hoists Ltd.	-1.32	0.63889611	0.00151	0.1097	0.210465	0	0.01567	0.002444	0	-0.25	-1.622	1.746185
Gujarat Apollo Industries Ltd.	-1.32	0.3647751	0.0284	0.6644	0.041199	0	0.00786	-0.000304	0	-0.67	-1.916	2.256548
Walchandnagar Industries Ltd.	-1.32	0.83489883	0.72773	0.4371	0.346832	0	-0.0736	-0.000373	1	0.067	2.5549	7.077251
Pitti Engineering	-1.32	0.69538453	0.58183	0.4589	0.329299	0	0.05103	-0.006703	0	0.255	1.0327	2.436269

Ltd.												
Windsor Machines Ltd.	-1.32	0.46117038	0.14061	-0.1364	1.484348	0	0.03923	0.031412	0	1	-1.024	2.043428
Eimco Elecon (India) Ltd.	-1.32	0.45769654	0.00607	0.2667	0.262145	0	0.03451	0.008215	0	0.09	-1.975	2.233396
Revathi Equipment Ltd.	-1.32	0.28015851	0.15722	0.2777	0.471002	0	0.05384	-0.000277	0	-0.02	-0.963	2.189363
Emkay Taps and Cutting Tools Ltd.	-1.32	0.10776789	0	0.1969	0.29819	0	0.1635	-0.003842	0	0.253	-2.135	2.628425
Lokesh Machines Ltd.	-1.32	0.31300384	0.38777	0.4657	0.300084	0	0.01694	-0.001112	0	1	-0.312	2.249148
Mahamaya Steel Industries Ltd.	-1.32	0.22204347	0.30055	0.4848	0.201635	0	0.0029	0.008596	0	-0.71	0.0715	2.682075
Ahlada Engineers Ltd.	-1.32	0.19974538	0.33931	0.4188	0.382247	0	0.05657	0.000389	0	0.139	-0.132	2.58732
Rama Steel Tubes Ltd.	-1.32	0.16279985	0.46524	0.546	0.221945	0	0.03252	-0.010215	0	0.594	0.2873	3.586934
Uttam Galva Steels Ltd.	-1.32	1.67397831	1.72651	0.0556	0.455382	1	-0.0422	0.002031	1	0.722	6.6499	-1.01194
Maan Aluminium Ltd.	-1.32	0.08287244	0.53455	0.7344	0.166419	0	0.10753	0.044176	0	0.324	0.3273	5.027477
Lloyds Steels Industries Ltd.	-1.32	0.03012741	0.06924	0.8196	0.22841	0	0.0041	0.003856	0	-0.67	-1.739	2.310378
Manaksia Coated Metals & Industries	-1.32	0.39480867	0.64203	0.3627	0.570578	0	0.02285	0.005385	0	0.139	1.7791	2.813906

Ltd.												
Visa Steel Ltd.	-1.32	1.00259295	1.22403	0.0608	0.845752	1	-0.2537	0.001521	1	-0.55	5.0786	-0.60744
Shiv Aum Steels Ltd.	-1.32	0.02047202	0.42169	0.9492	0.018645	0	0.0182	0.013757	0	-0.4	-0.001	4.298078
Supreme Engineering Ltd.	-1.32	0.13201833	0.69031	0.8351	0.312704	0	-0.0191	0.010446	0	-1	2.1655	1.902018
Kritika Wires Ltd.	-1.32	-0.0779342	0.31787	0.7806	0.341295	0	0.00894	0.011574	0	-0.28	-0.36	3.233186
Hisar Metal Industries Ltd.	-1.32	-0.0749287	0.66228	0.7753	0.343247	0	0.05653	0.002403	0	0.161	1.3991	3.391517
Manaksia Aluminium Company Ltd.	-1.32	0.2957624	0.5162	0.5837	0.402986	0	-0.0141	-0.001691	0	-1	1.4255	2.691341
Sagardeep Alloys Ltd.	-1.32	-0.5335269	0.20166	0.4476	0.2788	0	0.00451	0.000601	0	-0.27	-0.375	3.298303
Bedmutha Industries Ltd.	-1.32	0.54828814	0.60939	0.3975	0.291279	0	0.4871	-0.000498	0	1	-0.089	3.889067
Century Extrusions Ltd.	-1.32	-0.1018395	0.41223	0.6805	0.302689	0	0.02424	0.103391	0	-0.26	0.145	3.861088
Gyscoal Alloys Ltd.	-1.32	-0.4237885	2.16986	-0.2566	1.181219	1	-1.738	-0.004433	1	-0.69	15.445	-8.58345
Vaswani Industries Ltd.	-1.32	0.10408728	0.29172	0.4899	0.38976	0	0.02809	-0.005536	0	1	-0.852	3.918521
S.A.L. Steel Ltd.	-1.32	0.18890637	0.85104	0.1696	0.772439	0	0.06574	0.004041	0	-0.16	3.4698	1.973915

Oil Country Tubular Ltd.	-1.32	0.18162766	1.43289	0.0969	0.799257	1	-0.2945	-5.79E-05	1	0.1	6.3795	-1.24027
Shah Alloys Ltd.	-1.32	0.09812655	1.31799	-0.5407	1.816592	1	-0.3623	0.009611	1	-0.56	7.1971	3.430299
National Steel And Agro Industries Ltd.	-1.32	0.3463175	5.97378	-0.7361	2.29942	1	-0.9008	-0.000515	1	0.122	36.425	-2.46185
Surani Steel Tubes Ltd.	-1.32	-0.4426333	0.44639	0.682	0.120126	0	0.09479	-0.000487	0	1	-0.159	4.508904
Ankit Metal & Power Ltd.	-1.32	0.58347645	2.68458	-0.1586	1.097143	1	-0.1737	0.00062	1	-0	13.918	-2.28195
Prakash Steelage Ltd.	-1.32	0	-7.7348	1.376	2.713143	1	-2.0369	-0.008026	0	1	-47.12	7.563863
Zenith Steel Pipes & Industries Ltd.	-1.32	0	-11.146	3.1702	1.946294	1	1.01552	-0.027158	1	0.144	-76.78	26.06279
Grand Foundry Ltd.	-1.32	0	-0.3103	1.056	2.458333	1	0.07759	-0.00431	1	0.838	-6.563	7.093565
Ramsarup Industries Ltd.	-1.32	0.84259928	2.58749	-1.6824	25.38791	1	-0.0703	-0.002716	1	-0.14	17.075	-4.51286
Ashapura Minechem Ltd.	-1.32	0.54646897	0.87085	0.4017	0.637111	0	0.139	-0.01724	0	-0.75	3.2767	2.497345
AVT Natural Products Ltd.	-1.32	0.50456815	0.11273	0.6846	0.184349	0	0.11683	-0.017253	0	0.058	-2.086	3.873085
Gokul Agro Resources Ltd.	-1.32	0.60774719	0.34148	0.4289	0.794165	0	0.07516	0.028814	0	0.413	-0.508	18.726
Bcl Industries Ltd.	-1.32	0.62069748	0.38854	0.6867	0.301717	0	0.09528	-0.003854	0	0.27	-0.548	5.155975

Gokul Refoils and Solvent Ltd.	-1.32	0.2720289	0.00127	0.259	0.157597	0	0.01391	-0.039436	0	-0.43	-1.519	1.737241
South West Pinnacle Exploration Ltd.	-1.32	0.10492789	0.3261	0.576	0.263943	0	0.07272	0	0	0.311	-0.534	2.61477
Raj Oil Mills Ltd.	-1.32	-0.7653609	1.61373	-0.085	1.146903	0	0.2085	-0.036373	0	0.467	8.26	4.517597
20 Microns Ltd.	-1.32	0.4041847	0.30969	0.3474	0.476437	0	0.07784	-0.003502	0	-0.05	-0.228	3.338713
Shyam Century Ferrous Ltd.	-1.32	0.0361778	0.04523	0.8493	0.095866	0	0.02265	0.225566	0	1	-3.257	3.301419
Mangalam Global Enterprise Ltd.	-1.32	0.12907778	0.56421	0.7485	0.095366	0	0.03456	-0.000784	0	0.144	0.8112	7.570167
Shree Ram Proteins Ltd.	-1.32	-0.1021776	0.48732	0.9188	0.107448	0	0.00935	0.002781	0	-0.51	0.5944	3.504856
M K Proteins Ltd.	-1.32	-0.3192052	0.46195	0.9421	0.199844	0	0.19054	-0.002017	0	0.702	-0.55	8.438197
Cubex Tubings Ltd.	-1.32	-0.2707957	0.02182	0.5661	0.405717	0	0.02182	-0.013615	0	0.511	-2.15	3.147539
Rohit Ferro-Tech Ltd.	-1.32	0.74022692	4.13778	-0.4609	2.295733	1	-0.1108	-0.001791	1	0.815	22.569	-4.43517
NK Industries Ltd.	-1.32	0.41568573	2.14121	0.0749	0.15575	1	-0.0078	0.000506	1	0.455	9.6724	1.963261
Impex Ferro Tech Ltd.	-1.32	-0.1519371	3.84654	-0.9513	1.72115	1	-0.109	-0.000374	1	0.483	22	-5.11682

Kokuyo Camlin Ltd.	-1.32	0.46068148	0.25858	0.4317	0.303502	0	-0.0445	0.005601	0	-1	0.0736	2.770128
Mirza International Ltd.	-1.32	0.93706173	0.35232	0.4148	0.293641	0	0.0075	-0.005357	0	-0.73	0.2254	2.620619
Shalimar Paints Ltd.	-1.32	0.48074302	0.39832	0.1594	0.722503	0	-0.1439	-0.000465	1	-0.13	1.4091	2.016157
Rushil Decor Ltd.	-1.32	0.76541732	0.60136	0.1132	0.610358	0	0.02071	0.001373	0	-0.25	1.9596	1.330686
Tribhovandas Bhimji Zaveri Ltd.	-1.32	0.93433385	0.45411	0.8433	0.229736	0	0.04408	0.003365	0	0.325	-0.431	3.475444
Indo-National Ltd.	-1.32	0.37135321	0.13855	0.5546	0.260386	0	0.12695	-0.002954	0	0.972	-2.211	3.919607
PTL Enterprises Ltd.	-1.32	0.79610222	0.1628	0.0456	0.379805	0	0.09849	-0.000169	0	0.229	-1.051	1.730255
Orient Abrasives Ltd.	-1.32	0.38554021	0.12342	0.5878	0.247102	0	0.04115	0.008722	0	-0.29	-1.518	3.250546
Bombay Super Hybrid Seeds Ltd.	-1.32	-0.273368	0.52261	0.8571	0.188691	0	0.09571	0.082673	0	0.371	0.1597	4.787172
Superhouse Ltd.	-1.32	0.59899981	0.26908	0.5003	0.339144	0	0.04348	0.048485	0	-0.11	-0.767	2.861084
Penta Gold Ltd.	-1.32	0.14653865	0.76268	0.9941	0.630128	0	0.00075	-0.072101	0	-0.94	2.4649	2.523242
Goenka Diamond and Jewels Ltd.	-1.32	0.57438374	0.40417	0.9523	0.438176	0	-0.0165	-0.000914	1	-0.97	0.3871	1.876801
Silgo Retail Ltd.	-1.32	-0.4173514	0.40092	0.9913	0.037285	0	0.05057	-0.003218	0	0.055	-0.29	2.869865

Moksh Ornaments Ltd.	-1.32	-0.1765154	0	0.9954	0.018104	0	0.05598	-0.37061	0	-0.12	-2.064	6.681664
M.R. Organisation Ltd.	-1.32	-0.7537263	0.02045	0.7471	0.296053	0	0.33017	0.071322	0	0.328	-3.02	5.014144
Kanani Industries Ltd.	-1.32	-0.240861	0.33961	0.6684	0.326131	0	0.00674	0.004134	0	-0.13	-0.062	2.873248
Laxmi Goldorna House Ltd.	-1.32	-0.3953547	0.31534	0.9969	0.213584	0	0.00262	0.005463	0	0.043	-0.706	3.610608
Banaras Beads Ltd.	-1.32	-0.3204813	0.07964	0.6066	0.049568	0	0.04396	0.026485	0	0.011	-1.731	2.499807
Ajooni Biotech Ltd.	-1.32	-0.7046243	0.30245	0.7051	0.260849	0	0.01648	0.005345	0	0.028	-0.261	3.895989
Karuturi Global Ltd.	-1.32	1.143245	0.04996	0.2964	0.031106	0	-4E-05	-0.000107	0	-1	-1.384	1.614992
Sona Hi Sona Jewellers (Gujarat) Ltd.	-1.32	-0.5052455	0.40051	0.993	0.0488	0	0.00366	-0.001126	0	0.238	-0.246	3.555743
Milton Industries Ltd.	-1.32	-0.3583498	0.25868	0.7413	0.269238	0	0.05318	0.006823	0	-0.14	-0.722	2.865238
Archidply Decor Ltd.	-1.32	-0.2138559	0.28647	0.6052	0.134746	0	-0.0102	-0.005612	1	0.228	-0.16	2.187277
Innovative Tyres and Tubes Ltd.	-1.32	0.01754771	0.42868	0.2213	0.567728	0	-0.0747	0.007516	1	0.053	1.4049	1.972214
Lypsa Gems & Jewellery Ltd.	-1.32	-0.337007	0.39358	0.931	0.498663	0	-0.0032	0	0	-1	0.4255	1.66606
Zodiac JRD-MKJ Ltd.	-1.32	-0.2276966	0.00178	0.9465	0.009482	0	0.00505	-0.020945	0	-0.18	-2.449	2.6122

Party Cruisers Ltd.	-1.32	-0.7835348	0.06357	0.2788	0.216541	0	0.02831	0.012286	0	-0.31	-0.93	2.022976
Sri Havisha Hospitality and Infrastructure Ltd.	-1.32	-0.7567694	0	-0.0271	5.5	0	-0.0196	-0.000502	0	-1	0.0115	0.06886
Ace Integrated Solutions Ltd.	-1.32	-0.8170421	0.02424	0.4253	0.252535	0	0.00808	-0.025967	0	-0.75	-1.009	2.047856
Crown Lifters Ltd.	-1.32	-0.5283397	0.43485	0.2844	0.104673	0	0.07688	0.042149	0	1	0.3381	1.952592
SecUR Credentials Ltd.	-1.32	-0.2069745	0.37884	0.4361	0.414082	0	0.0051	-0.000425	0	-0.88	0.9037	2.342363
Omfurn India Ltd.	-1.32	-0.4844813	0.43332	0.681	0.254407	0	-0.025	0.112691	0	-1	0.9095	2.078899
Continental Seeds and Chemicals Ltd.	-1.32	-0.7602736	0.39089	0.0663	0.912	0	0.01873	-0.002532	0	-0.27	1.4239	5.540991
Rajdarshan Industries Ltd.	-1.32	-0.796008	0.0011	0.4167	0.00915	0	0.03903	0.007147	0	1	-2.211	1.928642
Shree Rama Newsprint Ltd.	-1.32	0.83627064	0.57913	0.0914	0.559311	0	-0.0987	-0.000269	1	-0.27	2.4013	0.716271
Pudumjee Paper Products Ltd.	-1.32	0.5597938	0.24764	0.1521	0.627315	0	0.07276	0.009305	0	0.049	-0.44	2.603477
Astron Paper & Board Mill Ltd.	-1.32	0.28394853	0.20835	0.3576	0.497945	0	0.04459	0.026478	0	-0.16	-0.726	3.725746

Company												
Star Paper Mills Ltd.	-1.32	0.65913418	0.03254	0.1309	0.464057	0	0.03377	-0.0032	0	-0.36	-1.431	2.098883
Genus Paper & Boards Ltd.	-1.32	0.553615	0.10205	0.2513	0.310333	0	0.0189	0.099516	0	-0.07	-1.454	2.323645
Ruchira Papers Ltd.	-1.32	0.49618232	0.24221	0.3248	0.222938	0	0.014	-0.002946	0	-0.69	-0.177	2.676718
Shreyans Industries Ltd.	-1.32	0.41662323	0.23794	0.0007	0.997402	0	0.02958	-0.000168	0	-0.57	0.2463	2.429298
Ballarpur Industries Ltd.	-1.32	1.27427671	0.96908	-0.3345	1.999902	0	-0.2972	-0.002389	1	-0.34	5.8069	-0.84918
Worth Peripherals Ltd.	-1.32	0.03051916	0.1277	0.4316	0.117795	0	0.13098	0.02918	0	0.066	-1.569	3.558278
Malu Paper Mills Ltd.	-1.32	0.0169972	0.79647	0.3023	0.476114	0	-0.0488	-0.002875	0	-1	3.7214	2.012441
Magnum Ventures Ltd.	-1.32	0.34095129	1.1812	0.2424	0.435469	1	0.00537	0.002928	0	1	3.091	0.612924
Indian Oil Corporation Ltd.	-1.32	3.28100925	0.49124	-0.0128	1.027409	0.00	0.10054	-0.001022	0.00	0.887	-0.295	2.947891
Hindustan Petroleum Corporation Ltd.	-1.32	2.8446606	0.54497	-0.1007	1.209696	0.00	0.1341	0.007558	0.00	0.603	0.398	4.057652
Mangalore Refinery and Petrochemicals Ltd.	-1.32	2.33938749	0.69698	0.1543	0.606437	0.00	-0.0097	0.000967	1.00	0.839	1.6251	1.848368
Gulf Oil Lubricants India Ltd.	-1.32	0.98021304	0.19989	0.7206	0.30634	0.00	0.18415	-0.049891	0.00	-0.01	-1.863	4.357232

Chennai Petroleum Corporation Ltd.	-1.32	1.97446389	0.81065	0.172	0.63522	0.00	0.02215	0.000103	0.00	1	1.993	3.020206
GP Petroleums Ltd.	-1.32	0.49597515	0.34583	0.7609	0.128628	0	0.04973	0.037889	0	0.065	-0.736	3.711704
Alpa Laboratories Ltd.	-1.32	0.01497269	0.00161	0.3983	0.407931	0	0.06168	0.037635	0	0.28	-2.216	2.865869
Lyka Labs Ltd.	-1.32	0.1977154	0.97144	-0.0466	1.324524	0	-0.0807	-0.01043	1	0.586	4.8141	0.331422
Arvee Laboratories (India) Ltd.	-1.32	-0.5741115	0.29288	0.4321	0.443027	0	0.08839	0.185686	0	0.076	-0.494	3.238081
Ortin Laboratories Ltd.	-1.32	-0.4043688	0.46854	0.519	0.748323	0	-0.0125	-0.024989	0	-1	1.5807	5.75345
Syncom Healthcare Ltd.	-1.32	-0.9928828	2.07439	-0.1349	1.331915	1	-1.0138	1.557093	1	-0.01	10.012	44.24934
Texmo Pipes and Products Ltd.	-1.32	0.25186925	0.15785	0.4306	0.409373	0	0.05529	-0.000935	0	0.443	-1.416	4.037185
Tokyo Plast International Ltd.	-1.32	-0.1660909	0.25303	0.6393	0.162162	0	0.00155	-0.031323	0	-0.74	-0.188	2.562273
Vikas EcoTech Ltd.	-1.32	0.39173594	0.54101	0.8233	0.16453	0	-0.0512	3.57E-05	0	-1	1.2603	2.024665
Tainwala Chemical and Plastic (I) Ltd.	-1.32	-0.0624485	0.00548	0.0647	0.221001	0	-0.0032	0.006194	0	-1	-0.82	1.450153
Somi Conveyor Beltings Ltd.	-1.32	-0.1269841	0.26375	0.661	0.215245	0	0.02073	-0.004005	0	-0.16	-0.565	24.45332

Beardsell Ltd.	-1.32	-0.2040933	0.43866	0.359	0.611331	0	-0.0032	0.012099	0	-1	1.4476	3.072177
Pearl Polymers Ltd.	-1.32	-0.3142164	0.56418	0.2074	0.758912	0	-0.1918	0.009608	0	0.026	2.3941	2.249897
Balkrishna Paper Mills Ltd.	-1.32	-0.0221757	1.08986	-0.113	1.166598	1	-0.2392	0.288543	1	0.144	4.0396	-0.18325
Kshitij Polyline Ltd.	-1.32	-0.5189036	0.4772	0.6532	0.143564	0	0	0.010456	0	-1	1.3474	2.19886
Tijaria Polypipes Ltd.	-1.32	-0.1934111	0.90432	0.5137	0.39105	0	-0.1923	0.022237	1	-0.7	4.5723	0.952718
AVSL Industries Ltd.	-1.32	-0.3828198	0.43397	0.5183	0.453426	0	0.1242	0.01104	0	0.163	0.3464	3.69329
R M Drip and Sprinklers Systems Ltd.	-1.32	-0.6879259	0.41492	0.6665	0.26058	0	0.00471	0.036005	0	-0.92	0.9331	2.344697
AVRO INDIA Ltd.	-1.32	-0.7698335	0.21894	0.5528	0.217582	0	0.09369	0.009834	0	0.227	-0.819	4.836218
Sanco Industries Ltd.	-1.32	-0.1799117	0.81557	0.4724	0.308127	0	-0.3114	-0.01517	0	-1	4.3056	-0.28651
Niraj Ispat Industries Ltd.	-1.32	-0.9482915	0.23966	0.8493	0.097844	0	0.02732	0.004684	0	-0.2	-0.668	2.455226
SMVD Poly Pack Ltd.	-1.32	-0.3135084	0.60181	0.5598	0.192006	0	0.00887	0.004163	0	-0.2	1.7244	2.652845
United Polyfab Gujarat Ltd.	-1.32	0.13334073	0.6994	0.2875	0.234057	0	0.00349	-0.006145	0	-0.73	2.833	2.304853
Celebrity Fashions Ltd.	-1.32	-0.0881055	0.67008	0.637	0.522255	0	-0.06	-0.001616	0	-1	2.5512	3.094983
Lagnam Spintex Ltd.	-1.32	0.30192271	0.7417	0.3731	0.135698	0	0.01988	-0.000176	0	0.604	2.1451	1.917575

Nandani Creation Ltd.	-1.32	-0.7377773	0.28317	0.888	0.163875	0	0.08558	0.000962	0	0.413	-0.989	4.455303
Priti International Ltd.	-1.32	-0.7718614	0.07592	0.5117	0.23125	0	0.16017	-0.00884	0	0.176	-1.717	4.503168
Super Spinning Mills Ltd.	-1.32	0.09174291	0.26219	-0.0572	1.23842	0	-0.0562	-0.000498	1	0.178	0.7257	2.107698
STL Global Ltd.	-1.32	-0.1695756	0.66463	0.7011	0.21088	0	0.48597	0.011175	0	-0.3	0.7554	3.593681
Nagreeka Exports Ltd.	-1.32	0.43354118	0.66525	0.6223	0.142149	0	-0.027	0.006481	0	-1	2.209	2.442814
Soma Textiles & Industries Ltd.	-1.32	-0.4349762	2.56093	-1.656	2.619672	1	-0.5145	-0.053148	1	-0.57	17.045	-5.26121
Laxmi Cotspin Ltd.	-1.32	-0.1516122	0.40032	0.6388	0.173948	0	0.01359	-0.000748	0	1	-0.297	3.048795
Vera Synthetic Ltd.	-1.32	-0.8210704	0.106	0.7239	0.216761	0	0.10833	0.026209	0	0.003	-1.672	4.057478
Patspin India Ltd.	-1.32	0.15227807	0.92891	-0.1865	1.830897	0	-0.2351	0.005016	1	-0.22	5.5748	0.262893
Shekhawati Poly-Yarn Ltd.	-1.32	-0.0928561	2.10084	-0.0608	1.651869	1	-0.1246	0	1	0.297	10.303	-2.00476
Mohit Industries Ltd.	-1.32	-0.1495595	0.62998	0.683	0.092049	0	0.00844	-0.005212	0	0.495	1.3019	3.324302
Eastern Silk Industries Ltd.	-1.32	0.04997597	1.06482	0.2731	0.567188	1	0.00815	0.002822	0	-0	2.9909	0.817841
Mittal Life Style Ltd.	-1.32	-0.7500595	0.32443	0.9921	0.240152	0	0.01286	0.000495	0	-0.71	-0.121	4.424865

Mohota Industries Ltd.	-1.32	0.33866354	0.34077	0.1714	0.507929	0	-0.0707	0.001008	1	0.274	0.6983	0.971395
SKS Textiles Ltd.	-1.32	-0.6617394	2.53551	0.6703	0.521727	1	-2.7147	0	1	-0.72	18.696	-8.79825
Jet Knitwears Ltd.	-1.32	-0.5385128	0.40504	0.9058	0.153366	0	0.05044	-0.024613	0	0.041	-0.038	3.325443
Eurotex Industries and Exports Ltd.	-1.32	-0.7057866	1.08799	-0.7843	5.821429	1	-0.5239	-0.010272	1	0.231	6.7953	-1.79454
Raj Rayon Industries Ltd.	-1.32	-0.0396433	6.69933	-0.3125	2.699319	1	-0.3351	0.000482	1	-0.01	39.109	-9.83476
Alps Industries Ltd.	-1.32	0.10913641	4.21394	0.1397	0.71684	1	-0.51	-0.006976	1	0.214	23.575	-4.26492
Spentex Industries Ltd.	-1.32	-0.2382753	8.15038	-1.43	2.111848	1	-0.3227	-0.014003	1	0.775	49.08	-9.80868
GTN Textiles Ltd.	-1.32	0.28355114	0.79054	0.3363	0.4042	0	-0.0285	0.008056	1	-0.07	3.2538	2.302718
Bhalchandram Clothing Ltd.	-1.32	-1.0054609	0.65895	0.9323	0.001908	0	-0.2093	-0.033838	0	-1	2.8085	1.25182
Gretex Industries Ltd.	-1.32	-1.5105336	0.00855	0.9772	0.202326	0	-0.0912	-0.017094	1	-0.16	-1.418	4.151105
Thomas Scott (India) Ltd.	-1.32	-1.1357173	0.51683	0.7813	0.812193	0	-0.0132	0.014423	1	0.892	1.0281	5.256545
GB Global Ltd.	-1.32	0.27774765	4.92736	-1.1031	2.934668	1	-0.2009	-0.004407	1	0.019	29.118	-6.55562
Talbros Automotive Components Ltd.	-1.32	0.45987426	0.3232	0.3934	0.568446	0	0.10251	-0.002928	0	0.667	-0.663	3.344516

Sintercom India Ltd.	-1.32	0.04929467	0.18581	0.2592	0.402496	0	-0.0369	0.058482	1	-0.24	-0.168	1.615274
Shivam Autotech Ltd.	-1.32	0.72854836	0.81432	0.202	0.50561	0	-0.037	0.082244	1	0.245	3.138	1.451176
Rane Engine Valve Ltd.	-1.32	0.3173105	0.55465	0.4183	0.401031	0	-0.0258	0.097785	1	0.457	1.2567	2.380549
Hindustan Motors Ltd.	-1.32	0	-4.2638	4.666	3.429842	1	-0.7135	-1.110057	0	1	-31.96	24.63893
Sundaram Brake Linings Ltd.	-1.32	0.02658563	0.25418	0.4685	0.475264	0	0.04963	-0.025558	0	0.408	-0.716	3.641424
Autoline Industries Ltd.	-1.32	0.24264124	0.96872	-0.168	1.314565	0	-0.1791	-0.003772	1	0.295	5.3253	1.078614
JMT Auto Ltd.	-1.32	0.34319238	0.51339	0.5131	0.240746	0	-0.1804	-0.001636	1	-0.9	2.1032	1.463852
Ndr Auto Components Ltd.	-1.32	0.10687306	0.04008	0.644	0.29343	0	0.04771	-0.009282	0	0.612	-2.435	3.087692
Pavna Industries Ltd.	-1.32	-0.0920528	0.61457	0.3624	0.49107	0	0.05761	-0.000326	0	0.132	1.7373	3.373172
Omax Autos Ltd.	-1.32	0.66827948	0.48801	0.2757	0.374186	0	0.08226	-0.037655	0	0.98	0.3479	2.341414
Remsons Industries Ltd.	-1.32	-0.1061092	0.64758	0.3467	0.607424	0	0.07477	-0.012574	0	0.11	1.9668	3.492989
Uravi T and Wedge Lamps Ltd.	-1.32	-0.4101237	0.51345	0.6475	0.068618	0	-0.0298	-0.016731	0	-1	1.6446	2.019606
Jullundur Motor Agency (Delhi) Ltd.	-1.32	0.10363629	0.00388	0.7826	0.367661	0	0.14117	-0.02833	0	0.232	-2.834	5.174441

Bharat Gears Ltd.	-1.32	0.28438525	0.66275	0.3019	0.713716	0	-0.0352	0.00032	1	0.418	2.3328	3.286139
Automotive Stampings and Assemblies Ltd.	-1.32	-0.181823	2.18591	-0.2092	1.185677	1	-0.397	-0.005079	1	-0.27	11.981	1.94397
ASL Industries Ltd.	-1.32	-0.5564285	0	0.982	0.01399	0	0.01235	-0.0038	0	-0.69	-2.158	2.747674
Ultra Wiring Connectivity System Ltd.	-1.32	-0.7948158	0.25768	0.4413	0.546989	0	0.04989	0.028509	0	0.011	-0.209	2.80647
Castex Technologies Ltd.	-1.32	1.66981374	1.24023	-0.1459	2.635474	1	-0.0963	-0.000301	1	0.188	4.583	-0.78248
PAE Ltd.	-1.32	0	-7.0531	1.6538	48.52632	1	0.99817	0.001832	1	-0.68	-45.99	14.62674
The Western India Plywoods Ltd.	-1.32	-0.2622598	0.27344	0.559	0.218799	0	0.01608	0.015924	0	-0.25	-0.282	3.077265
Airo Lam Ltd.	-1.32	-0.1088483	0.43871	0.5891	0.432706	0	0.06169	0.042029	0	0.066	0.3024	3.253003
Mangalam Timber Products Ltd.	-1.32	-0.324655	2.49898	-0.7023	2.612106	1	-0.3491	0.000371	1	-0.12	14.538	-4.21918
Vasa Retail and Overseas Ltd.	-1.32	-0.6154039	0.59231	0.9677	0.217072	0	0.03119	0.092855	0	-0.28	1.0369	4.63842
JIK Industries Ltd.	-1.32	-0.1535657	0.71935	0.157	55.52174	0	-0.0001	-0.000125	1	0.929	6.8603	3.320553
Setco Automotive Ltd.	-1.32	0.57385429	0.70409	0.2085	0.686262	0	-0.1256	-0.003167	0	-1	3.2704	1.038739

To establish a cut off score for Altman Z model applicable for Indian corporates.

The cut-off points are scores to classify the firms into bankrupt and non-bankrupt groups. At the optimal cut-off point, the total misclassification error is minimized. Altman (1968) found that the optimal cut-off point for the original Z-score was 2.9 and Begley et al. (1996) adopted the same optimal cut-off point for their re-estimated MDA model. Ohlson (1980) found that the optimal cut-off point for the Logit model was 0.038 while Begley et al. found a different optimal cut-off point of 0.061 for the re-estimated model. Bankruptcy prediction models have been the subject of much study among international corporations, although this field has seen very little development in the India. Therefore, it is important to establish an appropriate threshold for the Altman Z-Score in the Indian context. Revising the cutoff value does improve the accuracy rate of the Altman models in predicting business failure for Indian companies. The predictive accuracy of Altman model can be improved by revising the cutoff values. The upper threshold value of Altman Z- score applicable for Indian corporates was determined by the mean value of Z- score of 306 solvent firms. The lower threshold value of Altman Z-score applicable for Indian corporates was determined by mean values of Z-score of 306 insolvent firms. The upper threshold value of Altman Z-score applicable for Indian corporates was deduced to be 2.59083488 and lower threshold value of Altman Z-score applicable for Indian corporates was 1.54453. Comparing the means, insolvent firms had lower mean than the solvent firms. If a firm has Z- score value lies between 1.54453-2.59083488, it means that firm will be going to bankrupt in near future and can prevent bankruptcy by taking corrective actions. Company which has Z- Score value less than 1.54453 is considered to be in risky zone and company which has Z- Score more than 2.59083488 is considered to be in safer zone.

The entire cut off matrix

	Altman Original Model Cut off Scores	Revised Cut off score
Insolvent Firms	<1.81	<1.54453
Solvent Firms	>2.99	>2.59083488
Grey Area	1.81-2.99	1.54453-2.59083488

To study the influence of individual ratio on Z-score value.

The value the Z- score is influenced by the five ratios of Altman Model. Whether a company will be going bankrupt in near future depends upon the ratios of company. By putting the values of five ratios in Altman model discriminant function Z- score value is determined. Working Capital/ Total Assets, Retained/Total Assets. Earnings Before Interest and Taxes/ Total Assets and Sales/Total Assets have a high influence on Z- score of Altman model while fourth variable(ratio) Book value of Equity/Total Liabilities has moderate influence on Z- score value. It means company should keep concern on its working capital, retained earnings, total assets, sales and total liabilities to prevent its bankruptcy.

It can be derived that X1, X2, X3 and X5 have a very high influence on Z Score whereas X4 has a moderate influence on Z Score for both insolvent and solvent companies.

There is significant and a positive impact of Working Capital & Total Assets ratio on Z-Score.

There is significant and positive impact of Retained Earnings & Total Assets ratio on Z-Score.

There is significant and positive impact of Earnings Before Interest and Tax/ Total Asset ratio on Z-Score.

There is significant and positive impact of Book Value or Market Value of Equity / Total Liability on Z-Score.

There is significant and positive impact of Sales / Total assets ratio on Z-Score.

To study the comparison of Altman Z-score model with Ohlson O-Score model

By applying the Ohlson Model and Altman Model on 306 solvent companies it was found that Ohlson Model has 53.59% accuracy rate of prediction and Altman model has 49.67% accuracy rate of prediction. Thus, it is clear that O- score and Z- score do not significantly vary in predicting bankruptcy of companies.

CHAPTER 5

RESULTS AND CONCLUSION

This chapter highlights the results of the study that were obtained in light of the previous literature. This chapter is divided into different sub sections. It outlines the major findings and the conclusions as well as the recommendations made on the bases of the study. This section consists of findings related to influence of individual ratio on Z- Score value. There is a discussion of findings on cut off score for Altman Z- Score Model applicable for Indian corporates. Apart, from this, results of comparison of two bankruptcy models Altman and Ohlson have been presented and after this discussion on liquidation and insolvency process of insolvent has been made.

5.1 Results

Objective 1-: To study the liquidation and resolution process of bankrupt firms of NCLT.

CIRP (Corporate Insolvency Resolution Process) includes six stages.

First Stage-: Petition to the National Company Law Tribunal (NCLT) — When a company fails to make payments to its creditors, the creditors may submit a CIRP petition to the NCLT (National Company Law Tribunal). If the petition is valid before the tribunal, the NCLT will review it once it has been filed. The petition will be denied by the tribunal under Section 4 of the Code if the amount requested is less than One Crore, or else it will be granted. Within 14 days of the petition being filed, a hearing will be scheduled (under sections 7, 9, or 10 of the law).

Second Stage-: The Process of Appointing an Interim Resolution Professional - The Committee of Creditors is responsible for appointing and nominating a Resolution Professional as that term is used in Section 27 of the Code. The IRP is appointed by the NCLT till that time.

The second part of phase two involves the IRP reclaiming the remaining insolvency procedure and guaranteeing the corporate debtor may continue business as usual.

Third Stage-: Moratorium-: A moratorium will go into effect after the tribunal grants the petition submitted in Step 1. According to Section 14, once this time period has been declared, the tribunal prohibits the following: the filing of any new debt-related lawsuits against the corporate debtor; the filing of any new debt foreclosure lawsuits against the corporate debtor under the SARFAESI Act, 2002; and the recovery of any property owned by the corporate debtor. Until the CIRP process is completed, the moratorium will remain in place. A 90-day extension of the moratorium is possible under exceptional circumstances.

Stage four-: Section 18 (b) of the Code mandates that the IRP organize and analyze the petitioner's claims in a systematic manner. According to the Code, the IRP may schedule a meeting with the petitioner to get clarification if the IRP demands an explanation of a claim made by the petitioner.

A Committee of Creditors (COC) must be established by the IRP within 30 days of the CIRP's commencement in accordance with Section 18 (c) of The Code. Appointing an RP is the first step taken once the COC has been established. The committee's decision as to whether or not the IRP will continue in their role as such is final.

After all of that, there is the plan to resolve the problem, or Resolution. After the IRP/collation RPs have been completed and the petitioner's allegations have been verified, the COC is required to issue a public notice. The corporate debtor is in the middle of an insolvency procedure, and the notice requests that any interested parties submit resolution plans for consideration.

Potential investors, creditors, etc., might be among these bidders.

The quantity of proposed resolution plans determines the depth with which the COC investigates them. More than 75% of the COC must vote in favor of a proposal for it to be submitted to the NCLT.

Last Stage-: Following acceptance by the COC, the resolution plan is submitted to the NCLT for final approval. After the NCLT's approval, the resolution plan is binding on the corporate debtor and all other parties involved.

The tribunal may order the liquidation of the corporate debtor, which must be performed within a year after the order if the NCLT does not approve the resolution plan or the COC is unable to implement a resolution plan within the required period.

The insolvency procedure is well-structured thanks to the Code, which allows for the above aims to be met. A key problem in the administration of insolvency existed prior to the Act's release: the absence of a system.

INSOLVENCY RESOLUTION PROCESS

DEFAULT IS COMMITTED

APPLICATION TO NCLT

FINANCIAL CREDITOR   OPERATIONAL CREDITOR   CORPORATE DEBTOR

NCLT

REJECT THE APPLICATION   ACCEPT THE APPLICATION

= Date of admission of application
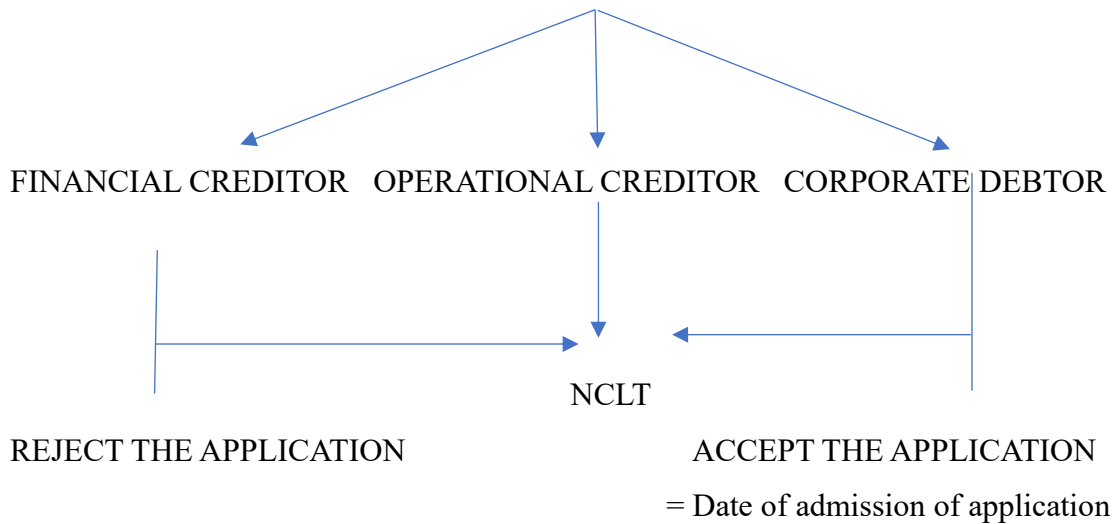
PUBLIC ANNOUNCEMENT +MORATORIUM

APPOINTMENT OF INTERIM RESOLUTION PROFESSIONAL & FORMATION OF COMMITTEE OF CREDITOR

First meeting of committee of creditors

IRP=RP/New RP

Preparation of Information Memorandum by Resolution Professional

Resolution Plan proposed by creditors and approved by 66% majority

Resolution Plan forwarded to NCLT

NCLT

APPROVE   REJECT

Proceed with plan   Liquidation of Corporate Debtor

Objective 2-: To establish a cut off score for Altman Z model applicable for Indian corporates.

Research Process
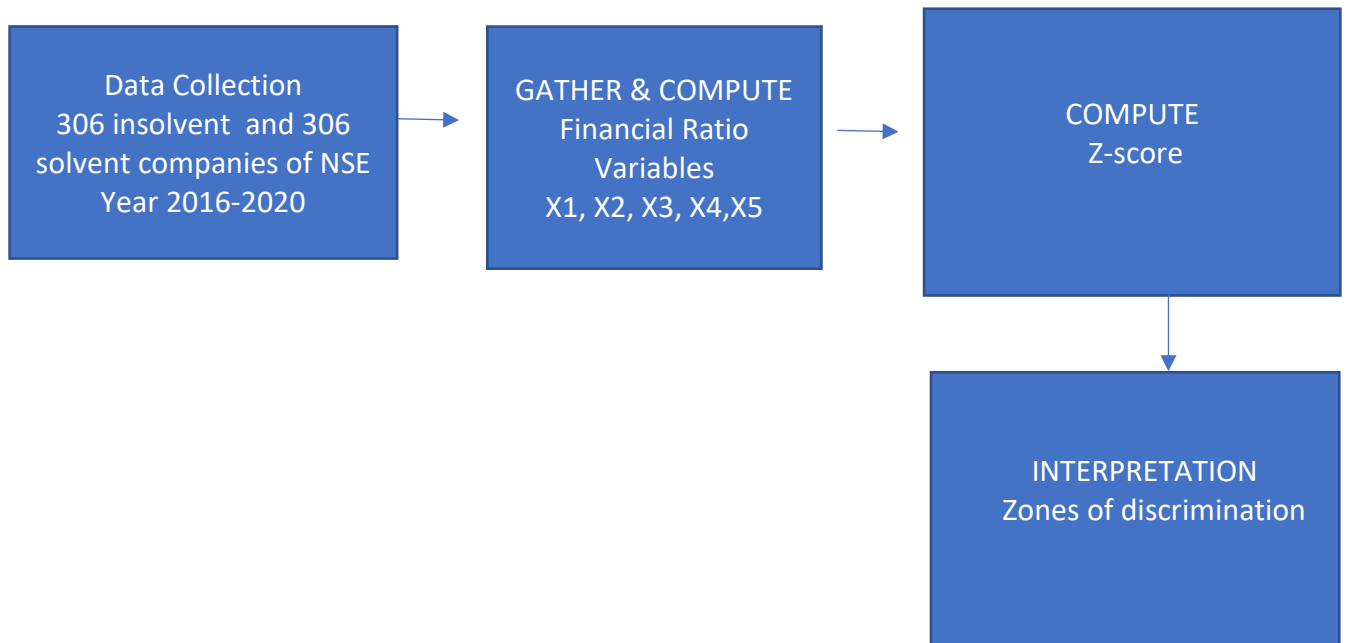
```
┌─────────────────────┐      ┌─────────────────────┐      ┌─────────────────────┐
│  Data Collection    │      │  GATHER & COMPUTE   │      │                     │
│  306 insolvent  and │ ───> │  Financial Ratio    │ ───> │      COMPUTE        │
│  306 solvent        │      │  Variables          │      │      Z-score        │
│  companies of NSE   │      │  X1, X2, X3, X4,X5  │      │                     │
│  Year 2016-2020     │      │                     │      │                     │
└─────────────────────┘      └─────────────────────┘      └─────────────────────┘
                                                                      │
                                                                      ▼
                                                          ┌─────────────────────┐
                                                          │                     │
                                                          │   INTERPRETATION    │
                                                          │ Zones of            │
                                                          │ discrimination      │
                                                          │                     │
                                                          └─────────────────────┘
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The upper threshold value of Altman Z-score for applicable for Indian corporates was deduced to be 2.59083488 and lower threshold value of Altman Z-score for applicable for Indian corporates was 1.54453

 The entire cut off matrix

Insolvent Firms	1.54453
Solvent Firms	2.59083488
Grey area	1.54453-2.59083488

The findings of the study are found to be consistent with the results of the previous research studies. Studies conducted by Lau Kam- wing, 2014; Lee, Ono Mari, 2018; Colak, 2020.

Objective 3-: To study the influence of individual ratio on Z-score value.

The 10 regression equations derived using Linear Regression Analysis to study the influence of individual ratio on Z-score value are as follows-:

Equation 1: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 2: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 3: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 4: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 5: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 6: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 7: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 8: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 9: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Equation 10: Z=1.2(X1) +1.4(X2) +3.3(X3) +0.6(X4) +0.999(X5)

Hence it can be derived that X1, X2, X3 and X5 have a very high influence on Z Score whereas X4 has a moderate influence on Z Score for both insolvent and solvent companies.

Therefore

There is significant and a positive impact of Working Capital & Total Assets ratio on Z-Score.

There is significant and positive impact of Retained Earnings & Total Assets ratio on Z-Score.

There is significant and positive impact of Earnings Before Interest and Tax/ Total Asset ratio on Z-Score.

There is significant and positive impact of Book Value or Market Value of Equity / Total Liability on Z-Score.

There is significant and positive impact of Sales / Total assets ratio on Z-Score.

We reject all the null hypothesis.

The findings of the study are found to be consistent with the results of the previous research studies. Studies conducted by Anggraini and Mulya, 2016; Kumar, Vasu, and Narayana, 2016; Fardinal and Gandhy, 2019.

Objective 4-: To study the comparison of Altman Z-score model with Ohlson O-score model.

Since the average Ohlson O-score was calculated to be 2.92081533053171, which is above the 0.5 threshold set by the Ohlson model, and since this range for the Altman Z-score was also determined to be 1.54453–2.59083488 by deduction, it follows that both models predict that the 306 firms under consideration will go into default within two years. Since both the Altman Z-score model and the Ohlson O-score model are equally accurate in depicting corporate insolvency, the conclusion is that there is no significant difference between the two.

Calculation of Z- Score is not as complex as calculation of O- Score that have so many difficult variables. Some variables used in O- Score are just inverse to the financial ratios, the current ratio (current asset/ current liabilities) was converted into current liabilities/ current assets, similarly ratio TL/TA (total liabilities/ total assets) was being changed from Total Assets/ Total Liabilities. Variables of Ohlson model also includes some assumptions as assign 1 if there is net loss for the past two years and assign 0 if there is net profit for the past two years.

By applying the Ohlson Model and Altman Model on 306 solvent companies it was found that Ohlson Model has 53.59% accuracy rate of prediction and Altman model has 49.67% accuracy rate of prediction. Thus, it is clear that O- score and Z- score do not significantly vary in predicting bankruptcy of companies. This is relevant with the Kleinert (2014) & Imelda (2017) who identified that there is no significant difference between both models. However, it is not relevant with Karamzadeh (2013) who identified that the Altman's model is more accurate than the Ohlson's model in predicting the financial distress and with Moghadam, Zadeh and Fard (2010) who identified that the Ohlson's model is more accurate in predicting financial distress than the Altman's model.

Total Companies	306
Solvent	306
Insolvent	0
Solvent using O-Score	164
Solvent using Z-score	152
Accuracy from O-score	53.59%
Accuracy from Z-score	49.67%

Based on the result, it is concluded that there is no significant difference between Ohlson's Model and Altman's Model in predicting financial distress of Indian companies.

5.2 Implications of the study

Implications of the research are as follows:

1. The study's conclusion is that in order to forecast or gauge a company's degree of risk, Indian investors, creditors, and shareholders should not just depend on total liabilities. The fact that total liabilities have a negative association with the non-failed group shows that there is no direct correlation between total liabilities and default risk. Instead, a business may produce revenues and profits and thrive if debts were used correctly, for as by investing the interest - bearing loans in productive initiatives. However, in terms of predicting failure, businesses with little total liabilities are just as susceptible to failure as those with huge total liabilities. To make a better decision, creditors, shareholders, and investors should weigh many factors.

2. The results of this study add to those of earlier investigations, which were notable for their lack of theory and for reporting business failure prediction factors with a great deal of variation. An empirical theoretical framework that is applicable to countries outside of the US can be constructed if the Altman (1968) and Ohlson (1980) models are shown to be reliable for Indian Companies.

3. Retail investors can use the Altman z-score to discern between typical firms and companies that are severely distressed and have financial issues before engaging in the financial market (BSE or NSE) to protect their assets. When it comes to anticipating insolvency, the Altman Z score performs far better.

4. Marketers might use this data to take proactive measures if a company's Zscore is falling year after year. The likelihood of bankruptcy can be used to estimate a company's financial sustainability in a changing global environment. Despite being a challenging process, bankruptcy prediction is utilised by practically all businesses worldwide.

5. This study applied the Altman Z-Score Model to 306 insolvent businesses and 306 solvent firms in India over the period of 2016–2020 to find a cut off score that is appropriate for Indian corporates. Whatever cutoff values on the Altman Z score that have been set in the United States for forecasting bankruptcy may or may not be

applicable in Indian business conditions. In this aim, a cut off score of the Altman Z model for Indian corporates is attempted to be established. It aids Indian businesses in promptly tracking their financial situation and productivity.

6. It becomes vital for businesses to have predictor factors that might foretell bankruptcy when changes in the country's economic situation have a detrimental influence on businesses. There are several factors that might influence a company's bankruptcy, some of which are under our control and others of which are not. A corporation can use revised cut off scores to predict when it will go bankrupt and can avert bankruptcy by taking the necessary corrective steps in a timely manner.

7. Investors will find this study useful in their decision-making process before making any investment-related decisions.

8. The ability to make quick judgements will aid managers in averting a precarious financial position.

9. The government is crucial to the development of the industrial sector. The government will be assisted in developing its strategy by this study.

10. The study's goal is to determine the cutoff values for Altman Z-scores in Indian conditions, which may be used by Indian businesses as an early warning system.

11. The capital structure and number of registered members of the firm should be taken into account when determining the time for case disposition

5.3 Limitations of Research-:

Like other studies, this study also has limitations as follows:

1. This research includes 306 financially stable firms from among those listed on the NSE. Obtaining more reliable findings would have been possible with a larger sample size.
2. A further difficulty was the fact that not all organizations' data was online.
3. If the scope of the research was altered, new conclusions may be drawn.
4. Budget Constraints-: The researcher was only given a little budget to complete the study.
5. Time constraints-: The research was conducted over the course of a year and a half, which may introduce some bias into the findings.

6. The variables used in the Altman Model and Ohlson Model can be manipulated by depreciation method, window dressing etc.

7. There might be some variables that have significant influence on Z- Score value but not included in the study.

8. The results are totally based on financial aspects, factors like poor management, efficiency of human resources, prevailing socio – political conditions etc are not taken into consideration. If non-financial aspects will be incorporated in the models, then results will be improved.

9. Other sectors like insurance and banking are not included in the study.

10. The time period taken for the study is of five years which can be expanded as results may vary.

11. The main indicator used in the study for the prediction of bankruptcy is working capital. If working capital is already in negative number, there is no need to test this indicator.

12. This study is based on financial statements of companies (secondary data) that are derived from the websites and capataline data base. Accuracy of results depends on secondary data (financial statements)

5.4 Conclusion-:

Retail investors may use the Altman z-score to differentiate between healthy firms and those with severe financial difficulties before engaging in the financial market (BSE or NSE) to safeguard their money. The Altman Z score is superior than other scores for predicting insolvency. Marketers may also use this information to take preventative measures if a company's Z-score has been steadily dropping over time. With the world economy constantly shifting, it is becoming more difficult to gauge the long-term health of businesses in emerging nations without some method of anticipating their likelihood of bankruptcy. Despite the difficulty of the endeavor, practically every business nowadays uses bankruptcy forecasting. Defeat, as defined by Argenti (2003)'s idea of bankruptcy, is the inability of a business to continue operations. According to Bibealt (1982), a company declares bankruptcy when its predicted return on investment (ROI) is lower than the ongoing rates on equivalent investments. By using the Altman Z-Score Model to 306 bankrupt businesses and 306 solvent firms in India for the years 2016-2020, the researchers were able to obtain a cut off score that is relevant for Indian corporates. For bankruptcy prediction

purposes, whatever thresholds on the Altman Z score have been set in the United States may or may not be applicable in Indian business contexts. While the Altman Z-score has been widely used in the business world, the optimal cutoff for Indian corporations has not been determined by any research to far. In light of this, an effort is made to determine an appropriate Altman Z model cutoff score for Indian businesses. As a result, Indian businesses can better keep track of their financial health and performance. Refining the thresholds for distinguishing between typical, borderline, and outlier businesses in the Altman z-score is the primary goal of this research. If a company's Z-Score is less than 1.54453, it is regarded to be in a high-risk category, while a Z-Score more than 2.59083488 indicates a low-risk category. In addition, the effect of Altman z-score on each of the ratios used to calculate Altman z-score is analyzed. So, for both insolvent and solvent businesses, X1, X2, X3, and X5 have substantial impacts on Z Score, whereas X4 has a minor impact. When economic condition of country changes and puts negative impact on companies, it becomes necessary for the companies to have predictor variables that can predicts bankruptcy in advance. There are many reasons for the bankruptcy of a company, some are controllable and some are uncontrollable. Therefore, the study also investigated the bankruptcy prediction power of Altman Model and Ohlson Model by applying these models on Indian corporates. Both the Altman and the Ohlson models accurately portray the insolvency of businesses, therefore there is no reason to believe that choosing one over the other is important. Investors may use this research as a starting point for making a sound judgment before committing funds. Managers may use this information to make well-informed choices and avoid a tense financial scenario. The government also has a significant impact on the expansion of the manufacturing sector. The findings of this research will aid the government in formulating policy. The study's goal is to provide an early warning system for Indian businesses by determining cut off values for Altman Z-scores in Indian circumstances.

5.5 Suggestions/Recommendations:

The research confirms the companies' suspicions that they need to shore up their finances to keep from going under.

- The Altman Z score model is a tool used to predict financial stability and distress in the financial services industry. Regulatory agencies recommend this model to forestall organisations' failures.

- Regulatory authority should make compliance on filling a new statement viz: risk management statements along with financial statements to describe the financial risk of a company.

- The firms should focus on their financial strength to avoid bankruptcy. The companies should work on strengthening their assets so that they can have substantial working capital to keep the business going.

- The time for case disposition should be determined based on the capital structure and number of registered members of the company.

- Insolvency Professional Agency should train the insolvency experts.

- Establish more NCLT benches for earlier disposition of the cases.

- The firms should retain the earnings for future so that the in case of any requirements they can be used as an option of last resort.

- Companies should on regular intervals check their scores and take the preventive action to avoid any such possibility of bankruptcy

- Businesses need to fortify their assets to ensure they have sufficient operating capital to be profitable. To ensure they have a safety net in the event of unforeseen needs, businesses should put aside a portion of their profits for the foreseeable future. In the event that a company's retained profits are inadequate, the only other alternative is to file for bankruptcy.

- Corporations should likewise strive to limit their liability exposure. There should not be any negative effect on revenue from any of the bankruptcy prediction ratios.

- The results are totally based on financial aspects, factors like poor management, efficiency of human resources, prevailing socio – political conditions etc are not taken into consideration. If non-financial aspects will be incorporated in the models, then results will be improved.

- Filing for bankruptcy is the final resort for corporations to avoid taking on massive finance losses in the form of missed payments to creditors and other obligations.

- Companies should, therefore, review their ratings on a frequent basis and take the necessary precautions to ensure they do not go bankrupt. Both of the models that were analyzed in the research may serve as a useful tool for preventing financial disaster.

5.6 Future Scope of Research:

This research aims to determine whether the currently available bankruptcy models are enough for making accurate bankruptcy predictions. Combining data from the Altman and Ohlson models is a promising area for future research. Both models' outputs would be combined, and the resulting aggregate model's performance would be evaluated (Altman model and Ohlson model). The emphasis of future research may be on improving the model's predictive power by including other ratios that correlate with the likelihood of bankruptcy. Since all prior research has been conducted in either Europe or the United States, future studies may concentrate on the Indian setting. These ratings may be used by Indian businesses to anticipate customer defaults. Incorrect prediction findings cost businesses a lot of money, and if future studies are done well, they may represent a turning point in averting such losses.

ANNEXURE

Name of the Companies

Names of the Solvent companies thus selected are as follows-:

Name of the Solvent Companies

S. No.	Name of company
1	Barak valley cement ltd
2	Burnpur Cement Limited
3	Par Drugs and Chemicals Limited
4	Mahickra Chemicals Limited
5	Hindprakash Industries Limited
6	Sanginita Chemicals Limited
7	Sikko Industries Limited
8	Ushanti Colour Chem Limited
9	Hindcon Chemicals Limited
10	Omkar Speciality Chemicals Limited
11	Ambani Organics Limited
12	Prolife Industries Limited
13	Vadivarhe Speciality Chemicals Limited
14	Shaival Reality Limited
15	IL&FS Engineering and Construction Company Limited
16	Madhucon Projects Limited
17	SPML Infra Limited
18	Ansal Housing Limited
19	Sumit Woods Limited
20	Giriraj Civil Developers Limited
21	HEC Infra Projects Limited
22	W S Industries (I) Limited
23	Atal Realtech Limited
24	Gayatri Highways Limited
25	S.S. Infrastructure Development Consultants Limited
26	C & C Constructions Limited
27	Unity Infraprojects Limited
28	Setubandhan Infrastructure Limited
29	A B Infrabuild Limited

30	BSEL Infrastructure Realty Limited
31	CMM Infraprojects Limited
32	International Constructions Limited
33	Dhanuka Realty Limited
34	Tantia Constructions Limited
35	Techindia Nirman Limited
36	Manav Infra Projects Limited
37	Websol Energy System Limited
38	BPL Limited
39	Indo Tech Transformers Limited
40	Spectrum Electrical Industries Limited
41	Kernex Microsystems (India) Limited
42	Kirloskar Electric Company Limited
43	Indosolar Limited
44	Wonder Fibromats Limited
45	Jyoti Structures Limited
46	Ujaas Energy Limited
47	Nitiraj Engineers Limited
48	Surana Solar Limited
49	Delta Manufacturing Limited
50	Focus Lighting and Fixtures Limited
51	Bright Solar Limited
52	Goldstar Power Limited
53	Shri Ram Switchgears Limited
54	MIC Electronics Limited
55	IMP Powers Limited
56	Emco Limited
57	Easun Reyrolle Limited
58	Pulz Electronics Limited
59	Neueon Towers Limited
60	Powerful Technologies Limited
61	Mold-Tek Technologies Limited
62	TRF Limited
63	Macpower CNC Machines Limited
64	A2Z Infra Engineering Limited
65	Aaron Industries Limited
66	Atlanta Limited

67	Manugraph India Limited
68	Latteys Industries Limited
69	Power & Instrumentation (Gujarat) Limited
70	Felix Industries Limited
71	Zodiac Energy Limited
72	Mukand Engineers Limited
73	Marshall Machines Limited
74	Nitin Fire Protection Industries Limited
75	Perfect Infra-engineers Limited
76	Premier Limited
77	Debock Sales and Marketing Limited
78	Accord Synergy Limited
79	Transwind Infrastructures Limited
80	CCL Products (India) Limited
81	National Fertilizers Limited
82	Tata Coffee Limited
83	Apcotex Industries Limited
84	Thangamayil Jewellery Limited
85	Harrisons Malayalam Limited
86	Madhya Bharat Agro Products Limited
87	Aries Agro Limited
88	Agro Phos India Limited
89	Agri-Tech (India) Limited
90	Norben Tea & Exports Limited
91	Bohra Industries Limited
92	Som Distilleries & Breweries Limited
93	Mcleod Russel India Limited
94	Euro India Fresh Foods Limited
95	Jayshree Tea & Industries Limited
96	Dhunseri Tea & Industries Limited
97	KCP Sugar and Industries Corporation Limited
98	Rana Sugars Limited
99	Pioneer Distilleries Limited
100	Magadh Sugar & Energy Limited
101	Mawana Sugars Limited
102	Dangee Dums Limited
103	Umang Dairies Limited

104	Ponni Sugars (Erode) Limited
105	SKM Egg Products Export (India) Limited
106	Sakthi Sugars Limited
107	K.M.Sugar Mills Limited
108	The Grob Tea Company Limited
109	Golden Tobacco Limited
110	The Peria Karamalai Tea & Produce Company Limited
111	Sarveshwar Foods Limited
112	Rajshree Sugars & Chemicals Limited
113	Sanwaria Consumer Limited
114	Simbhaoli Sugars Limited
115	Aurangabad Distillery Limited
116	Shanti Overseas (India) Limited
117	Dharani Sugars & Chemicals Limited
118	Ravi Kumar Distilleries Limited
119	Narmada Agrobase Limited
120	Thiru Arooran Sugars Limited
121	Inox Wind Limited
122	Shakti Pumps (India) Limited
123	Wendt (India) Limited
124	Dynamatic Technologies Limited
125	Kabra Extrusion Technik Limited
126	United Drilling Tools Limited
127	Jash Engineering Limited
128	Hercules Hoists Limited
129	Gujarat Apollo Industries Limited
130	Walchandnagar Industries Limited
131	Pitti Engineering Limited
132	Windsor Machines Limited
133	Eimco Elecon (India) Limited
134	Revathi Equipment Limited
135	Emkay Taps and Cutting Tools Limited
136	Lokesh Machines Limited
137	Mahamaya Steel Industries Limited
138	Ahlada Engineers Limited
139	Rama Steel Tubes Limited
140	Uttam Galva Steels Limited

141	Maan Aluminium Limited
142	Lloyds Steels Industries Limited
143	Manaksia Coated Metals & Industries Limited
144	Visa Steel Limited
145	Shiv Aum Steels Limited
146	Supreme Engineering Limited
147	Kritika Wires Limited
148	Hisar Metal Industries Limited
149	Manaksia Aluminium Company Limited
150	Sagardeep Alloys Limited
151	Bedmutha Industries Limited
152	Century Extrusions Limited
153	Gyscoal Alloys Limited
154	Vaswani Industries Limited
155	S.A.L. Steel Limited
156	Oil Country Tubular Limited
157	Shah Alloys Limited
158	National Steel and Agro Industries Limited
159	Surani Steel Tubes Limited
160	Ankit Metal & Power Limited
161	Prakash Steelage Limited
162	Zenith Steel Pipes & Industries Limited
163	Grand Foundry Limited
164	Ramsarup Industries Limited
165	Ashapura Minechem Limited
166	AVT Natural Products Limited
167	Gokul Agro Resources Limited
168	Bcl Industries Limited
169	Gokul Refoils and Solvent Limited
170	South West Pinnacle Exploration Limited
171	Raj Oil Mills Limited
172	20 Microns Limited
173	Shyam Century Ferrous Limited
174	Mangalam Global Enterprise Limited
175	Shree Ram Proteins Limited
176	M K Proteins Limited
177	Cubex Tubings Limited

178	Rohit Ferro-Tech Limited
179	NK Industries Limited
180	Impex Ferro Tech Limited
181	Kokuyo Camlin Limited
182	Mirza International Limited
183	Shalimar Paints Limited
184	Rushil Decor Limited
185	Tribhovandas Bhimji Zaveri Limited
186	Indo-National Limited
187	PTL Enterprises Limited
188	Orient Abrasives Limited
189	Bombay Super Hybrid Seeds Limited
190	Superhouse Limited
191	Penta Gold Limited
192	Goenka Diamond and Jewels Limited
193	Silgo Retail Limited
194	Moksh Ornaments Limited
195	M.R. Organisation Limited
196	Kanani Industries Limited
197	Laxmi Goldorna House Limited
198	Banaras Beads Limited
199	Ajooni Biotech Limited
200	Karuturi Global Limited
201	Sona Hi Sona Jewellers (Gujarat) Limited
202	Milton Industries Limited
203	Archidply Decor Limited
204	Innovative Tyres and Tubes Limited
205	Lypsa Gems & Jewellery Limited
206	Zodiac JRD- MKJ Limited
207	Party Cruisers Limited
208	Sri Havisha Hospitality and Infrastructure Limited
209	Ace Integrated Solutions Limited
210	Crown Lifters Limited
211	SecUR Credentials Limited
212	Omfurn India Limited
213	Continental Seeds and Chemicals Limited
214	Rajdarshan Industries Limited

215	Shree Rama Newsprint Limited
216	Pudumjee Paper Products Limited
217	Astron Paper & Board Mill Limited
218	Star Paper Mills Limited
219	Genus Paper & Boards Limited
220	Ruchira Papers Limited
221	Shreyans Industries Limited
222	Ballarpur Industries Limited
223	Worth Peripherals Limited
224	Malu Paper Mills Limited
225	Magnum Ventures Limited
226	Indian Oil Corporation Limited
227	Hindustan Petroleum Corporation Limited
228	Mangalore Refinery and Petrochemicals Limited
229	Gulf Oil Lubricants India Limited
230	Chennai Petroleum Corporation Limited
231	GP Petroleums Limited
232	Alpa Laboratories Limited
233	Lyka Labs Limited
234	Arvee Laboratories (India) Limited
235	Ortin Laboratories Limited
236	Syncom Healthcare Limited
237	Texmo Pipes and Products Limited
238	Tokyo Plast International Limited
239	Vikas EcoTech Limited
240	Tainwala Chemical and Plastic (I) Limited
241	Somi Conveyor Beltings Limited
242	Beardsell Limited
243	Pearl Polymers Limited
244	Balkrishna Paper Mills Limited
245	Kshitij Polyline Limited
246	Tijaria Polypipes Limited
247	AVSL Industries Limited
248	R M Drip and Sprinklers Systems Limited
249	AVRO INDIA LIMITED
250	Sanco Industries Limited
251	Niraj Ispat Industries Limited

252	SMVD Poly Pack Limited
253	United Polyfab Gujarat Limited
254	Celebrity Fashions Limited
255	Lagnam Spintex Limited
256	Nandani Creation Limited
257	Priti International Limited
258	Super Spinning Mills Limited
259	STL Global Limited
260	Nagreeka Exports Limited
261	Soma Textiles & Industries Limited
262	Laxmi Cotspin Limited
263	Vera Synthetic Limited
264	Patspin India Limited
265	Shekhawati Poly-Yarn Limited
266	Mohit Industries Limited
267	Eastern Silk Industries Limited
268	Mittal Life Style Limited
269	Mohota Industries Limited
270	SKS Textiles Limited
271	Jet Knitwears Limited
272	Eurotex Industries and Exports Limited
273	Raj Rayon Industries Limited
274	Alps Industries Limited
275	Spentex Industries Limited
276	GTN Textiles Limited
277	Bhalchandram Clothing Limited
278	Gretex Industries Limited
279	Thomas Scott (India) Limited
280	GB Global Limited
281	Talbros Automotive Components Limited
282	Sintercom India Limited
283	Shivam Autotech Limited
284	Rane Engine Valve Limited
285	Hindustan Motors Limited
286	Sundaram Brake Linings Limited
287	Autoline Industries Limited
288	JMT Auto Limited

289	Ndr Auto Components Limited
290	Pavna Industries Limited
291	Omax Autos Limited
292	Remsons Industries Limited
293	Uravi T and Wedge Lamps Limited
294	Jullundur Motor Agency (Delhi) Limited
295	Bharat Gears Limited
296	Automotive Stampings and Assemblies Limited
297	ASL Industries Limited
298	Ultra-wiring Connectivity System Limited
299	Castex Technologies Limited
300	PAE Limited
301	The Western India Plywoods Limited
302	Airo Lam limited
303	Mangalam Timber Products Limited
304	Vasa Retail and Overseas Ltd
305	JIK Industries Limited
306	Setco Automotive Limited

Names of Insolvent companies selected are as follows-:

Name of the Insolvent Companies

S. No.	Name of company
1	Frog Fone Private Limited
2	Rainbow Denim Limited
3	Bharani Commodities Pvt. Ltd.
4	Empee Power Company
5	Digicontrols Nortern Private Limited
6	SWE Fashions Private
7	Delhi Diamonds Pvt. Ltd.
8	Harsh Speciality Coating Pvt. Ltd
9	Anish Trading & Mercantile Pvt. Ltd.
10	Kerala GAIL Gas Limited
11	Jushi India Private Limited
12	Microsun Solar Tech Private Limited
13	Maharaja Techno Chromes Private Limited
14	Vandeu International Private Limited
15	Gena Pharmaceuticals Limited

16	Tejaswini Engineering Pvt. Ltd.
17	Astellia Telecom Pvt. Ltd.
18	Dyno-Enpro Oil Field Chemical Private Limited
19	Hi Rise Infratech Pvt. Ltd.
20	Padmavati Intermediates Private Limited
21	RJVS Traders Private Limited
22	Sunlight Extrusion Private Limited
23	STL Exports Limited
24	Kumaran Hi-Tech Private Limited
25	Sainsons Pulp and Papers Limited
26	Inspan Infotech Pvt. Ltd.
27	Coimbatore Commodities Limited
28	Coastal Energy Private Limited
29	Siva Industries and Holdings Limited
30	Deegee Cotsyn Private Limited
31	Icon Commodities Private Limited
32	Simhapuri Energy Limited
33	Hindusthan Ispat Private Limited
34	Aikya Infrastructure Private Limited
35	Aster Private Ltd.
36	CNN Minerals Private Limited
37	**Gupta Exim India Pvt. Ltd**
38	Cox & Kings Limited
39	Damoh – Jabalpur Toll Roads Limited
40	Shree Daksh Jyoti Silk Mills Pvt. Ltd.
41	Avani Impex Private Limited
42	Fort Projects Pvt. Ltd
43	Jotesriram Himghar Private Limited
44	Kaygee Shoetech Pvt. Ltd
45	Raghav Sarees Private Limited
46	Prithvi Multipurpose Cold Storage Pvt. Ltd
47	Khetan Apparels Pvt. Ltd.
48	Vardhman Chemtech Limited
49	Ganeshom Cereals Private Limited
50	Jagannath Sponge Private Limited
51	Shaifali Steels Limited
52	Segno Ceramics Pvt. Ltd

53	Maylari Agro Products Ltd
54	Epitome Petrochemical Private Limited
55	ABT (Madras) Private Limited
56	RNB Cements Pvt. Ltd.
57	S.V.E.C. Constructions Limited
58	Agarwal Steel Structures (India) Private Limited
59	Samyu Glass Private Limited
60	Lanco Hoskote Highway Limited
61	UIC Udyog Limited
62	Amrit Fresh Private Limited
63	Mather Projects Private Limited
64	Warana Dairy and Agro Industries Ltd
65	M Tech Developers Private Limited
66	Aditya Estates Pvt. Ltd.
67	Pack Tech Systems Private Limited
68	Valaya Clothing Pvt. Ltd.
69	Swastik Fruits Products Ltd
70	Sampan Tradex Pvt. Ltd
71	Prius Commercial Projects Private Limited
72	Swastik Aqua Ltd.
73	Pellet Energy Systems Private Limited
74	Superchem Coating Pvt. Ltd.
75	GRG Infrastructure Pvt. Ltd.
76	Rainbow Industrial Park Pvt. Ltd.
77	Bacon Vanijya Pvt. Ltd.
78	Shreebhav Polyweaves Pvt. Ltd
79	Janshank Impex Private Limited
80	Decent Laminates Pvt. Ltd
81	Ahitri Spinning Mills Private Limited
82	Telstar Industries Pvt. Ltd.
83	Mithilanchal Glass Industries Pvt. Ltd.
84	Kankesh Exims Private Limited
85	Saffron Poly Threads Private Limited
86	Angstrom Biotech Pvt. Ltd.
87	Bajrang Cotgin Pvt. Ltd
88	Aakash Polyfilms Ltd
89	Shivshakti Barrels Private Limited

90	Alcock Ashdown (Gujarat) Ltd.
91	Quality Steel Products Limited
92	Axis Nirman and Industries Limited Company
93	Uttarayan Steel Private Limited Company
94	Apex Aqua Agencies Private Limited
95	East Godavari Breweries Private Limited
96	CPR Laboratories Private Limited
97	Sree Naidu Beverages Pvt. Limited
98	Voltarc Electrodex Pvt Ltd
99	Jains & Alliance Palms Venture Pvt. Ltd.
100	Steel Hypermart India Private Limited
101	Metrik Infraprojects Private Limited
102	Jewel Garments Private Limited
103	Shree Ashraya Infra-con Ltd.
104	Nandlal Kamal Kishore Vyapaar Private Ltd.
105	Alaska Fabtech Pvt. Ltd.
106	S. Nanda Industries Private Ltd.
107	Jindal Builtech Private ltd
108	Best Zone Builders and Developers Private Limited
109	SCM Garments Private Limited
110	Real Value Promoters Private Limited
111	ETA Engineering Private Limited
112	GPR Resouces Private Limited
113	Fourpol Electricals Private Limited
114	JBM Shelters Private Limited
115	Spacex Furniture Private Limited
116	B V V Industries Limited
117	Mega Food Products Madras Private Limited
118	Infiniti Metal Products India Limited
119	Fomra Sales Private Limited
120	Pondicherry Extraction Industries Private Limited
121	Thai Summit Autoparts India Private Limited
122	Harsha Exito Engineering Private Limited
123	Forza Casting Private Limited
124	Kapico Motors India Private Limited
125	Prostar Textile Mills Private Limited
126	Baibhav Properties Private Limited

127	Y.Pani and Company Pvt. Ltd.
128	MAA Tarini Industries Limited
129	Tuff Tubes (Orissa) Pvt. Ltd.
130	Hariom Rice Mill Pvt. Ltd.
131	Namratha Power Pvt. Ltd
132	J S B Entrade Private Limited
133	Kalpataru Cold Storage Private Ltd
134	R. S. H. Agro Products Ltd.
135	Navya Agro Products Private Limited
136	Fertis India Private Limited
137	Lahari Infra Projects (India) Private Limited
138	Hyderabad Merchem Private Ltd
139	V R V Textiles Limited
140	Vivanta Laboratories Private Limited
141	Viom Infra Ventures Limited
142	Cosmos Forgings Limited
143	Mantena Laboratories Limited
144	BRS Enterprises & Trading limited
145	Pentacle Infrastructures and Towers Private Limited
146	Nexus feeds Limited
147	Suryachakra Energy & Infrastructure Private Limited
148	Buildmate Projects Private Limited
149	EBC Bearings (India) Limited
150	GKC Projects Limited
151	Genesys Biologics Private Limited
152	Pallorbund Tea Limited
153	Anand Distillers Private Limited
154	Anjali Waterford Hospitality and Infra Ltd
155	Devesh Engineering Enterprises Private Limited
156	Gouthami Hatcheries Pvt. Ltd.
157	ECI Infra Towers Company Private Limited
158	Affluence Engineering and Enterprises Ltd
159	Agarwal Steel Structures (India) (P) Ltd.
160	Vij Agro Exports Private Limited
161	Tradeinox Industries Limited
162	Shri Govind Realty Pvt. Ltd
163	Prakriti Power Private Limited Company

164	Jainam Alternate Energy Private Limited
165	Kimaya Industries Private Limited
166	Baldva Textiles Private Limited
167	Adig Jemtex Pvt. Ltd.
168	Aarti Suitings Pvt. Ltd
169	Grateful Buildinfra Pvt. Ltd
170	Tip Top Furniture Pvt. Ltd
171	Orma Marble Palace Private Limited
172	Tierra Food India Pvt. Ltd.
173	Subhlabh Steels Private Limited
174	Biharilal Greenwood Pvt. Ltd
175	Kanoi Plantations Private Limited
176	Mallick Projects Private Limited
177	Venus Controls & Switchgear Private Limited
178	Dulichand Auto Sales Private Limited
179	Karuna Distributors Private Limited
180	Pami Metals Private Limited
181	BST Infratech Limited
182	MSP Metallics Limited
183	Prosperity Steels Limited
184	Krishna Alex Private Limited
185	Madhushree Industries Pvt. Ltd.
186	Mohan Motor Dealers Private Limited
187	BIL Infratech Limited
188	Citylife Retail Private Limited
189	Sampark Land and Builders Private Limited
190	Suryodaya Realtors Private Limited
191	P.M. Cold Storage Private Limited
192	Kaygee Shotech Private Limited
193	Saturn Rings & Forgings Private Limited
194	Swastik Tungsten Private Limited
195	Shree Mahalaxmi Agro Farms Private Limited
196	New Steel Trading Private Limited
197	KH Foges India Private Limited
198	Shimita Trading Private Limited
199	Surya Landmark Developers Private Limited
200	Jawaria Enterprises Private Limited

201	Radiance Properties (India) Private Limited
202	Vag Buildtech Limited
203	TV Products India Private Limited
204	Miltech Industries Pvt. Ltd
205	Cubatics Industries Private Limited
206	Clear Channel India Private Limited
207	Meta Arch Private Limited
208	Moli Merchant Traders Private Limited
209	Shivam Steels and Tubes Private Limited
210	Mack Star Marketing Private Limited
211	Warana Diary and Agro Industries Ltd
212	Sai - Tech Pharmaceuticals Private Limited
213	VGS Realty Construction Private Limited
214	Dhanlaxmi Electricals Private Limited
215	Pandhe Infracons Private Limited
216	PNK Space Development Pvt. Ltd.
217	Ammanarul Spinners Pvt. Ltd.
218	Anuradha Real Estate Private Limited
219	Kasata Hometech (India) Private Limited
220	Marveledge Realtors Private Limited
221	Synergytech Automation Private Limited
222	S R (MCB) Engineers Pvt. Ltd
223	Radius Estates and Developers Private Limited
224	Deserve Construction Private Limited
225	Kumar Urban Development Private Limited
226	Vyas Mercantile Private Limited
227	Shivaji Cane Processors Limited
228	Vashistha Mercantile and Trading Pvt. Ltd.
229	Royal Polyurethane (India) Private Limited
230	Altech Infrastructure Private Limited
231	Unibera Developers Private Limited
232	Mystic Monk Designs Private Limited
233	Sanyog Healthcare Limited
234	Fashion Flare International Private Limited
235	Shree Om Enterprises Pvt. Ltd.
236	Shivansh Diamond Private Limited
237	VHV Beverages Private Limited

238	Mak Medicals Private Limited
239	Genexis India Pvt. Ltd. Company
240	VSP Udyog Private Limited
241	Trikalp Laminates Private Limited
242	Chowdhury Rubbers & Chemicals Private Limited
243	Suvidha Parklift Limited
244	FCRD India Pvt. Ltd
245	Artimpianti India Private Limited
246	Emkay Automobile Private Limited
247	AL-Tabarak Frozen Foods Private limited
248	Sachin Electricals Private Limited
249	Retail Kart Solutions Pvt. Ltd
250	Raghuveer Metal Industries Ltd.
251	Kiran Udyog Private Limited
252	Xion Gems & Jewellers Private Limited
253	Adityasamaraj Natural Foods Private Limited
254	Bindal Polymers Pte. Ltd
255	Asterism Pharmaceuticals Private Limited
256	Mirco Dynamics Pvt. Ltd
257	Shamik Enterprises Private Limited
258	Roharsh Motors Private Limited
259	Jain Shoppers Private Limited
260	Ceebuild Company Private Limited
261	Shree Shankar Saw Mill Private Limited
262	Hindusthan Small Tools Private Limited
263	Fontana Impex Private Limited
264	Airen Copper Pvt. Ltd.
265	Teja Cement Limited
266	Chemizol Additives Pvt. Ltd.
267	Thrive Therapeutic Private Limited
268	Vascular Therapeutics (India) Pvt. Ltd
269	STB Export Pvt. Ltd
270	Bherawa Textile Industries Private Limited
271	R&M International Private Limited
272	Matashree Snacks Private Limited
273	Sri Yadari Life sciences Private Limited
274	Silk Woven Sack Pvt. Ltd

275	Skyhigh Infra projects Limited
276	Krishna Knitwear Technology Ltd
277	Senioreetaa Designer Ensembles Pvt. Ltd.
278	Adkure Technologies Private Limited
279	Shree Murugan Flour Mills Private Limited
280	Bony Systems and Technologies Limited
281	Shri Gopal Agro Food Pvt. Ltd
282	Chairpertech Electronics Private Limited
283	Alipurduar Tea Co. Ltd
284	Hike Leather Private Ltd
285	Greens Farm Tech Private Limited
286	Nobile Ice Cream Company Private Ltd
287	Mohan Motor Distributors Pvt. Ltd
288	Sethuram Spinners Private Limited
289	Inter Labs (India) Private Limited
290	Windsor Cables Pvt. Ltd
291	LV Global Pvt. Ltd
292	Kumar's Metallurgical Corporation Limited
293	Flora Dyeing House Private Ltd.
294	Handum Industries Limited
295	Roshan Fruits India Private Limited
296	Arrowline Organic Products Private Limited
297	Mehrotra Engineering Works Pvt. Ltd
298	Jaibhagwati Texprint Pvt. Ltd.
299	Shaifali Steels Ltd.
300	Gangidi Industries Limited
301	Shivani Trendz Private Limited
302	Duckbill Drugs Private Ltd
303	Durgashakti Foods Private Limited
304	Nava Bharat Press (Bhopal) Private Limited
305	Barbrick Project Limited
306	Anjana Strong Doors Pvt. Ltd

BIBLIOGRAPHY

Affes, Z., & Hentati-Kaffel, R. (2019). Predicting US banks bankruptcy: logit versus Canonical Discriminant analysis. *Computational Economics*, 54(1), 199-244.

Aggarwal, R. K., Purnanandam, A., & Wu, G. (2005). Underwriter manipulation in initial public offerings. *Available at SSRN* 686252.

Aharony, J., Jones, C. P., & Swary, I. (1980). An analysis of risk and return characteristics of corporate bankruptcy using capital market data. *The Journal of Finance*, 35(4), 1001-1016.

Alam, S. I. (2002). Supply of Passenger Transport Services. *Journal of Business Research*, 4.

Al-Dalaien, B. O. A., & Alhroob, M. N. H. (2017). Financial performance analysis of Jordanian insurance companies using the Altman z-score model. *International Journal of Academic Research and Development* ISSN, 2, 24-29.

Alkhatib, K., & Al Bzour, A. E. (2011). Predicting corporate bankruptcy of Jordanian listed companies: Using Altman and Kida models. *International Journal of Business and Management*, 6(3), 208.

Almamy, J., Aston, J., & Ngwa, L. N. (2016). An evaluation of Altman's Z-score using cash flow ratio to predict corporate failure amid the recent financial crisis: Evidence from the UK. *Journal of Corporate Finance*, 36, 278-285.

Almamy, J., Aston, J., & Ngwa, L. N. (2016). An evaluation of Altman's Z-score using cash flow ratio to predict corporate failure amid the recent financial crisis: Evidence from the UK. *Journal of Corporate Finance*, 36, 278-285.

Al-Rawi, K., Kiani, R., & Vedd, R. R. (2008). The use of Altman equation for bankruptcy prediction in an industrial firm (case study). *International Business & Economics Research Journal (IBER)*, 7(7).

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The journal of finance*, 23(4), 589-609.

Andrade, G., & Kaplan, S. N. (1998). How costly is financial (not economic) distress? Evidence from highly leveraged transactions that became distressed. *The journal of finance*, 53(5), 1443-1493.

Anjum, S. (2012). Business bankruptcy prediction models: A significant study of the Altman's Z-score model. *Available at SSRN* 2128475.

Arnold, T., & Earl Jr, J. H. (2006). Applying Altman's Z-Score in the Classroom. *Journal of Financial Education*, 97-102.

Bagntasarian, A., & Mamatzakis, E. (2019). Testing for the underlying dynamics of bank capital buffer and performance nexus. *Review of Quantitative Finance and Accounting*, 52(2), 347-380.

Bateni, L., & Asghari, F. (2020). Bankruptcy prediction using logit and genetic algorithm models: A comparative analysis. *Computational Economics*, 55(1), 335-348.

Beaver, W. H. (1966). Financial ratios as predictors of failure. *Journal of accounting research*, 71-111.

Bellovary, J. L., Giacomino, D. E., & Akers, M. D. (2007). A review of bankruptcy prediction studies: 1930 to present. *Journal of Financial education*, 1-42.

Beynon, M. J., & Peel, M. J. (2001). Variable precision rough set theory and data discretization: an application to corporate failure prediction. *Omega*, 29(6), 561-576.

Boritz, J. E., & Kennedy, D. B. (1995). Effectiveness of neural network types for prediction of business failure. *Expert Systems with Applications*, 9(4), 503-512.

Brown, L. D. (1993). Earnings forecasting research: its implications for capital markets research. *International journal of forecasting*, 9(3), 295-320.

Chouhan, V., Chandra, B., & Goswami, S. (2014). Predicting financial stability of select BSE companies revisiting Altman Z score. *International Letters of Social and Humanistic Sciences*, 15(2), 92-105.

Clark, C. E., Foster, P. L., Hogan, K. M., & Webster, G. H. (1997). Judgmental approach to forecasting bankruptcy. *The Journal of Business Forecasting*, 16(2), 14.

Dakovic, R., Czado, C., & Berg, D. (2010). Bankruptcy prediction in Norway: a comparison study. *Applied Economics Letters*, 17(17), 1739-1746.

Datta, S., Doan, T., & Iskandar-Datta, M. (2019). Policy uncertainty and the maturity structure of corporate debt. *Journal of Financial Stability*, 44, 100694.

Davalos, S., Gritta, R. D., & Chow, G. (1999). The application of a neural network approach to predicting bankruptcy risks facing the major US air carriers: 1979–1996. *Journal of Air Transport Management*, 5(2), 81-86.

Denis, D. J., & Denis, D. K. (1995). Causes of financial distress following leveraged recapitalizations. *Journal of financial economics*, 37(2), 129-157.

Dichev, I. D. (1998). Is the risk of bankruptcy a systematic risk? *the Journal of Finance,* 53(3), 1131-1147.

48.Dimitras, A. I., Zanakis, S. H., & Zopounidis, C. (1996). A survey of business failures with an emphasis on prediction methods and industrial applications. *European journal of operational research*, 90(3), 487-513.

Dorantes, C. A., Li, C., Peters, G. F., & Richardson, V. J. (2013). The effect of enterprise systems implementation on the firm information environment. *Contemporary Accounting Research*, 30(4), 1427-1461.

Drotár, P., Gazda, J., & Smékal, Z. (2015). An experimental comparison of feature selection methods on two-class biomedical datasets. *Computers in biology and medicine*, 66, 1-10.

Durán-Vázquez, R., Lorenzo-Valdés, A., Martín-Reyna, S., & Manuel, J. (2012). Relevance of Discretionary Accruals Information (DAI) in Ohlson model: the case of Mexico. *Journal of Entrepreneurship, Management and Innovation (JEMI)*, 8(3), 21-34.

Edelman, M. (2015). An unexpected path: Bankruptcy, justice and intersecting identities in the catholic sexual abuse scandals. *Australian Feminist Law Journal*, 41(2), 271-287.

Fama, E. F., & French, K. R. (1995). Size and book- to- market factors in earnings and returns. *The journal of finance*, 50(1), 131-155.

Fehle, F., Tsyplakov, S., & Zdorovtsov, V. (2005). Can companies influence investor behaviour through advertising? Super bowl commercials and stock returns. *European Financial Management*, 11(5), 625-647.

Gandhy, F. (2019). Analysis of Financial Ratio to Predict Financial Distress Conditions (Empirical Study on Manufacturing Companies listed on the Indonesia Stock Exchange for 2014-2017). *International Journal of Business and Management Invention (IJBMI)*, 8(6), 27-34.

Garlappi, L., Shu, T., & Yan, H. (2008). Default risk, shareholder advantage, and stock returns. *The Review of Financial Studies*, 21(6), 2743-2778.

Gentry, J. A., Newbold, P., & Whitford, D. T. (1985). Classifying bankrupt firms with funds flow components. *Journal of Accounting research*, 146-160.

Gerantonis, N., Vergos, K., & Christopoulos, A. G. (2009). Can Altman Z-score Models Predict Business Failures in Greece. *Research Journal of International Studies*, 12(10), 21-28.

Giannopoulos, G., & Sigbjornsen, S. (2019). Prediction of bankruptcy using financial ratios in the Greek market. *Theoretical Economics Letters*, 9, 1114-1128.

Gordon, M. J. (1971). Towards a theory of financial distress. *the Journal of Finance*, 26(2), 347-356.

Grammatikos, T. (1989). Dividend stripping, risk exposure, and the effect of the 1984 Tax Reform Act on the ex-dividend day behavior. *Journal of Business*, 157-173.

Griffin, J. M., & Lemmon, M. L. (2002). Book- to- market equity, distress risk, and stock returns. *The Journal of Finance*, 57(5), 2317-2336.

Gunathilaka, C. (2014). Financial Distress Prediction: A Comparative Study of Solvency Test and Z-Score Models with Reference to Sri Lanka. *IUP Journal of Financial Risk Management*, 11(3).

Haddad, N. M., Holyoak, M., Mata, T. M., Davies, K. F., Melbourne, B. A., & Preston, K. (2008). Species' traits predict the effects of disturbance and productivity on diversity. *Ecology letters*, 11(4), 348-356.

Hanson, R. (2003). Combinatorial information market design. *Information Systems Frontiers,* 5(1), 107-119.

Hayes, S. K., Hodge, K. A., & Hughes, L. W. (2010). A study of the efficacy of Altman's Z to predict bankruptcy of specialty retail firms doing business in

contemporary times. *Economics & Business Journal: Inquiries & Perspectives,* 3(1), 130-134.

Hendel, I. (1996). Competition under financial distress. *The Journal of Industrial Economics,* 309-324.

Hillegeist, S. A., Keating, E. K., Cram, D. P., & Lundstedt, K. G. (2004). Assessing the probability of bankruptcy. *Review of accounting studies*, 9(1), 5-34.

Holder-Webb, L. M., & Wilkins, M. S. (2000). The incremental information content of SAS No. 59 going-concern opinions. *Journal of Accounting Research*, 38(1), 209-219.

Horrigan, J. O. (1968). A short history of financial ratio analysis. *The Accounting Review,* 43(2), 284-294.

Hussain, F., Ali, I., Ullah, S., & Ali, M. (2014). Can Altman Z-score model predict business failures in Pakistan? Evidence from textile companies of Pakistan. *Journal of Economics and Sustainable development*, 5(13), 110-115.

Idris, N. H., Abdul Rahim, F., & Kassim, S. (2019). The Influence of Digital Technologies and Consumer's Over-indebtedness. Idris, NH, Rahim, FA, & Kassim, S. (2019). The Influence of Digital Technologies and Consumer's Over-indebtedness. *International Journal of Academic Research in Business and Social Sciences*, 9(1), 1043-1051.

Islam, M. J., Hakim, M. A., Hanafi, M. M., Juraimi, A. S., Aktar, S., Siddiqa, A., ... & Halim, M. A. (2014). Hydrogeochemical quality and suitability studies of groundwater in northern Bangladesh. *Journal of environmental biology*, 35(4), 765.

Jones, S., & Hensher, D. A. (2004). Predicting firm financial distress: A mixed logit model. *The accounting review*, 79(4), 1011-1038.

Jouzbarkand, M., Keivani, F. S., Khodadadi, M., Fahim, S. R. S. N., & Aghajani, V. (2013). Bankruptcy prediction model by Ohlson and Shirata models in Tehran stock exchange. *World Applied Sciences Journal*, 21(2), 152-156.

Kalaiselvi, G. (2015). Cost Structure Analysis of Selected Oil and Natural Gas Companies in India. *The International Journal of Business & Management*, 3(11), 101.

Karas, M., & Režňáková, M. (2020). Cash flows indicators in the prediction of financial distress. *Engineering Economics*, 31(5), 525-535.

Keasey, K., & Watson, R. (1991). Financial distress prediction models: a review of their usefulness 1. *British journal of Management*, 2(2), 89-102.

Koh, H. C., & Killough, L. N. (1990). The use of multiple discriminant analysis in the assessment of the going- concern status of an audit client. *Journal of Business Finance & Accounting,* 17(2), 179-192.

Kulalı, F., Akkurt, I., & Özgür, N. (2016). Investigation of the radon levels in groundwater and thermal springs of Pamukkale Region. *Acta Physica Polonica A*, 130(1), 496-498.

Lakonishok, J., Shleifer, A., & Vishny, R. W. (1994). Contrarian investment, extrapolation, and risk. *The journal of finance*, 49(5), 1541-1578.

Ling, Z. H. A. N. G. (2003). Research on the International Cooperation Tendency of Transnational Bankruptcy. *Tribune of Political Science and Law*, 04.

Malik, M. S., Awais, M., & Khursheed, A. (2016). Impact of liquidity on profitability: A comprehensive case of Pakistan's private banking sector. *International Journal of Economics and Finance,* 8(3), 69-74.

Meric, I., Lentz, C., Li, S. F., & Meric, G. (2014). A Comparison of the Financial Characteristics of Hong Kong and Singapore Manufacturing Firms. *Global journal of business research*, 8(3), 31-37.

Mizan, A. N. K., Amin, M. R., & Rahman, T. (2011). Bankruptcy prediction by using the Altman Z-score model: An investigation of the pharmaceutical industry in Bangladesh. *Bank Parikrama*, 36(2-4), 33-56.

Mizan, A., & Hossain, M. M. (2014). Financial soundness of Cement industry of Bangladesh: An empirical investigation using z-score. *American Journal of trade and policy,* 1(1), 16-22.

Mohammed, S. (2016). Bankruptcy prediction by using the Altman Z-score model in Oman: A case study of Raysut cement company SAOG and its subsidiaries. *Australasian Accounting, Business and Finance Journal*, 10(4), 70-80.

Mulla, M. A. (2002). Use of Z score Analysis for evaluation of Financial Health of Textile Mills-A case Study. *Abhigyan,* 19(4), 37-41.

Muminovic, S. (2013). Revaluation and Altman Z-score–the case of the Serbian capital market. *International Journal of Finance and Accounting*, 2(1), 13-18.

Mustafa, O. A. (2019). Assessment of the financial performance of Islamic commercial banks in Sudan under credit risk and inflation pressures (1995-2017). *Journal of Islamic Banking and Finance*, 7(1), 14-26.

Nasser, E. M., & Aryati, T. (2000). Model analisis CAMEL untuk memprediksi financial distress pada sektor perbankan yang go public. *Journal Akuntansi dan Auditing Indonesia*, 4(2), 111-130.

Noga, T. J., & Schnader, A. L. (2013). Book-tax differences as an indicator of financial distress. *Accounting Horizons*, 27(3), 469-489.

Ogachi, D., Ndege, R., Gaturu, P., & Zoltan, Z. (2020). Corporate Bankruptcy Prediction Model, a Special Focus on Listed Companies in Kenya. *Journal of Risk and Financial Management*, 13(3), 47.

Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of accounting research*, 109-131.

Piotroski, J. D. (2000). Value investing: The use of historical financial statement information to separate winners from losers. *Journal of Accounting Research*, 1-41.

Platt, H. D., & Platt, M. B. (2002). Predicting corporate financial distress: reflections on choice-based sample bias. *Journal of economics and finance*, 26(2), 184-199.

Ramaratnam, M. S., & Jayaraman, R. (2010). A study on measuring the financial soundness of select firms with special reference to Indian steel industry–An empirical view with Z score. *Asian journal of management research*, 1(1), 724-735.

Rao, N. V., Atmanathan, G., Shankar, M., & Ramesh, S. (2013). Analysis of bankruptcy prediction models and their effectiveness: An Indian perspective. *Gt. Lakes Her*, 7(2).

Sanesh, C. (2016). The analytical study of Altman Z score on NIFTY 50 Companies. *IRA-International Journal of Management & Social Sciences* (ISSN 2455-2267), 3(3), 724-735.

Santos, T., & Veronesi, P. (2010). Habit formation, the cross section of stock returns and the cash-flow risk puzzle. *Journal of Financial Economics*, 98(2), 385-413.

Scott, J. (1981). The probability of bankruptcy: A comparison of empirical predictions and theoretical models. *Journal of banking & finance*, 5(3), 317-344.

Seaman, S. L., Young, D. M., & Baldwin, J. N. (1990). How to predict bankruptcy. *The Journal of Business Forecasting*, 9(3), 23.

Sena, J., & Williams, D. (1998). Using the Altman bankruptcy model to analyze the performance of oil companies. *Petroleum Accounting and Financial Management Journal,* 17(1), 72.

Severino, F., & Brown, M. (2020). Personal bankruptcy protection and household debt. *Available at SSRN* 2447687.

Sherbo, A. J., & Smith, A. J. (2013). The Altman Z-score bankruptcy model at age 45: standing the test of time. *American Bankruptcy Institute Journal*, 32(11), 40.

Shome, S., & Verma, S. (2020). Financial distress in Indian aviation industry: Investigation using bankruptcy prediction models. *Eurasian Journal of Business and Economics,* 13(25), 91-109.

Shumway, T. (2001). Forecasting bankruptcy more accurately: A simple hazard model. *The journal of business*, 74(1), 101-124.

Sirirattanaphonkun, W., & Pattarathammas, S. (2012). Default prediction for small-medium enterprises in emerging market: Evidence from Thailand. *Seoul Journal of Business*, 18.

Sulphey, M. M. (2013). A study on the Academic dishonesty, Anomia and Unethical Behaviour among Business Graduates. *Journal of Contemporary Management Research*, 8(2).

Taffler, R. (2018). Emotional finance: investment and the unconscious. The European *Journal of Finance*, 24(7-8), 630-653.

Tandiontong, M., & Sitompul, M. (2017). The influence of financial distress using Altman z-score, the beta of stocks and inflation to the stock return. *Journal of Finance and Banking Review,* 2(2), 21-27.

Thai, S. B., Goh, H. H., HengTeh, B., Wong, J., & San Ong, T. (2014). A revisited of Altman z-score model for companies listed in Bursa Malaysia. *International Journal of Business and Social Science*, 5(12).

Tirapat, S., & Nittayagasetwat, A. (1999). An investigation of Thai listed firms' financial distress using macro and micro variables. *Multinational Finance Journal,* 3(2), 103-125.

Van Gestel, T., Baesens, B., Suykens, J. A., Van den Poel, D., Baestaens, D. E., & Willekens, M. (2006). Bayesian kernel-based classification for financial distress detection. *European journal of operational research,* 172(3), 979-1003.

Vassalou, M., & Xing, Y. (2004). Default risk in equity returns. *The journal of finance*, 59(2), 831-868.

Ventura, John, (The Kit bankruptcy Kit), 3ed, Dearborn trade publishing, USA, 2004. 158.Warner, J. B. (1977). Bankruptcy costs: Some evidence. *The journal of Finance,* 32(2), 337-347.

Whitaker, R. B. (1999). The early stages of financial distress. *Journal of economics and finance,* 23(2), 123-132.

Zavgren, C. (1983). The prediction of corporate failure: the state of the art. *Journal of Accounting Literature*, 2(1), 1-38.

Zhang, J., Morris, A. J., & Martin, E. B. (1998). Long-term prediction models based on mixed order locally recurrent neural networks. *Computers & chemical engineering*, 22(7-8), 1051-1063.