THESIS

ANALYSIS OF THE CHANCE OF FINANCIAL DISTRESS ON TELECOMMUNICATION COMPANIES LISTED ON INDONESIA STOCK EXCHANGE (IDX)

SITI ALYFAH AINUN PUTRI BARAMULI

MANAGEMENT DEPARTMENT
FACULTY OF ECONOMICS AND BUSINESS
UNIVERSITAS HASANUDDIN
MAKASSAR
2021

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as one of the requirements to obtain
Bachelor of Economics degree

complied and submitted by

SITI ALYFAH AINUN PUTRI BARAMULI
A0211 71 819

kepada

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A0211 71 819

has been examined and approved for thesis examination

Makassar, August 18th 2021

Supervisor I

Prof. Dr. Ria Mardiana Y, SE.,M.Si.
NIP. 19670518 199203 2 001

Supervisor II

Dr. Muhammad Sobarsyah, SE.,M.Si.
NIP. 19680629 199403 1 002

Head of Management Department
The Faculty of Economics and Business
Universitas Hasanuddin

Prof. Dra. Hj. Dian Anggraece Sigit Parawansa, M.Si., Ph.D
NIP. 19620405 198702 2 001

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SITI ALYFAH AINUN PUTRI BARAMULI
A0211 71 819

has been defended in the thesis examination
on **August 18th 2021** and
has been declared to have met the graduation requirements

Approved by,
Supervisory Committee

No	Name	Position	Signature
1.	Prof. Dr. Ria Mardiana Y, SE.,M.Si	Head	1 .....
2.	Dr. Muhammad Sobarsyah, SE.,M.Si.	Secretary	2 .....
3.	Prof. Dr. H. Abdul Rakhman Laba, SE.,MBA	Member	3 .....
4.	Andi Aswan, SE., MBA., M.Phil., DBA	Member	4 .....

Head of Management Department
The Faculty of Economics and Business
Universitas Hasanuddin

Prof. Dra. Hj. Dian Anggraece Sigit Parawansa, M.Si., Ph.D
NIP. 19620405 198702 2 001

STATEMENT OF AUTHENTICITY

I, the undersigned below,

Name : St. Alyfah Ainun Putri Baramuli

NIM : A021171819

Major : Management

hereby truthfully declare that the thesis entitled,

ANALYSIS OF THE CHANCE OF FINANCIAL DISTRESS ON TELECOMMUNICATION COMPANIES LISTED ON INDONESIA STOCK EXCHANGE (IDX)

is my own scientific work and to the best of my knowledge in this thesis there is no scientific work that has been submitted by another person to obtain an academic degree at a university, and there is no work or opinion that has been written or published by another person, except those quoted in this manuscript and mentioned in the citation sources and bibliography.

If in the future it turns out that in the manuscript of this thesis it can be proven that there are elements of plagiarism, I am willing to accept sanctions for such actions and be processed in accordance with applicable laws and regulations (Law No. 20 of 2003, article 25 paragraph 2 and article 70).

Makassar, August 18th 2021

Who make the statement,

Siti Alyfah Ainun Putri Baramuli

PREFACE

Praises and gratitude the author sends to Allah SWT. Alhamdulillah, thanks to His grace, love, and mercy, the author is finally able to complete this research with title “ANALYSIS OF THE CHANCE OF FINANCIAL DISTRESS ON TELECOMMUNICATION COMPANIES LISTED ON INDONESIA STOCK EXCHANGE (IDX) ” as one of the requirement to complete the study and obtain academic degree in Faculty of Economics and Business Hasanuddin University.

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The author realizes that the process of writing and organizing this thesis is inseparable from mistakes and shortcomings. Therefore, with all humility, the author sincerely apologizes and is gracefully willing to accept all input, critics, and suggestions to make this thesis better. The author humbly presents this thesis, with the hope that it could be useful to increase knowledge and information in the field of management.

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St. Alyfah Ainun Putri Baramuli

ABSTRACT

Analysis of The Chance of Financial Distress On Telecommunication Companies Listed On Indonesia Stock Exchange (IDX)

ST. Alyfah Ainun Putri Baramuli
Ria Mardiana
Muhammad Sobarsyah

Financial distress is a process that shows the decline in financial position experienced by a company before the company falls into bankruptcy or is liquidated. Research purposes 1) To describe the forecast of financial distress in the Telecommunication Companies Listed On Indonesia Stock Exchange (IDX) using Altman Z- Score Method during 2009 – 2019. The study uses secondary data from the financial statements of telecommunications companies listed on the IDX, namely PT Telkom Indonesia (Persero) Tbk, PT XL Axiata Tbk, and PT Indosat Tbk from 2009 to 2019. The analytical method used is Altman Z-score Modification with Independent Variables, namely Working Capital To Total Assets (X1), Retained Earnings To Total Assets (X2), Earning Before Interest And Taxes To Total Assets (X3), and Market Value Of Equity To Book Value Of Liabilities (X4). Then the Dependent Variables, namely Financial distress (Y). The research results obtained 1) The Effect of Working Capital on Total Assets as measured by working capital and total assets; 2) Effect of Retained Earnings To Total Assets on Financial Distress; 3) Effect of Earning Before Interest And Taxes To Total Assets on Financial Distress; 4) Effect of Market Value Of Equity To Book Value Of Liabilities on Financial Distress.

Keywords : Working Capital To Total Assets (X1), Retained Earnings To Total Assets (X2), Earning Before Interest And Taxes To Total Assets (X3), and Market Value Of Equity To Book Value Of Liabilities (X4)

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CHAPTER I

INTRODUCTION

1.1. Research Background

Generally, bankruptcy is caused by two variables : internal and external factors. For occurrence, the cause of external components can be within the form of the failure of providers to supply rawmaterials for generation. In the mean time, the cause of internal factors can be within the form of issues in terms of company funds, such as expensive corporate obligations and negative working capital where the company is incompetent to handle its operational excercises . The starting organize of a commerce insolvency thathappens inside a company by and large starts with monetary trouble.Financial distress may be a prepare that appears in financial position experienced by a company some time recently the company falls in failure or is dissolve. In addition to this definition, financial distress may be a condition where there is a financial decrease some time recently the company runs into liquidation. Financial distress happens when a company is incapable to preserve its budgetarysteadiness, which comes about in operational losses and net losses for the current year. On the off chance that this circumstance continues without improvement and last for 2 consecutive years, the company can lead liquidation. Actually, financial distress happensdue to financial trouble, which may be a decrease within the company industry and destitute company management (Wilujeng & Yulianto,2020).

Financial distress can be recognized when a company is encountering monetary challenges or has experienced a nonstop decrease in profit and is incapable to meet its commitments when amount are due. Companies that are in “decline” cycle must be able

to form key choice wether to decrease profits, decrease investment or change the capital structure to maintain a strategic distance from financial (Fadillah, 2019).

Companies in Asia have the potential for financial distress in case that working use is not satisfactory to back deals volume and get adequate cash stream or working benefit some time recently depreciation. Analysts appear different shapes of financial distress, depending on the sort of occasion that happened. Failing to pay bonds and unpaid profit preferred stock can reflect the event of financial distress. Financial distress may be a significant time to decide whether a company's budgetary condition is solid or unfortunate, so it requires corrective activity to resolve the issue.

Telecommunications companies in Indonesia generally provide products in the form of telecommunication services, both domestically and internationally. Currently, there are six telecommunication companies listed on the Indonesia Stock Exchange: PT Bakrie Telecom Tbk, PT XL Axiata Tbk, PT Smartfren Tbk, PT Indosat Tbk, PT Inovisi Tbk, and PT Telekomunikasi Indonesia Tbk. According to records from the Directorate General of Resources and Equipment of Post Informatics at the Ministry of Communications and Informatics, Telkomsel controls the market share of 42 subscribers, followed by Indosat at 16.7%, XL Axiata 15.9%, Hutchison 3 Indonesia (Tri) with 5.4 %, and Axis Telekom Indonesia. 2.1%. Therefore, this study determines the criteria for top three telecommunication companies to be investigated.

Debt Service Coverage Ratio (DSCR) is for the most part utilized as an pointer that highlights the monetary circumstance among, companies, including financial distress. A consider using the DSCR esteem marker. There are a few companies encountering money related trouble such as PT Tiga Pilar Sejahtera Food Tbk (AISA), Wilmar Cahaya Indonesia Tbk (CEKA), Indofood Sukses Makmur Tbk (INDF), etc. with a DSCR esteem underneath 1.20. In the interim, companies that did

not involvement money related trouble, such as PT Mayora Indah Tbk (MYOR) and Ultrajaya Drain Industry and Exchanging Company Tbk (ULTJ) appeared a DSCR esteem over 1.20.

Financial distress was based on three things: company capacity, total debt, and standard deviation of resources. In any case, it focuses on the outside variables of macroeconomic conditions. Furthermore, Alifiah (2013) has added findings on the Prediciton of Financial Distress Companies within the exchanging and administrations division in Malaysia using macroeconomics factors. The autonomous factors used to predict financial distress within the exchanging and benefit segment companies are DER (Debt to Equity Ratio), Total Asset Turnover Ratio, Working Capital Ratio and Base Lending Rate. It is diverse from the past studies using the Capital Ratio (CR) proportion as a parameterthat influences the Debt Service Coverage (DSC) ratio. In a consider, analysing earning and cash flow in predicting financial distress in manufacturing companiesrecorded on the Indonesia Stock Exchange. In this way, restruction of subsidizing within the company after encountering financial distress necessary.

In Masdiantini & Warasniasih's (2020) research, several models in predicting bankruptcy are discussed. Zmijewski's (1984) model has a higher prediction accuracy than other bankruptcy prediction models. The results of other studies suggest that the Springate model is also appropriate for predicting financial difficulties. Meanwhile, the research results of Pangkey et al. (2018) and Prabowo & Wibowo (2015) found that the Altman method is the most accurate method in predicting potential bankruptcy of a company (Masdiantini & Warasniasih, 2020). Another study using Altman model and two other models, Zmijewski and Springate, was conducted by Rahayu (2016) in the telecommunications sub-sector. The results of this study indicate that two of the three methods accurately indicate financial distress in several telecommunication companies.

The complexity of the existing models encourages the author to conduct research that measures the potential financial distress of three companies in telecommunication sub-sectors using the Altman model.

1.2. Research Questions

1. Did the Telecommunication Companies Listed On Indonesia Stock Exchange (IDX) experience Financial Distress using Altman Z- Score Method during 2009– 2019?
2. Does Working Capital have a significant effect on Financial Distress?
3. Do Retained Earnings have a significant effect on Financial Distress?
4. Do Earnings Before Interest and Taxes have a significant effect on Financial Distress?
5. Does Market Value of Equity have a significant effect on Financial Distress?

1.3. Research Objectives

1. To describe the forecast of financial distress in the Telecommunication Companies Listed On Indonesia Stock Exchange (IDX) using Altman Z- Score Method during 2009 – 2019.
2. To analyse the effect of Working Capital on Telecommunication companies listed on IDX.
3. To analyse the effect of Retained Earning on Telecommunication companies listed on IDX.
4. To analyse the effect of Earning Before Interest and Taxes on Telecommunication companies listed on IDX.
5. To analyse the effect of Market Value of Equity on Telecommunication companies listed on IDX.

1.4. Significance of The Research

1. Theoretical Significance

   To contribute to references on the improvement of economic science regarding the analysis of the potential financial distress using the Altman model. In addition, the research could be used as a basis for further study, specifically the topic associated with finance.

2. Practical Significance

   To contribute to the development of science through the analysis of t the potential financial distress by companies listed on IDX. The result of this study could become an input for state-owned companies in formulating policies regarding capital structure and financial performance of the companies which, in this case, refers to financial distress.

1.5. Research Structure

The structure of this research is divided into five chapters. The Introduction section encompasses the title of the research, approval sheet, validation page, statement of authenticity, preface, abstract, table of contents, list of images and graphics, list of tables, and list of attachments.

Chapter I : Introduction, contains the background, research questions, the objectives, research significance, and research structure.

Chapter II : Literature Review, contains the theoretical bases, previous researches, and hypotheses.

Chapter III : Research methodology, describes the research variables and operational definitions of variables, populations and samples, types and sources of data, data collection methods, and data analysis.

Chapter IV : Results and Analysis, describes the research objects, data analysis, and interpretation of results.

Chapter V : Closing, contains the conclusion of the results, limitations, and suggestion of research.

CHAPTER II
LITERATURE REVIEW

2.1. Financial Management

Financial management can be defined by the duties and responsibilities of a financial manager. Although the duties and responsibilities differ in each company, the main tasks of financial management include: investment decisions, financing of business activities and dividend distribution of a company (Weston and Copeland, 1992: 2). The development of financial management is strongly affected by various factors, including monetary policy, tax policy, economic conditions, social conditions and political conditions. Monetary policy is related to interest rates and inflation.

Financial management deals with three main activities (functions):

1. Allocation of funds (fund usage activity), namely activities to invest funds in various assets. Fund allocation is in the form of: Financial assets, namely a piece of valuable paper that has market value because of the rights to earn income, for example: stocks, deposit certificates, or bonds, real assets, namely real assets: land, buildings, equipment.
2. Raising of funds (fund raising activity), namely activities to obtain funds from both internal sources and external sources, including dividend politics.
3. Asset management (asset management activity), after the funds are obtained and allocated in the form of assets, they must be managed as efficiently as possible. (Mulyanti, 2017).

According to Sundjaja and Barlian (2003) financial management is "a type of management that is associated with duties as a financial manager in a business company. Financial managers actively manage the financial

affairs of various types of businesses, which are associated with financial or non-financial, private or public, large or small, profit or non-profit. Managers carry out various activities, such as budgeting, financial planning, cash management, credit administration, investment analysis and raising funds ". Meanwhile, the definition of financial management according to Horne and Wochowiez (2012) is that "Financial management includes all activities related to the acquisition, funding and management of assets withseveral objectives. Therefore, the decision-making function of the finance manager can be divided into three main areas, namely decisions with investment, funding and assets "(Mamarimbing et al., 2016).

Financial management includes all company activities related to obtaining funds, use of funds, and management of assets according to the overall goals of the company (Riyanto, 1998). Financial management includes all company activities related to obtaining funds, use of funds, and management of assets according to the overall objectives of the company (Sartono, 2000). In other words, financial management is the management of how to acquire assets, fund assets and manage assets to achieve company goals.

From this definition there are 3 (three) main functions in financial management, namely:

1. Investment Decision

   Investment is defined as a capital implant of a company. Investments can be made in real assets or financial assets. Real assets are assets that are physical in nature or can be seen physically, for example merchandise inventory, buildings, and land. Where as, financial assets are assets in the form of securities such as stocks and dispositions. The assets owned by the company will be used in its operations to achieve company goals. The company's ability to manage these assets determines the company's ability to earn the desired profit. The wrong decision making in investing in these assets will result in disruption of the company's objectives.

Investment decisions are decisions on what assets will be managed by the company. This investment decision is the most important decision among the three decision areas in financial management. This is because this investment decision has a direct effect on the amount of investment profitability and the future of the company's cash flow.

Company Investment decisions can be made within several steps, which are:

1) The financial manager determines how many total assets are required for the company.
2) From the required assets, the composition of these assets are determined, namely the amount of current assets and the amount of fixed assets.
3) To achieve optimal asset utilization, assets that are no longer economical need to be reduced, eliminated or replaced with new assets.

2. Financing Decision

If the investment decision relates to balance sheet elements that are on the asset side, the funding decision will study the sources of funds that are on the liabilities side. Funding decisions involve several matters, including:

1) Decisions regarding the determination of fund sources needed to finance investments. Funds sources that will be used to finance these investments can be short-term debt, long-term debt and equity.
2) Determination of the best spending balance or more often called the optimum capital structure. Theoptimum capital structure is a balance of long-term debt and equity with the minimum average cost of the capital. Therefore, it is necessary to determine whether the company uses external capital sources that come from debt by issuing bonds, or using its own capital by

issuing new shares inorder to minimize the burden of capital costs borne by the company. Mistakes in making this funding decision will result in not having minimal costs.

3. Asset Management Decision

In this asset management decision, all the managers who are responsible for various operation levels of the existing assets will need to work together well in order for the obtained assets with the right funding can be managed efficiently. Because as the saying goes "it is easier to build than to maintain".

Conservative managers will allocate funds according to the span of the funded assets (Nurhayati, 2017).

Financial management refers to the systems of efficient and effective management of resources in such a manner as to accomplish the objectives of the organization (Chung & Chuang, 2010). Walker and Petty as cited by Kieu (2004) defined the main areas of financial management including financial planning (cash planning, fixed asset planning, profit planning), investment decision- making, working capital management (cash, receivable and inventory management) and sources of financing (short-term and long-term financing, intermediate financing and going public) (Kader & Khan, 2019).

Financial management is the process of planning and using management skills to control all of the financial activities in an organization. Several tasks should be performed by the financial management in which some of them are: checking the capital requirements, determining the capital structure, and finally deciding on the source of funds (Juneja, 2015) (Elsaied, n.d.).

2.2. Financial Reports

Kasmir (2013) states that financial reports are reports that show the company's current financial condition or there are condition in a certain period.

Usually financial reports are made per period, for example after three months, or six months for internal company purposes. Meanwhile, a broader report is conducted once a year. Through financial reports, it is possible to know the current position of the company after they are analyzed. In practice there are several types of financial reports, such as: (1) balance sheets; (2) income statement; (3) reports on capital changes; (4) cash flow statement; and (5) notes to financial reports. Financial reports can also be interpreted as information that describes the condition of a company's financial state and further information can be used as a description of the company's financial performance (Fahmi, 2012).

Financial report analysis is a method or analysis technique used for financial reports and functions to convert data originating from financial reports as a raw material into information that is more useful, deeper, and sharper with certain techniques. The main objective of financial analysis is to analyze future performance (Sanjaya, 2018). In addition, analysis of financial reports basically wants to know the level of profitability and the risk or health level of a company. The risk level of a company can be seen from the possibility of the company in experiencing financial difficulties or going through bankruptcy (Hanafi & Halim, 2016) (Masdiantini & Warasniasih, 2020).

Statement of Financial Accounting Standards (PSAK) No. 1 concerning the Presentation of Financial Reports (revised 2009) it states that financial reports are structured presentation of the financial position and financial performance of an entity. Financial reports consist of balance sheets, income statements, reports of changes in capital and cash flow reports. However, in accordance with the statementof financial accounting standards No. 1 (revised 2009) concerning the presentation of financial reports consisting of several components, namely:

(a) report of financial position at the end of the period; (b) comprehensive income statement through out the period; (c) a statement of changes in equity during the period; (d) cash flow statement during the period; (e) notes on financial reports. PSAK No. 1 concerning Presentation of Financial Report (revised 2009) states that the purpose of financial statements is to

provide information regarding the entity's financial position, financial performance, and cash flow that is useful for most users of the report in economic decision making. (Maith, 2013).

Halim (2008: 59) explains that financial reports are the final result of the accounting process that provides useful information for decision making by various parties. Hery (2012: 3) explains that financial statements are basically the result of an accounting process that can be used as a tool to communicate financial data or company activities to other interested parties (Tanor et al., 2015).

According to Kieso (2002: 3) financial reports are: "Financial reports are the main means of communicating financial information to parties outside of corporations. These reports display the history of a company quantified in monetary value. Financial report are often presented in balance sheets, income statements, cash flow statements, and owner or shareholder equity reports. In addition, notes on financial reports or disclosures are also an integral part of every financial report.

According to Munawir (2002: 2) financial reports are defined as: "The results of the accounting process that can be used as a tool to communicate between financial data or activities of a company and parties with an interest in such data or activities."

According to Belkoui (2000: 126) who explains that APB Statement No.4 classifies the objectives of financial reports by dividing them into several objectives, namely: (1) Specific objectives of financial reports. To fairly present according to generally accepted accounting principles, financial position, results of operations, and other changes in financial position; (2) General purpose of financial reports. To provide reliable information about the economic resources and liabilities of a business venture, changes in net resources, estimate the company's potential income (earnings), other information that is relevant to the needs of users. According to Suwardjono (2005: 154), the purpose of financial reports according to the FASB is: "to provide information that is useful in making business and economic decisions" (Jaya, 2014).

According to Sutrisno (2013: 8) "The financial report is the final result of the accounting process which includes two main reports, namely the balance sheet and the income statement." The purpose of financial report is to provide financial information for a company, either at a certain time or at a certain period, which is arranged suddenly or periodically, and is able to provide financial information to parties inside and outside the company that are interested in the company. (Kasmir, 2014: 10). In general, there are five types of financial reports, namely: balance sheet, income statement, capital change report, cash flow statement, note on financial report (Kasmir, 2014: 28) (Rahmah & Komariah, 2016):

1. The balance sheet is a report shows that the company's financial position on a certain date (Rahmah & Komariah, 2016). The balance sheet consists of three parts (Pongoh, 2013):
    1) Asset

        Kasmir (2008: 39) states that assets are possession or wealth owned by a company, either at a certain time or for a certain period.

        Asset components in general are as follows:

        a) Current assets
        b) Investment
        c) Fixed assets
        d) Intangible assets
        e) Other assets

    2) Liabilities

        Liabilities are economic sacrifices made by the company for the future taking in the form of delivery of assets or provision of services caused by actions or transactions in the previous period. In general the components of the liabilities are as follows:

        a) Current liabilities.
        b) Long-term liabilities / debt
        c) Other liabilities.

d) Subordinated loan.

3) Equity

The final component of the balance sheet is equity, which is the difference between assets and liabilities (debt). This capital is an investment made by the company owner. Capital components are:

a) Capital Stock
b) Share Premium/ Surplus
c) Retained Earning
d) Profit for the Year
e) Difference in Revaluation of Fixed Assets.

2. Income Statement

The income statement is a financial report that describes the company's operating results in a certain period (Rahmah & Komariah, 2016). The income statement is a report that provides information about the financial composition of sales, cost of goods, and company costs during a certain period. Through the income statement, the amount of profit gained or the loss experienced by the company during this particular period can be seen (Pongoh, 2013).

The form of income statement commonly used according to Kasmir (2008: 49) is as follows :

1) The single step form, which is a combination of the total amount of all the incomes, both principal (operational) and non-principal (non-operational), then the amount of principal and non-principal costs are also combined.
2) The form of multiple steps, which is the separation between main (operational) business components and non-principal (non-operational) business components.

3. Statement of Changes in Equity.

   The company must present a statement of equity as the main component of the financial report, showing: (a) the net profit or loss for the period in context; (b) Each item of income and expense, gain and loss, and the amount that is recognized under the relevant Financial Accounting Standards that is recognized directly in equity; (c) The cumulative effect of changes in the accounting policies and corrections to fundamental errors as specified in the relevant Statement of Financial Accounting Standards; (d) Capital transactions with owners and distributions to owners; (e) The balance of accumulated profit and loss at the beginning and at the end of the period and the changes there of; (f) Reconciliation between the carrying values of each type and model of shares, premiums and reserves at the beginning and end of the period, which discloses any changes seperately (Jaya, 2014).

4. The Cash Flow Report is a report that shows all aspects related to company activities, both those that have a direct or indirect effect on cash (Rahmah & Komariah, 2016). The cash flow statement must report cash flows during a certain period and is classified according to operating, investing and financing activities.

   1) Operating Activities.

      Total cash flows arising from operating activities representindicators that determine whether the company's operations can generate sufficient cash flow to pay off loans, maintain the company's operating capability, pay dividends, and make new investments without relying on external sources of funding. Information about the specific elements of historical cash flows, together with other information, is useful in predicting future operating cash flows.

Companies must report cash flows from operating activities using one of these methods: (1) Direct method, this method is the main group of gross cash receipts and gross cash disbursements that are disclosed; or (2) the indirect method, this method adjusted net profit or loss. by correcting the effect of non-cash transactions, deferrals or accruals from cash receipts or payments for past and future operations, and elements of income or expenses relating to investing or financing cash flows.

2) Investment Activities.

Separate disclosure of cash flows arising from investing activities is necessary, because they reflect cash receipts and disbursements relating to resources aimed at generating future income and cash flows.

3) Funding Activities.

Separate disclosure of cash flows arising from financing activities is necessary, as it is useful to predicting claims against future cash flows by suppliers of company capital. Companies must seperately report the main groups of gross cash receipts and gross cash disbursements that are arising from investing and financing activities.

The following cash flows arising from operating, investing and financing activities can be presented on a net cash flow basis: (1) Cash receipts and disbursements for the benefit of customers if the cash flows reflect customer activities rather than company activities; (2) Cash receipts and disbursements for items with fast turnaround, large volume of transactions, and with short tenure (Jaya, 2014).

5. The note report of the financial report provides information if there is a financial report that requires certain explanations (Rahmah & Komariah, 2016). Notes on financial reports must be presented in a systematic manner. Every item in the balance sheet in reporting income and cash flow statements must be related to the information registered in the notes of the financial statements. The notes to the financial statements disclose: (a) Information on the preparation basis of financial reports and the accounting policies chosen and assigned to the events of important transactions; (b) Information that is required in the Statement of Financial Accounting Standards, but is not presented in the balance sheet, income statement, cash flow statement, and statement of equity changes; (c) Additional information that is not presented in the financial statements, but is required in order to present it fairly (Jaya, 2014).

   Financial reports are reports that contain information about the financial condition of an entity and are also a mean of communicating the entity's financial activities (Fees et al., 2005) (Made Gede Wirakusuma, 2013)

   Harahap (2007: 19) states that financial reports in a company are actually the output of the accounting process or cycle in a business accounting unit, where the accounting process includes activities (Pongoh, 2013):

   1) Collect evidence of transactions
   2) Record transactions in a journal
   3) Posting in the ledger and making working papers
   4) Prepare financial reports

2.3. Financial Performance

According to Irhan Fahmi (2011: 2) financial performance is an analysis carried out to see the extent to which a company has

implemented proper and correct financial implementation rules. The importance of assessing the company's financial performance according to Munawir (2006: 31) is as follows: 1) To determine the level of liquidity, namely the company's ability to obtain its financial obligations that must be fulfilled immediately or the company's ability to meet its finances at the time of collection. 2) To determine the level of solvency, which is the company's ability to meet its financial obligations if the company is liquidated both short-term and long-term financial liabilities. 3) To determine the level of rentability or profitability, that is to show the company's ability to generate profits during a certain period. 4) To determine the level of business stability, namely the company's ability to conduct its business in a stable manner, which is measured by considering the company's ability to pay interest expense on its debts including repaying the principal debt on time and the ability to pay dividends regularly to shareholders without experiencing obstacles or financial crises (Faisal et al., 2018).

Financial Performance Appraisal can be assessed by calculating financial ratios. The value of these financial ratios will later be compared with existing benchmarks, comparing the value of financial ratios obtained from year to year is a step to determine whether the condition of the calculation result is good or bad (Parathon, 2012: 3) (Tanor et al., 2015).

According to Fahmi (2012 : 3) generally, there are five steps in analysing a company’s fanancial performance, which are (Pongoh, 2013):

1) Reviewing financial report data.

   The review here is carried out with the aim that the financial statements that have been made are in accordance with the application of generally accepted principles in the world of accounting, so that the results of these financial statements can be accounted for.

2) Performing calculations.

The application of the calculation method here is adjusted to the conditions and problems that are being carried out so that the results of these calculations will provide a conclusion in accordance with the desired analysis.

3) Make comparisons against the calculated results that have been obtained.

   The results of the calculation that has been obtained will then be compare with the calculation results of various other companies.

4) Interpretating the various problems found.

   At this stage, the analysis looks at the company's financial performance, after the three stages are carried out, an interpretation is done to see what problems and constraints are experienced by the company.

5) Seek and provide solutions to problems found.

   In this last stage, after finding the various problems faced, a solution is found to provide input or feedback so that any constraints and obstacles so far can be resolved.

2.4. Analysis Of Financial Statement

According to Leopold A. Bernstein quoted by Dwi Prastowo (2006: 40) regarding the definition of financial statement analysis: "Financial report analysis is a process full of considerations that can help evaluate the company's current and past financial position and results of operations, with the main objective of determining estimates and predictions and the most likely to happen in future condition and the company’s performance.

Walsh Ciaran (2006: 29) states that "financial statement analysis is everything that involves the use of accounting information to make business and investment decisions" (Faisal et al., 2018).The purpose of financial report analysis itself is essentially to assist users in predicting

the future of the company by comparing, evaluating, and analyzing trends from various financial aspects of the company (Wahyudiono, 2014: 11). Financial report analysis is carried out to achieve several objectives. For example, it can be used as an initial screening tool in choosing investment alternatives or mergers, as a forecasting tool regarding future financial conditions and performance as a diagnosis process for management problems, operations or other problems, or as a management evaluation tool (Darminto, 2011: 57) (Tanor et al., 2015).

According to Sulfida (2010), financial report analysis includes the calculation and interpretation of financial ratios. Financial ratios can be calculated from the content of financial information in financial reports so that it shows the strength of the company. According to Wild (2005: 36), ratio analysis can reveal important relationships and serve as a basis for comparison in finding conditions and trends that are difficult to detect by studying each component that makes up the ratio. The use of financial ratios for these three main groups according to Brigham and Houston (2006: 119) is to help analyze, control, and then improve company operations.

According to Harahap (2006: 297), financial ratios are the numbers obtained from the comparison of one financial statement post with another that has a relevant and significant relationship. According to Kasmir (2009: 104), financial ratios are an index that connects two accounting numbers and is obtained by dividing one number by another in one or several periods. Financial ratios are designed to assist evaluation of a financial report (Brigham and Hoston, 2006). (Mahaputra, 2012). "Financial report analysis means breaking down financial report items into smaller units of information and looking at their significant relationships." (Harahap, 2011: 190). Purpose and Benefits of Financial Report Analysis:

1) To determine the company's financial position in one period, whether they are assets, liabilities, capital, and

business results that have been achieved for several periods.

2) To find out what weaknesses the company has.
3) To find out the strengths that are owned.
4) To find out what improvements that need to be done in the future in relations to the company's current financial position.
5) To assess future management performance whether it needs a refresher or not if it is considered successful or not.
6) Can also be used as a comparison with similar companies about the results they achieve. (Kasmir, 2014: 104)

2.4.1 Financial Statement Analysis Methods

1) Financial Ratio Analysis is an activity to compare numbers in the financial report by dividing one number by another. (Kasmir, 2014: 104)
2) Du Pont analysis is an analysis that sharpens ratio analysis by separating profitability from asset utilization. (Sartono, 2011: 124)
3) Cross Sectional Analysis is an analysis technique done by comparing the calculation in the form of a ratio between a company and another company within a similar scope. (Fahmi, 2014: 138)
4) Time Series Analysis is to compare between times or between periods, with the aim that it will be seen in numbers and graphs. (Fahmi, 2014: 140) (Rahmah & Komariah, 2016).

2.5. Financial Ratios

According to Sofyan Syafri Harahap (2002: 297) financial ratio is as follows: "Financial ratios are numbers obtained from the results of a

match from one financial statement post to another and share a relevant and significant relationship. According to John J. Wild (2005: 36) ratio analysis is as follows: "Ratio analysis is one of the most popular and widely used financial analysis tools. A ratio expresses the mathematical relationship between two quantities." From some of the meanings above, it can be concluded that financial ratios are numbers resulting from comparisons of certain items with other items in the financial reports and also a mathematical relationship between one quantity to another (Jaya, 2014).

Financial ratios have advantages over other analysis techniques, namely as follows:

1) Ratios are figures or summary statistics that are easier to read and interpret.
2) Ratios are a simpler substitute for the very detailed and complicated information presented in financial reports.
3) Ratio analysts knows the financial position of other industries.
4) Very useful for materials in filling decision-making models and prediction models (Z-score).
5) It is easier to compare companies with other companies or to see the company's development periodically.
6) It's easier to see company's trends and make predictions for the future. (Harahap, 2013: 298).

The weaknesses of financial ratios are as follows:

1) Financial data is compiled from accounting data. Then the data is interpreted in various ways, for example:
    a) Different preparation methods are used to determine the depreciation value of the assets so that the depreciation value for each period is different.
    b) Evaluation of different inventory

2) Different reporting procedures, resulting in different reported earnings, (may increase or decrease), depending on the financial reporting procedures.
3) The existence of data manipulation, which means that in compiling the data, the compilers are not honest in entering the numbers into the financial reports they make. Therefore, the calculations of the financial ratios does not show the real results.
4) The treatment of expenses is different from one company to another. For example, research and development costs, retirement planning costs, mergers, quality assurance on finished goods and bad credit reserves.
5) Using a different fiscal year can also make a difference.
6) Seasonal influence results in the concretive ratio being influenced. The similarity of financial ratios that have been made with industry standards has not guaranteed that the company will run normally and have been well managed (Rahmah & Komariah, 2016).

Kasmir (2012: 104) states that financial ratios are an activity of comparing numbers in financial statements by dividing one number by another. Raharjapura (2011: 196) states that ratio analysis is comparing one number to another which gives a certain meaning (Pongoh, 2013). According to Brigham and Daves (2003), signs of potential financial distress are usually evident in ratio analysis long before the company actually fails.

This is reinforced by Whitaker (1999: 2), who states that financial distress is not only a problem when the company defaults but also starts when there is an increase in the possibility or probability that the company experiences default. According to Etty in Rayenda (2007), financial ratios are useful in predicting business financial difficulties for a period of one to five years before the business actually goes bankrupt (Andre, 2014).

Financial ratios, are "the numbers obtained from the results of the comparisons between one financial report item with another item and

shares a relevant and significant relationship." (Harahap, 2011: 297) (Rahmah & Komariah, 2016).

The following are things that should be considered when conducting financial ratio analysis:

1) Analysis and calculations must be carried out carefully and accurately.
2) If differences are found in the application of the accounting method, the basis of recording, reporting procedures, or differences in terms of accounting treatment, it is better if reconciliation is made or equated first so that the data used in the analysis has high comparability.
3) Conclusion on the results of the ratio analysis should be done carefully. For example, a high inventory turnover (as an activity ratio) could mean efficiency, or it could also mean the opposite, that there has been a shortage of inventory as a result of being out of stock in the warehouse.
4) Analysts must have and master the information about the operations and management of the company.
5) Don't be overly affected by normal financial ratios.
6) Analysts must be able to see things that are contained or hidden in financial statements based on sharp instincts and previous analytical experience.

Based on the a analysis data source, financial ratio analysis can be classified as follows:

1) Balance sheet ratio analysis, which is to compare financial figures that only come from the balance sheet.
2) Analysis of the income statement ratio, which is to compare numbers that only come from the income statement.
3) Inter-report ratio analysis, which is to compare the figures from two reports, in here’s case the balance sheet and the income statement.

Broadly speaking, currently in practice there are at least 5 types of financial ratios that are often used to assess the company's financial condition and performance. The five types of financial ratios are:

1. **Liquidity Ratio**

The liquidity ratio is the ratio used to measure the company's short-term liquidity ability by looking at the company's current assets relative to its current debt. (Hanafi and Halim, 2014: 75) (Rahmah & Komariah, 2016). According to Kasmir (2008: 110), the liquidity ratio is a ratio that describes the company's ability to meet short-term obligations. According to Wild (2010: 45), company liquidity shows the company's ability to finance the company's operations and pay off the company's short-term obligations (Andre, 2014).

According to Sartono (2006: 116) the ratios used in measuring the company's ability to complete short-term obligations are (Faisal et al., 2018):

1) Current Ratio

Is the comparison between current assets and current liabilities. A low ratio indicates that the company may not be able to pay its debts on time in the future. Mainly because of changing circumstances and high factors that may indicate a failure of the business in using available funding sources efficiently.

Used to present a company's ability to pay short-term financial obligations. The higher the current ratio, the greater the company's ability to meet short-term financial obligations. Current assets include cash, receivables, securities and inventories (Faisal et al., 2018).

According to Syamsuddin (2011: 43-44) Current Ratio is one of the most frequently used financial ratios. Current ratio is a ratio to measure the company's ability to pay short-term liabilities or current debts that are due immediately when collected as a whole (Kasmir 2012: 134. The formula for the Current ratio (Source: Syamsuddin, 2011: 43) (Rohmadini et al., 2018).

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

Current assets are cash and other assets that are expected to be converted into cash, sold or consumed within one year or in one normal operating cycle of the company, whichever is the longest. Cash (cash on hand and cash in bank) is the most liquid asset (smooth), followed by short-term investments (securities), trade accounts receivable, notes receivable, other accounts receivable, supplies, equipment, prepaid expenses. and other smooth assets.

Current liabilities are liabilities that are expected to be paid using current assets or creating other current liabilities and must be immediately paid within one period or within one normal operating cycle of the company, whichever is the longest. Current liabilities generally cover a variety of items, namely trade payables, short-term notes payable, expenses to be paid, unearned income, and the current portion of long-term debt. Included in the category of accrued expenses are wage debts, interest payable and tax debt (Hery, 2016).

2) Quick Ratio (Acid Test Ratio)

The acid test ratio is calculated by subtracting inventory from current assets and dividing the remainder with current liabilities as collateral for current debts that are due. This ratio is often referred to as the quick ratio, which is the ratio between current assets (inventories) and current debt. This ratio is a measure of the company's ability to fulfill its obligations without taking into account inventory because inventory takes a relatively long time to be turned into cash and assumes that receivables can be immediately turned into cash, even though in reality, inventories may be more liquid than receivables (Faisal et al., 2018).

Quick Ratio (Quick Ratio), a ratio that shows the company's ability to meet or repay short-term debt with current assets without taking into account the value of inventories (Kasmir, 2014: 136) (Rahmah & Komariah, 2016).

$$QR = \frac{Current\ Asset - Inventory}{Current\ Liabilities}\ x\ 100\%$$

3) Cash Ratio

Cash Ratio is a ratio that compares cash and current assets that can immediately become cash with current liabilities (Sutrisno, 2013: 223). (Rahmah & Komariah, 2016). The cash ratio is the ratio used to measure how much cash or cash equivalents are available to pay off short-term debt. This ratio illustrates the company's actual ability to pay off its current liabilities that will be due soon using existing cash or cash equivalents. Cash includes coins, banknotes, checks, wesel pos (money transfers via money orders), and deposits. Postage stamps are not cash, but rather prepaid expense or deferred expense. Some companies use the term “cash and cash equivalents” in reporting their cash. Cash consists of cash kept in the bank (cash in bank) and cash available in the company (cash on hand). Meanwhile, cash equivalents are short-term investments that are very liquid, which can be converted or disbursed into cash in a very immediate period, usually less than three months (90 days) (Hery, 2016).

$$\boldsymbol{Cash\ Ratio = \frac{Cash\ and\ cash\ equivalents}{current\ liabilities}}$$

2. Solvency Ratio or Leverage Ratio

According to Kasmir (2008: 113), the leverage ratio is a ratio used to measure the extent to which the company's assets are financed by debt.

According to Weston in Rita (2010), creditors prefer a moderate debt ratio because the lower this ratio, there will be a kind of shield so that the losses suffered by creditors will be smaller if there is liquidation. According to Toto (2008: 91), the greater the amount of debt,the greater the potential for the company to experience financial difficulties and bankruptcy. According to Lenox et al. in Pasaribu (2008), bankruptcy usually begins with a moment of default, this is because the greater the amount of debt, the higher the probability of financial distress(Andre, 2014).

According to Hendra (2009: 201), this ratio can be measured by the following formula (Andre, 2014):

$$\boldsymbol{Debt\ Ratio} = \frac{\boldsymbol{Total\ Debt}}{\boldsymbol{Total\ Assets}}$$

The leverage ratio is a ratio used to measure how much debt is used in spending (Sudana, 2009: 23) (Rohmadini et al., 2018). According to Irham Fahmi (2012: 72) to analyze the long-term financial position and the results of its operations, a ratio or comparison analysis is used, with this ratio analysis it is expected to get answers to several problems, as follows:

1) Debt to Total Asset Rasio

   The ratio that shows the ratio between the liabilities held and all assets. The use of debt for companies contains three dimensions, namely:

   a) Creditors will focus on the amount of collateral for the credit provided.
   b) By using debt, if the company gets a greater Profit than its fixed expenses, the owner of the company will Profitably increase.
   c) By using debt, the owner gets funds and does not lose control of the company (Faisal et al., 2018).

This ratio can be calculated using the formula (Source: Syamsuddin, 2011: 54) (Rohmadini et al., 2018) :

$$\boldsymbol{Debt\ Ratio} = \frac{\boldsymbol{Total\ Liabilities}}{\boldsymbol{Total\ Assets}}$$

This ratio is calculated by dividing total debt (total liabilities) by total assets (total assets). This ratio is used to measure the percentage of the amount of funds originating from current and long-term debt. The higher this ratio, the greater the risk faced by creditors and shareholders. Then investors will ask for higher Profits (Faisal et al., 2018).

2) Debt to Equity Ratio

The debt to equity ratio will show how big the level of use of own capital to assets. A high ratio will indicate a low proportion of own capital to assets. Thus, it can be concluded that solvency is the ability of a company to pay all its debts, both short and long term (Faisal et al.,2018).

The following is the formula used to calculate the debt to equity ratio:

$$\boldsymbol{Debt\ to\ equity\ ratio} = \frac{\boldsymbol{total\ debt}}{\boldsymbol{total\ equity}}$$

3) Long Term Debt to Equity Ratio is the ratio between long-term debt and equity, The ratio of long-term debt to equity is the ratio used to measure the proportion of long-term debt to equity. This ratio is useful to determine the ratio between the amount of funds provided by long-term creditors and the amount of funds that come from the company owners. In other words, the ratio of long-term debt to equity is the ratio used to measure how much of each

rupiah of equity is used as collateral for long-term debt. This ratio is calculated as the quotient between long debt and equity.

The following is the formula used to calculate the ratio of long-term debt to equity (Hery, 2016):

$$\textbf{Long Term Debt to Equity Ratio} = \frac{\textbf{Long term debt}}{\textbf{total equity}}$$

4) Times Interest Earned is a ratio to find the number of times the interest is earned. The generated ratio of multiples of interest shows the extent or how many times the company's ability to pay interest. The company's ability here is measured by the amount of Profit before interest and tax. The generated ratio of the multiplication of interest is calculated as a dividend between Profit before interest and tax with the amount of interest expense to be paid. Thus, the company's ability to pay loan interest is not affected by taxes. The following is the formula used to calculate the multiple ratios of interest generated (Hery, 2016):

$$\textbf{The generated ratio of the multiplication of interest} = \frac{\textbf{profit before interest and tax}}{\textbf{interest expense}}$$

5) Operating Profit to Liabilities Rasio

Operating Profit liabilities Ratio is a ratio that shows (to what extent or how many times) the company’s ability to pay off all liabilities. The company’s ability here is measured by the amount of operating Profit. The ratio of operating Profit to liabilities is calculated as the quotient between operating Profit and total liabilities. The ratio of operating Profit to liabilities is often known as the covarage ratio. This ratio is used to measure the extent to which operating Profit may decrease without reducing the

company's ability to pay off obligations. The following is the formula used to calculate the ratio of operating Profit to liabilities (Hery, 2016):

$$\textbf{\textit{Operating Income to liabilities Ratio}} = \frac{\textbf{\textit{Operating income}}}{\textbf{\textit{liabilities}}}$$

3. Profitability Ratios

Profitability ratio, a ratio that measures a company's ability to generate profitability at a certain level of sales, assets and share equity (Hanafi dan Halim, 2014:79) (Rahmah & Komariah, 2016). According to Mamduh (2007:83), the profitability ratio is a ratio that measures the company's ability to generate net Profit at a certain level of sale, assets, and share equity. This ratio is reflected in the Return On Assets (ROA). According to Lukman (2004:59), profitability is very important for the company, because to be able to maintain its survival, a company must be in a favorable condition. According to Atmini in Wahyu (2009), profitability is the level of success or failure of a company for a certain period of time. According to Wahyu (2009), profitability shows the efficiency and effectiveness of the use of company asstes because this ratio measure the company's ability to generate profits based on the use of assets (Andre, 2014).

According to Irham Fahmi (2012: 80) to measure the level of profitability, several ratios can be used, including:

1) Gross Profit Margin (GPM)

This ratio provides an overview of the company's efficiency in the company's main activities. This ratio is useful for knowing the company's gross profit from each item sold (Faisal et al., 2018).

Gross profit margin is the ratio used to measure the percentage of gross profit on net sales. This ratio is calculated by dividing gross profit against net sales. Gross profit itself is calculated as the result of subtracting net sales from cost of goods sold. The

following is the formula used to calculate gross profit margin (Hery, 2016):

$$\textbf{Gross profit margin} = \frac{\textbf{gross profit}}{\textbf{net sales}}$$

2) Net Profit Margin (NPM)

Net Profit Margin measures the rupiah profit generated by every one dollar of sales. This ratio illustrates the amount of net profit earned by the company on every sale made. If the Gross Profit Margin Measures the production efficiency of pricing, this ratio also measures all efficiency in terms of production, administration, marketing, funding, pricing, and tax management (Faisal et al., 2018).

The following is the formula used to calculate net profit margin:

$$\textbf{Net Profit Margin} = \frac{\textbf{Net Profit}}{\textbf{Net sales}}$$

3) Operating Profit Margin

Operating profit margin is the ratio used to measure the percentage of operating profit on net sales. This ratio is calculated by dividing operating profit against net sales. Operating profit itself is calculated as the result of a reduction between gross profitand operating expenses. Operating expenses here consist of selling expenses as well as general and administrative expenses.The following is the formula used to calculate operating profit margin (Hery, 2016):

$$\textbf{Operating Profit Margin} = \frac{\textbf{Operating Profit}}{\textbf{Net Sales}}$$

4) Return On Asset (ROA)

Return On Asset Ratio measures the company's ability and uses its assets to generate profits. This ratio describes the company's ability to generate profits from every one rupiah of

assets used. A high Return On Asset ratio indicates the efficiency of asset management, which means management efficiency so that the lower this ratio means inefficient (Faisal et al., 2018).

According to Hery (2016: 193) Return on Assets (ROA) is a ratio that shows how much the contribution of assets in creating net income. Mathematically, ROA can be formulated as follows (Hery, 2016: 193). (Rohmadini et al., 2018)

$$Return\ On\ Assets = \frac{Net\ Profit}{Total\ Asset}$$

5) Returm On Equity (ROE)

Return On Equity ratio measures the company's ability to generate profits based on a certain share equity. Return On Equity is useful for knowing the amount of return given by the company for every rupiah of equity from the owner and showing management success in maximizing the rate of return on shareholders (Faisal et al., 2018).

According to Syamsuddin (2011: 64) Return on equity is a measurement of income available to company owners (both common stockholders and preferred stockholders) on the capital they invest in the company. Return on equity is calculated as follows (Rohmadini et al., 2018)

$$Return\ on\ equity = \frac{Net\ profit\ after\ taxes}{Stockholders\ equity}$$

4. Activity Rasio

A ratio that measures the effectiveness of the use of assets by looking at the level of asset activity. (Hanafi and Halim, 2014: 76) (Rahmah & Komariah, 2016).

1) Accounts Receivable Turnover, a ratio to measure how long it takes to collect accounts receivable during a period or how many

times the funds invested in these receivables rotate in one period (Kasmir, 2014: 176).

$$Accounts\ Receivable\ Turnover = \frac{Credit\ sales}{Accounts\ Receivable}$$

2) Inventory Turnover, a ratio to measure the number of times funds are invested in inventory (this inventory rotates in one period (Kasmir, 2014: 176). Inventory Turnover is a ratio used to measure the speed of inventory turnover to cash. The faster the inventory is sold, the faster the investment. companies change and inventory becomes cash (Ang, 1997). Companies with higher inventory turnover value means more efficient in terms of cost control, efficiency in controlling costs for the company will have an impact on increasing profitability. Inventory Turnover is mathematically formulated as follows (Malasari & Yandro, 2019).

$$Income\ Turnover = \frac{Cost\ of\ Goods\ Sold}{Inventory\ Average}$$

3) Fixed Assets Turn Over, this ratio is used to measure the number of times the funds invested in fixed assets rotate in one period (Kasmir, 2014: 157).

$$FATO = \frac{Sales}{Total\ Fixed\ Assets} \text{x100\%}$$

4) Total Assets Turn Over, a ratio to measure the turnover of all assets owned by the company by looking at the amount of sales obtained from each asset (Kasmir, 2014: 157). Total Assets Turn Over (TATO) is a ratio used to measure how efficiently all company assets are used to support sales activities (Ang, 1997). Total asset turnover shows how effectively the company uses all assets to create sales in relation to profit. Companies with high

sales levels are expected to get big profits as well. The bigger the TATO value shows the bigger the sales value and the hope of getting a profit is also getting bigger. Total assets turnover is mathematically formulated as follows (Malasari & Yandro, 2019)

$$TATO = \frac{Sales}{Total\ Assets}$$

5) The assessment ratio or market measuring ratio is the ratio used to estimate the company's anthrinsic value (stock value). This ratio consists of (Hery, 2016):
   a. Earning Per Share. A ratio to measure the success of company management in providing benefits to common shareholders. This ratio shows the relationship between the amount of net income and the shareholder ownership in the investee company. Potential investors will change their investment decisions among the various alternatives.
   b. Price Earnings Ratio. A ratio that shows the comparison between the market price per share and earnings per share. Through this ratio, the share price of an issuer is compared to the net profit generated by the issuer in a year. By knowing the amount of PER, potential investors can find out whether the price of a share is fair or not (in real terms) according to current conditions and not based on future forecasts.
   c. Dividend Yield is a ratio that shows the comparison between cash dividends per share and the market price per share. This ratio is used to measure the return on stock investment. Through this ratio, investors can measure the amount of dividends distributed against the investment value they have invested. For issuers, dividend yield can be used as a measure in determining dividend policy.

d. Dividend Payout Ratio is a ratio that shows the comparison between cash dividends per share and earnings per share. This ratio describes the amount of profit from each share allocated in the form of dividends. Similar to dividend yield, this ratio can also be used as a proxy (approach) in determining dividend policy, namely a decision by the issuer regarding the amount of cash dividends to be distributed to shareholders.

e. Price to Book Value Ratio is a ratio that shows the comparison between the market price per share and the book value per share. The ratio is used to measure the level of the stock price whether it is overvalued or undervalued. The lower the PBV value of a stock, the stock is categorized as undervalued, which is very good for long-term investment. However, a low PBV value can also indicate a decline in the quality and fundamental performance of the issuer. Therefore, the PBV value must also be compared with the PBV of other issuers in the same industry. If the difference is too far, it should be necessary to analyze it further.

5. Debt Service Coverage Ratio (DSCR)

Financial distress can be measured using the debt service coverage ratio (DSCR). This ratio illustrates how much the company is able to generate funds to meet its obligations. Stulpinienė (2012) uses the DSCR as an indicator in measuring financial distress of farm in Lithuania, Europe. Alinda et al. (2015) also use DSCR as a determinant of the financial distress condition of the Indonesian telecommunications industry (Nurfajrina, 2016).

The debt-service coverage ratio applies to corporate, government, and personal finance. In the context of corporate finance, the debt-service coverage ratio (DSCR) is a measurement of a firm's available cash flow to pay current debt obligations. The DSCR shows investors whether a company has enough income to

pay its debts. In the context of government finance, the DSCR is the amount of export earnings needed by a country to meet annual interest and principal payments on its external debt. In the context of personal finance, it is a ratio used by bank loan officers to determine income property loans (Understanding the Debt-Service Coverage Ratio (DSCR), 2021).

The formula for the debt-service coverage ratio requires net operating income and the total debt servicing for the entity. Net operating income is a company's revenue minus certain operating expenses (COE), not including taxes and interest payments. It is often considered the equivalent of earnings before interest and tax (EBIT) (Understanding the Debt-Service Coverage Ratio (DSCR), 2021).

$$DCSR = \frac{Net\ Operating\ Income}{Total\ Debt\ Service}$$

where:

Net Operating Income = Revenue − COE

COE = Certain operating expenses

Total Debt Service = Current debt obligations

2.6. Financial Distress

Financial distress can be analyzed using a formula or model known as a financial distress model. According to Subramanyam & Wild (2010) the financial distress model, which is generally called a bankruptcy prediction model, provides trends and behavior of certain ratios. The ratio characteristics can be used to identify possible financial difficulties in the future (Meiliawati & Isharijadi, 2016) (Masdiantini & Warasniasih, 2020).

Financial Distress or financial difficulties is when the company experiences difficulties and problems in making debt payments that are due (Siagian, 2010). Financial Distress is also a moment when a company is heading towards bankruptcy due to finance (Haryetti, 2010) (Helena & Saifi, 2018).

There are various ways to test that a company is experiencing financial distress (Platt and Platt, 2005) such as: (Helena & Saifi, 2018)

1) The existence of layoffs of workers or not making dividend payments (Lau, 1987; Hill et al., 1996)
2) Interest coverage ratio (Asquith, Gertner and Scharfstein, 1994)
3) Cash flow lower than current long-term debt (Whitaker, 1999)
4) Negative net operating income (Hofer, 1980; Whitaker, 1999)
5) There is a change in equity prices (John, Lang and Netter, 1992)
6) The company is suspended from operations under the authority of the government and the company is required to carry out restructuring planning (Tirapat and Nittayagasetwat, 1999)
7) The company experienced a technical violation in debt and it was predicted that the company would experience bankruptcy in the coming period (Wilkins, 1997)
8) Having negative Earning Per Share (EPS) (Eliomi and Gueyle, 2001)

Meanwhile, according to Rayenda (2007), financial distress occurs because the company is unable to manage and maintain the stability of the company's financial performance, which stems from a failure to promote the products it makes which causes a decrease in sales so that the decreased income from the lack of sales allows the company to experience operational losses and net losses for the current year. According to Luciana (2003), a company that is categorized as experiencing financial distress is if the company experiences negative operating profit for two consecutive years. According to Andrande (1998), financial distress is a situation where a company cannot fulfill its obligations to third parties. Another indication is when the company is no longer able to meet short-term obligations such as paying suppliers, employees and other obligations that are due in the short term.

According to Janch & Glueck in Rulick (2012), Broadly speaking, the factors that cause financial distress are divided into three, namely:

1. General Factors
    a. Economic Sector

       The Factors of financial distress in the economic sector are symptoms of inflation dan deflation in the prices of goods anda services, financial policies, and interest rates.
    b. Social Sector

       Social factors that are very influential in changing people's lifestyle that affect the products anda services produced by companies and other factors that also influence are the riots and chaos that occur in society.
    c. Technology Sector
    d. Government Sector

       The government's policy is not to remove subsidies for companies and industries, the imposition of export and import tariffs for goods that have changed, new laws for banking or labor and others.
2. External Factors of the Company
    a. Customer Sector

       Companies must be able to identify the nature of consumers, because it is useful to avoid losing customers, also to create opportunities to find new customers and avoid decreasing sales results and prevent consumers from turning to competitors.
    b. Supplier Sector

       Supplier companies must continue to cooperate well because of the power of suppliers to increase prices and reduce buyers' profits depending on how far the supplier is with free traders.
    c. Competitor Sector

       Companies also do not forget about competitors because if competitors are more accepted by society, the company will lose customers and reduce the income received.

3. Internal Company Factors

   These internal factors are usually the result of inaccurate decisions and policies in the past and the failure of management to take action when the need arises. (Andre, 2014)

Damodaran (1997) states scientifically, the factors that cause financial distress from within the company are more micro in nature. The factors within the company are:

1. The amount of debt

   Errors in estimating the company's debt until the company cannot cover costs arising from the company's operations will result in liability for the company to repay debt in the future. When the bills are due, the company does not have enough funds to pay off existingbills, resulting in confiscation of assets.
2. Losses in the company's operational activities for several years

   Losses in operating activities that cause negative cash flow within the company. This is because operating expenses are greater than the revenue received by the company.
3. Cash flow difficulties

   A situation where the company's revenue from the results of operating activities is not sufficient to cover operating expenses arising from the company's operating activities or it can occur due to management errors when managing the company's cash flow in making payments for company activities which can worsen the company's financial condition. (Carolina et al., 2018)

2.7. Methods Predicting Financial Distress

Research on bankruptcy detection tools has been widely carried out, resulting in various bankruptcy prediction models that are used as a tool

to improve the condition of a company before the company goes bankrupt (Endri, 2009). Pradhan (2011) assesses that actions to improve the financial situation after receiving an early warning for bankruptcy depend on the use of certain sector capacities and the availability of financial options for the company. As stated by Nidhi and Saini (2013), the company's financial condition can be assessed using standard financial ratios (Prihanthini & Sari, 2013).

1. Grover's model is a model created by designing and re-evaluating the Altman Z-Score model. Jeffrey S. Grover used the sample according to the Altman Z-score model in 1968, adding thirteen new financial ratios. The sample used is 70 companies with 35 bankrupt companies and 35 companies that did not go bankrupt in 1982 to 1996. Jeffrey S. Grover (2001) produces the following functions:

   ***Z Score* = 1,650X1 + 3,404X3 - 0,016ROA + 0,057 ..... (1)**

   Explanation:
   X1 = Working capital / Total assets
   X3 = Earnings before interest and taxes / Total assets ROA = net income / total assets

   The Grover model categorizes a company in bankruptcy with a score of less or equal to -0.02 ($Z \leq -0.02$). Meanwhile, the value for companies categorized as not bankrupt is more or equal to 0.01 ($Z \geq 0.01$) (Prihanthini & Sari, 2013).

2. Altman Model

   In 1983 and 1984, Altman conducted a survey of bankruptcy prediction models developed in several countries. Through this research, a new Z-score was found for go-public companies, and it turns out that the Altman Z-Score method has a fairly good prediction rate of up to 95% (Hanafi & Halim, 2016).

Fatmawati (2012) states that this prediction model has undergone several revisions to become a new equation that has been adjusted so that predictions can be made on private companies and not only limited to manufacturing companies that have gone public. Anjum (2012) argues that this model can be applied to a modern economy that is able to predict bankruptcy for the next one, two and three years. Similar opinion is also given by Hayes, et al. (2010) and Odipo and Sitati (2010) that this model has a high level of accuracy, which is above 80% (Prihanthini & Sari, 2013).

The bankruptcy research method uses the Altaman Z-Score using the Multiple Discriminant Analysis method using five types of financial ratios, namely working capital to total assets, retainedearnings to total assets, earning before interest and taxes on total assets, market value of equity to book value of total debts, and salesto total assets (Fatmawati, 2012) (MEITA, 2014).

The use of the Altman model as a measure of bankruptcy performance is not fixed or stagnant but evolves from time to time, where the testing and model discovery continues to be expanded by Altman until its application is not only for public manufacturing companies but includes non-public manufacturing companies, non-manufacturing companies and corporate bond companies. The following is the development of Altman's model (Ramadhani & Lukviarman, 2009):

1. The First Altman Model

   After conducting research on the selected variables and samples, Altman produced the first bankruptcy model. The bankruptcy equation is intended to predict a public manufacturing company. The equation of the first Altman model is

   Z = 1,2XI + 1,4X2 + 3,3X3 + 0,6X4 + 0,999X5

   Explanation:

   Z = bankrupcy index

X1 = working capital/total assets

X2 = retained earnings/total assets

X3 = earning before interest and taxes/total assets

X4 = market value of equity/book value of total debt

X5 = sales/total asset.

The Z value is the overall index of the multiple discriminant analysis function. According to Altman, there are z-value cut-off figures that can explain whether the company will fail or not in the future and it divides it into three categories, namely:

1) If the Z value <1.8 then it is a bankrupt company.
2) If the value is 1.8 <Z <2.99 then it is a gray area (it cannot be determined whether the company is healthy or going bankrupt).
3) If the Z value> 2.99 then this is a company that is not bankrupt.

2. Revised Altman Model

The model developed by Altman underwent a revision. Altman's revision is an adjustment made so that this bankruptcy prediction model is not only applicable to manufacturing companies that go public but can also be applied to companies in the private sector. The old model underwent a change in one of the variables used. Altman converts the Market Value Of Equity numerator on X4 to book value of equity because the private company does not have a market price for its equity.

Z '= 0.717X1 + 0.847X2 + 3.108X3 + 0.42X4 + 0.988X5

Explanation:

Z '= bankruptcy index

X1 = working capital/total assets

X2 = retained earnings/total assets

X3 = earning before interest and taxes/total assets

X4 = book value of equity/book value of total debt

X5 = sales/total assets.

The classification of healthy and bankrupt companies is based on the Z-score model of Altman (1983), namely:

1) If the value of Z '<1.23 then it is a bankrupt company.
2) If the value of 1.23 <Z '<2.9 then it is included in the gray area (it cannot be determined whether the company is healthy or going bankrupt).
3) If the value of Z '> 2.9, it includes companies that are not bankrupt.

3. Altman Modifications

As time goes by and adjustments to various types of companies. Altman then modified his model so that it could be applied to all companies, such as manufacturing, non-manufacturing, and issuing companies in developing countries (emerging markets). In this modified Z-score Altman eliminates the X5 variable (sales/total assets.) Because this ratio is very varied in industries with different asset sizes. The following is the Z-Score equation modified by Altman et al (1995):

Z ”= 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4

Explanation:

Z ”**=** bankrupcy index

X1 = working capital / total assets

X2 = retained earnings / total assets

X3 = earning before interest and taxes / total assets

X4 = book value of equity / book value of total debt

The classification of healthy and bankrupt companies is based on the Z-score of the Modified Altman model, namely:

1) If the value of Z ”<1.1 then it is a bankrupt company.
2) If the value of 1.1 <Z "<2.6 then it is included in the gray area (it cannot be determined whether the company is healthy or going bankrupt).
3) If the value of Z ”> 2.6 then it is a company that is not bankrupt.

3. Springate Model

This method was introduced by Gordon L.V. Springate in 1978. This method is a development of the Altman method using Multiple Discriminant Analysis (MDA). Initially, this method used 19 popular financial ratios, however, after re-testing Springate finally selected 4 ratios used in determining the criteria for companies to be categorized as healthy companies or companies with the potential to go bankrupt. This method has an accuracy of 92.5% by using 40 companies as the sample used by Springate (MEITA, 2014).

Research conducted by Gordon L.V Springate (1978) produced a bankruptcy prediction model that was made by following the Altman model procedure. The bankruptcy prediction model known as the Springate model uses 4 financial ratios that are selected based on 19 financial ratios in various literatures. This model has the following formula:

Z = 1.03 A + 3.07 B + 0.66 C + 0.4 D .....(3)

Explanation:

A = Working Capital/Total Asset

B = Net Profit before Interest and Taxes/Total Asset

C = Net Profit before Taxes/Current Liabilities

D = Sales/Total Asset

This Springate model classifies companies with a Z score> 0.862 as companies that do not have the potential to go bankrupt, and vice versa if a company has a Z score <0.862 is classified as

an unhealthy company and has the potential to go bankrupt (Prihanthini & Sari, 2013).

4. Zmijewski Model

According to Zmijewski, he criticized the sampling method used by his predecessor. According to him, the matched-pair sampling technique tends to lead to bias in the results of the study, therefore Zmijewski uses a random sampling technique in his research requiring one crucial point (MEITA, 2014).

The bankruptcy prediction model produced by Zmijewski (1983) is the result of a review of studies in the field of bankruptcy for 20 years. The financial ratios used in this model are selected from the financial ratios that have been used in previous studies with as many as 75 bankrupt companies and 3573 healthy companies during 1972-1978 as samples (Purnajaya & Merkusiwati, 2014).

The prediction model produced by Zmijewski in 1983 was the result of 20 years of research that was reviewed. This model produces the following formula:

$$\mathbf{X = -4,3 - 4,5X1 + 5,7X2 - 0,004X3}$$

Explanation :

X1 = ROA (Return on Asset)

X2 = Leverage (Debt Ratio)

X3 = Liquidity (Current Ratio)

If the score obtained by a company from this bankruptcy prediction model exceeds 0, the company is predicted to have the potential to go bankrupt. Conversely, if a company has a score that is less than 0, it is predicted that the company has no potential for bankruptcy (Prihanthini & Sari, 2013).

2.8. Previous Researches

Table 2.1 Previous Researches Summary

No.	Researches	Research Titles	Research Results
1.	Savera Helena & Muhammad Saifi (2018)	Pengaruh Corporate Governance Terhadap Financial Distress (Studi Pada Perusahaan Transportasi Yang Terdaftar Di Bursa Efek Indonesia Periode 2013-2016)	The results of this study indicate that the Size of the Board of Directors and Institutional Ownership has a significant influence on Financial Distress. However, the Proportion of Independent Commissioners and the Audit Committee has a non-significant influence on Financial Distress.
2.	Pasaman Silaban (2014)	Analisis Kebangkrutan Dengan Menggunakan Model Altman (Z-Score) Studi Kasus Di Perusahaan Telekomunikasi	The analysis shows that in 2010 - 2012 the company's health condition was not good. In 2010 the company was in the gray zone, then the next year the company's condition declined, and in 2012 it was at an unhealthy condition/bankrupt. Telkom is in a healthy state and has increased each year, Indosat is in

			the unhealthy zone with Z score tends to increase every year.
3.	Laksita Nirmalasari (2018)	Financial Distress Analysis Of Property, Real Estate And Building Construction Company Registered In Indonesia Stock Exchange	The result of this research showed that: Altman Z-Score Modification method was the most accurate method in analyzing financial distress either in good economic situation or in bad economic situation, Altman Z-Score Modification, Springate and Zmijewski methods were more suitable to analyze financial distress during the good economic situation than during the bad economic situation, Springate method had the narrowest predetermined distress category standard, the second one was Altman Z-Score Modification method and the vastest predetermined distress

			category standard was Zmijewski method.
4.	Orina Andre & Salma Taqwa (2014)	Pengaruh Profitabilitas, Likuiditas, dan Leverage Dalam Memprediksi Financial Distress (Studi Empiris Pada Perusahaan Aneka Industri yang Terdaftar di BEI Tahun 2006-2010)	Based on the results of logistic regression analysis with a significance level of 5%, then the results of this study conclude: (1) profitability as measured by return on asset has negative and significant effects in predicting financial distress. (2) Liquidity as measured by the current ratio has no effects in predicting financial distress (3) leverage as measured by debt ratio has positive and significant effects in predicting financial distress in Various Industrial Companies listed on Indonesia Stock Exchange. The findings should be of interest to the company to perform corrective measures before financial distress

			gets more severe and leads to bankruptcy.
5.	Feri Dwi Ardiyanto Prasetiono (2011)	Prediksi Rasio Keuangan Terhadap Kondisi *Financial Distress* Perusahaan Manufaktur Yang Terdaftar Di Bei	The test results with three analysis models also shows that the variable of CACL, WCTA and NITA significantly influence probability of financial distress.
6.	Ni Made Evi Dwi Prihanthini & Maria M. Ratna Sari (2013)	Prediksi Kebangkrutan Dengan Model Grover, Altman Z-Score, Springate Dan Zmijewski Pada Perusahaan Food And Beverage Di Bursa Efek Indonesia	Conclusion of this study showed significant differences between the models Grover with Altman Z-Score models, Grover models with Springate models, and Grover models with Zmijewski models. And the highest level of accuracy achieved by the Grover models followed by Springate models, models Zmijewski, and final models Altman Z-score.

7.	Diyah Santi Hariyani & Agung Sujianto (2017)	Analisis Perbandingan Model Altman, Model Springate, Dan Model Zmijewski Dalam Memprediksi Kebangkrutan Bank Syariah Di Indonesia	The results showed that Springate model is the most appropriate model to predict the Islamic banks in Indonesia with an accuracy of 38.00 % , then Model Zmijewskiwith 28.00 % accuracy rate and Altman with an accuracy of 0.00 % .
8.	Ayu Suci Ramadhani & Niki Lukviarman (2009)	Perbandingan Analisis Prediksi Kebangkrutan Menggunakan Model Altman Pertama, Altman Revisi, Dan Altman Modifikasi Dengan Ukuran Dan Umur Perusahaan Sebagai Variabel Penjelas (Studi Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia)	The results of the three models are then compared with the use of company's age and size as descriptive information to predict the company's bankruptcy potential. The result of comparative data in bankruptcy prediction is that; the first Altman provides the highest percentage in predicting the bankruptcy. The research also found that the company categorized under small groups and under the age of 30 were likely to go bankcrupt in compare to the other groups.

9.	Evanny Indri Hapsari (2012)	Kekuatan Rasio Keuangan Dalam Memprediksi Kondisi Financial Distress Perusahaan Manufaktur Di BEI	The result of this study showed that regression coefficient of current ratio variable was -0,006 and the sig value was 0,793; regression coefficient return on total assets variable was -6,803 and the sig value was 0,024; regression coefficient profit margin on sales variable was -0,488 and the sig value 0,459; furthermore, regression coefficient current liabilities total assets variable was -1,546 and the sig value was 0,029, it means that current ratio and profit margin on sales did not significantly influence the condition of company financial distress although it was showed negative sign. Meanwhile, return on total assets and leverage (current liabilities total asset) negatively and significantly affected to

			condition of company financial distress.
10	Imam Wahyudi & Dr. Ir. Hakiman Thamrin, MM (2020)	Analysis Of Factors To Predict Financial Distress (Case Study In The Construction Sector Of State-Owned Enterprises Of 2009 - 2017)	The research results show that from 21 (twenty one) variables, only debt to equity, return to asset, operating cash flow to net wealth and receivable turnover that can be used to predict the financial distress potential at the Construction Sector of State-Owned Enterprises. There are positive effects from Debt to Equity and Receivable Turnover, as well as negative effects from Return to Assets and Cash Flow Operating to Net Wealth to the financial distress.
11.	Maria Florida Sagho & Ni Ketut Lely Aryani Merkusiwati (2015)	Penggunaan Metode Altman Z-Score Modifikasi untuk Memprediksi Kebangkrutan Bank Yang Terdaftar Di Bursa Efek Indonesia	After calculation is concluded that all the banks research from 2011 to 2013 resulted in a Z-Score greater than 2.6, or in other words, the 11 banks is not indicated any symptoms of bankruptcy even reverse

			all banks surveyed would not be expected to bankruptcy within a period of 1 year.
12	Fitriani Rahayu, I Wayan Suwendra & Ni Nyoman Yulianthini (2016)	Analisis Financial Distress Dengan Menggunakan Metode Altman Z-Score, Springate, Dan Zmijewski Pada Perusahaan Telekomunikasi	The final results of this study show that financial performance analyzed by the method of Altman Z-Score, Springate, and Zmijewski of the Telecommunication Company in the Period of 2012-2014 are classified in a state financial distress. The Results offinancial distresspredictionusing AltmanZ-Score method, there are two companies indicated financial distressduring three years in the period of 2012-2014, namely PT Bakrie Telecom Tbk and PT Smartfren Tbk. The Results of financial distress prediction using Springate method there are four companies indicated financial

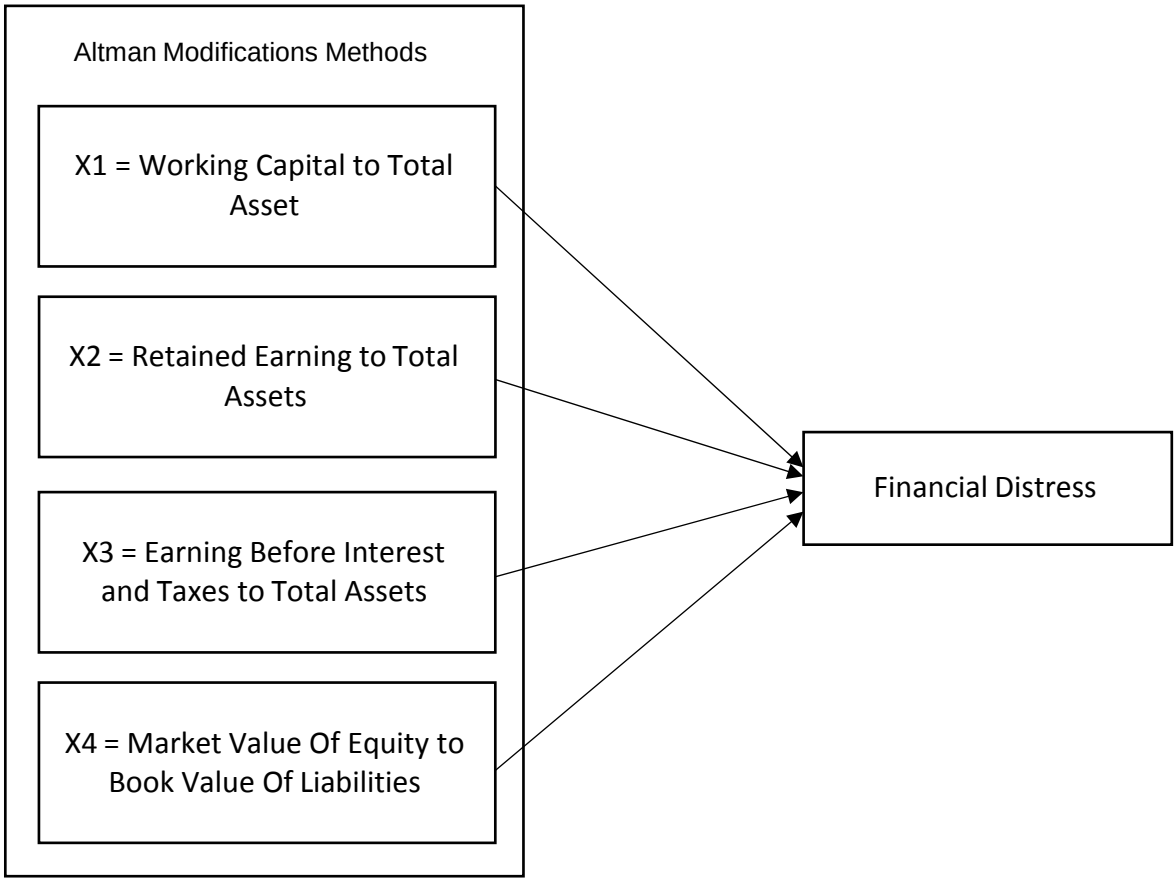
			distress, PT Bakrie Telecom Tbk, PT XL Axiata Tbk, PT Smartfren Tbk, and PT Indosat Tbk in 2012-2014. And the results of financial distress prediction using Zmijewski method there are two companies indicated financial distress, PT Bakrie Telecom in 2012-2014, PT XL Axiata in 2014, and PT Smartfren in 2013-2014.
13.	Saravanan Venkadasalam, Azhar Mohamad, Imtiaz Mohammad Sifat (2019)	Operational efficiency of shipping companies Evidence from Malaysia, Singapore, the Philippines, Thailand and Vietnam.	The results indicate consistently diminishing efficiency from 2011 to 2017, a phenomenon that persists even in the traditionally efficient companies. Thereafter, this paper develops Altman Z-scores for the sampled companies and notice that despite rising inefficiency, most firms remain unencumbered by bankruptcy concerns, especially those with large capital buffers.

14.	Khaled Halteh, Kuldeep Kumar, Adrian Gepp (2017)	Financial distress prediction of Islamic banks using tree-based stochastic techniques	The results indicate that the "Working Capital/Total Assets" ratio is the most crucial variable relating to forecasting financial distress using both the traditional "Altman Z-Score" and the "Altman Z-Score for Service Firms" methods. However, using the "Standardised Profits" method, the "Return on Revenue" ratio was found to be the most important variable. This provides empirical evidence to support the recommendations made by Basel Accords for assessing a bank's capital risks, specifically in relation to the application to Islamic banking.
15.	Khushbu Agrawal, Yogesh	Predicting financial distress:	The option-based DD is found to be statistically significant in predicting

	Maheshwari (2016)	revisiting the option-based model	defaults and has a significantly negative relationship with the probability of default. The DD retains its significance even after the addition of Altman's Z-score. This further establishes its robustness as a significant predictor of default.

2.9. Conceptual Framework

Figure 2.1 Conceptual Framework



2.10. Hypothesis

H1 : Working Capital has a significant effect on Financial Distress

H2 : Retained Earning has a significant effect on Financial Distress

H3 : Earning Before Interest and Taxes has a significant effect on Financial Distress

H4 : Market Value Of Equity has a significant effect on Financial Distress