

An Analysis of Company Experience and Macroeconomic Turmoil in Predicting Corporate Distress (An Empirical Study of Property and Real Estate Companies in Indonesia)

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Abstract

This study aims to find out and evaluate how company experience and economic turmoil could influence the corporate distress of real estate companies listed on the Indonesia Stock Exchange from 1998 to 2019. Using panel data logistic regression analysis, it was found that experience proxied by company age had a significantly negative effect on corporate distress prediction. Then, macroeconomic turmoil proxied by seeing the fluctuations in economic growth was made as a dummy variable which was determined by 0 for the contraction condition and 1 for the expansion condition. These conditions were seen from the changes or ups and downs of economic growth. This study revealed that macroeconomic turmoil had a significant effect on corporate distress prediction. With a negative coefficient, it means that in the condition of expansion, the probability of a company experiencing corporate distress is smaller.

Keywords: Corporate distress, macroeconomic turmoil, economic, experience, real estate company.

Introduction

Over the last 25 years, there have been a lot of economic shocks have occurred in the world. The most recent one is the Covid-19 pandemic which has had an impact on all aspects of human life. The shocks that have occurred become risks that must be faced by companies. The property and real estate business in Indonesia is a very volatile business where the real estate business is known to have characteristics of rapidly changing (volatile), intense competition. In addition, Indonesia is a very large country that has a lot of land for real estate development, so the development of real estate business in Indonesia is very developed. However, the rapidly changing nature of the real estate business has an impact on the company, and if the company is not able to anticipate changes it will cause the company to experience difficulties.

To survive, companies must be able to manage the risks well. The biggest economic shock that ever occurred in Indonesia was the one from 1997 to 1998 when the monetary crisis impacted the Indonesian economy to grow negatively by -13.3% (BI report). This economic shock also had an impact on the growth of companies in Indonesia in 1998 when 70% of the companies listed on the capital market went bankrupt and 16 banks were liquidated, and the inflation rate reached 54% in August 1998. One of the businesses that were impacted by the economic turmoil as such as property and real estate businesses. The occurrence of an economic crisis caused an increase in interest rates which led to a decline in the people's purchasing power in housing, bringing the property companies to face corporate distress.

There have been many studies carried out on corporate distress or financial distress where various terms are often used interchangeably: bankruptcy, failure, financial distress, insolvency, corporate collapse, liquidation, and default. There is no consensus on how financial distress affects company performance (Keasey & Watson 1991; Pérez et al., 2017), but it will

incur high costs (Lee & Feldman, 1994), and therefore it needs further investigation. Pozzoli & Paolone (2017) state that, regarding companies with financial distress that fail, the distress is divided into four general terms that are commonly used in the literature: failure, insolvency, bankruptcy, and default. Companies' financial distress persists in every company even though various definitions or terms are often used interchangeably (Altman & Hotchkiss 2006) which sometimes do not match the absolute condition such as bankruptcy or insolvency (Sun et al., 2014).

Companies' financial distress identifies the status which is extended in time, leading to failure or betterment instead, or indeed ending in bankruptcy. The literature on financial distress prediction has traditionally focused on highly visible legal events that characterize the end of a company's life cycle and that can be dated objectively and accurately and the company's financial distress can be precisely determined and identified.

Companies that have operated for a long time already have good experience and are well-known by people. From a financial point of view, long-standing companies generally have more stable profitability than short-standing companies or companies that have just been established. Long-standing companies tend to be more skilled in collecting, processing, and generating information when needed. Because long-standing companies have gained sufficient experience, the companies tend to always be able to avoid financial distress condition.

Research conducted on property and real estate companies on the Indonesia Stock Exchange which are included in the emerging market. Where the characteristics of service companies are different from manufacturing companies or others. Where service companies are very vulnerable to political and economic conditions where almost all service companies deal directly with consumers, where consumers are more likely to trust companies that are already established and have experience compared to those that are new and inexperienced, so it will cause various conditions within the company, For this reason, researchers want to see how the influence of economic turmoil and company experience on corporate distress.

Thus, the purpose of this study is to find out and evaluate the effect of liquidity, experience, and macroeconomic turmoil on corporate distress prediction.

This paper is forth structured as follows: Section 2 discusses the literature review; Section 3 describes the methodology; Section 4 shows the results and discussion; and Section 5 represents the conclusion and implications for further research.

Literature Review

The company life cycle asserts that the company's condition is measured through financial accounting items depending on the different features of the company and behavior at different stages. Conceptually, financial difficulties occur when the company's liquidation of total assets is less than the total value of creditors' claims (Kliestik et al., 2020). This situation can arise at any stage of a company's life cycle, with direct implications for the company's future performance (Avramov et al., 2013) If such a situation is prolonged, it can lead to bankruptcy (Fan et al., 2013). Companies must be responsive to financial difficulties by taking corrective actions or restructuring to recover from the situation (Sudarsanam & Lai, 2001; Li et al., 2020). According to the life cycle theory, the corrective action and restructuring strategies adopted by firms facing corporate financial difficulties are also different and can be conditioned by the stage of the firm's life cycle (Koh et al., 2015). The strategies adopted by the company in dealing with the life cycle are various and different for each company such as reducing investment and dividends or companies facing financial difficulties. involved in restructuring assets (Koh et al., 2015).

Corporate distress is a signal for stakeholders to invest and manage the company (Farooq & Qamar, 2019). Based on this signal/prediction, and to avoid failure, the investors can adjust their investment strategies, while the company and government can develop remedial measures, thus avoiding financial losses to some extent (Wang et al., 2018). Factors involved in predicting corporate distress are financial and non-financial factors. Early studies in this field mainly examined financial factors, including profitability, solvency, operational capability, and financial structure (Sun et al., 2014). Although the financial factor contributes significantly to the prediction of corporate distress, it only includes quantitative information, which cannot comprehensively represent a company's status. Several recent studies have highlighted the limited predictive capacity of financial variables and have attempted to exploit certain non-financial factors in predicting financial distress (Liang et al., 2016). Qualitative non-financial predictive factors can be extracted from unstructured texts, such as audit reports and annual reports, and these textual factors can then complement traditional financial factors used in predicting corporate distress (Jardin, 2016; Wang et al., 2018).

From the various definitions of corporate distress, it can be concluded that there are many definitions of financial difficulties, but it is clear that whatever the definition leads to the company experiencing pressure in its management. Determining the definition will depend later on the method or tool used in predicting the company's difficulties. The definition of Company Difficulties in essence is how to explain the difficulties experienced by the company by looking at the characteristics that occur and that includes the meaning of early prevention. If it can be more certain, it will allow the company to find and prevent in advance in such a way that there is also a great opportunity to save the company. In other words, a financial crisis is not equivalent to bankruptcy. On the other hand, if the company goes bankrupt, it will have a financial crisis (Cheng et al. 2018).

There have been many studies carried out on corporate distress which examined corporate distress seen from internal and external factors. A company's external factors are factors that cannot be controlled by the company so the company must pay

attention to these factors which in this study are represented by economic growth as a measure of whether the economy is in a state of expansion or contraction. A company's internal factors can be seen from the company's characteristics. The company's characteristics include demographic and managerial variables which are internal parts of the company environment and can be described by 2 approaches, namely the financial approach and the management approach. The financial ratio approach comprises liquidity, leverage, and profitability ratios which in detail in this study are represented by the variables of current ratio, debt ratio, and return on assets ratio. Then, the non-financial approach can be seen from company management which in this case is represented by owners' levels of control over the companies. In addition, a company's characteristics can also be determined by company size, company age, the number of employees, and company type.

Relations between Liquidity and corporate distress

Financial statements-based distress indicators had been quite commonly used until the early 2000s. Beaver (1966) conducted the first comprehensive study to identify 30 financial ratios, consisting of six groups of ratios in a univariate setting and concluded that each of the six groups of ratios had significant relative explanatory power towards a simple random model. Then, the model was developed and improved by Altman (1968) by applying Multiple Discriminant Analysis (MDA) and a series of much smaller ratios: (i) liquidity, (ii) leverage, (iii) cumulative profitability, (iv) market leverage, and (v) asset turnover. Subsequently, Zmijewski (1984) with X-Score made financial variables to determine corporate distress levels with simpler ratios but was able to predict corporate distress one year before bankruptcy (sari et al., 2019). Although the samples involved consisted of bankrupt and not bankrupt companies, many subsequent studies measured based on the results of previous studies. From this, it can be said that a company's characteristics based on financial factors are predicted by liquidity, while a non-financial factor in it is age.

Liquidity shows the company's ability to meet short-term debts that are due, if the company has a great ability to pay off its short-term debt, the company will be free from difficulties and able to carry out activities well. Research conducted by Masdupi et al (2018), Martínez S. & Tsomocos, (2018) states that firm liquidity is negatively related to corporate distress.

Hypotheses Development

H.1. Liquidity was negatively related to corporate distress - The relationship between corporate experience and corporate distress

The negative consequences of corporate distress can be distinguished based on the stage of the company's life cycle. According to life cycle theory, developing capacities, access to resources, and strategies vary over a company's life cycle, consisting of four stages: birth, growth, maturity, and decline (Anthony & Ramesh, 1992). The company's life stages also show the experience the company has had in line with the age of the company.

The age of the company is proof of how a company can survive in the face of all the problems it faces and at the same time make a company able to see an opportunity that is useful in developing the company so that it becomes a developed company and the establishment of a financial process or financial condition that is even better than before (Jeva & Ratnadi, 2015). The older the age of a company or the longer a company has been operating, it can be said that the company has succeeded in overcoming all its obstacles with the experience it has gained.

Relatively young companies may show a low ratio because they have not had time to build cumulative profits, and the possibility of being classified as bankrupt is relatively higher than older companies. The incidence of failure is much higher in the early years of a company (Altman et al., 2017) A study conducted by Rizaky & Dillak (2020) explains that the age of a company shows the company's experience in dealing with activities. In other words, a company's experience is related to age and affects the company's activities. If the company is rigid in its operations, the company may experience corporate distress, so the hypothesis can be drawn as follows:

H2. The company's experience affects corporate distress - The relationship between Economic turmoil and corporate distress

The risk of financial distress increases during periods of economic recession due to the decline in sales, cash flow, and business profitability. Tinoco & Wilson(2013) and Altman, (2002) are consistent, most studies assume that all firms behave in predictable ways during an economic recession or expansion, although there is an intuition that (i) financially healthy firms in periods of expansion may become financially depressed during periods of recession; (ii) firms that are stressed during periods of expansion may fall further into financial distress, or even become bankrupt during periods of recession or (iii) firms that are financially sound during periods of expansion may maintain, albeit to a lesser extent, with the evidence that macroeconomic variables contribute almost half of the variation in company earnings and earnings changes. From this, it can be said that economic turmoil affects corporate distress prediction.

H3. Economic turmoil has an impact on corporate distress -

The summary of the hypothesis can be seen in Table 1:

Table 1: A Summary of the Research Hypotheses

Hypotheses	Exogenous Variables	Endogenous Variable
H1	Liquidity	(-)
H2	Company Age	(-)
H3	Economic Turmoil	(-)

Research Method and Materials

Data and Sample Selection

This study aims to find out and evaluate the effect of company characteristics and economic turmoil on financial distress prediction carried out on the Indonesia Stock Exchange for real estate companies registered from 1998 to 2019 (for 22 years). From 65 companies registered, with purposive sampling technique, where the sample used is companies that are still actively trading their shares on the Indonesian stock exchange from the period 1998-2019, then we got 20 real estate companies that were still active during the research period. Where the data in this study uses panel data.

Operational Definition and Measurement of Variables

For the data analysis, the experience was proxied by company age. Liquidity was proxied by the current ratio. Macroeconomic turmoil was seen from the ups and downs of economic growth which was a dummy variable with 0 for expansion and 1 for contraction. Corporate distress was the dependent variable of which measurement was also dummy using the Zmijewsky X-Score model with the category of 1 for corporate distress and the category of 0 for corporate health. The details and measurement of the variables are presented as follows:

Table 2: Operational Definition of Variables

Variables	Dimensions	Indicators	Resources	
Corporate distress prediction	- Corporate Health - Corporate distress	Using the Zmijewsky X-Score model: X-Score = -4.3 - 4.5X1 + 5.7X2 - 0.004X3 Legends: X1 = return on assets X2 = debt ratio X3 = current ratio	Calculated by the authors	
Macroeconomic turmoil	Economic trend	growth	Dummy variable, 1 for expansion and 0 for contraction	Calculated by the authors, Bank Indonesia
Corporate finance	Liquidity	Current assets / current liability	Financial statements	
Experience	Company age	Company age (from the establishment date to the research period)	Annual reports	
Size	Logaritma natural of aset	Ln Aset	Financial Statement	

Methodology and Model Specifications

To estimate the relationship between economic turmoil and company characteristics with corporate distress, panel data logistic regression analysis was carried out. The logistic regression analysis was undertaken because the dependent variable was a dummy: 0 for corporate health and 1 for corporate distress. The following is the formula:

$$\text{Logit } Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4$$

Y as a dummy variable was identified by Zmijewsky's X-Score with the following criteria for determining the condition of the company: if X-Score was positive then the company was predicted to be distressed, otherwise, if the X-Score result was negative then the company was declared healthy. β_j is the coefficient for each company in the specified time; X1 is liquidity; X2 is experience; and X3 is economic turmoil as a dummy variable with 0 for expansion and 1 for contraction.

Data Analysis

Data Description

Table 3: Statistical Description

	N	Minimum	Maximum	Mean	Std. Deviation
Y	440	0	1	.2659091	.442319
CR (X1)	440	.08	961,05	174.5553	165.9815
Age (X2)	440	.04	37.05	17.75334	8.48466
ET (X3)	440	0	1	.5	.5005692
N	440				
n	20				
T	22				

From Table 3, it can be seen that liquidity was proxied by Current Ratio (CR) with the lowest one at 0.08% and the highest one at 961.05, and an average of 174.5553%. Then, the shortest lifespan was 0.04 years and the longest lifespan was 37.05 years. Economic Turmoil (ET) was a dummy variable indicating 0 for contraction and 1 for expansion.

Correlation Analysis

Correlation analysis was intended to see whether the variables were perfectly not correlated with each other. If the variables were perfectly correlated, these variables could not be included in the model, or in other words, multicollinearity occurred.

Correlation matrix:

Table 4: Correlation Matrix

	Y	CR	Age	ET
Y	1,0000			
CR	-0,4552	1,0000		
Age	0,4933	-0,3415	1,0000	
ET	-0,3171	0,1722	-0,2371	1,0000

From the correlation matrix, it was found that no variable was perfectly correlated with the other variable. It could be seen that the current ratio had a negative correlation with corporate distress prediction. Age had a positive correlation with corporate distress prediction and a negative correlation with the current ratio. Then, economic turmoil had a negative correlation with corporate distress prediction, a positive correlation with the current ratio, and a negative correlation with age. So, it could be said that the variables in this study could be further used in the estimation model.

Empirical Results

Table 5 below shows the estimation results of the variables that influenced corporate distress prediction.

Table 5: Panel Logistic Regression Estimation Results

Variable (y)	Coef	z	P> z
CR	-.0428796	-7.40	0,000***
Age	-.1580849	-3.38	0,001***
ET	-.8154921	-2.49	0.013**
Const	5.688943	6.36	0.000***
Wald chi2 (9)	= 62.25	Prob > Chi2	= 0,0000
Log-likelihood	= -101.76612		
\Insig2u	= .7626029	.3789493	
Sigma_u	= 1.464189	.2774267	
Rho	= .3945456	.0905232	

***Significant at $\alpha = 1\%$, ** Significant at $\alpha = 5\%$, * significant at $\alpha = 10\%$

Table 5 shows the results of the panel data logistic regression estimation. so that it can be known and answered the hypothesis of this research:

Hypothesis 1 states that liquidity harms corporate distress, from the results of the analysis it can be stated that liquidity proxied by the current ratio harmed corporate distress prediction. It can be seen that the value of the liquidity coefficient (CR) was -0.0428796 with a probability of 0.000 which was smaller than 1%. From this, it can be said that liquidity harms corporate distress prediction in the sense that when a company's liquidity increases, the probability of the company experiencing corporate distress decreases. This is in line with several previous studies. Lipson & Mortal (2007) in their study concluded that the liquidity ratio is a good indicator of the bankruptcy prediction model. This finding is also supported by John (2014) who states that the liquidity ratio is the best discriminator for differentiating companies whether they are heading toward bankruptcy or not. Chiamonte & Casu, (2017a) conclude that the liquidity ratio is relatively consistent in predicting a company's financial health.

Hypothesis 2 states that experience affects corporate distress, from the results obtained Experience proxied by age from the estimation results were found to have a significantly negative correlation with corporate distress prediction. The coefficient value was -0.1580894, with a probability value of 0.001 which was smaller than 1%. It indicates that the longer a company's age is, the smaller the probability of the company experiencing corporate distress. It can be said that a company's experience in dealing with its activities affects corporate distress. It is in line with what is stated in the life cycle theory and stated by Altman et al., (2017) that the incidence of failure is much higher in the early years of a company. Christidis & Gregory, (2012) in their study categorized companies into short-standing companies and long-standing companies, and it also showed a significant result in predicting corporate distress.

Hypothesis 3 economic turmoil affects corporate distress, from the results of the analysis it is found that economic turmoil in this analysis also had a significant effect on corporate distress prediction, indicated by the estimation coefficient value of -0, 8154990157, with the probability value of 0.013 which was smaller than the significance value at 5%. This indicates that if a company's economy experiences expansion which means that economic growth increases, the probability of the company experiencing corporate distress are lower. This is in line with studies conducted by Wei & Starks, (2013), Tinoco & Wilson (2013), Wijaya & Anantadjaya, (2014), and Holt (2016) although the indicator variables used are different.

So, from the table above, the prediction model for corporate distress could be made as follows:

$$\ln\left(\frac{\pi t}{1-\pi t}\right) = 5.688943 - 0,0428796CR - 0.1580849Age - 0.8154921ET$$

Conclusion and Policy Implications

The purpose of this study is to find out and evaluate the relationship between experience and economic turmoil with corporate distress prediction in real estate companies listed on the Indonesian stock exchange from 1998 to 2019. Real estate companies are very vulnerable to economic turmoil. It can be seen that economic growth has a significant effect on real estate companies that are connected with the property business. Therefore, it can be said that property market condition is closely related to economic condition. In other words, the more stable the economic condition of a country is, the more likely the property market will be stable as well and/or grow periodically which will affect companies' liquidity. In addition, for real estate companies engaged in the property business, experience is crucial thing. With the experience they have, the companies

can predict prospects and with the increasingly mature age, the companies will also have high assets so that the companies become more profitable.

In regards to the analysis carried out, since real estate companies are very vulnerable to economic turmoil, the government should consider that making a monetary policy may be detrimental to real estate companies. In fact, at this time, real estate companies contribute greatly to national income and employ more than 15% of employees who work in the real estate business.

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