

Is Financial Distress Cost Important for Determining Firm Performance ?

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Abstract: The global financial crisis provides the importance in developing model to monitor, identify and assess potential risks that can threaten business sustainability. Financial Distress Cost (FDC) seems to be one of the early signals about the early risk of decreasing of firm performance such as sales growth and stock return. Furthermore, it gives an early signal to firms reducing the loss possibility before it leads to firm's bankruptcy. This research aims to explain the evidence of FDC in Indonesia's industry and its impact on firm performance. The data used are financial reports of 107 firms in the manufacturing industry listed in the Indonesia Stock Exchange (IDX) for 2011 – 2017 and all analyzed using panel regression to present FDC's impact. The descriptive analysis shows that Indonesia's manufacturing industry has higher FDC and lower sales growth after the crisis year. There is a negative impact of FDC on firm's sales growth. The results propose that FDC can be used as an early determinant for reducing the loss possibility of firm's market share.

1 INTRODUCTION

Environmental changes become an important part of a firm's business strategies for managing performance. Economic expansion will create better operational activity for better growth opportunity, but recession may bring a probability of failing and liquidation of a firm that may be caused by raising of costs from a distressed condition (John, 1993). The global crisis in 2008 has still impacted business stability in some countries of Asia. Nikkei Releases on December 2016 reported a decline in new foreign business both volume and export since November 2015 where client demand weakened. Then leading the ASEAN's manufacturing industries to buy fewer inputs in a third week of December and causing pre-production stocks to fall in 16 last months. Other facts in Indonesia for the period 2014-2016, Indonesia Stock Exchange (IDX) suspended 28 firms in their trading stock caused by several things such as disruption of company's sustainability, no income, and other business management issues.

The uncertainty of this economic improvement makes a firm have greater pressure opportunity in industrial competition. Investment activities make a high probability of economic uncertainty risk which

will affect a firm's financial performance. A firm has potential decreasing of it when management has been unable to anticipate the impacts. This phenomenon is referred to as financial distress that occurs before liquidation (John, 1993).

The financial distress can occur in all industries and has been an early signal of firm bankruptcy such as in service (Smith and Graves, 2005) and manufacturing (Smith and Liou, 2007). In a distressed firm, there is a cost incurred called Financial Distress Cost (FDC) and it is suffered by the firm as an impact of weakening of financial position or business disruption (Bulot et al, 2017).

Firms tend to increase following cash flow realization which may be lower in economic crisis (Hann et al, 2013). Then that will damage firm performance such as loss of market share and also cause inefficiency. Opler and Titman (1994) found a loss of firm's market share was caused by distress period of highly leveraged firms.

The importance of FDC still receives less attention in its consequence to firm performance. In previous studies, some researchers have been interested to analyze the factors of it and there are many different estimations for measuring such growth of invested capital (Chen and Marvile, 1999), and firm's debt (Korteweg, 2007). Opler and Titman (1994) captured

financial distress debt which based the indicators assuming that the higher firms leverage will make higher it. Other studies such Pindado and Rodrigues (2005) and Bulot et al (2017) also captured opportunity cost that refer to the cost lowered as a result of decreasing financial conditions. This loss is calculated as the difference between firm sales growth and the sectors of sales growth. A positive result will demonstrate that firm bear opportunity loss and underperform as industry performance comparison in term of sales growth.

The paper gives an insight when financial distress occurs, mostly a pressure is directed toward firm performance. In distressed firm, there is an indication that management has an option to reduce budgets for remaining of competitive because it may affect their cost and this decision can damage its performance. It captured that industry's FDC in Indonesia descriptively based distress period in Opler and Titman's study. The argumentation that the level of firm's financial distress is different between before and after occur global crises in 2013, so it resulted FDC and performance difference. Furthermore, for completing our descriptive analysis, the FDC's data test of all sample firms to performance. Using Pindado and Rodrigues's model measurement through opportunity loss, mean opportunity cost which refer FDC and then tested the impact to firm performance. It also estimated that firm leverage, size, and firm age have influenced to firm performance. This study shows that opportunity loss as Financial Distress Cost's proxy impact to firm performance.

This paper provides more attention on the matters that have not fully described but it is critical in financial distress research that is FDC and its implication to firm performance. Referring to previous researchs, losing opportunity as FDC's measurement, and firm performance proxied by sales growth and stock return. The argumentation using both of them as firm performance indicators can reflect financial distress consequence in resource management, and also in the effort to describe its link to FDC. Furthermore, this study describes descriptively about the difference of firm performance in two years before based year of occurred global crisis in 2013 and four years after it. The hypothesis tested FDC have negative affect to firm performance by using some control variables such as firm size, leverage, and firm age in the regression model of all samples are expected more clarify the FDC's impact to performance.

For easier explanation, we manage the systematic of this paper as below: part 2 describes literature

review, then part 3 explains the data, including variables, also empirical model. Part 4 talks about descriptive analysis and regression result, and finally part 5 discussion that includes the limitation and suggestion.

2 LITERATURE REVIEW

2.1 Financial Distress Cost

In finance, a firm that use more debt in its operation will get more risk of financial distress. When firm have difficulty making payments to creditors, it categorized as distressed firm. The firm should pay some costs that associated with financial distress such indirect cost, cost of capital, and bankruptcy cost.

Financial Distress Cost (FDC) is a special argument in main financial problems of a firm that related with capital structure, firm valuation, and risk management. If firm takes more debt, it give more risk for firm being unable to meet the creditor's obligation. Previous research argue that FDC only occurs in small percentage and temporary but on the other side, there are some results find FDC is significant impact to firm (Altman and Hotchkiss, 2006).

FDC appears as result of costs that occur when firm unable to fulfil its responsibility because financial decreasing (Altman and Hotchkiss, 2006). The firm have difficulty in payment to its creditors may cause by several reasons, such as decreasing of profitability which Earning Before Interest and Tax Depreciation of Assets (EBITDA) is lower than financial costs incurred (Opler and Titman, 1994) and poor management (Venkataramana et al., 2012).

Some of previous studies employ different estimations in assessing FDC, such using firm liabilities (Korteweg, 2007), and loose opportunity (Pindado and Rodrigues, 2005). This study uses sales as part to evaluates FDC according Pindado and Rodrigues (2005) and Bulot et al. (2017), because it less affected by firm characteristic According In context of Indonesian firms, management tends more attention to internal factors such as human labor and sales growth. Therefore, sales used in measuring FDC which opportunity loss or profit can be detected as activities output. It calculated by comparison sales growth and sales sector.

However, the FDC discussion is important to understand the impact of control function for their strategic decisions in improvement firm performance. It may lead to bankruptcy (Altman and Hotckiness,

2006), so this paper assumes that FDC costs that occurs as result of financial decreasing which will impact to market share loss, growth opportunity, and firm return, therefore causes firm inability to fulfill its responsibilities.

2.2 Firm Performance

The firm achievement in certain period reflects the level of its performance. Using financial statements, management and investors can analyze firm performance and evaluate it. The information of firm's financial performance needed for getting better investment decision making, and risk management. Financial distress risk is one of things that firm should needs to pay attention to. As Opler and Titman (1994) states that financial distress is costly. The market share decline impacts to firm income, therefore sales growth be an important ratio to measure firm ability for maintaining its position in economic and industrial growth. In addition, firm performance in distress conditions also impact to rate of return in the market. Some results show evidence that firm earns lower return when there is decreasing financial such finding of Lamont et al. (2001) and Campbell et al (2008). On the other side, some research also find that firm ability of environment adapting make financial distress for firm but it unrelated impact to rate of return. The gap among these findings show there is an optimum implementation of strategy that FDC is managable well by effectively ways and not the contrary, increasing high cost which may decline firm performance.

3 METHODOLOGY

3.1 The Data

This research analyzes financial report of firms listed in IDX of 2011-2017. The samples are 107 manufacture firms with total of 749 observations in Indonesia's industry covering the subsectors of basic processing and chemical; pharmacy; textile and garment; miscellaneous industries; automotive; cable and electricity; cosmetics; and consumers goods. The data consist of FDC, sales growth, and stock return processed using panel data regression. In order to attain required sample, firms observation having zero sales and also merger firms are excluded.

FDC used as independent variable which measured by opportunity loss following Pindado and Rodrigues (2005) and Bulot et al (2017). Then dependent variables are firm performance which

proxied by sales growth and stock return (Opler and Titman,1994). Furthermore, we take firm size, leverage, and firm age as variable control in this research.

First, firms analyzed descriptively about their FDC, sales growth, and stock return over five-year periods between 2011 and 2017. It described previously that distressed firm have market shares loss possibility that impacted by uncertainty economic such global krisis. Then dividing period in two group are before and after crisis in 2013. As known, there is Yunani's crisis also impacted to many countries including Indonesia.

Second, the link between FDC and firm performance tested without crisis period because the insight of this paper that financial distress make a pressure to firm performance only. Then capturing the differences during crisis in Indonesia descriptively and focusing in FDC's impact to firm performance. Therefore it is not exploring the other determinants. After that proposing regression model in which is influenced by FDC formula as below:

$$SG_{it} = \beta_0 + \beta_1 FDC_{it} + LEV_{it} + SIZE_{it} + AGE_{it} + \varepsilon_{it} \quad (1)$$

$$SR_{it} = \beta_0 + \beta_1 FDC_{it} + LEV_{it} + SIZE_{it} + AGE_{it} + \varepsilon_{it} \quad (2)$$

SG_{it} represents firm performance which can be measured by sales growth and SR_{it} is stock return as another proxy of firm return, and FDC_{it} measured using opportunity loss as comparison sales growth of firm and sales sector, LEV_{it} is leverage of firm measured by total debt to total assets, $SIZE_{it}$ is firm size measured using \ln assets, and AGE_{it} is firm age.

4 RESULT AND ANALYSIS

4.1 Descriptive Statistics

Table 1 shows descriptive statistic results for each variable in all samples of manufacture sector. The lowest sales growth is 3,34% and the highest FDC is 21,23%. The statistics for each observation year for all sample of firms in which the lowest average of sales growth and stock return for overall samples are -26,6% in 2017 and -3,45% in 2013 and FDC as independent variable is the highest average of overall samples in 2017 with 26,6%.

Table 1: Descriptive Statistics Manufacture Sector

Sample	Firms	Statistic	FDC	Sales Growth	Stock Return
Full Sample	107	Mean	0.0478	-0.0312	0.1967
		Stdev	1.0944	1.0957	1.1641
Basic & Chemical	44	Mean	0.1184	-0.1017	0.1972
		Stdev	1.4895	1.4910	1.505
Aneka Industry	34	Mean	-0.0168	0.0334	0.1788
		Stdev	0.2249	0.2263	0.7688
Consumption	29	Mean	-0.0311	0.0478	0.2123
		Stdev	0.4974	0.4986	0.5419

This table presents the descriptive statistic of variables in which FDC is Financial Distress Cost that measure by opportunity loss as comparison sales growth of firm and sales growth in its sector. (%), Sales growth and stock return are proxy of firm performance (%)

Table 2: Comparison the average of FDC and Firm Performance of all samples in 2011-2017

Variables	Research Periode						
	2011 t-2	2012 t-1	2013 T	2014 t+1	2015 t+2	2016 t+3	2017 t+4
FDC	-0.0050	-0.0300	-0.1292	-0.0198	0.1232	0.1296	0.266
Sales Growth (SG)	0.1216	0.0795	0.0796	0.0198	-0.123	-0.1296	-0.266
Stock Return (SR)	0.2420	0.2969	-0.0345	0.1324	-0.158	0.6547	0.2425

This table presents the descriptive statistic of variables in which FDC is Financial Distress Cost that measure opportunity loss as comparison sales growth of firm and sales growth in its sector (%), Sales growth and stock return are firm performance proxies (%)

4.2 Regression

Against this background, the remainder of this study investigates the impact of FDC to firm performance. We employ panel least square regression to explain these, controlling for a number factors such firm size, leverage, and firm age that might help to explain it.

The two dependent variables used to capture FDC are sales growth, and stock return. Cash flow problems of distressed firm may also retard firm competitiveness in product market for various reasons. Creditors may be unwilling to extend credit to them fearing that they may go bankrupt before clearing their debts. Distressed firm may be unable to take advantage of cash discounts, and customers may be reluctant to buy durable goods from weak firms, which might not be in business to provide after sales service. Decreasing of obligation fulfilment ability due to increase FDC that lead to return decline for investors.

To provide background for the remainder of the analysis, table 2 presents the result of all samples before, during, and after the base year of global crisis in 2013 for FDC, sales growth, and stock return. Apart from showing how firms perform and the table also shows how their performance changes over time.

This study finds that manufacture industry in Indonesia have highest of FDC in 2017 then firms take down in sales growth level since global crisis's year until four year after. It is an early indication that firms may reduce budgets for remaining of competitive when economic crisis and it may affect their cost then it damage firms performance.

Table 3: Regression Result of Financial Distress Cost and Firm Performance

Dependent Variabel ; Firm Performance		
	Model 1 - SG	Model 2 - ST
FDC	-0,202* [0,000]	-0,225 [0,5730]
LEV	-0,020 [0,1741]	0,1493** [0,1001]
SIZE	0,0061 [0,3132]	-0,0634 [0,3095]
AGE	0,0004 [0,1475]	0,000018 [0,9945]
Method	Panel (LS)	Panel (RE)
Observations	749	747
R-squared	0,052	0,005

This table presents the result of LS on SG and SR. SG is sales growth and SR is stock return in percent, which FDC is Financial Distress Cost that measure by opportunity loss as comparison sales growth of firm and sales growth in its sector (%), LEV is measured by total debt to total asset, SIZE is firm size computed from total asset (ln TA), and AGE is firm age.

*significant at 1% **significant at 10%

As expected, this study finds negative and significant on the impact of FDC to sales growth. Firms with higher FDC decrease sales growth meaning firm lose more market share. This result

support the hypothesis. As presented in Table 3, on contrast, stock return not impacted by FDC although it is significant by using size and firm age as control variables. This finding shows an important role of FDC as early signal for better managing of firm performance.

This study also finds that firm size and firm age has no role in controlling relation between FDC and firm performance, but leverage level does. It supported the finding of Opler and Titman (1994) that leverage caused loss of firm's market share.

5 CONCLUSION

The conceptualization of FDC shows that Financial Distress Cost may appear as decreasing of firm's financial condition caused by economic crisis. This paper focuses on explain the evidence of FDC in Indonesia industries and its impact to firm performance. This analysis proposes that sales growth and stock return as firm performance proxies may be better capture the impact of FDCs.

Firstly, this paper describes that there is difference of firm performance before, during, and after the base year of global crisis in 2013. From the descriptive analysis, it is known that average FDC before the crisis occurs lower with average sales growth is greater than after the crisis occurred. This is in line with the statement of Opler and Titman (1994) that when a crisis occurs, there will be a loss of market share in terms of lower sales growth.

Secondly, we examine the effect of FDC to firm performance in all research periods with all samples. The result show negative effect of FDC to sales growth, but not find the FDC's impact to stock return. This is assumed due to the different Indonesian industry characteristics that tend to be based on the cost of human labor as the dominant determinant of corporate costs. In addition, Indonesian industrial investors may also have greater external considerations than the internal factors of the company, so it is necessary to explore further the link between FDC and stock return.

Other result of test also finds evidence that firm age has been as better controller on FDC's impact to firm performance, but none in firm size dan firm age. Pindado and Rodrigues (2005) and Bulot et al (2017) find the significant role of firm size in FDC. This inconsistency finding needed to be explore more in next research.

These all results have a theory implication that enriching evidence of the FDC's as one of firm performance determinants. Furthermore, we also

reveals the relationship between leverage level on management risk decision in improvement of business performance. This study also offers an practical implication for firms that the FDC's role is important as determinant of firm performance especially in crisis period. Therefore, a firm can choose preventive strategy for managing its growth opportunity through FDC's controlling so the decreasing probability of firm performance can be minimized.

As limitation of this study, we only analyse descriptively the differences of FDC and firm performance before during, and after crisis base year without examine it in regression. Then we use only one proxy of FDC's which measured based of Pindado's research. Those make this study's result can not generalized and we suggest future research will explore the relation of FDC and firm performance using a regression model which include dummy function of FDCs difference in period categories of crisis, so that firm performance can reflected at different level of industry and research period. Furthermore, next research also can combine many proxies of FDC and use other proxies of firm performance such Tobin's Q, so its will explain better about the impact FDC on firm performance.

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