

## How Does Human Capital's Impact to Cost of Financial Distress?

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### Abstract

*Purpose:* The important of human capital relation to firm financial distress still get limited attention, but there is some evidence that firm reduce the cost of human capital when its get a declining financial performance due to bankruptcy. This study aims exploring the cost of financial distress determinant by human capital.

*Methodology:* We use the data of manufacturing industry in Indonesia Stock Exchange (IDX) during 2011 – 2017. We use monetary approach for measuring human capital by income-base indicator i.e wage/salary and cost of financial distress measured by the difference of firm sales and industry sales. Furthermore, this study illustrates a tendency of cost of financial distress which controlled by firm size, firm age, and leverage. We analyze using static panel data and also doing robustness check as analysis complement.

*Results:* The results find that human capital has positive significant impact to cost of financial distress and excess salary is a breakthrough of indicator for measuring human capital. Furthermore, the usage of firm size, firm age, and leverage as control variable, we find that larger and older firms able to more control their human capital against the cost of financial distress, thus, they can get the benefit of human capital increasing as their competitive strategy.

*Applications/Originality/Value:* Based income indicator, excess salary as measurement of human capital that built in this study supports the previous empirical studies in describing human capital's impact to cost of financial distress. The results has practical implication that a firm should concern to welfare of employee as long as it does not exceed the firm's revenue for avoiding firm's bankruptcy. Furthermore, the government may should thinks about optimal standard of employee salary or wages in distressed firm according our finding of human capital role in firm costs.

## INTRODUCTION

A different strategy help a firm get competitive advantage that make it having the balancing position in its industry. The main elements considered are risk and output that must be managed by the firm for its work's improvisation. (Chirani & Effatdoost, 2013). Economic uncertainty make investment activities not going well therefore it often affect firm's financial performance. The declining potential of firm's financial performance make a bigger chance of bankruptcy when firm fails minimalizing it. A decreased firm's financial performance leads to its inability of management anticipating of this change and this indication is commonly refered as financial distress that occurs before bankruptcy or liquidation (Platt & Platt, 2006).

The phenomenon of financial distress in Indonesian industry is detected from the number of delisted firms from various sectors during 2009-2018. This has been a signal (bad news) that financial distress threat become a firm risk in all industries. Financial distress be able occure in various industries and as early signal of bankruptcy that might be experienced by firms. The distressed firm has consequences such decreasing of firm's value that leads to lower prosperity of shareholder and then has been reflected in stock price falling. The indication of financial distress be detected through three conditions are negative earning before interest and tax depreciation

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(EBITDA), negative earning before interest tax (EBIT), and negative net income

Financial distress is a condition which insufficient operational cash flow and then leads to liquidity problem. When firm unable to fulfil its financial obligation, so firm becomes getting financial distress condition and bearing an expense, namely cost of financial distress (Pindado & Rodrigues, 2005). Cost of Financial Distress (CFD) suffered by firm as a result of financial position weakening or business disruption (Bulot et al, 2014).

The importance of CFD's determinant become an important concern for researchers because there are some facts that unexpected economic crisis impacts to economy growth of many countries and make several lossed industries then get their bankruptcy. The survived firms seem focus on their human resources for having better corporate governance. Mc.Gruick et al (2015) state that competitive advantage strategy depends on firm ability of innovating, evaluating, and exploiting its internal and external resources. Furthermore, human resource ie. human capital is important for corporate management and should be developed through enrichment of knowledge, expertise, and experience as key strategic of innovation. Human capital is a centre of competitive advantage, productivity, increased capacity, and national economic growth (Kwon & Dae-Bong, 2009).

This study considers suggestion of Montare (2013) that financial management should focus on continuance of human capital cost research and its relation to financial distress. According Graham et al (2013), salary losses due to reduced work capacity of firm improvisation in its industry. The higher of salary cost paid using debts for competitive decisions may generate CFD. Previous researchs show that human capital cost is quite large and using debt exceed the limit significantly, then cost of bankruptcy possible arise from labor linked balance of tax benefit of debt (Berk, et al., 2010). This supported by Brown & Medoff (1989) that find a positive impact of firm size to salary.

The relation of human capital and CFD still has been interesting topic of finance, because there is sparse in some results of human capital's impact to firm performance, such return on sales (Roca-Puig et al., 2011), capital structure and payment of workers (Chemmanur et al., 2007; Gill, 2011; Tahir and Fraz, 2015). Furthermore, some results show the inconsistency of human capital's impact to cost of financial distress are insignificant (Korteweg, 2007; Berk et al., 2010; Gill, 2011), and significant (Graham et al, 2014). The gap among these findings show that there is an optimum strategy implementation of firm's human capital for increasing firm's value and not the contrary, lead to the higher cost that may bring financial distress to the firm.

Generally, this study aims to analyze the effect of human capital on CFD. Previous studies implicitly and explicitly describe negative relationship and disfunction of human capital on CFD (Korteweg, 2007). We argue excess salary as breakthrough of human capital proxy could reflects firm decision of human resource upgrading and describe its link to financial distress. However, the accuracy of human capital measurement is main indicator of firm for decreasing Cost of Financial Distress (CFD) and then impact to its strategical decisions. Specifically, we use firm size, firm age, and leverage as control variables and expect it could clarifying human capital as determiant CFD.

## LITERATUR REVIEW

### Cost of Financial Distress

Cost of Financial Distress (CFD) appears as result of firm financial weakening and business disruption (Bulot et al., 2014). CFD has main role linked firm reputation, especially it reflected by firm obligation payable in distressed financial and then high distress costs make its reputation as financially insecured firm (Ozkan, 1996). CFD is important argument of financial issues such

optimal capital structure, firm valuation, and risk management (Bar-Or, 2000). Several studies find that CFD only occurs in small percentage and temporary but the other studies such as Altman (1984) and Bar-Or (2000) find that CFD is significant.

There are two major parts of CFD are direct costs and indirect costs. Direct Cost of Financial Distress includes the cost of legal service, accounting, investment bank, restructuring consultant, expert witness, and other professionals. Even though these direct costs are easily identified, it is not easy for researchers to gather informations needed in studying the kind of cost systematically (Altman & Hotchkiss, 2006). Therefore, most of studies tend focusing on indirect cost of financial distress. Indirect cost of financial distress is cost that may occur as several consequence such managerial disturbance and distortion of customers and suppliers relation as well as dependency of debts (Graham et al., 2014). Indirect costs of financial distress includes various costs such as unobservable opportunity cost such sales loss, profit loss, employee loss, low funding, poor decision making management, and decreasing of stockholders (Altman & Hotchkiss, 2006).

For assesing of CFD, some studies employ different estimations such the usage of invested capital growth level (Chen & Merville, 1999), sales or income growth level (Pindado & Rodrigues, 2005), performance or firm liabilities (Korteweg, 2007), the difference of equity value in debt financing (Bar-Or, 2000), and firm sales growth compared to sectoral sales growth (Pindado & Rodrigues, 2005). This paper follows Pindado & Rodrigues (2005) and Opler & Titman (1994) measuring CFD as indirect cost of financial distress by comparing firm sales performance with industrial sales performance. It is based on argumen that sales is less affected by firm characteristic from market value or income and better measurement for evaluating the CFD.

Regarding CFD's determinant, several studies focus on various variables affecting CFD such firm size or assets and leverage (Chen & Marville, 1999; Bar-Or, 2000; Pindado & Rodrigues, 2005; Korteweg, 2007; Bulot et al., 2014), R&D expenditure (Opler & Titman, 1994; Reimund et al., 2008; Bulot et al., 2014), intangible asset (Korteweg, 2007; Bulot et al., 2014), human capital (Korteweg, 2007; Berk et al., 2010), probability of financial distress (Chen & Marville, 1999; Pindado & Rodrigues, 2005), as well as sales performance and firm performance (Opler & Titman, 1994; Pindado & Rodrigues, 2005; Reimund et al., 2008).

The human capital as indirect CFD becomes a variable that is understudied and Korteweg (2007) finds positive relation of human capital and CFD, especially when low industrial performance and highly relying of human capital. Based on this argument, our study focuses on human capital as a determinant due to its importance in firm operational activities.

However, the assessment of CFD is important for understanding of firm costs incurred by financial distress that may reduce firm's financial capability. CFD may leads to bankruptcy (Gill, 2011; Montare, 2013; Graham et al., 2014). Therefore, this paper assumes that CFD is costs that occurs as result of decreased firm financial which triggered by market share loss or growth opportunity and then it make inability of firm to fulfil its responsibilities (Platt & Platt, 2006), and incur higher firm costs such labor cost, debts cost, etc. (Bulot et al, 2014).

## **Human Capital**

Human capital is key resource of organization success because the dedicated and talented employee are valuable, rare, and cannot be imitated. The human capital investment provides some knowledge and skill that benefit for creating better product and service value of firm. A firm should focuses on human capital role as organizational aspects and its effects to firm performance such salary growth, employees and productivity. The improvement of human resource competence as better opportunity for firm's competitive advantage strategy (Kwon & Dae-Bong, 2009).

Stroombergen et al (2002) state that human capital consists of expertise, capacity, and individual ability to generate income. Human capital has productive skill, talent, and knowledge which measured by multiplying price and quantity of goods and produced services. The estimation of human capital could be valued by future income of individual human capital that depend on their benefits. According to Kwon & Dae-Wong (2009) and based on conventional standard, the other human capital measurement is cost-based approach that number of firm costs of individual employee. Furthermore, it also could be measured by income approach which based on individual return in market through education investment namely work quality.

Generally, our study highlights the importance of human capital in organization and use income-based approach for measuring it that firm cost of salary or employee wage reflects firm efforts in improving human capital quality when it compare to industry salary standard. This paper develops the model proposed by Wu et al. (2010) that human capital measurement is salary cost and revenue approach as estimation of human capital policy in a firm. It is based on the idea that employee cost (salary cost) is an effort of firm's maintenance and improvement in human capital that considers firm sales, namely excess salary.

### **Human capital and cost of financial distress**

Some researchs show positive relation between human capital and Cost of Financial Distress (CFD), also human capital and bankruptcy (Korteweg, 2007; Gill, 2011; Graham et al, 2013). We define CFD as firm cost triggered by decreased financial performance which impacted by firm's lossing of market share and growth opportunity. This perspective leads to financial distress's impact on firm inability of obligations payment because high financial distress arise from high CFD such employee cost, debt cost, and others and it make firm's financial weakening (Bulot et al., 2014). Previous studies of CFD's determinant not measure adjustment indicator of financial distress probability as well as no considering of human capital in their model. Pindado & Rodrigues (2005) use other way which differentiate the effect of probability of financial distress and leverage. They employ more accurate alternative measurement of CFD and probability of financial distress that those make the researcher testing the real effect of debts on CFD.

Generally, besides in CFD measurement and determinants, researchs gap also appear in the research findings of various industrial locations in US, UK, Germany, and Malaysia. The findings show inconsistency of empirical results about CFD determinants, especially human capital such no significant in research of Berk et al (2010) and (Gill, 2011), but it in contras to Graham et al (2014). Based on these inconsistency, we explore CFD and its determinant that using new proxy of human capital.

We define human capital as human resource capital for increasing firm value through income-based and revenue approach which human capital measured by developed model of Wu et al (2010), namely excess salary which included of firm salary cost, industry salary cost, firm sales, and industry sales. It is based on assumption that human capital estimation could be performed by sales cost probability (Stroombergen et al., 2002). We also follow the opinion of Graham et al (2015) who state that human capital as costs must be incurred to substitute employee's effort in their contribution in firm performance improvement. Salary cost calculated by employee cost of firm based on suitable of employee's work quality (Graham et al., 2013).

Furthermore, firm ability of improving their human capital is different between large firm and small firm because the assets provide an opportunity of easier access in getting the resources access. Firm size also considered as control for human capital based on argument that old firm have better ability for managing its sources included human then firm could minimize its CFD. Therefore,

agency theory perspective states that there is a negative relation of leverage and performance as result of excess funding from debts, so that leverage also important to controlling the human capital's impact to CFD because firm reputation of obligation payable enable firm for getting the larger access as strategy of financial distress anticipation.

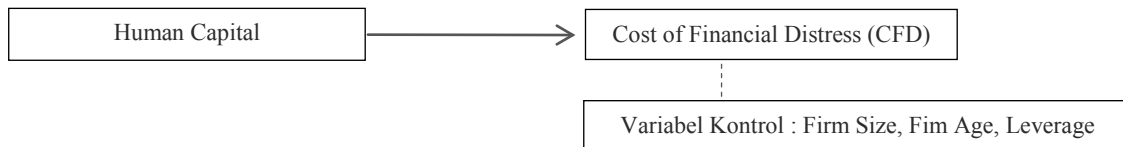


Figure 1 Framework of human capital and cost of financial distress

Several theories explain that firm loss from high salary cost triggered by firm bankruptcy. The employee may be paid on a premium level of salary in labor market (or marginal value of products) as firm bargaining position or employee selection based on their abilities for minimizing human cost. It leads firm to bankruptcy situation then employee get lower salary (Berk et al, 2010).

According Pindado & Rodrigues (2005), increasing of salary cost make financial pressure of firm and salary or wages regulation has positive or negative effect that it give certainty wage or salary and also it has been cost of firm which may leads to layoffs or plant transition. Berk et al (2010) develop the model of human capital cost linked financial distress. When a firm goes to bankrupt, it pressure almost always leads to human capital. The investment of employees during bankruptcy phase make firm have possibility of investment loss and get cost of bankruptcy. The higher human capital investment leads to larger CFD and bankruptcy. The fastest and most noticeable effect of firm collapse is the decreasing of firm's activities and this proved by empirical research which show there is loss from wages as result of this condition (Montare, 2013).

Some empirical findings which test the relations of human capital and CFD show positive significant (Graham et al., 2015), negative significant (Tahir & Fraz, 2015), and no significant (Berk et al., 2010). Our study propose that employee will anticipates the loss of wages or salary related to financial distress and the loss estimated occurring due to declining of financial performance through excess salary as improving firm human capital for firm competitive. Therefore, there is a proposition that human capital has a relation with indirect cost of financial distress and thus, we hypothesize that there is positive impact of human capital to CFD by inserted control variables are firm size, firm age, and leverage.

## DATA, VARIABLES, AND EMPIRICAL MODEL

### Data

This study analyzes financial data of listed manufacture firms in Indonesia Exchange (IDX) during 2011-2017. The samples are 107 firms with a total of 749 observations included many subsectors of basic processing and chemical, pharmacy, textile and garment, miscellaneous industries, automotive, cable and electricity, cosmetics, and consumers goods. The data consist of assets, sales, and salary cost (cost on employees/labor on production process, selling, and administration) that are processed using static data panel.

### Variables

*Dependent Variable*, We use Cost of Financial Distress (CFD) as dependent variable follow Pindado & Rodrigues (2005) which measured by the difference of industry sales growth and firm

sales growth as below:

$$CFD_{it} = \left( \frac{Sales_{it} - Sales_{it-1}}{Sales_{it-1}} \right)_{sec} - \left( \frac{Sales_{it} - Sales_{it-1}}{Sales_{it-1}} \right)$$

Where  $CFD_{it}$  reflects cost of financial distress measured by differences of sector sales growth and firm sales growth.  $Sales_{it}$  is firm return measured by gross sales min cash discounts, trade discounts, returned sales excise taxes and value-added taxes which credit sales assumption.

*Independent Variable*, the independent variable of study is human capital which proxied by excess salary as new measurement developed from model of Wu et al (2010) to measure human capital policy of a firm. The usage of salary cost and revenue approach make an estimation in improving of human capital policy. This is based on argument that employee cost (salary cost) is firm's effort of human capital maintenance that consider to firm sales level. The increasing of excess salary as a result of comparison between salary cost and average salary cost multiplied with industry sales and then divided by salary cost. It indicates the improvement if human capital performed by a firm. Thus, a new model for human capital proxy is surplus of salary cost which measured as follows:

$$HUCAP_{it} = \text{Salary Cost}_{it} - \text{IndSalarycost} * \frac{\text{Revenues}_{it}}{\text{IndRevenues}} \div \text{Salarycost}_{it}$$

$HUCAP_{it}$  is the percentage of excess salary,  $Salary\ cost_{it}$  is cost of employee includes incurred cost that is related with employees or labors, such as production costs in the form of direct wages and indirect wages, sales expense, and general administration costs such as salary, allowance, and welfare.,  $Revenues_{it}$  is total sales or income,  $IndSalarycost$  is industry average cost of employee, and  $IndRevenues$  is industry average sales.

### Control Variables

We use some control variables for better explanation about human capital as determinant CFD are:

*Firm Size*, the bigger firm have more and wider access of funding or other resources for its operational then easier getting chance in strategical improving of human capital (Dang & Li, 2015). We use Ln assets as firm size.

*Firm Age*, the older firm have more experiences and networks for accessing many sources than younger firm, so we also use firm age as one of control variable in this study.

*Leverage*, CFD linked to possibility of decreasing firm ability to fulfil its obligations. The higher leveraged firm has higher potency of financial distress that could impact to its human capital (Pratt, 2011). We measure leverage by percentage of firm leverage

### Empirical Model

This study build a model that Cost of Financial Distress (CFD) determinant by human capital which the model are :

$$CFD_{it} = \beta_0 + \beta_1 HUCAP_{it} + SIZE_{it} + AGE_{it} + LEV_{it} + \epsilon_{it} \dots\dots\dots (1)$$

Where  $CFD_{it}$  is Cost of Financial Distress (CFD) measured by industry sales growth and firm sales growth,  $HUCAP_{it}$  is human capital proxied by excess salary,  $SIZE_{it}$  is firm size using asset,  $AGE_{it}$  is firm age,  $LEV_{it}$  is firm leverage in percentage, and  $\varepsilon_{it}$  is error value.

## RESULTS

### Descriptive Statistic

Table 1 presents descriptive statistic of each variables in all sample (basic chemical industry, various industrial, and consumer goods) that the highest CFD value for overall samples is 23,97 % and the lowest average value of HUCAP is -59,45 % . Furthermore, Table 2 presents the statistics for each observation year for all sampled firms in which the highest of HUCAP is 85,69% of 2014 and the lowest average of CFD is 2,96%.

Table 1. Descriptive statistics of full sample

Sample	Firms	Statistic	CFD	HUCAP	SIZE	AGE	LEV
Full Sample	749	Mean	0,0478	-0,2331	8,57E+12	36,57	0,5519
		Median	-0,0531	-0,2389	1,66E+12	36	0,4999
		Maximum	23,966	9,0989	2,96E+14	100	5,0733
		Minimum	-0,9895	-59,449	7,65E+09	2	0,0133
		Std.dev.	1,0944	3,0146	2,54E+13	13,789	0,4848
		Skewness	18,956	-12,992	7,1629	1,6267	5,3567

The table presents descriptive statistic of variables which CFD is cost of financial distress measured by differences of sector sales growth and firm sales growth (%), HUCAP is human capital measured by excess salary (%), SIZE is firm size in billion rupiah, AGE refer to firm age, and LEV is firm leverage (%),

Table 2. Descriptive Statistics year by year

Year	Firms	Statistics	CFD	HUCAP	SIZE	LEV
2011	749	Mean	0,0581	0,8387	5,94E+12	0,5425
		St.dev	0,2698	0,2014	1,71E+13	0,4429
2012	749	Mean	0,0467	0,8499	6,93E+12	0,5246
		St.dev	0,1584	0,1836	2,01E+13	0,4083
2013	749	Mean	0,0370	0,8520	8,31E+12	0,5465
		St.dev	0,3657	0,2100	2,41E+13	0,4150
2014	749	Mean	0,0296	0,8569	9,04E+12	0,5597
		St.dev	0,2540	0,2085	2,63E+13	0,4989
2015	749	Mean	0,0496	0,8131	9,36E+12	0,5861
		St.dev	0,3162	0,2898	2,72E+13	0,5568
2016	749	Mean	0,1296	-0,4746	9,78E+12	0,5418
		St.dev	1,0689	5,9145	2,84E+13	0,5259
2017	749	Mean	0,2660	-0,3078	1,06E+13	0,5619
		St.dev	2,6035	4,2671	3,18E+13	0,5346

The table presents descriptive statistic of variables which CFD is cost of financial distress measured by differences of sector sales growth and firm sales growth (%), HUCAP is human capital measured by excess salary (%), SIZE is firm size in billion rupiah, and LEV is firm leverage (%),

## Regression

We use static panel data for analyzing the impact of human capital on cost of financial distress. As expected, our study finds positive significant effect of human capital (HUCAP) on cost of financial distress (CFD) in variety of significance level. Firms with higher proportion of excess salary have higher financial pressure therefore the hypothesis is supported. There is no evidence for leverage as potential control variable, while few proved of firm size and firm age. As presented in Table 3, our results confirm the finding of Graham et al. (2015) that human capital has positive relationship with CFD

**Table 3. Regression Results**

Dependent variable : Cost of Financial Distress (CFD)			
	Panel Least Square	Random Effect	Fixed Effect
	1	2	3
HUCAP	0,0164*** (0,0096)	0,0175** (0,0076)	0,0159** (0,0080)
SIZE	-0,1346*** (0,0817)	-0,1345 (0,0884)	-0,2334* (0,0819)
AGE	-0,0042 (0,0031)	-0,0033 (0,0023)	0,0211* (0,0047)
LEV	0,0950 (0,1034)	0,01320 (0,1511)	0,0317 (0,0563)
Year dummies	Not Included	Included	Included
Constant	Included PLS	Included	Included
Method	749	RE/GLS	FE/GLS
Observations	0,0142	749	749
R-squared	0,0089	0,0111	0,2374
Adjusted R-squared	0,0300**	0,0058	0,1059
F-Statistic		0,0807***	0,0000*

This table presents the results of panel least square (column 1), random effect panel data GLS (column 2), and fixed effect GLS (column 3). The independent variable is human capital (HUCAP presented in percentage), while dependent variable is cost of financial distress (CFD, in percentage). The control variables are SIZE as firm size denotes Ln asset, AGE is firm age in number, and LEV is firm leverage (%). The values in parentheses are standard errors.

\* Significance at the 1% level.

\*\* Significance at the 5% level

\*\*\* Significance at the 10% level

Strong evidence shows that our new proxy of human capital which proposed in this study namely, excess salary, is better explanation in human capital's impact to CFD which is significant in all significance level. Our study also find that large firm has better role to control the effect of human capital on CFD, thus it may get higher benefit from its increased human capital. This support the research of Brown & Medoff (1989) who find the positive relation of firm size and salary. Furthermore, we also find that firm age control human capital's impact to firm financial pressure and this is in line the finding previous study that age is related to declined financial performance then it may leads to CFD (Loderer & Waelchli, 2009).



### Robustness checks

In this study, the robustness check is performed according to Graham et al. (2014) by replacing excess salary with salary cost that refers to work quality. The results show that HUCAP still has significant effect on CFD, but there are negative effects in several models as presented in Table 4 below:

**Table 4. Robustness Check Results**

<b>Dependent variable : Cost of Financial Distress (CFD)</b>			
	<b>Panel Least Square</b>	<b>Random Effect</b>	<b>Fixed Effect</b>
	<b>1</b>	<b>2</b>	<b>3</b>
<b>HUCAP</b>	-0,4930** (0,2262)	-0,5812** (0,2739)	-0,5677* (0,1707)
<b>SIZE</b>	0,2697** (0,1156)	0,3284** (0,1408)	-0,1622*** (0,0980)
<b>AGE</b>	-0,0005 (0,0015)	0,0012 (0,0012)	0,0419* (0,0100)
<b>LEV</b>	0,1166 (0,1162)	0,1629 (0,1694)	0,0233 (0,0541)
<b>Year dummies</b>	Not Included	Included	Included
<b>Constant</b>	Included	Included	Included
<b>Method</b>	PLS	RE/GLS	FE/GLS
<b>Observations</b>	749	749	749
<b>R-squared</b>		0,0437	0,2702
<b>Adjusted R-squared</b>	0,0461	0,0386	0,1442
<b>F-Statistic</b>	0,0409 0,0000*	0,0000*	0,0000*

This table presents the results of panel least square (column 1), random effect panel data GLS (column 2), and fixed effect GLS (column 3). The independent variable is human capital (HUCAP measured by log salary), while dependent variable is cost of financial distress (CFD, in percentage). The control variables are SIZE as firm size denotes Ln asset, AGE is firm age in number, and LEV is firm leverage (%). The values in parentheses are standard errors.

\* Significance at the 1% level.

\*\* Significance at the 5% level

\*\*\* Significance at the 10% level

Likewise, our model shows that the effect of HUCAP on CFD remains significant negative in variety of significance level. This supports the result of study conducted by Tahir & Fraz (2015) that also find negative significant effect of human capital on CFD. The higher of firm investment in human resources (measured by salary) leads to decreasing of CFD. Similar relation also appears when we use firm size and firm age as control variables, while there is no evidence for leverage.

### CONCLUSION AND DISCUSSION

Crisis economy triggers financial distress and firm should have competitive strategy for its survival. Human capital is part of firm's main strategy because a firm get benefit for better

innovation of employee's knowledges and skills. We define human capital as human resource capital for increasing of firm value through income-based and revenue approach and convert human capital cost namely, salary cost or firm expenses of employee. Our analysis leads to the usage of excess salary in financial distress that linked losses possibility of employee cost as improving firm productivity.

The results show that human capital positive impact to Cost of Financial Distress (CFD), and leverage not distinguish it. The larger of human capital expenditure brings the higher CFD. Furthermore, a bigger and older firm controls the impact of human capital on CFD, then gets more benefit from increased human capital as firm's competitive strategy.

## IMPLICATION, LIMITATION, AND SUGGESTION

The finding of study has implication in contributing of strengthen evidences about human capital and Cost of Financial Distress (CFD). We also reveal the relation of firm size, firm age, and leverage on firm's management decision of human capital investment. Furthermore, The results also have implication that a new determinant for managing firm cost is human capital proxy linked to CFD and it may leads to bankruptcy when firm does not handle it properly. A firm should make preventive strategy of human capital that firm's financial expenses not exceed its revenue or firm may be get the distress of financial. The last implication is government may should think about optimal standard of employee salary or wages of distressed firm according our finding of human capital role in firm costs.

There is a limitation in our study that we do not use individual characteristic that refer the difference of knowledge, skill, competence, and individual attributes, and make quantitative approach of human capital only. We argue that the approach may be hindered by various characteristics and it may not have general measurement therefore could be hard to be mixed although main components can be handled by statistical technique. This may trigger serious problem in comparing human capital in individual and group level in a certain time period or in the past time period.

Therefore, future research may extend this research with a same approach of human capital measurement for other industries in many different countries. We also suggest that next researchers combine three approaches of human capital measurement as education investment of a firm using past period basis by including labor investment (firm), individual and family, and government, which has not performed in this paper.

However, new development of human capital theory leads to the aggregate advantage measurement, and concept exploration that could be closer to the facts. It help better explanation of human capital relation on CFD as the impact of decreased firm financial in crisis period.

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