Paradox Choice

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Paradox Choice of External Financing Needs and Financing Decision: an Empirical Study of Manufacturing Companies in Indonesia

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Abstract: External financing is an important part of financial management which is related to rational decision making on investment, funding and dividend policies for value creation. External Financing Needs (EFN) are calculated according to sales growth targets, which involve sales change variables, capital intensity ratios, financial, operational accounts payable, profit margins and retained earnings. Furthermore, how this variable influences funding decisions that are proxy by the Debt to Equity Ratio. The study was conducted on all manufacturing sector companies listed on the Indonesia Stock Exchange in 2011-2017, to prove the effect of changes in assets, additional retained earnings, external financing needs and sales growth on funding policies. The results show that retained earnings and asset changes have a significant effect on increasing DER and External Financing Needs has a significant negative impact on DER, while sales growth does not affect DER. This research shows the paradox between RE and DER as well as between EFN and DER to manifest the Pecking Order theory. The reason is that the company has a negative EFN as an indication of having a larger retained earnings, thus lowering the DER, the findings indicate otherwise.

Key words: external financing needs, retained earnings, asset changes, financing decisions, and paradox choices.

Introduction

The main issues in the field of corporate finance are investment, financial and dividend decisions (Ross, Randolph, and Jeffrey 2013; Vernimmen et al. 2014). The decisions in some literature are also called the financial strategy which is the interaction of funding investment decisions and the creation of corporate value decisions (Pike and Neale 2009). Although some literature shows different perspectives for financial strategies, the goal is to create value for shareholders, for example (Vanhorne 2002) emphasizes that funding decisions are rational actions in the efficient allocation of resources to maximize welfare for shareholders, while Ross et al. (2013) and Watson and Antoney (2010) said that the good financial decisions will add value to the firm and to shareholders and bad financial decisions will destroy value.

The way to create good financial decisions begins with financial planning. Financial planning is a corporate financial process in considering investment and funding decisions (Vernimmen et al. 2014). An important factor in financial planning is the estimation of company growth that means future projections have implications for current funding Ross et al. (2013); and Vernimmen et al. (2014). Corporate growth can be reflected in sales growth or asset growth. Generally, financial planning companies start with the sales target approach or sales approach. The sales approach is used to determine potential profit margins and additional potential retained earnings. Additional retained earnings as a basis for decision making to determine the combination of internal or external funding. Various studies have been conducted on how to determine the optimal combination of external and internal funds and their impact on value creation as good financial decisions.

The combination of external and internal funding can be reflected in the Debt to Equity Ratio (DER) as a funding decision. Ross et al. (2013) mentions that with the endogenous and exogenous resources, endogenous resources as auto financing are generated from reinvested profits and asset sales, while exogenous resources are loan capital from external sources.

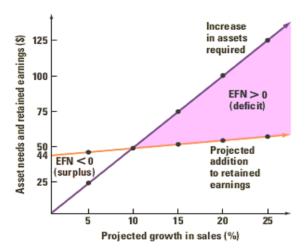


Figure 1. The relation of EFN, sales growth, asset needsand additional retained earning (Ross et al. 2013)

Empirically, there still have different result whether DER will add or reduce the value of the company. Some studies show that high DER decreased the value of companies associated with financial distress, while other studies show that high DER increased the value of the company. When the company grows, it will increase DER because of its confidence in profit margins that can solve financial problems. Several studies also show that there is a relationship between financial constraint and investment (Altomonte et al. 2016; Baños-caballero, García-teruel, and Martínez-solano 2013; Chae, Kim, and Jung 2009). So that several studies began to explain the relationship between funding and good corporate governance (Chae et al. 2009; Chen et al. 2010).

Operationally, funding analysis has been formulated in several approaches such as funding needs as a result of the sales growth proposed by Brealey, Myers, and Marcus (2001) using the Required Financial Needs (RFN). The RFN model shows that external financing is an equilibrium model between sales growth or new investment growth with dividend policy (Brealey et al. 2001). While (Ross et al. 2013) used the EFN as an equilibrium model of sales growth, changes in utilization assets ratio, changes in trade payables, profit margins and retained earnings. The relationship between sales growth and the need for asset enhancement and projections on additional retained earnings will determine whether the company needs external funding or not.

The negative EFN value as an indication that the company has cash to fund additional sales without having to use debt because it has sufficient cash obtained from additional profits held. While the positive EFN is the indication that the company needs external funds to finance the company because internal funds are not sufficient for sales growth. So, the context of the equilibrium EFN is related to sales growth and an increase in utilization ratio. Sales growth causes additional assets, liabilities and equity without external financing needs (Ross et al. 2013). The model shown in Figure 1 is easier to understand using the external financing needs (EFN) which describes a combination of the funding needed to increase the required assets with an additional projection of retained earnings.

Several empirical studies show that external financing needs and growth assets have a linear relationship. While (Eldomiaty et al. 2016) shows that equity is the first funding for current and sustainable growth, followed by retained earnings and financing with debt as the last option in accordance with the Pecking Order Theory. Other researchers show that EFN and firm value have a positive relationship that greater growth requires a larger EFN (Al-Najjar 2017).

In the strategic decision, the EFN is the way to control external environmental factors, as well as Karakaya, Kurtaran, and Kurtaran (2017) shows that EFN increases corporate value. When the company has potential growth and produces low profitability, the company will have high financial risk. Some other researchers show that external financing has a relationship with efficiency of capital allocation, where EFN is needed if the capital allocation is limited by low investor protection. Chen et al. (2010) found that EFN is to strengthen the quality of corporate governance practices and corporate value. Almeida and Wolfenzon (2005) argued that certain deficiencies in company performance, use of external financing are more profitable. Some researchers also show that external financing is needed when companies grow and develop, especially for start-up companies that use debt for survival after three years, Cole and Sokolyk (2018) even though it is found for business start-ups that use debt raises moral hazard problems, Nofsinger and Wang (2011) included in the case of patent commercialization (Svensson 2007). Although some studies have found a negative relationship between profitability and external financing by Leary and Roberts (2005) contrary to Karakaya et al. (2017) which shows a positive relationship between EFN and firm value.

Paradox Choices of External Financing Needs and Financing Decision

Paradox is a situation that arises from a number of premises, which acknowledges the truth that create from a statement and will arrive at a group of statements that lead to a contradiction or to a situation that is counterintuitive. Some literature has explained the paradox case in explaining asymmetric information by Myers and Majluf (1984) about financial signaling, transaction costs, flotation costs, and taxes. As far as before, Brien and David (2009) explained the paradoxization between dividend values in steady growth conditions to determine the optimization based on straight current yield, but it was invalid in dynamic conditions, which gave rise to market values used as discount dividend as earnings to market (Karakaya et al. 2017). It is certainly different when the profit opportunity that is not depend on other period investments.

Paradoxization has also been explained previously by Gordon Model which shows the higher retained earnings the lower return (Brien and David 2009). Brien and David (2009) explained the paradoxization between growth and debt policy (Agency theory). Some literature and empirical studies have explained about paradox choices, which can be explained by asymmetric information theory, financial signaling, transaction costs, flotation costs, and taxes. In the case of trade-offs of capital structures related to tax reduction and debt can create corporate value, paradoxically shows that excessive debt can cause financial distress, and the benefits of taxes are not large enough to generate greater profits and high debt can have an impact financial restructuring which has an impact on investment opportunity loss, this is overcome by optimizing capital structure.

In the context of growth, generally companies will increase new assets or investments, to utilize high grow opportunities, and will determine capital structure policies that can be explained by the pecking order theory. On the other hand, the managers expect a high growth rate as sustainable external financing is needed when the company has high growth. It shows that there is a paradox between growth, value for shareholders and funding. The paradoxical relationship between external funding needs and funding decisions can be seen when a company has a negative EFN meaning that the company has enough funds to finance. In line with (Koussis, Martzoukos, and Trigeorgis 2017) stated that under certainty conditions the company with excess cash is distributed in the form of dividends, while in the negative cash flow period the company uses external financing for its short-term funding.

Most companies determine financial forecasts as an assessment of growth planning and assume that they have no limitations to external funding source. Some funds are generated internally. But within the limited internal funding sources the company will determine how much is needed to achieve certain growth with external funds. On the other hand, under conditions of limited external funding sources, companies will take-into account how to use equity as a funding decision.

Objectives of the Study

This study aims to prove the relationship between External Financing Needs (EFN) and the choice of funding sources in the manufacturing companies that are listed on the Indonesia Stock Exchange. This study determines whether there is paradoxization of the choice of funding sources or not. If the EFN is negative, the company has an internal funding surplus. While the positive EFN indicated that the company has a lack of internal funds. In this case, it can increase or decrease leverage and whether there is a change in the new Debt to Equity Ratio. The novelty of this study is to provide an empirical explanation of the paradox between funding requirements and funding decisions in manufacturing companies in Indonesia.

Methodology

The study was conducted on manufacturing companies listed on the Indonesia Stock Exchange. There are 124 companies in the period 2011-2017 with 868 panel data. The sample selection is done by criteria of companies that have positive earnings and equity. It is the basis for consideration that the company has profits that are estimated as retained earnings. Sample selection is also done to meet the randomness of the data following the normal distribution by eliminating outlier samples. Outlier detection is done by box plot method and standardize z-score against univariate variables with a critical value of \pm 2.5. The normality test was performed on all variables with a critical value < 0.05. The number of N samples after outliers and normality tests were 249 samples.

The variable in the study is External Financing Needs (EFN) which is proxied by using an equation model that reflects the interaction between investment decisions and funding decisions for the purpose of corporate growth. The EFN is a pro forma balance-sheet planning model for external funding needs, in accordance with sales growth targets after considering investment needs, operational liabilities, and dividend policies. It means that EFN has considered the interaction between increased investment, retained earnings and financial operations of the company. The EFN model is presented as follows:

$$EFN = AU \times \Delta sales - \frac{SL}{Sales} \times \Delta Sales - PM \times PS \times (1 - D)$$
 (1)

External Financing Needs (EFN), as equilibrium model that formulated how much rupiah needed as additional external funds as a result of an increase in asset capacity from additional sales, after deducting additional trade payables and retained earnings from the projected future profit margin sales projection. In other words, EFN is an element of increasing utilization ratio, increasing sales, changing trade payables to sales, profit margins, sales projections and retained earnings (Ross et al. 2013). Each parameter can be explained as follows:

 Δ sales = Sales _{t+1} - Sales _{t0}

PS (Projected sales) = Sales $_{t+1}$

SL (Spontaneous Liabilities) = Δ Account Payable = AP_{t+1} – AP_{t0}

PM = Profit Margin
D = Devidend payor

D = Devidend payout ratio AU (Assets Utilization) = Asset to sales ratio

Then, balance sheet funding model using technical analysis with general linier model multivariate analysis as follows:

$$DER = \alpha_0 + \beta_1 G_S ales_{it} + \beta_2 G_A ssets_{it} + \beta_3 AdR Earning_{it} + \beta_4 EFN_{it} + \check{e} \quad (2)$$

where:

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\begin{array}{ll} \text{DER} & = \text{Debt to Equity} \\ \text{G\_Sales} & = \frac{\text{Sales}_{t-1}}{\text{Sales}_{t-1}} \\ \text{G\_Assets} & = \left(\frac{\text{Assets}_{t0} - \text{Assets}_{t-1}}{\text{Assets}_{t-1}}\right) \\ \text{AdREaming} & = \text{Additional Retained Earning} = (1 - \text{deviden Pay Out}_{t0}) \\ \text{EFN} & = \text{External Financing Needs} \end{array}
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Result

Table 1 shows that most of the age range of the respondents is 26-30 years (32.7%) with the gender of the respondents were women (54.5%). The majority of respondents' level of education is bachelor (57.4%) with a service period of 6-10 years (31.8%).

Based on descriptive result shown in Table 1, most companies have a negative EFN which is the company has a sufficient internal funds to finance its sales growth projection. According to other perspective, the average EFN Index as measured by the average funding requirement compared to the EFN manufacturing sector showed the variations result.

Table 1. External Financing Needs based on the manufacturing industry sub-sector are listed on the Indonesia Stock Exchange in 2011-2017

Sub Sector of Manufafturing	N	EF	EFN Index				
Industry	IN	Max	Min	Mean	Max	Min	Mean
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cement	14	68,773	-314,598	-180,187	0.12	-0.03	0.07
Ceramic, Glass & Porcelain	21	2,104	-418,345	-59,549	0.33	0	0.02
Metal	53	19,682	-269,351	-12,166	0.42	-0.03	0.02
Chemistry	42	3,460	-48,861	-4,055	0.29	-0.02	0.02
Plastic and Packaging	43	6,482	-23,452	-1,484	0.37	-0.10	0.02
Animal feed	18	-468	-180,162	-62,213	0.16	0	0.06
Wood and Processing	7	-1,851	-55,277	-22,461	0.35	0.01	0.14
Pulp and Paper	27	71	- 61,400	-8,369	0.27	0	0.04
Automotive	55	34,429	-1,189,441	-105,552	0.20	-0.01	0.02
Textiles & Garments	41	138,399	-589,039	-82,624	0.17	-0.04	0.02
Cables and Electronics	33	11,013	-73,888	-8,799	0.25	-0.04	0.03
Food & Drink	64	50,803	-304,686	-40,552	0.12	-0.02	0.01
Cigarettes	15	171,152	-789,125	-154,730	0.34	-0.07	0.07
Pharmacy	40	1,240	-1,208,368	-71,663	0.42	0	0.03
Cosmetics & Goods Household	17	-106	-208,901	-30,525	0.4	0	0.06
Household appliances	13	7	-4,231	-1,376	0.24	0	0.08
Total	503	505,189	-5,739,126	-846,305	4.45	-0.35	0.71
Average		59,434	-675,191	-99,565	0.52	-0.04	80.0

Source: Authors calculation from Indonesia stock exchange

Table 1 shows the average of external based on the manufacturing industry sub-sector listed on the Jakarta Stock Exchange, which was examined in the period 2011-2017 with panel data. The column (2) shows the variation samples in each industrial sub-sector as the information on the diversity of industrial sub-sectors contained in the manufacturing sector. The maximum and minimum values of the external funding needs in columns (3) and (4) and column (5) show the average external funding needs in each manufacturing sub-sector. Columns (6), (7) and (8) shows descriptive information about the EFN Index, which is the ratio between the EFN value of each sub-sector to the total of manufacturing sector.

The other interesting information shown in Table 2 namely the ratio between EFN to changes in assets and changes in sales based on the manufacturing industry sub-sector. EFN ratio to asset changes is an indication of changes in rupiah asset value to EFN requirements assuming no equity.

Examples: the cable industry sub-sector and EFN electronic ratio to maximum asset changes of 140.06 means that each increase in rupiah asset change has an impact on 140.66 rupiahs external funding needs with a structural capital assumption does not change. Likewise, the EFN ratio to changes in sales, for example in the automotive sub-sector showed an average EFN ratio to sales changes of 114.17, meaning that every change in rupiah sales requires funding of 114 rupiah. A positive number indicates that external funding is needed, whereas a negative number indicates that funding is sufficiently funded by reinvestment from retained earnings in the coming year.

Tabel 2. EFN Ratio to Change of Assets and Sales by sub sector of manufacturing companies in Indonesia

Industry	N	EFN to Change of Assets			EFN to Change of Sales			
		Max	Min	Mean	Max	Min	Mean	
Cement	14	2.49	-12.97	-6.27	3.86	-18.81	-9.2	
Ceramic, Glass and Porcelain	21	1.47	-200.76	10.8	1.65	-522.72	27.13	
Metal	53	120.88	-93.69	-4.01	21.12	-214.82	-0.9	
Chemistry	42	15.25	-30.51	-4,64	12.54	-52.9	-5.99	
Plastic and Packaging	43	13.89	-10.8	-1.66	7.79	-136.47	-7.84	
Animal feed	18	-0.19	-13.56	-4.85	-0.12	-7.87	-3.13	
Wood and Processing	7	-2.59	-58.73	-23.68	-2.27	-312.07	-71.89	
Pulp and Paper	27	0.03	-14.22	-2.88	0.07	-10.3	-3.48	
Automotive	55	6.82	-38.8	-4,21	5751.21	-150.86	114.17	
Textiles and Garments	41	10.1	-86.51	-9.99	6.06	-56.68	-7.57	
Cables and Electronics	33	140.06	-55.25	-2.68	52.35	-30.99	-2.41	
Food and Drink	64	22.77	-26.86	-5.72	17.02	-18.42	-5.1	
Cigarettes	15	4.5	-48.04	-8.28	1.92	-51.77	-6.75	
Pharmacy	40	2.67	-97.25	-11.83	2.41	-69.57	-9.44	
Cosmetics & Goods Household	17	-0.21	-22.32	-5.14	-0.25	-20.07	-3.89	
Household appliances	13	0.05	-7.23	-2.6	-0.32	-7.17	-2.22	
Total	503	337.99	-817.50	-78.79	123.83	-1.681.49	-112.68	
Average		39.76	-96.18	-10.51	15.48	-197.82	-14.09	

Source: Authors calculation from Indonesia stock exchange

The results of least square regression show that there is positive and significant influence sales growth rate, retained earnings, asset growth on DER. It suggests that the higher sales growth will have the higher asset growth and retained investment and the higher the use of external funds. While external financing needs have a significant negative effect on DER. EFN is negative as an indication that the company has sufficient internal fund where the company has sufficient internal funds and debt have increased. It is called the paradox between external funding needs and funding options. Normatively, when companies have negative EFN, DER will be smaller.

The results of empirical findings indicate that the magnitude of EFN is negative, the choice of external funding decisions is greater, this is the first paradox. There is an effect of retained earnings on DER which shows the higher retained earnings, the higher the DER. It contrasts with the choice concept of funding decisions in the pecking order theory that increasing internal funding will show lower DER. It is called the second paradox. Koussis et al. (2017) found that uncertainty retained earnings at a high-level increased debt but had an impact on the value of equity. This is contrary to several studies which show that financial constraint is a consideration in determining optimization investment (Baños-caballero et al. 2013).

Table 3. The result of model estimation

Variable	Estimation summary							
	Coefficient	S.E.	t-test	Prob.				
Constant	5.948	0.753	7.899	0.000				
G_Sales	0.001	0.003	0.333	0.642				
G_Assets	0.325	0.061	5.328	0.000				
AdREarning	0.810	0.360	2.250	0.026				
EFN	-1.084	0.356	-3.045	0.003				
DER (Debt to Equty Ratio) is dependend variable								
Statistic summary								
Obs	295							
\mathbb{R}^2	0.560							
SEE	0.560							
f-test (Prob)	0.000							
Distribution Normality Test α > 0.05								
G_Sales	0.200							
G_Assets	0.200							
AdREarning	0.200							
EFN	0.200							
DER	0.200							

Source: Authors calculation

This study in line with several studies found that there is no financial constraint in Indonesia manufacturing sector. The excessive debt funds have the potential to get incentives for stakeholders that may occur due to asymmetric information. To examine the effect of sales growth, asset growth, retained earnings, and external financing needs on DER was conducted by multiple regression analysis. The study was conducted on 868 panel data, using a sample of 124 companies in the 2011-2017 period. Researchers reduce the amount of observation data by removing the extreme data (outliers). After disposal of outlier data, a sample of 249 companies was obtained. Extreme data dumping causes all variables to be normally distributed. This is shown in Table 3.

The results of multiple regression analysis test are shown in Table: 3, that there is a significant positive effect between retained earnings and asset growth on DER. It means that the higher the asset growth and retained earnings, the higher the additional corporate debt. While the effect of EFN on DER shows significant negative results, it means that the lower the external financing needs, the higher the use of debt. This shows things that are contrary to the pecking order theory, which shows the paradox between income needs and funding decisions.

The retained earnings variable has a significant value of 0.026, the asset growth variable value is 0.000, and the extending financing needs variable value is 0.003. Meanwhile sales growth has no effect on DER. This is indicated by sales growth which has a significant value of 0.642 higher than the p-value of 0.05.

Conclusions

This study has explained the existence of interaction between investment decisions, retained earnings and funding sources. This study has implications for the enlightenment of the field of financial management analysis and financial planning and paradoxical practices still occur in financial decisions. Therefore, a management control system and a good corporate governance mechanism that can be accounted for are needed. The purpose of financial management is to produce good financial decisions to increase value creation.

The findings show that most EFN calculations are negative. It means that financial planning for funding needs is sufficiently funded by cash flow derived from the projected retained earnings generated from profit margins and additional funds derived from trade payables. Simultaneously, the

average DER shows a fairly high number. Further research needs to be observed the motivation of management to increase debt and the impact on the creation of company values. It shows the condition of bad financial decisions that have an impact on destroy value.

Another thing can be explained that the financial structure of the company can accumulate in aggregate and has the potential to affect macro financial stability. It occurs because the economic conditions in Indonesia are very vulnerable to conditions of financial stability.

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