

# Effect Investment Opportunity Set on Cost Of Equity Capital : Study of online investment Information Technology in the Indonesian Stock Exchange

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**Abstract.** The study aims to analyze disclosure as variable mediating the effects of investment opportunity set on cost of equity capital in the companies listed at Iq45 in Indonesian stock exchange. Data analysis exploited secondary data taken from financial report in the period of 2012-2016. Data on stock price was taken from <http://www.duniainvestasi.com/bei>. Sampling was carried out using purposive sampling method and it was analyzed through the use of partial least square. The results of this study indicate that investment opportunity set provides positive and significant effects on cost of equity capital. Disclosure provides negative and significant effect on cost of equity capital. Investment opportunity set provides indirect effects on cost of equity capital, disclosure. Therefore, the conclusion of this research is disclosure may mediate the effect of investment opportunity set on cost of equity capital.

**Keywords:** Investment opportunity set, disclosure, cost of equity capital

## 1 Introduction

Every company has a purpose and also different specific target. But the real of company's goal is to maximize company's value that can be measured from the share price of that company. The higher of company's value means the more prosperous shareholders. To achieve those goals, the capital owners can trust to managerials or it is common called agent. Those managerials are responsible to fund allocation decision both it derives from inside of company and it is from outside of company for investment. The policy of capital structure basically is built from the relationship between decision in selecting source of fund with the type of investment that must be selected by company in order to it is in line with company's goal which is maximizing the prosperity of shareholders who are reflected from company's value or market value from the stock price of company.

To achieve the purpose in that capital structure policy, manager has to be able to collect fund both it sources from inside of company and outside efficiently; in the sense of funding decision that can minimize capital cost charged by company. Capital cost that appears from those funding decision is a consequence which arises directly from decision conducted by manager. When manager uses debt, so capital cost appears is the amount of interest charged by creditor, while if

manager uses internal fund or fund itself will appear opportunity cost from fund or owner's equity used. Funding decision that is conducted inaccurately will cause fixed cost in the form of high capital cost, then it can impact on the low of company profitability.

Generally, the component of capital cost consists of cost of debt and cost of equity capital. Cost of Debt is return given by company to lender. In other words, it is interest expense that arises from debt financing. Cost of Equity Capital is abbreviated with COEC that is cost incurred by company which gets fund with selling stock. For investor, if COEC is low so it will attract to do investment, because COEC is opportunity cost from the funds invested by investor in a company, so if it can get opportunity cost from fund invested by investor, so investor will be interested to invest their investment in that company.

There are two factors that can be used to decrease COEC, are: 1) Investment Opportunity Set and 2) Disclosure. Investment Opportunity Set which is abbreviated with IOS, it is combination between asset in place and investment selection in the future with the positive of net present value [1].

The selection of investment in the future is not merely only showed by the existence of projects supported by research activities and only development, but it also company's ability more in exploiting the opportunity to take benefit compared than the equal other company in a group of its industries. The selection of investment in the future is related to the level of company growth so it is expected to give the positive aspect for company as the opportunity to invest in the future. The higher of company's ability is unobservable, so it is needed proxy.

However, the chance of company growth can be still seen in investment opportunity that is proxied with some kinds of combination of IOS value which is: (1) Proxy of IOS based on price; (2) Proxy of IOS based on investment; (3) Proxy of IOS based on variance measurement [2].

Second, disclosure is a providing information and a quite explanation about activity result of a business unit. Therefore, those information must be completed, clear, and it can describe economical events precisely that influences to operation result of that business unit. Adequate disclosure is given by company because it has a interest which is the existence of expectation about positive impact from the delivering disclosure. In other parties, investor needs information to assess time and uncertainty of cash flow right now and in the future so it can assess the company and make decision. Company fulfills those necessities by giving information both it is through a required disclosure or volunteer disclosure.

Capital Market Supervisory Bureau and Financial Institution (BAPEPAMLK) is as institution that manages and supervises the implementation of capital market in Indonesia has issued several rules of disclosure that must be done by go public of company.

Those rules are intended to protect the capital owners from the existence of asymmetry information. Company can provide disclosure through annual report that has been managed by mandatory disclosure (Bapepam), and through voluntary disclosure as additional minimum disclosure that has been set.

Mandatory disclosure is disclosure information that must be notified of a company as it is set in the provision (Kep-134/BL/2006) about information disclosure in annual report. Voluntary disclosure is disclosure information beyond mandatory disclosure that is given by company voluntarily to financial report user. Voluntary disclosure is not required by regulation so company is free to select kind of information that will be revealed; assumed by management is relevant in helping decision making.

Voluntary disclosure is one of ways to improve the credibility of company financial report and to help investor in understanding company business strategy. Voluntary disclosure includes the description of company strategy in long term period, the important and useful of non-financial indicators for the effectiveness of company strategy implementation and it is useful in discussing the correlation between the important indicators with the future earnings. By the existence of voluntary disclosure is expected to financial report users will be more completed the information in understanding operational activity of company and it is more showing company's transparency [3].

According to theory of agency, there is separation between ownership and controlling in a company that can cause conflict between principal and agent. It can impact the arising of agency cost. The behaviour of moral hazard and asymmetry information can be prevented by agreement with giving incentive in form of financial compensation which is calculated as agency cost, so manager will be motivated to provide disclosures especially voluntary disclosure to decrease agency cost. The cost for supervision by shareholders, the cost is charged by management to get the transparency report, included independent audit cost and internal controlling are agency cost [4].

Company will reveal information voluntarily if the benefit gained from disclosure information is bigger than its cost. The benefit of that disclosure is obtained because disclosure information of company will help investor and creditor in understanding company condition and it helps in investment decision making. If the benefit that will be achieved by disclosure information is bigger than the cost charged to reveal that, so company will reveal voluntarily those information.

The previous study mentioned that agency theory implicates the existence of asymmetry information between manager as agent and owner (in this case is shareholders) as principal. Asymmetry information appears when manager knows more about internal information and company prospect in the future compared than shareholders and other stakeholders. Related to the improvement of company value, when there is asymmetry information, manager can give signal concerning about company condition to investor in order to maximize the stock value of company. The signal given can be through disclosure information of accounting [5].

The study in order to review the influence of disclosure towards COEC done and it shows that there is negative correlation between disclosure with capital cost [6][7], the high quality of disclosure decreases capital cost [8]. While the high quality of accounting will decrease to COEC [9].

Some studies has been conducted particularly for testing the influence of IOS towards disclosure and the influence of disclosure towards COEC. There are studies conducted as concerning about the influence of IOS towards disclosure policy [10]. The previous study has found also that IOS influences positively and significantly towards disclosure and outside manager [11][12]. With simultaneously approach on companies in New Zealand, it has been proven that IOS influences positively and significantly towards the level of voluntary disclosure [13].

Besides that, the previous study has been conducted to review the influence of disclosure level towards equity capital cost [14][15], the influence of disclosure level towards COEC [16][17], the influence of voluntary disclosure and market liquidity towards the correlation between asymmetry information and COEC [18]. Information of accounting, disclosure and cost of capital [8]. The selection of capital allocation of company, the quality of information, and cost of capital [8]. The influence of information level towards equity capital cost in go pulic

company that is listed in Indonesia stock exchange [19]. The theory of voluntary disclosure and cost of capital [20][21].

One of important decision that a financial manager encounters in terms of the operational sustainability of the company concerns with financing decision or capital structure decision, i.e. the financial decision related to debt composition, preference stock and common stock that the company adopts[22]. A manager should be able to perform fund raising, both from internal and external sides of the company. In this case, the financing decision refers to one that is capable to create minimum capital cost that the company should spend. The capital cost that the financing decision produces turns out to be a direct consequence of the decision that the manager makes. The inaccurate financing decision will produce fixed burden, in terms of high capital cost, and in turn may cause lower profitability of the company.

In general, the components of capital cost consist of cost of debt and cost of equity capital. Cost of debt is a return that the company should give to lenders. Cost of equity capital may undergo internal increase by holding profit or external increase by selling or issuing new common stock. The company may distribute its after tax profit in the form of dividend or retained earnings. The retained earnings, then, is used for investment (reinvestment) in the company. Its capital cost of retained earnings spent for investment should be calculated.

To attract share holders invest their fund into the company, in addition to the capital cost, they also need transparency on financial report, and this is frequently called as disclosure.

To disclose accounting information is one of important instruments to solve agency problems that management and owner face since it is considered as an effort to minimize asymmetric information. There are two types of asymmetric information: first, is Adverse Selection; it is closely related to the communication issues of internal (manager) to external (investor) sides; second, is Moral Hazard; this problem arises due to the difficulty in supervising and controlling manager's effort to manage the company. This is true since the separation of ownership and control that big companies frequently perform; hence, it is impossible for stakeholders to conduct the level and liquidity of top manager's effort in running the company based on the shareholders' interest; and therefore, this condition encourages the manager to have opportunistic behavior. Related to the increase of company value, when there is asymmetric information, manager may provide investors with a signal concerning the condition of the company to maximize the value of company's stock. The signal can be provided through the disclosure of accounting information.

This study focuses on the testing whether disclosure may mediate the IOS effect on cost of equity capital. This is caused that IOS variable may provide both direct and indirect cost of equity capital as well, through information disclosure as an intervening variable.

### **1.1 The Effects of Investment Opportunity Set (IOS) and Disclosure**

The theory of agency starts from the separation of control and ownership of the company, triggering the conflicts between agents and principals. Such a conflict will, in turn, cause reducing company value[4].

The effect of asymmetric information on non-developing is greater than that on developing company[2][3]. Simak Baca secara fonetik. In specific, manager will involve activities that minimize agency cost and hence will maximize company value[23].

The Effects of Investment Opportunity Set (IOS) puts positive and significant effects on disclosure[10]. IOS gives positive and significant effect on the level of voluntary disclosure[13]. In the last results of study was showed that a company with higher profit development performs higher voluntary disclosure[24]

In this study, IOS exploits six proxies, i.e.: market to book total asset (MTBA) ratio, market to book total equity (MTBE) ratio, earning per share/ price earning (PE) ratio, investment to sales (INVOS) ratio, capital expenditure to book value of asset (CAPTA). IOS can be measured by using the six proxies. It is expected that these ratios reflect investment opportunity that the company has, i.e. the higher the ratios of IOS are, the higher the growth opportunity of the company is[25].

When the company shows prosperous growth, the management will send a signal through disclosure. Hence, IOS may be controlled by the manager. Therefore, hypothesis 1 is proposed as the following: Investment opportunity set provides positive effect on COEC.

## **1.2 Disclosure on COEC**

Factors affecting COEC, among others, are disclosure[26], company size[27], and financial leverage[28]. Disclosure is a variable that may reduce COEC. The greater the disclosure is, the lower COEC is[23][14]. The cost of equity capital can be computed in banking corporation by using the three measurement models[29]. However, the most significant model is CAPM.

The effects of voluntary disclosure and market liquidity on the relationship between asymmetric information and COEC indicate that the higher the effect of voluntary disclosure is, the lower the relationship between asymmetric information and COEC[18]. The higher the profit growth and the voluntary disclosure level are, the lower the capital cost of equity will be[24].

The last results of study indicated that higher disclosure level will decrease COEC[23][30][31][32][33][9][19]. Voluntary disclosure will decrease cost of capital[20]. Therefore, hypothesis 2 is proposed as the following: Disclosure provides negative effect on COEC.

## **1.3 Investment Opportunity Set and COEC**

Investment Opportunity Set (IOS) provides wider guidance stating that company value depends on the spending of the company in the future[1]. The components of company value that is the result of opportunities to make investment in the future turns out to be IOS[3][2]. The association between IOS and disclosure policy have been found [10]. The agency cost of stockholders and manager increase with the total of external stockholders. Public ownership is used to maintain the positive association between IOS and growth options; and hence, it facilitates interpretable infrastructure[34]. Manager must report disclosure on the future prospect of the company to reduce the conflict between stockholders and debtholder[10].

The increasing P/E ratio will reduce cost of equity capital[35]. Price earning growth ratio and P/E ratio indicate negative correlation with cost of equity[36]. Higher earning per share reduces cost of equity capital[37]. IOS provides negative effect on cost of equity capitals [38], increases growth to facilitate external fund raising and reduces capital cost[39]. Therefore, hypothesis 2 is proposed as the following: Disclosure may mediate the effect of investment opportunity on cost of equity capital.

## 2 Research Method

Annual data were gathered from the financial statements of the companies included in LQ45 group for 2010–2014 period, and stock prices was taken from [www.duniainvestasi.com](http://www.duniainvestasi.com). To perform hypothesis testing, IOS was computed by using the following formula:

### 2.1 Price-based IOS proxies involve:

- 1 The ratio of the market value of assets to the value of the book (MTBA) = [book value of debt + (outstanding shares x share price)] / Total assets
- 2 The ratio of equity market value to the book value (MTBE) = (outstanding shares x share price) / Total equity
- 3 Share price ratio to earnings per share (PE) = share price / profit per share

### 2.2 Investment-based IOS proxies consist of :

- 1 Investment to sales ratio (INVOS) = Total fixed assets are tangible / net sales
- 2 Investment to profit ratio (IOE) = Total fixed assets are tangible / net income
- 3 The ratio of capital expenditure to book value of total assets (CAPTA) = changes in fixed assets / total book value of assets

COEC was estimated by using Capital Asset Pricing Model (CAPM).

$$\text{COEC} = R_f + \beta(\text{RM} - R_f) \quad (1)$$

Note:

COEC = estimated cost of equity capital

$R_f$  = risk free rate

RM = market return

$\beta$  = market beta

Disclosure

*Mandatory Disclosure*

Minimum disclosure that is required by available regulation

*Voluntary Disclosure*

Disclosure which is released by company beyond the requirements of accounting standards or the regulations of supervisory body

## 3 Findings And Discussions

Table 1 shows the statistical descriptive of variables, consisting of the minimum value, maximum value, averages and standard deviation of variable values.

**Tabel 1.** Deskriptif statistic

	N	Minimum	Maximum	Average	Std.Deviation
MTBA	172	0.08	8.30	1.8135	1.92049
MTBE	172	0.01	8.92	1.9676	1.87768
INVOS	172	0.01	5.75	1.0534	1.22150
PE	172	2.00	79.20	20.3629	15.62090
IOE	172	0.03	37.31	7.8939	9.72763
CAPTA	172	0.00	1.93	0.9037	0.27587
MDISCL	172	0.52	0.90	0.6624	0.05274
VDISCL	172	0.58	0.85	0.6936	0.04267
COEC	172	0.08	0.65	0.2830	0.15642
Valid N (listwise) = 172					

Table 1 explains that the average value of COEC was 0.2830. Then, the average values of IOS variable measured using MTBA, MTBE, INVOS, PE, IOE, CAPTA were 1.8135, 1.9676, 1.0534, 20.3629, 7.8939, 0.9037, respectively. The average values higher than 1 indicate that the company undergoes sound growth opportunity. The average values of disclosure variable measured using mandatory disclosure, voluntary disclosure were 0.6624, 0.6936, respectively. The average values higher than 0.5 indicate that the company releases moderately high disclosure.

The direct effect level of IOS on COEC was  $-0.157$  and the level of disclosure on COEC was  $-0.339$ ; hence, the IOS effect on disclosure, the effect of disclosure on COEC was  $-0.149499$ . The level of total effect was  $-0.306499$ . The level of total effect of  $-0.306499$  was higher than the direct effect of IOS on COEC of  $-0.157$ . It is proved that disclosure serves as mediating variable for the IOS effect on COEC.

Last studies showed that Price Earning ratio (P/E ratio) has inverse correlation with cost of equity capital [40]. Market-to-book equity has negative correlation with cost of equity capital [15]. Increasing P/E ratio will decrease cost of equity capital [41][35]. Price earning growth ratio with P/E ratio has negative correlation with cost of equity [36]. Higher earning per share reduces cost of equity capital [37]. Investment opportunity set provides negative effect on cost of equity capital [38]. The availability of IOS providing profitable return to controlling stockholders will be greater than the benefit they will receive when discretion (free action to make decision) is taken on the resources of the company [39].

Several findings of this study is expected to be able to provide contribution to the development of capital structure policy theory and its implementation, and to both corporation managers and investors or prospective investors, as well. The theory on capital structure policy, basically, has been developed based on the correlation of the decision in selecting financial resources and the type of investment that the company should take in accordance with the goal of the company, i.e. to maximize the wealth of the shareholders that is reflected from the company value or market value of the company stock price.

## 4 Conclusions And Implications

IOS provides positive and significant effect on disclosure. It means that the greater IOS is, the higher disclosure will be. The theory proposes that in the company with higher investment opportunity when there is asymmetric information, then manager may give its investors with information concerning the company condition to maximize the value of company stock. Disclosure provides negative and significant effects on COEC; this shows that the higher disclosure is, the lower COEC will be.

COEC is highly important to be noted by managements. The lower COEC will attract investors to make their investment in the company. Higher IOS indirectly will decrease COEC since the higher disclosure is, the more transparent the company will be.

This will minimize the existing asymmetric information in the company, and hence it also reduces COEC. It is expected that such a theory can be adopted as a reference in the future studies on the factors affecting COEC. The understanding on COEC, particularly on IOS, i.e. IOS is really should be done through disclosure to provide effect on COEC. With this finding, studies on capital market on Indonesia will be increasingly rich and perfect.

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