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DISCOUNTED CASH FLOW IN BUSINESS VALUATION FROM INVESTMENTS IN PUBLIC CORPORATIONS

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Abstract:

Investment is the action of creating a profit by investing in a firm. An appraiser is required to do a business assessment of the company in order to determine the amount of value generated. Capital gains or dividends will accrue from investments in public corporations. Intrinsic value is a metric for determining the worth of a company's stock as a capital market investment. DCF (Discounted Cash Flow) is a method of calculating intrinsic value. The entire company is assessed using the Free Cash Flow to Firm (FCFF) technique. FCFF as a measure of the company's operations and success. The FCFF method considers a company's ability to pay dividends, buy stock, and repay debt holders. Capital or debt is an option that must be utilised in the company's actions. WACC (Weighted Average Cost of Capital) is an average rate of return used to calculate the cost of capital for debt and equity. Firms are less likely to create additional value for investors and creditors when the average cost of capital rises. WACC is a tool for determining if investing in companies with a capital structure is feasible. The debt-to-equity ratio and the weighted average cost of capital (WACC) are analytical methods for determining the best capital structure.

Keywords: Free Cash Flow to Firm, Weighted Average Cost of Capital

1. Introduction

When it comes to making investment decisions, investors require knowledge, particularly in terms of the company's financial soundness and future business prospects (Warae et al., 2021). An appraiser service that can conduct business assessments is required due to the high degree of interest of investors and company management who need the true value of a business to determine the amount of money that can be earned during the company's sustainability (Nurmadi et al., 2018). The process of assessing the value of a firm or organization, including its ownership, is known as business valuation. Intrinsic value is another term for a company's true worth. The current value of all future net cash flows is a company's intrinsic value (Kamaludin et al., 2015). Meanwhile, the intrinsic value of a company, according to (Ehrhardt and Brigham, 2011, Bakar et al., 2021), is the present value of the company's free cash flow discounted at the weighted average cost of capital. The current worth of the company is determined by this value, which is based on the company's estimated future free cash flow. The results of the company's evaluation will, of course, be valuable to potential investors as well as the company's management. Capital gains, which are the difference between the selling price and the purchase price of shares, as well as profits in the form of dividends, which are recompense for shareholders' involvement in the company's funds, will be seen by investors who put their money into public firms (Jannati,

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2012). The dividend policy of a firm is a collection of rules that govern how dividends are distributed to shareholders. To maximize the company's capital profits and dividends, a management who can make financial decisions that are in line with the company's aims in one way, namely decreasing the cost of capital is required. According to (Weston and Brigham, 1996), maximizing firm value by maximizing value entails accounting for both the time value of money and the risk of future revenue streams. According to (Rasyid et al, 2015), the intrinsic value of a firm is a critical factor for investors when deciding whether to buy company shares as a capital market investment. This is because if a company's value is great, it will be followed by its shareholders' prosperity. The Discounted Cash Flow (DCF) model is the most used method for calculating a company's intrinsic value. There are two types of discounted cash flow valuations: free cash flow to equity (FCFE) and free cash flow to firm (FCFF) (FCFF). FCFE is a company valuation that just considers the company's equity (Equity Valuation), whereas FCFF considers the entire company (Firm Valuation) in terms of liabilities and equity. Using an agency theory approach that uses free cash flow as a proxy, this study explores the understanding and policy implications of free cash flow on the prosperity of shareholders, managers, and creditors.

2. Literature Review

2.1. Free Cash Flow to Firm (FCFF)

Free Cash Flow to Firm (FCFF) is defined as the amount of net cash flow created from firm assets before debt payments are made and after the company reinvests in order to generate asset growth (Damodaran, 2002). Net capital expenditure and non-cash working capital are the two components of reinvestment. FCFF is a source of money that can be paid to investors once they have funded all of their investments with a positive Net Present Value, according to (Abdullah, 2002). (NPV). The corporation finances capital investment (capital expenditure) and working capital needs (working capital) using debt and own capital, according to the FCFF model (equity). The following is the formula for calculating Free Cash Flow to Firm (FCFF):

$$FCFF = EBIT\ (1\text{-}tax) + Depreciation - Capital\ Expenditure - \Delta\ Non\ Cash\ Working\ Capital$$

The first step in calculating FCFF is to look at operational profit after taxes. The operating profit of the company is determined from sales less operating expenses. The operating expenses included in the calculation must be adjusted, such as research and development spending and promotional advertising expenses, which are classified as promotional expenses since they generate future advantages and are thus classified as capital expenditures (Damodaran, 2006).

The expense of acquiring fixed assets with the potential to provide future benefits is known as capital expenditure. The difference between this year's and last year's fixed assets is used to calculate capital expenditure. By subtracting depreciation from capital expenditure, net capital expenditure (Net Capex) is calculated. When capital expenditure is utilized to predict future cash flows, according to (Damodaran, 2006), the first step is to normalize unstable

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capital expenditure, such as when it rises or falls too high or too low.

$$\text{Net Capex as \% of EBIT (1-tax)} = \frac{Total\ Net\ Cap\ Ex\ n.n-1}{Total\ EBIT\ (1-t)n.n-1}$$

Normalize Net Capex in n year = Capex in n year x Net Capex as % of EBIT (1-tax)
The difference between current assets and current liabilities is used to generate working capital to support the company's operating activities. To calculate non-cash working capital, subtract cash or marketable securities from current assets and short-term debt or a portion of long-term debt with interest that matures in the short term from the working capital used in the valuation. Changes in unstable working capital, such as those that rise too high or fall too low, can be normalized using the following formula (Damodaran, 2006):

Normalize Non cash WC = (Non cash WC n year / Revenues n year) x(Revenues n year - Revenues n -1year**)**

2.2 Cost of Capital

A firm manager must determine whether to employ loan or own capital to carry out their business activities and how much money is required. Because you will spend rupiah in every business action, and I am implying the cost. Costs of debt are costs incurred when loan is used, whereas costs of equity are costs incurred when internal business capital are used.
The entire cost of debt plus the cost of equity is the cost of capital.
The projected rate of return expressed by market participants in order to attract funds for a certain investment is known as the cost of capital (Pratt and Grabowski, 2008). The amount of capital expenditures incurred by each source of funds varies and is determined by the level of profit demanded by the fund's owner (Wardhani et al., 2021). The cost of capital is the cost of borrowing money as well as the minimal rate of return on an investment project that must be met in order for the company's value to rise. Several components of the capital structure must be considered when determining the weighted average cost of capital, including sources of money (preferred stock, common stock, and debt), the amount of funds, and the proportion of each source of funds. as well as the cost of each funding source
WACC is calculated using the following formula:

$$WACC = Wd.Kd(1-t) + Wps.Kps + Wce.Ke$$

Information:
Wd = Weighing factor for debt (the proportion of capital originating from debt) Kd = Cost of capital for debt
T = Tax rate to be paid by the company
Wps = Weighing factor for preferred stock
Kps = Cost of capital for preferred stock
Wce = Weighing factor for common stock
Ke = Cost of common stock capital

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Data about the proportion of capital to be utilized as a weight can be found in the following places:

1. The balance sheet's book value
2. The current market value of each capital component
3. The company's capital structure, as established by management.

In economic terms, the cost of capital for particular investments is an opportunity cost, which is the loss of return from other investment options due to the decision to engage in substitute assets (Tandelilin, 2001, Thariq et al., 2021). According to (Ehrhardt and Brigham, 2011), the opportunity cost is used as a measure of the implied level of profit because the fund's owner chooses to invest his funds in the company and thus loses the opportunity to earn a return, which is usually equal to the bank's interest rate, so the fund's owner will determine the required level of profit at least equal to the bank's interest rate.

2.3. Growth

The growth rate is critical in anticipating future cash flows, according to the company's estimate. According to the study (Penman and Yehuda, 2009), stock prices have a beneficial impact on net cash flow for companies with high growth prospects. This means the market expects these net cash flows to be invested in projects with a positive net present value.

The growth assumptions employed in a firm valuation have an impact. There are three fundamentals in calculating a growth rate, according to (Damodaran, 2002):

1. Historical growth is a company's previous growth that can be used to predict future growth if its growth tends to be stable.
2. Research analysis, which is the outcome of an analysis by analysts with experience determining a firm's growth rate and can be used to evaluate a company.
3. The fundamentals of the company, as measured by how much money is put into new assets in order to generate future growth. The formula for estimating growth when using FCFF to evaluate a company is:

$$\text{Expected Growth}_{EBIT} = \text{Reinvestment Rate} \times \text{Return on Capital}$$

$$\text{Reinvestment Rate} = \frac{Capital\ Expenditure - Depreciation + \Delta Non\text{-}Cash\ WC}{\text{EBIT}\ (1-\text{tax rate})}$$

$$\text{Return on Capital} = \frac{EBIT\ (1-tax\ rate}{BV\ Debt + BV\ Equity}$$

3. Study Method

A literature review was used as a research method in this study (Library Research). The data collection strategy employed is library research, which is going to the library and looking through reference books and journals. Secondary data in the form of books about the topic was utilized. Data analysis employs descriptive methods, which entail reporting study findings before reaching conclusions.

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4. Results and Discussion

4.1. Result

FCF has been found in previous studies to be a stronger proxy for agency costs than other variables like managerial ownership and leverage. FCF is a concern since it is frequently used by managers to expand their businesses, even when the outcomes of their business assessments are not profitable. Managers believe that as the size of the organization grows, so does their authority and job happiness. It should be highlighted, however, that analysts frequently make errors when estimating cash flows; yet, there are three main concepts that can help avoid these inaccuracies. The first, principle is to distinguish cash flow from accounting income. The value of a corporation, as we know from the company valuation model, is determined by its free cash flow (Lubis et al., 2021). Similarly, a project's worth is determined by the value of the project's free cash flow. It's crucial to understand the difference between cash flow and accounting income.

The fundamental distinction between the two is based on a number of factors, including:

1. Cost of fixed assets
   Most projects necessitate fixed assets, which must be purchased using funds provided by investors, both shareholders and lenders. It's worth noting that some expenditures are set in stone, such as shipping and equipment installation. This amount is added to the equipment's price, if the corporation wants to figure out the project cost that will be utilized as a depreciable basis when calculating depreciation expenditure. For example, if a corporation purchases a complete set of computers for Rp. 200 million, installation fees of Rp. 20 million will be added. The overall cost of the computer (on a depreciable basis) is therefore Rp. 220 million. Even if the salvage value is zero, fixed assets can usually be sold at the end of a project's existence. If this is the case, the cash flow from after-tax income will be positive.
2. Non-cash expenses (noncash charge)
   In calculating net income, accountants usually deduct some non-cash expenses in the form of depreciation from income. Thus, although accountants do not deduct the purchase price of fixed assets when calculating accounting income, they will usually deduct depreciation expense each year. Depreciation will protect income from taxation but depreciation itself is not a cash flow. Thus, depreciation must be added back when estimating project cash flows.
3. Changes in net operating working capital
   Typically, additional inventory is required to support new operations, and new sales will also cause accounts receivable to increase. Likewise, accounts payable, payroll and taxes will also increase spontaneously as a result of the expansion and this will usually cover the cash needed to fund inventories and accounts receivable. The difference between the required increase in current assets and the spontaneous increase in current liabilities is called the change in net operating working capital.
4. Interest costs are not included in the project's cash flows.
   The cost of equity capital is a weighted average of the cost of debt and the cost of issuing equity which is adjusted for project risk, where each cash flow is discounted

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based on the cost of capital (WACC). In addition, WACC is also defined as the level of profit required to satisfy all investors, including lenders and shareholders. The discounting process means reducing cash flow to pay debt and capital costs. If interest costs are first deducted and then cash flows are
discounted back to the cost of capital (including the cost of debt), this will result in a double calculation of the cost of debt. Therefore, it should not reduce interest costs in the calculation of project cash flows.

Second, the Incremental Cash Flow Principle. Is a change in the company's total cash flow that occurs as a direct result of the decision to accept a project. The three main problems in determining the incremental cash flow are as follows:

1. Sunk Cost
   Sunk costs are expenditures that have already been incurred, therefore they are not influenced by the decisions that will be taken. Because sunk costs are not costs that are constantly increasing, they are not included in the cash flow analysis. For example, in 20x1 PT ABC hired an analyst to conduct a feasibility study on the opening of a new branch of PT ABC in another city. The branch is envisaged to open in 20x2. So are these expenses in 20x1 a relevant cost in relation to capital budgeting decisions in 20x2? The answer is no, because the fees paid to the consultant will not affect future cash flows, regardless of the new branch that will be opened.
2. Opportunity cost
   Opportunity cost is the cash flow that can be generated from an asset that is already owned by the company if it is not used for the project being analyzed. For example, PT ABC already has fixed assets in the form of a plot of land suitable for the location of a new branch office. By evaluating the location of the land, the company analyzes the price of the land and estimates its price at around IDR 500 million after
   tax. By using the land as a new branch office, the company did not get cash of Rp 500 million. Thus, this amount of Rp 500 million must be charged as an opportunity cost.
3. The effect of a project on other parts of the company
   Also known as externalities. For example, a customer of PT ABC who previously made transactions at the head office will become a customer at a new branch office if the branch office is opened. Thus, the net income generated from the new branch office will not be treated as incremental income in capital budgeting decisions. Although externalities are generally difficult to quantify, these factors must still be considered in analyzing a project.

Third, the Principle of Timing of Cash Flows. Due to the principle of the time value of money, daily cash flows should theoretically be analyzed as they occur. Accounting income reports are made based on a certain period, for example annually or monthly, so they cannot reflect exactly when cash income or expenses occurred during that period. Timelines with daily cash flows are theoretically more accurate, but daily cash flow estimates are costly, difficult to practice and may not be more accurate than annual cash flow estimates because

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we also won't be able to forecast as accurately as possible each day's cash flow. Therefore, in most cases, we simply assume that all cash flows occur at the end of the annual period.

4.2. Discussion

There are several factors that must be considered when a manager is faced with making a decision to accept or reject a project. These factors are:

1. Taxes

Taxes affect operating cash flow in two ways, namely:

Reducing the operating cash flow of a project. Where the greater the tax, the greater the reduction. Tax laws determine the amount of depreciation expense that can be allocated each year. Project cash flow can be affected due to the larger or smaller the tax percentage. In some cases the effect of the tax will bring the project to a halt. Because this is very important then taxes should be described correctly.

2. Inflation

Inflation is a factor that greatly affects the cash flow of a project. This is because if the inflation rate turns out to be higher than anticipated, cash flows may not be as valuable as we expected when doing the initial analysis. Changes in the purchasing power of a currency from one time to another is measured by the inflation rate.

When researching inflation, one must know and be able to distinguish between expected inflation and unexpected inflation. Expected inflation refers to the anticipated loss related to purchasing power. When the economy strengthens, expected inflation tends to increase at least in the short term, reflecting high demand for labor (which causes wages to rise) and products (causes prices to rise). In reality, the expected inflation is easy to control and has little effect on the estimated cash flow.

Furthermore, unexpected inflation refers to the difference between actual inflation and expected inflation. Thus, if inflation for next year is estimated at 5% while the actual inflation for that year is 6%, then the unpredictable inflation is 1%. Because it was not anticipated, this unanticipated inflation was of course not included in the analysis and hence, errors in estimating the inflation rate became a source of project risk.

Inflation has a very close relationship with interest rates, and this relationship is very clear when we distinguish between the nominal interest rate and the real interest rate. To deal with the inflation problem that is expected to occur in investment analysis, there are two choices that can be made. First, by incorporating expected inflation into the estimated future cash flows which then generates nominal cash flows and then discounts these cash flows based on the interest rate or nominal cost of capital. The second option is to estimate real cash flows without considering the effects of inflation and then discount these cash flows based on the interest rate or real cost of capital.

5. Conclusion

To anticipate these two risks, there are two principles that must be adhered to, namely: The company must pay attention and consider whether the cost of capital that we will use for this project must be adjusted to the risks associated with the project to be taken. important step in

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analyzing a project, namely estimating incremental cash flows, opportunity costs, and externalities, should be considered more implicitly in the analysis. Likewise with the effects of taxes and inflation which of course have an effect on cash flow.

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