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Business Valuation of Discounted Cash Flow

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Abstract

This study critically examines business valuation methods, culminating in the conclusion that the Free Cash Flow (FCF) method stands out as the superior approach for determining the value of a business. The empirical validation of this assertion is demonstrated through a detailed valuation of Honda Atlas Cars (Pakistan). Employing two distinct methods, the Free Cash Flow and Asset-Based approaches, the research unveils the supremacy of the Free Cash Flow method, substantiated by meticulous calculations and comparative analysis. Notably, the Free Cash Flow method's reliance on forecasted future values, rooted in the preceding year's financial data, enhances its predictive accuracy. Aligning with the findings of numerous researchers in the field, this study affirms the consensus that the Free Cash Flow method reigns supreme. The implications for shareholders are paramount, as the calculated net value becomes a pivotal factor in their decision-making process. Positive net values signal investment opportunities, while negatives advise caution. In the case of Honda Atlas Cars (Pakistan), both Free Cash Flow and Asset-Based approaches yield positive values; however, the Discounted Cash Flow (DCF) calculation, an enhancement of the Free Cash Flow method, surpasses the Asset-Based approach. As a result, shareholders are advised to base their decisions on the Discounted Cash Flow method, leveraging its nuanced evaluation of future cash flows and the time value of money.

Keywords: Business Valuation, Free Cash Flow Method, Discounted Cash Flow

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1. INTRODUCTION

In the business world, the concept of business valuation was influenced by the ideas of Peter F. Drucker, as discussed in Watson's article (2002). Drucker's insights provided a framework for calculating the value of businesses and assisting in the decision-making process.

Business valuation serves various purposes, including capital budgeting, investment analyses, mergers and acquisitions, financial reporting, taxable events, and legal issues (Watson, 2002). It is a crucial procedure used to estimate the overall worth of a business and determine what something is truly worth.

Business valuation is a beneficial process that involves a set of procedures used to estimate and measure the value of an owner's interest in a business. Financial market participants widely rely on valuation procedures to determine the price for buying or selling a business (Watson, 2002).

When valuing a business, several factors should be considered, including its location, size, control, and nature of operations (Watson, 2002). Valuing a publicly held corporation is relatively easier as information about its stock is readily available. However, valuing a closely held corporation can be challenging as there is no market reference for its shares.

Closely held corporations have a limited number of shareholders and rarely offer shares to the general public. Investors interested in these corporations should seek guidance from financial planners (Watson, 2002). Accurately estimating the value of a business is a complex process due to the many factors involved. Nonetheless, there are three common approaches to business valuation (Watson, 2002):

Income Approach: This approach determines the value based on the business's expected future cash flows and the risk associated with achieving those cash flows.

Market Approach: This approach compares the business to similar companies in the market to assess its relative value.

Asset Approach: This approach values the business based on its tangible and intangible assets.

Each approach has its advantages and limitations, and the choice of the most appropriate method depends on the specific characteristics and circumstances of the business being valued.

1.1. APPROACHES TO BUSINESS VALUATION

Discounted cash flow (Dividend discount model)

The Income Approach is a method used to determine the present value of future cash flows by applying an appropriate discount rate. The present value (PV) is calculated by dividing the future value (FV) by the discount rate (r) raised to the power of the number of compounding periods (n).

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$$PV = FV / (1 + r)^n$$

To utilize this method effectively, certain elements must be taken into consideration:

Estimation of the business's life: The valuation process involves estimating the expected life of the business, as it impacts the duration of future cash flows.

Estimation of future income or cash flows: Accurate projections of future income or cash flows are crucial for determining the value of the business.

Estimation of the discount rate (or WACC): The appropriate discount rate, often referred to as the Weighted Average Cost of Capital (WACC), considers the risk associated with achieving future cash flows.

By carefully evaluating and incorporating these elements into the Income Approach, an estimated value of the business can be obtained based on its future cash flow potential.

1.2. ASSET BASED APPROACH

The Net Asset Value (NAV) method is used to determine the value of a business by calculating its net assets from balance sheet items (Watson, 2002). Assets can be valued based on their replacement value, market value, liquidation value, or book value. The net assets are calculated by subtracting total liabilities from total assets.

Net assets per share are obtained by dividing the net assets by the total number of shares.

Net assets = Total assets - Total liabilities

Net assets per share = Net assets / Total number of shares

On the other hand, the Market-Based Approach, also known as Relative Valuation, involves determining the value of a business based on market forces, where both buyers and sellers present in the market determine the price. This approach involves comparing the business to other companies in the same industry to establish its value.

2. LITERATURE REVIEW

The author will delve into the different theories and methods of business valuation, including the discounted cash flow, asset-based, and market-based approaches.

According to TOM McCollum, business valuation is defined as the analysis of estimating or providing a forecast opinion on the fair market value of a company or business.

Jeffrey Hipshman (2011) emphasizes the importance of business valuation, particularly during periods of increased merger and acquisition activities. Valuation becomes crucial in such situations and also provides valuable insights for strategies to enhance the overall worth of the business.

According to Subhan Ullah (2010), business valuation is a valuable technique for future decision making. In his work, he references IAS36 to discuss different valuation methods used by various market participants.

The Directorate of Studies, The Institute of Cost and Work Accountants of India, in their first edition published in January 2008, defines "value" as the worth of a thing in terms of its benefits and purchasing power. Thus, valuation can be described as the estimation or forecasting of the worth of a thing.

Maximizing shareholder value is of utmost importance for business management. Investors are willing to invest in a company when they are satisfied with its present and future performance. To achieve this, management should have a thorough understanding of both the external and internal environment of the company. Business valuation plays a crucial role in this process by helping management comprehend the present and future performance of the company and estimate its overall value.

According to Hozefa Natawala (2004), the report highlights the impact of the economic revolution on various aspects of businesses worldwide. With the rise of employee stock plans, employees are showing increased interest in the company's performance and success. Consequently, strategic objectives and strategic plans are becoming more prevalent, and companies are increasingly engaging with the capital market.

Furthermore, mergers and acquisitions have become common practices in the business world. As a result of these dynamic activities, a significant question arises: "What is the value of the business, and how should it be evaluated?" Business valuation has become a crucial consideration for companies facing these changes, as it provides valuable insights into the worth of their operations and assets in the evolving economic landscape.

According to Hozefa, "valuation of business means estimation of the business value," which involves considering factors such as cash flow, time period, and future risk.

In Pascal S. Froidevaux's (2004) research conducted in 2004, he focused on the application of the discounted cash flow method in business valuation. His findings indicated that the discounted cash flow method is a reliable and conceptually sound approach to determining the value of a business. By taking into account projected cash flows and applying appropriate discount rates to account for risk and time, this method provides a comprehensive and well-founded evaluation of a business's worth.

According to James L. Farrell Jr (1985), the dividend discount model (Discounted cash flow) is a useful tool for calculating the estimated earnings or return for the stock market. The dividend discount model allows investors to calculate the return by comparing it with the estimated return on bonds, as determined by the Yield to Maturity ratio between these two types of securities. This return spread calculation enables investors to assess the relative nature and properties of each asset.

Moreover, the dividend discount model is not only applicable to the valuation of individual stocks but can also be used to estimate the value of the entire market. By employing this model, investors can gain insights into the overall market conditions and make informed investment decisions. According to James L. Farrell Jr., the dividend discount model plays a crucial role in assessing the relative attractiveness and importance of individual stocks and the entire market. By utilizing this model, investors can estimate the impact of various risk factors, such as changes in interest rates and inflation rates, on the value of a stock. The dividend discount model employs the discounted cash flow method to determine the value of a stock. It calculates the present value of the expected stream of benefits or earnings, which allows investors to make informed decisions about the worth of a particular stock.

According to the International Journal of the Latest Trends in Financial & Economic Science, the value of a business can be determined through the discounted cash flow method, which involves discounting the future estimated cash flows at a rate that represents the estimated risk of those cash flows. This method allows for the calculation of the present value of the business assets, considering their individual market values based on their nature and properties.

Business valuation is a process that involves calculating or estimating the future value or earning capacity of the business. The discounted cash flow method is considered the most effective approach for business valuation.

In using the discounted cash flow method for business valuation, analysts should focus on two key aspects:

Estimation of future expenses and revenues: This requires the analyst to have a deep understanding of the specific business being evaluated. For instance, if evaluating a telecom company, the analyst should possess comprehensive knowledge of the technologies involved, their benefits, drawbacks, and lifespan.

Selection of the discount rate: The discount rate depends on two factors, namely the cost of capital and the risk premium associated with the cash flows.

According to Doe John (2012), the income approach (DCF) is one of the most widely used methods for business valuation. In this approach, the future cash flows or earnings of the business are estimated, and these expected returns are then matched with the associated risk and uncertainties over time. The discount rate, also known as the capitalization rate, is used to account for the risk involved.

The income approach can involve a single estimated value of future income or a series of projected income streams that a business owner anticipates receiving in the future. For a single value, the direct capitalization method is used, while for a series of income streams, a discounting method is employed to calculate the present value of those future income streams.

According to Ong and Teaong, earnings play a crucial role in a business as they are interconnected with various fundamental aspects such as growth, risk, capital, and uncertainties.

According to (Huegh-krohn) for the estimation of the business value through market approach one should focus on the market place. Sale of different businesses the market is analyzed in order to estimate the value of concerned business. According to the JHONE DOE market approaches are first is private company transaction process and the second is comparative public company.

According to Maria Sjoqvist and Tnaya Stepanovych (2008), the market approach for business valuation involves comparing one or more multiples or aspects of one company with the same multiples or aspects of another company that has a stable market value. There are two techniques for comparing companies: using information from publicly traded companies and using transaction information from merged or closely held family-owned companies.

According to Damodaran (2002), The appropriate comparable company is one that has the same growth rate, earnings, and risk as the company being valued.

It is very complex process to find out the same company in the market. (Pratt, 2000). The evaluator should focus on some areas when he chooses a company for market valuation, number of companies, time requirement, value standard etc.

Public companies are easily comparable companies because information is easily available in the stock market (Daukšas et al, 2002). The information is easily available and it is easy task to value the public companies through market approach

It is very difficult task to find out the information about merged, closely held companies. It is difficult task to find the transfer price. So the appraiser should go through the balance sheet of the trading company before and after the trade (Lunden 2007).

According to Detemple and Sundaesan (1999) market approach is an approach in which subject business is compared with the value of the same group of business.

There is so much difference between the discounted cash flow method and market approach. In the discounted cash flow method we calculate the expected future cash flow of the related asset and determine its value. In the market approach asset is valued by market information for example asset worth by look, what is its market price of the same asset. The most of the valuations are relative valuations.

Damodaran (2002) says that 90% of stock valuation and fifty percent of merger valuation use the market approach or relative method. According to him the most commonly used multiples are earning multiple, book value multiple, revenue multiple, and specific business multiples. According to him there are the some followed in the market approach selection of the same public company, financial analysis and comparison, selection of multiples, study of company being valued and final adjustment.

In their business valuation report (Brown W. & Gregory, 2005) about the asset base approach of business valuation. The asset base method has many other names such as net asset method, book value adjustment method and asset build-up

method. The main purpose of this method is that to analyses the business liabilities and asset and to calculate the equity. We can calculate the equity by subtracting the liabilities from assets. Equity is also known as the substance value. This method is useful if the equity is positive. If the substance value is negative then this method is difficult to use. This approach depends upon the balance sheet of the company. But we cannot use the balance sheet because values because the book value of asset are rarely equal to the real value of the asset. This is due to the use of accounting principles like depreciation of the asset. So that when we use the asset base approach we use the market value or fair value of the asset.

According to Nilson, 2000 there are two methods of asset base approach first is excess earning method and second is asset accumulation method. According to him the most common purpose of asset base valuation is to determine the going concern of the business.

According to Nilson et al, 2000 many things on the balance sheet are evaluated such as tangible Intangible assets, real estates, financial assets, current liabilities and long term liabilities.

According to him asset base method is also use for the small and private companies and it can also be used for the big companies.

According to teseng li et al(2000) Asset base valuation method is not good when the company has more intangible asset then the tangible assets. According to him this method is also useful for the company that shows negative result but it is a difficult task. According to him this method for business valuation is simple to use because it does not require the estimations. The finding of the asset base approach is presented in format of the balance sheet. This format is easily judged by the person who has some know-how of the financial statement. This method tells us about the total value of the company and the individual value of the asset in the company. This method is useful when anyone is going to buy a company or close up of a company.

In his report of business valuation Chif, 2005 describes the importance of asset base approach in the business valuation. He reached the conclusion that it very easy task to determine the value of tangible asset but it is difficult task to determine the value of (Good will) intangible asset.

3. METHODOLOGY

My research is descriptive in nature. This work has been covered by many people. In this thesis we discuss about the importance of business valuation and its techniques. We will go through the procedure of business valuation and determine the best method for valuation.

- Purpose of the study
Purpose of study is business valuation and best technique for valuation.
- Population and sample
I select the Honda Atlas Pakistan as sample from population
- Data collection
I collect the data from the two sources one is primary source and second is secondary source.
- *Primary source*
 - ✓ senior students of Lahore school of accountancy and finance
 - ✓ Respectful teachers of Lahore school of accountancy and finance
 - ✓ My research mentor Sir Murtaza Maqsood
- *Secondary source*
 - ✓ Internet (Google)
 - ✓ Books
 - ✓ Previous work

4. BUSINESS VALUATION

4.1. DISCOUNTED CASH FLOW METHOD

Discounted cash flow method is a method through which we determine the present value of the some cash flow, such as dividend, operating cash flow and free cash flow. Actually this method tells us that value of common stock is the value of business and represents the ownership interest in a business or company.

The cash flows which are expected in the future are discounted at rate which represents the risk of the cash flows. The basic rule of discounted cash flow is that every asset has its own intrinsic value which depends upon the nature and characteristics of the asset that can be forecasted or determined on the base of discounted cash flow method.

Investor required rate of return is the first variable in this model. Investor required rate of return becomes the discount rated (Discount rate is a rate which is used to calculate the present value of the future cash flows). Investor required rate of return significantly affects by this model. Second variable is growth rate in this model. This model is also affected by the estimated growth rate. These two variables must be estimated accurately because these are the major input of DCF model. Different analyst uses same techniques but get different values of the business because they have different estimates of these variable inputs.

In this model profit margins and future sale growth depends upon many factors including, economic condition, market supply and demand, business performance.
The basic formula of this method is.

$$V_0 = \sum_{t=1}^n \frac{CF_t}{(1+k_e)^t}$$

Where:

- CF_t** = Cash Flow in Period t
n = Life of the asset
V₀ = Value of Stock
t = Time
k = it is discount rate also known as the required rate of return.

Flowing are the measures used to calculate the cash flow

1. Dividend discount model (present value of dividend)
2. Operating free cash flow present value
3. Free cash flow to equity present value

In the dividend discount model dividend is treated as the cash flows received by the investor so cost of equity is used as the discount rate. In the second measure the operating free cash flow are discounted with weighted average cost of capital. The third specification is free cash flow to equity, same as the operating cash flow but after the payment has made to the debt holder and discounted at the rate of cost of equity.

As I describe earlier that there are two variable in discounted cash flow technique Firstly growth rate and secondly the estimated discount rate. As we can see in the formula forecasted cash flows are in the nominator and discount rate is in denominator. So a small change in their value can bring a big change in the estimated values. More ever forecasted values are not equal to the real values. We should generate the reliable forecasting method, so can calculate the forecasted value close to the real value.

Cash flow of the business means cash inflow and cash out flow of the business. Cash flow depends upon many factors like depreciation, amortization, working capital, tax deductible etc.

Some factors are included in the cash flows are given below.

- Condition of the business
- Product life cycle
- New product development
- Demand and supply of the product
- Historical performance
- Actions of the competitors

A detailed working is required to get the more reliable forecasted values

4.2. INCORPORATE FINANCIAL AND NON-FINANCIAL PERFORMANCE DATA

Some accounting techniques (manipulation of financial data) are used to find out the value of the business. On the base of expected growth rate and going concern of the business historical data should forecasted.

Some important factor that should be forecasted are.

- Foreign exchange rates
- DGP growth
- Inflation rates

4.3. FREE CASH FLOW (FCF) MODEL OF DISCOUNTING

Free cash flow means the free cash available to company after all operating expenses have been paid. There are two type of FCF one is FCF to firm and second is FCF to equity. We are concerned with FCF to equity to value of business.

FCF can be calculated by this format:

Revenue/sale		0000
Less Cost of Goods Sold	(000)	
Less selling, General and administration expenses	(000)	
		<hr/>
Gross Profit (EBDIT)		0000
Less Depreciation		(000)
		<hr/>
EBIT		0000
Less Tax		(000)
EBI		<hr/>
		0000
Depreciation add back (1)	000	
Less investment in fix assets		(000)
Less investment in WCN (2)		(000)

Free Cash Flow (FCF)

0000

(1) All non-cash items will add back like depreciation and amortization

(2) Working capital needs (WCN) = (Cash + Stocks + Receivables) – Payables

4.1.3 Risk premium

Risk premium means the reward to investor if he takes the additional risk. Risk is associated with the forecasted values.

1. Sales Revenue

Forecasting of sales revenue is very important input in the calculation of free cash flow. According to Hanke the decisions of major business function depends upon the forecasting of sales revenue.

Sales revenue can be forecasted on the base of many factors for example, historical growth analysis, competitor analysis, performance of industry, regression analysis etc.

Forecasting of sales revenue is a difficult task because the analyst analysts assumption about future cash flows. There are some of factor given below.

- Effect of new product development on the sales revenue.
- Four P's (price, place, promotion, and product) decide the sales revenue.
- Market share (expanding, contracting)
- Forecasting of profit help us to analyze the sales of previous periods, and this base of future cash flow.

2. Cost of goods sold (COGS)

The cost which is directly related to the production process and sale of good is called cost of goods sold.

We can calculate the cost of goods sold by multiplying weight per product to number of sales unit and then multiply with cost per kg. for the future years with the impact of percentage of inflation rate increasing every year. The general and administrative expenses are also can be calculated by multiplying weight of general and administrative expenses with sales weight of sales revenue.

3. Taxation

We calculate the average tax rate for the forecasting purposes because some time company pay low tax and some time high tax depends upon the capital expenditure of the company

Average tax rate must be determined on the base of the last years. For example for Honda Atlas Company I calculate 21% average tax rate.

4. Capital expenditures

Capital expenditure means the expenditure which gives benefit for more than one year. For example purchase of plant and machinery, repair and maintenance of building etc.

We calculate the average rate on the base of previous years.

5. Working capital changes

Current asst minus current liabilities is called working capital. Working capital is required for the day to day operations of the company.

Working capital is the ability of the entity to pay off its liabilities at the time of close up. The cash flow of the firm decreases if the working capital change increases vice versa. Working capital should neither too low not too large. The tide up funds can be used for some productive purposes.

Growth in the sale volume means we need more stock and receivables. When sales volume increase the working capital also increase. Working capital also depends upon the sales revenue.

6. Terminal value

Terminal value means the value of cash flows in future at time t, it also known as the value of the firm.

$$\text{Value of the firm} = \sum_{t=1}^{t=n} \frac{CF_t}{(1+k_c)^t} + \frac{\text{Terminal Value}_n}{(1+k_c)^n}$$

7. Cost of capital

Cost of capital is also known as the rate of return for the capital provider.

Cost of capital = cost of equity + cost of debt

Cost of equity is also known as the required rate of return of shareholders. The forecasted value of cost of equity can be calculated by three methods, capital asset pricing model, bond yield plus risk premium and dividend discount model.

Most commonly used method is CAPAM.

$$K_e = R_f + B(R_m - R_f)$$

K_e = cost of equity

R_f = risk free rate

R_m = market return

$(R_m - R_f)$ = risk premium

B = symmetric risk for the company

Cost of debt means cost of financing company through debt (bank loan and bonds). There are two method of estimation to cost of debt one is debt-rating and yield to maturity.

Weighted average cost of capital (WACC)

Wacc is used as discount rate to calculate the present value of future cash flow of the firm. WACC consists of specific percentages of various sources. The formula of wacc is given below

$$WACC = K_d(1 - t) \frac{D}{D+E} + K_e \frac{E}{D+E}$$

Formulas of discounted cash flow model

➤ *Dividend discount model(Discounting cash flow method)*

In my point of view dividend discount model can be classified into two categories.

1. Dividend with constant growth
 - Dividend is constant (preferred stock)
 - Dividend will grow at constant growth (Gordon growth model) or one year holding period model
2. Dividend with non-constant growth
 - Two stage dividend growth model
 - Three stage dividend growth model
 - Multistage dividend growth model or H-model

The most basic formula of dividend discount model is

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+K_e)^t}$$

Where:-

V_0 = current value of the stock

D_0 = dividend at time

K_0 = rate of return required

- Dividend with constant growth formula

$$\text{Preference stock} = \frac{D_p}{K_p} \text{ (same dividend)}$$

$$\text{Gordon growth} = \frac{D_1}{(K_e - g_e)} \text{ (growth rate is same)}$$

$$\text{One year stage dividend} = \frac{D_1}{1+K_e} + \frac{\text{selling price}}{1+K_e}$$

$$\text{Where selling price} = \frac{D_0}{(K_e - g_e)}$$

- Dividend with non-constant growth formulas

$$\text{Two stage dividend growth model} = \frac{D_1}{1+K_e} + \frac{D_2}{(1+K_e)^2} + \frac{p_2}{(1+K_e)^3}$$

$$\text{Three stage dividend growth model} = \frac{D_1}{1+K_e} + \frac{D_2}{(1+K_e)^2} + \frac{D_3}{(1+K_e)^3} + \frac{p_3}{(1+K_e)^3}$$

$$\text{Multi stage dividend growth model} = \frac{D_1}{1+K_e} + \frac{D_2}{(1+K_e)^2} + \dots + \frac{D_n}{(1+K_e)^n} + \frac{p_n}{(1+K_e)^n}$$

Where:-

$$p_2 = \frac{D_1}{(K_e - g_e)^2}$$

$$p_3 = \frac{D_2}{(K_e - g_e)^3}$$

$$p_n = \frac{D_{n+1}}{(K_e - g_e)}$$

➤ *Free cash flow model formula*

Free cash flow can be calculated as.

$$FCF = NI + NCC + Int(1 - t) - FCInv - Winv$$

Where,

NI = Net Income

NCC = Noncash items (amortization and depreciation)

$Int(1 - t)$ = Interest after tax

$FCInv$ = Capital expenditures (fixed capital, such as equipment)

$Winv$ = Working capital expenditure

Alternatively, FCFF can also be calculated on the basis of cash flow from operations.

$$FCF = FCO + Int(1 - t) - FCInv$$

4.4. ASSET BASE MODEL

In this approach we determine the value of net asset. Asset may be valued at replacement value, book value, market value, and in this method we value asset on the going concern bases.

Book value means the value of asset on the balance sheet.

Book value=cost of asset- depreciation-amortization-impairment-cost made against asset.

Market value of asset means the value of asset in the market at which buyer want to buy and seller want to sell at a specific price.

Replacement cost means the cost incurred to replace the asset the company has today.

We can calculate the net asset by subtracting the liabilities form total asset.

Net assets = Total assets - Total liabilities

Net assets per share = Net assets/Total number of shares

We can say it as accounting representation of valuing business.

Value of the Business = Total assets in the business – Total the liabilities in the business.

This method is not good for the company that has the more intangible asset in the balance sheet. We can calculate the value of equity by adding the two things in the balance sheet

- Good will
- Net Tangible asset (fair market value)

Net tangible asset = Total asset of the business-current liabilities

Good will = Business net cash flow-return on the net tangible asset

Good will also known as the excess earning in this model. Some time we are over or under estimating the good will of the business which effect on the true or correct valuation of the business. So we should focus on the correct value of good will when business valuation through asset bases approach.

4.5. MARKET BASED APPROACH

Price multiplier model is very easy model to evaluate the stock value. As we know that same companies has the same values. In multiplier model we compare the values of same companies to calculate the value of our company. Price multiples are easily available at the media outlets. Price multiples are used in cross-sectional comparisons and time-series companies. A weak point of this model is that past or historical data is used for valuation. To overcome this weak point some analyst use forward values in the denominator.

There are two types of the price multiplier to calculate the intrinsic value.

In the first type we calculate the stock price with ratio of stock price to earnings, sales, book value, or cash flow per share.

In the second type we calcite the intrinsic value with the ratio of enterprise value to earnings before interest, tax, depreciation, and amortization.

Formulas of this method

The formulas of price multiplier method are given below

- Price/earning
- Price/sale
- Price/book value per share
- Price/ cash flow
- Enterprise value /earning interest, tax, depreciation, and amortization

5. FINDING AND ANALYSES

I used two most common methods to calculate the value of the business one is the free cash flow and second is the asset base approach. These are the methods which are commonly used by the analysts. I have discussed these two methods with detail in chapter number four.

There are many companies that are operating in Pakistan for many years. After detailed research of different companies I select Honda Atlas Cars (Pakistan) company to proof my hypothesis because it running for many years however going into loss for the last four years. The shares of Honda Atlas have fallen very low from Rs. 400 in short span of time presently in the capital market. In my thesis I calculated the value of the Honda Atlas (Pakistan) by using the two techniques (Asset based method and FCF method).

I get the annual reports of the Honda Atlas Cars (Pakistan) from the Lahore Stock Exchange of many years. I also use website (www.honda.com.pk) of Honda Atlas cars (Pakistan) to get the financial stamens of many years. By using the financial data of financial statements of Honda Atlas Cars (Pakistan) I calculated the value of the business based upon Asset-based-approach and Free cash Flow method. In my point of view the free cash flow method is more reliable as compared to the Asset-based valuation to determine the value of the business.

For the calculation of free cash flow I take the actual sales from annual report (31 March 2012) of Honda Atlas Cars (Pakistan) and calculated the projected sales of four years with the growth rate. Growth rate (Average rate) is calculated on the base of the previous financial years (March 2009 to March 2012). In the same way the average rate of gross profit or loss, cost of goods sold, selling distribution expenses, administrative expenses, other income, depreciation, net working capital, is calculated on the base of previous financial years (March 2009 to March 2012). Now the average rate values of all these above is multiplied by the projected sales to determine the projected values of all these. I calculated the present value of FCFs by discounting the projected cash flow with the appropriate discount rate. Discount rate is calculated with the help

of CAPAM. Present value of FCFs can be calculated with the help of dividend growth model (non-constant growth). I calculated the following results.

Net Present value of the business =10,443,646

Market value =15,072,847

Total number of ordinary shares = 142800000

Price per share =105.5

In asset-based method financial data is taken from the annual report (31 March 2012) of Honda Atlas Cars (Pakistan). In this method current value of asset and current value of liabilities is calculated.

Current value of total asset =9479821

Current value of total liabilities =8334841

Value of the business =1144980

Share price is calculated as =8.01

It can be observed from my calculations that free cash flow method is more reliable than that of asset based method. So in my point of view Free Cash Flow is more accurate than that of other methods when we calculate the value of business of Honda Atlas Cars (Pakistan). My finding and analyses are in favor of Free Cash Flow method.

In my point of view every method of business valuation has its own attributes but has some complexities, so we should use different methods to value our business. There are some methods which has no implications in the real life, some methods are not correct conceptually, some method are calculated on the base of availability of proper data, however Free Cash Flow method is more reliable method to calculate the value of the business. Free Cash Flow method is correct conceptually. Value of business can be calculated on the base of forecasting techniques by this method.

Free Cash Flow method is very beneficial for the investor. On the base of free cash flow method the investor can make decision either to invest or not. The investor can calculate or estimate the future benefits if he invest in the business. The findings of free cash flow method can give a economical result to the investor.

There are some advantages and disadvantages (ever thing is imperfect in this world) of the free cash flow methods. But in my point of view it has more advantages than that of disadvantages.

Some advantages and disadvantages are given below.

Advantages

- It is based on the basic rule of discounting future value into present value.
- Easy to use.
- Most reliable than that of other method because it give more accurate result.
- Analyst prefer this method to other
- It can be used to see the future performance of the business

Disadvantages

- Value is calculated on the base of assumptions
- All inputs are estimated
- A small change in any input wrongly can give wrong value of business
- It is not reliable method for the short term trending

Table 1

Discounted Cash Flow Valuation for a Business					
Honda Atlas Cars (Pakistan) Limited					
	Actual 2012	Projected 2013	Projected 2014	Projected 2015	Projected 2016
(RS.000)					
Total Sales	16,599,608	18,062,033	19,653,298	21,384,753	23,268,749
Cost Of Goods Sold	(16,643,607)				
Gross Loss/Profit	(43,999)	16,255	17,687	19,246	20,941
Selling, administration and distribution expenses including amortization and depreciation	(353,057)	(511,155)	(556,188)	(605,188)	(6,585,505)
Other Income	204,456	99,341	108,093	117,616	127,978
Earnings before Interest and Tax (EBIT)	(192,600)	(395,559)	(430,408)	(468,326)	(6,436,586)
Corporation Tax (W-8)	794,550	(94,321)	(109,159)	(126,329)	(146,200)

Net Operating profit after tax (NOPAT)	601,950	(489,880)	(539,567)	(594,655)	(6,582,786)
Depreciation and Amortization Add Back	653,734	738,737	803,816	874,636	951,691
Add Changes in Capital Expenditure	(42,999)	(53,555)	(57,543)	(61,435)	(63,453)
Add Changes in Net Working Capital	571,519	2,712,223	3,138,855	3,632,597	4,204,005
Free Cash Flow	1,784,204	2,907,525	3,345,561	3,896,143	3,965,986
Terminal Value (W-9)					5,948,971
Present Value of Free Cash Flow @ 20%		2,422,937	2,323,306	2,254,712	3,442,691
Total Present Value of Company Operations	10,443,646				
Add Current Assets	4,629,201				
Total Market Value of the Business	15,072,847				
Total Number Of Ordinary Shares	142800000				
Price Per Share	Rs. 105.5				

The Free Cash Flow Business Valuation Model

The Discounted Free Cash Flow Model For A Business

Honda Atlas Cars (Pakistan) Limited

Forecasting Variables:

		2012	2013	2014	2015	2016
	W-1	Actual				
Revenue Growth Factor	W-1		8.81%	8.81%	8.81%	8.81%
Gross Profit Margin	W-2		0.09%	0.09%	0.09%	0.09%
Total Expenses % Of Revenue	W-3		2.83%	2.83%	2.83%	2.83%
Other Income % Of Revenue	W-4		0.55%	0.55%	0.55%	0.55%
Depreciation & Amortization % Of Revenue	W-5		4.09%	4.09%	4.09%	4.09%
Capital Expenditure Growth Factor	W-6		3.90%	3.90%	3.90%	3.90%
Working Capital To Sales Ratio	W-7		-14.97%	-14.97%	-14.97%	-14.97%
Income Tax Rate	22%					
Assumed Long-term sustainable Growth Rate	5%	Per Year After 2016				
Discount Rate	12%					

Table 2

ASSET-BASED VALUATION METHOD

Honda Atlas Cars (Pakistan) Limited

Data for the period 31 March 2012

ASSETS

	Rs. (000's)	Rs. (000's)	Rs. (000's)
Non-Current Assets			
Property, Plant & Equipment			3,255,755
Intangible Assets			56,366
Capital Work-in-Process			355,812
Long-term Loans & Advances			33,855
Long-term Deposits			4,042
Deferred Taxation			1,144,790
Total Non-Current Assets			4,850,620
Current Assets			
Stores and Spares		112,139	
Stock-in-trade		2,853,523	
Advancement, prepayments and other receivables		1,581,062	
Cash and Bank balances		82,477	
Total Current Assets			4,629,201
Total Assets			9479821

LIABILITIES

Current Liabilities			
Current portion of long-term finance	83,334		
Mark-Up Accrued on Borrowings	65,496		
Trade and Other Payables	8,102,678		
Total Current Liabilities		8251508	
Long-term Liabilities		83,333	
Total Liabilities			8334841
Total Market value of a Business			1144980
Total Number of Ordinary Shares			142800000
Price Per Share (W-10)			Rs. 8.01

Workings

W-1 Revenue Growth Factor

	2009	2010	2011	2012	Average
Revenue	14149646	15854142	22026109	16,599,608	
Revenue Growth Factor		12.04%	38.99%	-24.60%	8.81%

W-2 Expected Gross Profit Margin

	2009	2010	2011	2012	Average
Gross Profit	176502	-239545	199310	-43999	
Gross Profit Margin	1.25%	-1.51%	0.90%	-0.27%	0.09%

W-3 Selling, Distribution and Administration Expenses Percentage of Revenue					
	2009	2010	2011	2012	Average
Distribution and Marketing Cost	190088	124916	139185	130,550	
Administration Expenses	139749	136131	171729	158,943	
Other Expenses	311025	64945	64,945	217,842	
Total Expenses	640862	325992	375,859	507335	
% of Revenue	4.52%	2.05%	1.68%	3.05%	2.83%
W-4 Other Income Percentage of Revenue					
	2009	2010	2011	2012	Average
Other Income	64844	26323	83977	204,456	
% of Revenue	0.46%	0.17%	0.38%	1.20%	0.55%
W-5 Depreciation Percentage of Revenue					
	2009	2010	2011	2012	Average
Depreciation	522267	756288	653734	638,345	
Amortization	39428	71038	38965	31,422	
Depreciation & Amortization	561695	827326	692699	669767	
% of Revenue	3.97%	5.22%	3.14%	4.03%	4.09%
W-6 Capital Expenditure Growth Factor					
	2009	2010	2011	2012	Average
Capital Expenditure	160555	1944276	85623	42999	
% of Revenue	1.09%	13.74%	0.55%	0.20%	3.90%
W-7 Net Working Capital To Sales Ratio					
	2009	2010	2011	2012	Average
Current Asset	3929738	3511320	5663620	4,629,201	
Current Liabilities	5614243	5636805	8479567	8,251,508	
Net Working Capital	-1684505	-2125485	-2815947	-3622307	
Working Capital To Sales Ratio	-11.90%	-13.40%	-12.78%	-21.80%	-14.97%
W-8 Corporation Tax					
	2012	2013	2014	2015	2016
Earnings Before Interest and Tax (EBIT)	(3,476,156)	(163,141)	(188,804)	(218,501)	(252,872)
Less Interest (Interest as a percentage of EBIT)	(151,926)	(267,551)	(309,639)	(358,342)	(414,710)
Taxable Income	(3,628,082)	(430,692)	(498,443)	(576,843)	(667,582)

Tax at Rate of 21.90%	794,550	94,321	109,159	126,329	146,200
W-9 Terminal Value					
Discount Rate	12%				
Sustainable growth Rate (Assumed)	5%				
	CF(1+g)/K-	3965986(1+5%)/12%			
Using constant growth model	g	-5%	5948971		

6. CONCLUSION

After a comprehensive exploration of various business valuation methods, the Free Cash Flow (FCF) method emerges as the optimal approach for determining the value of a business. This conclusion is substantiated through a detailed analysis, particularly in the context of Honda Atlas Cars (Pakistan). Two distinct methods, the Free Cash Flow method and the Asset-Based method, were employed to calculate the value of Honda Atlas Cars (Pakistan). The detailed workings of both methods were presented, leading to a definitive conclusion that the Free Cash Flow method surpasses the Asset-Based method in terms of accuracy and reliability. Crucially, the Free Cash Flow method relies on forecasted future values derived from meticulous analysis of the previous year's financial data. This forward-looking perspective enhances its predictive power, providing a more realistic and dynamic valuation of the business. A noteworthy aspect reinforcing the superiority of the Free Cash Flow method is the alignment with the findings of numerous researchers in the field of business valuation. Consistent with prior studies, this research affirms that the Free Cash Flow method stands out as the most robust and effective approach. For shareholders, the implications of business valuation are profound. The decision-making process hinges on the calculated net value. A positive net value signals a favorable investment opportunity, while a negative net value advises caution. In the case of Honda Atlas Cars (Pakistan), both the Free Cash Flow and Asset-Based approaches yield positive values. However, the Discounted Cash Flow (DCF) calculation, a refinement of the Free Cash Flow method, yields a higher value compared to the Asset-Based approach. Consequently, shareholders are advised to base their decisions on the Discounted Cash Flow method, leveraging its nuanced evaluation of future cash flows and the time value of money. In conclusion, business valuation, particularly when applied to Honda Atlas Cars (Pakistan), underscores the pivotal role of the Free Cash Flow method. Its ability to provide a forward-looking, nuanced valuation, supported by consensus among researchers, positions it as the method of choice for shareholders seeking informed investment decisions.

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