Intrinsic Value of Share : A Conceptual Discussion

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Abstract : Identification of mispriced securities to facilitate an investment decision is the objective of resorting to fundamental analysis by its users (investors/analysts). Whether a security is mispriced or not depends on the relative position of market price and intrinsic value. Whereas the market price is dependent on the forces of demand and supply operating in the securities market, intrinsic value is dependent on the information available to its user concerned. Success of fundamental analysis is thus dependent on the reliability of the intrinsic value. The present article is an attempt to provide an insight into the intrinsic value—its meaning, need, origin, drivers, components and models for its computations followed by a critical analysis of the same.

Key-words : Fundamental analysis, intrinsic value.

1. Introduction

Fundamental Analysis helps investors/analysts indentify mispriced securities to facilitate an investment decision. The process of identification is—calculation of Intrinsic Value of the security concerned, collection of information as to the market price of the same, and comparing the two, to see whether it is a mispriced one or not. Thus, the success of the process is very much dependent on proper quantification of Intrinsic Value of the security on the basis of qualitative and quantitative information gathered through economy-industry-company analysis.

Price is—what one pays, value is—what one gets, said Buffett quoting Graham (http://www.berkshirehathaway.com/owners.htm). Meaning thereby that market price of a security and the Intrinsic Value of the same need not be equal. Because as Graham, (http://en.wikipedia.org/wiki/Benjamin_Graham) points out, in the short term, the stock market behaves like a voting machine, but in the long term it acts like a weighing machine (i.e. its true value will be reflected in the long run).

Concept

Black's Law Dictionary defines Intrinsic value of a thing as its true, inherent, and essential value, not depending upon accident, place, or person, but the same everywhere and to everyone. (http://thelawdictionary.org/intrinsic-value/)

The price that is justified for a share when the primary factors of value are considered. In other words, it is the real worth of the stock, as distinguished from the current market price of the stock. It is a subjective value in the sense that the analyst must apply his own individual background and skills to determine it, and estimates of intrinsic value will vary from one analyst to the next (Hampton,1979).

In intrinsic valuation, one values an asset based upon its intrinsic characteristics. It is the value that one would attach to an asset, based upon its fundamentals: cash flows, expected growth and risk.

The essence of intrinsic value is that one can estimate it in a vacuum for a specific asset, without any information on how the market is pricing other assets (Damodaran, 2011, 2012). Intrinsic Value as, the worth of an investment that is justified by the information about its payoffs. (Penman, 2007)

Chartered Financial Analyst Institute states that intrinsic value is the value that, an investor considers on the basis of an evaluation of available facts, to be the true or real value that will become the market value when other investors reach the same conclusion. (http://www.bwts.com.au/download/articles/nl-114-intrinsic-value.pdf)

The important points arising from this definition—1) Intrinsic Value so calculated is specific to the individual performing the calculation. Buffett says, "Two people looking at the same set of facts, will almost inevitably come up with at least slightly different intrinsic value figures," is due to a difference in opinion of the future cash flows. Since some investors are more conservative than others, their estimates of book value growth or dividend payments may be lower. This will immediately change the intrinsic value. (http://www.berkshirehathaway.com/owners.htm), 2) the definition assumes that value can differ from the market price.

Buffett defines Intrinsic Value as the discounted value of the cash that can be taken out of the business during its remaining life. As per his understanding intrinsic value of a business is its true value not accounting/book value. In order to arrive at intrinsic value one has to take the expected future cash flows and discount them back to their present value. Such calculation should also consider tax and margin of safety, he opined. (http://www.berkshirehathaway.com/owners.htm)

Need for Computation of Intrinsic Value

Hedonism says that pleasure is the only thing with positive Intrinsic Value. To an investor pleasure in investment is there as long as that investor enjoys a margin of safety i.e., market price of the security is less than its Intrinsic Value.

An asset is a promise to a stream of future payoffs. The demand for an asset is dependent on the stream of expected payoff from the same. The acquisition of a financial asset involves sacrificing current consumption for future payoffs. It is the asset that appreciates the most and thus delivers the most future consumption for today's sacrifice. Therefore choosing the right asset depends on its Intrinsic Value.

The fundamental premise of Intrinsic Value is that the prices quoted on stock exchanges around the world do not necessarily reflect the true value of the underlying businesses. The intrinsic value of a stock reflects the actual value of the stock. While the price of a stock fluctuates even within a very short period of time, the intrinsic value of a stock is considered fixed within a very short period of time.

The calculation of Intrinsic Value lies at the heart of Value Investing-enabling value investors to buy listed assets for less than they believe they are really worth.

Intrinsic Value investing brings critical risk management discipline to the stock selection process. The philosophy of buying under-priced security serves at the same time, both generating returns and limiting risk. Buying stocks cheap provides a guard against losing a lot of money.

Value Drivers

Intrinsic value drivers refer to factors relating to a company's growth, margins on investments made and/or cost of capital, as these are the factors that drive intrinsic value (Koller et al, 2005). When talking about equity, one can make assumptions of the future development of these intrinsic valuation factors and estimate future cash flows for the underlying company and thereby estimate an intrinsic value of the equity.

Components

Four earnings factors are the major components of the intrinsic value of a going concern.

1. Level of normal earning power and profitability in the employment of assets as distinguished from the reported earnings, which may be, sand frequently are, distorted by transient influences.

2. Dividends actually paid or the capacity to pay such dividends currently and in the future.

3. A realistic expectation about the trend line growth of earning power.

4. Stability and predictability of these quantitative and qualitative projections of the future economic value of the enterprise.

In capitalizing these earning power components, the valuation process involves the derivation of a risk premium, relative to an assured flow of returns, based on the following:

1. Variability of expected returns around trend line returns, reflecting industry factors, operating and financial leverage, creditworthiness, and nonfinancial elements.

2. Positive value of growth potential derived from definite prospects such as new products, new markets, and external economic and social developments.

3. Informed and experience based appraisal of management's ability to cope with the uncertainties and unpredictable events of the long term future.

In essence, the intrinsic value of the firm is its economic value as a going concern, taking account of its characteristics, the nature of its business(es), and the investment environment. (Graham and Dodd, 1989).

2. History of Intrinsic Value Calculation

An early reference to attempts to determine the fair value for exchange traded equities can be found in Joseph de la Vega's 1688 book, "Confusion de Confusiones". De la Vega tells us that he based his investment decisions upon "calculations" and as input to these calculations he used "prospective dividends". Thus De la Vega, who traded shares on the Amsterdam Exchange over 320 years ago, was giving consideration to a potential difference between market price and fair value. But De la Vega's book was written in Spanish. In order to find early reference to the English word "Intrinsic" (or Intrinsick as it was then spelt) we must turn to English writings. An early English application of the term "Intrinsic Value", to traded shares, can be found in Thoughts on Trade's 1716 book, "Thoughts on Trade". The concept of discounted cash flow, which underpins the methodology of most Intrinsic Value calculations, significantly predates trading in publicly listed shares. The first listed company,

The Dutch East India Company, was floated in 1602. But it was exactly 400 years earlier, in 1202, that we find the first written reference to discounted cash flow calculations. They were described in Leonardo Pisano's book, "Liber Abaci"—it's title translates to "A Book of Calculation". Pisano meant for his mathematics to be applied to annuities, bonds and other contractual cash flows. But in attempts to determine the Intrinsic Value of shares analysts have subsequently applied his mathematics to the less quantifiable forecasts of future company earnings. (Kemp, 2011).

3. Models for Computation of Intrinsic Value

Stock price is the sum of the price of realized events and the price of expectation of future events, which influence company's future cash flows. This can be described as

$\text{Price}_{\text{stock}} = \text{Price}_{\text{realized events}} + \text{Price}_{\text{expectations}}$

Decomposing price of expectation, Price of stock becomes

$\text{Price}_{\text{stock}} = \text{Price}_{\text{realized events}} + \text{Price}_{\text{rational expectation}} + \text{Price}_{\text{irrational expectation}}$

where *Price realized* events is price based on past events (e.g., accounting information), *Price rational expectation* is the price of expectation based on market or company fundamentals, and *Price irrational expectation* is the price of expectation not based on fundamentals (e.g., rumor, discontinuous information, and bubble and bust).

The intrinsic value can be described as,

$\text{Price}_{\text{stock}} = (\text{Price}_{\text{realized events}} + \text{Price}_{\text{rational expectation}})$, assuming $E(\text{Price}_{\text{irrational expectation}}) = 0$ in the long term

Many underpriced and overpriced stocks are in the securities market. In order to determine undervalued, correctly valued and overvalued stocks the intrinsic values of stocks calculated using a certain model are compared with the current market price of a stock. Based on this calculation, an investment decision is put forward, recommending buying or selling the stock.

There are several models that can be used to determine an intrinsic value of a stock. Penman, (2007), defines four methods of valuation that involve forecasting.

  i. Dividend Discounting Analysis that discounts the dividends from a company,
 ii. Discounted Cash Flow Analysis that discounts free cash flow to investors,
iii. Residual Earnings Analysis that calculates the value as the book value plus residual earnings and finally
 iv. Earnings Growth Analysis that calculates value as capitalized earnings plus the present value of expected abnormal earnings growth.

Hellman (2000) talks about different valuation attributes; dividends, residual earnings, and free cash flow that are involved in the three fundamental valuation models he mentions.

Dividend Discount Model (DDM)

According to theory, shareholders receive cash payoffs in the form of dividends. The Dividend Discount Model (DDM) values equity by forecasting and discounting future dividends at the cost of equity capital. By definition DDM can be viewed through equity perspective:

$$Value\ of\ Stock = \frac{Div_1}{(1+r)^1} + \frac{Div_2}{(1+r)^2} + ... \frac{Div_n}{(1+r)^n}$$

Where:

Div = Dividends expected in one period

r = Required rate of return

One variety of this model is the Gordon Growth Model, which assumes that the company under consideration is within a steady state — i.e., with growing dividends in perpetuity. It is expressed as the following:

$$Value\ of\ Stock = \frac{DPS_1}{R_e - G}$$

Where:

DPS_1 = Expected dividends one year from the present

R = Required rate of return for equity investors

G = Annual growth rate in dividends in perpetuity

As the name implies, it accounts for the dividends that a company pays out to shareholders reflecting on the company's ability to generate cash flows. There are multiple variations of this model, each of which is based on different variables depending on the underlying assumptions made for the purpose.

Discounted Cash Flow Model

At its core, if one stay true to principles, a discounted cash flow model is an intrinsic valuation model, because one is valuing an asset based upon its expected cash flows, adjusted for risk. Only assets that are expected to generate cash flows can have intrinsic values. (Damodaran, 2011)

Independent of its book value or market value, the intrinsic value of a firm's equity is calculated through a discounted cash flow (DCF) valuation. A DCF valuation computes a firm's annual projected cash flow for a number of years at its current value—essentially as a quantification of potential performance. Using a firm's weighted average cost of capital (WACC)—the return a firm must earn on the money it has borrowed—DCF weights each annual cash flow projection to give it a current theoretical value.

The most common valuation method used in finding a stock's fundamental value is discounted cash flow (DCF) analysis. In its simplest form, it appears as stated below :

$$DCF = \frac{CF_1}{(1+d)^1} + \frac{CF_2}{(1+d)^2} + ... \frac{CF_n}{(1+d)^n}$$

Where:

CFn = Cash flows in period n. d = Discount rate, Weighted Average Cost of Capital (WACC)

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The Discounted Free Cash Model (DCF) is based on the insight that dividends can be recast as Free Cash Flows to both Equity and Entity, depending on the valuation approach. DCF assumes that free cash flows represent value better than dividends over a short horizon. Free Cash flows equal the cash available to the enterprise after all required investments

The DCF model uses free cash flows to determine a fair value for a stock. Free cash flow—that is, cash flow where net income is added with amortization/depreciation, and changes in working capital and capital expenditures are subtracted. It also utilizes WACC as a discount variable to account for the time value of money.

Residual Income Model

Another such method of calculating this value is the residual income model, which expressed in its simplest form is :

$$Value\ of\ Stock = B_0 + \sum_{n=1}^{\infty} \frac{(ROE_n - r)B_{n-1}}{(1+r)^n}$$

Where:

B_0 = Current book value per share

B_n = Expected book value per share at n

ROE_n = Expected EPS

r = Required rate of return on investment

What is important to consider is how this valuation method derives the value of the stock based on the difference in earnings per share and per-share book value (in this case, the security's residual income), to come to an intrinsic value for the stock. Essentially, the model seeks to find the intrinsic value of the stock by adding its current per-share book value with its discounted residual income (which can either lessen the book value, or increase it.)

Earnings Growth Model

The AEG model was first introduced by Ohlson and Juettner-Nauroth (2004) and Ohlson (2005). As a consequence it is also called OJ model. The model for valuing earnings growth anchors the valuation on capitalized earnings and then adds value from anticipated growth:

Value of equity = Capitalized forward earnings + Extra value for abnormal cum-dividend earnings growth.

$$V_0^E = \frac{Earn_1}{pE-1} + \frac{1}{pE-1}\left[\frac{AEG2}{PE} + \frac{AEG3}{PE2} + \cdots\right]$$

Where

Earn = Earnings

PE = Price earnings ratio

AEG = Abnormal (cum-dividend) Earnings Growth

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4. Criticisms

Intrinsic Value is the backbone of fundamental analysis, which relies on the assumption that the price on the stock market may not fully reflect a stock's "real" value. This very assumption forms the basis for its criticism. The critiques argue that the market will misprice a security if all the information is not taken care of. The proponents of Efficient Market Hypothesis (EMH) hold that the market is fully aware of all the information ("informationally efficient") and price reflects all publicly available information. Therefore, price instantly changes to reflect new public information not only that, the price instantly reflects even hidden or "insider" information. Hence it is impossible to produce market-beating returns in the long run.

Now the question arises, does price reflect value? The answer depends on who is asked, Warren Buffett, one of the most successful investors in history and a fundamentalist or Professor Eugene Fama, a distinguished finance academic. Buffett and Fama represent different schools of thoughts. On one hand, Buffett believes an investor can find undervalued stocks if he or she looks hard enough. On the other hand, Fama argues the prices of stocks reflect their fair values. But, neither of these successful individuals is dismissing the other's views on markets entirely. Buffett recognises that markets are efficient most of the time; and Fama admits that there is something beyond luck behind Buffett's extraordinary success in his investments.   (http://www.investeem.com)

5. Conclusion

Equilibrium situation, for a security, arises when the market price of a security is equal to its Intrinsic Value. So, the investor becomes indifferent between buying and selling a stock. If a stock is in equilibrium, there is no fundamental imbalance, hence no pressure for a change in the stock's price. At any given time, most stocks are reasonably close to their Intrinsic Value and thus are at or close to equilibrium. However, at times stock prices and equilibrium values are different; in such a situation stocks can be temporarily undervalued or overvalued.

Some mistakenly consider value investing a mechanical tool for identifying bargains. But, it is actually a comprehensive investment philosophy that emphasizes the need to perform in-depth fundamental analysis, pursue long-term investment results, limit risk and resist crowd psychology. (Klarman, 2008).

Intrinsic Value is a concept masquerading as a number. There is no unique method of Intrinsic Value determination to suit all circumstances. Its determination is both an art and a science. The inputs are based on judgment and the process is far more subjective than many people acknowledge. (Kemp, 2011). It is an estimate of a stock's "true" value based on available risk and return data. It can be estimated but not measured precisely. A stock's market price is based on perceived but possibly incorrect information. Thus one can see that a stock's "true" long-run value is more closely related to its Intrinsic Value rather than its market price.

References

Damodaran, A. (2011), Thoughts on Intrinsic Value (http://www.stern.nyu.edu accessed on 19.5.2013)

Damodaran, A. (2012), Intrinsic Valuation, Valuation: Lecture Note Packet 1(http://campus.unibo.it accessed on 19.5.2013)

Graham, B. and Dodd, D. (1989). Security Analysis, Fifth International Edition, New York: McGraw-Hill Book Company.

Hampton, J.J. (1979). Handbook for Financial Decision Makers, Virginia: Reston Publishing Company.

Hellman, N. (2000). "Investor Behaviour: An empirical study of how large Swedish institutional investors make equity investment decisions", EFI, Stockholm.

Kemp, M. (2011), "Intrinsic value", Annual AIA Conference Sydney, Saturday, 3rd September.

Klarman, S. (2008). The Timeless Wisdom of Graham and Dod, Preface to the Sixth Edition of Security Analysis, New York: McGraw-Hill.

Koller, T., Goedhart, M. and Wessels, D., (2005). Valuation: Measuring and managing the value of companies, 4th edition, New Jersey: McKinsey and Company.

Ohlson, J. (2005). "On Accounting-Based Valuation Formulae", Review of Accounting Studies, 10, pp. 323-347.

Ohlson, J.and Juettner-Nauroth, B. (2005). "Expected EPS and EPS Growth as determinants of value", Review of Accounting Studies, 10, pp. 349-365.

Penman, S.H., (2007), Financial Statement Analysis and Security Valuation, New York: McGrawHill/Irwin

Websites consulted :

http://www.investeem.com accessed on 23.5 2013

http://www.berkshirehathaway.com/owners.htm accessed on 23.5 2013

http://en.wikipedia.org/wiki/Benjamin_Graham accessed on 25.5 2013

http://thelawdictionary.org/intrinsic-value/accessed on 25.5 2013

http://www.bwts.com.au/download/articles/nl-114-intrinsic-value.pdf accessed on 28.5 2013