The Significance of Value and Its Relationship with a Firm's Operational Quality

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Abstract

Valuation plays a central role in business as long as assets are traded. Value of a firm represents its past, present and future performance as well as the long-term interest of investors (shareholders and stakeholders). In the past, stock price (market capitalization) has been used as a proxy for firm's value. We focus on the stock price as well as the enterprise value as we set out to examine the impact of operating efficiency on both variables. The operating efficiency of a firm is measured through ratios related to a firm's activity, its cash flows, sales and profits. We find that though the operating efficiency of a firm has an impact on both stock price and enterprise value, it is a little more pronounced in case of the latter.

Key Words

Operating Efficiency, Enterprise Value, Stock Price, Panel Data Analysis, EV / EBITDA

INTRODUCTION

Valuation is a key dimension of measurement in the world of financial markets. It is a systematic quantitative technique of determining the value of a firm in the associated industry. Value of firm represents the past, present and future performance of a firm as well as the long-term interest of investors (shareholders and stakeholders). Investors invest in a particular firm with expectations of high return on their investments as a compensation for the risk they undertake for a given

holding period. Investors want to invest in those companies which add economic value to their investment. Companies seek to create value for investors by generating more cash than cost of acquiring capital.

Some of the main purposes that valuation serves for the companies are indicated by Pablo Fernandez, 2002. They include determination of acquisition price of firms when they undergo corporate restructuring. The lowest price at which the target firm must be ready to sell its business to the acquirer, under or over valuation of a firm, comparative analysis of firms, determining the value drivers for the company and selection of corporate restructuring strategies

Ohlson (1995) and Feltham and Ohlson (1995) show that the value of a firm can be expressed as a function of the firm's book value and future abnormal earnings or future return on equity in excess of the cost of capital. These studies suggest that understanding firm value requires forecasts of future return on operating assets. It is well established that operations are considered as the core source of cash. If cash generated from operations is not sufficient to pay dividends to investors, the attractiveness of a firm as a potential investment prospect declines. Creditors also tend to turn a cold shoulder towards such a firm (Libby Libby, 2011). A change in profit margin may reflect a change in operating efficiency or a change in accounting conservatism. Operating efficiency and its measurement tools highlight the level of competence & effectiveness in the management and asset utilization. Various activity ratios measure operating efficiency. Operating efficiency refers to a profitable, efficient and judicious use of financial resources available to an organization in perfect consonance with clearly laid-down financial policies relating to the operation. The operating efficiency of an organization in terms of the efficient utilization of the resources is reflected in net profit margin. It has been observed that although a high profit margin is a test of better performance, a low margin does not necessarily imply a lower rate of return on investments/assets turnover. Nissim and Penman (2001) and Penman and Zhang (2003) also show that changes in asset turnover are related to current and future earnings changes. Soliman (2008) extends these studies by examining whether equity investors and analysts impound the predictive information embedded in asset turnover changes. Evidence suggests that investors and analysts do not fully utilize information about changes in asset turnover. Greene and Segal (2004) argue that "cost inefficiency affects profits and growth through the negative effect of wasted resources on earnings and cash flows." This implies that more operationally efficient firms should be more profitable.

ENTERPRISE VALUE OR STOCK PRICE

Enterprise Value of firm represents a firm's value in this work. It provides an economic measure of real market value of firm as a whole business.

Enterprise Value *(EV)* = Equity Value (Market Capitalization) + Net Debt Preferred Stock + Minority Interest

Where,

Equity Value = Equity value of firm is also known as Market capitalization of a firm.

Market Capitalization = Total No. of outstanding share × Current share price

Net Debt = Total Debt − Cash & Cash Equivalents (Marketable securities, Treasury bills)

Minority Interest = Interest on Non-Controlling shareholders

Preferred Stock = It is not convertible into common stock.

Minority interest is the percentage of the subsidiary's book value of equity that the parent firm does not own

A number of studies, however, consider stock price as a reflection of a firm's value. Elena Beccalli, Barbara Casu and Claudia Girardone (2002), Abdul Majid, Muhamed Zulkhibri and Sufian (2008), Dehuan Jin and Jin Zhenhu (2008) and Muhamed Zulkhibri, Abdul Majid and Fadzlan Sufian (2008) and others have used stock price as an explanatory variable in establishig the value of a firm. It must be noted though that the value of a firm determined on the basis of stock price speaks only about the total market price of all the shares of company. It does not consider debt, cash and cash equivalents and other major factors that could impact a firm's value.

By way of an example, let us consider an acquisition scenario briefly. The management of the acquiring firm may negotiate the consideration based on the equity value of the target firm, its debt, revalued assets, etc.

Suppose Firm C is examining two potential candidates for an acquisition: Firm A and Firm B. Their summary financials are presented in Exhibit 1

Exhibit 1 - Financial data of Company A and Company B

Particulars	Company A	Company B
No. of Equity Shares	1,00,000	1,50,000
Market Price Per Share (in Rs)	150	100
Debt	NIL	75,00,000
Cash (in Rs)	20,00,000	30,00,000
Preferred Stocks	10,000	15,000

Though both firms have the same market value of $15,000,000 in common stock, it does not completely and accurately compare the two candidates because Firm C will need to take over the debt liability also if it decides to go with Firm B. In spite of being identical in terms of their market capitalizations, the enterprise values of A and B would be $13,010,000 and $19,515,000 respectively. This will make Firm A, a cheaper acquisition candidate even though Firm B could bring in a million more dollars in cash with it.

DATA AND METHODS

We attempt to examine which measure; Market Capitalization or the Enterprise Value, serves as a better representation of a firm's value. They, therefore, serve as the dependent variables. Since a firm's operating efficiency is likely to have a bearing on its value, we aim to use six key ratios (EV/EBITDA, EV/SALES, NPM, Quality of Earnings, FATO and ROCE) as possible explicators. They are the independent variables and are described below :

1. $$\frac{EV}{EDITDA}$$

   This ratio represents the relationship between gross profit and enterprise value of a firm.

2. Return On Capital Employed (ROCE)

   Return on Capital Employed represents the efficiency of company in terms of profitability of a firm expressing its operating profit as a percentage of capital employed.

   $$ROCE = \frac{\text{Operating Profit}}{\text{Capital Employed}}$$

   where, Capital Employed = Total Assets – Current Liabilities

   High value of return on capital employed represents that the firm is highly efficient to generate more revenue per rupee of capital employed.

3. Enterprise Value/Sales (EV/S)

   It shows the total value of firm to its sales. It represents the cost of buying a firm's sales. This ratio is very useful during corporate restructuring of firm

   $$\frac{EV}{S} = \frac{\text{Equity Value} + \text{Net Debt} + \text{Preferred Stock} + \text{Minority Interest}}{\text{Sales}}$$

   Or

   $$\frac{EV}{S} = \frac{\text{Equity Value} + (\text{Total Debt} - \text{Cash/Cash Equivalents}) + \text{Preferred Stock} + \text{Minority Interest}}{\text{Sales}}$$

4. $$\frac{CFOA}{S}$$

Cash flow from operating activities/sales ratio represents the efficiency of company in terms of amount of cash generated by the company from its core business as a percentage of its sales.

$$CFOA = \frac{\text{Net Cash Flow from Operating Activities}}{\text{Sales}}$$

5. Fixed Asset Turnover Ratio (FATO)

It represents the firm's operating efficiency in terms of converting fixed assets into sales. High fixed asset turnover ratio represents that company is highly efficient in managing its fixed assets.

$$FATO = \frac{\text{Net Sales}}{\text{Total Fixed Assets}}$$

6. Net Profit Margin (NPM)

This ratio shows the efficiency of company in converting its sales into profitability.

$$NPM = \frac{\text{Profit after Tax}}{\text{Sales}} \times 100$$

A higher net profit margin ratio represents that a company is more efficient at converting sales into actual profit.

We use an eight year time frame (2005-2012) and investigate six industrial sectors (Automobile, Banking, FMCG, IT, Infra and Pharmaceuticals) in India. 90 companies (15 companies from each sector) provide the sample data. These companies are selected to be a part of the sample on the basis of highest market capitalization in their respective sectors.

CAPITALINE software has been used to source the required data. Panel Data Analysis has been employed to measure the effect of independent variables on dependent variables. STATA software has been used to apply panel data Analysis on the study variables.

RESULTS AND DISCUSSION

The results of the data analysis pertaining to r^2 for the models are shown in Tables 1 and 2

Table 1

Model r^2 with Stock Price as Dependent Variable

	Model Statistics	Industry						
		Aggre-gate	Auto-mobile	Banking	FMCG	Infra-structure	IT	Pharma-ceuticals
r^2	Within	0.3999	0.5386	0.7003	0.2924	0.6925	0.5055	0.3738
	Between	0.7335	0.1796	0.3238	0.1661	0.0506	0.4472	0.488
	Overall	0.4243	0.2107	0.2917	0.1941	0.2525	0.525	0.4021
	F Value	25.19	8.27	16.53	2.92	16.39	10.39	4.22
	Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 2

Model r^2 with Enterprise Value as Dependent Variable

	Model Statistics	Industry						
		Aggre-gate	Auto-mobile	Banking	FMCG	Infra-structure	IT	Pharma-ceuticals
r^2	Within	0.7408	0.8781	0.9001	0.867	0.8811	0.8684	0.8058
	Between	0.8333	0.1338	0.6005	0.5037	0.0701	0.8453	0.7224
	Overall	0.6885	0.1588	0.4651	0.4271	0.3036	0.7273	0.4799
	F Value	108.42	50.93	63.75	46.13	52.45	44.69	29.36
	Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Within r^2 refers to the observation of effects over time within firms; between r^2 refers to the observation of effects between firms at any one point in time. The r^2 values for the aggregate sample in Table 1 suggest that all independent variables account for 42% overall variation in the Stock Price, 73% variation between companies at a point in time and 39% variation within companies over time. The model fit according to r^2 appears to be poor in majority cases in various industries.

The r^2 values for the aggregate sample in Table 2 suggest that all independent variables account for 68% overall variation in the Enterprise Value (EV), 74% variation within companies over time and 83% variation between companies at one point in time. The model fit according to r^2 appears to be "relatively" better except Automobile Industry.

Tables 3 and 4 provide the regression coefficients from the two regression models (one with Enterprise Value and other with Stock Price).

Table 3

Regression Coefficients with Stock Price as Dependent Variable

	Auto-mobile	Banking	FMCG	Infra	IT	Pharma	Aggre-gate
EV/EBITDA	0.005	1.356*	0.4392*	0.1635	-0.18	-0.449*	0.205**
EV/SALES	0.134**	0.1194	0.4283	0.7289	-0.0683	0.012	0.658*
NPM	-0.074*	-0.0165	0.0837	0.0643**	0.34*	-0.085	-0.0268
CFOA/S	0.251*	-0.3263	0.1383*	0.0015	-0.004**	0.227*	0.142
FATO	0.344**	0.7437**	-0.3013	0.0816	0.354	0.382**	0.1667**
ROCE	0.056*	0.3386	0.1136**	0.0102**	0.155*	0.133	0.0853**
dummy2005	-0.339**	-0.436**	-0.105	0.771**	0.299	0.443**	0.051
dummy2006	-0.226*	-0.473**	-0.2569	0.8657	0.1462	0.413**	0.003
dummy2007	-0.127	-0.1095	-0.2502	1.137**	0.2407*	0.273*	0.1242*
dummy2008	-0.336**	-0.0119	-0.3871	0.6336**	-0.0263	0.112	-0.03581
dummy2009	-0.111	-0.085	-0.212	0.381	-0.018	-0.045	-0.024*
dummy2010	0.202*	0.260**	-0.0551	0.5422**	0.1457	0.268*	0.1616
dummy2011	0.043	0.0148	-0.1137	0.267	0.0908	0.011	0.0547
dummyauto							0.1513
dummybanking							0.8476**
dummyFMCG							-0.5129**
dummyPharma							-0.2707**
dummyIT							-0.5889**
Constant	3.324	3.863	2.103	1.9095	2.04	3.35	1.8098

** Significant at 1% level of significance * Significant at 5% level of significance

Table 4

Regression Coefficients with Enterprise Value as Dependent Variable

	Auto-mobile	Banking	FMCG	Infra	IT	Pharma	Aggre-gate
EV/EBITDA	0.2**	1.43*	0.644**	0.582**	-0.116	0.319*	0.712**
EV/SLES	0.134*	2.013**	0.0122	0.358**	0.0599	0.422**	0.883**
NPM	-0.091**	0.019	0.031	0.031	0.995**	0.017	-0.132**
CFOA/S	0.481**	-0.015	-0.043	0.059	-0.101**	0.377**	0.625**
FATO	0.395**	0.209	-0.263*	-0.344**	0.537**	-0.176*	0.328**
ROCE	-0.041	-0.047	0.226**	0.372**	-0.039	-0.044	-0.1631*
dummy2005	-1.000**	-0.871**	-1.33**	-2.05**	-0.806**	-1.044**	-1.406**
dummy2006	-0.773**	-0.817**	-0.974**	-1.437**	-0.558**	-0.704**	-1.279**
dummy2007	-0.695**	-0.628**	-0.849**	-0.971**	-0.404**	-0.548**	-0.95**
dummy2008	-0.611**	-0.461**	-0.623**	-0.587**	-0.245*	-0.484**	-0.614**
dummy2009	-0.600**	-0.393**	-0.724**	-0.656**	-0.149	-0.516**	-0.337**
dummy2010	-0.21**	-0.19**	-0.405**	-0.261*	-0.011	-0.213**	-0.355**
dummy2011	-0.0935	0.024	-0.203*	-0.121	-0.015	-0.087	-0.153
dummyauto	-	-	-	-	-	-	-0.094
dummybanking	-	-	-	-	-	-	3.65**
dummyFMCG	-	-	-	-	-	-	-0.96**
dummyPharma	-	-	-	-	-	-	-0.549**
dummyIT	-	-	-	-	-	-	-1.524**
Constant	4.06	4.59	6.02	4.83	0.703	3.82	1.266

** Significant at 1% level of significance * Significant at 5% level of significance

It can be observed from the above Tables that many of the operating efficiency predictors are significantly related to Enterprise Value and Stock Price. A look at the aggregate results, however, points towards a few important observations. For at least three out of six ratios, the coefficients are higher in Table 4. Given that, these three ratios (EV/EBITDA, EV/Sales and FATO) are significant in both Tables, a higher value of coefficients in Table 4 indicates a better explanatory relationship with Enterprise Value than Stock Price. It can also be seen that the aggregate value of coefficients for profitability related ratios are negative, especially the Net Profit

Margin, which is negative in both Tables. On the other hand, ratios related to activity and cash flow affect both measures of value positively.

CONCLUSION

Enterprise Value is deemed a broader measure of value than stock price (market capitalization). We strive to examine the effect of a firm's operating efficiency on both measures of a firm's value. Operating efficiency is established through six key ratios that focus on a firm's activity, cash flow, sales and profitability. Though the analysis does not indicate a clear-cut winner in terms of which valuation measure is more affected by operating efficiency, there is a suggestive tone in the results that points towards a slightly more pronounced effect of operating efficiency on the enterprise value in comparison with the stock price.

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