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How Investors Perceive Financial Ratios at Different Growth Opportunities and Financial Leverages

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Abstract
This study examines the connection between a firm's market value and its reported financial ratios. The purpose is to investigate the degree to which the market value is determined by the internal financial performance such as: profitability, liquidity, efficiency, dividend payout and leverage ratios. The emphasis is on explanation rather than prediction. However, market-to-book, price-earnings and Q ratios are used to measure market value. The existence of these relationships is examined in terms of 65 non-financial public companies in the UK that are listed in the FTSE 100, and their performance from 2000-2013. Using cross-sectional time-series data, this study has performed a thorough regression analysis, which has shown that return on assets, financial leverage, and Q-ratio have a significant positive relationship to market value creation (MB ratio), while debt ratio and capital structure have a negative relationship. Using Q-ratio as a measure of growth opportunity, this study has found that market perception is different for firms with high growth opportunity than it is for those with low growth opportunity. Similarly, investors responded differently to more highly-leveraged firms.

Keywords: Financial ratios, financial leverage, FTSE100, MB ratio, PE ratio, Q-ratio.

1. Introduction

Financial reporting plays an important role in investors' decision-making process. Shareholders observe their company's performance through its main financial statements such as the balance sheet and the income statement, which is why it is very important to report figures that accurately reflect a company's performance. Bushman and Smith (2010) argued that high-quality financial reporting reduces information asymmetry. In an efficient market, it is assumed that the smooth flow of information is discounted in share prices, meaning that these prices reflect the true measure of a firm's performance. Investors gain confidence in a company when they realize that the company is reporting reliable information. Such consistent reliability could lead to a systematic reallocation of resources and creation of solid values. But, when the market is efficient in the semi-strong form, then all past information and reported or published figures should be incorporated in share prices, and no systematic abnormal returns should be generated.

Financial reporting and ratios help investors choose which company to invest in. Therefore, it is the management of the company that attracts investors through the signals they provide to the market. Thus, these signals should be presented in a way that reflects a true picture of the company. McLeaney and Atrill (2005) reported that financial ratios provide a quick and

relatively simple means of assessing the financial health of a business. These ratios are mostly used as a starting point for more detailed financial analysis because they can refer to the areas of good and bad performance as well as areas of significant changes, which would subsequently be analyzed more carefully. Investors' use of financial ratios to select suitable companies to invest in is largely influenced by the presumptions that have informed the preparation of those financial statements (Malikova and Brabec, 2012). This study attempts to investigate the significant accounting-based performance measures that investors might consider as signals and might then use to understand firms' market-based performances. Accounting measures which are used to assess a corporation's performance are financial ratios such as profitability, financial leverage, liquidity, efficiency, dividend payout, and investment in capital expenditure. The market-based values are measured by price-earnings ratio (PE), market-to-book ratio (MB) and Q-ratio. The movement in these market ratios is important since any change in these ratios may signal a response on the part of the shareholders and their willingness to invest in a particular company. If the market value is moving with the changes in accounting ratios, then there might be some connection between these market- and accounting-based ratios. Therefore, this investigation's focus is on determining whether investors use these reported ratios as signals from the firm to create wealth and rational resource allocation, or not. If they do, then does this relationship vary according to different stages of growth opportunities and different degrees of financial leverage? The result of this study is in twofold: If accounting-based ratios manage to explain market-based ratios, then, on the one hand, management could benefit from this relationship in terms of policy making by concentrating on providing very strong support for certain desired ratios in the market. On the other hand, investors could base their investment decisions on these selected accounting ratios, which will lead to value creation.

2. Literature Review

Past literature has examined the relationship between accounting variables and market value. Different researchers have looked at different accounting measures. Ball and Brown (1968) observed that literature supports the proposition that capital markets are both efficient and unbiased, which means that if information is useful in forming security prices, then the market will adjust these prices to that information quickly, without leaving any opportunity for further abnormal returns. This is also supported by Fama, (1970), Brown (1988), O'Hanlon (1991), and others. Theories in finance and accounting suggest that accounting variables are associated with stock market returns. The origin of the relation between accounting information and stock prices commences with the classic paper by Ball and Brown (1968) in which the question of whether or not annual reports contain any new information was considered. They found that accounting earnings played a significant role in determining the prices of securities, although such earnings were often found to be anticipated by the market (Brennan, 1991). Bushman and Smith (2001) concluded that high-quality financial reporting reduces information asymmetry, a conclusion that was also supported by Ramalingegowda et al. (2013). Wahlen and Wieland (2011) and Lev et al. (2010) argued that if capital providers want to choose which company to invest their resources in, they need to compare the contemporary financial position and performance of their chosen company to other relevant entities, and use this information to forecast their company's future developments. Therefore, one has to ensure that financial reporting presents a fair and thorough picture of an organization's economic activities, as recommended by Ingram and Albright (2007). Barlev and Livnat (1986) argued that share prices might be indirectly influenced by financing events because such events can affect investment activity, and can additionally affect a firm's future cash flow. They concluded that rates of return on a firm's securities relate positively to the use of funds and negatively to the source of funds. In addition, the application of funds is generally positively related to the various sources of funds. Few studies have investigated the association between financial markets and investment in capital expenditure. McConnell and Muscarella (1985) examined the relationship between the announcement of unexpected increases/decreases in capital expenditure and increases/decreases in common stock prices. Their work provides evidence of the effect of corporate investment decisions on the market value of a firm. They found that the reactions of security prices to announced capital

expenditure are generally consistent with the market value maximisation hypothesis and the traditional model of corporate valuation. Using annual data, Livnat and Zarowin (1990) found no relationship between investment cash flow and cumulative abnormal returns, while Lev and Thiagarajan (1993) discovered a negative relationship in one test and 'no relationship' in another test. The real question here is: How effective is the response to information? How much change in the allocation of resources occurs before efficiency is reached?

Looking at the impact of leverage and debt ratio on market valuation, Malikova and Brabec (2012) argued that higher debt ratio indicates that a company has a higher level of liabilities, which could advance the potiential risks for lenders as well as for owners of the company. On the other hand, financial leverage also has a signfiicant effect, whereby a higher proportion of liabilities causes the return on equity to increase. High debt ratio could indicate that a firm is engaged in profitable projects with low cost of debt and a consistent pool of shareholders, causing earnings per share to increase. Chiang et al. (2002) assessed 35 companies listed in the Hong Kong Stock Exchange, and found that profitability and debt ratio (capital structure) are interrelated. Abor (2005) tested this relationship using companies listed in the Ghana Stock Exchange, and found a positive relationship between short-term debt and ROE and a negative relationship between long-term debt and ROE. Gill et al. (2011) tested several American service and manufacturing firms, and their results support the findings of Abor (2005). Chisti et al. (2013) studied companies listed in various stock exchanges in India, and found that debt to equity ratio is negatively correlated to profitability ratios, which implies that if the debt increases aggressively, it will have an adverse impact on profitability. Moreover, companies in such circumstances expose themselves to more risk and the possibility of losing control. On the other hand, results consistently find that debt to assets ratio is positively and significantly correlated with the profitability ratio, implying it will contribute to the profitability of the company. Ebrati et al. (2013) investigated the impact of capital structure (leverage level) on a firm's performance in the Tehran Stock Exchange, and the results found that ROE, Q-ratio and MB are significantly and positively associated with capital structure and negatively associated with ROA and EPS. Barclay and Litzenberger (1988) found that the relationship between marginal profitability of growth opportunities and Q-ratio is positive, and is used as a measure of investment, investment opportunity and market valuation. Ryan et al. (2000) used Q-ratio as a proxy for growth opportunity, defining firms with a Q-ratio of greater than one as "value maximizers" and those with a Q-ratio of less than one as "over-investors." In addition, Land and Litzenberger (1989) suggest that an average Q-ratio of more than one is a necessary condition for a firm that invests in positive NPV projects, while an average Q-ratio of less than one is sufficient for firms that lack such projects.

Ruland and Zhou (2005) found that the association of leverage and valuation is strong in diversified firms that are smaller in size. To measure the factors that are associated with the excess value of a firm, they used debt ratio, Capex, operating income, dividend yield, cash flow, size and several other ratios. All these ratios were positively related to excess value creation, with the exception of dividend and leverage ratio. Ou and Penman (1989) identified factors that could explain the variation among firm's PE ratios. They used Logit models and a set of independent variables as forms of ratios: liquidity, turnover, profitability and leverage. They concluded that several ratios provide useful information for predicting the direction of the change in earnings for the next period. As argued by Shen (2000), some researchers believe that a high PE ratio is usually followed by slow growth in stock price while others believe the opposite. They argue that history is no longer a true guide because fundamental changes in the economy have made stocks more attractive to investors, justifying a higher PE ratio. Shen finds strong historical evidence that high PE ratios often precede disappointing stock market performance in both the short and long term. Specificaly, he claims that it leads to slow long-run growth in stock prices. He used PE ratios for the overall market index for S&P rather than individual companies to reach this conclusion. Shiller (2000) also found that the PE ratio was negatively correlated with subsequent stock price growth. Pringle (1973) argued that PE ratio can lead to confusion regarding the effects of investment decisions with those of financing decisions,

and often leads to a wrong decision. As a result, the magnitude of the PE ratio becomes irrelevant. He further argued that to the extent that a high PE ratio indicates that management is doing a good job of maximizing market value, it is desirable, but a high PE ratio should not be considered as unequivocally desirable because it also permits raising equity capital "cheaply" and making investments on more favorable terms.

Kiani et al. (2012) concluded that 18 financial variables can be grouped together into five different ratios as such: short-term liquidity, return on investment, long-term liquidity, firm size and capital turnover. It was concluded that return on investment was positively related to a firm's growth while long-term solvency was negatively related to growth. In addition, the study found that smaller firms tend to grow faster than others, and short-term liquidity has a positive relationship to firm growth. Asiri and A Hameed (2014) used all five financial ratios to assess the firm values for all listed companies in the Bahrain Bourse, and found that ROA is the most prevelant determinant in explaining the market value, followed by financial leveage beta and the size of the firm.

A number of researchers, including Audretsch and Elston (2002), Carpenter and Petersen (2002), Bond et al. (2003), Fagiolo and Luzzi (2006), Oliveira and Fortunato (2006), and Musso and Schiavo (2008) have focused on testing the impact of individual financial factors such as cash flow and investment decisions on firm growth. By selecting a few ratios from a financial data set, researchers have been trying to identify the underlying theoretical assumptions of the statistical model that would best describe the salient characteristics of a firm's activities where each financial ratio conveys unique information about those activities. Kiani et al. (2012) argued that without full knowledge of the empirical relationships that exist among individual financial ratios, attempts to draw a meaningful financial selection of variables are not necessarily effective. As a result, the ratios chosen are often neither exhaustive nor exclusive in their ability to describe firm behaviour that would best represent the firm, or to cull the most relevant information from the original data set.

3. Data and Methodology

Based on the above reviewed literature, three null hypotheses were developed as follows:

H_1: Investors do not find any association between profitability, efficiency, liquidity ratios, capital expenditure, dividend payout, leverage and the market values.

H_2: Investors do not consider Q-ratio as a measure of investment and growth opportunity which leads to value creation.

H_3: Investors reaction to reported information differs based on the size of the firm, growth opportunity and intensity of financial leverage.

All 100 companies listed in the FTSE 100 are drawn from the Bloomberg and Factset databases. This group was selected because it represents the 100 qualifying UK companies listed on the London Stock Exchange with the highest market capitalization, which is one of the most widely-used stock indices. The index is maintained by the FTSE Group, a subsidiary of the London Stock Exchange Group. FTSE 100 companies represent about 81% of the entire market capitalization of the London Stock Exchange. Even though the FTSE All-Share Index is more comprehensive, the FTSE 100 is by far the most widely-used UK stock market indicator, in which listed companies must meet a number of requirements set out by the FTSE Group. From these 100 companies, the financial sector is excluded since their type of data differs from the data of non-financial companies. However, due to the unavailability of certain information and inability to meet certain data requirements, the sample size ended up being 65 companies, all which provide a complete set of data for different sectors. The study examines data from the period of December 2000 to December 2013. Using multiple regression technique, the above hypotheses have been formulated in the following research model:

$$MV_{it} = f(ROA_{it} + Liq_{it} + Eff_{it} + FL_{it} + D_{it} + Capex_{it} + Q_{it} + DP_{it} + size + \varepsilon_{it}) \quad (1)$$

Where MV_{it} is the market value for firm *i* for the period *t* and is measured by any of the following three ratios: Market to book, price to earnings or Q ratios. These three dependent variables are used interchangeably to test their relative importance in explaining the accounting ratios. *ROA* is the return on assets, *Liq* is the liquidity ratio, *Eff* is efficiency ratio *FL* is the financial leverage, *D* is the debt ratio, *Capex* is the capital expenditure relative to total asset, *Q* is the Tobin Q growth measure, *DP* is the dividend payout ratio, *size* is the log of total assets and ε is the random error.

For hypotheses 3, the above research model will be tested at different Q-ratio levels. A ratio of less than one is considered a no growth opportunity, one to two a small growth opportunity, and more than two a huge growth opportunity. Since the sample includes wide ranges of companies and sectors, a median value for the Q-ratio will be used as a cut-off point for the high and low growth opportunities. The model will also be tested for high and low leveraged firms, where the median will be used as the cut-off point. For the market value, three measures are used: PE, MB and Q ratios. First, PE and MB ratios will be used as dependent variables in the main model. For the rest of the study, in addition to the Q-ratio, either of these two will be used according to their relative importance in a given result. Descriptions of the variables are provided in Table 1.

Table 1: Variables

Ratio	Description
PE	Price to earnings ratio = market price per share divided by earnings per share. It is the willingness of investors to invest per unit of earnings per share. If the ratio is high then this will indicate that investors are looking positively at the company and leads to wealth creation.
MB	Market to book ratio = market price relative to book value per share. It measures how investors regard a company and value its market shares relative to its book value. A value < 1 is seen as not attractive, because investors value the share below its book value. A ratio > 1 should indicate an appreciation of investors to the performance of the company.
Q	Originated by Tobin (1969), it is the ratio of the market value of the firm's equity and debt over the replacement cost of assets. Although some argue about the difficulties in using it to distinguish between the high and low growth firms, Perfect and Wiles (1994) argue that Q is the best measure of growth opportunity.
FL	Financial Leverage = total assets divided by total equity or (1/(1-D). It is the degree to which an investor is utilizing borrowed money. High leveraged firms could lead to high risk of bankruptcy. Alternatively, high leverage could be a good signal to investors as it could increases returns for them. Cost of debt is always the cheapest and has tax advantage.
D	Debt to total assets could mean that the company has been aggressive in financing its growth with debt. This additional interest expense could result in volatile earnings. Similar to financial leverage, it is a measure of capital structure, but debt ratio is considered total debt (short- and long-term) relative to total assets while financial leverage is formulated as total assets relative to equity.
ROA	Return on assets = net income relative to total assets.
DP	Dividend payout ratio = dividend over net income.
Capex	Capital expenditure relative to total assets.
Liq	Liquidity: Current ratio = current assets relative to current liabilities, cash ratio = available cash relative to current liabilities, and free cash flow = available cash after investing in all positive net present value projects.
Eff	Efficiency: Inventory turnover (I) = cost of sales to inventory and total assets turnover (TAT) = sales relative to total assets.
Size	Is measured by the Log of total assets (LogTA)

4. Findings

Table 2 highlights the coefficients used to run partial correlation among the ratios. The highest coefficient is between the Q-ratio and ROA (0.54), and is significant at the 5% level. The MB ratio has the strongest significant positive relationship with the financial leverage (0.35). The coefficients indicate no existence of multicolinearity since the highest coefficients between the independent variables do not exceed 0.54. MB is predicted to be most accurately explained by FL, Q, ROA, D and I ratios while PE ratio is expected to be explained by DP, Q, and Capex ratios. Q-ratio is expected to be best explained by CR, TAT, ROA, size, PE and MB ratios.

Table 2: Correlation matrix

	CR	Cash	DP	TAT	I	Q	ROA	Capex	D	TA	PE	MB
CR	1											
Cash	.09*	1										
DP	-.04	-.02	1									
TAT	-.15**	-.02	-.04	1								
I	-.08	-.06	-.02	.01	1							
Q	.23**	-.01	-.06	-.12**	.040	1						
ROA	.21**	-.05	-.15**	-.11*	.029	.54**	1					
Capex	.07	.03	.05	.02	.070	.08*	-.02	1				
D	-.33**	-.03	.08*	.08*	.039	.01	-.08*	.03	1			
TA	-.10*	-.01	-.01	.25**	-.081	-.16**	-.20**	-.14**	-.09*	1		
PE	.07	-.01	.24**	-.07	-.020	.22**	-.07	.09*	-.02	-.02	1	
MB	-.04	-.02	-.03	-.04	.125*	.28**	.18**	.05	.27**	-.07	.07	1
FL	.01	.02	.01	.01	.104*	-.05	-.07	-.01	-.12**	.01	.02	.35**

** 5% and * 10% level of significance, (t-values) are in parenthesis

Table 3 reports the summary of the stepwise regression models which were developed for the full sample to explain the impact of accounting-based ratios on market value. Using the MB ratio as the dependent variable, Model 1 highlights that investors mainly appreciate profitability ratio as ROA. Here, a one percent increase in the ROA results in a 0.311 point increase in the MB ratio, which is highly significant at 1% (t=3.075). Q-ratio and FL are also found to be highly positively significant in explaining MB ratio. In contrast to financial leverage, looking at the capital structure, i.e. the debt ratio, the direction the market takes is found to be significantly negative. Using the PE ratio as the dependent variable, Model 2 highlights that the same explanatory variables are found to be significant in explaining the PE ratio, with the exception of the financial leverage which was insignificant and the dividend payout ratio which was highly significant. The adjusted R^2 is higher when using MB rather than PE ratio. Almost 30% of the variation in MB is explained by the financial ratios, and the omitted variables are captured by the residuals, which may reflect investors' expectations. Comparing the degrees of freedom for the two models, it is higher when using the MB ratio than when using the PE ratio since the PE ratio was missing many observations . For the remaining analysis, MB ratio will be used rather than PE ratio as the dependent variable. Models 1 and 2 reject the null hypotheses 1 and 2 and provide evidence that management actions such as the level of debt, financial leverage, dividend payout and generating profits are associated with the market and can change market value.

Using MB as the dependent variable and running stepwise regression at different stages of growth opportunities, Table 4 summarizes three models. The first model exhibits no growth opportunity with firms whose Q-ratio is less than one; the second model presents data for firms whose Q-ratio falls between one and two, implying small to moderate growth opportunity; and the third model looks at the presence of huge growth opportunities where the Q-ratio is greater than two. When assessing low-growth opportunity firms, investors consider ROA as the main ratio, followed by Q-ratio and, surprisingly, capital expenditure. The significance of the relationship between investment in assets and firm value is supported by previous literature such as McConnell and Muscarella (1985), among others. However, since such firms exhibit low

growth opportunity, any increase in Capex could send a positive signal, extending the promise that the firm is moving toward better performance. A positive significant coefficient for Capex (1.211), however, supports both the Shareholder Maximisation view and the Traditional Valuation Approach since it appears that investors value firms on their positive NPV projects, which contradicts Webb's (1993) argument. As soon as managers invest, assuming there is a positive NPV, investors react quickly and positively. Leverage and debt ratio are found to be insignificant. The R^2 is 0.743 here, which is very high compared to all the other models. Looking at firms with growth opportunities that lie between one and two, the market responds positively only to Q-ratio and financial leverage. Both coefficients are highly significant at less than 1%. This indicates that during a growth stage, a firm generates a positive image and attracts more investors, which leads to high market value. Financial leverage could be a positive sign, indicating that as a firm grows, the risk factors decrease and the firm's value increases. When the growth opportunity is very high (Q > 2), the market's reaction is similar to the reaction observed in Model 1, as is the size of the firm, which is shown by the logTA to be significant at 5%.

Table 3: Summary of the regression models - The Full Sample

	Model 1: Dependent Variable MB	Model 2: Dependent Variable PE
Constant	-47.882 (-8.701)***	20.022 (8.604)***
Q	1.958 (4.458)***	6.989 (9.475)***
FL	43.699 (6.946)***	
D	-0.530 (-3.928)***	-0.128 (-2.247)**
ROA	0.311 (3.075)***	-1.323 (-7.354)***
DP		0.022 (3.128)***
R^2	0.296	0.169
Sample size	707	658

** 5% and *** 1% level of significance, (t-values) are in parenthesis

Table 4: Growth opportunity and the market value - Dependent variable: MB ratio

	Model 3: Q < 1	Model 4: 1 < Q < 2	Model 5: Q > 2
Constant	-0.638 (-2.868)***	-11.014 (-5.733)***	-58,690 (-4.091)
Q	1.480 (5.892)***	4.669 (4.812)***	
FL		5.488 (5.490)***	71.498 (5.764)***
D			-0.813 (-2.995)***
ROA	0.014 (6.350)***		0.626 (3.205)***
Capex	1.211 (4.084)***		
LogTA			-2.154 (-2.474)**
Adj-R^2	0.743	0.155	0.353
Sample size	39	295	182

** 5% and *** 1% level of significance, (t-values) are in parenthesis

Observing the descriptive statistics in Table 5, each variable shows extreme values. For instance, the MB ranges between 0.35 and 234, with an average value of 5.75 and a median value of 2.68. The Q-ratio ranges between 0.73 and 39.78, with an average value of 1.98 and a median value of 1.20. It is abundantly clear that the distribution is skewed to the right. Further insight can be gained by removing around 4-5% of the extreme values from the top tail for the dependent variables, in this case the MB and Q ratios, and running regression. The results of these two models are summarized in Table 6.

Table 5: Descriptive statistics

	CR	DP	TAT	I	Q	ROA	Capex	D	TA	PE	MB	FL
Sample	661	691	762	412	734	746	746	750	750	658	707	750
Mean	1.5	68	1.3	34.6	2	6.9	1033	24	87414	22	5.8	1.2
Median	0.4	48	0.9	7	1.2	6.2	234	23	7158	17	2.7	1.3
Min	0	0	-4.7	0	0.7	-57	0	0	11.9	2.3	0.4	-170
Max	10	2515	10	1112	39.8	40	24520	157	2692538	445	234	10

Model 6 shows that approximately 40% of the variations in the MB ratio are due to financial leverage, profitability, liquidity (cash ratio), size of the firm, and dividend payout ratio. Investors consider these ratios as good signals and react positively to them, with the exception of the size of the firm, which spurs negative reactions. All coefficients are found to be highly significant at less than 1%, with DP standing as an exception at 5%. Model 7 includes the additional element of inventory turnover, which measure the management's overall efficiency. Here, it is found to be positively related to the MB ratio.

Table 6: Summary of the models excluding the extreme values - Dependent variable: MB

	Model 6	Model 7
Constant	-3.429 (-1.341)	-24.734 (-8.150)***
Q		1.918 (5.427)***
FL	7.162 (5.992)***	16.262 (7.992)***
D		
ROA	0.473 (9.969)***	0.403 (4.4413)***
Cash Ratio	0.353 (2.805)***	
Size	-1.535 (-3.372)***	
DP	0.016 (1.987)**	
I		0.011 (2.460)***
R^2	0.369	0.332
Sample size	274	274

** 5% and *** 1% level of significance, (t-values) are in parenthesis

Using Q-ratio as the dependent variable in explaining how accounting ratios affect the market, Table 7 summarizes Models 8 and 9. Compared to the previous models in Table 4, Table 7 reveals how, when using the MB ratio as a measure of market value, R^2 increased to 0.682 and 0.755. The debt ratio shows itself to be highly negatively significant in both models,

and the ROA is highly positively related. Model 9 includes Capex, which is significant at 5%, and fails to work with the dividend payout ratio.

Dividing the sample into sub-samples using Q-ratio as the growth opportunity indicator, two models are developed: one in which the Q-ratio is more than the median 1.2 and indicates high growth opportunity and one in which it is less than the median and therefore indicates low growth opportunity. The summary is reported in Table 7 within Models 10 and 11. Regardless of the growth opportunities, investors consider the ROA, TAT and FL as positive signals in valuing the firm in these models. The level of cash ratio proves important when the firm falls under the high growth opportunity category, and the debt to total assets works positively with the market. When the firm is experiencing low growth opportunity, free cash flow is not attractive to investors, and capital expenditure tends to negatively affect the value of the firm. Furthermore, investors consider the speed of sale, i.e. inventory turnover, an important measure for value creation.

Table 7: Summary of the models using Q-ratio as the dependent variable

	Model 8	Model 9	Model 10 $Q \geq 1.2$	Model 11 $Q < 1.2$
Constant	0.726 (3.894)***	1.389 (10.309)***	-9.371 (-8.144)***	-1.063 (-3.790)***
FL			1.970 (6.580)***	2.074 (7.522)***
D	-0.013 (-3.334)***	-0.017 (-5.522)***	0.206 (8.833)***	
ROA	0.082 (9.556)***	0.058 (8.660)***	0.362 (6.046)***	0.011 (2.628)***
FreeCashFlow				0.001 (-2.402)**
Capex		2.491 (2.414)**		-4.681 (-5.368)***
DP	-0.003 (-2.439)**			
CR (cash ratio)			0.320 (2.439)***	
T			1.494 (2.929)***	0.033 (2.856)***
I				0.023 (7.522)***
R^2	0.682	0.755	0.48	0.816
Sample size	266	266	233	47

** 5% and *** 1% level of significance, (t-values) are in parenthesis

Dividing the sample into sub-samples of high and low leveraged firms, four models have been developed and reported in Table 8. The median (1.3) is used as the cut-off point to distinguish the degree of leverage. For the high-leveraged firms, Model 12 states that the MB is significantly explained as positive by the ROA, dividend payout and debt ratio (capital structure) at less than 1%. On the other hand, Capex and the size of the firm relates negatively to the MB. Investors might consider more investment in capital expenditure while a firm is highly-leveraged to be an accumulation of risk. Adding the Q-ratio to Model 12, Model 13 exhibits similar results with the exception of the debt ratio, which becomes insignificant. For the low-leveraged firms, Model 14 shows that both the ROA and debt ratio have a positive relation to the market; therefore, regardless of the degree of leverage, these two ratios are positively related to the market. When a firm is low-leveraged, high current ratio or liquidity does not provide good

signals to the market, as investors prefer not to see idle cash. Dividend payout ratio is more likely to be viewed in such cases as a positive signal in the market.

Table 8: Summary of the models for high v. low leveraged firm - Dependent variable: MB

	Model 12 FL ≥ 1.3	Model 13 FL ≥ 1.3	Model 14 FL < 1.3	Model 15 FL < 1.3
Constant	1.106 (0.310)	-0.784 (-0.244)	0.505 (-1.789)*	1.839 (3.150)***
Q		3.822 (4.990)***	1.544 (23.842)***	
D	0.144 (2.469)***		0.062 (4.958)***	
ROA	1.128 (13.191)***	0.710 (5.921)***	0.048 (3.449)***	0.171 (6.362)***
CR			-0.331 (-4.582)***	
Capex	-25.392 (-2.281)***	-23.029 (-2.200)**		
Size	-2.892 (-3.807)***	-1.869 (-2.551)**		
DP	0.043 (4.010)***	0.026 (2.385)***		0.013 (2.129)**
R^2	0.587	0.587	0.848	0.242
Sample size	179	179	178	178

** 5% and *** 1% level of significance, (t-values) are in parenthesis

5. Conclusion

This paper has examined the role of investors in responding to the signals firms send according to accounting-based ratios. These ratios are related to investing in assets, capital structure, profitability, liquidity, inventory turnover, receivable turnover and dividend payout ratios. Such signals were found to alter the investment decisions of investors in companies and in many cases, to change a company's market value. Using cross-sectional time-series data, this study has performed extensive regression analysis to better understand these relationships. Data shows that return on assets has a significant positive influence on market value (MB ratio). In addition, capital structure, capital expenditure and liquidity ratios were also found to be significant in explaining market value. Using Q-ratio as a measure of growth opportunity, the behaviour of firms was found to be significantly different at different levels of growth opportunities, with varying degrees of financial leverage. However, ROA and capital structure were the two ratios that were, to some extent, found to be significant in all of the 15 models developed in this study. These ratios shed some light on what qualities and statistics investors should look for when deciding which company to invest in. The findings apply to managers, as well, urging them to take a deeper look into the market in order to better grasp what signals their account activity sends to the stock market (MB and Q ratios). By using this information to tailor these signals, managers can portray their company as the optimal choice for investment. . They could become adept judges of how their performance is perceived by investors, which aspects of their performance investors most appreciate, and what accounting signals are most likely to attract them to invest.

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