The Role of Financial Performance as a Moderator on the Relationship Between Financial Leverage and Shareholders Return

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The study examines the moderating effects of financial performance on the relationship between financial leverage (FL) and shareholders return (SR). Panel data of pharmaceutical companies listed in the National Stock Exchange (NSE) were used for 13 years for the period from 2002-03 to 2014-15. Findings indicated that FL is significantly related with SR. However, financial performance has an insignificant relationship with SR and did not moderate the relationship between FL and SR.

Keywords: financial performance, financial leverage (FL), shareholders return (SR)

Background

Anecdotal evidence says that the most unanswered question in the field of capital market research is “Is there any theory to explain the movement in stock prices?”. This paper uses the most logically as well as widely accepted theory of supply and demand as the primary forces that determine the stock price of a company. It is very difficult to understand the reason behind every investor’s course of action, because every individual has a specific opinion about the value of stocks. Information released from time to time about the company and the way shareholders perceive such information influence their trading/investing behavior. The interpretation of information about the company will definitely vary from one individual to another because of various factors such as age, experience, expertise, professional background, income and so on. One of the most important information investors expect from a company is about its earnings and the distribution of the earnings. Earnings represent the profit a company makes and distribution refers to the amount of profit shared by the company with its shareholders. This information affects the investors’ behavior. Though, a company has various signaling devices to communicate its future plans, prospects, or course of action to the public, two most important signaling devices are earnings and distribution figures (Aharony & Swary, 1980). Therefore, companies must utilize these two signaling devices to increase their market value. There are many published studies which lend support to these views (for example, Al-Twaijry, 2006; Rao & Jose, 1996; Momani & Abu-Al Sondos, 2008; Hall & Brummer, 1999; Pradhan, 2003; and others).

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Strategic investment decisions (SIDs) are among the critical decisions which are the major determinants of overall firms' performance (Kannadhasan & Nandagopal, 2010; Kannadhasan & Aramvalathan, 2011). These decisions would be vital at the firm level. They have implications for many aspects of operations, and often exert a crucial impact on survival, profitability, and growth, since they involve the allocation of substantial financial, human, and organizational resources (Sauner-Leroy, 2004). Therefore, SIDs have a long-term and wide-ranging impact on the firm's performance, and can be critical to the firm's success (Brown & Solomon, 1993). As mentioned above, SIDs need substantial amount of capital which results in a change in the capital structure of the firm. Changing the existing capital structure involves the consideration of the amount and forms of financing. Debt is an inevitable option at firm and country levels, especially in emerging economies (Abor & Biekpe, 2006; Erol, 2004). It is beneficial for a company to mix its borrowed capital with owner's capital, because such a capital structure helps increase the shareholders' return (SR). Under normal circumstances, employing debt along with equity (financial leverage (FL)) will yield higher earnings per share (EPS) thereby increasing the dividend declaring capacity which in turn enhances the value of the company. Therefore, the value of the firm is expected to be influenced by its FL. However, the use of debt is a double-edged sword; it may increase the profitability of a firm as well as risk. In simple words, FL indicates the level of financial risk of a firm and at what level it magnifies the return/loss to the firm (Ross, Westerfield, & Jordan, 1998).

It is essential that each company should find a judicious mix of debt-equity in the capital structure of a firm, i.e., optimum capital structure (Graham & Harvey, 2001) that provides a balance between costs and benefits (Myers, 1984). However, it is challenging to find the optimum capital structure in reality. This imbalance creates difference of opinion among the investors resulting in variation in share price. Although Modigliani and Miller (1958) proposed theory of irrelevance by arguing that investors do not give considerable attention to FL under the perfect market conditions since financial risk could be diversified. However, due to the presence of information asymmetry, managers have more information than the investors about taxation and bankruptcy costs, which may lead to imperfections in the market operations (Myers, 1984; Ross, 1977). This is known as the theory of relevance. As noted above, distribution of earnings directly influences the stock value. The larger the dividends, lesser are the amounts available for retained earnings (Asif, Rasool, & Kamal, 2011). However, a company may find it difficult to meet its obligations such as debt repayments and/or working capital requirements. This line of views is also supported by Miller and Modigliani (1961), Black and Scholes (1973), and Charitou and Vafeas (1998).

The extant literature shows that FL influences financial performance and SR. Similarly, financial performance influences SR. However, whether financial performance influences SR independently or moderates the relationship between FL and SR has not been researched in Indian context. This research gap motivated the researcher to investigate whether financial performance influences SR independently or moderates the relationship between FL and SR in the pharmaceutical firms in India.

Literature Review and Hypotheses Development

The theory of capital structure irrelevance developed by Modigliani and Miller (1958; 1963) paved the path for the development of various theories. Miller (1977) modified the theory by introducing personal as well as corporate taxes into the model. Deangelo and Masulis (1980) extended Miller's work by examining the effect of tax shields other than interest payments on debts. Ross (1977) did research on the signaling role of debt. Another equilibrium theory of optimal capital structure is agency theory proposed by Jensen and Meckling (1976). Myers (1984) proposed pecking order theory. Numerous studies have investigated the relationship between FL and

financial performance at different periods of time and in different geographical contexts as well. Studies found that there exists a positive relationship between debt-equity ratio and financial performance (for example, Roden & Lewellen, 1995; Dessí & Robertson, 2003; Margaritis & Psillaki, 2010; Abor, 2005; Odit & Gobardhun, 2011; Ojo, 2012). In contrast to the aforesaid opinions, some studies found a negative relationship between the two (for example, Önel & Gansuwan, 2012; Ghosh, 2007; Rao, Al-Yahyaee, & Syed, 2007; Simerly & Li, 2000; King & Santor, 2008; Chhibber & Majumdar, 1999; Akhtar, Javed, Maryam, & Sadia, 2012). Moreover, few studies found that there is no difference between the two (for example, Soumadi & Hayajneh, 2012). There is an inconclusive result among the extant literature. Therefore, it is expected that:

H1: There is a positive relationship between FL and financial performance of a company.

It is a well-known fact that wealth maximization is an important goal of a firm. It cannot be ignored while making decisions. The market value of a firm is an important measure of shareholders' wealth. When a firm increases the proportion of debt or substitutes debt for equity, equity shareholders feel that they are exposed to a higher degree of financial risk. When the firm increases the FL, equity shareholders of the firm would demand higher dividend. Thus, increased leverage leads to an increase in cost of equity. If investors perceive high risk, share price would decrease. Therefore, higher FL decreases the firm value by increasing bankruptcy risk (Obradovich & Gril, 2013). Hence, an optimal capital structure is essential for every firm to enhance its value. A firm could increase its debt level till it reaches the optimum level which does not affect its credibility. In addition, a quality company is always inclined towards debt issue to meet its growth opportunities. As a result, issue of debt is considered as a signal to the investors. It shows that there exists a positive relationship between leverage and market value of a company (Ross, 1977). Contrary to this, Jensen and Meckling (1976) said that debt has a negative relationship with market value of a company as a result of the conflict of interest between principals (owners) and agents (managers) arising from moral hazard issues. These perspectives have motivated considerable research and produced mixed results at different points in time. Past research found that the leverage has an effect on stock return (for example, Iturriaga & Crisóstomo, 2010; Guo, Wang, & Wu, 2011; Ozdagli, 2012; Pachori & Totala, 2012). Therefore, it is expected that:

H2: There is a positive relationship between FL and SR.

The Moderating Role of Financial Performance

As discussed above, issue of debt is considered a signaling mechanism of insider information to the market (Leland & Pyle, 1977; Ross, 1977). The other perspective is that issuing of more debt alleviates the problem of sub-optimal managerial behavior (Myers & Majluf, 1984). The opposing argument with respect to the relationship between leverage and stock value has motivated considerable research on this area. These studies produced inconclusive results because of the investors' perception towards the role of debt. If an investor perceives debt negatively, the stock value will come down and vice versa. This is not only the result of adding debt to the capital structure. It is also equally important how well the company utilized the borrowed money and increased its financial performance. The higher the financial performance, higher is the dividend pay-out. This would be viewed by the investors positively. The magnitude of price-change responses of earnings announcements was greater than the average price change for non-announcement period (May, 1971; Mozes & Rapaccioli, 1995; Singh & Faircloth, 2005; and others). The above discussion shows that debt influences stock value. However, it depends on the way in which company utilizes the funds to enhance its financial performance. Therefore, it is expected that:

H3: Financial performance of a company moderates the relationship between FL and SR.

With the help of the above discussion, the study has conceptualized the following research model as shown in Figure 1.

Figure 1. Research model.

Methodology

This study has adopted a quantitative, non-experimental research design in order to gain a broad understanding of the relationship among FL, financial performance, and SR of pharmaceutical companies listed in National Stock Exchange (NSE) of India. This study is based on secondary data which were obtained from Prowess: the leading corporate financial database in India maintained by Centre for Monitoring Indian Economy (CMIE), which is extensively used by academic researchers as well as practitioners in India. The study used panel data to test the proposed hypotheses using pooled cross sectional and time-series data. A finite sample of 66 companies listed in NSE India was selected for the study. Nineteen companies were excluded as its financial data for 13 years or share returns are not available. Therefore, analysis has been carried out for 47 companies for the period from FY 2002-03 to FY 2014-15.

Measurement of Variables

This study measured the leverage by employing debt-to-equity ratio (debt divided by equity). It indicates the degree to which a firm is utilizing borrowed money to achieve its expected performance. The leverage was used as an independent variable. The study used one accounting measure of return on equity (ROE) (%) as a proxy of financial performance (for example, Chhibber & Majumdar, 1999; Abor, 2005; Demsetz & Lehn, 1985; Gorton & Rosen, 1995; Mehran, 1995; Ang, Cole, & Lin, 2000; Konar & Cohen, 2001; Cochran & Wood, 1984; Cochran, Wood, & Jones, 1985; Mallette & Fowler, 1992). This ratio is commonly used as a comprehensive measure of financial measure that uses data from Income Statement and Balance sheet. This variable is used as a moderator variable. SR was calculated by share price appreciation (Ending – beginning period price) and dividends paid to the shareholders. The lagged value of SR was used to test the relationship.

Analysis Tools

Moderated panel least square regression was used to quantify the effect of financial performance on the relationship between FL and SR.

Results

The average mean and standard deviations (SD) scores of the measures used in this study are presented in Table 1. Although there is a significant difference among the companies in terms of usage of debt capital and financial performance, no difference exists in terms of SR among the 47 companies during the study period (see Table 1).

Table 1

Descriptive Statistics and One-Way ANOVA Results

Measures	<i>N</i>	Minimum	Maximum	Mean	SD	<i>F</i> -value
SR	611	-366.08	220.13	1.5107	76.34238	0.466
ROE	611	-424.90	168.11	9.5176	43.69238	5.108**
FL	611	0.00	17.58	1.0790	1.40235	6.407**

Note. **. *F*-statistic is significant at the 0.01 level.

To examine the proposed relationship in the research model, this study employed correlation analysis as an initial verification. Table 2 shows that there is a significant negative relationship between financial performance and FL. The other relationships are not statistically significant (see Table 2).

Table 2

Relationships Among Variables

Measures	<i>SR</i>	<i>ROE</i>	<i>FL</i>
<i>SR</i>	1		
<i>ROE</i>	0.007	1	
<i>FL</i>	-0.008	-0.254**	1

Note. **. Correlation is significant at the 0.01 level (2-tailed).

In order to test H3, this study employed moderated regression analysis. This tool is used to yield a conservative estimate of the moderating effects of financial performance on the relationship between FL and SR. To test the possibility of such effect, FL (predictor) and financial performance (moderator) were multiplied to create an interaction variable (FL × Financial Performance) to predict SR (Chin, Marcolin, & Newsted, 2003; Henseler & Fassott, 2010). The equation for the moderated regression model is as follows:

$$Y = b_0 + b_1X + b_2Z + b_3XZ + \text{\textit{\textit{cross section effect}}} + \text{\textit{\textit{period effect}}} + \varepsilon$$

where:

Y = Dependent variable (i.e., SR);

X = Independent variable (i.e., FL);

Z = Moderator variable (i.e., Financial Performance);

XZ = Interaction term (FL × Financial Performance).

Table 3 shows the regression results of research model using three different methodologies, namely, pooling regression, fixed-effect model, and random-effect model. To identify the appropriate methodology, the study performed two statistical tests, namely, Lagrangian Multiplier (LM) test and Hausman test. LM test is used to test the random-effect model versus the pooling regression (Breusch & Pagan, 1980). The LM test result shows that random effect is more appropriate than pooled regression (see Table 3). Similarly, Hausman test is used to test the fixed-effect model versus the random-effect model (Hausman, 1978). The results show that fixed-effect model is the most appropriate in identifying the determinants of investment decisions (see Table 3). It indicates that the correlation between the error term and the dependent variable is confirmed while performing the fixed-effect estimation. Therefore, the most appropriate way to estimate the relationship between FL and investment was using a fixed-effect panel regression analysis.

Table 3

Regression Analysis of Research Model

SR	Without moderator			Fixed effect with moderator
	Pooling	Fixed effect	Random effect	
Intercept	1.9693	-1.1025	1.5290	-0.0406
FL	-0.4251	2.4220	-0.0170	2.2118
ROE				-0.0835
FL_ROE				0.0088
R^2	0.00	0.3487	0.00	0.3491
Adjusted R^2	-0.00	0.2790	-0.0016	0.2775
Hausman test	2.97; $p < 0.05$			
LM test	1,236.38; $p < 0.000$			

Note. All the coefficients are insignificant at the 5% level.

The purpose of the moderated analysis is to determine if the addition of an interaction term increases the explanation of variance (R^2) marginally. However, the adjusted R^2 decreases. The results are given in Table 3. The study has estimated the standardized coefficient of -0.035 for the interaction variable, which is not significant at the 5% level. The effect size is calculated as suggested by Cohen (1988) by using R^2 . The value is 0.00614. The size of the moderating effect is small as well as the resulting beta is insignificant at the 5% level. Consequently, this study confirms that financial performance does not moderate the relationship between FL and SR.

Discussions, Conclusions, and Directions for Further Research

The objective of this paper is to quantify the influence of FL on SR moderated by financial performance of a company. The theory says that FL is one among the means for enhancing the financial performance of a company as well as SR. However, this would be beneficial to the company which maintains the optimum level of debt during normal and during the period of study. Besides, leverage is beneficial during the growth phase of a company. If debt increases beyond the optimum level, it hurts ROE during normal period itself. The results of this study show that FL did not impact on financial performance significantly. This finding is in contrast to that of Chhibber and Majumdar (1999), Rajan and Zingales (1995), Johnson and Rao (1997), Michaelas, Chittenden, and Poutziouris (1999), and others. Even though there is a difference in using debt money among the companies, performance of the companies did not vary. This may be due to the fact that companies might be successful and are not dependent on external funding as they can place reliance on internal reserves (Myers, 1984). Another reason might be that higher levered companies might have used the debt funds more effectively than the lower debt-equity companies, thus equaling the performance. Another possible explanation from De Wet and Hall (2006) is that significant amounts of value can be unlocked in moving closer to the optimum level of gearing. Also, Modigliani and Miller (1963) concluded that a firm's cost of equity increases as the firm increases its debt which affects negatively ROE. However, there would be a negative impact on ROE if firms are not at their optimal level of debt. Further, financial performance has an insignificant relationship with SR and did not moderate the relationship between the FL and SR.

As mentioned earlier, May (1971), Mozes and Rapaccioli (1995), and others pointed that the magnitude of price-change responses of earnings announcements was greater than the average price change for non-announcement period. Probably, negative news about the company and the country's performance (viz. GDP, international investment position (IIP), and others) would have nullified the benefit of positive announcement of ROE during the year. The objective of using the FL is to increase the SR based on the assumption of advantage of tax benefits and use of fixed charges. Finding of the study goes with the common presumption that debt fund enhances the SR. It also proves that theory of relevance persists in the industry. One reason could be that the sample companies are able to avail low-cost debt option over the cost of equity. Investors are aware that pharmaceutical companies should invest more on R&D, copyrights, etc. than companies in other industries. It is to be noted that this study did not test whether the sample companies were in fact moving closer to their optimal level of debt. This study indicates confirmation of theory of relevance. It is important to note that FL is explained about 11%. It indicates that there may be other quantitative as well as qualitative factors which may lead to the enhancement in the SR. It is important to note that variation in the stock market return is attributed to some other factors as well, which has to be investigated.

It is suggested that studies can be extended to different industries as well as countries. The contribution of operating leverage along with FL towards financial performance can be studied. Further, studies could be done to identify the factors that influence FL, how FL influences investment decisions and interrelationships among FL, performance, firm size, and growth.

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