

NEXUS BETWEEN FINANCIAL LEVERAGE AND SHARE PRICE: EVIDENCE FROM AUTOMOBILE SECTOR LISTED AT PAKISTAN STOCK EXCHANGE

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Abstract. *The purpose of this study is to investigate the influence of endorser's credibility*

on consumer responses. It also explores the mediating role of attitude towards advertisement (ATA) and moderating role brand awareness (BA). Data was collected from two hundred and sixty-three educated consumers to test the proposed hypotheses. The results suggested that the endorser's credibility (attractiveness, expertise, and trustworthiness) positively impacts ATA and purchase intention (PI). Moreover, ATA mediates between endorser's credibility and PI. It was also found that brand awareness moderates the relationship between ATA and PI. The findings of this study imply that advertisers should carefully consider the endorser's credibility before the selection. In contrast, ignoring these factors could lead to adverse effects on consumer responses. Theoretical implications are also discussed, which are presented in the proceeding sections.

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Introduction

In today's world investors want to invest their surplus money in liquid assets for getting return on their investments, investors have lot of funds for investment in stocks, banks deposits, government securities, for that purpose investors require the major feature of higher returns, liquidity and safety of principle amount (Charkha & Lanjekar, 2014).

For taking higher returns investor prefer to invest in stock of different companies so they can claim assets and earnings of companies, the shareholder

earn from dividend and appreciation of share price however determination of stock price has been very crucial task as it is sensitive to internal and external factors. So, it is the reason that shareholders and managers are showing their interest on those factors that mainly affects share price (Iqbal, 2014).

Here is the risk associate with investment in shares like dilution of investment and reduction of share prices. Due to low corporate earnings and risk of dilution caused by using high leverage in capital structure and stockholders who invest their funds in leverage firm will face more risk than investing in low leverage firm (Scordis, 2008), Debt caused the increase in probability of financial distress or increases bankruptcy risk and debt holders will demand higher interest that will increase cost of debt (Brigham & Ehrhardt, 2008).

Shareholders are very sensitive to their investment that's why they avoid investing in highly riskier companies, due to the risk of dilution of their investment exists. Setting capital structure is basically tradeoff between risk and return, however using more debt rise the risk born by the stockholder, the higher risk involvement tends to reduce the share price but, it increases expected rate of return (Brigham & Houston, 2009). So that the companies using high debt are facing higher financial risk, which is cause by type of financing company uses, more the obligations higher the risk (Acheampong, Agalega & Shibu, 2014). Different studies have been performed in order to determine the relationship, interdependence and nexus between financial leverage and share price including Arsalan et al. (2016), Andresson (2016), Muhammad, Shah and Zia (2014), Nyamolo et al. (2012), and Naeem et al. (2015) found leverage has negative impact on share price however limited studies are conducted in Pakistan perspective so that this study is intended to find out either leverage effect on share price in Automobile sector of Pakistan or not. Nowadays investors in public sector are very sensitive for their investment they keep eyes on the share prices and company's performance. Leverage can affect the financial capacity the risk of investment strateg choice of investment and at the end shareholders wealth too (Kay & Jhang, 2011). Due to low corporate earnings and dilution caused by using high leverage in capital structure and stock holders who invest their funds in leverage firm will face more risk than investing in low leverage firm (Scordis, 2008) that's why investors avoid the risk of low returns on invest and dilution of their investment by using more debt in capital structure and high cost of debt that can decrease company's profitability and share prices too. For this purpose, this study is conducted to find out either leverage firm cause share price reduction or not. The previously Iqbal et al. (2016) found relationship between leverage and share price for the period of eleven years from 2005 to 2015 on cement sector of Pakistan, Elangkumaran et al. (2013) found relationship between leverage

and share price in Colombo stock exchange companies for the period of years six years 2007 to 2012, Barakat (2014) found the relationship of leverage and share price on Saudi Industrial companies for the period of 2009 to 2012. Nayeem et al. (2015) conducted research on Dhaka stock exchange for the period of 2008 to 2012 to find the impact of leverage on share price, here this study is conducted to find the relationship between leverage and share price on Automobile sector of Pakistan where no one conducted the reach on that area. And this study used fifteen-year sample data from 2004 to 2018 that is also was not used as a sample size previously. The study is to find the relationship between debt ratio and stock prices in the automobile sector of Pakistan as well as examine the relationship between the degree of financial leverage and stock prices the in automobile sector of Pakistan as study comprises on nine companies of the automobile companies listed at Pakistan stock exchange as these nine companies are operating while remaining three companies are diluted. It would be helpful to investors about risk associated with leveraged firm as well as will be helpful for investor in investing their funds in stocks of different companies as it clarifies the investor about risk associated with leveraged firm. Moreover, this study will be helpful for those companies which purchase stocks for maximizing shareholder wealth and helpful for companies for optimizing their capital structure for shareholder wealth maximization.

2. Review of Relevant Literature

Iqbal and Usman (2018) identified the relationship between financial leverage and firm performance of the textile companies of Pakistan. This research includes all textile companies in KSE-100 index, 5-year data was accumulated from 2011-2015. Furthermore, the study confessed that the value of leverage does not exceed the value of equity, meanwhile, leverage has a positive impact on a firm overall performance. Iqbal et al. (2016) examined the impact of leverage ratios on the share price as they selected the Cement sector of Pakistan, hence it found that the debt ratio and degree of financial leverage are negatively determining share price as data was accompanied from 17 cement companies listed as Pakistan stock exchange from 2005-2015. Further, multiple regression model were used for findings and make conclusion. Moreover, multiple regression techniques were used for analysis from the span of 2006-2015. So, Regression results indicated that short-term debt is negatively correlated with stock returns, long term debt ratio also negatively correlated with stock returns as well as negative relation between leverage and stock returns were found after analysis. Barakat et al. (2014) explored the effects of financial structure, financial leverage and profitability on industrial sector, where capital structure and return on equity used as predictors and stock returns

were taken as outcome. As, 46 companies were listed in Saudi stock market; here random sample was selected, amounting eight companies, which have been adopted to represent all industrial sectors, from 2009 to 2012. The study used descriptive statistics, Pearson correlation coefficient, multiple regression, and model parameter tests for data analysis. Hence, it has been reported that significant relationship of return on equity with stock prices however, weak insignificant relation between leverage and value of stock while strong positive relationship were seen between capital structure and return on equity (ROE). Periyathampy and Nimalathasan (2013) demonstrated the leverage effects on prices of shares and earnings on Colombo Stock Exchange, authors intended to determine the relation of leverage on earning per share and share prices, in which earning per share and share prices used as regressand and degree of operating leverage (DOL), degree of combined leverage (DCL) and degree of financial leverage (DFL) were taken as regressor. In this paper the secondary data was collected from 20 companies which selected from 285 companies of 20 different sectors of Colombo Stock Exchange. As, data was sorted from annual reports of companies from the period of 2007/2008 to 2011/2012, it found that correlation was at 0.1 or two tailed between DFL and share price, DCL and share prices, which shows insignificant relationship between them. Muhammad et al. (2014) intended to know the impacts of capital structure on firm performance, this study used debt to assets ratio and debt to equity ratio as explanatory variable and gross profit margin, net profit margin, return on assets, return on equity are used as dependent variables, secondary data was gathered from annual reports of 25 cement companies listed on Karachi stock exchange, for the period of 2009-2013. For data analysis, this study approached descriptive statistics, correlation, and regression analysis, so, the results from correlation analysis showed the strong negative correlation between debt to asset and firm performance variables. Further it revealed high significant relationship between all variables except debt to asset and return on equity as well as indicates a positive relationship between firm performance variables (GPM & NPM) and debt to equity, whereas negative relationship between (ROA & ROE) and debt to equity. Finally, the study concluded that there is significant impact of capital structure on firm performance. Mustafa, Saeed and Zafar (2017) studied the effects of financial leverage and market size on stock returns listed at Karachi stock Exchange (KSE-100 index), this study intended to find the effects of financial leverage and market size on shareholder's returns in Pakistan. Moreover, stock returns of selected stocks were used as dependent variable and debt to equity ratio of non-financial sector used as independent variable, data was collected from KSE-100 companies, annual publication of State Bank of Pakistan for the period of 12 years form 2004-2015 and average monthly share price data was collected from non-financial sector from 2011-2015. It concluded that sector is highly financed by leverage. Hence, it found

that the size is positively correlated with stock returns, 1% expansion in market capitalization cause 111% expansion in stock return. Nyamolo et al. (2012) depicted that the effects of leverage on share prices of companies listed at Nairobi Stock Exchange. In this study share prices used as regressor while leverage used as regressand and the target population was 47 companies, listed at Nairobi Stock Exchange, the sample was made up of 20 companies and data was collected for 5-year period from 2006 to 2010 from annual reports and Nairobi stock exchange database. Here simple linear regression analysis and correlation were used for data analysis. The main purpose of the study was to make the effect of leverage on share price of companies listed at NSE (Nairobi Stock Exchange). The study findings proved that increase in leverage of the company lead to decrease in the share price of the company. Abdullah and Mohammad (2015) determined the impact of financial leverage and market size of selected stocks returns on the Dhaka Stock Exchange. There were five companies: Fu-Wang Ceramic, Find Food limited, Olympic Industries, Metro Spinning, and Rahim Textile as the data source was secondary that was taken from Dhaka Stock Exchange database since 2008-2012. So, the (OLS) ordinary least squares reported that the both leverage and size have significant relationship between stock returns. Bahreini et al. (2013) intended to know the relationship of economic leverage and the operational performance of accepted companies of Tehran stock market. The meaningful relation of economic leverage and share prices were found, as 145 companies with systematic elimination method from 2005-2006 were taken for analysis. Findings showed that there is meaningful relation between the total assets and independent variables like log of market value leverage change; on other hand return on equity has no relation with total assets. Results also indicated that there is meaningful positive relation between size and return on assets and negative relation between return on assets with leverage. So, Bahreini et al. (2013) concluded that leverage has negative effect on firm efficiency on other hand size has positive impact on firm efficiency so that the company can be effective after controlling the leverage

2.1. Conclusion about the Literature Review

From literature it is found that previous studies conducted research related to debt capital structure firm performance and stock prices. These studies conducted in different counties and in different sectors. Here some studies found insignificant and relation between leverage and stock prices but the most of the studies in literature review concluded that there is negative relation between leverage and stock prices.

3. Research Methodology

This study is comprised on the deductive method. Deductive method begins from theory and ends on testing of hypothesis and lastly conclusions are drawn. Deductive method is generally the part of quantitative approach. These method appearances the connection between theory and variables elaborate in the research. (Philomena Korash, 2016). Data was analyzed in EViews software; furthermore study uses statistical tools: descriptive statistics, regression analysis for robustness and ordinary least square random effect model. The research is based on secondary data that was collected from nine (9) companies of automobile sector listed on Pakistan Stock Exchange (PSX) from 2004-2018 for the period of 15 years from annual reports of companies, State Bank website, and Pakistan Stock Exchange website.

Following table shows companies used as sample of study.

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1. Atlas Honda Limited.
 2. Ghandhara Industries Ltd.
 3. Ghandhara Nissan Ltd.
 4. Hino Pak Motor Limited.
 5. Honda Atlas Cars (Pak) Ltd.
 6. Indus Motor Company Ltd.
 7. Millat Tractors Limited.
 8. Pak Suzuki Motors Co Ltd.
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4. Econometric Model

$$SP = \alpha + \beta_0 DR + \beta_1 DFL + \beta_3 SIZE + \varepsilon$$

4.1 Dependent Variable: Share price (SP)

The share price is value of stocks of company at which these stocks are traded in stock market. In this study share prices is used as dependent variable which is collected from stock exchange website. Various studies used share price as dependent variable as Iqbal et al. (2016) and Barakat (2014).

4.2 Independent Variables

Debt ratio

It is used as independent variable which calculated by dividing total debt with total assets. It shows the portion of total asset financed by leverage (Barakat, 2014; Iqbal et al, 2016).

Degree of financial leverage

It is used to measure the extent of debt in the capital structure. "It can be calculated by dividing (EBIT) earnings before interest & tax to (EBT) earnings

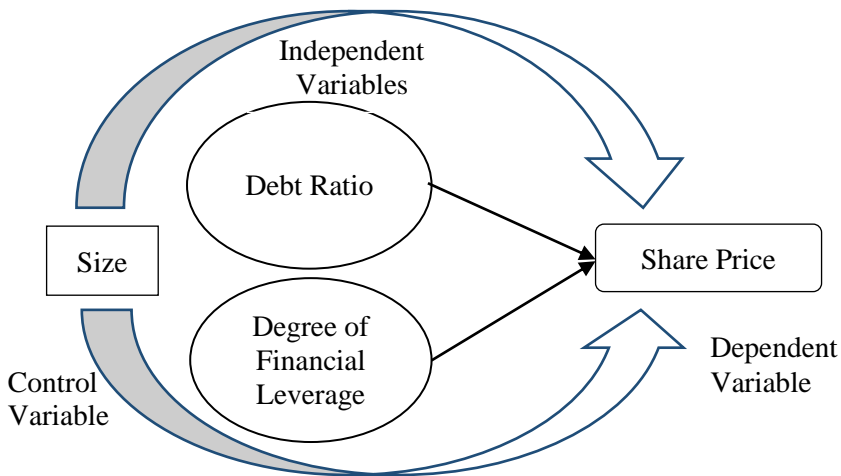
before tax”. Iqbal et al. (2016) also used this variable previously in their research study.

4.3 Controlled Variables: Size

Here size refers to natural logarithm of total assets. It is used as controlled variable (Iqbal et al, 2016).

4.4 Conceptual framework

This framework indicates the connection and influence of explanatory variables on dependent variable.



4. Empirical Analysis

Table 1: *Descriptive Statistics (N = 135)*

	SP	DR	DOL	SIZE
Mean	266	0.508	1.26	9.80
Median	150	0.512	1.02	9.93
Maximum	1751	0.910	12.20	10.91
Minimum	2.50	0.096	-10.01	0.00
Std. Dev.	333.38	0.191	1.87	1.26

Note: whereas SP is share price, DR is debt ratio, DOL is degree of financial leverage, SIZE is Log Total Assets.

Table 1 reports the results of descriptive statistics in which 135 observations is analyzed for the period of 15 years from 2004 to 2018. Here average share price of automobile companies is 266 it indicates that automobile sector shares are traded at high price over the period of 15 years. The median is 150 which

are below the mean but it is still show that half of prices of companies during 15 were above the 150 which is good price in Pakistan stock exchange. The mean of debt Ratio is 0.508 which depicts that, almost half of assets are financed by debt, the median value of DR is 0.512 which is almost equal to mean value and shows that the standard automobile sector prefer slightly debt financing and Standard deviation is 0.19 indicate the minor difference of DR in automobile sector for selected years. The average Degree of Financial leverage ratio is 1.25 which indicates that 1 percent change in EBIT caused 1.24 times change in earning before since 2004 to 2018. The standard deviation of DOL is 1.873 which means low difference of DOL ratio in automobile sector companies. For the automobile sector the mean of log of Assets is 9.801, and standard deviation is 1.262 that indicates there is difference in SIZE of automobile companies.

Table 2 *Panel Stationary Test*

Variables	Probability	Stationary
Independent Variables		
DOL	0.00	Level
DR	0.00	Level
Control Variables		
Size	0.05	Level
Dependent Variable		
SP	0.03	Log

Table 2 demonstrated the result of unit root test (Levin, Lin and Chu, 2002). ‘Data is stationary’ implies random movement of each variable if numbers are designed on the time line. Any rising or sliding pattern in the numbers creates spurious regression. If data is non-stationary, it develops fake conclusions that are not dependable and effective for further calculations. If data is non-stationary, it may likewise increase the autocorrelation and multicollinearity problems. Test for unit root is utilized to change the data structure from non-stationary behavior to stationary. Dependent, Independent and also Controlled variables were examined separately and their results are appeared in above tables. As discussed the theoretical background, data is behaved as non-stationary, if there is unit root which means p-value is beyond 0.05, it is viewed as insignificant which means data is Non-stationary. In contrast, data is behaved as stationary, if there is no unit root which means p-value is below or equal to 0.05, it viewed as significant which means data is Stationary and can be used for further data analysis and as stochastic model. In this study model the variables including DR, DOL, SIZE having stationary on level, and SP have stationary at log.

Table 3 *Hausman Test*

	Probability
Cross-section Random	0.523

The Hausman test is applied to decide either Fixed Effect model or Random Effect model is appropriate for regression model. The table 4 show that the probability value is 0.523 which is above the 0.05 it confirms that Random Effect model is appropriate for findings.

Table 4. *Random Effect Model*

Dr	-2.10* (0.60)
DOL	-0.10** (0.03)
SIZE	0.18** (0.08)
R ²	0.71
Adj R ²	0.61
DW	1.75
F-Statistics	7.78
Probability (F-Statistics)	0.00

Note: Whereas, DR is ratio, DOL is degree of financial leverage; SIZE is log of Total Assets. The significant levels * for < 1%, ** for < 5%

H1: There is significant negative relation between share price and debt ratio.

Table 4 shows, the p-value of DR is 0.60 is less than 0.01 significant level, and T-Statistic value is -3.48 which is greater than two the probability vale and T-Statistic value show that model fit, and relationship between share price and debt ratio is significant. The, that's why it rejects the Null hypothesis, here is the coefficient is -2.10 is negative, it means that DR have significant negative impact on Share Price.

H2: There is significant negative relation between share prices degree of financial leverage.

The table shows, the p-value of DOL is 0.03 which is below the significance level of 0.05 and T-statistics value -2.95 which is greater than two so that it confirms that model is fit and DOL has significant relationship with share Price. Here coefficient value is -0.098 which is negative it means that there is negative relationship between debt to equity ratio and share price.

H3: There is significant positive relation between share price and firm size.

Table shows, the p-value of SIZE is 0.03 which is less than 0.05 significant level and T-Statistic value is 2.25 which is greater than two. The values of probability and T-Statistics confirm that SIZE has significant impact on Share

Price and the model is fit and the coefficient value is 0.18, the Positive value of coefficient it means that Size have significant Positive impact on Share Price. That's why it rejects the Null hypothesis.

5. Discussion on Results

R square is the coefficient of determination shows that fitness of model for prediction; here R^2 value is 71% which shows the model is fit for analysis. F - statistic value also shows the goodness of model which is 7.78 and is beyond 4 and also the Probability (F-statistic) which is 0.00 and is below 0.05. This shows, the model is absolutely convenient for estimation The VIF (Variance Inflated Factor) formula checks the multicollinearity in data. If the VIF value is below 5, then there is no multicollinearity problem in the data, which shows the validity of our results. VIF can be measured as:

$$VIF=1/(1-Adjusted R^2); VIF=1/(1-0.61); VIF = 2.56$$

Now it is confirmed that there is no multicollinearity issue in data because the VIF value is 2.56 which is below 5.

The results of Ordinary Least Square Random effect found that the debt ratio has significant negative relation with share price which confirms the previous finding of Iqbal *et al.* (2016), Nyamolo *et al.* (2012), Nayeem *et al.* (2015) these study also found negative relationship between debt ratio and share price. Further, according to findings, there is insignificant relationship between degree of financial leverage and share price which confirms the finding of Iqbal *et al.* (2016). Moreover, the findings of OLS and Random effect model reveal that the Size has significant positive relationship with share price.

6. Conclusion

This study was conducted to find that either the investors consider the risk which is caused by using more leverage in capital structure like debt cause low corporate earnings risk of dilution of company, loss of invested capital. The results from Ordinary least square at random effect model clearly mentioned that debt ratio is showing significant negative relation with share price. So, the study concludes that using more debt in capital structure is not beneficial for company share price. Moreover, it confirms that investors do not prefer to invest in the company which uses more debt in their capital structure. The study also elaborates that company size in terms of total assets have positive effect on share price that leads to increase in share price.

6. Future Direction

As, this paper is covered the companies of automobile companies only, so it would be the gap for future studies to analyze the impacts of different leverages on share price to remaining sectors. Moreover, authors can examine the effects

of leverages on the share price of automobile sector during the period of covid-19 outbreak as this study has taken the period of 2009-2018 that is pre-COVID-19 period.

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