Impact of Competitive Advantage and Risk on Market Performance : A Study of Top 20 Companies as per Market Capitalization

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Abstract

The paper investigated the impact of competitive advantage and risk on market performance of top 20 companies globally. The companies were chosen based on their rankings on market capitalization during the financial year 2016 - 17. The study was based on the analysis of disclosed financial and market data using correlation and regression analysis in SPSS. The quantitative approach provided a better understanding of all the dynamics, complexities, and problems that characterized companies with high market capitalization. I used financial data from the annual reports of the companies, and market data from stock market sources. The results suggested that leverage had the greatest impact on market performance.

Keywords: **market to book ratio, asset turnover as cost advantage, profit margin as differentiation advantage, leverage as risk, intangible capability**

JEL Classification : G32, M41, M10

Paper Submission Date : May 25, 2018 ; Paper sent back for Revision : February 7, 2019 ; Paper Acceptance Date : March 20, 2019

Market performance of public limited companies has been an area of interest for managers and researchers as it provides a basis of success of firms. To be able to maintain superior market performance, strategists look for keys to success in the market. One of the measures of market performance is the book - to - market ratio (BMR). Strategists compare their BMR with that of their peers (companies in the same industry) as well as other benchmarked companies outside the peer group to get a sense of the extent of market performance. Use of BMR as a measure of market performance of public limited firms is considered appropriate both in terms of principle and in terms of consequences. As a principle, it factors in both internal as well as external sources of success. For instance, a profitability ratio like return on net worth tends to reflect the power of internal capabilities of a firm, used to benefit from opportunities, historically. However, BMR can reflect how external stakeholders perceive the potential to create value. The consequence can be seen as a reflection of goodwill and a better way to value a firm. However, when markets are out of equilibrium, during building- up of bubble, high BMR can reflect overpricing of a share.

Nezlobin, Rajan, and Reichelstein (2016) studied the magnitude of BMR and concluded that behaviour and magnitude of BMR is shaped by conservatism in accounting practices, economic profitability, and anticipated as well as past growth. Forner and Vázquez Veira (2018) used the book-to-market ratio to study value investing strategy in the Spanish context and concluded that accounting strength had a high potential to drive the value investing strategy. Myšková and Hájek (2017) studied the impact of information contained in the annual reports on market sentiments and thereby on market to book ratio and concluded that net optimism in annual reports was

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DOI : 10.17010/ijf/2019/v13i4/143126

perceived positively by stakeholders. Donnelly (2014) studied the impact of BMR on future stock returns and concluded that price of low BMR stocks was sensitive to earnings disappointments, while that of high BMR stocks was not. Alzahrani and Rao (2014) decomposed the BMR to analyze the link between corporate investment and mispricing and suggested that sensitivity of investments to mispricing was a function of the nature of mispricing, the type of investment, and the firm's characteristics.

I examined the competitive advantage and financial risk derived from published audited accounts of companies and BMR by using the stock prices data to gain insights into the impact of competitive advantage and risk on BMR. Using Porter's framework of generic strategy, I used asset turnover as the measure of cost advantage, profit margin was used to measure differentiation advantage, and financial leverage was used as a measure of financial risk (Sar, 2017, 2018).

Review of Literature and Hypothesis Development

Kumar and Rao (2016) reviewed the work of Dr. Prasanna Chandra on the link between strategy and financial performance and reflected on the eight levers of value octagon with a step by step approach. Maji and Hazarika (2016) studied the performance of Indian banks with data from 39 commercial banks for the period from 1999 - 2013 and concluded that there was a strong correlation between return on assets and market to book ratio.

BMR is an indicator of true value of a company listed in a stock exchange. It is calculated as a ratio of the book value of outstanding shares to the market value of outstanding shares. The book value is calculated by dividing the net worth by the number of outstanding shares. The market value of a share is taken as the average of the trade prices during a reference period. When the BMR is less than 1, a company is perceived by the market operators as a company with superior market performance as the market values are more that the valuation based on historical accounting information (Investopedia, n.d.). Companies which operate in emerging high technology areas, like the platform mediated network businesses, tend to have a low BMR owing to low physical asset base.

(1) Cost Advantage and Book - to - Market Ratio : A firm is said to have a cost advantage when it achieves a lower suppliers' opportunity cost with a slight decline in the customers' willingness to pay as compared to the industry average player (Brandenburger & Stuart Jr., 1996). Operationally, it becomes difficult to measure suppliers' opportunity cost and customers' willingness to pay to establish cost advantage for a firm. To overcome the difficulty, scholars use proxies such as unit price for customers' willingness to pay and unit cost for suppliers' opportunity cost. The challenge to establish cost advantage for services and solutions thus becomes further difficult. Since cost advantage is rooted in efficiency, asset turnover has been found to be a valid measure of cost advantage (Sar, 2017, 2018). Kubota and Takehara (2010) analyzed data in companies listed in Tokyo Stock Exchange and concluded that efficiency ratios were strong predictors of BMR. Fairfield and Yohn (2001) studied the disaggregation of profitability into asset turnover and profit margin and concluded that changes in asset turnover were useful in forecasting BMR. To validate the impact of asset turnover on BMR, the following hypothesis is proposed :

↳ **H1 :** Assets turnover significantly impacts BMR.

(2) Differentiation Advantage and Book - to - Market Ratio : A firm is said to have differentiation advantage if it can raise significantly the customers' willingness to pay with a slight rise in the suppliers' opportunity cost (Brandenburger & Stuart Jr., 1996). Considering the operation difficulty in measuring customers' willingness to pay and suppliers opportunity cost, Sar (2017, 2018) suggested profit margin as a valid measure of differentiation

advantage in multiple contexts such as products, services, and solutions. Baba and Abdul - Manaf (2016) studied 100 leading firms in Malaysia for the period of 2008 - 2012 and concluded that operating profit margin had a strong impact on firm value measured by BMR. Tserng, Ho, Sung, Tsai, and Yang (2009) studied the valuation models for the construction industry through case studies and suggested that BMR was driven by profit margin in contexts associated with high vulnerability and economic downturns. Han and Hsiao (2017) studied 692 firm-year observations over 5 years between 2002 and 2006 related to long term firm performance and early adoption of Statement of Financial Accounting Standard 142 (SFAS 142), and concluded that there was a strong correlation between firm performance measured by BMR and profit margin. To validate the impact of asset turnover on BMR, the following hypothesis is proposed :

↳ **H2 :** Profit margin significantly impacts BMR.

(3) Financial Leverage and Book - to - Market Ratio : A firm is said to have a financial leverage, when it has a superior total asset to net - worth ratio. Leverage ratio indicates the extent of financing of a company's assets by equity versus debt. A leverage ratio of 1 is indicative of full financing of assets by equity. A higher leverage ratio is indicative of financing of an asset by debt in part. When the leverage ratio tends to be very high, it is considered to be risky, particularly if the company doesn't generate sufficient revenue to service the debt. Han and Hsiao (2017) studied stock returns in Spain, Portugal, Italy, and Greece, and concluded that there was a negative impact of leverage on firm's value. Menichini (2015) used a dynamic trade-off model of the firm to simulate leverage, investment, and pay-out decisions of firms and suggested that firm specific leverage effects in leverage regressions were related to BMR. Manrai (2016) studied risk management through product diversification in Indian companies and concluded that the extent of risk strongly correlated with firm performance. Ogden and Wu (2013) used static trade-off theory to study BMR, and concluded that a convex (inverse exponential) transformation of MBR had substantial explanatory power of median leverage. Chen (2013) studied the Japanese banking industry during the late 1990s (when more than 200 American banks went bankrupt including Lehman Brothers) and concluded that leverage had predictive power for cross-sectional variation market performance of banks. Arora, Kumar, and Verma (2016) studied the performance of the Indian manufacturing sector and concluded that managing risk through growth, through sustainability performance, sales growth, and asset growth was correlated with market performance. Hence, to validate the impact of asset turnover on BMR, the following hypothesis is proposed :

↳ **H3 :** Leverage significantly impacts BMR.

Methodology

(1) The Context : The market performance of the top 20 companies as per market capitalization places greater emphasis on meeting the expectations of stakeholders. All these companies operate in the emerging technology areas, which are associated with a high level of volatile, uncertain, complex, and ambiguous (VUCA) environment. There are some significant dynamics in the way these companies operate and interact with their stakeholders. Details of market capitalization of the companies are given in the Table 1. Their business models are often referred to as "platform mediated networks" with the firms creating dominant exchanges (Eisenmann, Parker, & Van Alstyne, 2006). Platforms can be classified into two types : (a) exchange platform, where the platform owners provide exchange for products, services, payment, investment, social networking, or communication, and (b) maker platform, where the platform owner provides a platform for content development, open development, controlled development, or closed development.

Table 1. List of Companies Studied

Symbol	Company	Cap Rank	Market Cap	1d Chg	1m Chg	12m Chg
-	-	on 10/31/17	on 10/31/17	on 10/31/17	on 10/31/17	on 10/31/17
AAPL	Apple	1	873.1	1.40%	9.70%	48.90%
GOOGL	Alphabet	2	715.8	0.00%	6.10%	27.60%
MSFT	Microsoft	3	640.7	-0.80%	11.70%	38.80%
AMZN	Amazon.com	4	531	-0.50%	15.00%	39.90%
FB	Facebook	5	522.9	0.10%	5.40%	37.50%
BABA	Alibaba Group	6	470.2	1.80%	7.10%	81.80%
BRK-A	Berkshire Hathaway	7	461.8	-0.50%	2.10%	30.00%
JNJ	Johnson & Johnson	8	374.2	-0.40%	7.20%	20.20%
JPM	JPMorgan Chase	9	355.6	-0.80%	5.30%	45.30%
XOM	Exxon Mobil	10	353.2	-0.20%	1.70%	0.00%
BAC	Bank of America	11	288	-0.80%	8.10%	66.00%
WFC	Wells Fargo	12	276.7	0.50%	1.80%	22.00%
WMT	Wal-Mart Stores	13	260.8	0.40%	11.70%	24.70%
RDS-A	Royal Dutch Shell	14	258.8	1.40%	4.00%	26.50%
V	Visa	15	251.5	-0.10%	4.50%	33.30%
BUD	Anheuser-Busch InBev SA/NV	16	237.4	1.60%	2.90%	6.30%
PG	Procter & Gamble	17	220.2	0.10%	-5.10%	-0.50%
CVX	Chevron	18	219.6	1.30%	-1.40%	10.60%
TSM	Taiwan Semiconductor Manufacturing	19	219.5	0.50%	12.70%	36.10%
INTC	Intel	20	213.8	2.50%	19.50%	30.50%

Source: Compiled from Dogs of the Dow. (n.d.). *Market capitalization*. Retrieved from http://dogsofthedow.com/largest-companies-by-market-cap.htm

Platform mediated networks are associated with a triangular relationship with three sets of players interactively engaging with each other. The key player is the platform provider, which creates an architecture, rules comprising of standards, protocols, policies, contracts and components comprising of hardware, software, and services. The platform owner can have platform sponsors to provide specialized intermediation for users. Then there are users on two sides. The nature of users will depend upon the nature of the platform, exchange or maker platform, as explained in the previous paragraph. The benefit of engaging in a platform as opposed to a one-to-one transaction arises from the network effect such as : (a) same side network effect - more users on a side make it more valuable to a user, and (b) cross side network effect- more users on one side make it valuable to users on the other side.

Sixty of the world's 100 largest companies earn most of their revenue from platform - mediated networks. The platform mediated business faces three key challenges, (a) pricing - which side to monetize, which side to subsidize, and the basis of monetization and subsidy, (b) the dynamics of winner - take - all, and (c) the threat of envelopment by a competing platform. Considering the nature of the business and challenges facing them, a study of the drivers of market performance of these firms would greatly improve the underlaying causes of success.

(2) Sample and Data Collection : The target population comprises of top 20 companies as per market capitalization (Dogs of the Dow, n. d.). Financial data for 4 years pertaining to the companies were collected from

the annual reports of the companies. Average market prices of common stocks were collected from the stock market data for 4 years to calculate the BMR. Microsoft Excel was used to calculate the ratios, that is, asset turnover, profit margin, leverage, and BMR. SPSS was used to compute correlation and regression coefficients.

The analysis considers financial data of 20 companies over 4 years (2013 - 2017). The analysis intends to estimate one regression equation as specified below through data analysis. Book-to-market ratio (BMR_{it}) has been taken as a dependent variable and asset turnover (AT_{it}) & profit margin (PM_{it}) along with leverage (LEV_{it}) have been taken as independent variables. If any statistically significant association is found between the dependent and the independent variables as specified, then it might be concluded that competitive advantage and risk have a significant impact on market performance of firms.

The regression equation to be estimated is :

$$BMR_{it} = a + b.AT_{it} + c.PM_{it} + d.LEV_{it} + u_{it} \quad i = 1, 2, 3 \text{ and } t = 2013, 2014, \ldots 2017$$

In the above equation; *'a'* is the constant terms, b, c, and d, are the coefficients of AT_{it}, PM_{it}, and LEV_{it}, and u_{it} is the error term.

(3) Measures :

(i) Competitive Advantage - Cost Advantage : Asset turnover ratio is measured by sales divided by total assets. It is often used as an indicator of efficiency with which a company is deploying its assets to generate revenue. Particularly for companies operating as platform mediated networks, asset turnover ratio has been found to be a good indicator of cost advantage (Bel, 2018 ; Blaise, Halloran, & Muchnick, 2018 ; Nissen, 2018 ; Pollalis, 2018; Sar, 2017, 2018).

(ii) Competitive Advantage - Differentiation Advantage : Profit margin is measured by net income as a percentage of sales. It is indicative of price premium associated with the offerings of a firm as it shows how much out of each rupee/dollar of sales, a company keeps in earnings. Several studies assessing the relative rise in customers' willingness to pay and maintaining parity with respect to suppliers' opportunity cost have indicated profit margin as an indicative measure of differentiation advantage (Douglas, Douglas, & Davies, 2010 ; Dumovic & Knowles, 2008 ; Gebauer, Gustafsson, & Witell, 2011; Makadok & Ross, 2013).

(iii) Financial Leverage - Risk : To the extent a firm is able to meet its debt servicing obligation from the cash flow from operations, high leverage contributes to superior return on equity. However, in a VUCA environment, the incidences of cash crunch and resultant difficulty in servicing debt owing to use of higher levels of debt to finance assets has been real. Thus, it is considered to be riskier when assets of a company are largely financed through debt. Leverage has been used as an indicator of risk to long term profit of firms (Acharya & Thakor, 2016 ; Boguth & Simutin, 2017; Chugh, 2016; Qizam, 2017).

(iv) Market Performance - Book - to - Market Ratio : The market performance of a company is best understood by assessing its value, or how valuable is the company. Measures like economic value added, shared value, and accounting value (measured by return on equity) miss the perception of market players on potential value. BMR has been used as a measure of market performance of firms for a variety of purposes such as : (a) due diligence for mergers and acquisitions, (b) creating appropriate portfolio of investment for high net worth investors, (c) creating benchmark price for primary issues, and (d) for investments by foreign direct investors (Donnelly, 2014; McNichols, Rajan, & Reichelstein, 2014 ; Myskova & Hajek, 2017 ; Oler, 2015).

Analysis and Results

The Table 2 lists the correlation matrix, average, and standard deviations for my construct based on the financial data and market data of the companies studied. The Tables 3, 4, and 5 list model summary, ANOVA, and regression coefficients, respectively.

In line with H1, the data suggest that asset turnover significantly impacts market performance. I accept H1, as the correlation coefficient of -.305 is significant at the 0.01 level. Efficiency at which assets are used in the business become very relevant to market performance of firms. Since the companies under reference use intellectual assets to a great extent, the results signal towards understanding the drivers of cost of assets in general and intellectual assets, in particular, to enable optimum use and control.

In line with H2, the data suggest that profit margin significantly impacts market performance. I accept H2, as the correlation coefficient of -.315 is significant at the 0.01 level. The ability of firms to price products, services, and platform usage by customers becomes relevant for market performance. The platform players, in particular, need to understand the opportunity to offer free services, subsidize some side, and monetize the other side as users are critical to superior market performance.

In line with H3, the data suggest that leverage significantly impacts market performance. I accept H3, as the correlation coefficient of .559 is significant at the 0.01 level. The extent of debt used to finance the assets, reflecting the long term risk, is critical to market performance. Since companies need to invest continuously in assets associated with emerging technologies, the extent of debt versus the extent of equity capital used to finance assets would be critical to firms' market performance.

Table 2. Correlation and Statistics

	Mean	*SD*	*AT*	*PM*	*LEV*	*BMR*
AT	0.647	0.578	1			
PM	18.866	12.932	-.523**	1		
LEV	3.240	2.737	-.296**	-.016	1	
BMR	0.4236	0.314	-.305**	-.315**	.559**	1

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

Table 3. Model Summary

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate
1	.741.	.549	.532	.21518

a. Predictors: (Constant), *LEV, PM, AT*

Table 4. ANOVA.

Model		Sum of Squares	*Df*	Mean Square	*F*	Sig.
1	Regression	4.291	3	1.430	30.087	.000
	Residual	3.519	76	.046		
	Total	7.810	79			

a. Dependent Variable: *BMR*

b. Predictors: (Constant), *LEV, PM, AT*

Table 5. Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	*t*	Sig.
		B	Std. Error	Beta		
1	(Constant)	.694	.086		8.090	.000
	AT	-.259	.053	-.475	-4.916	.000
	PM	-.014	.002	-.557	-6.028	.000
	LEV	.047	.009	.409	4.963	.000

Note. a.Dependent Variable: *BMR*

The model summary in Table 3 shows *a*, adjusted *R* square of .532, that is, 53% of variation in the market performance is explained by asset turnover, profit margin, and leverage. The *F* - value and associated *p* - value presented in Table 4 indicate a statically significant finding with *p* - value less than 0.05. The regression coefficients given in Table 5 indicate a statistically significant impact of the independent variables - asset turnover, profit margin, and leverage on the dependent variable book-to-market ratio, considering the *p* - values. Among the three independent variables, leverage has the most significant impact on market performance with a regression coefficient of 0.047. It would mean using too much of debt to finance assets may result in poor market performance.

The results are consistent with results from past research with respect to Dempsey (2010), who studied the related context of Australian stock markets ; Tilehnouei and Shivaraj (2014), who studied the relationship between market-to-book ratio and leverage for companies listed in the National Stock Exchange of India ; and Iqbal and Usman (2018), who studied the relationships under reference for Pakistan composite textile companies covering data for 2011- 2015.

Discussion and Conclusion

The study examines the impact of competitive advantage (cost advantage and differentiation advantage) and risk on market performance. The companies under reference achieved high market capitalization continuously for the reported 4 years. Thus, understanding of the drivers of such superior market performance would add to the knowledge base in strategy and competitive advantage. In the process of trying to win in the market place, companies have given emphasis on sustaining competitive advantage. Large scale promotions to improve brands as reported in global ranking of brands by Interbrand were very common by companies with a view to improve position vis-à-vis customers, create customers from among people with higher willingness to pay, and raise prices for the offerings. Similarly, companies outsourced large extent of the value chain activities to improve efficiency by controlling the associated drivers of cost. The study confirms that higher levels of efficiency and price premiums did matter for superior market performance. However, leverage is found to be a more statically significant driver of superior market performance.

The study contributes to strategy and competitive advantage theory in several ways. First, efficiency matters, therefore, in the processes of aggressive market adventures aimed at effectiveness, one shouldn't overlook efficiency. Second, customer perceptions on both sides of platforms matter in a platform mediated network business; therefore, one shouldn't overlook the drivers of customer value for each side of the platform. Third, ways and means of financing assets is significant, therefore, while financing assets to support growth in high technology areas, one shouldn't rely on too much of debt, lured by availability low - interest debt products.

Managerial Implications

In the process of trying to win in the market place, strategists aim at controlling drivers of cost and differentiation, while managing risk. At strategic business unit level, more focus is given on the drivers of cost and differentiation. However, the results from the study indicate that leverage, a measure of risk, is a more significant driver of market performance. Hence, at the corporate level, the focus can shift to manage risk, while issues concerning cost and differentiation are managed at the business unit level.

High market capitalization and superior market performance create value not only for the direct stakeholders like stockholders, customers, suppliers, employees, and complementors, but also for the community where firms operate and the broader society. Thus, a better understanding of the drivers of market performance would enable the strategic apex to orient strategy aligned to the appropriate drivers, and thereby create superior value for direct as well as indirect stakeholders.

Limitations of the Study and Scope for Further Research

The study uses financial ratios such as asset turnover and profit margin as measures of cost advantage and differentiation advantage, respectively. Qualitative factors have not been considered in the study. Future research can expand on the measures by exploring qualitative factors like stakeholders' perceptions on sensing and seizing opportunities. This study is limited to top 20 companies on market capitalization. Further studies can be conducted considering companies with lower or middle order market capitalization and based on different sectors and industries.

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