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The Relationship between Marketing Costs and Stock Returns of Companies Listed in the Stock Exchange

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Abstract

This research aims to investigate the relationship between marketing costs and stock returns of companies admitted into the stock exchange; in other words, this question is answered whether the economic recession directly affects marketing costs of companies or not. In order to test the variables of the research, 107 companies were selected as sample from population under investigation, namely companies admitted into the Tehran Stock Exchange over an 11-year period, based on financial statements between 2005 and 2015. Data were analyzed, and hypotheses were tested using Pearson correlation and multivariate regression tests through EVIEWS. The results of the analysis of research hypotheses showed that there is a significant relationship between marketing costs and stock return during the periods of recession and growth. There is no difference in the rate of stock return at both periods of recession and growth. It means that corporate executives have used a consistent procedure in all periods, and have not changed their programs.

Keywords: Marketing, Stock Return, Time of Recession, Time of Growth, Marketing Costs

Introduction

The stock market naturally reflects business cycles and economic conditions. According to economic and financial theories, stock prices are determined based on the current value of expected cash flows. Hence, any factor that affects the present value of expected cash flows will obviously influence stock prices. Therefore, at the time of economic growth, stock prices will grow, and vice versa, stock prices will decrease during economic recession. In the meantime, volume of transactions as one of the variables affecting stock prices will be reduced (Sun, 2003). Based on economic theories, the stock price index should reflect the expectations of the economic sector of companies' future performance, while corporate profits reflect the level of economic activities. If the stock price index accurately reflects the information on the future trend of underlying variables, then it can be used as a leading variable to predict fluctuations in economic activity. Therefore, scientific relations and dynamic interactions between macroeconomic variables and stock price indices are very important in developing macroeconomic policies of a country. In many studies, stock price index and macroeconomic variables have been considered (for example, studies conducted by Chung Tai, (1998), Karamustafa and Kucukkale (2004), Miller and Show Fang, 2001)). The stock market is very important to determine economic developments. It is essential to put emphasis on factors that create stock return, while financial theories emphasize on certain firms and industries. There is a growing belief among financial researchers that macroeconomic variables play a crucial role in determining the stock market performance (Tripathi and Kumar, 2014).

During the economic crisis, the type of marketing mix used by companies is very important. In this regard, Koksal and Ozgol (2007) stated that the introduction of new products could have a significant effect on the performance of companies at the time of recession. Kim (1992), Werner (1991) and Quelch (2008) investigated the effect of advertising strategies due to conditions of the economic crisis, and they concluded that by increasing or maintaining advertising level, companies can enhance their sales and market share at the time of recession and after economic recession (Nott and Vlachvei, 2015).

Srinivasan et al. (2005) in their studies indicated that in order to respond to these changes, companies are interested to react as follows: 1. Investing in marketing, or 2. Reducing marketing costs. Interestingly, most of strategic marketing studies at the time of economic recession have focused on examining marketing strategies (such as advertising costs, sales and customer service) instead of investigating changes of consumption patterns. They concluded that most companies have limited their marketing costs, and this often limits the company's sales in future and their profit (Roger et al. 2015).

Economic changes and recessions cause changes in decision making in regard with marketing, and can influence the stock returns of companies. In this regard, economic recession affects marketing costs. Investigating decisions made on marketing costs at the time of recession, researchers showed that decisions made on marketing costs can be seen in fluctuations in stock returns. In a large part of the marketing literature, drivers of decisions made on marketing costs have been examined. Studies have indicated that in terms of non-marketing and financial drivers, marketing costs such as influence of free cash flows and representing costs on advertising costs, and how stock returns are affected by marketing costs have been examined. Hence, theoretical and empirical contributions to this topic are limited (Imran et al. 2016). Therefore, the relationship between marketing costs and stock returns of companies admitted into the stock exchange during recession and growth is studied in this research.

Research background and related review of literature

According to resource-based view, a better return is achieved on the basis of corporate resources and capabilities. The difference in companies' return is due to the difference in the use of capabilities to create productivity and also achieve better performance. Among the capabilities of the organization, marketing capabilities contribute to create value for products and services (Kamboj et al. 2015). According to definitions provided by Vorhies et al. (1999) and Dee (1933), marketing capabilities are integrated and coherent processes that are designed to apply collective skills and company's knowledge and resource, and help identify market needs, and improve value of goods and services provided by the company. By the help of these capabilities, the company will be able to adapt itself to changing conditions of market, and make use of opportunities provided by the market to deal with competitive threats. Marketing capabilities represent the specific abilities of a company in identifying target markets, strategies and mixes of developing markets that lead to maintaining relationship with loyal customers. Studies show a positive relationship between marketing capabilities and company's performance (Morgan et al. 2009). Based on the subjects discussed in this research, the effect of marketing commitments and its influence on corporate return will be examined in this research.

Rollins et al. (2014) examined the impact of economic recession on marketing. They investigated marketing decisions made by companies at the time of economic recession. The research results showed that companies which focused on their customers, have increased their marketing activities and changed marketing strategies.

Nott & Vlachvei (2015) investigated the changes made in marketing strategies during the recession. In this research, 161 managers of Greek companies operating in the food industry were surveyed. In this study, seven marketing strategies were considered: 1. New product presentation 2. Advertising 3.Customizing 4.Being cost-oriented 5.Being discount-oriented 6.Market orientation using B2B promotions. The research results showed that, cost-oriented leadership method is mostly applied at the time of recession.

Roger et al. (2015) reviewed marketing strategies during the recession in regard with New Zealand manufacturers. In this study, 427 and 272 manufacturing companies were investigated during the recession and favorable economic conditions. The results indicated that applying an appropriate strategy to facilitate achieving success in competitive marketing, and targeting customers based on value creation for them play an important role in their marketing success.

Imran et al. (2016) investigated commitment to marketing spending through recessions: better or worse stock market returns?. This research was conducted on 600 companies over the period of 1982-2009. The results indicated that marketing commitments during the recession lead to an appropriate return in the stock market.

Makhzan Ghadimi (2012) analyzed marketing strategy of service companies during the recession (road and building construction service companies). In this research, after collecting data using statistical software, while rejecting the relationship between factors promoting sales and distribution and sales rate of companies, the effect of other factors based on the priority: product, process, staffs, objective evidence and price was confirmed. Another result is that successful companies during the recession not only have reduced their activities and costs, but have considered recession as an opportunity, and used the strategy of development and differentiation.

KarimiAlavijeh and AyazSheibani (2014) reviewed the strategies of industrial companies during the economic recession. The results of this research are in details as follows: focusing on new markets; in other words, markets that are less affected by the recession, merging with other companies, increasing the diversity and improving the quality of products, paying particular attention to the behavior of industrial customers in order to follow changes made in their buying patterns, and finally trying to adapting itself to existing conditions to survive. Another result is that successful companies during the recession not only have reduced their activities and costs, but have considered recession as an opportunity, and used the strategy of development and differentiation.

Hosseini et al. (2011) analyzed the marketing strategies of service companies during the recession. Accordingly, the relationship between the seven well-known factors of the service (product, price, distribution, staffs, facilities and physical assets and process) and sales rate of companies was investigated in the form of indices, using t-student and Fereydon's variance analysis. As a result, the relationship of other factors, except factors promoting sales and distribution, and sales rate in companies was approved. Another result is that successful companies during the recession not only have reduced their activities and costs, but have considered recession as an opportunity, and used the strategy of development and differentiation.

Research hypotheses

Most studies have shown that managers change their marketing costs at the time of recession and growth. Rasuli and Gryth(2012) showed that companies change their marketing strategies and take new steps at the time of economic crisis. Regarding this hypothesis, Imran et al. (2016) indicated that there is a significant relationship between commitment to marketing costs and stock return at the time of recession. Bam (2010) showed that at the time of economic recession, companies can make an attempt to provide goods and services using e-marketing methods, such as email marketing and sales websites. To clarify the ambiguity of the relationship between marketing and stock return at the time of recession and growth, the following hypotheses are presented:

First hypothesis: There is a significant relationship between marketing costs and stock returns of companies listed in the stock exchange at the time of recession.

Second hypothesis: There is a significant relationship between marketing costs and stock returns of companies listed in the stock exchange at the time of growth.

Method of research

The overall aim of this research is to investigate whether commitment to marketing costs at the time of recession leads to better market returns or not. In this research, existing phenomena are examined and described; hence, from data collection viewpoint, this research is descriptive. In terms of study method, this is a correlational research. In these types of studies, the relationship among variables is analyzed based on the purpose of research. Since this research aims to develop knowledge to use it in a particular field, this is an applied research in nature.

This research population includes companies admitted in the Tehran Stock Exchange. Accordingly, the research sample has been selected according to the following criteria:

1. The company should be admitted into the stock exchange before 2005, and be active until the end of 2015.
2. The fiscal year of company should be ended on March 29, and the company should have no change in activities or in fiscal year during 2005-2015.
3. Companies should have no trading interruption for more than 6 months during the research period.
4. Corporate financial information should be available.

Regarding the above-mentioned limitations, 107 companies were selected and investigated as sample using systematic sampling method.

The research model and the method of measuring variables

Hypotheses are tested based on Imran et al. (2016) model and using the following model. To test the first and second hypotheses, the following regression model is applied:

$$\Delta TSR_{it} = \beta_0 + \beta_1 \Delta MCm_{it} + \beta_2 \Delta MTB_{it} + \beta_3 \Delta ROA_{it} + \beta_4 \Delta SALES_{it} + \varepsilon_{it}$$

Stock return variables are as follows:

TSR_{it}: Total shareholder return in one year

CTSR: Cumulative total stockholder return

CAR: Cumulative Abnormal Return

MCm: Marketing Commitments at the time of recession

SALES: Sales growth of the company

ROA: Return on assets

MTB: Market to book ratio

Definitions of variables

Cumulative total stockholder return (CTSR): This ratio indicates that how much a company gains net profit for each shareholder investment unit. Usually, the most important criterion for measuring the performance of institutions is stock return rate at the present time.

Cumulative abnormal return (CAR): Abnormal return is a term used to describe returns received from stock exchange or portfolio over a period of time that is different from the expected return rate. Expected rate of return is the return calculated based on assets pricing model, using the long-run average of return or other measures (Jabarzadeh & Asgari, 2010).

Total shareholder return (TSR): Sum of abnormal returns over a long term is called total shareholder return.

Marketing commitments (MCm): Marketing commitments relate to recession time; it represents the difference between actual and expected marketing costs. This variable shows the deviation from actual marketing costs during the recession (Imran et al. 2016).

Return on assets (ROA): Return on assets or return on index is based on how profitable the company is, depending on the total assets of that company. The return on assets represents an idea of efficient management, in relation to the use of assets, to produce output (productive assets) which is calculated by annual dividend per total assets of the company.

Sales growth of company (SALES): It refers to the sales increase ratio at the end of considered time to the growth obtained at the beginning of the period.

Market-to-book ratio (MTB): It is calculated through the ratio of stock market value to book value.

In this research, based on the status of economic variables in Iran, years between 2011 and 2015 are used as periods of recession. Also, years between 2005 and 2010 refer to growth periods.

Analyzing and Testing Hypotheses

In this research, regression analysis, cross-sectional regression and combined regression were used to test the hypotheses. Table 1 contains descriptive statistics including 1173 observations in regard with data used for linear regression in which information related to measures of central tendency (mean, median, maximum and minimum) and dispersion (standard deviation, skewness and kurtosis) are presented.

Table 1. Descriptive statistics of research variables

	CAR	CTSR	MCm	MTB	ROA	SALES	TSR
Mean	1.806518	2.809247	0.012887	6868372.	0.144659	2648076.	1.439485
Median	1.303227	1.790438	0.010631	2266702.	0.108919	502582.0	1.158766
Maximum	55.84781	178.9893	0.427165	3.78E+09	2.145393	1.67E+08	14.32862
Minimum	23.90953	-22.30723	9.91E-05	1.21E+08	-1.240493	9547.000	0.114538
Standard deviation	5.330588	7.827196	0.015413	1.11E+08	0.203930	10462573	1.048212
Skewness	1.665440	10.65507	17.42887	33.65982	3.039911	9.607718	4.044663
Kurtosis	16.88686	225.6082	450.2979	1145.526	29.74641	118.7205	31.94503
Number of companies	107	107	107	107	107	107	107
Number of observations	1177	1177	1177	1177	1177	1177	1177

To test the hypotheses, the research models are estimated at the specific times of recession and growth and then, are examined in a comparative way based on the results. Table 2 shows the results obtained from the estimation of the first hypothesis.

Table 2.Estimation of the Research model for the first hypothesis during 2011-2015 (recession)

	(TSR)		(CTSR)		(CAR)	
Variable	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
MCm	6.061524	0.0000	1.858680	0.0000	0.256188	0.0053
MTB	0.043959	0.0025	0.004725	0.0469	0.007899	0.0463
ROA	0.091924	0.0036	0.011268	0.0326	2.70E-05	0.0090
SALES	-0.085071	0.0077	-0.009630	0.0077	-0.025407	0.0001
C	0.222799	0.0000	1.797967	0.0000	1.884960	0.0000
General fitting of model	F= 1.498786 prob(F)=0.002 D.W=2.114998 R^2 =0.282855		F= 7.095712 prob(F)=0.000 D.W=2.100942 R^2 =0.451239		F= 2.667723 prob(F)=0.000 D.W=2.121842 R^2 =0.149760	

First case of dependent variable (TSR): The results shown in the table indicate that the effect size of independent variable (MCm) on dependent variable (TSR) has been equal to 6.061 during (2011-2015), and significance level is 0.000 that is less than error level of 0.05; it means that observed coefficient is positive and significant. Therefore, it can be said that there is a positive and significant relationship between marketing commitments and total shareholder return.

Second case of dependent variable (CTSR): The results shown in the table indicate that the effect size of independent variable (MCm) on dependent variable (CTSR) has been equal to 1.858 during (2011-2015), and significance level is 0.000 that is less than error level of 0.05; it means that observed coefficient is positive and significant. Therefore, it can be said that there is a positive and significant relationship between marketing commitments and cumulative total stockholder return.

Third case of dependent variable (CAR): The results shown in the table indicate that the effect size of independent variable (MCm) on dependent variable (CAR) has been equal to 0.256 during (2011-2015), and significance level is 0.000 that is less than error level of 0.05; it means that observed coefficient is positive and significant. Therefore, it can be said that there is a positive and significant relationship between marketing commitments and cumulative abnormal return.

Table 3 shows the results obtained from the estimation of second hypothesis.

Table 3. Estimation of the Research model for the second hypothesis during 2005-2010 (growth)

	(TSR)		**(CTSR)**		**(CAR)**	
Variable	Coefficient	Significance	Coefficient	Significance	Coefficient	Significance
MCm	8.237955	0.0000	2.183050	0.0000	1.134416	0.0000
MTB	0.064898	0.0342	0.009054	0.0117	0.008892	0.0324
ROA	0.074724	0.0199	0.009312	0.0082	0.004857	0.0011
SALES	0.084395	0.0046	0.009864	0.0012	0.006097	0.0439
C	0.095817	0.0000	1.769735	0.0000	1.796263	0.0000
General fitting of model	F= 1.529139 prob(F)=0.000 D.W=2.194760 R^2 =0.248382		F= 1.917608 prob(F)=0.000 D.W=2.195328 R^2 =0.542345		F= 1.039600 prob(F)=0.000 D.W=2.108327 R^2 =0.183158	

First case of dependent variable (TSR): The results shown in the table indicate that the effect size of independent variable (MCm) on dependent variable (TSR) has been equal to 8.237 during (2005-2010), and significance level is 0.000 that is less than error level of 0.05; it means that observed coefficient is positive and significant. Therefore, it can be said that there is a positive and significant relationship between marketing commitments and total shareholder return.

Second case of dependent variable (CTSR): The results shown in the table indicate that the effect size of independent variable (MCm) on dependent variable (CTSR) has been equal to 2.183 during (2005-2010), and significance level is 0.000 that is less than error level of 0.05; it means that observed coefficient is positive and significant. Therefore, it can be said that there is a positive and significant relationship between marketing commitments and cumulative total stockholder return.

Third case of dependent variable (CAR): The results shown in the table indicate that the effect size of independent variable (MCm) on dependent variable (CAR) has been equal to 1.134 during (2005-2010), and significance level is 0.000 that is less than error level of 0.05; it means that observed coefficient is positive and significant. Therefore, it can be said that there is a positive and significant relationship between marketing commitments and cumulative abnormal return.

Based on the results of analyzing research hypotheses, it is concluded that marketing commitments (MCm) has a positive and significant effect on total shareholder return (TSR), cumulative total stockholder return (CTSR) and cumulative abnormal return (CAR) at the time of recession (2011-2015). Hence, the first hypothesis of research is accepted at 95% confidence level, and there is a significant relationship between marketing costs and stock returns of companies listed in the Tehran Stock Exchange at the time of recession. Also, based on the results, it is said that marketing commitments (MCm) has a positive and significant effect on total shareholder return (TSR), cumulative total stockholder return (CTSR) and cumulative abnormal return (CAR) at the time of growth (2005-2010). Hence, the second hypothesis of research is accepted at 95% confidence level, and there is a significant relationship between marketing costs and stock returns of companies listed in the Tehran Stock Exchange at the time of growth.

Conclusion

After analyzing the hypotheses and conducting statistical tests, it can be concluded that there is a significant relationship between marketing costs and stock returns at the time of recession and growth. There is no difference in the rate of stock return at both periods of recession and growth. It means that corporate executives have used a consistent procedure in all periods, and have not changed their programs. Regarding this hypothesis, researchers have come to different results. Most studies have shown that managers change their marketing costs at the time of recession and growth. Imran et al. (2016) also showed that marketing commitments at the time of recession leads to appropriate returns in stock market. Based on the results of the research, it is suggested that corporate executives and managers who have more access to resources at the time of economic growth, turn their products into high-impact brands among customers using their potential marketing resources in order to be able to benefit from this competitive advantage at the time of recession.

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