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Investigating Joint Effects of Brand Value and Advertising Expenditure on Corporate Financial Performance and Stock Returns

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ABSTRACT

Customer-oriented and firm-oriented perspectives are two dominant perspectives adopted in brand valuation. The former is the same as the behavioral marketing approach, while the latter focuses on financial data. The study used two financially focused brand valuation methods. The first method takes into account the three dimensions of marketing, finance, and accounting, and is known as the corporate brand success (CBS) valuation. The second method employed Tobin's q ratio for brand valuation. Finally, the authors investigated the joint effects of brand value (from both methods) and advertising expenditure on corporate financial performance and stock returns of 27 food industry companies listed in Tehran Stock Exchange, Iran. To this end, unbalanced panel data modeling was used with 378 observations for 21 years. The results confirmed the joint effect of advertising budget and brand value (from two methods) on return on assets, as an indicator of corporate financial performance. Regarding the second hypothesis, CBS valuation only confirmed the effect of brand value on stock returns. However, the entire hypothesis (i.e. the joint effect of advertising budget and brand value on stock returns) was confirmed when Tobin's q ratio was used.

Keywords:

Brand value, advertising, return on assets, stock returns.

1. Introduction

Today, cost management techniques are used by organizations in order to survive and generate more competitive advantages. Just as a firm's management is held accountable to the shareholders for maximizing firm profitability, marketers are increasingly pressed to demonstrate to the senior management their profit contribution through effective and efficient use of firm resources. Supporting this imperative, marketing scholars have argued that greater financial accountability is essential for marketing' s credibility as a business function, empowering marketers in the executive suite, and enabling better resource allocation to strategic activities. In response, there has been a dramatic increase in research at the interface of marketing and finance focused on the relationship between marketing initiatives and various stock-market-based measures, including short-term and long-term stock returns, stock price variation, and firm market value. The balance of the accumulating evidence suggests that marketing activity has a beneficial impact on these financial metrics [16]. According to Aaker [2], intangible assets are the most critical assets of organizations. However, the main problem is that intangible assets are not considered capital assets and are not included in corporate balance sheets and financial statements. Today companies are aware of the importance of their intangible assets. In the past, the value of a firm was determined solely based on its tangible (physical) assets such as land, buildings, capital, and investments. By understanding the concept of brand management, organizations can perceive the significant effects of brand value and intangible assets on their performance. Different organizations invest heavily on advertising, marketing, and promotional activities to create brand value not only for their products but also for the whole organization [10] and most organizations often use advertising as a strategy to create brand value [17]. The issue of branding has become one of the most exciting marketing topics in recent years. The estimated brand value of companies may make up a significant portion of their physical assets;. The valuation of return on advertising and marketing activities in financial terms is a significant challenge facing the marketing and brand management sectors. Marketing decisions can have significant effects on an organization's operational and financial performance. In addition,the marketing budget substantially affects an organization's cost structure [9]. However many CEOs in Iran believe that advertising and branding expenses are unnecessary. This may be due to the fact that no relationship has been found between these expenses and the financial returns and performance of companies. Therefore, if this relationship is established, CEOs' attitude will change and marketing managers will quickly address such issues. However, organizations will no longer need a marketing sector if these costs are not financially justified [23]. Therefore, this study aimed to investigate the joint effects of advertising and brand value on corporate financial performance by calculating stock returns (SR) and return on assets (ROA).

2. Review of the Related Literature

The Resource-Based Review (RBV) attributes the competitive advantage of a corporation to its total resources. In accordance with this approach, all assets of a corporation, its particular capabilities, organizational processes, business features, its information and knowledge, and anything helping organization to increase its efficiency and effectiveness are regarded as the corporation's resource [3]. This theory is related to corporation asset and brand value, and the relationship between them and return on assets (ROA). Central to the RBV approach is the theory that a company's internal resources equally sustain firm growth in addition to its external resources [18].

Since a brand is considered as an asset, which creates current and future income and cash flow in the organization, therefore the market value of the organization and consequently shareholders value should be affected by brand value [6].

Adham Chehab *et al.* [7] in a study entitled "More on intangibles: do stockholders benefit from brand values?" analyzed the relationship between brand value and short-term and long-term stock performance. According to them, intangible assets (such as brand value) are essential factors in creating corporate value and shareholder wealth. They also state that there are two important perspectives on brand value. One perspective addresses brand value from consumers' point of view, while the other focuses on the financial market reaction to brand value. This research focused on the financial performance of brands. Given the

great benefits of high brand value to organizations, the following two hypotheses were proposed:

Hypothesis 1: The stock market will react positively to a brand which has been ranked by a branding company (such as Interbrand) in the top 100 brands.

Hypothesis 2: Brand value significantly affects the stock market reactions.

Chehab *et al.* used the list of the top 100 most valuable brands (of non-financial companies) published by Interbrand Company during 2001-2012 to test the above hypotheses. The cumulative abnormal returns (CARs) between 2001 and 2012 were calculated to determine the stock market reaction to the Interbrand ranking. They introduced brand value and capital as significant determinants of CARs. They also concluded that consumers show insignificant positive reactions to Interbrand ranking, probably due to their unawareness of such rankings.

Dutordoir *et al.* [8] conducted a study entitled "Stock price reactions to brand value announcements: magnitude and moderators" to investigate the effect of brand value changes on stock returns. The first hypothesis investigated the effect of brand value on stock returns. Other hypotheses examined this effect in firms with different liquidity structures, products, investment risk levels, and branding strategies. Brand value was calculated based on the Interbrand rankings, and 80 companies from different industries were selected as the study population. Finally, manufacturers of durable goods, non-durable goods, non-financial service providers, and financial service providers accounted for 37%, 36%, 20%, and 5% of the sample, respectively. The results confirmed the positive effect of brand value changes on stock returns.

Billett, Jiang and Rego [5] investigated the effect of consumer perceptions of products on stock returns. To this end, they studied consumer feedbacks on 1200 brands and concluded that highly prestigious brands have more excellent positions in the stock market.

Belo *et al.* [4] defined brand name as an intangible asset that represents the value placed on a company's products by its customers, which differentiating its goods from competitors. Therefore, brand name is a significant competitive advantage for companies. The researchers also examined the effect of brand name on corporate value and risk. They calculated brand value using advertising costs, and found that greater focus on the brand name can lead to higher stock returns.

Ruenrom and Pattaratanakun [22] evaluated corporate brand success. They proposed a new corporate brand success valuation tool that integrates the marketing, finance, and accounting dimensions of business administration. They also investigated the relationship between brand name and sales revenues, and found a direct relationship between these two variables.

Krik *et al.* [15] investigated the relationship between brand value and firm value. They argued that a firm's stock price represents investor perceptions of the current and future value of its tangible and intangible assets. Finally, they found that a firm's brand name has a direct relationship with its stock price.

Peterson and Jeong [19] investigated the impact of research and development (R&D) and advertising expenditure on brand value and corporate financial performance. They found a significant relationship between marketing activities and the financial performance of the studied companies.

Ukiwe [25] proposed the following hypotheses in his study on the joint impact of advertising budget and brand value on corporate financial performance and stock returns:

H1: Advertising budget and brand value have a joint positive effect on return on assets.

H2: Advertising budget and brand value have a joint positive effect on firms' stock returns.

To test these hypotheses, he selected 17 PC-based firms listed on the Interbrand website from 2000 to 2007. He found that brand value and advertising budget can predict ROA. In addition, in the analysis of the effect of independent variables, a significant relationship was observed between brand value and ROA.

Regarding the second hypothesis, it was found that advertising budget and brand value cannot predict stock returns. Therefore, other financial factors are supposed to have more substantial effects on stock returns.

Hill *et al.* [11] indicate that growing body of research provides robust evidence of a direct significant link between advertising expenditures and various measures of financial performance(e.g., revenue growth, earnings, and stock returns)

Eng and Keh [9] studies showed that advertising over a period of three to four years affects brand value. Also, the operational turnover of advertising can

measure the efficiency and effectiveness of advertising costs in a positive and long-term role of brand value for the organization [10].

Abdollah Khani and Ebrahimi [12] measured brand value using CBS valuation technique. They also investigated the relationships between brand value and sales with brand value and stock market values of 82 companies, and found direct relationships between brand value and sales, and between brand value and stock market values of the studied companies.

Rahnamay Roodposhti F. and Mohammad Jalili [21] used Tobin's q ratio as a new method for calculating economic value added (EVA). After calculating Tobin's q ratio, they found a positive correlation between this ratio and stock returns (R^2 = 20%). Therefore, they argued that Tobin's q ratio is the best indicator for calculating EVA in Iranian firms.

Azizi *et al.* [1] examined the effects of four main factors on brand equity. They used Tobin's q ratio to calculate brand equity. They found that advertising intensity, corporate age, and brand age positively influence brand equity, while market share does not affect this variable.

According to the objectives and theoretical foundations of the research, the following hypotheses have been developed:

Hypothesis 1- Advertising budget and brand value are jointly and positively associated with return on assets(ROA).

Return on assets is a financial indicator demonstrating profitability and success of the company, while what is appealing for shareholders is return on their investments. Therefore the resulted hypothesis as follows:

Hypothesis 2- Advertising budget and brand value are jointly and directly associated with stock return.

3. Research methodology

3.1. Statistical Population

In this study we desire to calculate the brand value of manufacturing company which their products were used by general consumers. We also want to examine the impact of this value and advertising budget of companies on their financial performance and stock return. According to our studies and interviews were done with professors, companies activating in the food industry were selected as the population. Considering the selected population, 27 companies and their data over a period of 21 years were studied

Since the studied population in this research involves food industry companies active in Tehran Stock Exchange, their financial statement data is available. We used the systematic elimination sampling method, which is a non-probability sampling method. Therefore the method will be non-probability sampling and based on information required, the selections will be judgmental.

4. Research variables

4.1. brand value

In this study, the brand value was considered as an independent variable. No reference institute in Iran has presented an indicator for calculating brand value. Therefore, in this study, corporate the brand success (CBS) valuation (developed by Ruenrom and Pattaratanakun [22]) and Tobin's q ratio (Azizi *et al.* [1]) were used for measuring the brand value.

4.1.1 CBS valuation

In the CBS valuation, enterprise (firm) value is calculated and used to measure brand value.

- **Enterprise valuation**

To calculate enterprise value, market capitalization (market value of stocks (MV) multiplied by the number of stocks outstanding (Q)) is added to preferred stocks (if any) and current liabilities, and then total amounts of cash are subtracted from the result:

Enterprise Value = (MV*Q) + Preferred Stock (if any) + Current Liabilities – Cash

- **Brand valuation**

The value of an enterprise includes the value of all its tangible and intangible assets. Therefore, it involves factors such as awareness, distinction, honesty, superiority and preference, attraction, market share, quality, and stability. Considering the fact that brand name is an intangible asset [14], in the brand valuation process, the book value of total assets (minus total amounts of cash) is subtracted from enterprise value and then added to the company's goodwill is an intangible asset. This relationship includes the marketing, finance, and accounting dimensions and can reflect corporate performance:

Brand Value (CBS Valuation) = Enterprise Value – (Book Value of Total Assets – Cash) + Goodwill

4.1.2 Tobin's q ratio

Tobin's q ratio is one of the most valid indicators used for the assessment of corporate performance. It was presented by James Tobin (1969) and is defined as the ratio of market value of an asset to its replacement cost. Tobin introduced this theory to predict whether capital investment increases or decreases overtime. Larger ratios indicate better brand names [1]. According to Simon and Sullivan [24], companies with Tobin's q ratios larger than 1 have an abundant intangible assets supply. Indeed:

a) if Tobin's q ratio > 1, then brand equity is positive;
b) if Tobin's q ratio = 1, then brand equity is zero, and
c) if Tobin's q ratio < 1, then brand equity is negative [1]. In this study, the following formula was used to calculate Tobin's q ratio:

Tobin's q ratio = Total (Current and Non-current) Liabilities + Preferred Stock + Common Stock/Total Assets

The above formula was presented by Perfect and Wiles [20]. They found a positive correlation between this formula and Lindenberg and Ross' formula (r = 0.931).

4.2. Advertising expenditure

Financial statements of some companies listed in stock exchange markets do not contain advertising expenditure; therefore, similar to the studies of Kapareliotis Panopoulos [12] and Azizi *et al.* [1], this study also used administrative expenses and sales as an estimate of advertising expenditure.

4.3. Return on assets and stock returns

Return on assets and stock returns were considered as two dependent variables.

Return on assets is calculated by dividing a company's after-tax net income by the book value of its total assets. To calculate stock returns, dividends plus the stock price at the beginning of the fiscal year is subtracted from the stock price at the end of the fiscal year and the result is divided by the stock price at the beginning of the fiscal year.

Stock Returns = Stock Price at the End of the Fiscal Year – (Dividends + Stock Price at the Beginning of the Fiscal Year)/Stock Price at the Beginning of the Fiscal Year

5. Research findings

Based on the above table, the mean (± SD) of stock returns is 45.847 (± 122.197); these data are incredibly skewed to the right and have a very high Kurtosis. The mean (± SD) of return on assets is 11.2207 (± 13.117); these data are slightly skewed to the right and have a slightly high Kurtosis. The mean (± SD) of advertising expenditure is 33489.17 (± 65197.32); these data are skewed to the right and have a relatively high Kurtosis. The mean (± SD) of brand value is 5.38E+11 (± 1.38E+12); these data are extremely skewed to the right and have a very high Kurtosis. Finally, the mean (± SD) of Tobin's q ratio is 792491.1 (± 673944.6), and the skewness and kurtosis values are positive.

Table 1: Measures of central tendency and dispersion

Variable	Number	Lost	Mean	SD	Variance	Skewness	Kurtosis
Stock returns (SR)	378	189	45.8474	122.1975	14932.24	0.213	0.325
Return on assets (ROA)	378	189	11.2207	13.1175	172.069	0. 33	0.467
Advertising expenditure (AER)	378	189	33489.17	65197.32	3.25E+09	1.98	1.805
Brand value (BV)	378	189	5.38E+11	1.38E+12	1.92E+24	1.902	1.636
Tobin's Q Ratio	378	189	792491.1	673944.6	4.54E+11	1.503	1.476

5.1 Goodness of fit of the first model

Model 1: ROAit = B1i + B2 AERit + B3 BVit + B4 (AERit * BVit)

As shown in Table 2, in the Chow test, F < 0.05; therefore, panel data modeling must be used, and Hausman test must be conducted to differentiate between the fixed effects model and the random effects model. Based on the Hausman test results, H0 is rejected; thus, the fixed effects model is preferred over the random effects model (Sig. < 0.05). Regarding the relationship between return on assets (ROA) and advertising expenditure (AER), significance level (Sig. = 0.0148) < 0.05 and the negative beta value indicates a significant negative

relationship between the two variables. Regarding the relationship between ROA and brand value (BV), the significance level (Sig. = 0.0411) < 0.05, and the positive beta value indicates a significant positive relationship between the two variables. In the analysis of the joint effect of advertising expenditure and brand value (AER*BV) on ROA, significance level (Sig. = 0.0194) < 0.05, and the positive beta value indicates a significant positive relationship between AER and BV with ROA. Therefore, the first hypothesis is confirmed. It can be said that there is a significant relationship between the independent variables of advertising expenditure and brand value with the dependent variable of return on assets.

Table 2: Goodness of fit results for the first regression model

Variable	P-value	t-statistic	Sig.	Result	Direction of Relationship
C	7.595714	6.173998	0	Confirmed	+
AER	2.81E-5	- 2.45104	0.0148	Confirmed	-
BV	1.31E-12	2.050963	0.0411	Confirmed	+
AER*BV	4.02E-18	2.349399	0.0194	Confirmed	+
AR (1)	0.676379	13.25505	0	Confirmed	+
Indicators of Significant F = 28.687; P = 0.001; R^2 = 0.721; R^2_{adj} = 0.696; DW = 2.451					
Chow Test F = 5.734; P = 0.001			Hausman Test x^2 = 27.164; P = 0.001		

5.2. Goodness of fit of the second model

Model 2: SRit = B1i + B2 AERit + B3 BVit + B4 (AERit*BVit)

As shown in the above table, in the Chow test, F < 0.05; therefore, panel data modeling must be used. Based on the Hausman test results, H0 is rejected; therefore, the fixed effects model is preferred over the random effects model (Sig. < 0.05). Regarding the relationship between stock returns (SR) and advertising expenditure (AER), significance level (Sig. = 0.517) > 0.05; therefore, the variable advertising expenditure has no effect on stock returns. Regarding the relationship between SR and brand value (BV), the significance level (Sig. = 0.0037) < 0.05, and the positive beta value indicates a significant positive relationship between the two variables. Regarding the joint effect of advertising expenditure and brand value (AER*BV) on SR, significance level (Sig. = 0.4499) > 0.05; therefore, the variable of (AER*BV) has no effect on stock returns. Therefore, the second hypothesis is rejected, and there is no significant relationship between the independent variables of advertising expenditure and brand value with the dependent variable of stock returns.

Table 3: Goodness of fit results for the second regression model

Variable	P-value	t-statistic	Sig.	Result	Direction of Relationship
C	38.056	4.566	0.001	Confirmed	+
AER	- 9.99E-5	- 0.648	0.517	Rejected	
BV	2.24E-11	2.922	0.0037	Confirmed	+
AER*BV	- 1.74E-17	- 0.756	0.499	Rejected	
Indicators of Significant F = 2.227; P = 0.003; R^2 = 0.157; R^2_{adj} = 0.09; DW = 1.936					
Chow Test F = 1.922; P = 0.0414			Hausman Test x^2 = 21.464; P = 0.001		

5.3. Tobin's q ratio results

Models 3 and 4 were developed using Tobin's q ratio method instead of the CBS valuation. The results are provided in the following paragraphs.

Model 3: ROAit = B1i + B2 AERit + B3 Tobin's q ratio + B4 (AERit*Tobin's q ratio)

As shown in Table 4, in the Chow test, F < 0.05; therefore, panel data modeling must be used. Based on

the Hausman test results, H0 is rejected; therefore, the fixed effects model is preferred over the random effects model (Sig. < 0.05). The value of F-statistic (28.021) confirms the significance of the regression model as a whole. The values of coefficient of determination (R^2 = 0.724) and adjusted coefficient of determination (R^2_{adj} = 0.698) indicate that the independent variables of advertising expenditure and Tobin's q ratio directly explain about 72% of variations in the dependent variable of ROA. In the analysis of the joint effect of advertising expenditure and Tobin's q ratio (AER*Tobin's q ratio) on ROA, significance level (Sig. = 0.000) < 0.05. Therefore, the first hypothesis is confirmed, and it can be said that there is a significant relationship between the independent variables of advertising expenditure and Tobin's q ratio with the dependent variable of return on assets.

Model 4: SRit = B1i + B2 AERit + B3 Tobin's q ratio + B4 (AERit*Tobin's q ratio)

As shown in the above table, in the Chow test, F < 0.05; therefore, panel data modeling must be used. Based on the Hausman test results, H0 is rejected; therefore, fixed effects model is preferred over random effects model (Sig. < 0.05). The value of F-statistic (4.246) confirms the significance of the regression model. The values of coefficient of determination (R^2 = 0.261) and adjusted coefficient of determination (R^2_{adj} = 0.199) indicate that the independent variables of advertising expenditure and Tobin's q ratio directly explain about 20% of variations in the dependent variable of SR. Regarding the joint effect of advertising expenditure and Tobin's q ratio (AER*Tobin's q ratio) on SR, significance level (Sig. = 0.0002) < 0.05 and the beta value is positive; therefore, the second hypothesis is confirmed and there is a significant relationship between the independent variables of advertising expenditure and Tobin's q ratio with the dependent variable of stock returns.

Table 4: Goodness of fit results for the third regression model

Variable	P-value	t-statistic	Sig.	Result	Direction of Relationship
C	8.239	7.452899	0	Confirmed	+
AER	4.43E-5	- 4.499624	0	Confirmed	+
Tobin's q ratio	1.66E-8	0.029427	0.9765	Rejected	
AER*Tobin's q ratio	5.52E-11	11.34397	0	Confirmed	+
Indicators of Significant F = 28.021; P = 0.001; R^2 = 0.724; R^2_{adj} = 0.698; DW = 2.32					
Chow Test F = 3.959; P = 0.001			Hausman Test x^2 = 21.334; P = 0.001		

Table 5: Goodness of fit results for the fourth regression model

Variable	P-value	t-statistic	Sig.	Result	Direction of Relationship
C	- 24.391	- 2.17165	0.0306	Confirmed	+
AER	- 0.000181	- 2.09468	0.0369	Confirmed	+
Tobin's q ratio	8.33E-5	4.054757	0.0001	Rejected	
AER*Tobin's q ratio	4.74E-10	3.767919	0.0002	Confirmed	+
Indicators of Significant F = 4.246; P = 0.001; R^2 = 0.261; R^2_{adj} = 0.199; DW = 2.189					
Chow Test F = 1.574; P = 0.0389			Hausman Test x^2 = 15.723; P = 0.0013		

6. Conclusion and Recommendations

The research hypotheses were tested using two methods. The first hypothesis indicated that advertising expenditure and brand value have a joint direct effect on return on assets. This hypothesis was first tested using the CBS valuation technique, where the significance level (Sig. = 0.0194) was less than 0.05. In addition, the absolute value of the t-statistic

(2.349399) was greater than the tabulated value; thus, the H0 was rejected at 95% confidence level and H1 was confirmed. Therefore, the first hypothesis is confirmed. It can be said that there is a significant relationship between the independent variables of advertising expenditure and brand value with the dependent variable of return on assets. This hypothesis was then tested using Tobin's q ratio, where the significance level (Sig. = 0.000) was less than 0.05. The absolute value of the t-statistic (11.34397) was also greater than the tabulated value; thus, the variable of AER*Tobin's q ratio had a significant effect on ROA. Therefore, the first hypothesis is confirmed and there is a significant relationship between the independent variables of advertising expenditure and Tobin's q ratio with the dependent variable of return on assets. Thus, the results of both CBS valuation and Tobin's q ratio methods confirmed the first hypothesis. This is in agreement with the results of Ukiwe [25] who found that advertising budget and brand value can predict the return on assets. In addition, Eng and Keh [9] observed that advertising and brand value affect a firm's future return on assets.

The second hypothesis indicated that advertising expenditure and brand value have a joint direct effect on stock returns. This hypothesis was first tested using the CBS valuation technique, where the significance level (Sig. = 0.4499) was less than 0.05. Moreover, the t-statistic (- 0.756) value absolute was smaller than the tabulated value; hence, the variable of AER*BV had no effect on stock returns. Therefore, the second hypothesis is rejected, and there is no significant relationship between the independent variables of advertising expenditure and brand value with the dependent variable of stock returns. This hypothesis was then tested using Tobin's q ratio, where the significance level (Sig. = 0.0002) was less than 0.05. The absolute value of the t-statistic (3.767919) was also greater than the tabulated value; thus, the variable of AER*Tobin's q ratio had a significant effect on SR. Therefore, the second hypothesis is confirmed and there is a significant relationship between the independent variables of advertising expenditure and Tobin's q ratio with the dependent variable of stock returns. The results of CBS valuation rejected the second hypothesis indicating that there is no direct relationship between the independent variables of AER and BV with the dependent variable of SR. This is consistent with the results of Ukiwe [25] who found that advertising budget and brand value do not predict stock returns. The present results also showed that advertising expenditure has no effect on stock returns. This is consistent with the results of Eng and Keh [9] who found no significant relationship between advertising and stock returns. In the present study, brand value (from CBS valuation) significantly affected stock returns. This is consistent with the results of Dutordoir *et al.* [8] who confirmed the positive effect of brand value changes on stock returns. Belo *et al.* [4] found that companies can acquire higher stock returns by focusing on their brand names. Krik *et al.* [15] found that a firm's brand name is directly associated with its stock price. Mortanges and Van Riel [6] found a significant relationship between changes in brand equity and changes in shareholder value. Khani and Ebrahimi [13] measured brand value using the CBS valuation technique, and found a direct relationship between brand value and stock market value of several companies. Finally, the results of Tobin' q ratio method confirmed the second hypothesis, indicating a direct relationship between the independent variables of AER and BV with the dependent variable of SR.

The results of the first hypothesis confirmed the direct joint effect of advertising expenditure and brand value on return on assets; therefore, besides financial approaches, companies can use marketing techniques to increase return on assets. This relationship also justifies marketing costs and expenses.

In the second hypothesis, the relationship between brand value and stock returns was confirmed. In addition, based on the theoretical research framework, advertising expenditure is associated with brand value; hence, an increase in advertising expenditure leads to increased brand value, which in turn results in higher stock returns. Therefore, this non-financial approach (*i.e.* advertising) can be adopted to attract more shareholders and increase stock returns.

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