A comparative study on the effects of profitability and operating cash flow on the trademarks at different industries

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Abstract

The purpose of this paper is to comparatively examine the impacts of profitability and operating cash flow on the value of trademarks at different industries. The profitability and operating cash flow were the parameters studied for their impacts on trademarks. Data have been analyzed using a sample size of 76 at different companies for the period of 2007-2014, through total data integration and complete least square regression. There were two hypotheses in the paper that surveyed the relationship between two independent variables and values of the trademarks as the dependent variable. Results showed that the profitability and operating cash flow had significant relationships with the values of trademarks in the studied companies.

Keywords: Trademarks, profitability, operating cash flow, brand, performance indices.
Introduction
Whenever a property is discussed, one is unconsciously actuated towards concrete properties such as money, land, goods, etc. In today's world, however, another kind of ownership is considered, which is more important than tangible assets known as intellectual ownership. For instance, it is the direct result of human intellectual work and cannot be destroyed by consumption.
Intangible assets are referred to those that are detectable and of non-monetary and physical nature. To be recognizable means that it can be distinguished from a company’s detectable goodwill. There are two criteria for such a recognition. One is that it should be separable in order to be sold, transferred or leased, and secondly, it should arise from the contractual or other legal rights. Therefore, as a trademark represents a company's products and the future economic benefits for that company, it is classified as intangible assets. This article has tried to comparatively study the effects of profitability and operating cash flow on the trade marks at different industries.

Theoretical background
According to the accounting standards, trademarks, copyrights, and items of a similar nature occurred within a commercial unit should not be recognized as intangible assets. This is because the expenditures made for these types of assets within business units cannot be differentiated from the expenses of general business activities.
The central question in this research is that how the trademarks or brands of companies can be detected and measured, and that what are the affecting factors? For this purpose, the impacts of various factors such as profitability and operating cash flow of these assets are investigated.
The first and most important priority in this article is that how the trademarks can be imagined, detected, and measured. The outcomes of the present paper can help companies to be informed about the calculation of the value of their trademarks and make better decisions on the factors influencing them. Therefore, it is necessary for companies to take appropriate procedures in order to manage, control and report their trademarks and other intangible assets. This would result in increased profitability, stock price and corporate value. Factors affecting the trademarks are discussed as follows:

Profitability
The criteria for measuring the profitability and performance of a company are numerous divided into two categories of traditional and new criteria. Traditional measures include net income, earnings before interest and taxes, return on assets, and return on equity; new criteria are, for instance, economic value added and Tobin ratio, which are also used to measure the value of a company.
Earning is one of the most basic elements of financial statements that have always been considered, which is referred to as a measure of continuity, efficiency, and revision of the structure of contracts by the representatives of an economic entity.
Financial ratios and types of it
Financial ratios are the most widely used and popular tools of financial analysis. Usually, financial ratios alone do not matter, but they are considered important when compared with the following:
A) Previous financial ratios of the same company
B) Some pre-determined standards
C) Financial ratios of industries in which the company operates.
D) Financial ratios of companies in the same industry
Financial ratios are classified into three general groups of liquidity, leverage and profitability ratios.

Return on Equity
Return on equity (ROE) represents the amount of profit obtained for each unit of money invested by ordinary shareholders. It can be calculated by the following formula:
1) This ratio is obtained by dividing the net profit belonging to ordinary stockholders (net earning minus any dividends owned by preferred shareholders) by the total equities of ordinary stockholders.

\[ \text{ROE} = \frac{\text{net profit belonging to common stockholders}}{\text{the equity of ordinary shareholders}} \]

2) This ratio is determined through dividing the net profit by equity as follows:

\[ \text{Return on Equity (in percent)} = \frac{\text{Net profit}}{\text{equity}} \times 100 \]

Ratio of profit to the price of each share
This ratio is an important ratio and index in discussing on financial management and assessment of a company’s status. It is a category of profitability ratio showing the percentage of return an investor will earn per investment on each share.

Earnings per share
Common stock is a financial asset that represents ownership in a company. The person who purchases the common stock of a company will acquire the ownership in that company and shares in the company's income; the holder of common stock will take losses if any loss occurs. Earnings per share (EPS) are calculated by dividing the net profit belonging to ordinary stockholders by the number of ordinary shares:

\[ EPS = \frac{\text{EBIT} - I}{N} (1 - T) \]

Where:
- \( EPS \): Accounting earnings belonging to each share (earnings per share)
- \( EBIT \): Earnings before interest and tax
- \( I \): The interest accrued
- \( T \): Tax rate
- \( N \): Number of common stocks

If preferred dividends (DP) is present, the above formula will be as follows:

\[ EPS = \frac{\text{EBIT} - I}{N} (1 - T) - \frac{\text{DP}}{N} \]
According to the Act of the General Assembly of the Shareholders, which is paid after deduction of gross cash dividend (DPS) per share taxes is estimated as follows? The gross dividend per share = proposed gross dividend / number of shares

**Stock price and its determinants**
The stock price is changeable by the influence of many factors. Stock price should be determined in two different stages based on a series of fundamentals and factors. The first step is the primarily basic price, and the next steps are daily and secondary prices.

**Operating cash flow**
The general term ‘funds’ is the plural form of fund meaning cash. However, funds have a wider meaning in accounting term including any cash or its equivalent coming into/out of an institute. From this viewpoint, funds account for critical resources at a business institute, which by creating a balance between available funds and cash needs is the most important factor for the economic health of any institution.

**Literature review**
Results of a study by Morgan and Rego (2009) in the U.S exchange showed that the cost of sales, cash flow, and market share had a significant relationship with the value of trademarks, but they were not significantly related to the advertising costs.

Namazi and Ebrahimi (2009) studied the effects of intellectual capital on the current and future operations of the companies listed on the Tehran Stock Exchange. The results indicated that regardless of firm size, the debt structure and financial performance in the past; there were significant relationships among the intellectual capital and the current and future operations of all the companies and the industries.

**Research hypotheses**
**First hypothesis:** There is a significant positive relationship between the profitability and brand value.

**The second hypothesis:** There is a significant positive relationship between the operating cash flow and brand value.

**Variables and empirical models**
In this study, two financial variables were used including one dependent and seven independent variables (Table 1).

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on Equity</td>
<td>Financial variable</td>
</tr>
<tr>
<td>Operating cash flow</td>
<td>Financial variable</td>
</tr>
<tr>
<td></td>
<td>Value of trademarks</td>
</tr>
<tr>
<td></td>
<td>Value of trademarks</td>
</tr>
</tbody>
</table>
Independent variables

1. **Profitability**: The criteria for measuring the profitability in this study are return on equity. This variable is calculated through the net profit divided by total equity rights.

2. **Operating cash flow**: is the sum of funds earned by the company's operations during the year, which derived from the statement of cash flows. To increase the comparability of the companies, the operating cash flow will be divided by total assets.

A multi-variable regression model has been developed to examine the relationship between independent and the dependent variables in this study:

The left variable (trade value) in this model represents the value of the trademark (the dependent variable).

\[ ROE \] and \[ CFO \], respectively, denote the profitability and operating cash flow (independent variables). Additionally, \( i \) and \( t \) in the model represent the company \( i \) in year \( t \), and \( e \) marks the error coefficient of the model.

6. **Research methodology**

On the basis of objective, the present research is descriptive – functional, and based on the nature and method is a correlational one. The study is based on a quasi-experimental research design using post-hoc (through the past) approach.

7-**Population and statistical sample**

The population in this study includes all companies that have been accepted in the Tehran Stock Exchange between 2007 -2014 and have maintained their membership in this period.

**Research findings**

**Brand value of the sampled companies**

The indicator used to compare the value of the trademarks studied is the market value. This is obtained from the difference between market value and book value adjusted for the company's stock using the general price level index. These indices have been extracted from the Central Bank web site for the years 2007 to 2014 (Table 2).

**Table (2). The general price level index**

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>15.4</td>
<td>10.4</td>
<td>11.9</td>
<td>18.4</td>
<td>25.4</td>
<td>10.8</td>
<td>9.6</td>
<td>8.7</td>
</tr>
</tbody>
</table>

The impact of inflation on the book value of equity has been applied such that the amount of the balance sheet of companies, in addition to changes resulting from financial and accounting events over several years, have been adjusted with the rate of yearly inflation.

For this purpose, the average value of the companies’ trademarks has been employed during the period of investigation (2007-2014). As is seen, the maximum amount of the index is 6,241,489 million Rials, which is owned by Iran Khodro auto industry. The lowest index value of the trademarks (-248,286 million Rials) belongs to Kerman Tire Manufacturing Company from the rubber and plastic industry.
Table 3. Companies with the highest and lowest trademark values calculated

<table>
<thead>
<tr>
<th>Row</th>
<th>Company name</th>
<th>Highest value (million rials)</th>
<th>Company Name</th>
<th>Lowest value (million rials)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Iran Khodro</td>
<td>6241489</td>
<td>Kerman Tire Manufacturing</td>
<td>-248,286</td>
</tr>
<tr>
<td>2</td>
<td>Kurdistan Cement</td>
<td>3817352</td>
<td>Plastiran Manufacturing</td>
<td>-243,834</td>
</tr>
<tr>
<td>3</td>
<td>Fars &amp; Khuzestan Cement</td>
<td>3440554</td>
<td>SAIPA Diesel</td>
<td>-216,094</td>
</tr>
<tr>
<td>4</td>
<td>Calcimine</td>
<td>2598362</td>
<td>Iran Khodro Diesel</td>
<td>-192,654</td>
</tr>
<tr>
<td>5</td>
<td>Arak Petrochemical</td>
<td>1999463</td>
<td>Kaf Company</td>
<td>-92,289</td>
</tr>
<tr>
<td>6</td>
<td>Fars Chemical Industries</td>
<td>1869029</td>
<td>Absál</td>
<td>-79,637</td>
</tr>
<tr>
<td>7</td>
<td>Sadid Industrial Group</td>
<td>1709843</td>
<td>Gas extraction pipe</td>
<td>-58,872</td>
</tr>
<tr>
<td>8</td>
<td>Dorood Cement</td>
<td>1668341</td>
<td>Iran Refractories Co.</td>
<td>-36,948</td>
</tr>
<tr>
<td>9</td>
<td>Abadan Petrochemical</td>
<td>1503622</td>
<td>Sahand Rubber Industries</td>
<td>-32,190</td>
</tr>
<tr>
<td>10</td>
<td>Quaen Cement</td>
<td>1453928</td>
<td>Plasco kpar</td>
<td>-26,263</td>
</tr>
</tbody>
</table>

Reference: Mohaghegh calculations

Descriptive statistics
In this study, the study variables have been calculated using the raw data, and then the descriptive statistics including mean, median, maximum, minimum, and standard deviation were calculated (Table 4). The amounts mentioned only provide overview of the distribution of research data.

Table 4: Descriptive statistics of this study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Symbol</th>
<th>Average</th>
<th>Middle</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Standard deviation</th>
<th>No. of observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of trade marks (unadjusted)</td>
<td>Trade value</td>
<td>583792</td>
<td>224792</td>
<td>6649382</td>
<td>-286473</td>
<td>121867</td>
<td>456</td>
</tr>
<tr>
<td>The value of trade marks (adjusted for inflation)</td>
<td>Trade Value</td>
<td>532172</td>
<td>106941</td>
<td>6289108</td>
<td>-248989</td>
<td>106586</td>
<td>456</td>
</tr>
<tr>
<td>Return on Equity</td>
<td>ROE</td>
<td>0.4926</td>
<td>0.4189</td>
<td>0.6832</td>
<td>-0.0426</td>
<td>0.1983</td>
<td>456</td>
</tr>
</tbody>
</table>
The correlation coefficient test
Pearson’s correlation coefficient was used to determine the relationship between variables. Correlation study is a statistical tool that can be used to measure the degree to which a variable is linearly related to another one. Table 5 shows the correlation between the variables and their statistical significance (Sig or p-value).

Table 5. Pearson’s correlation coefficients between variables

<table>
<thead>
<tr>
<th></th>
<th>CFO</th>
<th>ROE</th>
<th>Trade Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFO</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>ROE</td>
<td>1.00</td>
<td>1.00</td>
<td>0.133</td>
</tr>
<tr>
<td>Trade Value</td>
<td>0.153</td>
<td>0.094</td>
<td>CFO</td>
</tr>
</tbody>
</table>

Source: Mohaghegh calculations

Test of research hypotheses
The Chow test was applied to select the appropriate method for estimating models at different periods of the combined data (Table 6). The method of estimating integrated data is a more appropriate option to estimate the models for testing study hypotheses.

Table 6. Chow test results

<table>
<thead>
<tr>
<th>Statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chow test to test the study model</td>
<td>0.2894</td>
</tr>
</tbody>
</table>

Source: Mohaghegh calculations

As shown in Table 7, F statistics for the research model is significant in both cases estimated at a confidence level of 99%. As a result, approximately 35 percent of the changes in dependent variable, i.e. the value of trademark and intangible assets of the sampled companies have been arisen by independent variables, and 65 percent are associated with changes in other factors.

Table 7. The results of testing study hypotheses at the level of combined data

<table>
<thead>
<tr>
<th>The second mode: Estimated adjusted model</th>
<th>The mode second: Estimated Unadjusted model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>t-static</strong></td>
<td><strong>p-value</strong></td>
</tr>
<tr>
<td>6.7954 (0.0000)</td>
<td>-0.4128</td>
</tr>
</tbody>
</table>
The results of first hypothesis test
The relationship between return on equity and the value of trademarks was determined in the first hypothesis. T statistics related to the first independent variable (ROE) was significant at an error level of 1%. Accordingly, the relationship between return on equity and the brand value is confirmed for both models in the analysis of data.

The results of second hypothesis test
The second hypothesis examines the relationship between operating cash flow and the value of the trademark. T statistic related to operating cash flow variable (CFO) was significant at an error level of 1% because its significance level is less than 1%.

Conclusion
Due to the lack of revalued assets in the companies and the effect of inflation on the items in the financial statements as well as according to the criteria used in this study to measure and compare the trademarks of the companies studied, the book value was adjusted with the annual inflation rate to avoid a false distance between the market and book values of the stock. In general, the results of estimating the research model both before and after adjustment for the value of trademarks by annual inflation rates were similar and both hypotheses have been approved. So, it was observed that the general increase in prices and inflation rate have not affected the results and confirmation or rejection of the hypotheses. In addition, the results of testing each hypothesis were presented separately and compared with those in similar results. In summary, the results based on combined data showed that there is a significant positive relationship between the return on equity and the value of trademarks and as a result, the first hypothesis was confirmed at a confidence level of 99%.

Operating cash flow and brand value have a significant relationship at confidence level of 99%, therefore, the results confirm the second hypothesis with a direct relationship.
References
11. Statement of international accounting standards No. 38, june (2001), "intangible assets".