

Valuation of Trademarks and factors affecting it in the context companies listed in Tehran stock Exchange.

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Abstract: Valuation of Trademarks and factors affecting it in companies Listed in Tehran stock Exchange. The purpose of this research is to investigate the value of trademarks and factor affecting it in companies listed on Tehran stock Exchange, the factor that were examined in terms of their impact on trademarks included profitability, sales revenue, operating cash flow, intensity of advertising cost, the ratio of earnings to price per share, size and age of the firm. The data of the research have been analyzed using a statistical sample including 76 listed companies on Tehran stock Exchange for a time period between the years 1383 to 1388, in the method of combining all data and ordinary least squares regression. The current research included seven hypotheses which studied the relationship between independent variable. the results of the research suggested that profitability, sales revenue, operating cash flow, intensity of advertising cost, the ratio of earnings to price per share, and the age of the firm in the studied companies are significantly associated with the valuation of trademarks; however, the size of the (manufacturing) company is not significantly associated with trademarks.

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1- Introduction

Whenever we talk about property, unconsciously our mind is directed to concrete examples of property such as, money, land, goods, and so forth. This is while in nowadays world another kind of ownership is considered, which is for more important that tangible properties, and is known as intellectual property (or intangible property), in fact, this kind of properties has unique features compared to other goods and properties has unique features compared to other goods and products, such that it is a direct result of human intellectual work, and is not lost through consumption (Arabi,1388,page39).

Among various examples of industrial and intangible property (Such as patent, copyright, technical knowledge, right to design, etc), trademarks (brand) have an effective role in the development and earning more revenue for businesses (calboil,2005).

In this research we have tried to study how to measure one of the most significant company's capitals, that is trademark and effective factors on it among companies listed on Tehran stock Exchange. The result of this research can present a practical application, as well as making way for future research in this area.

2- The Otrical Basics of the Research

A- Indicators of profitability and Trademark's value:

Indicators of profitability and financial performance whose relationship to the value of

trademarks is being studied in this research include return on equities, sales revenue, and the ratio of profit per share to price per share. share holders and other potential in restore always look for gaining more profits and return. in order achieve their goal, they consider various indicators and variables including net profit, the amount of the company's dividends, etc. If sales revenue, net profit, and return on equities improves and more profit is paid to share holders (increase in the ratio of profit per share to its price) compared to the pervious years- then, share holders are satisfied with their investment in the company and as a result, stock trading volume of the company increases. This leads to further increase in share prices, and an increase in difference of the company's market value compared to its book value. the value of intangible property including trademarks.

B- Advertising and trademarks. Businesses are never need less of advertising. Advertising affects the behavior of consumers. positive Advertising decreases marketing expenses, and if we can attract new customers, then the revenue increases. Advertising has a direct influence on sales, and on increase in sales, in turn, is effective on company's profitability. The brand of businesses that have been popular through advertising competitors if they don't advertise continuously.

Advertising can lead to increase in consumption, and experience in using the product can be effective on the brand's value. Advertising affects brand links by presenting information on provable

properties, as price and physical features. More, advertising creates positive valuations and attitudes that are easily appreciable in our minds (Keller, 1993). So, it is expected that the value of trademarks (brands) goes up as the company's advertising costs increase.

C- company's non-financial properties and trademark's value in this research, the impact of two non-financial properties of the company on the value of their trademarks has been studied. These properties are company's size and life. Larger-sized companies having more resources, facilities, and opportunities over similar companies- by creating subsidiaries and branches at various points can achieve more share of products market or production services, and also expand their activity level in the whole country, or even in the international level. This means to introduce one's brand to the public. Larger companies because of taking advantage of political opportunities, extensive advertising, and the government support can be more successful than their competitors. In addition, older companies because of experience and popularity gained over the time can maintain their position against competitors. Of course, this requires going forward with the latest technology and applying new methods of production and marketing.

3- The Background of Marketing

In this section, home and foreign researches that have already been done in this area are presented in short as follows:

Kapareliotis and Panopoulos (2010) studied the effects of four variables including marketing costs, research and development costs, company's life, and brand's life. These researchers according to data access and reporting in Greece stock Exchange, studied 37 companies with data of the eight year period from 2000 to 2007. The result of their research showed that marketing costs, company's life and brand's life have a positive significant relationship with the value of the brand's life; however there is no relationship between research and development costs and the value of the brand.

Sahay and Piliyai (2009) investigated the impact of certain variables on brand value in India stock exchange and concluded that the ratio of advertising costs to the total marketing costs, and the ratio of costs to the total marketing costs have a positive significant (meaning full) relationship with brand value.

The results of studies by Morgan and Rego (2009) showed that sales costs, cash flows and market share have a significant relation with trademarks, but advertising costs don't have such a relationship with trademarks. Belkaoui (2003) in his study investigated the relationship between intellectual capital and the

performance the U.S. multinational businesses. He concluded that there is a significant relationship between the aforementioned variables. Also, Pfeil in his research concluded that the value of intellectual capital has a positive significant relationship with the company's performance.

Azizi, Darishi, and Namayan (1390) in their research in listed [manufacturing] companies on Tehran stock Exchange between 1380 to 1388 studied the effects of certain variables on mentioned company's brand value by using (kiotobin standard). The result of their research showed that intensity of advertising company's life brand's life, and market share have a positive significant and relationship with brand value.

Namazi and Ebrahimi (1388) did a research titled as (the study of the effects of intellectual capital on current and future performances of listed companies on Tehran stock Exchange).

The results indicate that regardless of the company size, its debt structure and post financial performance, there is a positive significant relationship between intellectual capital, current and future financial performance of the company both in the level of all companies and in the level of industries.

4- The Research Hypotheses

The research hypotheses were developed based on the theoretical basics and previous researches as follows:

First hypothesis: There is a positive significant relationship between profitability and value of the trademark.

Second hypothesis: There is a positive significant relationship between sales revenue and value of the trademark.

Third hypothesis: There is a positive significant relationship between operating cash flow and value of the trademark.

Fourth hypothesis: There is a positive significant relationship between intensity of advertising and value of the trademark.

Fifth hypothesis: There is a positive significant relationship between the ratio of profit to price per share and value of the trademark.

Sixth hypothesis: There is a positive significant relationship between the company size and value of the trademark.

5- Variables and Experimental Models of Research

In this research eight financial and non-financial variables including a dependent and seven independent variables are used as stated in table (1).

Table(1) separation financial and non-financial variables effective on value of the trademark.

Independent variables		Dependent variables
Return Equities	Financial Variable	Value of the Trademarks
Sales revenue	Financial Variable	Value of the Trademarks
Operating cash flow	Financial Variable	Value of the Trademarks
Advertising costs	Financial Variable	Value of the Trademarks
Ratio of profit per share	Financial Variable	Value of the Trademarks
To price per share	Financial Variable	Value of the Trademarks
Company size	Financial Variable	Value of the Trademarks
Company life	Financial Variable	Value of the Trademarks

A- Independent variables

In order to measure the value of trademarks, models, and methods introduced by Fernandez(2008) have been used. it is very difficult to introduce same standards for measuring company's trademarks. Fernandez(2008) has offered different ways of measuring trademarks as follows:

- 1- The value of company's market value of shares.
- 2- Difference between market value and book value of the company's shares (added value of market). This method is calculated by some companies in the form of difference between market value of shares and adjusted book value.
- 3- Difference between market value and book value of shares minus the value of the management team power(intellectual capital).
- 4- Difference between the value of the company with the same kind of product, but without brand.
- 5- present value of the company's free cash flow by using the expected return rate.

In the present research, second method introduced by Fernandez(2008) is used as an indicator to determine the value of trademarks titled as added value of market. According to this method, the value of trademark equals the difference between market value of the company's shares and book value of its shares. The reason for choosing this method is its accessibility to related variables from financial statements of sample companies for calculations of course, this method dose not calculate the value of comparing the value of trademarks in the studied company's brand and trademark would worth more than other companies.

B- Independent variables

- 1- Profitability: the criterion for measuring profitability in this research is return on equities. this variable is obtained from dividing net profit by total of equities.
- 2- sales revenue: equals company's total sales during the year. it can be derived from income

statement, for comparability of companies, sales revenue is divided by total assets.

- 3- Operating cash flow: equals the total cash obtained from company's operations during the year. it can be derived from the statement of cash flow. in order to increase the comparability of companies, operating cash flow is also divided by total assets(properties).
- 4- intensity of advertising costs to its total assets.
- 5- the ratio of profit to price per share: equals the ratio of earnings per share to price per share.
- 6- The size of the company's: equals company's term of activity; that is difference between the current year and the establishment year of the company is calculated.

Regression model for studying the relationship between independent and dependent variables of the research is formulated as multivariable model as follows:

$$\text{Trade value} = \beta_0 + \beta_1 \text{ROE} + \beta_2 \text{sales}_{it} + \beta_3 \text{CFO}_{it} + \beta_4 \text{adver}_{it} + \beta_5 \text{E/P}_{it} + \beta_6 \text{L size} + \beta_7 \text{Age}_{it} + e_{it}$$

left side variable(Trade value) in this model indicates the value of trademark (dependent variable). ROE, sale, CFO, adver, EIP, L size, and age respectively represent profitability, sales revenue, operating cash flow, intensity of advertising costs, the ratio of earning to price per share, company size and life (independent variables). in addition (i) and (t) in this model mean Ith company in tth year, and (e) represents the model's coefficient of error.

6- Research Method

This research is functional-descriptive in terms of purpose, and the kind of solidarity in terms of nature and method. this research- based on research plan-is semi empirical, and based on approach, it is post event (through post data).

7- Statistical Community and Sampling

Statistical community in this research includes all companies listed on Tehran stoke Exchange between 1383 to 1388, and maintained their membership during this period. the reason for choosing and studying stoke companies is the possibility of easier access to financial information of these companies and having more homogenous data

because of the regulations of Tehran stock Exchange organization total number of listed companies on Tehran stock Exchange amounts to 422 companies.

the method of choosing sample in this research is (systematic elimination method). in this method, among all listed companies, those not qualified and finally all remaining companies were selected for testing.

Companies should have full information for all financial statements such as balance sheet, income statement, and the statement of cash flow.

Their financial (Fiscal) year should be ended by Esfand 29th.

Companies should be active in Tehran stock Exchange during the period of the research.

Companies should not change fiscal year during the research.

- Companies should not be the kind of investment or financial intermediation.

in the present research, given the limitations mentioned, 76 companies were studied as the research sample.

8- Data Collection Method

In this research, data is collected in two steps, in the first step, library method is used in order to formulate theoretical basics of the research, and in the second step, in order to collect desired data, the sample company's documents such as financial statements contained in CDs, presented by Tehran stock Exchange, organization and website of the Research, Development, and Islamic studies of Tehran stock Exchange, organization (<http://rdis.ir>) are used. Therefore data collection method is a field study method.

9- Hypothesis Testing Method and Tools

Data analysis and hypothesis testing have been used with the help of a statistical software called (E views). In order for testing the research hypotheses, the multivariable regression model testing relying on combined approach of data is used. The use of combined data is a popular method there is no need to much statistics and information. yet, it answer many questions correctly (Ashraf zadeh and Mehregan, 1387). Another advantage of this method is that by

using it, the dynamism of variables over the time can be estimable. while in cross-sectional studies because of not including time in estimations, this is not possible (Zara Nejad and Anvari 1387). In this method, in order to select the kind of model estimation method, chi or restricted F-test and Hausman test are used.

10- The Research Findings

(10-1)- The value of trademark in sample companies

The index used for comparing the value of trademarks in the studied companies is market value added. This value is obtained from the difference between the adjusted market value and book value of the company's shares using index of general price level. in this research in order to create better comparability of trademarks value, the difference between market value of shares and book value, and be between zero and one. Indices of general price level mined from website of the central bank for between 1383 to 1388 are presented in table(2).

Table(2) : Indices of General price level

year	1383	1384	1385	1386	1387	1388
Index	15/4	10/4	11/9	18/4	25/4	10/8

- Source: Mined from website of (www.cbi.ir).

The impact of inflation index on book value of equities has been exerted in a way that amounts related to companies balance sheet- in addition to changes resulting from financial and accounting events over various years- have been adjusted using inflation rate each year. This causes some difference between market value and book value of share, resulting from general price level and inflation rate, to decrease.

(10-2)- Descriptive statistics

In this research, first using some raw data, the number of the research variables including are calculated, then descriptive statistics of the research including are range, median, maximum, minimum and standard deviation of the research data, are calculated and presented in the situation of the research data.

Table(4): Descriptive statistics of the research

variables	symbol	Average	Median	maximum	minimum	Standard Diviation	Number of observation
Trademark value	Trade value	583792	224792	6649382	-286473	121867	456
Trademark value inflation rated	Trade value	532172	106941	6289108	-248989	106586	456
Return on equities	ROE	0.4926	0.4189	0.6832	-0.0426	0.1983	456
Sales	Sales	0.6289	0.5838	1.3276	0.242	0.3216	456
Operating cash flow	CFE	0.5428	0.5528	0.8946	-0.2846	0.2168	456
Advertising	A dver	0.0954	0.0743	0.1627	0.0029	0.0102	456
Ratio of earning per share price	EIP	0.4890	0.4156	0.7829	-0.3176	0.1652	456
Company size	L size	5.4167	5.3287	6.0263	5.1672	0.1426	456
Company age	Age	21.7983	20.1178	52.00000	9.0000	8.1874	456

source: calculations by the research

(10-3) Correlation Coefficients Test

In order to determine the rate of relationship between variables, Pearson's correlation coefficient has been used. the study of correlation is a statistical tool by which we can measure the degree to which a variable is related to the other variable is related to the other variable in a linear way.

Correlation relationship between the research variables and their significance statistic (sig or p-value) is presented in table(5)

Table(5): pear son's correlation coefficients between the research variables

	Trade value	ROE	Sales	CFO	Adver	EIP	L size	Age
Trade value	1							
ROE	0/133	1						
Sales	0/188	0/349	1					
CFO	0/094	0/153	0/226	1				
Adver	0/322	0/102	0/186	0/216	1			
EIP	0/206	0/042	0/342	0/345	0/156	1		
L size	0/233	0/534	0/188	0/329	0/224	0/365	1	
Age	0/124	0/485	0/065	0/114	0/281	0/286	0/389	1

Source: calculations by the researcher

Painted parts indicate a significant correlation between variables in level %1 and %5.

(10-4) The Research Hypothesis Testing

In this research the number of sections (companies) is 76 and the number of year of the period is 6 year (1383 to 1388). So the number of the observations for testing hypotheses is 456 which are combined and then estimated by lasted squares in the introduced model. In order to choose a proper method for estimating mentioned model in various (time) sections and periods of combined data, chow test is used. If the statistic (F) is bigger than critical value, the null hypothesis is rejected and fixed effect model is accepted. The approach of fixed effect is acceptable only when we can explain the difference between companies and differences in intercept terms. in case of similar intercept terms, pooled data is used for hypothesis testing.

Results of chaw test is presented in table (6). Results of chaw test confirmed the null hypothesis of the test that intercept terms are the same in all periods.

So the ,method of pooled data estimation is a more appropriate option for estimation of the research hypothesis testing models. According to this method all data is combined and estimated by ordinary least squares regression.

Table (6): Results of chaw test

p-Value	Statistic	
0/6892	0/2894	Chaw test for studying the research model

Source: calculations by the research

After determining a proper model for testing hypothesis in this part the relationship between independent and dependent variables are studied by

estimating the research model using pooled data method.

Estimation of the research model in the level of total data combination has been done in two ways. First data related to the research variables including trademark value is estimated in the research model, before adjusting book value figures. Then in order to compare and study the effects of inflation rate, the model is estimated using inflation using ordinary least square regression model mentioned in two cases, are presented in table 6.

As you see in the tables, (F) statistic of the research model- in both estimation cases is generally significant (Prob= 0/000).

According to data on left side of the table, the coefficient of adjusted determination resulting from the estimation is 0/3489. We conclude that almost 35 percent of the dependent variable changes, that is the value of trademark and intangible assets of sample companies, result from independent variables, and the other 65 percent of its changes depend on other factors.

Source: calculations by the researcher

Dependent variable of the model: Trademark (Trade) value.

In order to study the significance of the model's coefficient t-statistic analysis is used. Error level of the significance of model's coefficient is taken %5. in order to confirm a significant relationship between independent and dependent variables, p-value of each variable should be less than this value. Dorbin Watson test is used for studying self-correlation between the model errors. Given that the rate of the

resulting Dorbin Watson statistic in both cases of the model estimation has been 1/9837 and 2/1318, self-correlation in the values if the model error is rejected.

(10-5)- Results of testing first hypothesis

In first hypothesis the relationship between return on equities and trademark value was investigated. Return on equities, is significant in error level of 1 percent, so the relationship between return on equities and trademark value is confirmed in total data analysis in both cases of the model estimation. coefficient of this variable has a positive sign that means there is a direct relationship between return on equities and trademark value among the examined companies.

This is because an increase in profitability in companies leads to an increase in profitability in companies leads to an increase in stock market prices, and given that in order to measure trademark value. The market will cause a higher value for trademarks and intangible assets of the company. results of funding related to this hypothesis are consistent with the results from research by banana (2006), Belkouei(2003).

(10-6) Results of Testing Second Hypothesis

The purpose of testing second hypothesis is to investing the relationship between sales revenue and trademark value. t-statistic of sales variable at error level of 5%, so the relationship between sales and trademark is confirmed, and the type of relationship is direct. that is as sales increase, trademark value will increase as well. results of findings on this hypothesis are consistent with the results of a research by Belkouei(2003).

(10-7) Results of testing third hypothesis

Third hypothesis studies the relationship between operating cash flow and trademark value. t-statistic of operating cash flow variable is significant at error of %1 because the relevant significant level is less than 1 percent. the type of relationship is also direct. Results of findings on this hypothesis are consistent with the results of a research by Morgan and Rego(2009).

(10-8) Results of testing fourth hypothesis

In fourth hypothesis the relationship between advertising costs and trademark value was studied. The relationship between intensity of advertising costs and trademark value is also confirmed at error level of 1 percent in both cases of the model estimation. Here, as well the type of relationship is direct. That is fourth hypothesis is also confirmed. Thus as advertising costs increase as well. This is because advertising increase in companies lead to introduction and identification of

the company and its products to the public, and this will increase the stock market price. Given that market price approach is used to measure trademark value, so an increase in stock market causes higher value for trademarks and intangible assets of the company. Results of finding on this hypothesis are consistent with research results by Fernandez(2008), Sahay and Piliai(2009), Azizi, Darishi and Namamian(1390). However, they are not the same as results of a research by Morgan and Rego(2009).

(10-9) Results of Testing Fifth Hypothesis

Fifth hypothesis explores the relationship between the ratio of earnings per share to its price (EIP) and trademark value. Results of the research at data level suggest that the ratio of (EIP) and trademark value has significant relationship with confidence level of %99 and therefore, research results confirm this hypothesis and the relationship is type of direct.

(10-10) Results of Testing Six hypothesis

Sixth hypothesis studies the relationship between company size and trademark value. Results of the research at combined data level suggested that the size of the company (total assets) and trademark value don't have a significant relationship and therefore, research results do not confirm this hypothesis. Possible reasons for rejecting this hypothesis at the level of total data. Combination can be sample company's incomplete or out of date data. In addition, various factors which are not considered and studied, influence trademark value. Results of finding on this hypothesis are not the same as those by kaparliotis and ponopulos(2010) and Azizi, Darvishi, and Namamian(1390).

(10-11) Results of Testing Seventh Hypothesis

The purpose of seventh hypothesis is to explore the relationship between company age and trademark value. It was expected that companies activity more years in the stock exchange, would have more valuable trademarks. Since, aging in company's activity leads to introducing more products and receiving an appropriate share of the market. According to the relationship between company's age and trademark value with %5 error level in both cases of the model estimation was confirmed and the type of relationship is direct. This shows that at %95 confidence level, the sample company's age leads to an increase in trademark value. Results of finding related to this hypothesis are consistent with those by kaparliotis and Ponopulos(2010) and Azizi, Darvishi, and Namamian(1390).

11- Conclusion and Suggestions

The method of estimating combined data and multivariable regression by the use of a sample including 76 listed companies listed on Tehran stock Exchange between 1383 to 1388 is used for testing the research hypothesis. Due to the lack of revaluation in companies, and given the standard(criterion) used in this research for measuring and comparing trademarks of the studied companies, book value of shares was adjusted using annual inflation rate so as to prevent from possible false distance between market value of shares and their book value (as an indicator for measuring trademarks). In general results of the research model estimation is the same in both cases-before and after the adjustment of trademark value by the annual inflation rate, and all hypothesis of the research are confirmed, except for sixth hypothesis. There fore we saw that the level of general increase in prices and inflation rate is not effective on rejecting or confirming the hypothesis. Next the results of each hypothesis are presented separately and then compared to those of similar researches.

Results of the research based on combined data, in short suggested that: There is a positive significant relationship between return on equities and trademark value, and as a result, it was confirmed at %99 confidence level. The coefficient of sale revenue variable is also significant, which indicates that at %95 confidence level, in the sample companies as sales revenue increases, trademark value index increases as well. operating cash flow and trademark value have a significant relationship with %99 confidence level and therefore, results of the third hypothesis are confirmed and the type of relationship is direct. There is a positive significant relationship between advertising costs and trademark value and as a result, fourth hypothesis is confirmed at confidence level of %99. thus with the increase of advertising costs, trademark value of the companies goes up, too. The ratio of (E/P) and trademark value have a significant relationship with %99 confidence level, and the relationship is type of direct, company's size (total assets) and there fore results of the sixth

hypothesis are not confirmed. the coefficient of the company's age variable is positive and significant which shows that at %95 confidence level, the sample company's age leads to an increase in trademark value. Based on the results obtained by research, we offer some suggestions for the future research as follows: A- the study of the impact of non financial variables such as the rate of share transactions, on trademark value. B- the study of the impact of profitability and financial performance on trademark value using other introduced methods that we did not use in this research. C- the study of the impact of profitability and financial performance indices on intellectual property value and other intangible properties. D- the study of profitability and operating cash flow on trademark value at the level of various industries, and comparing them. E- Doing research in the same topic, however, in order to present more information, trademark value should be studied in an industry to industry way inside and outside the country (here. Iran).

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