

# Comparison of the Price-Earnings Ratio (P/E Ratio) before and after the Use of Off-Balance Sheet Financing in Firms Listed in the Tehran Stock Exchange

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**Abstract:** The aim of this study was to compare price-earnings ratio of companies before and after the use of off-balance sheet financing in firms listed in the Tehran Stock Exchange. The research method was causal-comparative descriptive. The population was all the accepted companies in Tehran Stock Exchange (cars and car fragments, petrochemicals, petroleum products, cement, pharmaceutical, home and sugar appliances) between years of 2010 and 2014 that 87 companies were selected at random. Data were analyzed using independent t-test. Results showed that the average ratio of net profit to total assets (ROA) for companies which have used off-balance sheet financing had significant difference with the average ratio of net profit to total assets (ROA) for companies that did not use off-balance sheet. Other results showed that the average ratio of the book value of total debt to book value of total assets in companies after using off-balance sheet financing had significant statistical difference with the average ratio of the book value of total debt to book value of total assets before use of off-balance sheet financing. As well, the average ratio of stock price to earnings per share in the companies after the use of off-balance sheet financing had no significant difference with an average ratio of stock price to earnings per share before using off-balance sheet financing.

**Keywords:** Price-Earnings Ratio, Financial Reporting, Investment.

## Introduction

Growth and development of companies, the use of profitable investment opportunities, achieving to appropriate market share, resistance to inflation and other potential cases needs enough cash (Finnerty, 1996). In order to provide the funds needed, companies can use in different ways of financing. It can be noted to some of these methods such as financing through the issuance of common stock, preferred stock and its subsets, retained earnings and long term debt (Zhang, 2007). Accepting any of these models can be associated with desirable or undesirable consequences. If companies do not carefully choose, they may be at the risk of financial failure and even bankruptcy (Wen et al., 2002). Campobasso's study (2000) showed that off-balance sheet financing is a method of financing that makes company's existing capital structure and improves risk curve. Methods of financing and in other words capital structure have been introduced as the most important parameter affecting the valuation of commercial units

and their orientation in the capital markets. The importance of capital structure is in changing the financial policies and its impact on systematic and unsystematic risk in the financial markets (Zhang, 2007). Leigh and Olveren (2000) conducted a study entitled as "how does the off- balance sheet financing cause to create value for the company". It has been introduced four key factors that must be considered to judge the value created for a company in this study. These four factors include: cost, management options, risk transfer and costs of the transaction / information asymmetry. Then, the influence of any tools of off-balance sheet financing has been assessed through changing any of aforementioned factors. The results of the research were in this case that the off-balance sheet financing through changes in the four factors described above would cause value-adding. Study of debts and capital of companies listed in Tehran Stock Exchange indicates that in 2010 the average debt and capital of these companies was equal to 1465 billion Rials and 688 billion Rials respectively. This issue demonstrates the leverage form of active companies in the capital market and indicates a high ratio of debt to capital in stock companies (Faramarzi & Pormosa, 2014). Low level of cash holdings and a high level of leverage ratio of Iranian companies increase the need to consider the issue of appropriate financing in accordance with the reaction of investors, shareholders and decisions of capital structure and also the relationships between them. Also, given that the researchers have proposed various ideas and theories in the field of ways of financing and sometimes even the comments violated each other's, so the aim of this study was to compare price-earnings ratio of companies before and after the use of off-balance sheet financing in firms listed in the Tehran Stock Exchange.

### Materials and Methods

The research method was descriptive and causal-comparative. The population was all the accepted companies in Tehran Stock Exchange (cars and car fragments, petrochemicals, petroleum products, cement, pharmaceutical, home and sugar appliances) between years of 2010 and 2014 that 87 companies were selected randomly. The companies with the following conditions were participated in the study.

1. Those that their financial period conduces to the end of March.
2. Those that have been accepted in the Tehran Stock Exchange prior to 2013.
3. Those that are not among the mediation, financing, leasing and insurance companies.
4. Those that their needed financial information is available.
5. Those that are not among companies with the initial supply of the stock.

Following regression model was used to achieve the research goals.

$$\text{off - balance sheet financing}_{it} = \alpha_0 + \alpha_1 ROI_{it} + \alpha_2 ROE_{it} + \alpha_3 ROA_{it} + \alpha_4 Lev_{it} + \alpha_5 \frac{P}{E_{it}} + \alpha_6 Size_{it} + \varepsilon_{it}$$

$\text{off - balance sheet financing}_{it}$  : Off-balance sheet financing in the studied years

$ROI_{it}$ : Return on investment (ROI) ratio in the studied years

$ROE_{it}$ : Return on owners' equity (ROE) ratio in the studied years

$ROA_{it}$ : Return on assets (ROA) ratio in the studied years

$Lev_{it}$ : Financial leverage ratio in the studied years

$P/E_{it}$ : Price to earnings per share ratio of companies in the studied years

$Size_{it}$ : The size of the companies in the studied years

According to the study of Glen and Singh (2004), the criterion of profitability index may affect on the relationship between capital structure and other variables. Profitability indices involve return on investment, return on owner's equity and return on assets that are calculated as follows.

A) Return on investment:

$$ROI_{i,t} = \frac{\text{Profit and loss before taxes (gross)}}{\text{Total assets}}$$

B) Return on owners' equity

$$ROE_{i,t} = \frac{\text{Profit and loss after taxes (net profit)}}{\text{equity}}$$

C) Return on assets

$$ROA_{i,t} = \frac{\text{Profit and loss after taxes (net profit)}}{\text{Total assets}}$$

D) Financial leverage ratio:

To calculate the financial leverage ratio of firm i in year t, we have (Maquieira et al., 2012):

$$Lev_{i,t} = \frac{\text{The book value of total debts}}{\text{The book value of total assets}}$$

E) Price to earnings per share ratio:

It will be proceeded to calculate the ratio of stock price to earnings per share of the firm i in year t as follows. Price ratio (3.5) Earnings per share

$$PERation_{i,t} = \frac{\text{Price per share}}{\text{Earnings per share}}$$

Off-balance sheet financing of the firm i in year t was measured using rental costs disclosed in the notes to the financial statements of companies listed in Tehran Stock Exchange (Faramarzi and Pormosa, 2014). Independent t-test was used to analyze the data. In all analyzes, the significant level was considered as  $p < 0.05$ .

### Results

Results of Kolmogorov-Smirnov test showed normal distribution of the data ( $p > 0.05$ ). The average ratio of net profit to total assets (ROA) in companies that used off-balance sheet financing was compared with an average ratio of net profit to total assets (ROA) in companies that did not use off-balance sheet financing using independent t-test. Results are represented in Table 1. Given that the average (ROA) for companies that have used off-balance sheet financing was equal to 0.1237 and for companies that have not used off-balance sheet financing was equal to 0.1838, so the averages of two samples differ significantly. Commenting on the result of this assumption, it can be concluded that that the average ratio of net profit to total assets (ROA) in companies that used off-balance sheet financing had significant difference with an average ratio of net profit to total assets (ROA) in companies that did not use off-balance sheet financing.

**Table 1.** Results of independent t-test

ROA	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	%095 Confidence Interval of the Difference	
							Lower	Upper
Variance equality hypothesis	5.306	0.022	-3.616	0.000	-0.06013	0.01663	-0.09284	-0.02743
Variance inequality hypothesis			-3.351	0.001	-0.06013	0.01794	-0.09554	-0.02472

The average ratio of the book value of total debt to book value of total assets in companies after use of off-balance sheet financing was compared with the average ratio of the book value of total debt to book value of total assets in companies before using off-balance sheet financing. Results are presented in Table 2. It can be concluded that the average ratio of the book value of total debt to book value of total assets in companies after use of off-balance sheet financing had significant statistical difference with the average ratio of the book value of total debt to book value of total assets in companies before using off-balance sheet financing.

**Table 2.** Results of independent t-test

Financial leverage	N	Mean	t	df	sig	Mean	Std. Deviation	Lower limit	Upper limit
Before off-balance sheet financing	19	0.6479	2.302	18	0.034	0.06684	0.12658	0.00583	0.12785
After off-balance sheet financing	19	0.5811							

The average ratio of stock price to earnings per share in companies after use of off-balance sheet financing was compared with the average ratio of stock price to earnings per share in companies before using off-balance sheet financing. According to Table 3, the average ratio of stock price to earnings per share in companies after use of off-balance sheet financing had significant statistical difference with the average ratio of stock price to earnings per share in companies before using off-balance sheet financing.

**Table 3.** Results of t-test

P/E	N	Mean	t	df	sig	Mean	Std. Deviation	Lower limit	Upper limit
Before off-balance sheet financing	19	3.3837	0.805	18	0.431	0.85632	4.63780	-1.37903	3.09166
After off-balance sheet financing	19	2.5274							

The average ratio of stock price to earnings per share in companies that used off-balance sheet financing was compared with an average ratio of stock price to earnings per share in companies that did not use off-balance sheet financing using t-test. It can be seen that the average ratio of stock price to earnings per share in companies that used off-balance sheet financing had no significant difference with an average ratio of stock price to earnings per share in companies that did not use off-balance sheet financing (Table 4).

**Table 4.** Results of t-test

P/E	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	%95 Confidence Interval of the Difference	
							Lower	Upper
Variance equality hypothesis	2.026	0.155	0.704	0.482	79.96810	113.64275	-143.54494	303.48115
Variance inequality hypothesis			1.040	0.299	79.96810	76.88662	-71.49338	231.42958

### Conclusion

The aim of this study was to compare price-earnings ratio of companies before and after the use of off-balance sheet financing in firms listed in the Tehran Stock Exchange. Results showed that the average ratio of net profit to total assets (ROA) in companies that used off-balance sheet financing had significant difference with the average ratio of net profit to total assets (ROA) in companies that did not use off-balance sheet financing. Commenting on the significance of the effect of off-balance sheet financing on (ROA), it can be written that despite the expectation of increase in (ROA) after the off-balance sheet financing (Leland and Skarabot, 2003), off-balance sheet financing

resulted in a significant difference, it can be stated that the average ratio of net profit to total assets (ROA) in companies that used off-balance sheet financing had significant statistical difference with the average ratio of net profit to total assets (ROA) in companies that did not use off-balance sheet financing. Other results showed that the average ratio of the book value of total debt to book value of total assets in companies after the use of off-balance sheet financing had significant statistical difference with an average ratio of book value of total debt to total book value of the assets before the use of off-balance sheet financing. Commenting on the significance of the effect of off-balance sheet financing on the reduction of debt and equity ratios resulting in increment of profitability and stock price, it can be written that despite the expectation of reduction in financial leverage after the use of off-balance sheet financing, off-balance sheet financing resulted in the significant statistical difference. As well, the average ratio of stock price to earnings per share in companies after the use of off-balance sheet financing had no significant difference with an average ratio of stock price to earnings per share before the use of off-balance sheet financing. In the interpretation of no significance of impact of off-balance sheet financing on the accretion of stock price, it can be said that despite the expectation of increasing the stock price after the use of off-balance sheet financing, off-balance sheet financing did not lead to a statistically significant difference (Taghavi et al., 2010).

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