

## **Study of the Effect of Adoption of Off-Balance Sheet Financing on the Factors Affecting Investors' Reaction of the Firms Accepted into Tehran's Stock Exchange**

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**Abstract:** In this research, the effect of adoption of off-balance sheet financing on the factors affecting investors' reaction of the firms accepted into Tehran's Stock Exchange is studied. Previous studies have shown that firms make use of off-balance sheet financing tools when on the one hand while acquiring assets don't show the related assets and debts in financial statements and on the other hand show the financial leverage and profitability ratios of the firm favorably. On the other hand, the activity of off-balance sheet financing provides more tax saving than lack of use of this type of financing. Generally, the benefits acquired by a firm, as a result of off-balance sheet financing is more than its imposed risk. For this purpose, factors affecting investors' reaction using off-balance sheet financing are tested in the present study. The existing research is a descriptive-inferential one. Descriptive statistics have been used to describe the population and the studied sample and inferential statistics have been used to analyze the data related to the hypotheses of the study. The statistical population has been determined out of 37 industries distributed among the exchange as 116 firms that include all the firms existing in eight major industries of stock exchange (car and car parts, petrochemical, oil products, cement, drugs, household and sugar appliances) during the time domain 1389-1393. Using Cochran sampling, 89 firms were selected as the study sample. The results of the study indicate that given future expectations of investors, the effect of adoption or the lack of adoption of off-balance sheet financing in firms on factors affecting investors' reaction has no meaningful difference in Iran capital market.

**Key words:** Off-balance sheet financing, operational lease, financial leverage ratio, profitability ratios, investors' reaction

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### **INTRODUCTION**

In economics and from the perspective of the school of rationalists, the main goal of the establishment or survival of organizations is the condition of profit maximization and experience and witnesses also confirm the rationalists' claim. In fact, we should confess that achieving higher profit necessitates lowering costs and increase of revenues. Meanwhile, organizations are increasingly trying to make use of innovative methods to increase effectiveness and capability of their organizations. According to studies, nowadays in the economic world, one of the main goals of managers to show better performance is to increase profit and investors also seek increase of their wealth as well. For this purpose, managers look for making decisions for the financial and capital structure of the company and also various methods of financing or a combination of them to increase profit as well as show liquidity, financial leverage and profitability ratios favorably to guarantee investors' reaction to gaining wealth which causes managers to

make decisions or use tricks to finance in various ways. In addition, off-balance sheet financing activity provides more tax saving in comparison with the lack of use of this type of financing. Since one of the account decoration goals is unreal display of profit in this regard, tricks such as off-balance sheet financing, identification of revenues as higher and other exaggerating factors are used. In account decoration, without violating principles, standards and accounting standards and by the use of lack of standards, accounting rules and financial regulations on accomplishment of a financial event, a reporter may display an incorrect image and desirable for managers of a company. Nowadays, financing methods through off-balance sheet financing tools has been considered by most companies, such that using the existing tools in this method, firms not only enhance liquidity but also don't show assets and the related debts in financial statements while acquiring assets which influences on the financial leverage as well as a company's profitability ratio. According to the above mentioned items in addition to reviewing various methods

of financing, this study evaluates the effect of adopting off-balance sheet financing on the reaction of investors of the firms accepted into Tehran's Stock Exchange through the effect off-balance sheet financing has on financial leverage and profitability ratios of firms. It is obvious that a response to the question can help investors with their decision making and encourage them to use financial analysts' opinions and consultation. The present research looks for a response to the question that whether using off-balance sheet financing by firms affects investors' reaction or not?

### **Theoretical foundations and a review on the research background**

**Off-balance sheet financing:** The technical statement No. 603 of off-balance sheet financing and account decoration as the first accounting statement about off-balance sheet financing was issued in 1985 by Chartered Accountants Association of England and Wales. The third part the statement, off-balance sheet financing has been defined as follows.

Off-balance sheet financing refers to the investment or capital increase (increase of operational activities) of a firm according to accounting legal rules and accepted treaties, all or some of which is not shown in the balance sheet. After the statement, the proposed statement No. 42 and 49 and financial research proposed statement No. 4 and after that the financial research statement No. 5 (1994) and transactions content reporting were also issued to complete statement 603 (Financial Accounting Standards Board, 1976).

Off-sheet balance sheet financing is a kind of financing that most firms try to adopt for their operation to avoid an over increase their financial leverage and debts contracts defects by not showing their debts in the balance sheet.

**Off-balance sheet financing tools:** Using off-balance sheet financing tools, firms while acquiring assets, don't show the assets and the related debts in financial statements on the one hand and on the other hand are able not to show the financial ratio and profitability ratios favorably. In general, five types of financing tools can be mentioned as off-balance sheet financing tools as follows (Leigh and Olveren, 2000).

**Operating leases:** According to the definition by Riahi-Belkhaoui, lease is an agreement or contract between two or more sides through which lessor agrees to acquire assets and make it its own and take advantage of tax benefits of its depreciation and lease. Lessee agrees to use rental property and pay the rental fee determined

by lessor. The rental fee is for compensation of a part of investment made by lessor, the technology getting obsolete, the risk associated with reduction of sale value at the time of resale of the assets and the probability of its annihilation by the lessee. The property that strengthens motivation of firms to tend to leases is the possibility of implementation of off-balance sheet financing which becomes possible for the lessee by not showing assets and debts in financial statements and as a result, leverage ratio and profitability ratios (assets turnover, investments turnover and shareholder equity turnover) are shown better than when assets were bought, although the action is known as a kind of account decoration and not regarded ethical.

**Sale of receivable accounts:** There are three types of accounting action way for the seller of receivable accounts that are: no identification of asset and debt, simultaneous identification of asset and debt, separate identification of asset and debt resulting from sale of receivable accounts. In case of no identification of asset and debt, the action of sale of receivable accounts is regarded as a kind of off-balance sheet financing tool. In this type of action, demands of receivable accounts are cleared by debts resulting from their sale.

**Financing of special projects:** Based on Finnerty's findings (1996), the key stages of financing of special projects are such that having started a project, revenues and costs of the project are known irrespective of primary costs. The reason is separation of project ownership from its director (its operator). This means that there are firms that take responsibility for accomplishment of projects and these firms are regarded as external financiers. Normally, a company uses this type of financing when having limited financial ability or when they haven't found another way which is wise from cost viewpoint. Financing of special projects can also be named as financing of limited resources (Finnerty, 1996). Financing of special projects has the follow key features:

- Limited financial ability of project director (the project accomplisher)
- Separation of profit unit of (project owner) for project director
- Possibility of financing with lower costs

**Outsourcing:** According to Antvnochy's ideas, outsourcing is the sale of a part of a business unit together with the personnel and production equipment that the business unit has already gained from an external firm and then making a contract with another firm to

manufacture equipment or deliver services with the specification that they themselves have specified. Outsourcing has a lot of benefits but is followed by some disadvantages as well. Outsourcing is considered as a kind of financing because in case of not using this method, equipment or services should be supplied internally. The main feature of financing through outsourcing is to transfer the responsibility of supplying equipment and services to other firms.

**Conversion of assets into securities:** Shaw (1991) defines conversion of assets into securities as classification of a collection of assets such as loans and receivable accounts and transferring the collection of assets as a pledge, to a trusty (like a bank). Then, with the bankroll of the bailed out assets, (the trusty) the bank can issue securities in various types and offer them to the public. The funds obtained from the issue of the securities are paid to the firm as loan. Therefore, conversion of assets to securities can be defined as a process through which illiquid assets are converted to quick liquid assets by a better management method. Here the conversion of assets to securities often causes securities to be issued sensibly because their risk is at a low level. This causes financing cost of the firm to reduce. In this type of financing, given that no types of debt is identified (since like the sale of assets, they are omitted from the balance sheet and cash is received instead), the action is regarded as a kind of off-balance sheet financing which improves key ratios. Moreover, it enables the firm to do without cash and develop its business activities volume without capital enhancement. Conversion of assets to securities has the following features:

- To consolidate similar assets
- To reduce credit risk through increase of credit
- Investors invest on the firm's assets not on the firm itself

Economic structures as well as peremptory rules and regulations make it impossible to apply all the mentioned tools in Iran.

**Factors affecting implementation of off-balance sheet financing:** Operational lease has been used as the only off-balance sheet financing tool in this study like previously conducted studies. We can describe the effect of operational lease on the leverage ratio and profitability ratios (return on investment, return on equity return and return on asset) as follows.

**Effect on leverage ratios:** Not reflecting some of debt items in the balance sheets of firms shows leverage ratios as being lower. From investors' viewpoint, firms with high leverage ratio are regarded as high risk firms and it seems that firms' managers try to maintain leverage ratio at a reliable range.

**Effect on profit (loss) and profitability ratio:** Some of off-balance sheet financing methods have a positive effect on the value of the reported profit besides the effect on the balance sheet. This type of financing method is specifically used when managers' reward is based on the annual reported profit and its value has a direct relation with profit. On the other hand, not showing assets in balance sheets because of performing off-balance sheet financing and not including the depreciation of the assets in profit and loss causes profit and also return on assets to increase.

Some of off-balance sheet financing methods have benefits from tax point of view. Depending on the type of the agent creating the financing method, the above mentioned items can be considered. If the structure of off-balance sheet financing has a tax effect it will have a direct influence on cash flows and ultimately on the shareholders' wealth. However, it may indirectly or negatively affect shareholders' wealth. For example, we can refer to the time when shareholders sell their shares due to superficial changes of artificial accounting.

**Reaction of firms investors:** One of the assumptions of an efficient capital market is that investors react to new information reasonably. However, empirical findings indicate that the type of people's reaction to the published information is different and in some cases their reaction to new data is not completely reasonable. In other words, affected by psychological and behavioral factors, people react differently to new information and create some abnormalities such as excessive or lesser increase of prices.

**Background of the research:** Edman states that there are a lot of positive and negative reasons for the goals, structure and results of off-balance sheet financing. Of course, any manger takes the measure with different motivation. Managers tend to incur debt while the debt is not shown in the balance sheet. Making decision on whether or not to show debts in the balance sheet depends on the financial leverage. Using operational lease debts are not shown; hence financial leverages reduce with the increase of operational leverage. The empirical results of the study together with theoretical predictions

have shown that firms with high agency costs have high information asymmetry and risky motivations and more probably choose investment by the special value as the financing resource.

Miller and Bahnson (2010) have stated that managers' main aim of using off-balance sheet financing is to reduce debt and ownership ratios and as a result increase profitability and stock price. The results of the study show that supporters of off-balance sheet financing tend to pave the way for the increase of stock price using lack of transparency and awareness of shareholders. Furthermore, the results of the study indicate that managers using the method claim acting according to accepted accounting principles and standards while the research carried out according to ethical approach show that they use the principles and standards to mislead information users and hide debts and use off-balance sheet financing to display firms condition and profitability as better (Miller and Bahnson, 2010).

Zhang (2007) have carried out a research called "economic outcomes of off-balance sheet financing: witnesses of investment by the special value method". In the dissertation, specification and results of applying the so called investment by the special value method as a special kind of off-balance sheet financing tools has been analyzed empirically (Zhang, 2007).

However, Ge (2006) have conducted a research called "off-balance sheet activities, persistence of revenues and stock price witnesses of operational leases" in University of Michigan. In the study, disclosure of information related to operational leases in notes accompanying financial statements and prediction of revenues and future return on shares have been investigated. The results of the study showed that increase of operational lease activities leads to reduction of future revenues. The findings are compatible with the descending of final return on investment in operational leases. The final tests showed that investors totally expect a negative relationship between off-balance sheet operational lease activities and future revenues (Ge, 2006).

Lim (2005) accomplished a study called "Evaluation of market of off-balance sheet financing". They stated that operational lease is one of the most important forms of off-balance sheet financing which is reported in the notes accompanying financial statements, while its effect on the debt ration reduction is negligible.

In a study called "off-balance sheet financing of firms and various financial debts: witnesses of different tax reports", Nilz and Newbry studied the amount of tax saving due to off-balance sheet financing activities and

compared it with the firms that lack such type of financing. Considering financial statements of major companies from 1989-2001, they expressed that off balance sheet financing activity provides higher tax saving in comparison to not using such type of financings (Mills and Newberry, 2001).

In a study called "profit quality, off-balance sheet financing risk and the approach of financial and accounting combination to transfer financial assets", New and Rechardson studied the risk associated with off-balance sheet financing. Investigating financial statements of companies using this type of financing during the years 1997-2001, they demonstrated that the risk associated with this type of financing activities is similar to the risk ( $\beta$ ) in capital assets pricing model. Besides, they observed that benefits gained by the company as a result of off-balance sheet financing activities are higher than its imposed risk. In a study called "financial interaction and the desirable outcome of firm: implication on firms' structure and off-balance sheet financing", using Miller and Modigliani's model presented for financial interaction and achieving desirable goals of firms, Liland and Eskaraboot showed that off-balance sheet financing has a direct relationship with financial interaction and imagined desirable goals of firms due to forming capital structure appropriately.

In a study called "off-balance sheet financing of firms by operational lease: how to distinguish debt from lease" Graff (2001) came up with the fact that off-balance sheet financing instead of financing by debt and reporting it in the balance sheet can be a more suitable strategy to gain tangible assets.

Compobasso's research showed that off-balance sheet financing is one of financing methods that forms the existing capital structure of a firm and improves the risk curve (Campobasso, 2000).

Leigh and Olveren (2000) have conducted a study called "how off-balance sheet financing creates value for a company". In the study, four key factors that should be considered when judging the value created for a company have been introduced. The four factors are: cost, managerial authorities, risk transfer, doing business/information asymmetry costs. Then, changing each of the mentioned factors, the effect of off-balance sheet financing tools on the creation of value is has been studied. The results of the study have been such that off-balance sheet financing tools increase value by the change in the above said four factors (Leigh and Olveren, 2000).

In a study called “off-balance sheet financing of firms by operational lease: how to distinguish debt from lease”, Geraff concluded that off-balance sheet financing instead of financing by debt and reporting it in the balance sheet can be a more suitable strategy to gain tangible assets (Graham *et al.*, 1998).

Dhawan (1997) has suggested that if information flow is free, it can be concluded that off-balance sheet financing cause a firm’s value to increase by the improvement of key ratios. In a response to Dehavan’s study, a study was done by Akelrov where it is concluded that in fact, information can flow quite freely and the related heavy costs and complexities weaken the flow of information. In the study, no response has been given to the question of whether or not off-balance sheet financing lead to value enhancement for a firm.

Umutlu (2010) has investigated the effect of leverage on investment in the state of the art markets. He argues that the effect of leverage on investment is important because a firm’s value is determined through the expected cash flows obtained from investments but the channel by which leverage affects investment is not determined. Anyway, managers wouldn’t like investment to be financed more through debts because it will also associate creditors in the output of investments. Thus, with the increase of debts ratio, a manager may not even make suitable investments which leads to the reduction of the firm’s value. The surrogate theory for the relation between leverage and investment results from the benefits conflict between shareholders and managers. Managers prefer their firm’s size to increase (and they increase their power in the firm) even if this action is at the expense of shareholders losing their wealth (and reduction of the firm’s value as a result of accepting weak projects) (Umutlu, 2010).

In a study, Chen and Zhao (2006) investigated the relationship between the ratio of market value to book value and three variables of financing costs through debts, financing decisions and financial leverage ratio. Their expectation was that the firms with higher ratios of market value to book value confront with lower debt costs. In contrast, such companies use more debts while companies with low ratio of market value to book value pay back their debt more.

In a study, Aivazian *et al.* (2005) investigated the relationship between leverage and investment. Collecting and investigating the information of the firms accepted into Canada exchange from 1982-1999, they tended to respond to the question of whether financial leverage is considered when investing too much or less than

expected. Their reasoning was that the negative relationship is significantly more powerful for the companies with lower growth opportunity than with higher growth opportunity. Such reasoning indicates the confirmation of the concept that leverage plays an inhibitory role for the companies confronting weak growth opportunities (Aivazian *et al.*, 2005).

Faramarz and Pormosa (1393) evaluated the effect of off-balance sheet financing on the shareholders’ equity of the firms accepted into Tehran’s Stock Exchange. The results of the research show that off-balance sheet financing in the firms accepted into Tehran’s Stock Exchange has not caused firms’ shareholders’ equity to increase.

Taghavi *et al.* (1389) evaluated the effect of off-balance sheet financing method (operational lease) on the firms accepted into Tehran’s Stock Exchange. The results of the study indicate that in Tehran’s exchange, off-balance sheet financing doesn’t lead to the increase of stock price and profit.

Moradzadehfard and Faramarz (1968) investigated the study of the effect of off-balance sheet financing on firms’ value. The results of the study show that off-balance sheet financing in the firms accepted into Tehran’s Stock Exchange hasn’t led to the increase of the firms’ share price.

Namazi and Shirzadeh (1384) investigated the effect of the capital structure of Tehran’s Stock Exchange firms on the return and risk. They divided the firms into two samples. Firms that used credits (46 firms in total) and those that issued shares to provide their required funds (60 firms in total). Then, they have calculated the return on shares of the first and second sample firms and obtained the total average of each statistical sample. The result indicated that financing methods haven’t had any meaningful effect on the return on shares of the studied firms.

Having investigated the effect of financial leverage due to debts and increase of capital on the profitability ratios of the firms accepted into Tehran’s Stock Exchange, Torghaban and Barat concluded that in contrast to the existing theories, there is no meaningful difference between the profitability ratios of the firms financing through the increase of capital and those using debts to finance.

Razieh Mohammadi conducted a research called “Investigation of the factors affecting the capital structure of the firms accepted into Tehran’s Stock Exchange”. The statistical population consisted of five major industries of securities exchange of cement, car

parts, drugs, household and sugar appliances in the time domain 1376-1382. The study follows the investigation of the meaningful relationship between the variables of structure, liquidity capital, firms competition, profitability, profitability growth and sale growth and the degree of using leverage in the firms' capital structure. The obtained results showed that during the time domain of the research, the factors of competition, assets structure (the ratio of fixed assets to total assets), profitability and liquidity are among the factors that have a meaningful relationship with the capital structure while the two other variables of profitability growth and sale growth have a weak relationship with the capital structure.

**The research hypotheses:** In order to respond to the question of whether or not off-balance sheet financing affects the reaction of investors of the firms accepted into Tehran's Stock Exchange, factors are tested that managers, using off-balance sheet financing, try to show favorably to become able to affect investors' reaction. For this purpose, the research hypotheses are proposed as follows.

**Main hypothesis No. 1:** There is no meaningful difference between the average of profitability ratios of firms after and before using off-balance sheet financing.

**The first minor hypothesis:** There is no meaningful difference between the ROI average of firms after and before using off-balance sheet financing.

**The second minor hypothesis:** There is no meaningful difference between the ROE average of firms after and before using off-balance sheet financing.

**The third minor hypothesis:** There is no meaningful difference between the ROA average of firms after and before using off-balance sheet financing.

**Main hypothesis No. 2:** There is no meaningful difference between the average of the profitability ratios of the firms using off-balance sheet financing and those that don't use it.

**The fourth minor hypothesis:** There is no meaningful difference between the average ROI of the firms using off-balance sheet financing and those that don't use it.

**The fifth minor hypothesis:** There is no meaningful difference between the average ROE of the firms using off-balance sheet financing and those that don't use it.

**The sixth minor hypothesis:** There is no meaningful difference between the average ROA of the firms using off-balance sheet financing and those that don't use it.

**Main hypothesis No. 3:** There is no meaningful difference between the financial leverage ratios of firms after and before using off-balance sheet financing.

**The seventh minor hypothesis:** There is no meaningful difference between the book value ratios average of total debts of firms after and before using off-balance sheet financing.

**Main hypothesis No. 4:** There is no meaningful difference between the average financial leverage ratios of the firms using off-balance sheet financing and those that don't use it.

**The eighth minor hypothesis:** There is no meaningful difference between the average of the ratio of total debts book value to total assets book value of the firms using off-balance sheet financing and those that don't use it.

**Main hypothesis No. 5:** There is no meaningful difference between the average Peration of firms after and before using off-balance sheet financing.

**The ninth minor hypothesis:** There is no meaningful difference between the average of price earnings ration of firms after and before using off-balance sheet financing.

**Main hypothesis No. 6:** There is no meaningful difference between he verage Eration f the firms using off-balance sheet financing and those that don't use it.

**The tenth minor hypothesis:** There is no meaningful difference between the average of price earnings ration of the firms using off-balance sheet financing and those that don't use it.

## **MATERIALS AND METHODS**

The present study is an applied research from type perspective which is accomplished after an event during which real information and various statistical methods are used to reject or not reject hypotheses. The

survey-comparison method has been used in this study and the library method (exchange archive) has been used to collect the necessary information related to theoretical issues and financial information based on audited financial statements of the studied companies. In this study, the firms accepted into Tehran's Stock Exchange have been categorized into three populations.

A: The statistical population of the firms haven't used off-balance sheet financing from the financial year 89-90 and have used it from the year 91-93.

B: The statistical population of the firms using off-balance sheet financing during the study time domain (89-93).

C: The statistical population of the firms that didn't use off-balance sheet financing during the study time domain (89-93).

The statistical population of the present study consists of the firms accepted into Tehran's Stock Exchange during the years 1389-1393. The statistical sample will be selected by the systematic omission method while implementing the following restriction and five pre-requisites have been met to select the elements of the statistical population:

- Their financial period ends at the end of Esfand
- They are accepted into Tehran's Stock Exchange before the year 1392
- They are not among the brokerage, investment, leasing and insurance companies
- Having their required financial information available
- They are not among the companies presenting primary offer of shares

According to the preliminary studies, the firms of the statistical population were determined as over 116 firms distributed among 37 industries of the exchange. The statistical population consists of all the firms in 8 major industries of stock exchange (car and car part, petrochemical, oil product, cement, drugs, household and sugar appliances). Using the Cochran sampling method, 89 firms were selected as the research sample which includes the population of A-group firms (19 samples), B-groups firms (22 samples) and C-group firms (48 samples). For data analysis, the Kolmogorov-Smirnov test is used to investigate normality of data distribution first. For A statistical population, the paired-samples t-test and the Signed Ranks Wilcoxon tests are respectively used for the cases of normality and abnormality. For B and C statistical population, independent-sample t-test and Man-Witni tests are respectively used for the cases of normality and abnormality.

**The research variables and measurement method:** In the present research, "off-balance sheet financing" is the independent variable which is measured by the use of the lease cost disclosed in the notes accompanying the financial statements of the firms accepted into Tehran's Stock Exchange. In this study, investors' reaction which consists of three components as follows is the dependent variable.

**Profitability index (ProInd):** According to the study by Glen and Singh (2004), the profitability index criterion can be effective on the relationship between capital structure and other variables. Profitability indices include return on investment, return on shareholders' equity and return on assets which are calculated as follows.

**Return on investment:** It is obtained from the ratio of profit and loss before deduction of tax (gross) to total assets.

**Return on equity:** It is obtained from the ration of profit and loss after deduction of tax (net profit) to equity.

**Return on total assets:** It is obtained from the ratio of profit and loss after deduction of tax (net profit) to total assets.

**Leverage ratio:** It is the ratio of the book value of sum of total debts to the book value of total assets (Maquieira *et al.*, 2012).

**Price earnings ration:** It is obtained from the ratio of stock price to the profit of each share. In order to obtained the above mentioned data, profitability ratios, financial leverage and PERation were calculated at the end of the year and in order to get the necessary ratios, financial information including net profit (profit after tax deduction), gross profit (profit before deduction of interest and tax), equity (total equity), total assets, total debts, price of each share and profit of each share were extracted from financial statements of the sample firms.

## RESULTS AND DISCUSSION

**The first minor hypothesis test:** On the analysis and investigation of the hypothesis, the use of comparison of the averages of the two populations, the paired-samples t-test for dependent populations has been considered. On interpretation of the paired-samples t-test, if (Sig. >0.05), then the average of the two used groups doesn't have any difference and if (Sig. <0.05), it means that the difference of the two groups is meaningful. It can be said

Table 1: The first minor hypothesis test

ROI	N	Average	t-value	df	Sig.	Mean	SD	Low limit	High limit
Before off-balance sheet financing	19	0.2216	0.290	18	0.775	0.00842	0.12659	-0.05259	0.069440
After off-balance sheet financing	19	0.2132							

Table 2: The second minor hypothesis test

ROI	N	Average	t-value	df	Sig.	Mean	SD	Low limit	High limit
Before off-balance sheet financing	19	0.6216	0.228	18	0.822	0.15579	2.98071	-1.28087	1.59245
After off-balance sheet financing	19	0.4658							

Table 3: The third minor hypothesis test

ROI	N	Average	t-value	df	Sig.	Mean	SD	Low limit	High limit
Before off-balance sheet financing	19	0.1189	-1.890	18	0.075	-0.05211	0.12017	-0.11002	0.00581
After off-balance sheet financing	19	0.1711							

with a 95% certainty that the averages of the two populations are equal and the difference is not meaningful and given that the average (ROI) before and after off-balance sheet financing has respectively been equal to -0.2216 and 0.2132, the second hypothesis is rejected. To interpret the result of the hypothesis it can be stated that the average (ROI) of the firms after and before applying off-balance sheet financing doesn't have any meaningful statistical difference. To interpret the effect of off-balance sheet financing on ROI not being meaningful it can be written that in spite of the expectation to increase ROI, off-balance sheet financing doesn't lead to a meaningful statistical difference (based on the reasons stated in the research theoretical foundations and also the results obtained from the studies conducted abroad). The reasons for this issue can be lack of proper use of off-balance sheet financing tools by the firms accepted into Tehran's Stock Exchange, restriction on the use of off-balance sheet financing tools, how to choose the statistical population and other factors such as severe inflations effects on the country's current economy which results in faster increase of lease cost according to inflation and consequently reduction of profitability (Leigh and Olveren, 2000; Leland and Hayne, 2003) (Table 1).

**The second minor hypothesis test:** To investigate the results of the hypothesis, it can be said with a 95% certainty that the averages of the two populations are equal and the difference is not meaningful and given that the average (ROE) before and after off-balance sheet financing has respectively been equal to -0.6216 and 0.4658, whenever the low limit is negative and the high limit is positive, the averages of the two samples don't have any meaningful difference. Therefore, the second hypothesis is rejected. To interpret the result of the hypothesis it can be stated like the first hypothesis that the average (ROE) of the firms after and before applying off-balance sheet financing doesn't have any meaningful statistical difference (Table 2).

**The third minor hypothesis test:** To investigate the results of the hypothesis, it can be said with a 95% certainty that the averages of the two populations are equal and the difference is not meaningful and given that the average (ROA) before and after off-balance sheet financing has respectively been equal to 0.1189 and 0.1711 whenever the low limit is negative and the high limit is positive, the averages of the two samples don't have any meaningful difference. Therefore, the second hypothesis is rejected. To interpret the result of the hypothesis it can be stated like the first and second hypotheses that the average (ROA) of the firms after and before applying off-balance sheet financing doesn't have any meaningful statistical difference (Table 3).

**The fourth minor hypothesis test:** On the analysis and investigation of the hypothesis, the use of comparison test of the averages of the two populations, the paired samples t-test which is used to compare the average of a parameter of two independent populations has been considered. In this estimation, given the low and high limits values, it can be said with a 95% certainty as follows: the first stage of interpretation of the results of the test is to state whether or not variances of the two groups are equal which is performed by Levene's test. If the meaning level of Levene's test is lower than 0.05 (Sig. <0.05), we will use the section of inequality of variances, otherwise the section of variance equality will be considered (Sig. >0.05). The second stage is the interpretation of the result of the paired-samples t-test for the difference of the averages of the two groups based on the meaning level (Table 4).

For Sig. >0.05, the difference is not meaningful while for Sig. <0.05 it is meaningful. Given that the average ROI for the companies using off-balance sheet financing and not using it has respectively been equal to 0.2125 and 0.2235, the averages of the two samples don't have any meaningful difference and the second hypothesis is rejected. To interpret the result of the hypothesis it can be stated that the averages (ROI) of the firms that use off-balance sheet financing and those that don't use it don't have any meaningful statistical difference.



Table 4: The fourth minor hypothesis test

ROE	Levene's test for equality of variances		t-test for equality of means				95% confidence interval of the difference	
	F-value	Sig.	t-values	Sig. (2-tailed)	Mean difference	SE difference	Lower	Upper
	Variance equality hypothesis	1.998	0.158	-0.402	0.688	-0.01100	0.02739	-0.06487
Variance inequality hypothesis			0.300	0.765	-0.01100	0.03672	-0.08368	0.06168

Table 5: The test of the fifth minor hypothesis

ROE	Levene's test for equality of variances		t-test for equality of means				95% confidence interval of the difference	
	F-value	Sig.	t-values	Sig. (2-tailed)	Mean difference	SE difference	Lower	Upper
	Variance equality hypothesis	3.373	0.067	-1.021	0.308	-1.12070	1.09749	-3.27926
Variance inequality hypothesis			-1.500	0.135	-1.12070	0.74734	-2.59268	0.35127

Table 6: The test of the sixth minor hypothesis

ROE	Levene's test for equality of variances		t-test for equality of means				95% confidence interval of the difference	
	F-value	Sig.	t-values	Sig. (2-tailed)	Mean difference	SE difference	Lower	Upper
	Variance equality hypothesis	5.306	0.022	-3.616	0.000	-0.06013	0.01663	-0.09284
Variance inequality hypothesis			-3.351	0.001	-0.06013	0.01794	-0.09554	-0.02472

**The test of hypothesis 5:** Given that the average ROE for the companies that have used off-balance sheet financing and those not using it has respectively been equal to 0.8513 and 0.2694, the averages of the two samples don't have any meaningful difference and the second hypothesis of the research is rejected. To interpret the result of the hypothesis it can be stated like previous hypotheses that the averages ROE of the firms that use off-balance sheet financing and those that don't use it don't have any meaningful statistical difference (Table 5).

**The test of the sixth hypothesis:** Given that the average ROA for the companies that have used off-balance sheet financing and those not using it has respectively been equal to 0.1237 and 0.1838, the averages of the two samples don't have any meaningful difference and the first hypothesis of the research is rejected. To interpret the result of the hypothesis it can be stated that the averages ROA of the firms that use off-balance sheet financing and those that don't use it have a meaningful statistical difference. To interpret the effect of off-balance sheet financing on ROA being meaningful it can be written that in spite of the expectation to increase ROA, off-balance sheet financing lead to a meaningful statistical difference after its accomplishment (based on the reasons stated in the research theoretical foundations and also the results obtained from the studies conducted abroad). We can say that the average ROA of the firms using

off-balance sheet financing does have a meaningful statistical difference with the average ROA of those firms not using it (Leigh and Olveren 2000) (Table 6).

On the analysis and investigation of the hypothesis, it can be said with a 95% certainty that the averages of the two populations are not equal and the averages difference is meaningful and given that the average of financial leverage of firms before and after off-balance sheet financing have respectively been equal to 0.6479 and 0.5811, whenever the low and high limits are positive in general, the first population average is higher than the test value of the second population and the average difference is meaningful. Thus, the first hypothesis of the research is rejected. On the interpretation of the result of the hypothesis, it can be stated that there is a meaningful difference between the averages of the ratio of total debts book value to total assets book value of firms before and after using off-balance sheet financing. On the interpretation of the effect of off-balance sheet financing on the reduction of debt and ownership ratios and as a result increase of profitability and stock price, it can be written that in spite of the expectation to reduce financial leverage, having used off-balance sheet financing it leads to a meaningful statistical difference (Maquieira *et al.*, 2012) (based on the reasons stated in the research theoretical foundations and also the results obtained from the studies conducted abroad) (Miller and Bahnsen, 2010) (Table 7).

Table 7: The test of the seventh minor hypothesis

Financial leverage	N	Average	t-value	df	Sig.	Mean	SD	Low limit	High limit
Before off-balance sheet financing	19	0.6479	2.302	18	0.034	0.0668	0.12658	0.00583	0.12785
After off-balance sheet financing	19	0.5811				4.0000			

Table 8: The test of the eighth minor hypothesis

ROE	Levene's test for equality of variances		t-test for equality of means				95% confidence interval of the difference	
	F-value	Sig.	t-values	Sig. (2-tailed)	Mean difference	SE difference	Lower	Upper
Variance equality hypothesis	4.329	0.038	2.811	0.005	0.07862	0.02793	0.02361	0.13362
variance inequality hypothesis			2.679	0.008	0.07862	0.02937	0.02072	0.13651

Table 9: The test of the ninth minor hypothesis

Financial leverage	N	Average	t-value	df	Sig.	Mean	SD	Low limit	High 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 test of the eighth hypothesis:** On the analysis and investigation of the hypothesis, given that the average financial leverage for the firms using off-balance sheet financing and those not using it has respectively been equal to 0.6398 and 0.5612, the averages of the two samples have a meaningful statistical difference and the first hypothesis of the research is rejected. On the interpretation of the result of the hypothesis, it can be stated like the seventh hypothesis that there is a meaningful difference between the averages of the ratio of total debts book value to total assets book value of firms using and not using off-balance sheet financing (Table 8).

**The test of the ninth hypothesis:** On the analysis and investigation of the hypothesis, it can be said with a 95% certainty that the averages of the two populations are not equal and the averages difference is meaningful and given that the average of financial leverage of firms before and after off-balance sheet financing have respectively been equal to 3.3837 and 2.5274, whenever the low and high limits are positive in general, the first population average is higher than the test value of the second population and the average difference is meaningful. Thus, the second hypothesis of the research is rejected. On the interpretation of the result of the hypothesis, it can be stated that there is no meaningful difference between the averages of price earnings ratios of the firms after and before using off-balance sheet financing. On the interpretation of the effect of off-balance sheet financing on the increase of stock price, it can be written that in spite of the expectation to increase stock price, having used off-balance sheet financing, it doesn't lead to any meaningful statistical difference (Maquieira *et al.*, 2012) (based on the reasons stated in the research theoretical foundations and also the results obtained from the studies conducted abroad) (Taghavi *et al.*, 1389) (Table 9).

**The test of the tenth hypothesis:** On the interpretation of the result of the hypothesis, it can be stated that there is no meaningful statistical difference between the averages of the price earnings ratios of the firms using off-balance sheet financing to those not using it. On the interpretation of the effect of off-balance sheet financing on the increase of share prices not being meaningful it can be written like the tenth hypothesis that in spite of the expectation of the increase of stock price after using off-balance sheet financing, off-balance sheet financing doesn't lead to any meaningful statistical difference (based on the reasons stated in the research theoretical foundations and also the results obtained from the studies conducted abroad), (Taghavi *et al.*, 1389) (Table 10).

In order to investigate whether the changes of financial leverage, profitability ratios and price earnings have been a criterion to use off-balance sheet financing, the results of previous studies show that using off-balance sheet financing enables managers to acquire assets while not showing them and the related debts in financial statement and on the other hand, show the financial leverage and the firm's profitability ratios while acquiring assets don't show the related assets and debts in financial statements and on the other hand show the financial leverage and profitability ratios of the firm favorably. Then, factors affecting investors' reaction to using off-balance sheet financing in capital market by firms was investigated. As it was stated, the negative relationship between off-balance sheet financing and the future return of shares which is created due to presence of inexperienced investors in the market, the existence of the use of off-balance sheet financing in the market by firms has been confirmed by the conducted study on the investigated sample. Then, the issue was investigated the when inexperienced investors react incorrectly to the use of off-balance sheet financing. Given that the use of off-balance sheet financing has been known as an

Table 10: The test of the tenth minor hypothesis

P/E	Levene's test for equality of variances		t-test for equality of means				95% confidence interval of the difference	
	F-value	Sig.	t-values	Sig. (2-tailed)	Mean difference	SE difference	Lower	Upper
	Variance equality hypothesis	2.026	0.155	0.704	0.482	79.96810	113.64275	-143.54494
Variance inequality hypothesis			1.040	0.299	79.96810	76.88662	-71.49338	231.42958

incorrect reaction factor in the statement of the problem of the mentioned studies, the factor was studied which shows that as the use of off-balance sheet financing by firms increases, no meaningful change is seen the desirability of financial ratios and profitability ratios. The reasons for this issue may be lack of proper use of off-balance sheet financing tools by the firms accepted into Tehran's Stock Exchange, restriction on the use of off-balance sheet financing tools, how to choose the statistical population and other factors such as severe inflations effects on the country's current economy which results in faster increase of lease cost according to inflation and consequently reduction of profitability. In addition, the results of previous studies indicated that the increase of operational lease activities leads to the reduction of future revenues. The findings are compatible with the descending of the final return on investment of operational lease. The final tests showed that investors totally expect a negative relationship between off-balance sheet operational lease activities and future revenues.

**CONCLUSION**

The main objective of the managers using off-balance sheet financing is to reduce debt and ownership ratios and as a result increase profitability and stock price. The results of the previous studies show that supporters of off-balance sheet financing tend to pave the way for the increase of stock price by the use of lack of transparency and enough awareness of shareholders. Moreover, managers using the method claim acting according to accepted accounting principles and standards while the research carried out according to ethical approach indicate that they use the principles and standards to mislead information users and hide debts and use off-balance sheet financing to display firms condition and profitability as better. Investors consider the increase of desirability of financial ration and profitability ratios as a positive indicator of the firm and as a result predict the future profitability of the firm optimistically and vice versa, consider the reduction of desirability of financial ration and profitability ratios as a negative indicator of the firm and predict the future profitability of the firm pessimistically. Accordingly, the results of the study state

that the effect of applying or not applying off-balance sheet financing in the firms hasn't had any meaningful difference on factors affecting investors' reaction.

**SUGGESTIONS**

**The research suggestions:** The research suggestions consist of propositions based on the study results and future studies.

**Suggestions based on the study results:** Given the research findings indicating the existence of a positive and meaningful relation between off-balance sheet financing and profitability ratios, it is suggested that the financial leverage and profitability ratios as a criterion of the existence of off-balance sheet financing are taken into account when making decision on investment.

Given the findings of the study indicating the presence of inexperienced investors in the capital market, it is suggested that investors react more cautiously to the changes in the financial leverage and profitability ratios and ask financial analysts to help them with making decisions on investment.

Investors are proposed to pay attention to the financial statements presented by the companies when making decisions and use the information related to identification of using various methods of off-balance sheet financing leading to a desirable display of financial leverage and profitability ratios, so that they are enabled to make appropriate decisions on the by and sale of companies shares.

**Propositions for the future studies:** When considering the information of the firms outside the exchange and carrying out similar research on this area, it is suggested that its results are compared with the result of this study.

It is suggested that the effect of factors such as auditing quality and disclosure of off-balance sheet financing methods on the reaction of investors to off-balance sheet financing is investigated.

It is suggested that the study of the effect of using off-balance sheet financing on investors' reaction is conducted in such a way that industries are studied separately and the results are compared with each other next.

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