# The effect of audit quality on stock valuation in initial public offering

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**Abstract**:  Main goal of this research is to check the effect of audit quality on stock valuation in initial public offering. In this research valuation below cost is considered as dependent variable and the size of accounting firm considered as independent variable.This study addresses this issue that we can say if in firms with higher audit quality ٬prices in below in initial public offering is less?The statistical results of datarelated to 102 companies which share initial offering in Tehran stock exchange between years 1380 to 1390, shows that at 0.95 confidence level there is significant negative relationship between valuation below price and audit quality criterions (size of company, audit tenure) in companies under review. Results of this analyze proves that in companies with higher audit quality rate of valuation below price is significantly less than other companies.

## 1.Introduction

In developed countries …public offering and Converting certain property to public ownership Often has been welcomed by many because of its benefits like Capital increase, Business tax breaks, Access to finance affordable,…. According to article 44 of constitution and spread privatization in our country, public offerings have been receivedin last decade. But One of the issues facing is how to valuation the prices in initial offering. With respect toimportance of this issue, lots of research has been done in this area. The company activity may have been continued before public offering then because of information asymmetry valuation of assets is based on incomplete and inadequate information. From other hand the prices are depend to some complex and interrelated variable, this makes the problem more difficult and cause Abnormalities in initial public offering(IPO)( arabmazaryazdi, ghasemi,1388).the most important abnormality that exist in initial price offerings(IPO) are price dropping in long term, valuation below price and hot initial public offerings(haghbin zeinab,1387). Through these abnormalities with respect to more prevalence of valuation below price, this them is more researched. Because of this, we concentrate on valuation below price. According to signaling theory, because of valuation below price, the company issued new shares, give positive mark to people and use this to overcome information asymmetry between new stock and investors. So whatever the stock is better, initial offering of that stock is more below price than the bad stock because offering below price is a cost for fine company and this cost will compensate with higher price of stock in next offering in secondary Market Investors (zeinab haghbin,1387).on the other hand because of decrease in information asymmetry and

decrease in agency cost due to more efficient corporate governance mechanisms it's expected that underpricing be less(mashayekhi,beyrami,1391). One of the most important mechanisms is independent audit.companies that are audited by large firms, due to high quality of audit, have more transparent of accounting information and accounting processes so managers have less opportunity for earning manipulation, and this makes agency cost and information asymmetry less. So it's expected to less underpricing in these companies (chahini, filatotcho, 2011). according to the above and given that there is no research in iran that respect effect of audit quality on stock valuation in initial public offering, so the main problem in this research is to check effect of audit quality on underpricing in initial public offering.

## 2. Background research
### 2.1 external research:

Chang et.al(2012) they survey the pricing in initial public offering in korea between 2000 to 2002.they results that underpricing is 19 percent in korea stock exchange.

Heren(2011) studied the relation between number of irresponsible executives and level of underpricing. he results that there is a significant direct relationship between irresponsible executives and level of underpricing.

Eminoil et. al (2010) they compared underpricing level of Bangladesh stock exchange with other countries markets. according to their study, underpricing level in Bangladesh stock exchange is 480.71 % with standard deviation 1217.compared to other countries(singapour 31%, malezia 44% unitedstate 22% ) its significant. Based on their regression analysis, age and size of company have positive and significant relationship and type of

industry and trading volume, have negative and significant relationship with underpricing. They didn't obtain an important relationship among time of initial public offering and underpricing.

2.2 internal researches

Abbasi, balavard(1388) they test underpricing in initial public offering. Results of adjusted returns on the market index in short time by using t test demonstrated that there is underpricing in Tehran stock exchange.

Ebrahimikordlar,hasaniazardariani(1385) by doing research on 30 offering companies in Tehran stock exchange between 1378 to 1380 result that reason of underpricing and IPO is poor invest market performance information. Because it's difficult to access information, therefore, investors may not have the knowledge and insight for data analysis; these researchers confine that the base of these problems in invest market of country is existence of major shareholders like organizations dependent on government and banks.

Abdohtabrizi ,demori(1382) after study of 104 company which are accepted in Tehran stock exchange thorough 1369 to 1374 related to IPO they show high efficiency in short term and low efficiency in long term.

## 3. Research hypotheses

In stock market, one of the things that we are witnessing the greatest information asymmetry and thus problem of adverse selection, is related to the time of initial public offering. High quality companies which have offer in initial public, to distinguish themselves from low quality suppliers, for fix this problem can use various methods like signaling (jane, 2007). According to the signaling theory, one of the exist solutions for reduce information asymmetry for high quality company is to sale its stocks with lower than the real value of money. Indeed this lost revenue, is the cost for signaling in high quality companies. Furthermore, if the firm has more efficient corporate governance mechanisms, because of reduction of information asymmetry and reduction of agency cost, it's expected to have less underpricing. One of these mechanisms is an independent audit. Torenton says that quality of accounting and reporting information is the joint product of at least 4 products that one of them is audit quality. diangelo(1981) discussed that size of audit agency can be agent of audit quality. He believes that the elder audit agencies, have more efficient audit services because they tend to find better reputation in labor market and since their employers are a lot they don't worry about losing them. Companies that are audited by large firms tend to showtheir accounting with higher quality and implement more transparent accounting processes. So managers have less time to manipulate profit and this cause less cost in agencies

and less information asymmetry. So underpricing in these companies is expected (chahini,filatotcho,2011).

So according to above hypothesis are the following:

**First hypothesis:** There is a meaningful and inverse relationship between size of audit institute and underpricing in initial public offering (IPO).

**Second hypothesis:**there is a meaningful and inverse relationship between audit tenure and underpricing in initial public offering (IPO).

**Method of research:** This research is placing in proof researches and due to the use of historical data it places in quasi experimental researches. the present method of research is deductive and after the event, and the statistical method is sectional correlation that means check if there is relationship between variables with regression. Analyze of data from this research consist of two parts:

### 4.1)model used to test hypotheses

Illative analyzes will produce by the data from (tehran stock exchange website), softwares(rah avardnovin) (tadbirprdaz), spss,eviews and with appropriate statistical tests due to research hypothesis. The following regression model to test the research hypotheses are:

$Underpricing\ it\ =\ \beta0+\beta1(Size\text{-}Auditor)i,t+\beta2(Tenure\text{-}Auditor)i,t+\beta3LnAsset\ i,t+\ \beta4Agei,t\ +\ \beta5Debt\text{-}ratioi,t\ +\beta6Loss\text{-}dummyi,t\ +\ \beta7Founder\ Ownership\ i,t+\ \beta8Current\ Asset\ i,t+\ \beta9Internet\ dummy\ i,t+\ \varepsilon i,t$**(1)**

### Dependent variable:

*Underpricing*= calculate from this formula:

Underpricing= (the closing price of the stock-the closing price of first day of offering)/the closing price of the stock

### Independent variables:

*Size –Auditor*= it's a dummy variable, if the audit institute is useful this variable is 1 otherwise it's 0.

*Tenure-Auditor :*the period of auditor activity

### Control variables:

*Ln Asset*= natural logarithm of total assets

*Age*= age of company(difference between date of establishment and date of first initial offering)

*Debt ratio*=Long-term debt to total assets ratio

*Loss dummy*= dummy variable if the company had losses in last year its =1 otherwise =0

*Founder Ownership*=ownership Percentage of institutional shareholders

*Current Assets*=Ratio of current assets to total assets

*Internet dummy*= if the company has internet website it's =1 otherwise it's= 0

### 5.Community subjects

Community subject in consist of all of companies in Tehran stock exchange thorough 1380-1390which for the first time offer their stock in Tehran stock exchange. For statistical sample we choose those companies which didn't belong to investment

companies. We disregard initial offerings which their information were not available. due to this, finally 102 initial public offering selected.

**6.method of sampling**

Required data for test hypothesis extracted from various resources such as (rahavardnovin software)……and financial statements were second information of sample companies. Obtained information related to research variables entered in excel and then analyze by eviews and spss. In this research spss used for descriptive statistics study. And for inferential statistics we use Eviews.

**7.findings**

7.1 Descriptive statistics

Descriptive statistics of independent, dependent and control variables have done with data from 102 mentioned company, thorough (1380-1390). And involve mean, middle, standard deviation, minimum and maximum that shown in picture (1). As shown in pic (1) through test period, variable of underpricing has mean:0.721, middle:0.542, standard deviation:0.871 .maximum underpricing is 3.124 and minimum is: 0.578. in the case of independent and control variable mean, middle, standard deviation, min and max shown in pic (1). For instance they are like this: 0.245, 0.314, 0.531, 0, 1. With respect to amount of mean and middle (middle is more than mean), skewness is negative (left). Independent variable size of audit institute has mean, middle, standard deviation, min and max as follows 2.73, 3, 8.021, 1, 5 and regard to amount of middle and mean(middle is more than mean) the skewness is negative too.

**Picture 1.**

| max | min | Standard deviation | middle | mean | variable |
|---|---|---|---|---|---|
| 3/124 | -0/578 | 0/871 | 0/542 | 0/721 | *Underpricing* |
| 1 | 0 | 0/531 | 0/314 | 0/245 | *Size-Auditor* |
| 5 | 1 | 8/021 | 3 | 2/73 | *Tenure- Auditor* |
| 22/26 | 0/459 | 32/02 | 10/11 | 13/97 | *Ln Asset* |
| 32 | 7 | 42/21 | 21 | 14/23 | *Age* |
| 0/721 | 0/211 | 0/342 | 0/482 | 0/529 | *Debt ratio* |
| 1 | 0 | 0/324 | 0/236 | 0/148 | *Loss dummy* |
| 0/867 | 0/078 | 0/345 | 0/623 | 0/467 | *Founder Ownership* |
| 1/23 | 0/045 | 0/782 | 0/327 | 0/426 | *Current Asset* |
| 1 | 0 | 0/711 | 0/513 | 0/621 | *Internet dummy* |

**Picture 2. jar co bra test for dependent variable**

| result | Level of significance | Jar co bra statistic | variable |
|---|---|---|---|
| Distribution is normal | 0.2311020 | 14.3833 | *Underpricing* |

Correlation coefficient between independent variables, dependent variables and control are shown in picture (2). As shown in this picture most of independent and control variables except age variable have meaning full correlation at 95% confidence level with dependent variables. Dependent variable, underpricing, have meaning full negative correlation with the variables, audit tenure, size of audit institute, institutional investors, rate of debt and current assets. And with other variables has positive meaning full correlation. Briefly, considering correlation coefficient of dependent variables independent variables and control variables in research can expect that results from regression have high validity to have good responses for questions and research hypothesis.

7.2. Study the assumption of classic regression

7.2.1. Normality test of dependent variable

For checking the normality of dependent variable distribution, we use (jar co bra) test. This test performed for total discretionary accruals (dependent variable). and resulted that dependent variable distribution is normal. The results table is shown in picture (3).

According to above table and (ja co bra) statistic since the significance level (0.041102) is more than 0.05 null hypothesis accepted so with 0.95 confidence can be said discretionary accruals (dependent variable) has normal distribution

7.2.2. test of errors independence

Serial correlation will be tested with durbin Watson statistic between residuals of regression. If this statistic places between 1.5, 2.5the null hypothesis will be accepted, otherwise alternative hypothesis will be proved. In this regression model amount of durbin Watson statistic is 1.625 and between 1.5 and 2.5. so null hypothesis, that there is serial correlation between residuals, is proved.

7.2.3. Study normality of residuals distribution

One assumption of regression is that the residuals have normal distribution with mean at 0. For study the normality of residuals the curve components of residuals plotted in this diagram. Results of jar cobera statistic says that in regression model(1) mean of residuals is almost (0) and standard deviation is near to (0.994).with respect to results of jacobera test and that, significance level (0.564) is more than 5%, as a result, residuals of regression model are normal.
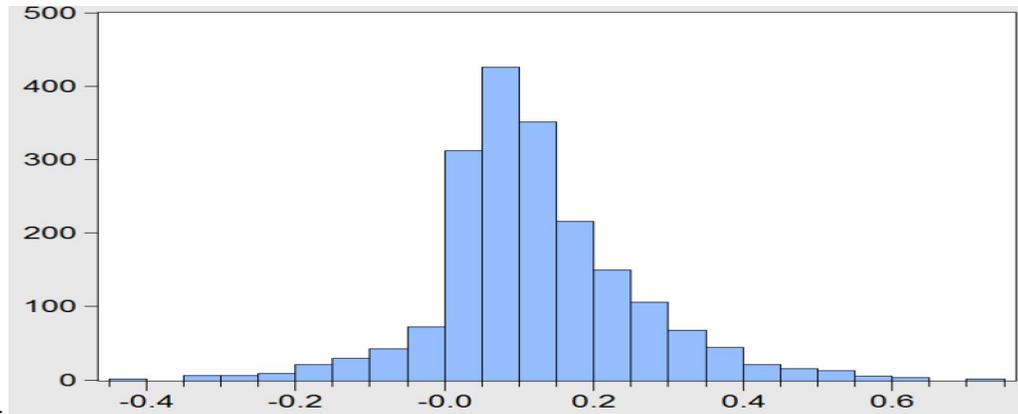
**Picture 3.** The normality of dependent variable distribution

7.2.4. variance homogeneity test

This assumption checked by white test. Since significant level is more than 5% in output, so there isn't variance homogeneity. Output is shown in picture (4).



Heteroskedasticity Test: White

| | | | |
|---|---|---|---|
| F-statistic | 0.747276 | Prob. F(9,55) | 0.6643 |
| Obs*R-squared | 7.082272 | Prob. Chi-Square(9) | 0.6286 |
| Scaled explained SS | 3.796842 | Prob. Chi-Square(9) | 0.9243 |

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares

Picture 4. Homogeneity of variance

7.3 The results of the regression model

In this research we use this regression model which based on statistical sample (102 company in initial public offering).

$$Underpricing_{it} = \beta_0 + \beta_1(Size\text{-}Auditor)_{i,t} + \beta_2(Tenure\text{-}Auditor)_{i,t} + \beta_3 LnAsset_{i,t} + \beta_4 Age_{i,t} + \beta_5 Debt\text{-}ratio_{i,t} + \beta_6 Loss\text{-}dummy_{i,t} + \beta_7 Founder\ Ownership_{i,t} + \beta_8 Current\ Asset_{i,t} + \beta_9 Internet\ dummy_{i,t} + \varepsilon_{i,t}$$

Results of regression and relative statistics are shown in picture (5). According to figure (5), F statistic (15.436) implies that model is significant at significance level of 95%. Coefficient of determination and adjusted coeficieant determination are (38.21%) and (34.6%). Coefficient of determination is a criterion which describes strength of relation between independent variable, dependent variable and control variable. indeed amount of this coefficients, describe how much of dependent variable is explained by independent and control variables. In this regression, adjusted determination coefficient is (38.9%) that shows, (38.9%) of dependent variables change is described by independent variable (audit tenure, size of audit institute) and control variables (age of company).

| Level of significance | Statistics t | Variable coefficient | variable | |
|---|---|---|---|---|
| \multicolumn{5}{l}{$Underpricing_{i,t} = \beta_0 + \beta_1(Size\text{-}Auditor)_{i,t} + \beta_2(Tenure\text{-}Auditor)_{i,t} + \beta_3 LnAsset_{i,t} + \beta_4 Age_{i,t} + \beta_5 Debt\text{-}ratio_{i,t} + \beta_6 Loss\text{-}dummy_{i,t} + \beta_7 Founder\ Ownership_{i,t} + \beta_8 Current\ Asset_{i,t} + \beta_9 Internet\ dummy_{i,t} + \varepsilon_{i,t}$} | | | | |
| 0/0001 | 9/886 | 2/11 | Fix number | |
| 0/0001 | 5/507 | -0/221 | Size-Auditor | independent |
| 0/036 | 2/108 | -0/189 | Tenure- Auditor | |
| 0/004 | 2/871 | 0/105 | Ln Asset | control |
| 0/443* | -0/768 | -0/078 | Age | |
| 0/0001 | 9/810 | -0/097 | Debt ratio | |
| 0/007 | 2/727 | 0/121 | Loss dummy | |
| 0/0001 | 8/540 | -0/141 | Founder Ownership | |
| 0/194* | 1/31 | -0/061 | Current Asset | |
| 0/0086 | 2/6327 | -0/071 | Internet dummy | |
| 15/436 | آماره F | 0/382 | Coefficient of determination | |
| 0/00 | (P-Value) | 0/346 | Adjusted coefficient of determination | |
| 1/625 | Durbin watson | | | |

Picture (5)

After significant test, every coefficient of test has to be checked with T statistics of significant. In significant level of (95%), if significant level of T statistics is below 5%, it means related coefficient are significant and if it's more than 5% it means coefficients are not significant. In the case of fixed value (2.11), T statistic is (9.886) and significant level is (0.0001), this value is less than 5% thus significant of fixed value (2.11) in significant level (95%) is proved. Coefficient (size of audit institute), (-0.221), have T statistic about (5.507) and significant level of (0.001), and significant of this coefficient is proved. Coefficient (audit tenure),(-0.189), have T statistics about (2.108) and significant level of (0.036), and significant hypothesis of this coefficient is proved too. Results are shown in figure (5). Except variable of current asset and age of company, at significant level of 95%, other variables are significant.

7.5 Testing of hypothesis

7.5.1 First hypothesis test

First hypothesis:there is a significant and inverse relationship between size of audit institute and underpricing in initial public offering (IPO).

According to fig (5), significant level of independent variable (size of audit institute) is (0.0001). this value is less than considered significant level (in this research it is 5%); also absolute value of T statistic, related to this variable (5.507), is more than T statistic results from table with the same degree of freedom. On the other hand, this variable is a positive number (-0.221) which explains that there is a negative significant relationship between dependent variable (underpricing) and size of audit institute in considered companies. Thus in significant level of 95%, first hypothesis is proved.

7.5.2 second hypothesis test: there is a meaningful and inverse relationship between audit tenure and underpricing in initial public offering (IPO).

According to fig (5), significant level of independent variable (audit tenure) is equal to (0.036), this value is less considered significant level in this research (5%); also absolute value of T statistic related to this variable (2.108) is more than T statistic results from table with same degree of freedom. On the other hand this variable is a positive number (-0.189), which explains that there is negative significant relationship between dependent variable (underpricing) and audit tenure in considered companies. Thus in significant level of (95%) second hypothesis is proved.

**8. Conclusions and recommendations**

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Initial public offering is one of the subjects that we see in stock market, it's the problem of information asymmetry and then adverse selection. Base on sign theory, one of existing solutions for reduce information asymmetry is underpricing by high quality companies. The lost revenue is actually the cost which high quality companies have to pay for signaling. Companies which are audited by large audit institute, tend to show accounting information quality high and implement more transparent accounting process. Thus managers have less time to manipulate profits which cause less agency cost and less information asymmetry. So underpricing is expected.

Checking effect of audit institute size and audit tenure, on stock valuation in initial public offering, is the main aim of this research. Statistical results from analyze of (102) companies, which began to initial public offering in Tehran stock exchange, shows that there is a significantnegative relationship in significant level of (95%), between underpricing and audit quality(size of audit institute and audit tenure), in considered companies. Results show, in companies with high quality audit, underpricing was significantly less.

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