



## The effect of political affiliation using company size factors and government ownership percentage methods on the relationship between information asymmetry and stock price fluctuations after initial public offerings

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### ABSTRACT

With the increase in general public offerings and stock price fluctuations after the initial public offering, there was a need to examine the factors affecting these fluctuations. For this purpose, in this study, to examine the exact dimensions of political affiliation, this variable was measured by two methods, company size factor (TOPSIS) and government ownership percentage. Information asymmetry was calculated using the bid price difference between buying and selling. Also, variables of supplier type (supplier reputation and reputation), institutional ownership, number of shareholders, audit quality and earnings management were used as control variables to examine the impact of other important factors on initial public offering. The results show that political affiliation using the percentage of governmental ownership method affects short-term relationships and political affiliation with the method of firm size factors affects long-term relationships. We find that both methods of political affiliation should be used to accurately examine the dimensions of political dependence and its effect on stock price fluctuations. With a low percentage of governmental ownership, they had high political affiliation and influenced price fluctuations after initial public offerings. The findings also show that with increasing information asymmetry, stock price fluctuations increase after the initial public offering in the long run, but in the short term cannot be effective, which is due to the upward and grammatical effect of the market after the initial public offering. This is also related to the corporate political relations with the government and emphasizes the importance of properly evaluating the political relations using both methods.

**Keywords:** Political affiliation, information asymmetry, stock price fluctuations, percentage of state ownership, company size factors

## 1. Introduction

Initial offerings are made by companies with little knowledge of the market. Hypothesis of information asymmetry believes that one party has more information in the initial public offering process than the others. The most popular models of information asymmetry hypothesis have been proposed by Baron (1982) and Rock (1986). In the Baron model, there is information asymmetry between publishers and fundraisers, and in the rock model, between informed and uninformed investors. Therefore, due to the existence of information asymmetry at the time of initial public offering and according to the donated models, it is addressed. Lead in a direction that reduces the outflow of profits from the company that this method of reporting can affect the prices and valuation of shares of companies. Also, given that these companies have easier access to financial resources, it can be argued that political communication influences the decisions of investors. In addition, by examining initial public offerings and stock price fluctuations afterwards, we came across companies that had sharp price fluctuations after the initial public offering, and these companies were sometimes state-owned companies. These findings and the effects of political affiliation led us to examine its impact. In addition, the variables of institutional ownership, type of supplier, number of shareholders and the quality of auditing and profit management have been used to examine other important factors affecting price fluctuations, which are signs of information asymmetry in initial public offerings. (Success and Burbori, 2016) (Hoko, 2014) Investors can buy stocks that are reasonably priced at the time of initial public offering so that they do not experience inappropriate price fluctuations in the short and long term after the purchase.

## 2. Literature Review

we want to examine the effect of companies' political dependence on the relationship between information asymmetry and short-term and long-term stock price fluctuations after the initial public offering to find out what effect the political environment and companies' dependence on government have on pricing and stock price fluctuations. Has short-term and long-term. In this regard, regarding political affiliation, it has been stated that government political

relations in companies affect the motivation of managers in relation to financial reporting in such a way as to reduce the outflow of profits from the company, which can affect prices. And valuation of companies' shares. In addition to this by checking the supply. Initial and stock price fluctuations after that, we came across companies that had sharp price fluctuations after the initial public offering, and these companies were sometimes state-owned companies. These findings and the effects of political affiliation led us to examine the impact of this variable. Also, as one of the influential variables, the effect of information asymmetry on stock price fluctuations after the initial public offering is examined because the initial public offerings are made by companies that the market has little knowledge of and one of the parties, in the initial public offering process, It has more information than others, which is a sign of information asymmetry. Therefore, due to the existence of information asymmetry at the time of initial release and donated models, its impact is investigated. In this regard, the effect of companies' political dependence on the relationship between information asymmetry and short-term and long-term stock price fluctuations after the initial public offering is measured. In this study, information asymmetry is determined by Wenkatesh and Chiang model, which is based on determining the range of the bid price of companies' stocks. Political affiliation also means the affiliation and relationship of companies with the government and state-owned companies, which can be done in two ways: 1) percentage of ownership of state-owned companies and 2) company size factors, have been used to measure it. For the first time in research, both of these variables have been used to measure political affiliation, which can give a complete view of companies. Give political affiliation to investors. In addition, the variables of institutional ownership, supplier type 4, number of shareholders and audit quality have been used to examine other important factors affecting price fluctuations, which are signs of information asymmetry in initial public offerings. (Hoko, 2014) so that investors can buy stocks that are reasonably priced at the time of initial public offering so that they do not experience inappropriate price fluctuations in the short and long term after the purchase. In this regard, for the first time, the effect of the variable type (reputation) of the supplier is tested by three characteristics proposed for suppliers

(registered capital, relative share of the ipo market and the number of ipos managed by the supplier) in the research. It can be useful for investors when buying initial public offering shares due to the reputation of the suppliers and also for companies that are offering initial public offering in choosing the supplier for the initial public offering of their shares, according to the three characteristics mentioned Be used.

For a closer look at the research literature, initial public offering is one of the major capital market events and if not planned properly and with full knowledge of the capital market and potential investors, it can have adverse consequences for companies and the capital market (Qalibaf Asl et al., 2012) since public offerings. The initial public offering of shares is carried out by companies with little knowledge of the management and ownership of the market, about which less general information is available to outside investors at the time of the initial public offering of shares than to other listed companies. In contrast, early suppliers have more insider information about the company. Thus, there is an information asymmetry between issuers at the time of the initial public offering and potential foreign investors. (Kamyabi, Yahya, 2016). The researchers also found that information asymmetry affected trading volume and stock prices, which is another reason to examine the role of information asymmetry in price fluctuations after initial public offerings. (Vatanparast and Ghanemi, 2015).

Regarding political dependence, it can be said that the government, as the main supporter of the economy of any country, has always played the role of guardian for economic units in any society. It has been argued that state-owned companies incur lower costs by the government due to special circumstances (political affiliation) (Black & Kafi, 1994) Therefore, in order to avoid such costs (economic consequences), they will have more motivation to use reporting to reduce the outflow of profits from the company. (Ebrahimi Kordler, Shahriari, 2009) Be long-term and long-term. Other articles also state that political affiliation and influence not only affects the financial position of enterprises, but also the motivations of managers in relation to financial reporting. This situation is expected to eventually lead to significant differences in the quality of financial reporting of companies that have extensive political relations compared to other companies. (Channy, Fascio and Parsley, 2011). Given

that companies have easier access to financial resources after political communication, it can be argued that the existence of political communication in companies overshadows the decisions of investors. It is also stated that companies with political relations (government affiliation) in The choice of investment opportunities works better and they can benefit from government dependencies in choosing projects with a positive current value, thereby reducing the risk associated with their economic conditions. Therefore, it can be argued that political dependence, since it affects the risk variable, can affect the return on investment and stock prices of companies.

In addition, regarding political affiliation, it is stated that companies with a higher percentage of shares owned by large companies and government ministries will have more political ties with the government. In Iran, according to Article 4 of the General Accounting Law, a state-owned company is an organizational unit formed with the permission of the law and more than 50% of its shares are directly or indirectly owned by the government. (Laleh Majin, Maryam. Zalghi, Hassan, 2017) that both this definition and company size factors have been used for the political dependency variable in this study. Regarding the political dependence on the size of the firm, Mozes (1987) argues that as companies grow, their accountability increases and corporate executives are exposed to a wide range of claimants. Some also believe that the larger the company, the more closely they are exposed to scrutiny. Large companies, on the other hand, are a kind of implementer of government policies and are supported by the government because of this role. Therefore, it can be said that there is some kind of interaction between the government and large companies. In return for the implementation of its policies by large companies, the government has various advantages, puts. These companies also welcome this two-way interaction as they seek opportunities to grow or improve their current situation. The government also considers establishing relations with companies as a tool to control them (Rezaei and Rafieinia, 2014) (Afroozi, Rezaei, 2015). About communication, given that size is considered as an indicator by Sovereignty is considered, so size criteria can express the political relationship between the government and large corporations, so in this method, political communication refers to the communication between the government and large

corporations through performance or ability to perform operations. For this purpose, six variables Has been used to determine the political connections between government and corporations. (Rezaei and Veisi Hesar, 2014) (Afroozi, Rezaei, 2015) :

- 1) Number of employees
- 2) Foreign sales (exports)
- 3) Employer share insurance and unemployment
- 4) Total assets of the company
- 5) Market value of shareholders' rights
- 6) Income tax as a measure of company size

Previous research related to the subject of the research is as follows: Dongmin, Toshang, and Shasha (2020) studied (information asymmetry, corporate investment, and stock prices) in a study. The aim is to investigate the effect of information asymmetry on investment sensitivity to stock price and stock price sensitivity to investment. In this study, information delay and information disclosure scores were used as criteria for information asymmetry and change in the book value of assets and capital expenditures to the book value of assets as an investment criterion. The findings of this paper show that managers learn from the market when making investment decisions, and that information asymmetry has a significant negative effect on investment sensitivity to stock prices; And information asymmetry has a significant positive effect on stock price sensitivity to investment. Hira (2017) in a study examined (the relationship between political instability and stock market fluctuations and returns). In this study, the relationship between political instability and stock price has been investigated. The results indicate a negative relationship between stock price and political instability. In addition, the results show that an unstable political system ultimately leads to lower stock prices. Inflation has a negative relationship with stock prices and industrial production, and exports have a positive relationship with stock prices. Merrill and Howard (2017) examined (the consequences of information asymmetry in corporate risk management). The findings show that there is a significant impact on consumer credit risk that if a company recognizes this, it can improve credit decisions, which in turn can reduce the consequences. Theoretical effect when showing The part of risk management that is sensitive to information asymmetry will be provided. We have a direct impact on the development of credit policy

models and production volumes. These results are used for banks with portfolios including consumer credit goods and small businesses. Banks can make their credit policies and commitment and underwriting guidelines more appropriate to mitigate these effects. These plans are for empirical investigations into financial consequences, especially in the case of loss claims and consumer compensation present. Bliss and Gull (2014) 1 in a study (the relationship between political relations and debt spending). Their findings showed that from the perspective of the capital market and auditing firms, firms with political connections are more risky than other firms. Their evidence showed that these companies were mainly; Higher debt costs, higher loss reporting, and more negative equity are more likely to be audited by a large auditing firm. Bobakry et al. (2012) in a study, (the cost of ordinary shares of companies with political and non-political connections) and showed that companies with political connections have a lower cost of ordinary shares compared to other companies. Matoufi, Alireza and Pourdadashi, Azita and Barani, Zeinab in a study in (2020) examined the effect of information asymmetry on the relationship between the geographical location of the company and the risk of falling stock prices. Has been processed for this purpose. For geographical location as an independent variable of research from the cosine criterion of distance and for the risk of falling stock prices as a dependent variable, the criterion of negative skewness of stock returns has been used. Also, information asymmetry is a moderating variable. The results show that there is a positive and significant relationship between the geographical location of the company and the risk of falling stock prices. The findings also showed that information asymmetry moderates this relationship

Javadian Kotnaei and Dadashi (2018) investigated the effect of political relations on the relationship between information asymmetry and product market performance. In this research, product market competition has been measured with three variables: market share growth, group market share growth, and sales growth. According to the research results, information asymmetry has a positive and significant effect on the growth of market share of the group and has no significant effect on the growth of market share of industry and sales growth. On the other hand, the results showed that by including the political communication variable in the hypothesis test model,

the relationship between information asymmetry and market share growth is weakened, but has no significant effect on the relationship between information asymmetry and group market share growth and sales growth. Laleh Majin, Maryam . zolghi , hassan .Bayat, Morteza Sobhani (2017) examined (the effect of government ownership on the performance of companies listed on the Tehran Stock Exchange). The present study examines the relationship between government dependence and firm performance. The results indicate that there is a direct and significant relationship between government ownership and company performance, in other words, it can be said that companies that have government affiliation, this ownership affects the supply and demand of companies. It can be said that the effect of market fluctuations on the shares of state-owned companies will be greater. Nasirzadeh, Farzaneh, Abbaszadeh, Mohammad Reza and Zolfaghar Arani, Mohammad Hossein (2017) examined the effect of managers' optimism and the resulting information asymmetry on the risk of falling stock prices. The results indicate that managers' optimism, risk The stock price fall is significantly affected based on all three measurement indicators. Also, managers' optimism affects the relationship between information asymmetry and the risk of falling stock prices and intensifies this relationship. The originality and innovation of this study is the attention to the behavioral dimension of managers in dealing with investment decisions in companies and the use of combined criteria in measuring this behavior. Its achievement is to provide a perspective through which to explain the behavior of managers to prevent sudden fluctuations in stock prices stemming from the decisions of managers and create information transparency in the capital market. Zalqi and Hashemi (2016) examined (the effect of government dependence on the systematic risk of listed companies). The present study examines the relationship and government affiliation with the systematic risk of the company. The results indicate a direct and significant relationship between government affiliation and systematic risk. One of the effective factors is systematic risk, or it can be said that the effect of market fluctuations on the shares of state-owned companies will be greater. Therefore, government dependence can be considered as one of the important variables in the study of risk. Rahmani

(2016) investigated (the relationship between political communication and holding cash in companies listed on the Tehran Stock Exchange). In this study, we examine the relationship between business unit liquidity and political communication as measured by corporate lobbying. One question that has occupied the minds of many is whether political communication reduces a firm's cash holdings. Gives. The results show that there is a negative and significant relationship between the cash held and the company's political connections, which is measured through lobbying activities and the percentage of government ownership, and the amount of cash stored decreases with increasing political costs.

Given the above-mentioned theoretical principles, the following hypotheses are presented.

**Hypothesis 1:** The political dependence of companies affects the relationship between information asymmetry and short-term fluctuations in stock prices after the initial public offering.

**Hypothesis 2:** The political dependence of companies affects the relationship between information asymmetry and long-term fluctuations in stock prices after the initial public offering.

### 3. Methodology

This research is applied in terms of purpose and correlation method in terms of type. Regarding the scope and scope of the research and the method of conducting the research, it can be stated that in this research, the data required by the initial public offering companies in the stock exchange were collected from stock exchange software, financial statements and accompanying notes and entered into statistical software. And then the validity of the proposed models for research hypotheses is examined. It should be noted that to determine

Companies with political connections use the multi-criteria decision-making method (TOPSIS) and in fact the method of work is that first the weight of the indicators is determined. To perform this step, one weight must be assigned to each of the criteria. This weight can be chosen directly by the decision maker so that each of the weights is between zero and one and the sum of the weights is equal to one.

In the next step, we determine the hypothetical options of the positive ideal and the negative ideal. To form the ideal ideal option (A +), the best value must be selected in each of the columns, ie if the index

corresponding to that column had a negative aspect (such as cost), the lowest value of the matrix should be selected and if it has a positive aspect, the highest value should be selected.

Then we calculate the distance between each of the options to the positive ideal option and the negative ideal option. Finally, we have to rank the options according to the value of the ratio of closeness to the ideal solution. The lower the value, the more desirable the desired option. (Ranking using TOPSIS. The validity of the model is measured by the software. The statistical population of the research consists of initial public offering companies listed on the Tehran Stock Exchange from 1392 to 1397. In this study, short-term, two-month and long-term annual periods are considered. Has been.

### 3.1. Research Model and Variables

**Hypothesis model 1:** Companies' political dependence on the government affects the relationship between information asymmetry and short-term stock price fluctuations after the initial public offering.

$$AIR = \beta_0 + \beta_1 IA_i + \beta_2 INS_i + \beta_3 ST_i + \beta_4 NS_i + \beta_5 SA_i + \beta_6 TA_i + \beta_7 EM_i + \beta_8 PGO_i + \beta_9 CSF_i + \beta_{10} PGO_i * IA_i + \beta_{11} CSF_i * IA_i + \varepsilon$$

**Hypothesis model 2:** The political dependence of companies on the government affects the relationship between information asymmetry and the long-term performance of stock prices after the initial public offering.

$$MABHR_i = \beta_0 + \beta_1 IA_i + \beta_2 INS_i + \beta_3 ST_i + \beta_4 NS_i + \beta_5 SA_i + \beta_6 TA_i + \beta_7 EM_i + \beta_8 PGO_i + \beta_9 CSF_i + \beta_{10} PGO_i * IA_i + \beta_{11} CSF_i * IA_i + \varepsilon$$

Wherein,

IA<sub>i</sub> : Information Asymmetry

TA<sub>i</sub> : Audit Report Type

INS<sub>i</sub> : Institutional Ownership

SA<sub>i</sub> : Audit Institute Size

ST<sub>i</sub> : Supplier Type

EM<sub>i</sub> : Profit Management

NS<sub>i</sub> : Number of Company Shareholders

CSF<sub>i</sub> : Company size factors

PGO<sub>i</sub> : Percentage of Public Ownership

AIR : short-term fluctuations in ipo stock prices

MABHR<sub>i</sub> : long-term fluctuations in ipo stock prices

### Political Affiliation (POA)

In this study, to distinguish between political and non-political companies, we use the following two factors: 1-Percentage of state ownership (PGO), Explained by (percentage of shares owned by ministries and large state-owned companies. 2- Company size factors (CSF): Explained by variables such as (stock market value, book value of assets, income tax, number of employees, total export sales and insurance payable). (Rezaei, Veisi Hesar, 1393) , (Fasio. 2006), (Rezaei, Afroozi, 1394) In fact, here, the purpose of establishing political relations is the amount of significant financial performance with the government, which is done by using multiple decision-making and weighting methods. Determines the level of political communication between the company and the government. (Rezaei, Afroozi, 2015) In the study of variables according to the results obtained from the method (company size factors) companies with extensive political connections to The form of an imaginary variable is converted into a quantitative variable as follows: if it has a political affiliation, we consider the number 1 and otherwise 0. Also, in the method of using the percentage of state ownership, as mentioned, it is stated that the higher the percentage of shares of companies belong to large companies and government ministries, the more the company will have a relationship with the government. In Iran, according to Article 4 of the General Accounting Law, a state-owned company is an organizational unit formed with the permission of the law and more than 50% of its shares are directly or indirectly owned by the government. (Laleh Majin, Maryam. Zalghi, Hassan, 2017) In this regard, in the study of variables according to the results obtained from the method (percentage of government ownership) companies with political connections in the form of an imaginary variable becomes the following quantitative variable that if Political affiliation should be considered a number 1 and otherwise 0.

### Information Asymmetry (IA)

Information asymmetry is a qualitative concept and in order to be able to express it in the form of numbers, a model is needed to quantify it. To do this, the model designed by Wenkatesh and Chiang (1986) based on determining the offer price range of companies' stock is used. Because the greater the difference between the bid prices of buyers and sellers

of a company, the different and asymmetric the information influencing their decisions will be. This model has been used in several studies such as Karimer et al. (2013), Ghanemi and Watanparast (2005), Mahdavi and Kermani (2015). The model is as follows:

$$SPREAD_{i,t} = ((AP-BP) * 100) / ((AP + BP) / 2)$$

**SPREAD** The range of the difference between the bid and ask price of the stock, *i* of the company under review, *t* of the year under review, *AP* is the average bid price of the stock of company *i* in period *t* and *BP* is the average bid of the stock of company *i* in period *t*. According to this model, the larger the difference between the bid price and the larger the number of shares offered, the greater the information asymmetry. In testing the relevant hypothesis, the absolute value of the number obtained from this model is used. (Mehrani, hassas yeghaneh, 2012) and (Ebrahimi, Bahrami Nasab, 2016). To perform the calculations, first the best bid price for each share for three weeks before and after the announcement of the estimated dividend is extracted. The best bid price is the highest bid price per share per day and the best bid price is the lowest bid price per share per day (Mahdavi and Kermani, 2015). After calculating the amplitude of the difference between the two prices, the average of the numbers for each sample before and after the profit announcement it will be counted. A mean of zero indicates information asymmetry relative to profit

announcement and a non-zero mean indicates information asymmetry. (Ghanemi and Patriot, 2005)

**Stock price fluctuations after ipo in the short term (AIR)**

To calculate the short term return, the comparison of ipo return with the market index is used according to the following formula, which indicates the difference between IPO stock price fluctuations or its short term return. Comparison with price changes or short-term returns of other companies in the market in the corresponding period. (Yaghoubejad, Ahmad, Tajiknia, Elham, 2010)

$$AIR_i = ((P_{i1}-P_{i0}) / P_{i0}) - ((P_{m1}-P_{m0}) / P_{m0})$$

**Fluctuations in stocks after ipo in the long run (MABHR)**

Fluctuations in the initial public offering in the long run, based on the method of purchase and maintenance returns adjusted based on the market index on an annual basis. This model was first used by Ritter in 1991 and is calculated using the following formula: (Alavi Tabari and Rahmani, 2009)

$$MABHR_i = \sum_{t=1}^{t-n} \ln(P_{i,t} / P_{i,t-1}) - \ln(I_{m,t} / I_{m,t-1})$$

*P<sub>i,t</sub>* is the stock price at the end of period *t*, *I<sub>m,t</sub>* is the market index (TEPIX) at the end of month *t*. The duration control variables in the test of research models are as follows:

**Table 1: Control variables**

Title Variable	Methods	Calculation Method
Supplier Type	Registered capital	virtual variable, if it has a reputation, is equal to one, otherwise it is equal to zero. Then the numbers obtained based on these three properties are entered into the model in proportion. As (1/3 or 2/3 or 3/3)
	Relative market share of initial supply covere	
	Managed number of initial public offerings	
Institutional Ownership	The percentage of institutional ownership	equal to the ratio of ordinary shares held by institutional investors in a company to the total shares of that company.
Number of Company Shareholders	The number of shareholders at the time of the initial public offering is equal to or greater than 1000 (according to the main board of the stock market).	The virtual variable is one if the number of shareholders is equal to or greater than 1000 and otherwise equal to zero.
Profit management	$\alpha_0 + \alpha_1 \Delta REV_{it} + \alpha_2 PPE_{it} + \alpha_3 ROA_{it} + \epsilon$	Kotari et al. Model has been used.
Audit Quality	Audit Institute Size	virtual variable is one if it is performed by auditing firms with an A rating, otherwise it is zero
	audit report type	Virtual variable is zero if the audit report is acceptable and number one and otherwise non-standard (conditional, rejected or no comment)

**4.Result**

In the table below, central indices such as mean and median and scatter indices such as standard deviation, elongation and skewness have been calculated for different variables. The large mean of the middle indicates the presence of large points in the data because the mean is affected by these values. These data distributions are skewed to the right. INS variables are skewed to the left, and if the mean and

median values of the variables are close to each other, the distribution of the variables is symmetric. It will be addressed. The dependent variables AIR and MABHR with the amount of skewness and elongation equal to 1.05, 0.67 and 0.16, 1.27 are very similar to the normal distribution (the amount of elongation and skewness of the normal distribution is zero). This view is similar to the normal distribution.

**Table 2: Results of descriptive statistics of research variable**

parametrs		Median	Mean	Std. Deviation	Kurtosis	Skewness	Maximum	Minimum
AIR	Stock price fluctuations after ipo in the short term	-0/020	0/015	0/191	0/67	1/05	0/507	-0/228
MABHR	Fluctuations in stocks after ipo in the long run	-0/269	-0/280	0/323	1/27	0/16	0/597	-1/050
IA	Information Asymmetry	2/723	2/746	0/826	-0/62	0/21	4/553	1/223
INS	Institutional Ownership Percentage	90/700	86/578	20/460	10/25	-2/97	100/000	0/000
ST	Supplier Type	0/333	0/242	0/254	-1/06	0/52	0/667	0/000
NS	Number of shareholders	0/000	0/303	0/467	-	-	1/000	0/000
SA	Audit firm size	1/000	0/970	0/174	-	-	1/000	0/000
TA	Type of Audit Report	0/000	0/455	0/506	-	-	1/000	0/000
EM	Profit Management	0/021	0/031	0/138	-0/19	0/31	0/386	-0/199
PGO	Political Dependence ) Percentage of State Property Ownership 1(	1/000	0/848	0/364	-	-	1/000	0/000
CSF	Political Dependence ) Company Size Factors Method 2(	0/000	0/485	0/508	-	-	1/000	0/000
PGO*IA	Relationship between political affiliation1 and information asymmetry	2/375	2/340	1/413	-0/95	-0/24	4/490	0/000
CSF*IA	Relationship between political dependence 2 and information asymmetry	0/000	1/323	1/586	-0/90	0/75	4/620	0/000

#### **Investigating the normality of dependent variable distribution:**

The normality of the remnants of the regression model is one of the regression assumptions that indicates the validity of the regression tests. Then, using the Kolmogorov-Smirnov test, the normality of the distribution of dependent variables is investigated. Because the normality of the variables depends on the normality of the residuals of the model (difference between the estimated values from the actual values). Therefore, it is necessary to check the normality of the dependent variable before estimating the parameters and if this condition is not met, take a suitable solution

to normalize them (including converting it). The null hypothesis and the opposite hypothesis in this test are written as follows.

H0: The data for the dependent variable follow the normal distribution

H1: The data for the dependent variable do not follow the normal distribution

Significant probability values of AIR and MABHR dependent variables are 0.57 and 0.84, respectively, neither of which is less than 0.05, so the null hypothesis for this variable is not rejected. That is, the distribution of these variables is normal.

**Table 3: Results of one-sample Kolmogorov-Smirnov test**

Variables	Mean	Std.Deviation	Kolmogorov-smirnov Z	Sig.	Results
AIR	0/02	0/19	0/78	0/570	Normal
MABHR	-0/28	0/32	0/62	0/844	Normal



To prove the linearity of the relationship, we used the correlation test (Pearson correlation coefficient) because this criterion measures the linear correlation

between two variables. In the correlation matrix, the Pearson correlation rate between dependent and independent variables is calculated.

**Table 4 : Results of correlation test**

Variables	Statistics	AIR	result	MABHR	result
IA	correlation	0/05	Meaningless	0/36	Meaningful and positive
	Significance level	0/787		0/043	
INS	correlation	0/14	Meaningless	-0/25	Meaningless
	Significance level	0/434		0/171	
ST	correlation	0/07	Meaningless	0/07	Meaningless
	Significance level	0/687		0/722	
NS	correlation	-0/52	Meaningful and negative	-0/41	Meaningful and negative
	Significance level	0/002		0/021	
SA	correlation	0/14	Meaningless	0/11	Meaningless
	Significance level	0/426		0/543	
TA	correlation	-0/58	Meaningful and negative	0/01	Meaningless
	Significance level	0/000		0/978	
EM	correlation	0/19	Meaningless	0/16	Meaningless
	Significance level	0/286		0/376	
PGO	correlation	-0/13	Meaningless	-0/22	Meaningless
	Significance level	0/484		0/228	
CSF	correlation	-0/08	Meaningless	0/42	Meaningful and positive
	Significance level	0/648		0/017	
PGO*IA	correlation	-0/48	Meaningful and negative	-0/24	Meaningless
	Significance level	0/004		0/182	
CSF*IA	correlation	-0/22	Meaningless	0/53	Meaningful and positive
	Significance level	0/212		0/002	

The correlation between short-term stock price fluctuations with the number of shareholders is equal to -0.52 (negative and significant relationship), with the type of audit report is equal to -0.58 (negative and significant relationship) and with (relationship of political affiliation 1 and asymmetry Information (equal to -0.48) and there is no significant relationship with other variables. The degree of correlation between long-term stock price fluctuations with information asymmetry equal to 0.36 (positive and significant relationship), with the number of shareholders equal to -0.41 (negative and significant relationship) with political dependence (using company size factors) equal to With 0.42 (positive and significant relationship) and with (relationship of political dependence 2 and information asymmetry) equal to 0.53 and there is no significant relationship with other variables.

**Results of regression test of the first hypothesis**

After examining the correlation test, we examined the hypothesis test using cross-sectional regression. The

test results of the first hypothesis are as follows: The coefficient of determination is equal to 0.72, ie about 72% of the changes of the dependent variable are expressed by independent and control variables.

**Table 5: model summary of the first hypothesis**

Model	R	R Square	Adjusted- R Square
1	0.85	0.72	0.57

The regression results indicate that the model is generally significant because its probability value is 0.005, which is less than 0.05. also The results of regression show that the variables of the number of shareholders and the type of audit report as well as (relationship between political affiliation 1 and information asymmetry) have a significant and negative relationship and other variables whose probability value is higher than 0.05 are not significant

**Table 6: estimation Results of the first model of research**

Parameters		t	Sig.	VIF
Fixed value ( $\beta_0$ )		0/69	0/5	
IA	Information Asymmetry	0/90	0/378	1/17
INS	Institutional Ownership Percentage	0/52	0/606	2/89
ST	Supplier Type	0/95	0/355	1/63
NS	Number of shareholders	-2/12	0/046	1/38
SA	Audit firm size	-0/21	0/838	1/51
TA	Type of Audit Report	-3/34	0/003	1/30
EM	Profit Management	0/28	0/785	1/21
PGO	Political Dependence ) (Percentage of State Property Ownership 1	0/43	0/668	4/20
CSF	Political Dependence ) (Company Size Factors Method 2	-0/32	0/753	6/58
PGO*IA	Relationship between political affiliation1 and information asymmetry	-2/60	0/017	3/09
CSF*IA	Relationship between political dependence 2 and information asymmetry	-0/41	0/685	7/14
F Statistic	4.89	sig		0.001
R Square	0.72	Durbin-Watson statistic		1.672

**Results of regression test of the second hypothesis**

The coefficient of determination is equal to 0.74, ie about 74% of the changes of the dependent variable are expressed by the independent and control variable.

**Table 7: model summary of the Second hypothesis**

Model	R	R Square	Adjusted R Square
2	0.86	0.74	0.59

The regression results indicate that the model is generally significant because its probability value is 0.005, which is less than 0.05. also The results of regression show that the variable of the number of shareholders has a significant and negative relationship between the variables of information asymmetry and also (the relationship between political dependence 2 and information asymmetry) and the width of the origin have a significant and positive relationship and other variables that the amount Their probability is higher than 0.05 and they are not significant.

**Table 8: estimation Results of the Second model of research**

parameters		t	Sig.	VIF
Fixed value ( $\beta_0$ )		-2/74	0/013	
IA	Information Asymmetry	4/17	0/000	1/13
INS	Institutional Ownership Percentage	0/13	0/902	2/96
ST	Supplier Type	0/54	0/596	1/62
NS	Number of shareholders	-3/10	0/006	1/45
SA	Audit firm size	-0/18	0/856	1/54
TA	Type of Audit Report	0/85	0/404	1/35
EM	Profit Management	0/93	0/365	1/17
PGO	(Political Dependence (Percentage of State Property Ownership 1	0/09	0/926	4/19
CSF	Political dependence ) (Company Size Factors Method 2	-0/33	0/744	6/51
PGO*IA	Relationship between political affiliation 1 and information asymmetry	-0/75	0/463	3/11
CSF*IA	Relationship between political dependence 2 and information asymmetry	2/28	0/034	7/33
F Statistic	5.13	sig		0.001
R Square	0.74	Durbin-Watson statistic		2.08

**Check the validity of the model**

The validity of the estimated models is equal to the amount of assumptions needed to establish the model. The most important of these assumptions are :

1- Normality of the residues, 2- Matching variance, 3- Lack of autocorrelation of residue , 4- Existence of linear relationship and lack of outliers and effect points 5- No alignment between independent variable . In this research, with tests and diagnostic diagrams, the establishment of assumptions has been investigated :

1) Kolmogorov-Smirnov test which is performed to check normality. (The significant probability values of the dependent variables were not less than 0.05, which means that the distribution of the dependent variables is normal.)

- 2) Residual graph versus estimated values (sence of pattern in this graph indicates variance heterogeneity)
- 3) The Durbin – Watson statistic values close to 2 (between 1.5 and 2.5) indicate a lack of autocorrelation of the residues, which is in the range for the various hypotheses presented.
- 4) Existence of linear relationship and lack of outliers and effect points shown by distribution diagrams.
- 5) VIF values (factor of variance increase) which is an indicator for checking the alignment between independent variables. If its value is higher than 10, there is a possibility of linearity between independent variables. This index is presented for various estimation hypotheses, none of which was greater than 10.

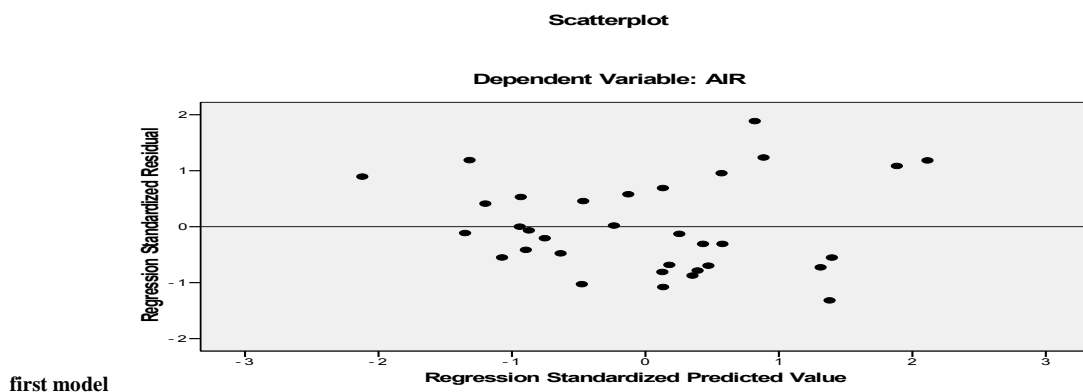


Fig 1: Residual distribution graphs versus estimated values Residual distribution graphs versus estimated values for the

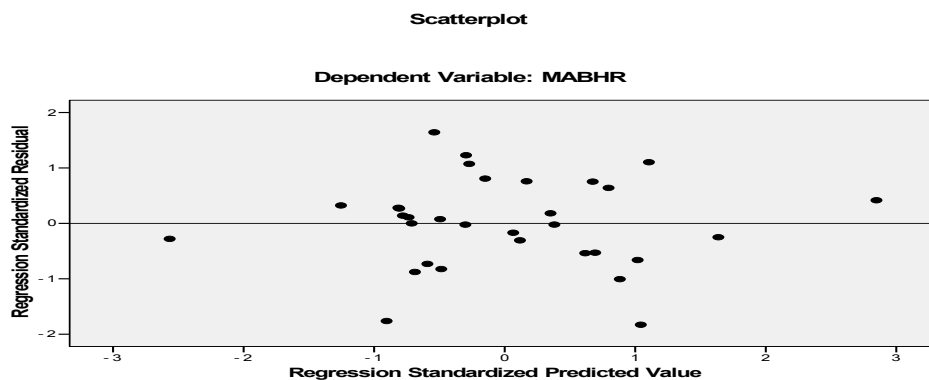
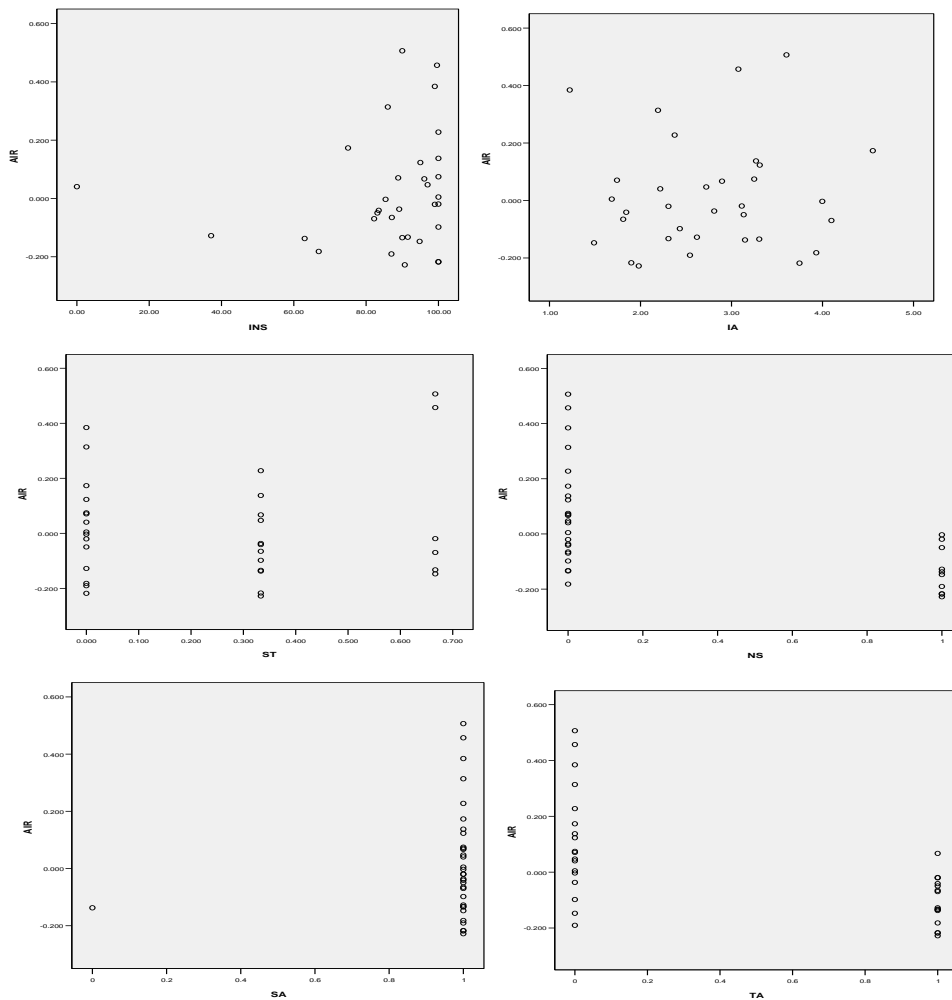


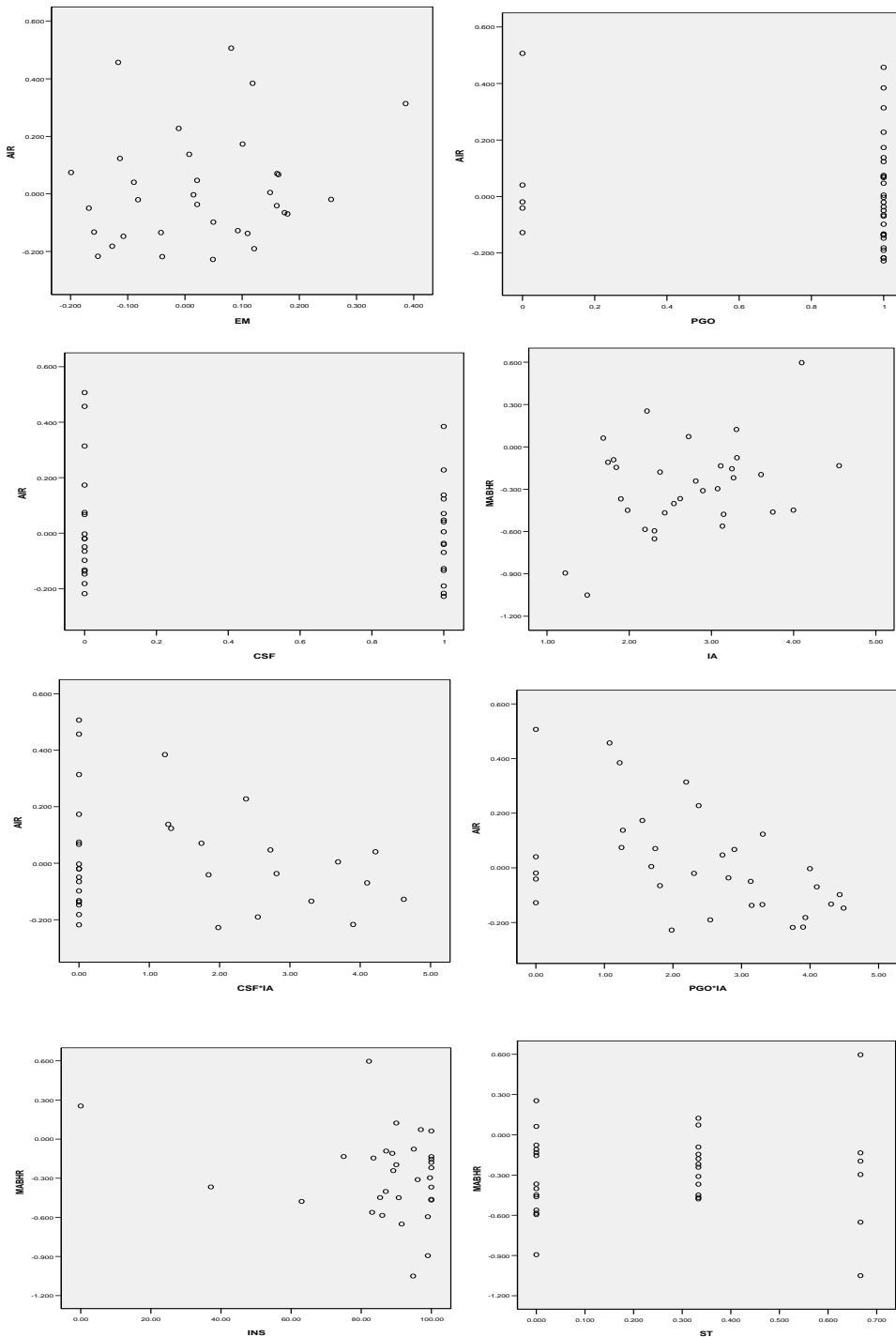
Fig 2: Residual distribution graphs versus estimated values Residual distribution graphs versus estimated values of the second model

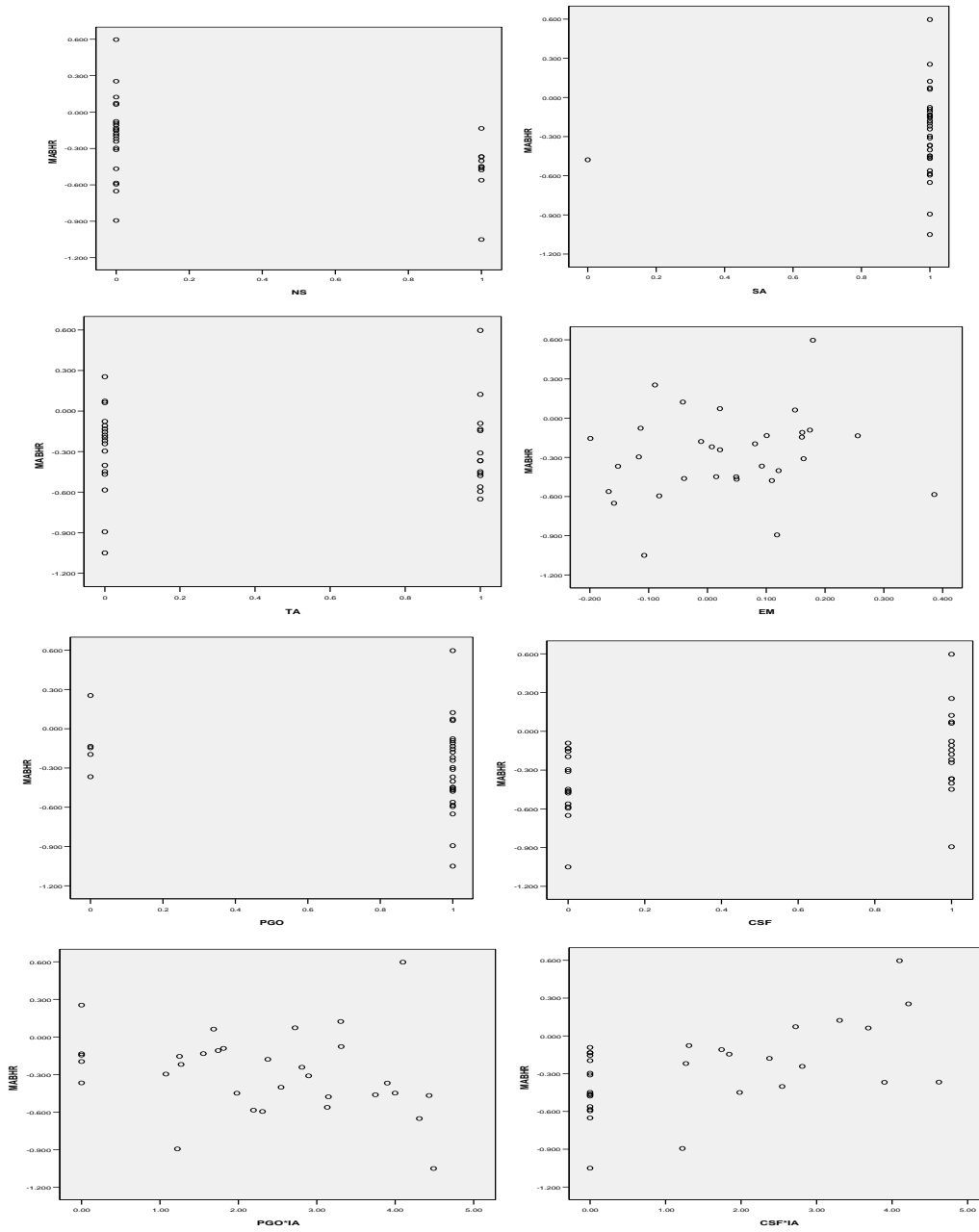
The residual graphs against the estimated values contain very important information, including the fact that the lack of a regular pattern in the scatter of these points can confirm the similarity of variance, which is

one of the presuppositions of regression modeling. In the above diagrams, too, the scatter in these diagrams is random and not patterned.

**Fig 3** :Distribution diagrams; Which shows the existence of linear communication and the lack of outliers and effective points.







## 5. Discussion and Conclusions

Examining the correlation coefficient, we concluded that there is a significant positive relationship between political dependence (using company size factors) and information asymmetry with long-term fluctuations in stock prices, but these variables cannot explain stock price changes in the short term. Examining the results

of regression tests, we concluded that political dependence (by percentage of state ownership) affects the relationship between information asymmetry and short-term fluctuations in stock prices and about 72% of the dependent variable changes are expressed by the independent and control variables. It shows the high impact of political dependence in this regard, because

in the independent case there was no significant relationship between information asymmetry and short-term stock price fluctuations and this shows the importance of paying attention to companies' political dependence in examining stock price fluctuations in the short term. Gives . While there is a significant relationship between information asymmetry variable and long-term fluctuations in stock prices and shows that the information asymmetry variable can explain stock price changes in the long run. Also, political dependence (using company size factors) affects the relationship between information asymmetry and long-term fluctuations in stock prices and about 74% of the changes in the dependent variable are expressed by the independent and control variables, which shows a high relationship between information asymmetry. With long-term fluctuations in stock prices and the high impact that political affiliation has in this regard.

Regarding the control variables of the research, by examining the correlation coefficient and the results of regression tests, we jointly concluded that the variable of the number of shareholders has a significant negative relationship with short-term and long-term fluctuations in stock prices, which shows that the more shareholders a company has. Its stock price fluctuations are less in the short and long term, and pricing is more accurate, and by investing in these companies, less investment risk can be borne. Also, the type of audit report has a significant negative relationship with short-term fluctuations in stock prices. In addition, by examining the results of regression tests, we reached the following results that there is a significant negative relationship between the variables of institutional ownership percentage with long-term fluctuations in stock prices, which shows that institutional ownership percentage, which is a fundamental factor in a company, can affect stock price fluctuations in the long run. Be. Finally, it can be said that by examining the observations, we came to the conclusion that political dependence (by percentage of state ownership) on the relationship between information asymmetry with short-term fluctuations in stock prices and political dependence (by firm size factors) on the relationship between inequality Information symmetry with long-term stock price fluctuations is effective. Also, by examining the observations, we conclude that in examining stock price fluctuations in the long run, the fundamental factors of the company such as the percentage of

government ownership and political affiliation (by the method of company size factors concluded by the fundamental factors of the company) are effective. The impact of the company's fundamental factors in the long run on stock price fluctuations.

According to the results of research as well as its limitations , the following suggestions are presented for future research :

- 1) It is suggested that since the political dependency variable (percentage of state ownership) affects the relationship between information asymmetry with short-term stock price fluctuations and the political dependence variable (company size factors) affect the relationship between information asymmetry and long-term stock price fluctuations . Therefore, in examining stock price fluctuations, both methods of recognizing political dependence should be used in order to properly examine the effect of this factor in other studies as well.
- 2) It is suggested that to examine stock price fluctuations, instead of initial public offerings, the total stock offerings in this regard should be measured because the correlation increases with increasing the volume of the study population. In fact, sometimes there is a correlation between variables but they are not strong enough to be able to affect the regression equation and be significant at the model level.

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