

Investigating relationship between active and passive institutional ownership and agency costs according to ability of management

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Abstract: The purpose of this study is to investigate relationship between active and passive institutional ownership and agency costs according to ability of managers. this research is applied in terms of purpose and descriptive-correlational in terms of nature, because in this type of research, researcher evaluates relationship between two or more variables. for this purpose, using systematic elimination method, 1440 years-companies (144 companies) during the period 2012 to 2021 were studied. financial data were analyzed using panel data and generalized least squares regression. data analysis was performed using Eviews and Stata software. The results obtained from test of research hypotheses showed that active and passive institutional ownership have a negative and significant relationship with agency costs. findings also showed that ability of managers has a negative and significant effect on the relationship between active institutional ownership and agency costs and on relationship between passive institutional ownership and agency costs.

Keywords: agency cost, ability of managers, active and passive institutional ownership.

Introduction

Agency theory refers to case where a person responsibility of deciding whether to distribute financial and economic resources or perform a service under a specific contract delegates to another person. the first person in term is called owner and second person is called agent (Jahanshad & Alam Ahrami, 2014). according to agency theory, an agency relationship is a contract which one or more persons (owner or owners) assigns operational implementation to another person. in this regard, it delegates authority to make decisions some to person that form of representation is created due to conflict of interest between parties. by establishing an agency relationship, each party seeks to maximize their personal interests. since function of utility of managers is not same as shareholders (owners), so there is a conflict of interest between them that with formation of agency relationship, cost of agency is created (Jensen & Meckling,

1976). separation of management from ownership creates agency costs and as a result, there is a conflict of interest between management and ownership (even among the classes of owners) (Rushdie, 2020). investors want managers to manage the company in a way that increases value of their capital, but managers may want to increase their personal power and wealth, which may not be in the best interests of shareholders. in this way, agency theory raises problem of conflict of interest with managers and agency cost arises. in this study, role of institutional ownership in agency costs is examined according to ability of management.

Institutional ownership, as one of major players in capital markets, has a special place in stock markets around world. the growing role of institutional ownership has raised concerns about their investment strategies and their impact on returns. there is a view that lack of a definite and planned strategy by institutional ownership and movement based on market waves can lead to more market turmoil and instability. however, there is no conclusive evidence of market turmoil as a result of institutional ownership actions (Hyun-Dong et al, 2019). if institutional owners play a role in monitoring and controlling managers, quality of financial statements, especially profit and loss statements, will increase and useful information will be provided for the correct pricing of securities, which plays an important role in optimal use of resources and national wealth (Seyedi, 2021). in addition, institutional ownership is a heterogeneous group with a diverse range of goals and interests, and their cohesive organizational structure and complex ownership network make this group even more distinctive. institutional owners, on behalf of a wide range of owners and relying on their high analytical power, make more informed and rational decisions (compared to uninformed investors), accelerate the process of improving market efficiency, and improve resource allocation performance (Hyun-Dong et al, 2019). according to agency theory, institutional owners may reduce agency conflict by monitoring management actions and improving corporate performance. institutional owners have the motivation, expertise, and resources to oversee the company. what can ensure growing life of the organization is the existence a powerful and efficient management system. in other words, in the case of authority and capability of the company's managers, we can expect good performance of companies in current situation (Andreou et al., 2013). the ability of managers and its effectiveness has been studied from various aspects in previous research. (Andreou et al., 2013) showed that ability of management improves company performance and increases company value. (Demerjian et al., 2013) showed that more able managers earn higher profits. (Baik et al., 2017) showed that ability of management improves the company's information environment and increases quality of financial reporting. ability of management is an influential and important factor in various decisions and contracts of the company and is considered as representative of shareholders. there are two general views in this regard: the first view is contract desirable and based on this view, management makes its decisions in a way that is in favor of management and in order to receive rewards, which increases the problems and agency costs. the second view is opposite of first view. according to this view, managers are guardians of shareholders' interests and according to their ability, they make their decisions in a way that is in interest of the shareholders. according to this view, the problems and costs of agency are reduced (Zhang et al., 2016). therefore, ability of managers can directly impact on relationship between institutional ownership and agency costs, which has been addressed in this study.

Literature Review

In this section, research backgrounds are presented.

Institutional ownership and agency costs

Institutional investors invest their money on behalf of others (Scholtens & Van Wensveen, 2000) and seek to maximize the risk-return relationship. institutional investors avoid companies with information asymmetries to access and process information (Carney, 1997). institutional investors prefer to distribute free cash flows in the form of dividends to reduce agency costs related to free cash flows (Stouraitis & Wu, 2004). (Bhattacharya & Graham, 2007) examined the institutional ownership and performance of the company and concluded that there is a significant reaction between performance of the company and institutional ownership of the stock. (Chen & Yur-Austin, 2007) in their study entitled "measuring agency costs: the effectiveness of major shareholders" concluded that there is a significant relationship between institutional shareholder ownership and agency cost criteria and external institutional shareholders act more effectively in reducing agency costs. (Gul et al., 2011) in examining the effectiveness of corporate governance mechanisms in reducing agency costs showed that managerial ownership, institutional ownership, reward structure and board independence reduce agency costs but board size and duality of CEO responsibilities do not affect agency costs. (Njah & Jarbou, 2013) examined relationship between institutional investors and earnings management of 76 firm mergers in 2000-2010 and concluded that institutional investor monitoring limits earnings management opportunities. (Singh & Davidson, 2013) conducted a study entitled "investigating the relationship between ownership structure and agency costs". the results of their research showed that if the ratio of asset turnover is used as a measure of agency costs, increasing the ownership of managers increases

the alignment between managers and owners and thus reduces agency costs. significant relationship was not found between ownership ratio of major external shareholders and agency costs. (Wangfeng & Lihong, 2016) conducted a study entitled "family ownership, internal controls and agency costs". the results of their research showed that agency costs family companies are lower than non-family companies. Also, the results of this study showed that the quality of internal controls plays a moderating role on the relationship between family ownership and agency costs. (Schuble, 2018) conducted a study entitled "investigating effect of internal and external mechanisms of corporate governance on agency costs" and results showed that expertise of auditing firm industry, presence of a major auditing firm, abnormal audit fees, management ownership and management composition are negatively related to agency costs. (Huu Nguyen et al., 2020) conducted a study entitled the impact of corporate governance and agency costs. for this purpose, effect of characteristics of board and ownership structure on agency costs were examined. results showed that characteristics of board and ownership structure are effective in controlling opportunistic management behavior and help lower agency conflicts and thus reduce agency costs. (Ahmadi Milasi, 2017) conducted a study entitled "investigation of effect of institutional ownership on sensitivity of investment cash flows with emphasis on agency cost in companies listed on the Tehran Stock Exchange". for this purpose, information of 148 companies listed on stock exchange during 2014 to 2018 was examined. findings showed that institutional ownership has a positive and significant effect on sensitivity of investment cash flows. investment cash flows are also more sensitive in companies that have agency cost than in companies that do not have agency cost. (Faizi, 2020) conducted a study entitled "the relationship between short-term and long -Term institutional ownership and debt agency cost". for this purpose, the information of 143 companies listed on the stock exchange during 2015 to 2019 was examined. the findings show that debt agency costs increase with the increase of short-term and long-term institutional investors. in fact, the findings confirm that short-term and long-term institutional investors have a significant and negative effect on debt agency cost. (Seyedi, 2021) conducted a study entitled "short-term institutional ownership and debt agency costs. for this purpose, the information of 132 companies listed on the stock exchange during 2015 to 2019 was examined. the findings showed that with the increase of short-term institutional investors, all costs (agency costs and debt costs) increase. (Rushdie, 2020) conducted a study entitled "the effect of government ownership on tax planning with emphasis on agency cost of listed companies". for this purpose, the information of 130 companies listed on the stock exchange during 2015 to 2020 was examined. to test hypothesis, correlation method between variables and multivariate regression equations were used. the results showed that government ownership has a significant negative effect on tax planning. also, moderating effect of agency costs on relationship between government ownership and financial planning was negative and significant.

Hypothesis 1: There is a significant relationship between active institutional ownership and agency costs.

Hypothesis 2: There is a significant relationship between passive institutional ownership and agency costs.

The moderating role ability of management and agency costs

One of human resources that plays an important role in converting company resources into revenue and creating wealth for shareholders is managers of commercial companies. information related to ability of company managers, such as their ability to use investment opportunities, provide resources, optimal allocation of resources and their knowledge and experience is one of important and valuable dimensions of intangible assets of commercial companies (Namazi & Ghaffari, 2016). ability of management, use company time and assets to get the best possible result. achieving a reliable indicator to measure ability of management is complex; Because reputation assessment is a multidimensional factor consisting of the characteristics of competence at work, honesty, credibility and strategic vision (Moradzadeh Fard, 2017). (Chemmanur et al., 2009) examined the quality of management of investment policies and information asymmetry. the results of their research showed that there is a negative and significant relationship between ability of management and information asymmetry. (Andre, 2010) examined the ability of managers and capital flows. Their results showed that countries with more capable managers are more involved in higher risk projects and have the ability to launch larger projects. He showed that at the same level of capital, more capable managers earn more returns for the company. (Demerjian et al, 2012) examined relationship between managers' capabilities and profit quality. using data envelopment analysis (DEA) technique, they first calculated performance of managers based on input sources and outputs and then measured effect of managers' performance scores on earnings quality criteria using multivariate regression. the results showed a positive and significant relationship between these two variables. they stated that managers make better quality profits by making accurate and quality estimates and judgments. (Panayiotis et al, 2013) examined relationship between ability of managers and company performance during global financial crisis. they showed that ability of managers has a positive and significant relationship with performance of companies. this means that companies run by able managers invest more and make more profit during times of crisis. (Chet et al., 2014) also examined relationship between management abilities and investment efficiency and quality of financial reporting. the results of their research showed that although the ability

of management will lose its effect in the long run, it will increase the efficiency of the company's investments and improve the quality of financial reporting. (Choi et al., 2015) examined relationship between operational capacity of CEO with accruals and future cash flows. The results of their research showed that in companies with more ability managers, relationship between current account accruals and future cash flows is stronger. (Baik, 2011) examined relationship between ability of managers and impairment of goodwill. he reviewed 4,576 years-company during years 2002-2011 and concluded that ability of managers prevents the decline in value of goodwill, and this effect is statistically significant. (Habib & Hasan, 2017) examined ability of managers, investment efficiency and risk of falling stock prices. Their results from 267,154 years- company during years 1987-2012 showed that risk of falling share prices increases for companies with more capable managers due to existence of inefficient investments by them. (Hassani Al-Qar & Marfou, 2018) examined relationship between ability of management and readability of financial reporting for a sample of 55,574 company-years. in this study, three fugue, flash-kinkid and text length indices were used to measure readability of financial reporting. also, model of (Demerjian et al, 2012) was used to measure ability of management. results showed that companies with capable managers publish more readable financial statements. (Tari Verdi et al., 2018) examined ability of managers to final value cash in United States. they conducted their research in period 2003-2013 between 27799 observations. they used model of (Demerjian et al, 2012) to measure the ability of managers and also the model of (Schuble, 2018) to measure the final value of cash. the results showed that there is a significant relationship between the ability of managers and the final value of cash. especially ability of managers is more noticeable in times of financial crisis. (Cornaggia et al., 2017) in a study entitled " ability of management and company's credit rating" examined how analysts consider ability of management as a credit risk factor in determining a company's credit rating. the results showed that more capable managers create a higher credit rating for company, which leads to increased value for company. (Dehghan et al., 2014) examined relationship between ability of management and profit quality. they found that ability of management has a direct relationship with profit quality. (Piri et al., 2015) in their research concluded that in growth period, ability of managers has a significant direct effect on reporting quality of companies listed on the Tehran Stock Exchange. (Bozorg Asl & Salehzadeh, 2016) in their research examined relationship between ability of management and quality of accruals in the Tehran Stock Exchange. results of their research showed that there is no significant relationship between ability of management and quality of accruals in study period. (Mumtazian & Kazemnejad, 2017) in a study examined relationship between ability of management and performance criteria. findings showed that there is a direct and significant relationship between the ability of managers and company performance criteria, meaning that by increasing ability of managers and increasing efficiency of company, company performance improves and thus increases wealth of shareholders. (Ali Nejad Saro Kalai & Tarfi, 2018) examined the effect ability of management on financing policy in companies listed on Tehran Stock Exchange. the results indicate that ability of management has a positive and significant relationship with financial leverage. capable managers are moving to use leverage to make profitable investments. (Hassani Al-Qar & Marfou, 2018) examined the relationship between ability of management and dividend policy in companies listed on Tehran Stock Exchange. results of their research showed that there is a positive relationship between ability of management and dividend policy. (Ebrahimi et al., 2018) in their research examined impact of financial crisis on the quality of financial reporting. results showed that the financial crisis has a significant negative effect on earnings smoothing, earnings value relationship and conditional conservatism, but no significant relationship was found between financial crisis and unconditional conservatism. (Sarлак et al., 2017) investigated the effect ability of managers on investment efficiency in companies listed on Tehran Stock Exchange. results show that quality of financial reporting has a positive effect on investment efficiency. ability of managers also has a positive effect on investment efficiency. (Hassani Al-Qar & Marfou, 2018) in a study examined effect of ability of management on tax avoidance and concluded that management ability has a positive and significant effect on tax avoidance in companies listed on Tehran Stock Exchange. (Tari Verdi et al., 2018) examined effect of company strategy and ability of managers on asymmetry of cost behavior. their results by examining 106 companies listed on Tehran Stock Exchange during the years 2006-2016 showed that investment strategy, company strategy with respect to future information and ability of management increases asymmetry of cost behavior. (Zarei, 2020) conducted a study entitled effect of agency costs on profitability with emphasis on role of ability of management. his results by examining 100 companies listed on Tehran Stock Exchange during the years 2011-2017 showed that indicators related to agency costs have a negative and significant effect on profitability index, ability of management using EGLS panel has a negative and significant effect on profitability and using GMM panel (dynamic model) has a positive and significant effect on future profitability. the results also showed that ability of management has a significant role on relationship between agency costs and profitability and reduces the negative impact of agency costs on the profitability index.

Hypothesis 3: The ability of managers affects relationship between active institutional ownership and agency costs.

Hypothesis 4: The ability of managers affects relationship between passive institutional ownership and agency costs.

Methodology

Considering that results of this research are expected to be considered by financial managers, investors and other stakeholders in decision-making, so this research is an applied research in terms of purpose; also, because research examines relationship between several variables, research is a descriptive correlation in terms of nature and method. All companies listed on the Tehran Stock Exchange constitute the statistical community of the present research, which must have the following characteristics:

1. Companies must be present in stock exchange from 2012 to 2021;
2. The companies in question are not among banks and financial intermediaries, leasing and other investment companies;
3. Incomplete data.

The time domain of this research covers from the beginning of 2012 to the end of 2021. due to the above limitations, 144 companies were selected as a sample.

Research models

The following multivariate linear regression models are used to test research hypotheses:

Model 1 relates to first hypothesis:

$$AC_{it} = a + \beta_1 AINST_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROA_{it} + \beta_4 Size_{it} + \beta_5 R\&D Intensity_{it} + \beta_6 SG_{it} + \beta_7 Age_{it} + \varepsilon_{it}$$

Model 2 relates to second hypothesis:

$$AC_{it} = a + \beta_1 PINST_{it} + \beta_2 LEVERAGE_{it} + \beta_3 ROA_{it} + \beta_4 Size_{it} + \beta_5 R\&D Intensity_{it} + \beta_6 SG_{it} + \beta_7 Age_{it} + \varepsilon_{it}$$

Model 3 relates to third hypothesis

$$AC_{it} = a + \beta_1 AINST_{it} + \beta_2 MA_{it} + \beta_3 AINST * MA_{it} + \beta_4 LEVERAGE_{it} + \beta_5 ROA_{it} + \beta_6 Size_{it} + \beta_7 R\&D Intensity_{it} + \beta_8 SG_{it} + \beta_9 Age_{it} + \varepsilon_{it}$$

Model 4 relates to fourth hypothesis

$$AC_{it} = a + \beta_1 PINST_{it} + \beta_2 MA_{it} + \beta_3 PINST * MA_{it} + \beta_4 LEVERAGE_{it} + \beta_5 ROA_{it} + \beta_6 Size_{it} + \beta_7 R\&D Intensity_{it} + \beta_8 SG_{it} + \beta_9 Age_{it} + \varepsilon_{it}$$

Which is here:

AC_{it} : Agency costs of company i in period t

$AINST_{it}$: Active institutional ownership of company i in period t

$PINST_{it}$: Passive institutional ownership of company i in period t

MA_{it} : Ability of managers of company i in period t

$LEVERAGE_{it}$: Financial Leverage of company i in period t

ROA_{it} : Return on assets of company i in period t

$Size_{it}$: size of company i in period t

$R\&D Intensity_{it}$: Research and development costs of company i in period t

SG_{it} : Sales growth of company i in period t

Age_{it} : Age of company i in period t

$\varepsilon_{i,t}$: Model error

Research variables

There are four types of variables used in this study; dependent variable, independent variable, control variable and moderator variable. a dependent variable is a variable that the researcher aims to describe or predict its variability. the independent variable is a feature that its effect on the dependent variable is examined by the researcher. the control variable is a variable that is examined in order to distinguish the effect of the independent variable on the dependent variable from the effect of other variables (Khaki, 2012). based on this, the research variables are as follows.

Dependent variable

- Agency costs

According to (Rostami et al., 2014), the interaction between growth opportunities and free cash flow is used to measure agency costs.

Tobin Q ratio (growth opportunity): this ratio is used as a measure of management performance. it is believed that poor management performance is likely to lead to decisions that will increase agency costs. therefore, a lower Q-Tobin ratio, which indicates poor performance of managers, indicates presence of agency costs.

Q-Tobin = sum market value of stock and book value of total debt on sum book value of total assets.

Free cash flows: in this research, this model is used following (Rostami et al., 2014) to measure free cash flows of a business unit.

According to model, free cash flows are calculated using following formula:

$$FCF_{i,t} = (INC_{i,t} - TAX_{i,t} - INTEP_{i,t} - PSDIV_{i,t} - CSDIV_{i,t})/A_{i,t-1} \quad \text{Relationship 1}$$

Which is here:

$FCF_{i,t}$: Free cash flows of company i in period t;

$INC_{i,t}$: Operating profit before depreciation of company i in period t;

$TAX_{i,t}$: Total tax paid of company i in period t;

$INTEP_{i,t}$: Interest paid of Company i in period t;

$PSDIV_{i,t}$: Profit of preferred shareholders paid of company i in period t;

$CSDIV_{i,t}$: Profit of ordinary shareholders paid of company i in period t;

$A_{i,t-1}$: Total book value assets of company i in period 1-t;

$Q * FCF$ = interaction between growth opportunities and free cash flow: according to (Jensen & Meckling, 1976), combining free cash flow with low growth opportunity creates agency costs. maintaining free cash flows reduces capital market's ability to monitor managers' decisions. therefore, increasing free cash flows increases resources in control and power of managers, which will eventually increase agency costs (Rostami et al., 2014).

Independent variable

Institutional ownership: includes large investors such as banks, insurance companies, investment companies, and state companies, equal to average percentage of institutional ownership of common stock.

Moderator variables

Ability of management: the measure of ability of management is Data Envelopment Analysis (DEA) designed by (Demerjian et al., 2013) to measure input variables of this analysis of cost of goods sold; general, administrative and sales expenses; fixed assets (property, plant and equipment) and intangible assets are used and output variable of this analysis is sales. DEA provides a boundary of efficiency for companies. amount of performance that DEA produces is a between zero and one. companies with efficiency score of one are highly efficient, and Companies with an efficiency score of zero are below efficiency boundary and must reach efficiency threshold by reducing costs or increasing revenues. the following equation designed by (Demerjian et al, 2012) is used to measure the efficiency of companies.

$$max_{\theta} = \frac{sales_{i,t}}{CGS_{i,t} + SG\&A_{i,t} + PPE_{i,t} + OtherIntan_{i,t}} \quad \text{Relationship 2}$$

max_{θ} : Efficiency of company i in period t;

$sales_{i,t}$: Sales of company i in period t;

$CGS_{i,t}$: Cost of goods sold by company i in period t;

$SG\&A_{i,t}$: General, administrative and sales expenses of company i in period t;

$PPE_{i,t}$: Tangible assets (property, plant and equipment) of company i in period t;

$OtherIntan_{i,t}$: Intangible assets of company i in period t;

(Demerjian et al, 2012) in order to control effect of intrinsic characteristics of company in their model, have divided company efficiency into two separate parts, namely efficiency and management ability. (Demerjian et al, 2012) did this work using 5 intrinsic characteristics of company (company size, company market share, company cash flow, company age and foreign sales (exports)). each of these five variables, as intrinsic characteristics of company, can help management to make better decisions or, conversely, limit management ability. in following model presented by (Demerjian et al, 2012), these 5 features are controlled.

$$Efficiency_{i,t} = \beta_0 + \beta_1 LN(Total Assets_{i,t}) + \beta_2 Market Share_{i,t} + \beta_3 Posiyive Free Cash Flow_{i,t} + \beta_4 LN(Age_{i,t}) + \beta_5 Foreign Currency Indicator_{i,t} + \epsilon_{i,t} \quad \text{Relationship 3}$$

$Efficiency_{i,t}$: Efficiency of company i in period t;

Total Assets_{it} : Company size (natural logarithm of total assets)
 Market Share_{it} : Company market share and equal to ratio of company sales to total industry sale of company i in period t;
 Posiyive Free Cash Flow_{it} : Virtual variable for company i in period t is considered equal to 1 if operating cash flows is positive and 0 if it is negative.
 Foreign Currency Indicator_{it} : Virtual variable for company i in period t, for companies that had exports (sales or foreign currency) is equal to 1 otherwise 0.

Control variables

Financial Leverage:
 Which is obtained by dividing total debts on total assets of company i in period t.
 Leverage_{it} : Financial leverage of company i in period t;
 TD_{it} : Total debts of company i in period t;
 TA_{it} : Total assets of company i in period t;
 Return on assets: is obtained by dividing net profit on total assets.
 Company size: is obtained by logarithm of total assets.
 R&D cost: is obtained by dividing R&D cost on total sales.
 Sales growth: to calculate sales growth, difference between total sales of company this year compared to total sales of company last year is divided by sales of the company last year is used:
 SG_{it} : Sales growth of company i in period t;
 S_{it} : Total Sales of company i in period t;
 S_{it-1} : Total Sales of company i in period t-1;
 Company age: The logarithm is the number of years of activity of the company since its establishment.

Findings

After collecting data required for research, Office 2016 software will be used to calculate variables and composite data will be used to test hypotheses.

Descriptive statistics

According to (Table 1), descriptive statistics include mean, median, minimum, maximum, standard deviation, skewness and kurtosis, which are most popular descriptive statistics. The skewness and kurtosis of data is an indicator of symmetry and indicates their status relative to normal distribution.

Table 1. Descriptive statistics of model variables

Row	Kurtosis	Skewness	Std. Dev.	Median	Maximum	Minimum	Mean
AC	31.7362	3.9981	0.7095	-3.5564	8.3719	0.1025	0.3079
AINST	1.5972	0.0654	0.3118	0.0000	0.9898	0.4192	0.4196
PINST	14.6132	3.1730	0.0937	-0.0049	0.684	0.0000	0.0423
MA	4.8798	0.7162	0.1137	-0.3885	0.5082	-0.0091	0.0000
LEV	33.8447	3.064	0.2492	0.0314	3.8517	0.5686	0.5761
ROA	4.4018	0.3666	0.1551	-0.5811	0.682	0.1105	0.1328
SIZE	4.0905	0.8109	1.6390	10.3521	20.7687	14.3261	14.5294
R&D	29.0562	4.4903	0.0031	0.0000	0.0303	0.0000	0.0013
SG	35.5373	3.8398	0.5352	-0.9092	6.5947	0.2352	0.3174
AGE	2.5917	-0.6249	0.3709	2.3026	4.2485	3.7256	3.6313

Looking at (Table 1), it can be seen that among variables, company size with a value of 14.5294 has highest mean and management ability with a value of 0.0000 has lowest mean. also, company size with a value of 1.639 has a wider standard deviation and a wider range, which indicates company size of most companies is far from mean. standard deviation of R&D intensity with value of 0.0031 has less standard deviation and scope and shows that R&D intensity of most companies is less than mean. also, the R&D intensity variable with a value of 4.4903 is skewed to right, which indicates that it has more asymmetry. the company age variable with a value of -0.6249 have a skew to

left. also, sales growth with amount of 35.5373 has highest prominence and active institutional ownership has lowest prominence with amount of 1.5972 compared to normal curve.

Classic assumptions

Due to the fact that data used in this study are combined (year-company) and combined data are both panel and pool, so in order to choose between panel and pool data method in estimating model, F-Limer test was used.

Table 2. Classical assumptions

Result	Prob	statistics	Model	Classical assumptions
Panel method	0.0000	2.3935	Model 1	F-Limer test
Panel method	0.0000	2.3517	Model 2	
Panel method	0.0000	2.4976	Model 3	
Panel method	0.0000	2.4484	Model 4	
Fixed effect	0.0000	96.7956	Model 1	Huasman test
Fixed effect	0.0000	92.2816	Model 2	
Fixed effect	0.0000	105.9683	Model 3	
Fixed effect	0.0000	99.4891	Model 4	
Autocorrelation	0.0284	4.905	Model 1	Autocorrelation test
Autocorrelation	0.0285	4.897	Model 2	
Autocorrelation	0.0233	5.257	Model 3	
Autocorrelation	0.0269	4.998	Model 4	
heteroscedasticity	0.0000	60479.56	Model 1	heteroscedasticity test
heteroscedasticity	0.0000	60990.47	Model 2	
heteroscedasticity	0.0000	79672.21	Model 3	
heteroscedasticity	0.0000	87571.52	Model 4	

As shown in (Table 2) probability of statistics for research models is less than 0.05, so panel data method is accepted. therefore, Hausman test should be used to choose between random or fixed effects method. if probability of chi-square statistic is more than 0.05, the random effects method should be used. Otherwise, fixed effects method is used. summary of results of Hausman test for research models is presented in (Table 2). also, according to (Table 2), probability of obtained statistics for autocorrelation test for all research models is less than error level of 0.05. First-order autoregressive process AR (1) method has been used to eliminate autocorrelation. also, variance heterogeneity test for research models is less than error level of 0.05. generalized least squares (GLS) method has been used to eliminate variance heterogeneity.

Test research hypotheses

(Table 3) shows findings of test research hypotheses.

Table 3. Results test of first model

Variable	prob	t-Statistic	Std. Error	Coefficient
C	0.0000	-6.4819	0.3991	-2.5873
AINST	0.0241	-2.1459	0.0546	-0.0079
LEV	0.0167	-2.3973	0.0655	-0.1572
ROA	0.0000	22.1221	0.0970	2.1469
SIZE	0.0000	9.3826	0.0224	0.2106
R&D	0.9609	0.0490	3.1354	0.1536
SG	0.0000	4.6289	0.0160	0.0742
AGE	0.503	-0.6700	0.1537	-0.1030
AR (1)	0.0000	8.1715	0.0384	0.3139
R-squared	0.7169	Adjusted R-squared		0.7499
F-statistic	0.0000	Prob (F-statistic)		22.7255
D-W	1.7173			

The D-W test was used to test autocorrelation between residues. if probability of statistic is between 1.5 and 2.5, there is no autocorrelation between residuals. probability of F-statistic is less than 0.05, so hypothesis H_0 is rejected. this indicates that all regression coefficients are not zero at same time. therefore, at 95% confidence level, this model is significant. coefficient of determination of model is 0.7499, which indicates 74.99% of changes dependent variable (agency costs) are described by independent variables. according to (Table 3), coefficient of active institutional ownership is -0.0079 which is negative and probability of t-statistic for active institutional ownership is 0.0241. this value is less than the error level of 0.05. therefore, researcher's assumption is not rejected and there is a significant relationship between active institutional ownership and agency costs. as a result, first hypothesis of research is confirmed at 95% confidence level.

Table 4. Results test of second model

Variable	prob	t-Statistic	Std. Error	Coefficient
C	0.0000	-6.3973	0.401	-2.5653
PINST	0.0047	-3.8335	0.0134	-0.0517
LEV	0.0174	-2.3821	0.0655	-0.1561
ROA	0.0000	22.0015	0.0970	2.1351
SIZE	0.0000	9.4187	0.0225	0.2122
R&D	0.9562	-0.0549	3.1262	-0.1718
SG	0.0000	4.6318	0.0160	0.0742
AGE	0.4541	-0.7489	0.1533	-0.1148
AR (1)	0.0000	8.2633	0.0384	0.3180
R-squared	0.7152	Adjusted R-squared		0.7484
F-statistic	0.0000	Prob (F-statistic)		22.5458
D-W	1.7166			

The coefficient of determination of the model is 0.7484, which shows 74.84% of changes dependent variable (agency costs) are explained by independent variables. according to (Table 4), coefficient of passive institutional ownership variable is -0.0517, which is negative, and probability of t-statistic for passive institutional ownership is 0.0047. this value is less than error level of 0.05. therefore, researcher's assumption is not rejected and there is a significant relationship between passive institutional ownership and agency costs. as a result, second hypothesis of research is confirmed at 95% confidence level.

Table 5. Results test of third model

Variable	prob	t-Statistic	Std. Error	Coefficient
C	0.0000	-6.7333	0.4728	-3.1838
AINST	0.0746	-0.3239	0.0568	-0.0184
MA	0.0000	4.3580	0.1273	0.5548
AINST*MA	0.0128	-2.3640	0.2277	-0.5382
LEV	0.0000	-4.4297	0.0646	-0.2864
ROA	0.0000	15.7024	0.1040	1.6338
SIZE	0.0000	10.3891	0.0234	0.2436
R&D	0.9075	0.1162	3.3539	0.3898
SG	0.0005	3.4920	0.0156	0.0547
AGE	0.8677	-0.1666	0.1724	-0.0287
AR (1)	0.0000	9.8364	0.0374	0.3680
R-squared	0.7232	Adjusted R-squared		0.7559
F-statistic	0.0000	Prob (F-statistic)		23.1183
D-W	1.7235			

The coefficient of determination of model is 0.7559, which shows 75.59% of changes dependent variable (agency costs) are explained by independent variables. according to (Table 5), coefficient of the interactive effect of active institutional ownership and management ability is -0.5382 which is negative and probability of t-statistic for interactive effect of active institutional ownership and management ability is 0.0128. this probability value is less than error level of 0.05 and researcher's assumption is not rejected. therefore, ability of managers moderates relationship between active institutional ownership and agency costs. as a result, third hypothesis of research is confirmed at 95% confidence level.

Table 6. Results test of forth model

Variable	prob	t-Statistic	Std. Error	Coefficient
C	0.0001	-3.9526	0.7931	-3.1350
PINST	0.1595	-1.4078	0.0882	-0.1243
MA	0.0000	4.6168	0.1587	0.7330
PINST*MA	0.0255	-2.2360	0.2649	-0.5924
LEV	0.0017	-3.1390	0.0933	-0.2928
ROA	0.0000	5.5574	0.2903	1.613
SIZE	0.0000	7.1136	0.0349	0.2488
R&D	0.9742	0.0323	2.6842	0.0867
SG	0.0401	2.0547	0.0264	0.0543
AGE	0.7337	-0.3402	0.1818	-0.0618
AR (1)	0.0000	5.7208	0.0640	0.3665
R-squared	0.7189	Adjusted R-squared		0.7521
F-statistic	0.0000	Prob (F-statistic)		22.6521
D-W	1.7301			

The coefficient of determination of model is 0.7521, which shows that 75.21% of changes of dependent variable (agency costs) are explained by independent variables. according to (Table 6), coefficient of variable interaction effect of passive institutional ownership and management ability is -0.5924 which is negative and probability of t-statistic for interaction effect of passive institutional ownership and management ability is 0.0255. this value is less than error level of 0.05. therefore, H_0 hypothesis is rejected. therefore, ability of managers moderates relationship between passive institutional ownership and agency costs. as a result, fourth hypothesis of research is accepted at a 95% confidence level.

Discussion & Conclusion

If manager owns a portion of a company's stock, agency issue potentially arises. accordingly, a large part of research in field of accounting and financial management is related to agency theory, because it is assumed that managers act based on their personal interests and shareholders' interests are not given priority, which leads to agency costs. agency costs are a type of internal costs that must be paid to a representative on behalf of manager. agency costs arise from issues such as conflicts of interest between shareholders and management. findings showed that active and passive institutional ownership have a negative and significant relationship with agency costs. in fact, monitoring role of institutional ownership can be a guarantee for proper behavior of managers. therefore, it is assumed that when there is monitoring role of institutional ownership, interests of managers in concealing bad news through internal relations diminish, thus reducing agency costs. the findings also showed that ability of managers is effective in relationship between passive institutional ownership and agency costs. it can be argued that in presence of institutional owners, managers are highly motivated to use their abilities and skills in interests of owners and shareholders, and consequently cost of agency is reduced. in general, agency theory is used to analyze the relationship between shareholders and agents. but it is also important to understand differences between different classes of shareholders because some shareholders may have different motivations and strategies for their control operations. in today's large corporations, due to number of owners and shareholders, direct monitoring of company's performance by shareholders is not

possible. Therefore, interests of company and shareholders can be maintained by creating regulatory mechanisms such as institutional owners and professional mechanisms such as capable managers.

References

- Jahanshad A. & Alam Ahrami M. (2014), Investigating relationship between free cash flows and Tobin Q ratio with managers' reward schemes. *Investment Knowledge Quarterly*, 2(7): 191-167.
- Jensen MC. & Meckling WH. (1976), Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(1): 305-360.
- Rushdie Y. (2020), Investigating the effect of agency costs and financial transparency with emphasis on audit quality. Master Thesis. Seraj Non-Governmental Institute of Higher Education, 12(1): 156-168.
- Hyun-Dong K. & Kim Y. & Mantecon T. & Songd R. (2019), Short-term institutional investors and agency costs of debt. *Journal of Business Research*, 95(1): 195-210.
- Seyedi M. (2021). Study of the relationship between short-term institutional investors and debt representation costs. Master Thesis. West Kabir Higher Education Institute, 6(1): 24-33.
- Andreou PC. & Ehrlich D. & Louca C. (2013), Managerial Ability and Firm Performance: Evidence from the Global Financial Crisis. Working Paper.
- Demerjian P. & Lev B. & Lewis M. & MacVay S. (2013), Managerial Ability and Earnings Quality. *The Accounting Review*, 88(2): 463-498.
- Baik B. & Choi S. & Farber D. (2017), Managerial Ability and Income Smoothing. Working Paper, Seoul National University.
- Zhang X. & Tang G. & Lin Z. (2016), Managerial power, agency cost and executive compensation – an empirical study from China. *Chinese Management Studies*, 10(1): 119-137.
- Scholtens B. & Van Wensveen DMN. (2000), A critique on the theory of financial intermediation. *J. Bank. Financ.* 24(1): 1243-1251.
- Carney WJ. (1997), Large bank stockholders in Germany: saviors or substitutes. *Journal of Applied Corporate Finance*, 9(4): 74-81.
- Stouraitis A. & Wu L. (2004), The Impact of Ownership Structure on the Dividend Policy of Japanese Firms with Free Cash Flow Problem. Working paper.
- Bhattacharya PS. & Graham M. (2007), Institutional Ownership and Firm Performance: Evidence from Finland, University Melbourne. Working Paper, 1-33.
- Chen X. & Yur-Austin J. (2007), ReMeasuring Agency Costs: The Effectiveness of Block Holders. *The Quarterly Review of Economics and Finance*, 47(1): 588-601.
- Gul S. & Mohammad S. & M. & Razzaq N. & Afzal F. (2011), Agency Cost, Corporate Governance and Ownership Structure: Case of Pakistan, *International Journal of Business and Social Science*, 3(9): 268-377.
- Njah M. & Jarbouli A. (2013), Institutional investors, corporate governance, and earnings management around merger: Evidence from French absorbing firms. *Journal of Economics Finance and Administrative Science*, 18(35): 89-89.
- Singh M. & Davidson WA. (2013), Agency costs, ownership structures and corporate governance mechanisms. *Journal of Banking and Finance*, 27(1): 793-816.
- Wangfeng Z. & Lihong C. (2016), Family involvement, internal control and agency costs - Evidences from China's listed family firms. *Perspectives in Science*, 7(1): 45-51.
- Schuble J. (2018), The impact of external and internal corporate governance mechanisms on agency costs, www.emeraledinsight.com.
- Huu Nguyen A. & Thuy Doan D. & Ha Nguyen L. (2020), Corporate Governance and Agency Cost: Empirical Evidence from Vietnam. *Journal of Risk and Financial Management*, 13(5): 1-15.
- Ahmadi Milasi M. (2017), Investigating the Impact of Institutional Investors on the Sensitivity of Investment Cash Flows with Emphasis on Representation Costs in Companies Listed on the Tehran Stock Exchange. Master Thesis. Payam Noor University of Bushehr Province.
- Faizi S. (2020), Study of relationship between short-term and long-term institutional investors and debt representation costs. Master Thesis. West Kabir Higher Education Institute.
- Namazi M. & Ghaffari MJ. (2016), Investigating importance and role of information management ability and financial ratios as a criterion in selecting optimal stock portfolio of companies listed on Tehran Stock Exchange (using data envelopment analysis), *Financial Accounting Quarterly*, 27(7): 29-31.
- Moradzadeh Fard M. (2017), Managerial Ability, Investment Efficiency and Risk of Future Fall in Stock Prices. *Quarterly Journal of Experimental Financial Accounting Studies*, 50(13): 56-25.

- Chemmanur T. & Paeglis I. & Simonyan K. (2009), Management Quality Financial Investments and Asymmetric Information. *Journal of Financial and Quantitative Analysis*, 44(5): 1045-1079.
- Andre CS. (2010), Managerial ability and capital flows. *Journal of development Economics*, 2(6): 126-136.
- Demerjian P. & Lev B. & McVay S. (2012). Quantifying Managerial Ability: A New Measure and Validity Tests. *Management Science*, 58(7): 1229-1248.
- Panayiotis CA. & Daphna E. & Christodoulos L. (2013), Managerial ability and firm performance: evidence from the global financial crisis.
- Chet KCW. & Chen Z. & Wei J. (2014), Agency Costs of Free Cash Flow and The Effect of Shareholder rights on the implied Cost of Equity Capital.
- Choi W. & Sam H. & Sung HJ. & Tony K. (2015), CEO's Operating Ability and the Association between Accruals and Future Cash Flows. *Journal of Business Finance & Accounting*, 42(5): 619-634.
- Baik BOK. & Farber DB. & Lee SS. (2011), CEO ability and management earnings forecasts. *Contemporary Accounting Research*, 28(5): 1645-1668.
- Habib A. & Hasan M. (2017), Managerial talent, investment efficiency and stock price crash risk. *Research in International Business and Finance*, 42(1): 262-274.
- Hassani Al-Qar M. & Marfou M. (2018), The Impact of Management Abilities and Profit Divided Policy in Companies Listed on Tehran Stock Exchange. *Empirical Accounting Research*, 6(3): 129-103.
- Cornaggia KJ. & Krishnan GV. & Wang CH. (2017), Managerial ability and credit rating. *Contemporary Accounting Research*, 34(4): 2094-2122.
- Dehghan A. & Rezaiejad F. & Babadi M. (2014), The Impact of Management Ability on Profit Quality, First National Conference on Accounting and Management.
- Piri P. & Didar H. & Khodayarganeh S. (2015), Investigating effect of management ability on quality of financial reporting during life cycle of listed companies, *Financial Accounting Research*, 6(3): 118-99.
- Bozorg Asl M. & Salehzadeh B. (2016), The relationship between management ability and profit stability with emphasis on accrual components and cash flows in companies listed on the Tehran Stock Exchange. *Accounting knowledge*, 58(8): 170-153.
- Mumtazian A. & Kazemnejad M. (2017), Investigating Relationship between Management Capabilities and Performance Criteria Using Data Envelopment Analysis: An Empirical Study of Companies Listed on the Tehran Stock Exchange, *Empirical Accounting Research*, 20(5): 88-65.
- Ali Nejad Saro Kalai M. & Tarfi T. (2018), The Impact of Management Ability on Financing Policy in Companies Listed in Tehran Stock Exchange, Faculty of Management and Economics, Shahid Bahonar University Kerman. *Journal of Accounting Knowledge*, 8(2): 159-180.
- Ebrahimi SK. & Bahrami Nasab A. & Mamshli R. (2018), The Impact of Financial Crisis on the Quality of Financial Reporting, *Journal of Accounting Knowledge*, 8(3): 165-141.
- Sarlak N. & Shaykh al-Islami F. & Izadpour M. (2018), Investigating the effect of managers' ability on investment efficiency in companies listed on the Tehran Stock Exchange, *Quarterly Journal of New Accounting and Auditing Research*, 1(1): 92-74.
- Tari Verdi Y. & Nikkar J. & Malikkhodai E. (2018), The Impact of Company Strategy on Ability of Managers on Asymmetry of Cost Behavior. *Accounting and Auditing Reviews*, 24(4): 526-503.
- Zarei M. (2020), The effect of agency costs on profitability with emphasis on the role of management ability. Master Thesis. Allameh Tabatabai University.
- Khaki G. (2012). *Research Method with Approach to Dissertation Writing*, 9th Edition, Tehran: Baztab Publications.
- Rostami MR. & Norouzi M. & Saberi M. & Mohammadi MA. (2015), Investigating the relationship between working capital management and agency costs. *Asset Management and Financing Research*, 2(2): 17-30.