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Presenting a financial reporting model for companies focusing on market value and accounting value

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Abstract

Financial reporting is the end product of the financial accounting process, providing financial information to various users, both internal and external users from business unit, in the form of accounting reports. According to this fact that the financial reports and book (accounting) value of companies have played a significant role in the life of different groups, today it is more important to pay attention to issues related to honest, relevant, reliable and transparent financial reporting. Therefore, according to its importance, in this paper we study the financial reporting of companies by focusing on the market value of companies and accounting value in inflationary conditions. For this, the information of the member companies of the stock exchange over a ten-year period 2009-2020 are collected, then the hypotheses are tested after performing the necessary statistical tests using linear regression by Eviews 10 and SPSS 26 software. In this research, multivariate regression method is used as a statistical method. The results indicate that there is no significant relationship between the quality of accruals and cash flow with the accounting value of companies in inflation condition, but there is a significant relationship between total assets and net income with the accounting value of companies in inflation conditions. Also, there is no significant relationship between the quality of accruals, cash flow and net income with the market value of companies in inflationary conditions, however, there is a significant relationship between total assets and accounting value of companies in inflationary conditions.

Keywords: Financial reporting, Accounting value, Market value of companies
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1 Introduction

According to this fact that the financial reports and book (accounting) value of companies have played significant role in the life of different groups, today it is more important to pay attention to issues related to honest, relevant, reliable and transparent financial reporting. After the events of the early third millennium and the emergence of financial crises in the context of recession and inflation of world stock exchanges, the issue of information transparency in the financial reporting process has received increasing attention, as many believe that transparency in financial reporting, particularly under specific inflationary conditions, helps management decisions. Also, the information environment of companies is less transparent, and this issue, along with the asymmetric information environment,

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makes it difficult to accurately analyze the performance of companies and can lead to the bankruptcy risk. In countries with inflationary conditions, not only the accounting value of companies is important, but also the company's return and expected rate of return would be one of the influential components in the current competitive and intensive market, which can make it difficult to make the appropriate decision for actual investors and pave the way for them to leave the market, as well as prevent the potential investors to enter the financial markets. The accounting value of companies, in addition to extending the financial markets, can lead to reduction in capital costs. Perhaps the importance of financial reporting and stock returns has led most countries in the world to realize the importance of corporate accounting value and take positive steps and measures. A number of these measures include the standard codification, the issuance of regulations and the formation of institutions and associations that monitor the performance of companies. The feature of financial reporting and stock returns can make reliable conditions and increase the investors' confidence, particularly under information asymmetry conditions. There is information asymmetry if the managers and market do not have the same information about the company and in a way the managers have more and better information about the company due to having confidential information about the company and have access to the company information before the market. For this reason, in an asymmetric information environment, it is difficult for investors to make decision and the relevance of the value of financial reports and information as well as the accounting value of companies may be useful, particularly under inflation condition in order to validate the company and create high returns. While governments have traditionally been responsible for improving people's living conditions, the societies' requirement is more than the ability of governments to meet them. In this regard, the view is changing from governments to the role of economic activities of individuals and companies in society and is focused on businesses so that progressive companies seek to differentiate themselves in terms of engagement and attention to social responsibility [12].

Like most accounting concepts such as financial reporting, accounting value, inflationary and critical conditions for the relationship among these components, a factor called information disclosure and transparency is addressed for which a comprehensive and widely accepted definition has not yet been found and there are several definitions.

Although the lexical definition of transparency is the obviousness of institutions, ease of understanding, clarity, or explicitness, a more common definition can be derived from Bushman et al. [5] who define the transparency of accounting information as a situation in which information is widely available, relevant, reliable, high quality, and timely. Barth et al. [4] has defined profit transparency as a simultaneous change in earnings and profitability with stock returns. Barth et al. [3] has define transparency as a situation in which the information user is aware of everything and can study any subject based on transparent information.

By examining whether the identification against disclosure affects value relevance, Yu [24] has provided the evidence of American corporate retirement accounting. He has shown that in the case of retirement information, information disclosure also has a significant effect on value relevance, particularly when there are institutional owners or analysts. According to Verdi [22], in companies with limited funding, the role of transparency is more important to signal more and more to resource providers for easier financing. Some also believe that greater transparency provides more complete information about the improper status of such companies and makes their status more specific. So, these companies are less inclined to transparency and be transparent. The major goal of this study is to present the financial reporting model of companies by focusing on the market value of companies and accounting value in inflationary conditions. In this regard, in this research, we attempt to examine the relationship between companies' financial reporting on company value and accounting value, and how they affect each other in terms of inflation. A number of stakeholders in this research include the companies listed on the Tehran Stock Exchange, financial and economic policy makers and analysts, universities and higher education centers, real and legal investors and other users of financial statements.

2 Theoretical Foundations and Literature Review

2.1 Financial Reporting

Financial reporting is the end product of the financial accounting process, providing financial information to various users, both internal and external users, in the form of accounting reports. Those groups of accounting reports that are prepared and presented to meet the information needs of users outside the business unit are within the scope of financial reporting action. The financial statements form the main part of the financial reporting process. Currently, a complete set of financial statements includes the balance sheet, profit and loss statement, total profit and loss statement of the company and cash flow statement and explanatory notes. Other components of financial reporting include items such as management reports on the entity's activities and management analytical reports, which forms a set called annual financial report in addition to the independent audit report (and, as the case may be, the statutory auditor's report) and financial statements. Other financial statements that are prepared as a case with specific purposes include

items such as financial reports provided to obtain the financial facilities from banks, explanatory report of the Board of Directors to increase capital for joint-stock companies, and financial statements [1].

The question of what influences a company's financial reporting process has been widely studied in accounting researches [7]. Previous studies have examined this question by identifying factors at the market level [17], the firm level [16], and the individual management level [9]. However, those papers that study the impact of individuals on corporate financial reporting decisions focus on executive managers, mainly CEOs and senior financial managers. Elements of a financial reporting system include the organization activities, the accounting system, financial reporting (information disclosure), monitoring and guidance, performance evaluation, and stakeholder support and participation.

The first step in improving accountability in public sector is to understand the used reporting systems. The accounting system reflects the activities that organizations perform in the form of monetary units. Organizations continuously prepare and publish financial statements for stakeholders (disclosure of financial information). Organizations continuously provide and publish financial statements for stakeholders (disclosure of financial information). The organization activities, the accounting system and the disclosed financial information may be evaluated by internal and external departments to ensure the compliance of the activities with existing contracts and regulations, accurate reflection of activities in the accounting system and compliance of disclosed financial information with other requirements. Stakeholders such as investors, creditors, donors, customers and the government analyze the disclosed information. The use of an accounting and reporting system in order for a manager to perform his/her duties efficiently and effectively and to report the results to competent people is inevitable in a state democratic system. Financial reporting plays a key role in the government as a public accountant, since it is used as a tool to assess the accountability and economic, social and political decisions. Although financial reporting is not the only source of information used for decision-making and accountability and cannot be reassuring about the desirability of government operations alone, however, it can play a useful role in achieving government financial reporting objectives. The Government Accounting Standards Board pays attention to the major users of financial reports. Citizens are at the forefront of government accountability.

Government funding providers or those involved in the government financing process are taxpayers, other governments, investors, creditors, underwriters and analysts, as well as government executives who are users of financial reports. It has several goals in responding to the information requirements of users of financial reporting, for example, financial reporting, which helps governments in performing public accountability. Financial reporting does not meet all accountability goals, but it provides useful financial information for many goals. Financial reporting meets the information requirements of users with limited power or do not have the required ability and resources to access information, and these reports are their only source of information. The financial statements are the core of financial reporting for external users. The content of financial reports includes the ability to evaluate public accountability, the ability to evaluate the performance of the government unit and the ability to assess the continuity of services.

2.2 Financial Reporting Limitations

As above mentioned, the financial reporting is not the only source of information for decision making and accountability, and in many cases, the users of financial reporting with general purposes should use other resources to meet their information requirements. Since financial statements with general purposes provide only specific information, it is necessary to use the other resources of information. It is presented through financial or non-financial reports of society sections not through the government. To meet the information requirements of different people, it is essential to combine and report financial and non-financial information. Combining government information with information about sections of society is necessary for performance appraisal during the government planning. On the other hand, the government accounting system should provide the possibility of special purpose reporting for the parliament, executive officials and other people who need special reports.

2.3 The Importance of Accurate and Credible Financial Reporting

According to Kothari [15], high quality financial information reduces the lack of information symmetry between the business unit management and foreign investors. The quality of the reported financial information is influenced by the quality of reported financial information and the quality of accounting standards as well as other institutional factors affecting the demand and supply of financial information (the quality of financial reporting directly affects capital markets). "Kothari" also focuses on the impact of investor support laws and enforcement laws on the nature of the aristocracy over the company and the quality of financial reporting. J. Pratt and M.F. Peters [19] states that the financial reporting information allows the debt and equity help investors to evaluate the past business management

decisions and predict future performance and figures used in debt and compensation contracts that impact management behavior.

An efficient financial reporting system is useful for the effectiveness of the aristocracy over the company in a critical situation. Deberseny et al. [6] has observed that the timeliness and cost-effectiveness of disseminating financial information via Internet is changing dramatically (web-based financial reporting is a relatively new phenomenon that provides a new style of information dissemination and represents a quite new reporting environment). The conclusion we achieve from the performance and efficiency of financial reporting is that these reports are in fact one of the major tools of examining the financial and operational performance of governments. It is important to consider the efficiency criteria for financial reporting to examine the extent to which these reports demonstrate the accountability of governments. It should be noted that these reports are more consistent with financial accountability and they are operational to some extent. It seems that financial reporting does not provide all the dimensions of accountability, i.e. public accountability of governments, but it can lead governments in this direction.

Ghodsmofidi [10] has studied the influence of the audit committee on reducing financial distortions by focusing on the auditor's expertise in the industry. This research has been performed during 2013-2016 period for active companies in the Tehran Stock Exchange. 101 companies are selected as a statistical sample and analyzed using logistic regression test in EVIEWS 9 statistical software. The results have shown that unlike the public perception, there is no statistically significant relationship between the audit committee (including the independence, financial expertise, and experience of the audit committee) and financial distortions. Also, the auditor's expertise in the industry does not have a statistically significant effect on the relationship between the audit committee (including the independence, financial expertise and experience of the audit committee) and financial distortions.

Rezaei et al. [20] has investigated the relationship between the values of accounting information in the integrated reporting approach at the Tehran Stock Exchange. With the increasingly growing information requirements on the operations of business units, it seems that the presentation of financial statements cannot meet all the needs of users in a traditional way. In this regard, a new global issue has been introduced as integrated financial reporting, so that this research provides the information on the features of integrated financial reporting by extending this type of financial reporting. For this, the required data have been collected from 81 member companies of Tehran Stock Exchange during 2006-2016 period. Their obtained results have shown that there is a significant linear relationship between net profit and stock market value. There is a significant nonlinear relationship between net profit and stock market value. There is a significant linear relationship between book value of equity and stock market value. There is a significant nonlinear relationship between book value of equity and stock market value. There is a significant linear relationship between comprehensive profit and loss and stock market value. There is a significant nonlinear relationship between comprehensive profit and loss and stock market value. Kordestani et al. [14] has studied the effect of social responsibility disclosure on accounting, economic and market performance evaluation criteria of companies. The obtained results have shown that the level of social responsibility disclosure has a significant positive effect on the rate of return on assets, earnings per share and companies' economic value added. Also, the level of social responsibility disclosure has a significant negative impact on the capital cost rate of companies. However, the level of corporate social responsibility disclosure does not have a significant effect on market value added criteria and stock return rates. Rouhi Maleki and Pakmaram [21] have studied the relationship between accounting conservatism with market reaction and the value of companies listed on the Tehran Stock Exchange. The results of this study have shown that the accounting conservatism with market reaction has a significant relationship with company value and among the control variables included in the model, the asset return rate has a positive relationship with market reaction and asset return rate and there is a positive and significant relationship between asset return rate with market to book value ratio and liquidity ratio with company value.

Mashayekh and Nasiri [18] have investigated the relationship between financial reporting transparency and the relevance of the accounting information value. To measure the transparency of financial reporting, they have used three important features of accounting information, especially earnings. These features include non-smoothing, profit and quality predictability of accruals. In order to ensure the results of each criteria and to provide an overall result of the reporting transparency, a hybrid index is created. The model of [8] is used to measure the relevance of accounting profit value. The statistical sample of this research is 78 companies listed on the Tehran Stock Exchange over 2006-2013. The obtained results show that the transparency of financial reporting has a positive and significant effect on the relevance of the accounting information value. This result can encourage accounting information managers and providers interested in attracting more capital at a lower cost, to increase reporting transparency, thereby help them to maintain investor confidence and increase the number of micro-investors in the market, and finally provide economic growth and prosperity for the community.

Wang and Sarkis [23] have studied the effect of social responsibility disclosure on corporate financial performance

and used the variables of asset return rate and Tobin's Q ratio as representative variables of corporate financial performance. Their results have shown that the variable of social responsibility disclosure has a positive effect on both criteria for the companies' performance evaluation. Han et al. [11] have used the variables of equity's return rate, stock market value to book value ratio and the stock return rate as the representative of corporate financial performance variables. Their findings have shown that of the social responsibility indicators, only the corporate governance index has a significant positive effect on corporate financial performance and also, the environmental and social indicators of social responsibility have no effect on corporate financial performance. Zhang [25] has presented evidence that improving social performance has a negative effect on the rate of return on assets, while it has a positive effect on the rate of return on property rights and the Tobin's Q ratio. K. Aijmer and B. Altenberg [2] in the United States has examined the accounting conservatism in relation to current stock returns and prices. They have studied the value of relevance by identifying the value drivers of the firm that have been transferred from the underlying financial statements items and how to stop the market containing this information to explain changes in prices and returns. The accounting conservatism has been known for its impact on financial performance and has been increasing for some decades. The financial markets can really be the application characteristic of accounting conservatism.

3 Research Methodology

This research is correlative in terms of nature and content, which analyzes the correlation relationship using the secondary data extracted from the financial statements of companies listed on the Tehran Stock Exchange. This research is performed in the framework of deductive-inductive reasoning. The reason for using the correlation method is to discover the correlation relationships among the variables. In the present study, first we test the correlation between research variables and if any, we will estimate multiple regression models. On the other hand, the present study is post-event (semi-experimental), i.e. it is based on the analysis of past and historical information (financial statements of companies). Also, this research is a library and analytical-causal study based on the analysis of panel data. The research has a practical goal and is considered as a descriptive-correlative method.

The first original model:

$$BV_{i.t} = \alpha_0 + \beta_0 FI_{i.t} + \beta_1 INF_{i.t} + \beta_2 Size_{i.t} + \beta_2 Lev_{i.t} + \varepsilon_{i.t} \tag{3.1}$$

The second original model:

$$MV_{i.t} = \alpha_0 + \beta_0 FI_{i.t} + \beta_1 INF_{i.t} + \beta_2 Size_{i.t} + \beta_2 Lev_{i.t} + \varepsilon_{i.t} \tag{3.2}$$

where the independent variables are as follows:

Financial reporting (FR):

It is calculated using the components of Accrual Quality (ACCR), cash flow, total assets (TA) and Earnings per Share (EPS).

In order to measure the quality of accruals, in the present study, we use the Kasznik [13] equation as follows:

$$ACCR_{i.t} = \alpha_0 + \alpha_1[\Delta REV_{i.t} - \Delta REc_{i.t}] + \alpha_2 PPE_{i.t} + \Delta CFO_{i.t} + \varepsilon_{i.t} \tag{3.3}$$

In this regression:

$ACCR_{i.t}$ is the total accruals,

$\Delta REV_{i.t}$ is the change in sales earning in year t over the previous year,

$\Delta REc_{i.t}$ is the change in receivable net accounts in year t over the previous year,

$PPE_{i.t}$ is the final cost of property, machinery and equipment,

$\Delta CFO_{i.t}$ is the change in cash flows from year t over the previous year

Cash Flow

$$\text{Cash Flow} = \frac{\text{Net Cash Flow of the Company}}{\text{Total Asset}}$$

Total Assets (TA)

Earnings per Share (EPS)

$$EPS = \frac{\text{NET INCOM} - \text{Preferred stock dividends}}{\text{eighted average ordinary shares}}$$

The research dependent variables are:

Accounting Value (BV)

We use book value to calculate the accounting value of the company. To do this, we subtract the final price from accumulated depreciation.

Market value (MV)

Market value of all company shares

Also, the control variables of the present study include the following components:

Inflation Rate (INF)

The inflation rate can be obtained by extracting from statistical sites and the central bank.

Company SIZE

The natural logarithm of the company's assets

Leverage (LEV)

The following equation is used to measure this variable:

$$Leverage_{i,t} = \frac{Dept_{i,t}}{Asset_{i,t}} \tag{3.4}$$

$Leverage_{i,t}$: financial leverage of company i in year t

$Debt_{i,t}$: Total debt of company i at the end of year t

3.1 Research Hypotheses

The present study includes two main hypotheses and 8 sub-hypotheses:

1. There is a significant relationship between financial reporting characteristics and accounting value of companies under economic crisis.
   (a) There is a significant relationship between the quality of accruals and the accounting value of companies under economic crisis.
   (b) There is a significant relationship between cash flow and accounting value of companies under economic crisis.
   (c) There is a significant relationship between total assets and accounting value of companies under economic crisis.
   (d) There is a significant relationship between net income and accounting value of companies under economic crisis.
2. There is a significant relationship between financial reporting feature and market value of companies under economic crisis.
   (a) There is a significant relationship between the quality of accruals and the market value of companies under economic crisis.
   (b) There is a significant relationship between cash flow and market value of companies under economic crisis.
   (c) There is a significant relationship between total assets and market value of companies under economic crisis.
   (d) There is a significant relationship between net income and market value of companies under economic crisis.

4 Research Findings

Table 1: Descriptive Statistics of Research Variables

	Median	Average	Maximum	Minimum	Standard deviation	Skewness	kurtosis	Jarque-Bera	Probability
Book value	4687.72	2645	42193	408	5351.95	2.684	12.508	4982.809	0.000
Market value	30612149	2357000	2.451	0	7.758	31.577	99.052	4162906	0.000
Quality of accruals	-75.186	0.053	6236.564	-18494.42	982.998	-10.994	16.326	1148718	0.000
Cash flow	11.135	0.023	1230.718	-0.006	74.576	11.273	14.866	922683.9	0.000
Net income	55143.2	1450	4554224	-6536258	419169	-0.133	98.27	379326.7	0.000
Total assets	5713359	725068	$1.15E+08$	2332	10703793	4.919	40.456	62678.75	0.000
Inflation	19.568	21.5	37.36	9.25	9.25	0.567	2.073	89.628	0.054
Financial Leverage	1.015	0.697	58.989	0.012	2.112	21.118	56.8198	13406993	0.000
Company size	5.717	5.612	8.359	3.542	0.858	0.361	3.199	23.465	0.000

According to Table 1, the maximum standard deviation is the total asset variable which indicates that this variable has high fluctuations and the minimum data dispersion is related to the company size. Also, the market value, quality of accruals, cash flow, total assets and financial leverage have simultaneous skewness and kurtosis, and kurtosis is observed among all variables except the inflation rate. Jarque-Bera Test statistics does not confirm the normality of the research variables. Since the p-value of the variable of the producer price index is less than 0.05, it indicates that the data of this variable is not normal. But the inflation rate variable has a normal distribution.

4.1 Shapiro-Wilk Normality Test

The idea of Shipro-Wilk test is similar to that of quantile-quantile plot. In this test, a regression relation is considered between the sequential statistics of the data and the expected values of the sequential statistics of the normal distribution, and the test statistic is like a determination coefficient in regression, where the higher it is, the more the data distribution is similar to the normal distribution and the small values of test statistic rejects the null hypothesis (normal data distribution). The Shipro-Wilk test is based on a regression relation or correlation analysis between sequential statistics and their given values.

Table 2: Shapiro-Wilk Normality Test

Variables	Statistics	Degrees of freedom	Sig
Quality of accruals	.1370	983	.000
Cash flow	.1300	983	.000
Net income	.3340	983	.000
Total assets	.5490	983	.000
Book value	.6970	983	.000
Market value	.0150	983	.000
Leverage	.5890	983	.000
Company size	.9870	983	.000

If the significance level in the Shipro-Wilk test, shown by sig. in this table, is higher than 0.05, the data can be assumed as normal data with high confidence. Otherwise, it cannot be said that the data has normal distribution. Therefore, H_0 hypothesis is rejected at the 95% confidence level based on the normal distribution of these variables is normal is rejected and indicates that the dependent variable does not have a normal distribution and we should use a non-parametric test to examine the correlation among variables.

4.2 Correlation of research variables

In this section, the relationship between research variables and their correlation is studied using the Spearman correlation coefficient, and analyzed by SPSS 25 software. The matrix of correlation coefficients among the research variables is shown in table 3.

Table 3: Spearman correlation

		Quality of accruals	Cash flow	Total assets	Net income	Book value	Market value	Inflation	Leverage	Company size
Quality of accruals	Spearman correlation	1								
	Probability									
Cash flow	Spearman correlation	.010	1							
	Probability	.725								
Total assets	Spearman correlation	−.043	−.074*	1						
	Probability	.138	.010							
Net income	Spearman correlation	−.068*	.003	−.068**	1					
	Probability	.020	.909	.000						
Book value	Spearman correlation	−.012	.003	−.039	.069*	1				
	Probability	.699	.926	.223	.030					
Market value	Spearman correlation	.002	−.003	−.003	−.004	−.024	1			
	Probability	.941	.913	.921	.877	.446				
Inflation	Spearman correlation	.035	−.034	.016	.007	.001	0.036	1		
	Probability	.225	.239	.577	.807	.974	.213			
Leverage	Spearman correlation	.004	−.017	−.005	.000	−.011	−0.002	.025	1	
	Probability	.884	.558	.858	.997	.727	.945	.380		
Company size	Spearman correlation	.088**	.072*	−.049	−.037	.002	−0.006	−.021	−.235**	1
	Probability	.003	.013	.089	.205	.957	.826	.460	.000	

According to the results of Spearman test, the quality of accruals has a negative correlation with net income and positive correlation with company size. The independent cash variable is negatively correlated with total assets and positively correlated with company size. Also, the net income is positively correlated with accounting value, and the total assets are positively correlated with net income and financial leverage is negatively correlated with company size. However, there is no correlation between other research variables.

4.3 Reliability test

In this section, first we test whether the research variables are static or dynamic. The Hadri test is used to evaluate the reliability. The experimental results are shown in table 4.

Table 4: Hadri test

Variable	T Test	P-value
Quality of accruals	10.2507	0.000
Cash flow	2.82076	0.002
Net income	2.86343	0.002
Total assets	9.89196	0.000
Book value	5.94076	0.000
Market value	1.78946	0.000
Inflation	12.7414	0.000
Leverage	5.66156	0.000
Company size	7.54620	0.000

According to the results of table 4, as the P value is less than 0.05, all variables are at a reliable level during the

research period. This means that the mean and variance of the variables and the covariance of the variables is constant over time. As a result, the use of these variables in the model does not led to false regression.

4.4 Chaw Test

To accurately determine the estimation of the regression model, it must be first examined whether there are heterogeneity or individual differences. If there is heterogeneity, the panel data method is used, otherwise the pooled method is used. Therefore, the Chaw test is used to determine the application of the fixed effects model against the pooled data (integrated). The hypotheses of this test are as follows.

Table 5: Chaw test results

	Test result	Prob.	D.F.	Statistics value	Effects Test
First hypothesis	Panel data model	0.000	(85,410)	22.274302	F Term
		0.000	85	457.393	Chi-square Term
Second hypothesis	Panel data model	0.000	(117,999)	11.595661	F Term
		0.000	117	975.358599	Chi-square Term

The results of the Chaw test show that the p value in the model is less than 0.05, so the hypothesis H_0 is rejected and the hypothesis H_1 is confirmed. Therefore, it can be concluded that there is individual heterogeneity (invisible individual effects) and the panel data method should be used to estimate the model. As a result, the Hausman test is performed to determine the use of the fixed effect model versus the random effect model at the next step.

4.5 Hausman test

The Hausman test is based on the existence or non- existence of a relationship between estimated regression error and model-independent variables. The hypotheses of this test are:

H_0: Random Effect

H_1: Fixed Effect

Table 6: Hausman test result

hypotheses	Test result	P-value	Degrees of freedom	Chi Square test
First hypothesis	Fixed effects model	0.0987	12	18.598
Second hypothesis	Fixed effects model	0.0211	12	23.880

As table 4,5,6,7 shows, the value of P is less than 0.05, which means that there is a relationship between the estimated regression error and the independent variables, so hypothesis H_0 is rejected and hypothesis H_1 is accepted. According to the results of Chow test and Hausman test, the most appropriate method to estimate the hypothesis test is the fixed effects model.

4.6 Test results of research hypotheses

4.6.1 Test results of the first hypothesis (sub-hypotheses 1 to 4)

The first hypothesis of this study is the relationship between financial reporting and accounting value of companies under economic crisis. This hypothesis is estimated using model (3.1) as the panel data:

$$BV_{i.t} = \alpha_0 + \beta_0 FR_{i.t} + \beta_1 INF_{i.t} + \beta_2 Size_{i.t} + \beta_2 Lev_{i.t} + \varepsilon_{i.t}$$

As in this study we measure the financial reporting according to 4 different factors of accruals quality, cash flow, total assets and net income, so this hypothesis consists of 4 sub-hypotheses where the hypothesis model can be stated as follows:

$$BV_{i.t} = \alpha_0 + \beta_0 ACCR_{i.t} + \beta_1 CASHFLOW_{i.t} + \beta_2 TA_{i.t} + \beta_3 EPS_{i.t} + \beta_4 INF_{i.t} + \beta_5 Size_{i.t} + \beta_6 Lev_{i.t} + \varepsilon_{i.t}$$

Table 7: Results of the first research model estimation

Variables	Symbol	Coefficient	standard error	t test	probability	Result
y-intercept	C	43.961	555.058	7.877	0.000	
Quality of accruals	ACCR	−0.061	0.165	−0.367	0.714	rejected
Cash flow	CASHFLOW	−0.251	1.241	−0.203	0.840	rejected
net income	EPS	0.000	0.000	−2.623	0.009	accepted
Total assets	TA	0.001	0.000	4.930	0.000	accepted
Inflation	INF	3.800	21.884	0.174	0.862	rejected
Leverage	LEV	149.623	73.874	2.025	0.043	accepted
Company size	SIZE	34.224	119.806	0.286	0.775	rejected
F Test: 20.936 probability: 0.000			Determination coefficient 0.844			
Watson Camera 1.721			Modified determination coefficient 0.803			

According to Table 7, F test and its significance level is less than 0.05, so the null hypothesis is significant with 95% confidence and it is able to express the dependent variable based on the available data. Also, according to the determination coefficient, about 84% of the changes of the dependent variable are obtained by independent and control variables. The Watson camera statistic 1.72 shows that the residuals in the regression are not auto-correlated. According to t-test, the quality of accruals −0.367 and the significance level of this test, which is 0.714 and higher than 0.05, the existence of a significant relationship between the quality of accruals and accounting value is rejected, so the first sub-hypothesis is rejected. Also, according to the t-test for the independent variable of cash flow −0.203 and the significance level of this test, which is more than 0.05 and is 0.840, the existence of a significant relationship between cash flow and accounting value is rejected. Therefore, the second sub-hypothesis is also rejected. According to the third sub-hypothesis regarding the significant relationship between total assets and accounting value, as its statistical value is 4.930 and its significance level is 0.000, this hypothesis is confirmed by 95% probability. As a result, there is a positive and significant relationship between total assets and accounting value in order to have a positive coefficient. That is, as the asset increases by one unit of change, the total accounting value also increases. In addition, regarding the relationship between the independent variable of net income and accounting value, since the statistic of this test is outside the ±1.96 and is −2.623 and also the significance level of this test is 0.009 and less than 0.05, therefore, there is a significant inverse relationship between net income and accounting value. And the fourth sub-hypothesis is accepted. In the first model, among the control variables, only the financial leverage with a statistical value of 2.025 t and a significance level of less than 5% with a value of 0.043 has a direct and significant relationship with accounting value. However, the other control variables in this model have no significant relationship with the accounting value due to its p-value which is greater than 0.05.

$$BV_{i.t} = 43.961 - 0.061ACCR_{i.t} - 0.251CASHFLOW_{i.t} - 0.000TA_{i.t} + 0.001EPS_{i.t} + 3.800INF_{i.t} + 149.623Size_{i.t} + 34.224Lev_{i.t} + \varepsilon_{i.t}$$

4.6.2 Test results of the second research hypothesis (sub-hypotheses 5 to 8)

The second hypothesis of this study is the relationship between financial reporting feature and market value of companies under economic crisis. This hypothesis is estimated using model (3.2) in the form of panel data as follows:

$$MV_{i.t} = \alpha_0 + \beta_0 FI_{i.t} + \beta_1 INF_{i.t} + \beta_2 Size_{i.t} + \beta_2 Lev_{i.t} + \varepsilon_{i.t}$$

Since in this study we measure the financial reporting according to 4 different factors of accruals quality, cash flow, total assets and net income, so this hypothesis consists of 4 sub-hypotheses, so that the hypothesis model can be expressed as follows:

$$MV_{i.t} = \alpha_0 + \beta_0 ACCR_{i.t} + \beta_1 CASHFLOW_{i.t} + \beta_2 TA_{i.t} + \beta_3 EPS_{i.t} + \beta_4 INF_{i.t} + \beta_5 Size_{i.t} + \beta_6 Lev_{i.t} + \varepsilon_{i.t}$$

According to table 8, the F test and its significance level, which is less than 0.05, so the null hypothesis is significant with 95% confidence level and is able to express the dependent variable based on the available data. Also, according to the determination coefficient, about 50% of the changes of the dependent variable are expressed by independent

Table 8: Results of the second research model estimation

Variables	Symbol	Coefficient	standard error	t test	probability	Result
y-intercept	C	24.000	34.000	7.018	0.000	
Quality of accruals	ACCR	22.814	14.968	1.509	0.132	rejected
Cash flow	CASHFLOW	31.359	42.123	0.746	0.456	rejected
net income	EPS	−0.025	0.030	−0.817	0.414	rejected
Total assets	TA	−1.113	0.497	−2.239	0.025	accepted
Inflation	INF	19.800	14.600	1.307	0.191	rejected
Leverage	LEV	−84.370	32.570	−2.570	0.010	accepted
Company size	SIZE	−22.800	28.300	−0.803	0.422	rejected
F Test: 7.859 probability: 0.000			Determination coefficient 0.504			
Watson Camera 1.637			Modified determination coefficient 0.439			

and control variables. Watson's camera statistic 1.63 shows that the residuals in the regression do not have auto-correlation. According to t-test, the quality of accruals 1.509 and the significance level of this test, which is more than 0.05 and is 0.132, the existence of a significant relationship between the quality of accruals and market value is rejected and the fifth sub-hypothesis of the research is rejected.

Also, considering the t-test for the independent variable of cash flow 0.746 and the significance level of this test, which is more than 0.05 and is 0.456, the existence of a significant relationship between cash flow and market value is rejected. Therefore, the sixth hypothesis of the research is rejected. According to the seventh sub-hypothesis of the research regarding the significant relationship between total assets and accounting value, considering that its statistical value is -2.239 and its significance level is 0.025, this hypothesis is confirmed with 95% probability. Therefore, there is an inverse and significant relationship between total assets and market value due to a negative coefficient. It means that by increasing one unit of change in assets, the total market value decreases. Also regarding the relationship between the independent variable of net income and market value, as the statistic of this test is not outside the ± 1.96 and is -0.817 and also the significance level of this test is 0.414 and is higher than 0.05. Therefore, there is no significant relationship between net income and market value. And the 8th sub-hypothesis is rejected. In the second model, among the control variables, only the financial leverage with a statistical value of -2.570 t and a significance level of 0.010 which is less than 5% has an inverse and significant relationship with market value. However, the other control variables in this model have no significant relationship with the accounting value due to having a p-value higher than 0.05. According to the above table, the estimated regression model of the first hypothesis is as follows:

$$MV_{i.t} = 24.000 + 22.814ACCR_{i.t} + 31.359CASHFLOW_{i.t} - 1.113TA_{i.t} - 0.025EPS_{i.t} + 19.800INF_{i.t} - 84.370Size_{i.t} - 22.800Lev_{i.t} + \varepsilon_{i.t}$$

5 Discussion and Conclusion

In the present research, we study the financial reporting of companies by focusing on the market value of companies and accounting value. The first hypothesis of the research is on the existence of a significant relationship between the financial reporting and the accounting value of companies under economic crisis. In order to measure the features of the financial reporting, four variables of accrual quality, cash flow, total assets, and net income are used. Therefore, the first main hypothesis consists of 4 sub-hypotheses where the relationship of each of these four items with the accounting value is considered under the economic crisis. According to the results of the first hypothesis test, the existence of a significant relationship between the quality of accruals and accounting value is rejected and the first sub-hypothesis of the research is not accepted. Also, considering the t-test for the independent variable of cash flow with a value of -0.203 and the significance level of this test, which is higher than 0.05 and equal to 0.840, the existence of a significant relationship between cash flow and accounting value is rejected. Therefore, the second sub-hypothesis of the research is not confirmed. According to the third sub-hypothesis of the research on the significant relationship between total assets and accounting value, considering that its statistical value is 4.930 and its significance level is 0.000, this hypothesis is accepted with 95% probability. Therefore, it is found that there is a positive and significant relationship between total assets and accounting value due to having a positive coefficient, i.e. by increasing one unit of change in assets, the total accounting value also increases. Furthermore, regarding the relationship between net income and accounting value, it is found that since the statistic of this test is outside the ± 1.96 and is -2.623 and

also the significance level of this test which is 0.009 and less than 0.05, so there is a significant inverse relationship between net income and accounting value. As a result, the fourth sub-hypothesis is accepted. Also, regarding the second hypothesis which is about the significant relationship between financial reporting and market value of companies under economic crisis, four variables of accruals quality, cash flow, total assets, and net income are used to measure the financial reporting feature. Therefore, the first main hypothesis consists of 4 sub-hypotheses, where the relationship of each of these four items with the market value in the conditions of economic crisis is considered. According to t-test, the quality of accruals 1.509 and the significance level of this test, which is higher than 0.05 and is 0.132, the existence of a significant relationship between the quality of accruals and market value is rejected and the fifth sub-hypothesis is accepted. In addition, considering the t-test for the independent variable of cash flow 0.746 and the significance level of 0.456, which is higher than 0.05, the existence of a significant relationship between cash flow and market value is rejected. Therefore, the sixth sub-hypothesis of the research is not accepted. According to the 7th sub-hypothesis on the significant relationship between total assets and market value, based on its statistical value -2.239 and its significance level 0.025, this hypothesis is confirmed with 95% probability. Therefore, there is an inverse and significant relationship between total assets and market value due to a negative coefficient. It means that by increasing one unit of change in assets, the total market value decreases. Furthermore, regarding the relationship between net income and market value, it is found that the statistics of this test is not outside ± 1.96 and it is -0.817, and also the significance level of this test is 0.414 which is higher than 0.05. Therefore, there is no significant relationship between net income and market value and the 8th sub-hypothesis is rejected.

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