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THE MEDIATING ROLE OF ACCOUNTING INFORMATION QUALITY ON THE RELATIONSHIP BETWEEN COMPARABILITY OF FINANCIAL STATEMENTS AND CASH HOLDINGS: EVIDENCE FROM SELECTED IRANIAN COMPANIES

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ABSTRACT

This study investigates the mediating effect of accounting information quality on the Relationship between Financial statement comparability and cash holdings. Hence, in this paper, data from 90 non-financial firms listed on Tehran Stock Exchange (TSE) between 2013 and 2017 (450 firm-year) were evaluated by using linear regression models with panel data analysis. To test the significance of the mediating effect, the Sobel test is used. The results of the research show that financial statement comparability decreases poor accounting information, Also the results indicate that poor accounting information increases cash holdings. Moreover, by adding accounting information quality (mediating variable) to the model, there is also a significant relationship between Financial statement comparability and cash holdings which implies comparability enhances accounting information quality that indirectly and significantly decreases cash holdings. Thus the author finds a partial mediation effect of accounting information quality on mentioned relationship.

1. INTRODUCTION

One of the main duties of corporate financial managers is to manage the firm's cash. Firms determine their cash management strategies on the basis of two goals: to provide cash for the company's payments and to minimize the funds remaining in the company stagnant. The second goal reflects this thinking that if no asset items are used properly, there will be no returns for the company. Unfortunately, these two goals may contradict each other. One theory of corporate cash management

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is pecking order theory, which, in contrast to the trade-off theory, contends that the most worry of managers is not to determine the optimal level of cash; Instead, they focus more on how to fund investment projects and for investment, use available cash in the company, retained earnings, debt, and equity, respectively. According to this theory, managers will save the company's cash assets to use for investments. Another theory relates to agency theory that managers with high cash assets have a greater incentive to use these assets for their own interests and do not pay attention to optimal levels of cash and appropriate investments (Khajavi et al., 2012).

Mehrvarz and Marfou (2016) state that the information of a reporter entity will be more useful when compared with similar information from other entities and with similar information of the same entity for other periods. Comparability is one of the main quality features associated with providing information that adds to the usefulness of the information.

According to FASB Statement No. 8 (FASB., 1980) and the IASB Financial Reporting Framework, the ability to compare, validate, timely and comprehensible are qualitative features that highlight the handiness of the information that is pertinent and truly allocated. the ability to compare, which enables the investors to recognize and get similitudes and contrasts, decreases the expense of getting information and processing them, And by that way enhances the general amount of quantity and quality of companies' information (De Franco et al., 2011) and leads to the allocation of capital efficiency (Chen et al., 2013). Other advantages of comparability include: increasing the quality of available information and, consequently, increasing the coverage of analysts and their predictive accuracy and reducing their predictive dispersion (Horton et al., 2013; Lang et al., 2010). Increasing liquidity and volume of stock trades and reflecting more specific company's information on the returns of the current period (Barth et al., 2013) and reducing the benefits of using confidential information (Brochet et al., 2012). In the concept statement No. 8 of the Financial Accounting Standards Board, the importance of financial statement comparability has been highlighted that among the most basic reasons for the need for financial reporting standards is increasing the ability to compare the reported financial information, and in the theoretical concepts of financial reporting of Iran (Accounting Standards Committee., 2010), It has been argued that if information is relevant and reliable, its usefulness will be restricted if it is not comparable and incomprehensible.

On the other hand, the quality of accruals is considered as a substitute for the quality of accounting information, as it provides information about the expected cash flow to investors' knowledge and can be a criterion for optimal cash management (García-Teruel et al., 2009). Due to the effect of accounting information quality on the companies' interest in holding cash, firms with low (high) quality of accounting information tend to hold more (less) cash. Since opaque reporting accentuates information asymmetry, thereby making external financing costly (Sun et al., 2011). In terms of comparability of financial statements, Peterson et al. (2015) show that by increasing the comparability of financial statements, the incentives for earning management are reduced. In general, the better quality of accrual accounting information is, the better prediction of future corporate cash flow is easier, and this prediction is more easily done, and in this situation, it seems that companies are more easily financed and are not obliged to hold additional cash in the company. On the other hand, managers of Iranian companies may hold more cash due to more caution, regardless of the quality or weakness of the quality of accounting information.

Since the Similarity level of financial statements decreases the expense of acquiring information and, expanding the information quality, and consequently reduces unreliability information through the access of investors to low-cost information, it is expected that this diminishing in unreliability information, subsequently decrease cash holdings by lessening restrictions of financing and information asymmetry issues.

What is less obvious from the existing studies is the mediating role of accounting information quality in the relationship between financial statement comparability and cash holdings. To handle this problem, the current study was designed to answer this problem.

This study develops the existing literature in various significant ways. To start with, as far as we could possibly know, it is the first study that examines the accounting information quality as a potential mediating variable between the similarity level of financial statements and cash holdings. Second, it features the problem of accounting information quality and the comparability of financial statements in Tehran Stock Exchange (TSE) firms. In this manner, this paper can give more experience in solving agency problems and information asymmetry in TSE firms.

2. LITERATURE REVIEW AND BACKGROUND OF THE STUDY

Mita et al. (2018) utilized 18 nations data of Europe, Asia, Africa, and Australia in a period from 2003-2012, found that "the level of IFRS adoption positively affects the comparability of financial statements. The degree of compliance with IFRS obliquely expands the ownership of cross-border investors via the comparability of financial statements". Their findings were in accordance with defenders for compliance with IFRS which contended that "compliance with IFRS enhances the financial statements comparability, thus improves the attraction of foreign investors' ownership". Parsa and Sarraf (2018) used 81 firms data in 2010-2017 in TSE listed companies and demonstrated that comparability of financial statements significantly reduced expected crash in stock prices. Habib et al. (2017) examined a sample of 58828 firm-year in the US during 1981-2013. They stated that "there is a significant and negative relationship between financial statement comparability and cash holdings". Also, they examined whether corporate governance, financial reporting quality, and financing constraints play a mediating role in this relationship or not. Their findings confirmed the correctness of this issue. Kia and Garayeli (2017) used a sample of 85 companies listed in TSE during 2012-2016 and Multivariate Regression Model based on panel data, showed that "the comparability of accounting information reduces accrual-based earnings management, while increases real earnings management". That's mean, with the expansion in the comparability of financial statement, managers replace real earnings management with accruals earnings management. Hajiha and Chenari (2017), with 400 firm-year data in TSE listed companies during 2012-2016, uncovered that "financial statements comparability significantly increases the real earnings management". That means, with expanding the comparability, managers' propensity to real earnings management would be expanded to manipulating real activities. Hosseini (2016), using 111 active firms in TSE during 2010-2014 indicated that the score of disclosure quality, timeliness and reliability affected the stock price delay. also, the mentioned effects were confirmed in the firms with a high risk of lack of funds. Fakhari and Taghavi (2010), by using 150 non-financial firms listed in TSE in period 2001-2007 (1050 observation) showed that "cash holdings are negatively affected by financial reporting quality. These

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findings suggested firms with good accrual quality hold lower cash levels than firms with poor accrual quality". García et al. (2009), using panel data for firms listed in the Spanish Stock Exchange over the period 1995-2001, showed that firms with good accruals quality hold lower cash levels than firms with low quality of accruals. They suggested that the quality of accounting information may reduce the negative effects of information asymmetries and adverse selection costs, allowing firms to reduce their level of cash holdings.

3. METHODOLOGY

3.1 RESEARCH METHODOLOGY

Considering that the results of this research can be used by investors, shareholders, corporate executives and other users of financial statements, this research can be considered as applied research. Also, in terms of the data-analysis method is cross-sectional descriptive-correlational study.

Accordingly, after data collection, to investigate the relationship between variables and test the hypothesis of research, first in each stage, multivariate regression models based on panel data, the necessary tests have been done and in the final stage to test the research hypothesis, using the estimated coefficients of the previous models, through the Sobel test, the significance of the role of the mediating variable has been investigated. As indicated by Baron and Kenny (1986), testing for mediating impact should be possible after three stages:

1) **Stage 1:** Check out that the explanatory variable is associated with the explained variable.
2) **Stage 2:** Check out that the explanatory variable is associated with the mediator. This stage basically includes the mediator as though it were an explained variable.
3) **Stage 3:** Check out that the mediator influences the explained variable. It isn't adequate just to associate the mediator with the explained variable, in light of the fact that the mediator and explained variable might be connected because they are both occurred by the explanatory variable. Therefore, the explanatory variable should be controlled in setting up the impact of the mediator on the explained variable.

Baron and Kenny (1986) called attention to three options. To start with, if the impact of the explanatory variable on the explained variable winds up insignificant within the sight of the mediator, the impacts of the explanatory variables are totally interceded by the mediator. Second, if the impact of the explanatory variables stays significant within the sight of the mediator, the impacts of the explanatory variable are partially mediated. At long last, if none of the above conditions are met, the mediation effect will not be approved.

Sobel test cannot be directly calculated and to obtain it, the regression coefficients are calculated from online sites. In this research, the site http://quantpsy.org/sobel/sobel.htm is used.

3.2 RESEARCH POPULATION AND STATISTICAL SAMPLE

The statistical population of this research includes all companies accepted in Tehran Stock Exchange from 2013 to 2017 excluding financial firms. Also, in order to calculate the Financial statement comparability, it was required to have data for the last six semesters (3 years ago) of it, Therefore, the required data for sample companies should be available for the 8 year period (years 2010-2017). The sampling method was performed using a systematic elimination method (screening). Common features of the firms to determine the population are as follow:

- The company is listed on TSE from the beginning of 2010 till the end of 2017. in order to enhance the comparability and homogeneity of companies, The fiscal periods of companies should be finished at the end of the solar year
- The company should be continuously active during the research period and its shares have been traded, and there is no trading halt.
- The type of company activity should be productive not be subsidiaries of banks, financial institutions such as investment firms, financial mediating, holding corporations, and leasing agencies. Because of their nature of management, activity, and financial reporting are different.

Accordingly, the sample selection includes 90 firms and 450 firm-years.

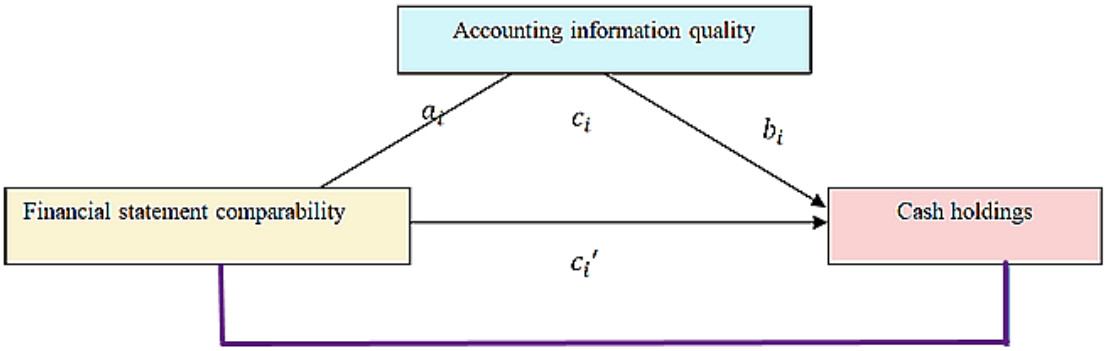

Figure 1: A research framework.

3.3 RESEARCH MODELS

In testing the mediation effect of accounting information quality on the relationship between financial statement comparability and cash holdings we use the Sobel test. Therefore the following steps must be met:

1) Test the direct impact of the explanatory variable (Financial statement comparability) on the explained variable (cash holdings). as appeared in Figure 1, examine track (c_i), Regarding Model 1.
2) The explanatory variable (Financial statement comparability) affects the mediator variable (accounting information quality). As appeared in Figure 1, examine track (a_i), Regarding Model 2.
3) The mediator (accounting information quality) affects the explained variable (cash holdings) controlling the impacts of the explanatory variable. As appeared in Figure 1, examine track (b_i), Regarding Model
4) Investigate the impact of the explanatory variable (Financial statement comparability) on the explained variable (cash holdings) by controlling for the impacts of the mediator. As appeared in Figure 1, examine track (c_i'), Regarding Model 3.

The regression models are given as

$$CASH_{i,t} = \beta_0 + \beta_1 COM_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 MB_{i,t} + \beta_4 LEV_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 DIV_{i,t} + \beta_7 NWC_{i,t} + \beta_8 CFO_{i,t} + \varepsilon_{i,t} \quad (1),$$

$$DAC_{i,t} = \beta_0 + \beta_1 COM_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 MB_{i,t} + \beta_4 LEV_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 DIV_{i,t} + \beta_7 NWC_{i,t} + \beta_8 CFO_{i,t} + \varepsilon_{i,t} \quad (2),$$

$$CASH_{i,t} = \beta_0 + \beta_1 DAC_{i,t} + \beta_2 COM_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 MB_{i,t} + \beta_5 LEV_{i,t} + \beta_6 R\&D_{i,t} + \beta_7 DIV_{i,t} + \beta_8 NWC_{i,t} + \beta_9 CFO_{i,t} + \varepsilon_{i,t} \quad (3),$$

where $CASH_{i,t}$ denotes cash holdings, $COM_{i,t}$ represents financial statement comparability, $DAC_{i,t}$ is the accounting information quality proxied by discretionary accruals model, $SIZE_{i,t}$ denotes the size of firms, $MB_{i,t}$ denotes growth firms, $LEV_{i,t}$ denotes the leverage of firms, $R\&D_{i,t}$ denotes Research and development expenditures of firms, $DIV_{i,t}$ denotes cash dividends, $NWC_{i,t}$ denotes

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Net working capital, $CFO_{i,t}$ is defined as operating cash flows and $\varepsilon_{i,t}$ is the error term of firm *i* in year *t*.

4. RESULT

4.1 DESCRIPTIVE STATISTICS

To evaluate the data, the descriptive statistics including minimum, maximum, mean, median, standard deviation, Skewness, and Kurtosis are calculated and presented in Table 1 below:

Table 1: Descriptive Statistics for Major Variables.

	CASH	COM	DAC	SIZE	R&D	NWC	MB	LEV	CFO	DIV
Average	0.038	-0.814	0.005	14.057	1.176	0.122	2.596	0.616	0.134	0.788
Median	0.025	-0.709	0.035	13.9	0.000	0.142	2.274	0.633	0.122	1.000
Maximum	0.46	-0.003	2.732	18.427	10.630	1.057	33.21	0.996	0.823	1.000
Minimum	0.000	-2.629	-2.930	10.616	0.000	-1.228	-32.953	0.012	-0.283	0.000
SD.	0.043	0.603	0.991	1.415	2.653	0.288	4.261	0.196	0.142	0.408
Skewness	3.307	-0.826	0.059	0.471	1.929	-0.427	-0.221	-0.351	0.624	-1.415
Kurtosis	23.632	3.020	3.070	3.34	5.058	4.382	40.352	2.882	4.821	3.004
Observations	450	450	450	450	450	450	450	450	450	450

Table 2: Correlation matrix (Pearson values)

Variables	COM	DAC	SIZE	RD	NWC	MB	LEV	DIV	CFO	VIF
COM	1.000 -----									1.138
DAC	-0.0102 (0.828)	1.000 -----								3.245
SIZE	0.098 (0.036)	0.036 (0.445)	1.000 -----							1.188
RD	-0.120 (0.010)	0.015 (0.742)	0.057 (0.220)	1.000 -----						1.022
NWC	0.338 (0.000)	0.0677 (0.151)	-0.016 (0.734)	-0.059 (0.206)	1.000 -----					1.716
MB	0.121 (0.010)	-0.045 (0.332)	0.133 (0.004)	0.045 (0.339)	0.037 (0.425)	1.000 -----				1.041
LEV	-0.450 (0.000)	-0.013 (0.771)	-0.186 (0.000)	0.146 (0.001)	-0.602 (0.000)	-0.086 (0.066)	1.000 -----			1.944
DIV	0.357 (0.000)	0.012 (0.787)	0.198 (0.000)	-0.059 (0.206)	0.309 (0.000)	0.061 (0.195)	-0.441 (0.000)	1.000 -----		1.137
CFO	0.189 (0.000)	-0.608 (0.000)	0.285 (0.000)	-0.088 (0.061)	0.114 (0.015)	0.085 (0.069)	-0.315 (0.000)	0.270 (0.000)	1.000 -----	3.473

Note: the significant at the level of 5 percent. The values in brackets represent p-value significance level.

4.2 MULTICOLLINEARITY OF VARIABLES

We utilize two tests to check the multicollinearity between the independent variables. In the principal test, a Pearson correlation matrix is evaluated. Multicollinearity alludes to a condition in which at least two explanatory variables are very associated with each other. Based on Kervin (1992), when the Pearson correlation coefficient surpasses 0.7, there is multicollinearity. Based on Table 2, the correlation coefficients are poor, proposing that there is no significant issue of multicollinearity among explanatory variables.

To additionally test whether the independent variables are associated with each other, we determined the variance inflation factor (VIF). Studenmund (2006) shows that the basic point is 10 and more of this amount represents a high degree of multicollinearity. As featured in Table 2, the VIF for independent variables is poor. This demonstrates the independent variables are not significantly related to one another.

4.3 ASSUMPTIONS OF THE CLASSICAL LINEAR REGRESSION TEST

One of the hypotheses of the Classical linear Regression (CLR) is that residuals of the estimated model have the same variance. This is known as homoscedasticity. When this assumption is not confirmed, we have heteroscedasticity. In this study Bartlett's test is used to detect heteroscedasticity. According to Table 3, Results in all three models indicate that the Null hypothesis based on homoscedasticity is accepted. Additionally for checking autocorrelation and independence of the residuals, the Durbin-Watson test is used. As indicated by Table 3, in all models the Durbin-Watson statistic is between 1.5 and 2.5 and therefore the data is not autocorrelated. Multicollinearity of Variables checked out in Table 2.

Table 3. Assumptions of the classical regression test

Classical assumptions / Regression Models	Homoscedasticity test	Autocorrelation test
Regression Model 1	2.702 (0.439)	2.07
Regression Model 2	6.317 (0.097)	1.97
Regression Model 3	2.827 (0.419)	2.07

Note: The Table denotes the significant at the level of 5 percent. The values in brackets represent the p-value significance level.

4.3.1 Determination the type of model's estimation

In this research, all models are assessed utilizing panel data regression.

According to the results of Table 4, it can be concluded that since the probability value of the F-Limer test is less than 0.05 for all models, the preference of the pooled method is rejected, while the panel data method is accepted. Table 5 gives the Hausman test result.

Table 4: F-Limer Test.

Model	Null hypothesis	F-limer test
Model 1	Preferred pooled	3.802 (<0.001)
Model 2	Preferred pooled	12.968 (<0.001)
Model 3	Preferred pooled	3.729 (<0.001)

Table 5: Hausman Test.

Model	Null hypothesis	Hausman test
Model 1	Preferred Random Effects Model	17.12 (0.028)
Model 2	Preferred Random Effects Model	1145.7 (<0.001)
Model 3	Preferred Random Effects Model	18.937 (0.025)

4.4 THE REGRESSIONS RESULTS OF THE RESEARCH

After performing various statistical tests and identifying its results, the findings of the hypotheses of this research are shown in Table 6. It is necessary to test the significance of the model before

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variables examination, approval or rejection of the hypothesis. This can be done by calculating the F statistic and p-value of this statistic. Since p-value calculated for this statistic is less than 0.05, the significance of all models can be confirmed at a five-percent error level. According to the result, the high value of R-squared shows all our models will fit better data.

Table 6: The Regression results of the research.

Variables	Model 1 (Cash)	Model 2 (DAC)	Model 3 (Cash)
COM	-0.002*** (0.006)	-0.113*** (<0.001)	-0.002*** (<0.001)
DAC			0.001*** (0.004)
SIZE	-0.004 (0.849)	0.006 (0.8688)	-0.004 (<0.001)
R&D	<0.0011 (<0.001)	-0.002 (0.456)	<0.0018 (0.897)
NWC	0.043 (0.552)	1.333 (<0.001)	0.039 (<0.001)
MB	-<0.0011 (<0.001)	0.007 (0.017)	-<0.0011 (0.495)
LEV	0.033 (0.012)	-0.782 (<0.001)	0.032 (<0.001)
DIV	-0.003 (<0.001)	-0.481 (<0.001)	-0.002 (0.026)
CFO	0.052 (<0.001)	-9.700 (<0.001)	0.069 (<0.001)
R-squared	0.74	0.98	0.73
Adjusted R-squared	0.67	0.97	0.65
Prob(F-statistic)	<0.001	<0.001	<0.001
Sobel test			-2.721
P-value of Sobel t			0.006

Note: the significant at the level of 5 percent. The values in brackets represent the p-value significance level. The models are estimated with firm-year fixed effects.

5. DISCUSSION

The present study tried to give a few responses to the questions concerning the mediating role of accounting information quality on the Relationship between Financial statement comparability and cash holdings. Thus this research used panel data from 90 TSE listed companies during 2013-2017 (450 observations), and the result is consistent with previous studies (Habib et al., 2017; Kia and Safari garayeli., 2017; Peterson et al., 2015; Bhattacharya et al., 2013; Ebrahimi et al., 2015; Fakhari and Taghavi., 2010; García-Teruel et al., 2009). Our empirical results reveal that low-level of accounting information increases cash holdings. The higher accounting information quality, the lower the cash holding. The results also show that accounting information quality mediates the effects of financial statement comparability on cash holdings.

In this research, the accruals quality criterion has been used as an accounting information proxy. Other studies can extend the current research to other features of earning quality such as sustainability, predictability, timeliness, and relevancy. Also, Since De Franco et al. (2011) model is based on the returns and earnings; there are some limitations to this model. Zalaghi et al. (2017) claim that the suggested model of De Franco et al. (2011) cannot properly reflect the ability to compare, and when companies have a different capital cost, the model shows fewer comparisons. Therefore, it is

suggested that financial statement comparability be calculated based on newer models, such as Cascino and Gassen (2015) and Zalaghi et al. (2017), and its relationship with cash holdings be tested again. On the other hand, since larger companies are more capable of comparing their performance due to the better performance of the accounting system in reflecting economic events (in the form of financial statements) than on smaller companies, Therefore, it is suggested that the subject of this research be considered separately in small, medium and large companies.

Model (1) in the research tests the effect of financial statement comparability on cash holdings. The results are reported in Table 6 (Column 2). According to the results obtained from the estimated first regression model, the level of possibility of financial statement comparability is less than 5 percent and has a negative effect on cash holding. Thus the H0, namely the insignificance of the obtained coefficient is rejected and H1 is accepted and the obtained coefficient is significant, statistically. The results of this hypothesis showed a negative and significant connection between financial statement comparability and cash holdings. Regarding the control variables of this model, it can be mentioned that the variables of R&D, LEV and CFO are positively connected with cash holding; while DIV and MB are negatively connected with cash holding.

Model (2) in the research tests the effect of financial statement comparability on accounting information quality. The results are reported in Table 6 (Column 3). According to the results obtained from the estimated second regression model, the coefficient for COM is negative and statistically significant. Implying that financial statement comparability decreases low-level of financial reporting. Thus the H0, namely the insignificance of the obtained coefficient is rejected and H1 is accepted and the obtained coefficient is significant, statistically. The results of this hypothesis showed a negative and significant connection between financial statement comparability and low quality of accounting information. Regarding the control variables of this model, it can be mentioned that the variables of NWC and MB are positively connected with low quality of accounting information; while CFO, DIV and LEV, are negatively connected with low quality of accounting information.

Model (3) in the research tests the mediating effect of accounting information quality on the relationship between financial statement comparability and cash holdings. The results are reported in Table 6 (Column 4). According to the results obtained from the estimated third regression model, the level of possibility of DAC on cash holdings (by controlling the effects of the financial statement comparability) is less than 5 percent and is positive and statistically significant, implying that low-level of accounting information increases cash holdings. Also, the level of possibility of financial statement comparability on cash holdings by controlling for the effects of accounting information quality is again less than 5 percent and has a negative effect on cash holding, which means comparability improves accounting information quality that indirectly reduces cash holdings. Thus the H0, namely the insignificance of the obtained coefficient is rejected and H1 is accepted and the obtained coefficient is significant, statistically. Regarding the control variables of this model, it can be mentioned that the variables of R&D, LEV, and CFO are positively connected with cash holding; while DIV, NWC and Size are negatively connected with cash holding.

The Sobel test for the indirect effects as shown in Table 6 demonstrates that the impacts of financial statement comparability and cash holdings through their indirect effects via accounting

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information quality are significant. Accordingly, our findings demonstrate a partial mediation effect of accounting information quality on the mentioned relationship. These results are in accordance with Baron and Kenny's (1986) findings.

6. CONCLUSION

The results of this study have important implications. First, the factors that improve the quality of accounting information and the ability to compare financial instruments are essential, including providing solutions for the rapid, effective and efficient transmission of information reporting and comparability, such as providing information through the company's website that can be identified for the general public (charts, tables, etc.). Second, regarding the role of financial statement comparability and accounting information quality, in reducing issues such as information asymmetry and agency conflicts, and hence reducing cash holdings, it is recommended that the standard-makers determine strategies for applying these two criteria and thereby help the accounting information providers to provide the best information. Third, The results of this study will increase investors' and other users' awareness of cash holdings, so they are advised to focus more on the financial statement comparability and accounting information quality. Because comparability is an important qualitative feature of financial information that enables users to identify similarities and differences in the financial performance of companies. In addition it is recommended that directors and officials of the Tehran Stock Exchange be required to reduce the conflict of interests by requiring institutions to accurately audit and validate financial reports and check the criteria for financial statement comparability.

7. DATA AND MATERIAL AVAILABILITY

Information regarding this study can be requested to the corresponding author.

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