THE IMPACTS OF EARNINGS MANAGEMENT AS AN AGGRESSIVE ACCOUNTING TECHNIQUE ON THE ACCOUNTING DATA QUALITY

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ÖZET

Agresif muhasebe uygulamaları, muhasebe yazınında gelişen bir fenomen olmakla beraber, bu uygulamaların muhasebe bilgi sistemi tarafından üretilen verinin kalitesini nasıl etkilediği hususu yeterince ele alınmamıştır. Bu araştırmada bir agresif muhasebe uygulaması olarak kar yönetiminin ¹veri kalitesi üzerindeki etkilerine dair analizler gerçekleştirilmiştir. Çalışmada öncelikle literatürel analizler doğrultusunda çalışmanın hipotezleri ortaya konmuştur. Bu kapsamda kar yönetiminin boyutları olan ihtiyari tahakkuklar, küçük pozitif kazançlar ve gelir yumuşatma ile veri kalitesinin bir indikatörü olan kar kalitesi regresyon analizine dahil edilmiştir. Yapılan analiz sonucunda, işletmelerin kar kalitesi uygulamalarına yönelme durumunun, veri kalitesi üzerinde istenmeyen olumsuz etkilerinin olduğu belirlenmiştir. Kar yönetimi yoluyla, muhasebe veri kalitesi aşağılara çekilmekte ve bu şekilde finansal tablo kullanıcılarına sunulan bilginin değeri azalmaktadır. Elde edilen bulgular doğrultusunda uygulayıcılara ve araştırmacılara dönük tespitler ortaya konmuştur.

Anahtar Kelimeler: Veri Kalitesi, Muhasebe Bilgi Sistemi, Kar Yönetimi, Kar Kalitesi, Muhasebe Uygulamaları

ABSTRACT

Although aggressive accounting techniques are phenomena developed in accounting literature, it was not discussed sufficiently how such methods affect the quality of the data produced by the accounting information system. In this study, analyses were conducted as to the effects of earnings management as an aggressive accounting application on the accounting data quality. In the study, the hypotheses were revealed in line with the literature analyses. In this sense, discretionary accruals, small positive earnings and income smoothing as the dimensions of the earnings management and profit quality as an indicator of the data quality are included in the regression analyses. As a result of the analyses, it was determined that there are undesired effects on the data quality is dragged to low with earnings management and in this manner, the value of the data presented to the users of the financial statements decrease. Evaluations are revealed for the executors and researchers in line with the findings obtained.

Keywords: Data quality, accounting information system, earnings management, profit quality, aggressive accounting

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1.Introduction

This study investigates the relationship between the earnings management as one of the aggressive accounting techniques and the data quality produced by the accounting information system. The businesses, today, continue their operations and compete in a period called as information age and in which information is a fundamental element. Information has become a key for businesses, economies and society. The firm's competition changed the axis towards production and use of the abstract information rather than concrete products. The firms considering the key role for success of the data quality realized their operations in this sense. It is believed ideally that managers use information related to daily status and operation conditions in preparation of such information and such information reflect the financial status and operating results of the company reliably and truly. Accounting scandals revealed one after another caused a great debate about the reliability of the figures. Many regulations were made towards prevention of aggressive accounting behaviors. The transition to International Accounting Standards (IAS) accelerated to certain extent in order to decrease fraudulent operations in large companies. International Accounting Standard 8 (IAS 8) is one of the efforts aiming at decreasing accounting manipulations by attempting to take change in accounting policies and estimations under a discipline in an integration retrospectively and prospectively. The purpose is to prevent damages of the shareholder by decreasing the manipulative behaviors. Aggressive accounting is the status of loyalty to request in creating management options or designing transactions, in order to affect the wealth transfer options between the company and society (political costs), fund providers (cost of capital) or managers (salary plans) (Stlowy and Breton, 2004). In this manner, the purpose in aggressive accounting implementations are to change earnings per share and debt/equity ratios (Breton and Taffler, 1995, p.88-89). Is is possible to prevent such methods? In order to answer such question as positive, the data quality in accounting should be at more requested level. Therefore, there is a relation between the data quality and earnings management as one of the most apparent techniques from aggressive accounting behaviors.

It is certain that weak and poor quality data shall have important effects on society and the business (Strong et al., 1997, p.109). In practice, an increase is seen in the problems experienced related to the data quality. Many businesses experience serious problems as a result of the data quality. Stakeholders may be suffering in the event of quality defect in the data presented to them by the organizations, and may face with losses in economic sense. Accounting information system is a mechanism through which organizations produce the data required for diagnosing, evaluating and planning the dynamics affecting on the financial situations and activities (Anthony et al., 1994). Data quality is related to whether the accounts reflect in realized financial transactions appropriately. Producing a reliable data is one of the accounting information quality shall assist correct formation of the accounting information systems of the businesses and information produced by them to be in high quality. The works conducted reveal that there are few factors affecting the data quality in accounting. This study aims at

submission of a suggestion and assumption about how the data quality is affected by analyzing certain analyses about the earnings management methods. In another say, it is attempted to determine how earnings management methods affect the data quality. Therefore, it is aimed at presenting new and original data to the scientific data by establishing the relationship at the base between earnings management and data quality. In subsequent part of the study, first of all conceptual framework is drawn, earnings management and data quality concepts are presented and literature analysis is conducted. Lastly, given the findings revealed, the conclusion part was constructed containing evaluation, discussion and recommendations.

2. The Conceptual Framework and Hypotheses

Aggressive accounting defined as realization of figures in the financial reports indicating the financial status and operating results by the management as per certain expectations consists of fraud, earnings management in broad meaning and creative accounting methods. Healy and Wahlen (1999) defines it as formation of transactions suitable for the purpose at the phase of manipulation of accounts, formation of accounting data and interpretation of accounting standards or another sate, to organize the contracts or transactions and operations to which the Company is a party pursuant to the purpose or to define timing of the transactions and operations. In Earnings management as an aggressive accounting technique, such methods leading change in the figures of financial statements cause failure to reflect the financial statements indicating financial situations and operating results of the companies truly and reliable to the users of the financial users using them at various decision phases. This situation results in losses to the investors investing n the securities of the companies and loss of trust to the current capital market system in the country. The term "earnings management" includes an extensive series of accounting techniques used by the management to manipulate the earnings. It is not possible to give a single definition generally accepted. However, accounting literature presents various types thereof. Schipper (1989) defines earnings management as intervention of managers with the external reporting process deliberately and decisively in order to have personal interests, Healy and Wahlen (1999) define it as consisting of managerial decisions by the managers related to any and all operations and accounting records which will change the profit figure through changes in financial reports in order to mislead some of the shareholders and to affect the results related to the contract based on the accounting figures. The consistent component of such two definitions is at the deliberate manipulation of the reported figures by the management. However, although, in previous definitions of the earnings management, managerial intention was not cited, the current definition includes "difficulty in using the properties of the reported accounting figures directly" (Dechow and Skinner, 2000, p. 220). Fischer and Rozenzweig (1995) define earnings management as a behavior of the managers to increase or decrease the profits reported in the current period for personal interests only, without any decrease or increase the profitability of their companies in the long term and it as a manipulation operation on the accounting results in order to correct changed impression of the business performance.

It is possible to find out studies that revealing of conduct of earnings management affects share returns of the companies negatively. In this subject, Beneish (1997) stated that firms gain negative earnings by conducting violent acts under the accounting principles. Parallel findings are seen in Dechow et al. (1995). It is revealed that players adopt negative opinion about the firms about which negative information is revealed. The firms apply aggressive methods on the data for the reasons such as reducing political risk and cost related to the firm from any and all legal regulations, increasing share prices, and making borrowing possibilities sustainable, and accordingly conduct earnings management. To this end, some methods are applied including changing depreciation predictions (Teoh et al. 1998); allocate legal provisions for doubtful accounts, applying company acquisition and mergers, dispose of assets, increasing share value in manipulation, and changing on the stock valuation methods (Bauman et al., 2001, p.29; Hunton et al., 2004, p.22). Below, it is shown on the accounting records how earnings management is applied in depreciation calculation management.

A firm is required to allocate depreciation as per accelerated depreciation method for a machine with price of \$100,000 having useful life of 5-year. However, the manager of the firm aims at getting higher premium on the profit obtained. Therefore, he instructed the accounting department to apply straight line method. The effect of such situation on the profits shall be as following.

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	Debit	credit
730 General Production Expenditures Account	40.0000	
257 Accumulated Depreciation Account		40.000
An Accelerated Method		
First Year Depreciation, 100.000/5*2		

//	Debit	Credit
730 General Production Expenditures Account	20.000	Credit
257 Accumulated Depreciation Account		20.000
Straight-Line Method		

First Year Depreciation, 100.000/5

As it may be seen in the accounting records, the depreciation expenses of the period in accelerated depreciation method, in the first year 40,000 US Dollar shall be accumulated at 730 General Production Expenditures Account, and such will decrease the profits of the Company by 40,000 US Dollar. In application of the second method, 20,000 US Dollar shall be accumulated at 730 General Production Expenditures Account, and since this will decrease the company earnings as 20,000 US Dollar and the premium or bonus of the manager shall increase. The above example is one of the typical application of the earnings management. The firm management decreased the data quality to lower levels. In order to prevent this, data quality and transparency should be decreased. However, there is no standard data quality in the literature, agreed upon. Traditionally, data quality is defined and explained from the accuracy perspective. However, in the recent studies, data quality is phenomenon including mode dimension than only the accuracy of the data quality. In Huang (1999), it is stated that the quality data should include accuracy, timeliness, consistency, intrinsic, contextual, and accessibility dimensions. It is seen the data quality and information quality concepts are confused in some cases. The information is a product of data processing. Therefore, there is a difference between the data and information in terms of time of occurrence. Information is revealed after data and it indicates the next phase after the data in processing process as an output on which the final user conducted.

In accounting information system, there are many samples related to the problems caused from low quality of the data obtained to the businesses. In the study conducted by Özer and Uyar (2010) it is defined that the decrease in data quality reflects in the financial statements negatively. For example, the stock reports prepared erroneously affect the orders, and accordingly, significant errors occur in the purchase and sales budgets. Accounting information system is the entire process of recording financial and non-financial transactions. In this sense, each of processes such as issuance of document for such transaction from occurrence of a financial transaction. transfer of such document in the accounting books, issuance of trial balance, income statement and balance sheet based on the book records is a function of the accounting information system. Afterward, making decisions on balance sheet and income statement and application thereof occur as an output of process output of the accounting information system. Accounting and audit aims at minimum costs in attaining the maximum level in data reliability. Appropriate operation of the sub-systems is in line with correct establishment, reliability, accuracy, timeliness and consistency. Another say, an accounting system designed appropriately shall assist increase in data quality.

The effect of accounting data quality is very important on the decisions related to the investments of the firms and investors. High quality of accounting information is a key in directing the assets of the businesses to proper investments. One of the most important indicators of the accounting data quality is earnings quality. Data quality affects financial reports; to the extent it reflects earnings quality properly. Earnings quality provides with significant tips in evaluation of financial health of the business. Indeed, the increased interest towards the corporate profits of the firm reported have relation with two fundamental forces. At one hand the increased preform company earnings, and the organizers and legislators at the other side consider the compliance of

the financial reports with the generally accepted accounting principles and accounting records. Creditors, investors and other financial statement users conduct evaluation frequently by considering the earnings quality and accordingly the data quality (Bellovary et al., 2005). Data quality is defined as a level of financial reports to reflect correct information and of course it represents the ability to provide information about earnings to be obtained in the future. The studies conducted in the USA and England support that current period earnings are strong explanatory to the cash flows which will occur in the future (Al-Attar et al., 2008, p. 13). If Managers will conduct earnings management methods pr show conservative approach for various reasons, the data quality will be affected negatively and third parties may experience big losses, therefore risk perception related to financial statements becomes low and expectation related to the earnings quality shall be high (Ayres, 1994).

Fischer and Rosenzweig (1995) defined earnings management as a form of behavior applied only to increase or decrease the reported earnings in the current period for personal interest, without an increase or decrease in the long-term profitability of the companies owned by the managers. Earnings management is often used in measuring accounting quality due to its impact on reported earnings (Chin, et al., 2009, p. 239). For representing earnings management, discretionary accruals, small positive earnings, and earnings smoothing are used. The first proxy for earnings management is the discretionary accruals. Discretionary accrual is a non-mandatory expense/asset that is recorded within the accounting system that has yet to be realized. The second proxy for earnings management attempts to detect the presence of earnings management aimed at achieving a target. Prior studies suggest that firms are likely to set a positive-earnings level as a target and use the frequency of small positive net income as ametric of earnings management aimed at achieving such a target (Barth et al., 2008; Burgstahler et al., 2006; Chen et al., 2010). As the third earnings management variable, earnings smoothing was used. When companies are exposed to increasing pressures during economic turmoil, managers often ask the accounting department to improve the earnings figure in the financial statements. Thus, the information content of the company is changed. However, accounting cannot be said to be too flexible in terms of changing the earnings figure in the financial statements and thus of providing useful information to management in economic turmoil. The information contained in the financial statements, which are the outputs of accounting, is complicated according to the types of information users. For example, the investors need to know the stability and profitability of a company before they invest in that company. Managers need to know the financial situation of a company. Banks and lenders need to know the company's ability to pay its debts. Earnings smoothing is an activity that makes these expectations difficult.

The following hypotheses are revealed given such information and evaluations. H1: Discretionary accruals dimension of earnings management affect the accounting data quality negatively.

H2: Small positive earnings dimension of earnings management affect the accounting data quality negatively.

H3: Earnings smoothing dimension of earnings management affect the accounting data quality negatively.

3.Sample, Data Analysis and Findings

3.1 Sample and Variables of The Study

In order to define the relation between the variables attempted to be revealed in the study, financial statements of 100 firms with the highest market value quoted with Bourse Istanbul were used. Financial statements show annual values related to years 2011 and 2012. It is very difficult to evaluate data quality. Therefore, in order to determine the data quality in the study, earnings quality as one of the most important functions of the data quality is used. In the study, earnings quality evaluation model (EQEM) shown in Bellovary et al. (2005) is used. The Model consists of 20 different criteria affecting the earnings quality. The criteria insure evaluation of the data in the financial statements separately for each period. EQEM represents the data quality and accordingly the profit quality to the closest extent. The data obtained shall assist in making the optimal decisions in the investments of the businesses and individuals. EQEM shall evaluate each of 20 criteria each of which is scored on a scale of 1 to 5. In this manner, the firm shall reach a DATAQUAL (data quality) score on 1000 for the cited criteria. The score obtained is changed to a letter rating system thereafter, and the accounting data quality and accordingly the earnings quality of the firm is determined. 1 point indicates negative impact on the profit quality, as 5 represents quite good situation. The score may be changed between 20 and 100. The bond ratings also will be considered as A for 85-100, AB for 69-84, B for 53-68, BC for 35-52, and C for 20-34.

Discretionary accruals of 100 companies were estimated by using the crosssectional model in Kothari et al. (2005) and Jones et al. (2008). Prior studies suggest that firms are likely to set a positive-earnings level as a target and use the frequency of small positive net income as a metric of earnings management aimed at achieving such a target. The notion underlying this metric is that management prefers to report small positive earnings rather than negative earnings and performs earnings management actions whenever they overcome the zero earnings-level target. Therefore, following prior literature, the second proxy for earnings management is SPE, a dummy variable that assumes a value of one if net income scaled by total assets is between 0 and 0.01 and zero if otherwise (Lang et al., 2003; Christensen et al., 2008). Earnings smoothing is measured by the variance of Δ NIC (variability of the change in net income scaled by total assets) identified in prior researches (Barth et al., 2008; Lang et al., 2006; Cahan, et al., 2008; Paananen & Lin, 2009; Liu & O'Farrell, 2011). As previous studies document that firms' earning quality are affected by factors (control variables) such as firm size, financial leverage, sales growth, cash flow from operations, and auditors (e.g., Becker et al, 1998; Reynolds & Francis, 2000; Bartov et al., 2001; Klein, 2002; Lang et al., 2003; Lang et al., 2006; Cheng & Warfield, 2005; Van Tendeloo & Vanstraelen, 2005; Wang, 2006). The fundamental equation of the study has been arranged as following considering the above stated studies.

The descriptive statistics related to the variables in the study and the fact how variables are obtained are included in the Table 1.

	(n = 100)	
	Mean	S.D.
Test variable		
DATAQUAL	75.115	8.158
DACC	10.585	0.1054
SPE	0.038	0.003
ΔΝΙϹ	0.047	0.010
Control variables		
CSIZE	6.880	0.352
GROWTH	0.113	0.047
FINLEV	0.838	0.012
AUDITOR	0.378	0.095
CASHFLOW	0.682	0.040

Table.1 Descriptive Statistics

DATAQUAL: Data quality was calculated by using Bellovary et al. (2005). DACC: Discretionary accruals of companies were estimated by using the cross-sectional model in Kothari et al. (2005) and Jones et al. (2008). SPE, a dummy variable that assumes a value of one if net income scaled by total assets is between 0 and 0.01 and zero if otherwise (Lang et al., 2003; Christensen et al., 2008). Δ NIC: Earnings smoothing is measured by the variability of the change in net income scaled by total assets, identified in prior researches (Barth et al., 2008; Lang et al., 2006; Cahan et al, 2008; Paananen & Lin, 2009). CSIZE: The company size is the natural logarithm of sales (millions of USD) for firms. GROWTH: Growth rate is the annual percentage change in sales for firms. FINLEV:The Financial Leverage is total liabilities in the end of the year divided by total assets for firms. AUDITOR: The auditor is an indicator variable that equals one if a Big 4 auditor is hired, and zero if otherwise for firms. CASHFLOW: The cash flow is the annual net cash flow from operations scaled by lagged total assets for firm.

The average score of the data quality in the Table 1 is 75 and the standard deviation is defined as 8 points approximately. When the DACC and SPE and Δ NIC variables are examined as the earning management criteria, the averages are observed to be 10.585; 0.038 and 0.047. As stated in the theoretical framework of the study, in order

to observe the expected change in data quality in the period, the DACC and SPE variables are required to be smaller. As a result of the statistical process related to the data set, it was determined that, the descriptive statistics pertaining to all variables have values so as to meet the expectations. These findings reveal a particular perspective and fact for the multivariate analyses to be carried out thereafter. Table 2 presents the correlation coefficients for the research variables. In the correlation matrix, where highly detailed findings and valuable inferences are presented, the analysis of the relationship between the earnings management variables and the data quality variable.

	DATA QUAL	DACC	SPE	ΔNIC	CSIZE	GROWT H	FINLEV	, AUDI TOR
DATAQUAL	1							
DACC	-0.258**	1						
SPE	-0.339*	0.288^{*}	1					
ΔNIC	-0.101	0.251*	-0.167**	· 1				
CSIZE	0.142^{**}	0.114^{**}	-0.122**	0.294*	1			
GROWTH	0.254^{**}	0.171^{**}	0.118^{**}	-0.150**	0.101^{**}	1		
FINLEV	-0.187**	-0.178**	0.045	0.262^{*}	0.121**	0.111^{**}	1	
AUDITOR	0.296^{*}	-0.042	0.029	0.114^{**}	0.097	-0.131**	0.167**	1
CASHFLOW	0.086	-0.199**	0.022	0.101**	0.136**	-0.061	0.198**	0.111**

 Table.2 Correlations Matris

and ^{**} indicate significance at the levels of 0.01 and 0.05 (two tailed).

The findings related to the correlations between earnings management and data quality illustrate that there are relationships in the negative direction between DATAQUAL and DACC (-0.258) and between DATAQUAL and SPE (-0.339). The same relationship orientation is also observed between DATAQUAL and Δ NIC, but it is a weak relations (-0.101) These analyses show that change of standard reduces earnings management practices. There exists a relationship of medium strength between data quality and earning management in negative direction. The analysis of the relationship between DATAQUAL and the control variables shows that DATAQUAL is positively related to CSIZE, FINLEV, AUDITOR and CASHFLOW. In the correlations among DACC, ANIC, SPE and the control variables, which are the earnings management variables, there exists a positive correlation among the DACC and CSIZE, GROWTH variables and a negative correlation with the AUDITOR, FINLEV and CASHFLOW variables. In other words, there is a strong relationship in the reverse direction between the increase in audit quality and earnings smoothing behavior. In the correlations between DACC and the control variables, there is a positive relationship among SPE and Δ NIC and control variables and there is a weak-level relationship in the positive direction with the others.

3.2 Multivariate Analyses and Findings

Ordinary Least Square (OLS) regression was used to enable the test variables and the control variables to assess the hypotheses put forward in the study together. Table 3 shows the results of the empirical model created for the accounting data quality.

Variable	Data	Data Quality		
Variable	β	t		
Constant	0.740	124.248		
DACC	-0.482	-10.872*	H1: Supported	
SPE	-0.238	-8.802**	H2: Supported	
ΔNIC	-0.192	-4.109**	H3: Supported	
CSIZE	0.128	3.703**		
GROWTH	0.091	1.211		
FINLEV	0.075	0.905		
AUDITOR	0.349	9.101**		
CASH FLOW	0.046	0.845		
R2	0.43			
F	29.224*			

Table.3 Regression Results of The Earnings Management on The Accounting Data

 Quality

Note. * and ** indicate significance at the levels of 0.01 and 0.05 (two tailed).

According to the result of OLS, the DACC variable negatively affected DATAQUAL (β = -0.482; t = -10.872; p < 0.01). According to this result, there is a negative impact in DATAQUAL performed by the companies DACC transactions(7) In another statement, hypothesis is agreed as 1. The discretionary accruals affect the quality of the information produced by accounting information system affects the quality of the information negatively. We can see a similar negative effect on the DATAQUAL variable of the SPE variable. SPE variable affect the DATAQUAL variable at the value of β = -0.238; t = -8.872; p < 0.05. In another say, as the aggressive accounting tendency will increase a fall is occurred in accounting data quality of the firm. Such findings support of hypothesis 2. In the review conducted as to the hypothesis 3 testing the relation between Δ NIC variable and DATAQUAL variable the value set (β = -0.192; t = -4.109; p < 0.05) is found. According to such, hypothesis 3 is supported. In another say, earnings smoothing has negative effect on the accounting data information. The values showing the effect of the control variables on DATQUAL variable is defined as ($\beta = 0.128$ t = 3.703; p < 0.05) for CSIZE. The quality size of the firm affects the accounting data quality of the firm significantly and positively. When looked at the relation between GROWTH and DATAQUAL, the data ($\beta = 0.091$; t =

1.211) is seen. The growth size of the Firm could not be determined for significant connection in this study between the growth rate and DATAQUAL. The positive or negative effect of the financial leverage on the data quality may not be seen clearly. Findings obtained reveal that there may be very poor relation between FINLEV and DATAQUAL. The effect of AUDITOR variable on DATAQUAL is quite strong ($\beta = 0.349$; t = 9.101; p < 0.05). According to such, the size of the audit firm has strong positive effect on the quality of information produced by the accounting information system. Variance value (R2) insuring analysis of research model as a whole, parameter 0.43 is seen. The total effect of the variables used in the study on DATAQUAL is found as 43%. The remaining 57% may be explained by the variables not included in this study.

Conclusion

In this study it was investigated how and to what extent earnings management as one of the aggressive accounting techniques affect the quality of the data produced by the accounting information system. The data quality includes some dimensions such as accuracy, consistency, timeliness etc. In order that the data quality is to be at high level it is required to organize the information system properly, and the manager behaviors should be formed to elevate the data quality. High data quality increases the power of the financial statements to reflect the factual statement. The management conducts direct or indirect interventions at profitability levels of the firms by conducting earnings management methods. Aggressive accounting methods cause misperception and calculation of firm value and operational success. In this manner, it is possible to show the cash flows more than the actual amounts through earnings management and exaggerate the financial success of the firm. However, the erroneous presentation or direction will decrease the possibility to make proper decisions. The findings obtained in the study show that as discretionary accruals increase, or bringing the contingent earnings of the future to present day increases, the level of the accounting data to show financial and economic status will be decreased. In another say, it causes to errors such as showing non-earnings and contingent earnings as they exist. Another finding is to affect the data quality of small positive earnings negatively. According to such, the changes and expenses on the accounting policies or methods, the expenses are indicated lower and accordingly the business profitability is dragged to higher levels. The managers increase the premiums by utilizing the weaknesses in accounting system. A negative effect is seen between earnings smoothing dimension and data quality earnings management. The improvement efforts on the incomes of the firms increases the firm value, however, this situation makes the firm balance sheets and income statements more fictive. Regression and correlation analyses conducted with the control variables revealed that the size and quality of the auditor affect the earnings quality significantly and positively. The risk which may be experienced in the data quality of the firms working with the auditors proven and electing the appropriate auditors is reduced to lower levels. Bo direct impact has been found on the data quality from the variables such as cash flows, financial leverage.

The firm managements should be avoided from aggressive accounting methods. A way of insuring such is to limit or to prohibit the discretionary changes in accounting policies. Besides, collaboration and coordination should be increased between the finance department and the accounting department on the subjects such as fixture management, stock following, and receivable following. In remuneration of the managers, the objective and consistent systems should be applied instead of premium systems. More inclusion of the information produced by the accounting information system in electronic environment and transparent submission of the data to the stakeholders are required as well.

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