The Relationship Between Prior Period Adjustment and Earnings Management in Tehran Stock Exchange (TSE)

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Abstract

This paper examines the relationship between Prior Period Adjustment (PPA) and Earnings Management (EM) in Tehran Stock Exchange (TSE). In other words, this study seeks to answer the question as to whether restatement causes the EM or not. For this purpose, a sample of 81 companies was selected and examined during the period of 2002 to 2010 in six industry using panel data with fixed effect model. Modified Jones model (1991) is used for measuring of EM. To test hypotheses, multiple regression models and Pearson correlation coefficients are used. Results indicate that there is no significant relationship between PPA and EM in TSE.

Keywords: Prior Period Adjustment, Earnings Management, Tehran Stock Exchange.

1. Introduction

Studies show that managers by selecting the specific accounting policies, such as changes in accounting procedures and accruals management can manipulate the reported profits. One of the fundamental objectives of accounting standards is to allow users to take relevant and accurate decisions. So the accounting profession needs a way of reporting that the interests of all users be considered. On the other hand, as the definition of EM, managers are to achieve certain goals profit such a way that has been inconsistent with the purpose of providing general interest to users. Auditors have a duty to confirm fairness of financial statements under accounting standards while, in some cases, managers can choose accounting methods (bozorgasl, 2008). When a company restates its financial statement, accepts that there was an important mistake or incorrect procedural in the past periods. Hence, restatement is a sign of income smoothing. Instead of using complex models of income smoothing, managers use restatement due to its reliability in measuring (Moore, 2007; Richardson et al., 2002). Janot de Matos and Sancovschi (2005) believe that managers deliberately misuse the generally accepted accounting principles and they tend to manage the profit that will lead to decrease in the quality of financial reports and eventually will have negative effects in allocation of economic resources. Also, they note that managers employ different methods to manipulate the profit management and one way is PPA. Therefore, relevant adjustments mean lack of reliability of financial statements in the past periods. Whereas, firms future profitability and consequently value of cash flows and firm`s future value can be embedded by profits of previous periods. On the other hand, accounting standards allow managers in application of accounting methods used to report firm performance. When this discretion is used with the intent to manipulate reported results, it is called “earnings management” (Riahi-Belkaoui, 2004; Nigrini, 2005). In this study, it is postulated that EM is taken place through accruals manipulation. Studies show that managers, by selecting particular accounting policies, change accounting estimates and manipulate accruals (Mashayekhi et al., 2005). In this research, we will try to answer the question as to whether PPA causes the EM.

The paper proceeds as follows: The next section summarizes the related literature and describes the potential contribution of our study. After hypotheses development, we describe the data and the methodology.

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Then we will present statistical models and methods of research hypotheses testing. Finally, after presenting empirical results we will report the main results and conclusions.

2. Literature Review

Desai et al. (2006) and Sriniavasan (2005) in their investigation achieved the evidence of the impact of changing in financial manager and board of directors on the restatement. Zakolyukina (2012) by using discretionary accruals models investigated the deliberate manipulation of 1800 chief executive officers between the years of 2007 to 2010 and concluded that there is a significant relationship between discretionary accruals and intentional manipulation in financial statements. Dechv et al. (2012) by reviewing the performance of 169 senior accountants in public companies have concluded that twenty percent of EM in public companies resulted from the adjustments. Wiedman et al. (2010) in a research titled "the quality of accruals within the adjustments" concluded find that post-restatement levels and changes of accrual quality are significantly higher for firms with management change and significantly lower for firms switching to a lower quality auditor. Overall, their findings underscore the importance of governance mechanisms in determining accrual quality in the years following a restatement. In a research, Plumlee and Yohn (2010) by investigating the main reasons of the restatements find that, inconsistent with the notion that increased complexity has caused the rapid increase in the number of restatements, restatements are most often caused by basic internal company errors unrelated to the accounting standards themselves. They also find that for those restatements caused by some characteristic of the accounting standards, the primary contributing factor was the lack of clarity in applying the standards and/or the proliferation of the literature due to the lack of clarity in the original standard. Callen et al. (2008) examined the relationship between profit manipulation and restatements. They indicate that there is a positive relation between the number of years that firms exhibit and/or anticipate losses or negative cash flows and investment in receivables and the ex ante likelihood that firms manipulate revenue in violation of GAAP is positively associated with the history of past and expected future losses or negative cash flows as well as with the investment in accounts receivable. Their results suggest another indicator of manipulation that may be used by auditors and regulators in identifying firms that are more likely to overstate revenues. Yarri and Yarri (2007) studied as to question that why the largest accounting scandals had occurred in US. Their results show that when there is demand to beat a target report, EM strategy is conservative: instead of overstating low earnings, the firm either "takes a bath" or subtracts a downward bias from a truth-telling report. They also show that the firm combines a low level of discretionary accruals with a restatement, because a restatement de facto allows the firm to report the same dollar performance twice: in the past, when it overstated performance, and then again when the past is corrected and earnings are boosted at present. Wilson (2008) in an article titled "an empirical analysis of the decline in the information content of earnings following restatements indicate that although information content of earnings declines following restatements, the loss is temporary. Overall, their evidence is consistent with a short-term decline in investor confidence regarding financial reporting following restatements, but shows that suspicion regarding the information loss of post-restatement earnings in the long-term is unwarranted. Burgastahler and Dichev (1997) studied the management role in restating the financial statement. They found that manipulation of profit by management is the main cause of restating the financial statement and PPA. Molla-Nazari and Karimizand (2007) in a research titled "studying the relationships between income smoothing, firm's size and firms characterstics in firms listed in TSE" found that there is a significant correlation between EM and the firm's size. Rodrguez-Pérez and Hemmen (2010) investigated the relationships between debt, diversification and earnings management and find that for less-diversified (more transparent) firms, debt reduces positive discretionary accruals, whereas in relatively more-diversified (less transparent) firms the impact of debt becomes positive. Their results show that marginal increases in debt provide the incentives for managers to manipulate earnings, and diversification provides the needed context for this accounting practice to be possible. Chi and Gupta (2009) studied the relationship between overvaluation and EM and find that overvaluation is statistically and economically related to subsequent income-increasing EM. They also find that overvaluation-induced income-increasing EM is negatively related to future abnormal stock returns and operating performance and this negative relation becomes more pronounced as prior overvaluation intensifies.

3. Research Hypotheses

3.1. Main Hypothesis

There is a significant relationship between PPA and EM in firms listed TSE.

3.2. Sub Hypotheses

There is a significant relationship between changes in accounting procedures (CAP) and EM in firms listed TSE.

There is a significant relationship between error corrections (EC) and EM in firms listed TSE.

4. Methodology and Data Collection

Since, the study aims to find a significant relationship between restatement and EM in TSE, the study is correlation research. In addition, PPA is considered as the independent variable and EM as dependent variable. Considering the reliability of the financial statements of the firms listed in TSE, they are applied for developing research. The financial statements are derived from TSE database for the period of 2002-2010. In addition, to test our hypotheses Excel, Eviews and SPSS softwares are used.

The population of the study includes all listed companies in TSE during the period of 2002 to 2010. The existence of some limitations and non-uniformity among TSE companies such as unavailability of some firm's financial reporting led us to consider some specific conditions in sampling as followings:

1. Sample firms must not have changed their fiscal period during the studied priod.
2. Sample firms` financial statements must be available for the period of study.
3. Sample firms must not be investment or brokerage firms.

As a result of these conditions, a sample of 81 companies was obtained to be studied for the period of 2002-2010.

4.1. Statistical Models and Methods of Research Hypotheses Testing

4.1.1. Measurement of Earnings Management

Generally, Jones model used has been applied to measure EM by researchers. Jones model uses a two-step approach. First, a cross-sectional regression is performed for total accruals (TACC) measured as the change in non-cash working capital plus depreciation and amortization. Then regresses total accruals on the change in sales and property, plant and equipment.

$$TACC_{it}/TA_{it-1} = \beta_{0j}(1/TA_{it-1}) + \beta_{1j}(\Delta REV_{it} - \Delta REC_{it})/TA_{it-1} + \beta_{2j}(PPE_{it} / TA_{it-1}) \quad (1)$$

Where:

TA: total assets, DREV: changes in revenue, DREC: changes in receivables, and PPE is property, plant and equipment. DREV and PPE are controlled for the non-discretionary component of total accruals since these items are associated with changes in operating activity and depreciation. The second step is to use these industry-year parameter estimates from the previous equation (1) to divide the total accruals into a discretionary component (DACC) and a non-discretionary component (NDACC). Non-discretionary accruals (NDACC) are the predicted component of total accruals and discretionary accruals (DACC) are the residual resulting from this regression.

$$NDACC_{it} = \beta_{0j}(1/TA_{it-1}) + \beta_{1j}(\Delta REV_{it} - \Delta REC_{it})/TA_{it-1} + \beta_{2j}(PPE_{it} / TA_{it-1})$$

$$DACC_{it} = TACC_{it/} TA_{it-1} \_ \beta_{0j}(1/TA_{it-1}) + \beta_{1j}(\Delta REV_{it} - \Delta REC_{it})/TA_{it} + \beta_{2j}(PPE_{it} / TA_{it-1})$$

B_0, β_1 and β_2 are the industry-year parameter estimated in regression (1).

4.1.2. Measurement of Restatement

Frequency of PPA (effects of CAP and EC of prior years) are extracted directly from financial statements, and its notes of the sample companies.

4.1.3. Measurement of Control variables

4.1.3.1. Firms Size

Large firms are being a subject of scrutiny by outsiders such as financial analysts and investors. Therefore, these firms less tendency to practice EM (Chen et al., 2005). This is why firm's sales logarithm as a proxy for firms size is considered as control variable.

4.1.3.2. Financial Leverage

Sweeney (1994) found that increasing of leverage or debts increases EM because firm's managers have more

Table 1: Descriptive Statistics

variables	observations	mean	median	max	min	Std. div	Coefficient of variation
CAP	729	1401.59-	0.00	62335	381930-	18722.54	13.35-
EC	729	17641.77-	1065-	1669097	2532705-	169669.2	9.61-
PPA	729	19033.30-	1118-	1669097	2914635-	177670.5	9.33-
EM	729	1.37	0.50	0.50	6.74-	8.61-	6.28-
S	729	5.49	5.46	8.13	3.33	0.27	0.04
FL	729	0.43	0.31	12.32	0.00	11.25	26.16
IO	729	0.73	0.35	37.99	0.00	9.27	12.69
AS	729	0.31	0.00	1	0.00	0.79	2.54

Notes: EC is error corrections of previous years, CAP is changes in accounting procedures, PPA is prior period adjustment, S is firms size, IO is institutional ownership, FL is financial leverage, EM is earnings managements, AS is audit firms size.

motivation to meet debt contract conditions by EM. However, financial leverage is considered as control variable.

4.1.3.3. Ownership Structure

Chung and Zhang (2009) provide evidence to show that institutional investors are more likely prevent managers form practicing EM. However, ownership structure is considered as control variable.

4.1.3.4. Audit Size

Lai and Gu (2008) in a research showed that firms audited by the big audit firms have low accrual items than those audited by smaller firms because of big auditors reputation. However, audit size is considered as control variable.

5. Empirical Results

Firstly, to show an image of the research variable distribution, descriptive statistics are presented in Table 1.

Table 2: Variables Stationary

	Levin, Lin and Chu		Im, Pearson and Shin	
CAP	value	prob	value	prob
EC	5.51	0.00	7.62	0.00
PPA	17.90	0.00	9.27	0.00
EM	8.73	0.00	4.85	0.00
S	11.51	0.00	1.09	0.00
FL	13.51	0.00	3.11	0.00
IO	48.07	0.00	4.97	0.00
AS	1.30	0.00	1.89	0.02

5.1. Unit root test

To test variables stationary, Unit Root Test of Levin, Lin and Chu and also Im, Pearson and Shin tests are conducted which is indicated in Table 2.

The results show that while p-value of all variables is less than 5 percent, variables stationarity is accepted.

Table 3: Correlation Matrix

	CAP	EC	PPA	S	FL	IO	AS	EM
CAP	1							
EC	0.383776	1						
PPA	0.471577	0.995280	1					
S	-0.223952	-0.486676	-0.488286	1				
FL	-0.024186	0.001126	-0.001466	-0.012730	1			
IO	-0.218044	0.039637	0.014937	-0.004304	-0.003905	1		
AS	0.005371	-0.107867	-0.103622	0.182758	-0.013574	-0.033527	1	
EM	0.005371	-0.020090	-0.018620	0.015875	-0.052386	-0.047317	0.032225	1

5.2. Correlation Between Variables

Correlation matrix is presented in Table 3. The results show except for strong correlation between PPA and EC, the correlation between variables are very small amount mostly less than 20 percent which shows that there is no collineary problem.

5.3. F-Limer and Hasman tests

Firstly, F-Limer test is used to determine whether data is pooled or panel. The results of F-limer show that panel data regression model is more appropriate than pooled data regression model. Because of using panel data, before regression of the model, it should be determine if the model has fixed effect or random. To do so the Hasman test is used which results show that fixed effect is preferred. These results are shown in Table 4.

Table 4: Results of Limer and Hasman tests

test	*value*	*Prob*	*Result*
F-limer	3.62	0.00	Panel data
Hasman	62.34	0.00	Fixed effect

5.4. Hypotheses test

Main hypothesis: There is a significant relationship between PPA and EM in firms listed TSE.

The results of this hypothesis are illustrated in Table 5 according to EGLS and GLS methods separately.

The results indicated in Table 5 show that there is not a significant relationship between PPA and EM considering significance level of PPA (0.98 and 0.69 according to EGLS and GlS, respectively). In addition, control variables are insignificant according to EGLS showing that these variables do not affect EM while the results of GlS show that audit firms size and firm's size have a significant relationship with EM. Result of F-statistics (0,00) shows that the model is significant in general and considering the Durbin-Watson statistic (2.27 for EGLS and 2.26 for GlS), there is no autocorrelation problem in model`s residuals. In addition, the results of adjusted R^2 shows that 20 according to EGLS and 30 percent according to GlS of EM changes is from PPA, firm size, financial leverage, institutional ownership and audit firm size. On the whole, we can conclude that mangers of firms listed in TSE do not use PPA as a tool for practicing EM.

Sub-hypothesis 1: There is a significant relationship between CAP and EM in firms listed TSE.

The results of this hypothesis are illustrated in Table 6 according to EGLS and GLS methods separately.

The results indicated in Table 6 show that there is not a significant relationship between the effects of CAP and EM considering significance level of CAP (0.97 and 0.64 according to EGLS and GlS, respectively). In addition, control variables are insignificant according to EGLS

Table 5: Regression Model between EM and PPA

	EGLS			*GLS*		
	Coefficient	*t-Statistic*	*Prob.*	*Coefficient*	*t-Statistic*	*Prob.*
C	0.00	0.00	0.99	0.14-	3.09-	0.00
PPA	2.48-	0.02-	0.98	1.24-	0.39-	0.69
S	0.00	0.02-	0.97	0.02	3.01	0.00
FL	0.01-	0.47-	0.63	0.01-	0.36	0.71
IO	0.01-	1.19-	0.23	0.00-	1.53-	0.21
AS	0.07	1.11	0.26	0.03	2.92	0.00
R^2		0.29			0.29	
Adjusted R^2		0.20			0.30	
Durbin-Watson stat		2.27			2.26	
F-statistic		3.23			41.97	
Prob.		0.00			0.00	

Table 6: Regression Model between EM and CAP

	EGLS			GLS		
C	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
CAP	0.00	0.00	0.79	0.15-	3.22-	0.00
S	2.50	0.25	0.97	8.78-	0.46-	0.64
FL	0.00	0.03-	0.63	0.02	3.15	0.00
IO	0.01	0.46-	0.22	0.00	0.36	0.71
AS	0.01	1.21-	0.26	0.00	1.54-	0.12
R^2	0.07	1.10	0.99	0.03	2.89	0.00
Adjusted R^2		0.29			0.84	
Durbin-Watson stat		0.20			0.82	
F-statistic		2.27			2.13	
Prob.		3.23			41.92	
		0.00			0.00	

showing that these variables do not affect EM while the results of GlS show that audit firms size and firm's size have a significant relationship with EM. Result of F-statistics (0,00) shows that the model is significant in general and considering the Durbin-Watson statistic (2.27 for EGLS and 2.13 for GlS) there is no autocorrelation problem in model`s residuals. In addition, the results of adjusted R^2 shows that 20 according to EGLS and 82 percent according to GlS of EM changes is from PPA, firm size, financial leverage, institutional ownership and audit firm size. On the whole, we can conclude that mangers of firms listed in TSE do not use CAP as a tool for practicing EM.

Sub-hypothesis 2: There is a significant relationship between EC and EM in firms listed TSE.

The results of this hypothesis are illustrated in Table 7 according to EGLS and GLS methods separately.

The results indicated in Table 7 show that there is not a significant relationship between the effects of EC and EM considering significance level of EC (0.95 and 0.74 according to EGLS and GlS respectively). In addition, control variables are insignificant according to EGLS showing that these variables do not affect EC while the results of GlS show that audit firms size and firm's size have a significant relationship with EM. Result of F - statistics (0,00) shows that the model is significant in general and considering the Durbin-Watson statistic (2.27 for EGLS and 2.26 for GlS), there is no autocorrelation problem in model`s residuals. In addition, the results of adjusted R^2 shows that 20 percent according to EGLS and 82 percent according to GlS of EM changes is from CEP, firm size, financial leverage, institutional ownership and audit firm size. On the whole, we can conclude that mangers of firms listed in TSE do not use EC as a tool for practicing EM.

6. Further Results

After testing our hypotheses, research sample classified into six industries namely extraction, food and beverage, chemical industry, minerals, metals, and vehicles to test the hypotheses separately for each industry. The results of regression are shown in Tables 8 and 9.

The results of Table 8 show that other than significance (0.05) of the relationship between EM and CAP according to EGLS in chemical industry, the relationship is not proved for other industries.

The results of Table 9 show that the relationship between EM and CAP, there is no relationship between EM and EC for each industry seperatly.

Table 7: Regression Model between EM and EC

	EGLS			*GLS*		
	Coefficient	*t-Statistic*	*Prob.*	*Coefficient*	*t-Statistic*	*Prob.*
C	0.00	0.00	0.99	0.14-	3.09-	0.00
EC	6.56-	0.05-	0.95	1.09-	0.33-	0.74
S	0.00	0.02-	0.97	0.02	3.01	0.00
FL	0.01-	0.47-	0.63	0.00	0.36	0.71
IO	0.01	1.19-	0.23	0.00	1.53-	0.12
AS	0.07	1.11	0.26	0.03	2.91	0.00
R^2		0.29			0.29	
Adjusted R^2		0.20			0.82	
Durbin-Watson stat		2.27			2.26	
F-statistic		3.23			41.96	
Prob.		0.00			0.00	

Table 8: Regression Model between EM and CAP for Six Industries

Industry	*Method*	*Statistic*	*Constant*	*CAP*	*S*	*FL*	*IO*	*AS*	*Adjusted R^2*	*D-W*	*F-statistic*
Extraction	EGLS	Coefficient	– 0.07	– 1.24	– 7.45	0.04	0.26	0.29	0.15	2.15	0.00
		sig	0.12	0.57	0.03	0.70	0.11	0.01			
	GLS	Coefficient	– 0.05	– 1.26	– 8.35	0.02	0.24	0.29	0.10	2.39	0.00
		sig	0.50	0.54	0.00	0.16	0.19	0.07			
Food and beverage	EGLS	Coefficient	0.18	– 1.71	– 0.01	0.07	– 0.71	0.03	0.50	2.04	0.00
		sig	0.23	0.14	0.51	0.13	0.00	0.22			
	GLS	Coefficient	0.73	4.34	– 0.05	– 0.11	– 1.97	– 0.06	0.51	1.59	0.00
		sig	0.18	0.30	0.56	0.42	0.00	0.63			
Chemical industry	EGLS	Coefficient	0.40	8.94	– 0.03	– 0.26	– 0.03	0.10	0.24	1.85	0.00
		sig	0.00	0.05	0.07	0.00	0.14	0.00			
	GLS	Coefficient	0.50	– 1.94	– 0.06	– 0.13	0.03	0.04	0.70	1.57	0.00
		sig	0.00	0.66	0.03	0.10	0.40	0.08			
Minerals	EGLS	Coefficient	– 0.13	4.13	5.66	– 0.05	0.00	0.01	0.01	1.51	0.00
		sig	0.03	0.75	0.69	0.22	0.37	0.83			
	GLS	Coefficient	– 0.16	– 1.17	-3.39	– 0.08	– 0.01	– 0.16	0.00	1.79	0.00
		sig	0.46	0.97	0.58	0.62	0.50	0.24			
Metals	EGLS	Coefficient	0.04	– 6.48	5.07	0.01	– 0.02	– 0.01	0.02	2.17	0.00
		sig	0.17	0.29	0.11	0.36	0.49	0.22			
	GLS	Coefficient	0.05	– 1.13	– 2.07	0.04	0.02	– 0.10	0.51	2.05	0.00
		sig	0.10	0.82	0.57	0.06	0.36	0.22			
Vehicles	EGLS	Coefficient	0.14	-2.98	-9.63	0.01	0.00	-0.02	0.00	2.16	0.00
		sig	0.00	0.35	0.14	0.44	0.94	0.34			
	GLS	Coefficient	0.10	-1.70	-1.51	0.01	-0.01	-0.01	0.62	2.40	0.00
		sig	0.00	0.59	0.22	0.58	0.19	0.62			

Table 9: Regression Model between EM and EC for Six Industries

Industry	Method	Statistic	Constant	EC	S	FL	IO	AS	Adjusted R^2	D-W	F-statistic
Extraction	EGLS	Coefficient	– 0.07	5.35	7.07	0.06	0.06	0.29	0.09	2.39	0.00
		sig	0.13	0.55	0.04	0.62	0.02	0.01			
	GLS	Coefficient	– 0.05	1.57	– 8.40	0.02	0.24	-0.29	0.09	2.11	0.00
		sig	0.51	0.15	0.00	0.83	0.20	0.07			
Food and beverage	EGLS	Coefficient	0.04	– 1.93	– 7.28	0.13	– 0.65	0.01	0.30	2.15	0.00
		sig	0.13	0.08	0.00	0.00	0.59	0.13			
	GLS	Coefficient	0.16	– 1.36	– 5.55	– 0.06	– 0.07	0.53	0.29	2.40	0.00
		sig	0.56	0.83	0.01	0.71	0.95	0.04			
Chemical industry	EGLS	Coefficient	0.39	– 4.57	– 0.03	– 0.25	– 0.03	0.09	0.23	1.87	0.00
		sig	0.00	0.71	0.10	0.08	0.17	0.00			
	GLS	Coefficient	0.50	– 5.75	– 0.06	– 0.13	0.03	0.04	0.70	1.56	0.00
		sig	0.00	0.99	0.03	0.09	0.41	0.09			
Minerals	EGLS	Coefficient	– 0.13	– 6.07	4.63	– 0.05	0.00	0.00	0.01	2.35	0.00
		sig	0.03	0.53	0.75	0.21	0.62	0.86			
	GLS	Coefficient	– 0.16	1.56	– 3.36	– 0.8	– 0.01	0.29	0.00	1.79	0.00
		sig	0.46	0.95	0.58	0.62	0.49	0.24			
Metals	EGLS	Coefficient	0.06	3.83	4.08	0.01	– 0.02	-0.08	0.01	1.99	0.00
		sig	0.09	0.83	0.24	0.35	0.45	0.27			
	GLS	Coefficient	0.08	2.26	0.46	0.01	– 0.08	0.08	0.53	2.29	0.00
		sig	0.02	0.09	0.26	0.20	0.49	0.23			
Vehicles	EGLS	Coefficient	0.06	3.83	4.08	0.01	– 0.02	-0.08	0.01	2.08	0.00
		sig	0.09	0.82	0.24	0.35	0.45	0.37			
	GLS	Coefficient	0.11	2.04	– 1.49	0.01	– 0.01	0.01	0.62	1.71	0.00
		sig	0.00	0.58	0.22	0.57	0.19	0.61			

7. Discussion and Conclusion

The purpose of this paper was to examine the relationship between prior period adjustment (PPA) and earnings management (EM) in listed firms of Tehran Stock Exchange (TSE). For this purpose a sample of 81 companies was selected and examined during the period of 2002 to 2010 in six industry using panel data with fixed effect model. Modified Jones model (1991) is used for measuring of EM and to test hypotheses multiple regression models and Pearson correlation coefficients are used. Results of this research show insignificant relationship between PPA and EM in the accepted firms of TSE on the whole and for six industry extraction, food and beverage, chemical industry, minerals, metals, and vehicles separately. These results are inconsistent with those of Zakolyukina (2012); Dichev et al. (2012); Wiedman and Hendricks (2010); Plumlee and Yohn (2010); Yarri and Yaari (2007); Moore (2007); Richardson et al. (2002); Wilson (2008); Burgastahler and Dichev (1997). Insignificant relationship between two variables may stem from different factors such as lack of competition and exclusive market and differences in the different economic conditions of countries, competitive and non-competitive markets. On the whole, we can conclude that mangers of firms listed in TSE do not use PPA as a tool for practicing EM.

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