The Implication of Earnings Quality on Stock Price Volatility

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Abstract

Purpose: the purpose of this research is to investigate the impact of accruals quality measure of earnings quality on stock price volatility.

Design/methodology/approach: The paper's finding is based on an applying study by employing a fixed effect panel least square to test whether earnings quality has any significant effect on stock price volatility based on a sample of 46 publicly listed firms in the Egyptian Stock Exchange for years (2013-2018).

Findings: The results show that there is a significant negative impact of earnings quality on stock price volatility.

Key words: Earnings quality, Accruals quality, Stock Price volatility**.**

الملخص

الغرض: الغرض من هذا البحث هو التحقيق في تأثير مقياس جودة الاستحقاقات لجودة الأرباح على تقلب أسعار الأسهم.

التصميم/المنهجيه/المنهج: تستند النتائج التي توصل إليها البحث إلى دراسة تطبيقية من خلال استخدام لوحة ذات تأثير تستند إلى المربعات الصغرى الاعتيادية لاختبار ما

إذا كانت جودة الأرباح لها أي تأثير كبير على تقلب أسعار الأسهم بناءً على عينة من ٤٦ شركة مدرجة في البورصة المصرية لسنوات (٢٠١٣-٢٠١٨)

النتائج: تظهر النتائج أن هناك تأثيرا سلبيا مهما لجودة الأرباح على تقلب أسعار الأسهم.

الكلمات الدالة: جودة الأرباح ،جودة الاستحقاقات ، تقلب أسعار الأسهم.

1. Research Idea

Stock price volatility is considered an essential variable used by investors in their investment decisions because it plays an important role in measuring risk (Chun et al., 2020). Measuring risk enables investors to optimize their portfolio strategy (Wang et al., 2020).

High volatility in stock prices may weaken investors' confidence as it reflects high risk (Shi et al., 2019; and Zainudin et al., 2018). Due to investors' aversion to risk, high stock price volatility can have an adverse impact on the capital market because investors may spend less on capital investment and transfer their investments to safer assets (Shi et al., 2019).

In their capital allocation decisions, investors form their expectations about firms' future cash flows and the risk associated with these cash flows based on earnings information. Investors use earnings information to revise their expectations about future cash flows and this leads to a revision of stock prices (Isidro & Dias, 2017).

One of the crucial factors that lead to the volatility of stock prices is the variation between the actual financial results of firms and investors' expectations. In order to reduce this variation,

investors need high quality accounting information to form their expectations (Sadka, 2007).Therefore, this research will focus on how the quality of reported earnings can affect the volatility of stock prices.

2. Research objective

The main objective of this research is to examine whether earnings quality significantly influence the volatility of stock prices.

3. Related literature and hypothesis development:

Because investors are risk-averse, they give great attention to the volatility of stock prices, as it reflects risk (uncertainty) in the financial market (Ebeid & Bedier, 2004). The volatility of stock prices occurs as a result of the variation between actual cash flow, discount rate, or both, and the expectations of investors (Sadka, 2007). Hence, firms' earnings rather than dividends are preferred to be used to estimate future cash flow because it reflects firms' actual profitability and performance, which enables them to assess the ability of firms to distribute dividends (sadka, 2007).

Increasing the quality of earnings will allow investors to fairly and accurately predict future operating performance, allowing them to assess the firm's value (Jing, 2007).Improving the prediction ability of investors makes them react less and thereby reduces the volatility of stock prices (Beuselink et al., 2010).

Pereira and Cerqueira (2018) analyzed the relationship between a firm's earnings and stock price volatility by using daily data on stock returns for UK firms listed on the London stock exchange. They found a positive association between a poor information environment and stock price volatility.

Mitra (2016) examined the relationship between earnings quality and firm-specific return volatility for 1490 Japanese manufacturing firms and found that greater information asymmetry leads to high stock price volatility. Mitra (2016) documented that firms that operate in uncertain environments and firms whose managers use their discretion over accruals opportunistically are most likely to have high firm-specific return volatility.

Also, Chen et al. (2012) showed the negative association between earnings quality and firm-specific return volatility. These papers indicated that the negative association between earnings quality and stock price volatility returns to higher earnings quality. The high quality of earnings will reduce stock price volatility by eliminating informational uncertainty.

Jiang & Lee (2006) indicated that firms with poor prospects for future earnings have the tendency to disclose less information. This leads to greater hesitation in investors' beliefs, which means higher stock return volatility. This is in line with Pastro & Verones (2003), who suggested that if managers distort the reporting earnings through discretionary choices, the resulting information risk can potentially increase investors'

uncertainty about the future profitability of the firm, leading to an increase in return volatility.

The research hypothesis could be formulated as follows:

H_{01}: Earnings quality has no significant impact on the volatility of stock price.

4. Research methodology

Based on a sample of 46 publicly listed firms in the Egyptian Stock Exchange for the years (2013–2018), the researcher employs an accrual quality measure based on Dechow and Dichev (2002) model as modified by Francis et al. (2005) to measure the quality of reported earnings.

Moreover, the researcher follows Parkinson (1980) in measuring the volatility of stock prices. Furthermore, this research employs a fixed effect panel least square to test whether earnings quality has any significant impact on stock price volatility.

5. Research outline

Section One: The Effect of Earnings Quality on Stock Price Volatility

Section Two: An Empirical Study

Section Three: Conclusion

Section One: The Effect of Earnings Quality on Stock Price Volatility

1. The Meaning of Earnings Quality

There is no consensus on the earnings quality definition or measurement. Earnings quality can have multiple interpretations because its meaning varies depending on the decision context.

Domingues (2016) suggested that higher quality earnings provide more information about a firm's financial performance features that is relevant to a specific decision made by a specific decision-maker.

Also, Fakhfakh & Slaheddine (2016) mentioned some definitions of earnings quality, which is "earnings quality is the accuracy of investors' beliefs about stock prices following the earnings disclosure." Moreover, they referred to earnings quality as the extent to how well the reported earnings represent real economic firm performance.

Jing (2007) considered earnings of high quality if earnings reflect the firm's current operating performance, represent a good indicator of future operating performance, and enable users to assess the firm value. In line with Penman & Zhang (2002), who defined earnings quality as the ability to forecast the future income of a firm.

So, the researcher can define earnings quality as the extent to which decision-makers can depend on past and current firms' reported earnings to accurately evaluate current financial performance and predict a firm's future performance to make informed decisions and determine stock price. Also, earnings

could be considered high quality when meeting the users' need for information in making a specific decision.

2. **Accrual quality**

The quality of earnings relies on the firm's performance and the accounting system that measures accruals as a component of earnings (Dechow & Dichev, 2002). Previously, before the mandatory reporting of the cash flow statement, accruals were defined as non-cash working capital and depreciation. Since the introduction of the cash flow statement, accruals are defined as the difference between earnings and cash flow reported on the cash flow statement. Nevertheless, this definition mitigates errors induced by managers (Dechow et al., 2010). However, the definition of accruals is still developing; realize that all balance sheet accounts except cash are the result of the accrual accounting system (Dechow et al., 2010).

The accrual system allows the recognition of revenue in the period it is earned and matches it with related expenses. This proper matching provides a basis for measuring a firm's performance more accurately (Moshaka, T. 2010). However, accruals are frequently based on assumptions and estimates that, if wrong, must be corrected in the future accruals and earnings. The quality of accruals and earnings is decreasing in the proportion of accrual estimation errors. These judgments and estimates made by management create the opportunity for earnings management (Dechow & Dichev, 2002).

The accrual quality is expected to inform investors about the mapping of accounting earnings into cash flows. Since investors value securities to measure future cash flows, poor accrual quality is expected to weaken this mapping and increase information risk. Poor accrual quality is associated with a poor information environment (Francies et al., 2005).

In contrast with some studies that use models to focus on the opportunistic use of accruals to mislead users of financial statements, Dechow & Dichev (2002) developed a model to assess the accrual quality and took into consideration both intentional and unintentional estimation errors and didn't separate between them because both will reduce the beneficial role of accruals and lower the earnings quality

2. Stock Price Volatility

In financial markets, the term volatility is used to measure stock price fluctuation variability (Kastonjcar, 2012). Zainudin et al. (2018) defined stock price volatility as the variation or deviation of a stock price from the mean.

Prior studies used the volatility of stock prices as a measurement of risk. According to Bu, R. et al. (2019), volatility is a key concept in modern financial theory as it has been considered a risk indicator. They defined stock price volatility as an indicator of return dispersion for a given security. Also, Hashemijoo & Ardekani (2012) defined the volatility of a stock price as a benchmark for measuring risk as it reflects the changes

of the stock price over a determined period. Moreover, Kim & Won (2018) referred to volatility as a good indicator of risk or uncertainty as it reflects the degree of stock price fluctuations.

The volatility of stock prices is considered a fundamental variable in investment and trading decisions (Chun et al., 2020). Investors depend on volatility to measure the level of risk they are exposed to (Hussainey, K. et al., 2011). Financial intermediaries and practitioners carefully monitor the volatility of stock prices because of volatility dynamics related to hedging, risk management, and portfolio allocation issues, so better volatility predictions lead to more accurate valuation (Chun et al., 2020). Market investors track the stock market's volatility in real-time to optimize portfolio strategy and avoid market risk (Wang et al., 2020).

4. Earnings Quality and Stock Price Volatility

The price of an asset equals the discounted cash flow that it generates. Therefore, the expected discount rate and expected cash flow are considered the two factors that affect the stock price (Sadka, 2007). Investors in the capital market often depend on information in the financial statements to evaluate the firm's future cash flow from which to estimate its expected return (Dang et al. 2020).

Although dividends paid and capital gains are considered the stock's expected cash flow, prior studies show that dividends are irrelevant and should be replaced by earnings.

Earnings provide a more appropriate and useful measure of cash flow. Earnings are crucial financial details reported by the firm, and investors depend mainly on this figure in making their decisions because earnings reflect firms' actual profitability and performance (Makhsun et al., 2018).

Also, Sadka (2007) showed that dividends are not expected to affect stock prices because they are just a financing decision made by the firm and are not a performance measure. However, earnings are not a financing decision. Earnings reflect the firms' operations and investment results and thus represent the ability of firms to distribute dividends, so earnings rather than dividends should be reflected in stock prices.

Moreover, using earnings for further investments rather than distributing them as dividends will enhance the firm's growth and thus maximize the stock price (Sadka, 2007).

Previous studies proved the positive and significant effect of earnings on stock prices and considered it one of the most significant determinants of stock prices, such as Fadiran & Olowookere (2016).

Fadiran & Olowookere (2016) showed a significant positive relationship between earning per stock and stock price. They refer to earnings per stock as one of the accounting variables that measure the firm's performance, and investors pay the most attention to it to evaluate the performance and value of firms. They will influence their buy, sell, or hold decisions.

However, the profitability of the reporting firm may not be true to the real profit of the firm due to the distortion of the declared profit of the firm. This distortion arises from the conflict of interest between the manager and business owners and accounting constraints in the business, such as errors in the forecasting process, estimation of future value or the use of inappropriate accounting methods that make the difference between forecasted profits and profits in the financial statements (Dang et al., 2020). Thus, in order to better predict the future cash flow, the profit announced in the financial statements is a good quality profit (Dang et al., 2020).

Earnings are not a final product; they are an input used as a tool to forecast future earnings accurately and therefore facilitate the evaluation of stocks (Loh, & Mian, 2006).

Earnings are used by investors to measure and forecast future corporate performance, as well as to assess how closely actual earnings match their expectations (Isidra & Dias, 2017).Therefore; the failure to meet investors' expectations leads to the volatility of the stock price.

The firm's stock valuation does not depend on earnings figures but also on future performance expectations and earnings reliability expectations, which depend on the quality of these earnings (Domingues, 2016).

High earnings' quality will minimize information asymmetry as it provides more information about a firm's

financial performance relevant to a specific decision. Consequently, it will enable investors to expect future earnings efficiently and accurately, reducing the variation in expectations and thus contributing to the stability of stock prices (Rajpal & Venkalachalam, 2011).

Furthermore, the poorer the quality of information, the more it is related to high uncertainty about firms' future earnings, leading to increased stock price volatility (Domingues, 2016).

Section two: an Empirical Study

2.1. Sample Selection:

The study's sample is drawn from the annual reports of the EGX 100 non-financial firms for the years 2013–2018. The selected sample includes 46 publicly listed firms in the Egyptian Exchange, after excluding financial services firms (e.g., banks and insurance firms) as they are subjected to different accounting regulations and disclosure requirements, making it difficult to estimate the reported earnings quality.

Non-December 31 fiscal year-end firms are also excluded in order to ensure greater homogeneity of the firms in the sample. Moreover, firms with insufficient data are also excluded from calculating any independent variables and firms trading in foreign currency.

The sample selection procedures, as well as the final sample size, are summarized in Table 2.1.

Table 2.1: Sample Description

Sample selection procedure	
EGX 100	**100**
Less:	
Banks and other financial services	**19**
Firms with non-Dec 31 fiscal year	**19**
Firms with insufficient data	**9**
Firms trading in foreign currency	**7**
Total sample size	**46**

2.2. Data Sources:

All the required data (i.e., the firms' financial statements and high and low stock prices) was obtained from the Egyptian Stock Exchange (EGX) and the annual disclosure books[1] published by the Egyptian Stock Exchange.

2.3. Variables Measurement:

2.3.1. Measuring stock price volatility

SPV is the dependent variable whose measurement follows Parkinson (1980), which is considered one of the first and widely accepted extreme value methods of estimating volatility. It is based on the extreme value of the highest and lowest stock prices.

It means the yearly highest price of stock minus the lowest stock price, i.e., the range is divided by the average of the lowest and highest share prices, and then squared. In the end, the square root is applied to transform the variance to a standard deviation comparable.

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[1] The annual disclosure book is an annual publication that is made available by the Egyptian stock exchange.

The researcher applies the extreme value method because it is far superior than taking annual closing and opening prices in the sense that it incorporates extreme price fluctuations.

2.3.2. Measuring Earnings' quality:

The researcher uses an accrual quality measure based on the Dechow and Dichev (2002) model, as modified by Francis et al. (2005), to measure the earnings quality. This approach relies on the idea that accruals reflect managers' anticipation of current and future cash flows realization, or reversal of past cash flows, and the ability of accruals to reflect such a pattern could be affected by the estimation errors in accruals, regardless of management intent.

This approach takes into consideration both intentional errors resulting from opportunistic use of accruals raised from earnings management and unintentional errors resulting from environmental uncertainty and management lapses. Dechow and Dichev (2002) recognized that the effect of intentional and unintentional errors doesn't differ in impact on accrual quality since both will negatively affect accrual quality and reduce earnings quality, so the source of errors is not relevant in this approach.

According to the Dechow-Dichev measure, accrual quality is measured by the extent to which accruals map into operating cash flow realization, where a poor match signifies low accrual

quality. Specifically, the following model[1] is used as the proxy for accruals and earnings' quality.

- **Eq (1)**

$$TCA_{j,t} = a_0 + a_1 CFO_{j,t-1} + a_2 CFO_{j,t} + a_3 CFO_{j,t+1} + a_4 \Delta REV_{j,t} + a_5 PPE_{j,t} + \varepsilon_{j,t} \ ....eq(1)$$

Where:

- $TCA_{j,t}$ = total current accruals measured as ($NIBE_{i,t} - CFO_{i,t} + DEPN_{i,t}$)

- $NIBE_{j,t}$ = net income before extraordinary items at year t for firm j

- $DEPN_{j,t}$ = depreciation and amortization expense at year t for firm j.

- $CFO_{j,t}$ = cash flow from operations at year t for firm j

- $CFO_{j,t-1}$ = cash flow from operations at year t-1 for firm j

- $CFO_{j,t+1}$ = cash flow from operations at year t+1 for firm j

- $\Delta REV_{j,t}$ = annual change in sales revenues of firm j between years t and t - 1

- $PPE_{j,t}$ = growth value of property planet and equipment of firm j in year t

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[1] All variables in eq (1) are scaled by TAj,t-1 (lagged total assets) to control for scale differences.

- $\varepsilon_{j,t}$ = error term (residual)

Residuals from Equation (1) represent the estimation errors in the current accruals that are not associated with operating cash flows, and that cannot be explained by the change in revenue and the level of PPE.

The standard deviation of the residuals is an inverse measure of earnings quality, where the higher standards deviation of residuals, the poorer accruals and earnings' quality Francis et al., (2005).

2.4. Model Specifications for Hypothesis Testing:

2.4.1. Earnings' quality and Stock Price volatility:

To test the impact of earnings quality on the firm stock prices volatility the following regression model is estimated:

$$SPV_{j,t}=C_0 +C_1\,EQ_{j,t}+ +C_2 LEV_{j,t}+C_3\,Size_{j,t} + C_4\,Growth_{j,t}+ \varepsilon_{j,t}$$
$$……..eq(2)$$

Where:

- $SPV_{j,t}$=Stock price volatility at year t for firm j

- $EQ_{j,t}$ = earnings' quality measured as the absolute value of the residuals estimated from eq(1).

- $LEV_{j,t}$= firm leverage at t for firm j, measured by total liabilities divided by total assets.

- $SIZE_{j,t}$ = natural log of total assets at t for firm j

- GROWTH$_{j,t}$ = growth rate in sales at t for firm j, measured as the sales in year t minus sales in year t- 1 and scaled by sales in year t-1.

   Consistent with prior literature (e.g., Rajgopal & Venkatachalam, 2011; Mitra, K. 2016; Pereira, C. & Cerqueira, A. 2018), several control variables were included in the model to control their effect on the firm stock prices volatility.

EQ

   EQ is the standard deviation of Residuals from Francis et al. (2005) regression model. The researcher expects to find high level of stock price volatility in case of a poor information environment.

   If poor accrual quality indicates a poor information environment then a positive sign is expected for earnings quality regression Coefficient.

LEV

   Highly leveraged firms are more likely to experience higher stock price volatility, as they are more prone to financial distress (Mitra, K. 2016; Pereira, C. & Cerqueira, A. 2018)

Size

   Several studies showed that small firms experience higher stock price volatility because of higher uncertainty about profitability (Pastro & Veronesi, 2003; Liu & Di Iorio, 2012; Pereira, C. & Cerqueira, A. 2018).

Growth

The higher sales growth will lead to higher stock price volatility because an increase in sales of the company will make investors assess the positive value of the company itself, which will affect the stock price changes of the company (Handayani et al. 2018).

2.5. Data Analysis and Results:

Table 2.2: Pearson Correlation Matrix eq (2)

Correlation					
Probability	SPV	EQ_1	LEVREGE	SIZE	GROWTH
SPV	1.000000				
EQ_	0.339248	1.000000			
	0.000***	-----			
LEVREGE	0.278406	0.001478	1.000000		
	0.0029**	0.9843	-----		
SIZE	-0.074219	-0.214494	0.310869	1.000000	
	0.3221	0.0038	0.0000	-----	
GROWTH	-0.257523	0.121793	0.123682	0.104492	1.000000
	0.0031**	0.1034	0.0981	0.1627	-----

***, **, and * denote that correlation is significant at a level less than (0.001), (0.01), and (0.05).

According to table 2.2, there is a significant correlation between stock price volatility and earnings quality. Similar to Pereira & Cerqeira, (2018) and Domingues, (2016), stock price volatility positively correlated with the residual value of earnings quality (0.339), thereby there is a negative relationship between stock price volatility and earnings quality, implying that poorer

earnings quality is related with greater stock price volatility. This denies the research hypothesis. Therefore, stock prices become more stable in case of the availability of accurate earnings amounts which enable investors to anticipate future cash flows and reduce noise trading.

Also, Leverage significantly positively (0.278) correlated with stock price volatility which consistent with Pereira & Cerqueira (2018). This indicates that highly leveraged firms have high stock price volatility because of high risk they are exposed to.

However, inconsistent with Handayani et al. (2018), a firm's growth and stock price volatility are inversely related (-0.2575). The more a firm grows the less volatile its stock prices would be.

According to Hair et al., (2010), there is no multicollinearity problem since the highest correlation value between Leverage and size is (0.31).

Table 2.3: Total Panel Estimation Fixed-effect Model for eq (2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPV	0.737086	0.219084	3.364399	0.0009
EQ	0.352377	0.075224	4.684369	0.0000
LEVREGE	0.143723	0.035364	4.064105	0.0000
SIZE	-0.000629	0.023379	-0.026904	0.9415
GROWTH	-0.121454	0.047833	-2.539126	0.0193
R-squared	0.282536	Mean dependent var		0.814239
Adjusted R-squared	0.273302	S.D. dependent var		0.138706
S.E. of regression	0.140312	Akaike info criterion		-0.856370
Sum squared resid	2.539692	Schwarz criterion		0.048301
Log likelihood	128.0733	Hannan-Quinn criter.		-0.489565
F-statistic	2.080336	Durbin-Watson stat		2.177940
Prob(F-statistic)	0.000516			

SPV = 0.352377*EQ_1 + 0.143723*LEVREGE -0.000629*SIZE - 0.121454*GROWTH + 0.737086.

1- The coefficient of determination:

Table 2.3 shows that the coefficient of earnings quality is significant at PV < 5%, which indicates that earnings quality has a significant impact on the volatility of stock price, which is inconsistent with H_{01}. The positive coefficient of the residual value (0.36) with stock price volatility indicates that low earnings quality increases stock price volatility.

Moreover, the significant positive coefficient of leverage (0.15) at PV <5% indicates that highly leveraged firms have high stock price volatility. Also, the coefficient of firm growth is significantly negative (-0.111566) at PV <5%, which indicates that firms with a high level of growth have lower stock price volatility.

The model is significant at a p-value < 0.05 with an adjusted R2 of 27.33%, which indicates that the model explains 27.33 % of variations in the stock price volatility (SPV).

2- F-test

Since the value of "F test" is (2.07) with significant at the (.001) level, then the independent variables were accepted in the model have been affected on the level of EQ and the results can be applied.
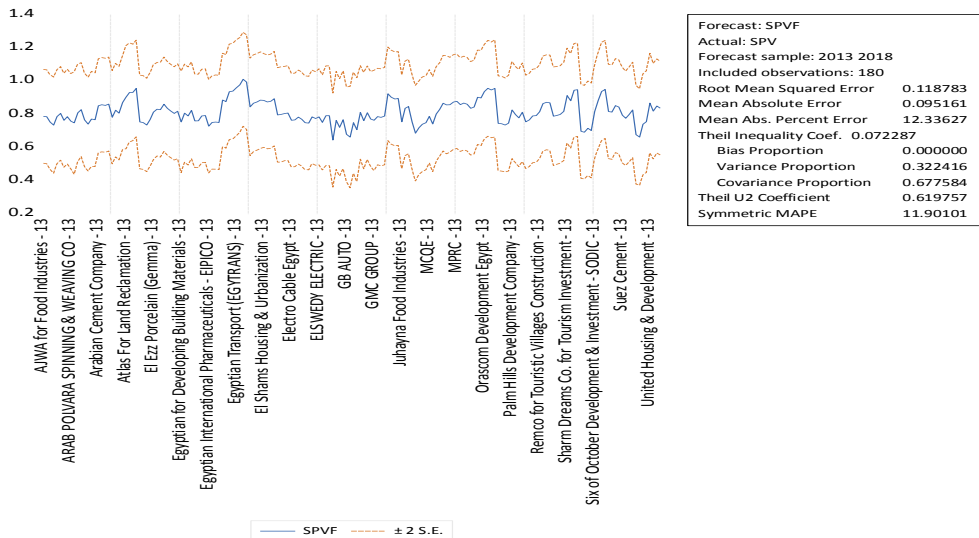
3- The Durbin-Watson test statistic

The Durbin-Watson test statistic tests the null hypothesis that the residuals from an Ordinary least-squares regression are not autocorrelated against the alternative that the Residuals

follow an AR1 process. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation. Since the test statistic value (2.21) for eq (2), greater than dU, the null hypothesis would not be rejected.

4- Theil's inequality coefficient U

FIGURE 2.1:Theil's inequality coefficient U for eq (2)

Forecast: SPVF	
Actual: SPV	
Forecast sample: 2013 2018	
Included observations: 180	
Root Mean Squared Error	0.118783
Mean Absolute Error	0.095161
Mean Abs. Percent Error	12.33627
Theil Inequality Coef.	0.072287
Bias Proportion	0.000000
Variance Proportion	0.322416
Covariance Proportion	0.677584
Theil U2 Coefficient	0.619757
Symmetric MAPE	11.90101

U Theil's inequality to measure the accuracy of the estimates of the fixed effects model.it lies between zero and one, where zero indicates a perfect fit. Since a value reaches to zero (7%) indicating the goodness of fit of the panel model, at a percent of not less than (91%).

5- Group unit root test

Table 2.4: group unit root test eq (2)

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-19.5706	0.0000	5	895
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-18.9216	0.0000	5	895
ADF - Fisher Chi-square	284.895	0.0000	5	895
PP - Fisher Chi-square	282.600	0.0000	5	895

** Probabilities for Fisher tests are computed using an asymptotic Chi - square distribution. All other tests assume asymptotic normality.

According to Table (2.4), It can be revealed that stationary of the time series of the return, ln SPV, EQ, LEVREGE, SIZE, GROWTH, based on the constant level, through to the following criteria: IPSW, PP, ADF, at a significant level less than (0.05).

Section three: conclusion

Earnings quality has a significant negative impact on stock price volatility. Stock price volatility is positively correlated (0.339) with the residual value of earnings quality as well as the positive coefficient of the residual value (0.36) with stock price volatility indicates that low earnings quality increases stock price volatility. This finding is consistent with Pereira & cerqueira, 2018; Domingues 2016 & Mitra, 2016.

High earnings quality will enable investors to evaluate firms' performance fairly and accurately predict future operating

performance. Improving the prediction ability of investors will reduce the variation between investors' expectations and actual results, thereby reducing the volatility of stock prices.

Furthermore, the significant positive coefficient (0.1546) of leverage with stock price volatility indicates that highly leveraged firms have high stock price volatility because high leveraged firms reflect high risk. However, inconsistent with Handayani et al. (2018), there is a significant negative coefficient (-0.1115) between firm growth and stock price volatility which indicates that firms with a high level of growth have lower stock price volatility because growth is considered a positive signal regarding greater future cash flows from new investment projects.

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