



Available Online

Journal of Economic Impact

ISSN: 2664-9764 (Online), 2664-9756 (Print)

<https://www.scienceimpactpub.com/jei>

IMPACT OF AUDIT QUALITY ON STOCK PRICE CRASH RISK: EVIDENCE FROM PAKISTAN STOCK EXCHANGE

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ARTICLE INFO

Article history

Received: April 29, 2022

Revised: August 16, 2022

Accepted: August 25, 2022

Keywords

Audit quality

Stock price crash risk

Fixed effect model

Pakistan stock exchange

ABSTRACT

Stock price crash risk is an unfavourable event in business that may decrease the shareholder's wealth and hurt stability and capital market growth. This study investigates the impact of audit quality measured by auditor industry specialization (AIS), audit tenure (AT), audit committee independence (ACI), audit firm size (AFS) on stock value crash (measured by down-to-up unpredictability) for a sample of 70 non-financial firms listed in Pakistan Stock Exchange during from 2009 to 2018. Efficient governance enriches financial and operational directness, which cuts down the stock value crashes in rotation. Facing crash risk difficulties, traders impart more funds to stocks of well-regime organizations. The fixed effect model results show that AIS and ACI have a negative and significant impact on crash risk, while there is a positive impact of AFS on stock price crash risk. Moreover, it concludes that it has an insignificant impact on stock price crash risk in Pakistan. It is concluded that effective audit quality lessens the difficulty of data abnormality and improves stock price crash risk. This study has importance for investors to help them identify the most liquid stock and will enable them to decide which stocks to acquire and which to dispose of. This study will also be helpful for academics and scholars to bridge this gap on the influence of audit quality practices on the economic consequences of Pakistan. It will be useful for future research as well as because it will become part of the empirical literature on the economic consequence of stock markets.

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<https://doi.org/10.52223/jei4032202>

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INTRODUCTION

Stock price crash risk is especially unfavorable event in business. The asymmetric variations in stock returns may decrease the shareholder's wealth and ultimately have an adverse effect on stability as well as capital market growth and development (Qayyum et al., 2021). An unexpected decline in security prices leads towards abolishment of shareholder's wealth. Therefore, it creates a situation of discouragement for the investors. Prior studies suggested that stock price crash risk happens due to the announcement of unpleasant news associated with career concerns and compensation. As soon as this negative news spreads in the stock market, it will bring about an immediate decline in stock prices (Kim and Zhang, 2014). One of the reasons behind these crashes is the agency conflicts between management and ownership. Managers have personal interests by storing negative information for a long periods of time. Secondly, directors may have benefited from excessive investment in negative net present value projects. These projects are not beneficial for the company, but only directors have private benefits; thus, they conceal information, which contributes to stock price crash risk (Kim and Zhang, 2016).

Efficient financial markets guide and facilitate investors for the productive allocation of their funds through dissemination of relevant information. In emerging economies, less economic information is processed by stock markets. In such economies if prices move because of noise trading, poor ownership and political unrest, it will end in poor allocation of resources and decline in economic process. Greater investor protection, good audit quality, and efficient enforcement system by the state can transmit company information into the share price, and consequentially co-movement of share price decrease the stock price crash risk (Han and Singal, 2000; Mahieux, 2022). The Audit quality is vibrant from another aspect. Regardless of the systematic risk of stocks, the possibility of severe shortfall within the stock prices doesn't reduce through the expansion of the portfolio. To prevent such risk, spot firms whose shares are visible to the danger of falling stock prices (Cadman et al., 2013). A method to stop such impairment is giving importance to the standard of audit administrated on firms' financial statements. Stock market and market microstructure are deemed to be the most debated topic within the literature on finance. The securities market has an important measurement of the growth and efficiency of a free laissez-faire

economy. On the opposite hand, both developed and developing countries are facing the matter of activities of securities market prices. Actions within the securities market have a deep economic impact on the economy and individual consumers. A failure in share prices has likely to cause extensive economic disturbance (Anderson et al., 2004; He and Guo, 2022). Most distinctively, the securities market crash of 1929 was a key thing that occasioned the depression of the 1930s. Stock price crash risk is an important consideration for the securities market (Thuy et al., 2022). Managers, strategy makers, stakeholders, and corporate policymakers all have the incentive to look at the subsidizing factor and reduce the crash risk in line with information directness (Jin and Myers, 2006), impervious financial disclosure, and earning quality (Hutton et al., 2009) corporate minimization (Kim and Zhang, 2014), the worth of chief money dealer possibility portfolio (Kim and Zhang, 2016) chief military officer CEO boldness and excess incentive (Lin et al., 2009) institutional stakeholder ownership (An and Zhang, 2013; Callen and Fang, 2013) corporate social responsibility and compassion (Kim et al., 2014) and accounting linked with crash risk. During this review of crash risk, Hutton et al. (2009) gave attention to this important principle regarding shareholder interest for "tail risk" in portfolio management. A number of studies have theoretically hypnotized and empirically detailed that shadow risk increases the required return for shareholders (Gabaix, 2012). Additionally, Conrad (1989) indicates that a more negatively skewed return is related to higher returns, which show greater crash risk. Results express that shareholders are averse to stocks with higher crash risk. Crash hazard accessible market in late year contains concerned expanding consideration in a particularly late year hosts a wide assortment of gatherings, including scholarly, pro, and policymakers. Late spot outrages (e.g., WorldCom, Enron, Xerox) have rapidly developing beck of research that inspect the creation of stock value crash chance. These examinations see the aggregation of awful news ("Bad News Hording") in light of the fact that the key consider the stock value crash chance. Impetuses like remuneration agreements and vocation concern urge firm administration to conceal terrible news from market to circle expanded offer costs (Conrad, 1989).

The research regarding stock price crash risk was initiated after the financial crisis of 2008-09. Up until this point, the vast majority of the investigations have been done about review quality (Andreou et al., 2016), financial reporting quality (Francis et al., 2016; Kim and Zhang, 2016), management style, and compensation (Okolie and Izedonmi, 2014) and informal institutions, like religion (Callen and Fang, 2015). Audit quality is the prospect that audit will present true and fair judgment within the register of its patron for the general public welfare (Lestari and Aeni, 2019). Researchers have explored the connection between audit quality and stock value crash risk in the capital markets of developed economies like USA, UK, and Canada (Lim et al., 2016; Abdel-Wanis, 2021; Yuan et al., 2016).

The objective of the present study is to explore the connection among the audit quality and stock price crash risk in the context of Pakistani listed firms. Stock price crash risk employs as a dependent variable, while audit quality is utilized

as the independent variable. The four variables used for measuring audit quality are auditor industry specialization, audit tenure, audit size, and audit committee independence. The corporate governance attribute audit quality is expected to increase effective decision making, promote management monitoring and compel opportunistic behavior (Ashbaugh et al., 2006; Andreou et al., 2016; Qiu and To, 2022). It is expected that the better a firm's audit quality is, the less information asymmetry among management and shareholders will reduce and ultimately lower the stock price crash risk (Yeung and Lento, 2018). This study is inspired by theoretical research, circumstantial evidence, and, therefore, the immoral news hoarding theory of crash. Theoretical research shows that prospective lawsuit concerns incentivized the examiner to closely oversee the entity testifying opinion that may disguise bad news. This inspiration is probably going to be exact for BIG-4 auditors that have more inducement to produce privileged audit quality because their "deep pockets" have more litigation risk. So higher moments of stock return distribution attracted by crash risk has important implication for set theories, resources, and the possibility of a pricing model. Specifically, various recent crisis-related issues contest the concept that auditor assistance to organizational bad news hoarding happenings within the public enterprise (Yeganeh and Barzegar, 2014).

The current study contributes to the literature in various ways. First, the effect of audit quality (auditor industry specialization, audit tenure, audit size, and audit committee independence) on stock price crash risk has not been investigated in the Pakistani setting, even though researchers have been investigated the association between crash risk and ownership (Hunjra et al., 2020), cost of equity (Saleem and Usman, 2021) and economic policy uncertainty (Azam, 2021). These factors are considered vital as if the auditor is not specialized in the industry, he/she may not put rational judgment (Khan et al., 2022). Auditor's tenure also defines his experience in the field (Mehran et al., 2022). Similarly, audit quality can be estimated through auditor independence, which means that he/she is not under any pressure (Farid et al., 2021). Secondly, it enriches the literature regarding audit quality. To the best of the author's knowledge, it is the pioneer study to inspect the association between stock price crash risk and four components of audit quality, especially in the context of Pakistan. Thirdly, it may be useful for managers, shareholders, policymakers, risk managers, traders, and financial analysts. This study has importance for investors to help them identify the most liquid stock and will enable them to decide which stocks to acquire and which to dispose of. This study will also be helpful for academics and scholars to bridge this gap on the influence of audit quality practices on the economic consequences of Pakistan. It will be useful for future research as well as because it will become part of the empirical literature on the economic consequence of stock markets.

It is evident from the literature that negative news from stock market experts directly impacts the audit quality of different public sector organizations because of different concerns, including vocation direction, momentary remuneration and experimental structure. The overview by Choudhary et al. (2009), Dichev et al. (2013) and Theng and Wie (2022) find

that supervisors are defenseless against discharging the terrible news compared with phenomenal news. In ongoing decades, episodic proof shows that administrative abysmal news crowding is located inside the recorded firms. For example, utilizing a specific reason vehicle, Enron had the option to cover cash losing resources for the all-inclusive period before the aggregated awful news got impractical to constrict the detailed influence. Lehman established off-record systems called "Repo 105s" during the 2007 and 2008 to dispose of the protections stock from its record.

Empirical proof reveals the awful news crowding hypothesis of crash chance (Hutton et al., 2009; Jin and Myers, 2006) gives the proof that obscurity is certainly identified with the firm explicit stock value crash chance at the nation and firm level separately. Kim and Zong (2011) find that assessment proof and CFOs choice possessions are two significant determinants of firm explicit stock price crash risk. Specialists likewise show that the level of financial specialist's solidness and strictness inside the nations where the firm are home office, which incites disincentives for directors to smother awful news.

Apart from the review quality zone, different analysts look at the elements that impact the stock price crash risk. Scientists give adequate proof of clashing for the association between examiner tenor and review quality. A few examinations recommend that long tenor improves the review quality by giving proof that examiner tenor is decidedly identified with the occurrence of going concern sentiment (Amin et al., 2014), accrual quality (Myers et al., 2003), earning response coefficient (Elliott et al., 2010) what's more, decrease inside the recurrence of monetary repetitions.

Industry specialization helps the audit firm increase the demand for audit but increases the demand from on audit services; improve the audit quality through economy of scale. It enables the audit firm to differentiate audit products and services, reduces the hurdles to entry within the new entrants to speculate within the significant and relevant industries, and affects the auditor-client relationship like review charges and money-related announcing quality (Farid et al., 2021; Mehran et al., 2022; Robin and Zhang, 2015).

Feng et al. (2021) find a higher market valuation of cash holding for firms evaluated by industry authority examiners. Similar findings are supported by Noor et al. (2022) and Ullah et al. (2019). Gong et al. (2019) found that industry pro auditor decreases power and snugness of obligation. Related to my examination, that industry expert evaluator diminishes stock value crash chance.

Chin and Chi (2009) reported that the issue of notoriety varies between review firms and individual auditors, in light of the fact that the past has more capacity to oppose a customer's forceful bookkeeping treatment, and furthermore, the last may confront more risk of review disappointment and notoriety harm. Moreover, He et al. (2017) find that the commitment review accomplice's notoriety capital impacts review quality emphatically in Taiwan. Researchers noticed the presence of a positive association among the freedom of the review advisory group and offer liquidity (Foo and Zain, 2010; Theng and Wie, 2022). For additional investigations, it's suggested that there likely could be assortment of other review quality elements which will impact the stock price crash risk, for instance,

remuneration, traits of review council, and in this way, the nearness of further boards. Past examinations explore that when confronting potential case chance, auditor will reaction lopsidedly to customer money-related announcing framework by more intently checking administrative conduct that outcome awful monetary news (Chen et al., 2017; DeFond et al., 2012). Similarly, Kothari et al. (2009) explored that "before marking of examined spending plan, auditor during this quarter whether any benefit is weakened or whether the other unrecorded misfortunes. This investigation can possibly reveal awful news that must be perceived inside the reviewed financial plan.

Bissessur and Hodgson (2012) investigated the impact of IFRS adoption by the Australian firms on stock price crash risk. The result revealed in decrease in synchronicity after the adoption of IFRS during first two post-IFRS years, but soon synchronicity increased during the subsequent year. IFRS deliver more firm specific financial information and ignore industrial and general market information analyst for reliability and industrial comparability to intercommunicate industry or general market information, which increase stock price crash risk. Brooks et al. (2013) examined emerging markets facing more frequent deviation from a stochastic process that developed economies, thanks to low ownership protection. Poor ownership increases the insecurity of investors against exploitation by the insider (controlling shareholders) within the modern financial economies, arbitrage plays important role within the deviation of costs and keeping market efficient through informed trading.

Kim and Shamsuddin (2008) and Ahmad and Wu (2022) argued that efficiency rely on the extent of equity market development. The developed equity market has high price efficiency because this facilitates efficient data flow. The efficient market hypothesis is valid within developed market economies. In line with the EMH, share price must have a stochastic process. Price should incorporate and reflect all relevant and accessible information at any particular time. From the above information, I can see that future prices are forecasted from the present prices. Okolie and Izedonmi (2014) investigated that past researchers have hypothesized that reviewers draw in an expense premium their more noteworthy decreases customer introduction in suit (the profound pocket hypothesis); while others have conjectured that there is no genuine review quality distinction, yet rather that enormous firms are seen to have gained notoriety for quality. In view of the report of DeAngelo (1981), past review intermediaries, the size of auditor arranging evaluating firms having a place with the Big 8, Big 6, Big 5, as against non-Big 8, Big 6, Big 5 to characterize the degree of review quality (Balsam et al., 2003; Clarkson, 2000; Copley, 1991). In light of ongoing occasions, enormous review firms are the biggest universal bookkeeping and expert administrations firms alluded to as Big 4.

Based on the above discussion, the following hypotheses are developed:

H_1 : Audit industry specialization significantly impacts stock price crash risk in Pakistan.

H_2 : Audit committee independence significantly impacts stock price crash risk in Pakistan.

H_3 : Audit tenure significantly impacts stock price crash in Pakistan.

H_4 : Audit firm size significantly impacts stock price crash risk in Pakistan.

METHODOLOGY

Non-financial firms listed in Pakistan stock exchange (KSE-100) are taken for examining the impact of audit quality on stock price crash risk. Only the listed firms possessing complete required data are included in the sample, and the rest of the firms were excluded resulting 70 firms as final sample. The secondary data were collected for ten years i.e., from 2009 to 2018. Financial data for stock prices, shares

traded or stock volume, and market capitalization has been taken from business recorder, the Pakistan Stock Exchange website, and the State Bank of Pakistan. Moreover, firm's annual reports and official websites were also used. The detail of the firms taken as final sample is presented in Appendix A. This study includes two variables, i.e., audit quality and stock price crash risk, while firm age, market to book value of share, and firm leverage are used as control variables. Dependent variable, stock price crash risk, is determined by down-to-up unpredictability, while audit quality is determined by auditor industry specialization, audit tenure, audit committee independence, and audit firm size. The proxies, along with the measurements of variables, are presented in Table 1.

Table 1. Measurement of variables.

Variable	Proxy	Abb.	Measurement	Reference
Stock Market Crash Risk	Down-to-up unpredictability	CR	The normal logarithm of the proportion of standard deviation in the 'down' Weeks to the standard deviation in the 'up' Weeks $DUVOL_{j,t} = \log \left\{ \frac{(nu - 1) \sum_{DOWN} R^2_{j,t}}{(nd - 1) \sum_{UP} R^2_{j,t}} \right\}$	(Chen et al., 2018)
Audit Quality	Auditor industry specialization	AIS	Audit fees is a proxy variable having value 1 if clients audit firm audit at least 20 percent of the sales in the clients two digit sic code industry and 0 otherwise	(Casterella et al., 2004; Dunn and Mayhew, 2004)
	Audit tenure	AT	Dummy variable having value 1 if tenure is 3 years or more and 0 otherwise	(Okolie and Izedonmi, 2014)
	Audit committee independence	ACI	Non-executive directors in audit committee divided by total number of directors in audit committee	(Foo and Zain, 2010; Al-Matari et al., 2013)
	Audit firm size	AFS	Dummy variable having value 1 if audited by Big4 audit firms and 0 otherwise.	(Khurana and Raman, 2004)
Control Variables	Firm age	FA	The number of years since the firm has been listed in the stock exchange	(Kim and Zhang, 2015)
	Market to book value of share	MTB	Annual average of standard deviation of weekly stock return	(Kim and Song, 2011)
	Firm leverage	LEV	The proportion of interest bearing debt overall market estimation of equity	(Sultana et al., 2019)

Pearson correlation and panel data methodology is applied to investigate the impact of crash risk on audit quality. The fixed effect model has been applied based on Hausman test and likelihood ratio. The following models are used to determine the impact of stock market crash risk on audit quality and control variables:

$$CR = \beta_0 + \beta_1 AIS_{i,t-1} + \beta_2 AT_{i,t-1} + \beta_3 ACI_{i,t-1} + \beta_4 AFS_{i,t-1} + \beta_5 FA_{i,t-1} + \beta_6 MTB_{i,t-1} + \beta_7 LEV_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

Where; $AIS_{i,t-1}$ = Auditor industry specialization for stock i at time $t-1$; $AT_{i,t-1}$ = Audit Tenure for stock i at time $t-1$; $ACI_{i,t-1}$ = Audit Committee Independence for stock i at time $t-1$; $AFS_{i,t-1}$ = Audit firm Size measures for stock i at time $t-1$; $FA_{i,t-1}$ = Firm Age is control variable for stock i at time $t-1$; $MTB_{i,t-1}$ = Market to book value is a control variable for stock i at time $t-1$; $LEV_{i,t-1}$ = leverage is also a control variable for stock i at time $t-1$; β = intercept; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = common coefficients of respected variables; $\varepsilon_{i,t}$ = error term.

RESULTS AND DISCUSSION

The results of descriptive analysis, correlation analysis and regression analysis are provided in this section. Table 2 explains the results of descriptive statistics. The descriptive statistics show mean, median, maximum and minimum values and details the skewness and kurtosis of all variables. As per the rule of thumb for mean and median data is considered normally distributed if mean and median values are equal. From Table 2, it seems that data is normally distributed for all variables except MTB. Almost the same results are observed from the values of skewness. The standard deviation shows that for all variables except FA and MTB the data is showing very low deviation from mean. From these results it can be concluded that mean of stock price crash risk is lower than that reported by Kim et al. (2015) and Kim and Song (2011). Moreover, Audit committee independence (ACI) shows that, on average 3.36 non-executive directors represent the audit committee and Auditor industry specialization (AIS) is 6.75 on average. Mean value for audit tenure is 57.14. In conclusion, it can be said that determinants of audit quality are showing the good quality of audit for the selected non-financial firms.

Table 2. Descriptive statistics for all variables.

Variable	CR	AIS	AT	ACI	AFS	FA	MTB	LEV
Mean	-0.26	6.74	0.57	3.36	0.54	48.7	499.0	0.59
Median	-0.26	6.86	1.00	3.00	1.00	34.5	75.77	0.55
Maximum	3.31	1.00	1.00	7.00	1.00	223	13650.	11.85
Minimum	-1.84	0.00	0.00	1.00	0.00	6.00	1.890	0.00
Std. Dev.	0.41	0.72	0.50	0.92	0.49	40.21	1705.9	0.59
Skewness	0.88	-0.18	-0.12	1.45	-0.17	2.67	5.604	14.60
Kurtosis	12.55	3.34	1.78	6.34	1.02	10.9	35.44	256.9
Observations	700	700	700	700	700	700	700	700

Table 3. Correlation matrix.

Variables	CR	AIS	AT	ACI	AFS	FA	MTB	LEV
CR	1.00							
AIS	-0.07	1.00						
AT	0.01	0.12	1.00					
ACI	-0.03	0.33	0.15	1.00				
AFS	-0.08	0.37	0.09	0.32	1.00			
FA	-0.04	0.25	-0.07	-0.03	0.20	1.00		
MTB	0.03	-0.07	0.04	0.02	0.02	-0.02	1.00	
LEV	-0.05	-0.16	-0.02	-0.03	-0.12	0.00	0.47	1.00

In order to test the issues related to multicollinearity it is essential to test the association among variables. Table 3 shows the correlation among all variables.

The results show that stock market crash risk is showing a negative relationship with audit quality. It shows that if audit quality is improved, the possibility of stock market crash risk will decrease. Moreover, none of the variables are showing high correlation, so it can be concluded that there is no multicollinearity in the data, so all variables can be used in a single model.

Table 4 explains the impact of audit quality on stock market crash risk. The results show that AIS and ACI have a negative and significant impact on crash risk, which depicts that one unit increase in AIS and ACI will decrease stock price crash risk by 0.02 and 0.04 units on average. These negative relationships seem logical, as, with the improvement in audit quality, chances of crash risks decrease. Moreover, it can also be seen that AFS is affecting crash risk positively, and this relationship is also significant. These results are in line with the previous literature (Baker and Stein, 2004; Cao and Petrusek, 2014; Ali et al., 2018).

Table 4. Regression analysis (Dependent variable: CR).

Variable	Coeff	Std. Error	t-Statistic	Prob.
C	-1.04	0.21	-4.88	0.00
AIS	-0.02	0.01	-2.39	0.02
AT	0.00	0.00	0.21	0.83
ACI	-0.04	0.01	-4.71	0.00
AFS	2.11	0.50	4.19	0.00
FA	-1.90	0.56	3.43	0.00
MTB	0.94	1.12	0.85	0.40
LEV	-0.28	0.12	-2.34	0.02
R-Sqr	0.55			
Adj. R-Sqr	0.50			
F-statistic	10.86			
Prob(F-stat)	0.00			

FA is showing a negative and significant impact on stock price crash risk. This finding is in favor of the previous study argument that large firms have the ability to disclose more information which helps to reduce information asymmetry and improve stock price. Similar results were also presented by many researchers (Bar-Yosef and Prencipe, 2013; Karmani et al., 2015; Prommin et al., 2014; Reyna, 2018). Similarly, leverage is showing a significant negative impact on crash risk. Based on these results, it can be concluded that firms with high debt ratios will observe stock price crash risk. These results are consistent with the study of Prommin et al. (2014). Based on these discussions, our first, third and fourth hypothesis is approved, stating that audit fee, audit committee independence, and audit firm size have significant impact on stock price crash risk. While the second hypothesis is rejected, which states that audit tenure significantly impacts stock price crash risk.

The table also explains that independent variables contribute 55 percent towards explaining dependent variables. The probability of F-stats shows that the overall model is significant.

CONCLUSIONS AND RECOMMENDATIONS

The motivation behind this examination is to explore the effect of audit quality on stock price crash risk in the Pakistan stock market. This investigation utilized the data of 70 non-financial firms recorded on the Pakistan Stock Exchange for the time period from 2009 to 2018. It has utilized the stock price crash risk as a dependent variable. While audit quality (auditor industry specialization, audit tenure, audit size, and audit committee independence) was utilized as an independent variable. In multivariate regression analysis, the fixed effect model has been applied in this examination. The findings of this investigation have been supported by the given hypothesis, i.e., increase in audit quality enhances the stock price crash risk (Robin Zhang, 2015). It implies that compelling audit quality diminishes the issues of asymmetry of data and increases the stock price crash risk. The other findings regarding components of audit quality reveal that there is significant negative impact of auditor industry specialization (AIS), and audit committee independence (ACI) on stock price crash, similar to previous research (Anderson et al., 2004) who argued that Big-4 audit firm reduces the information asymmetry problem which leads to increase the demand for share and the market becomes more liquid and hence reduce the stock price crash. Moreover, audit firm size and stock price crash risk are positively related to each other, which is reliable with the past research findings (Baker and Stein, 2004; Cao and Petrasek, 2014; Ali et al., 2018). In view of the results of the investigation, it could be contended that audit quality practices are subject to vital dynamic and improve the liquidity of the stock market as audit quality assists with improving the liquidity of the stocks. As indicated by the best of the author's insight, this is the main examination to recognize the effect of audit quality practices on stock price crash risk in the stock exchange of Pakistan. While the different past research contemplates which have directed other than evolved markets, they have utilized the constrained time period in their exact model that is the reason our examination is likewise having a transient commitment towards the budgetary writing. To summarize, we inferred that it isn't vital that all the audit quality factors have a similar impact on stock price crash risk in developing markets; for example, it would in evolved markets. It thoroughly relies on the idea of the audit quality, possession structure, and exchanging systems of the capital markets. This investigation will be useful for showcase producers to think about the impacts of liquidity chance toward taking activities to lessen advertise illiquidity. The consequence of this investigation can be utilized to decide the hazard of the board, financing, and progressively compelling administration factors decide the stock value crash risk.

Current research has implications for firm managers and financial specialists who ought to oversee the audit quality frameworks all the more carefully with the expectation of defining exchanging guidelines, professional workplaces, and commotion exchanging methodologies individually. This study additionally suggests that board of trustee's freedom plays a significant role in predicting the stock price crash risk, it means that this is very important determinant of stock price crash risk, and regulatory authorities such as SECP should

realize the importance of that variable and need to paid much attention on it by clearly defining their independent non-executive directors in Code of audit quality. This study has several future directions. It considered only one variable of corporate governance, i.e., audit quality as well as limited components of audit quality while forecasting the stock price crash risk. For further research period of financial crises can be included to cover the aspect of pre and post-period of financial crises. Moreover, other measures of crash risk can be considered which, is suggested by (Lesmond, 2005). This study proposed that upcoming research studies ought to be conducted to extend the findings of this research using larger sample size and the more diversity of firms.

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APPENDIX

Appendix A. number of sample firms in non-financial sector listed in PSX-100

Sr. #	Company Name	Abb.	Sr. #	Company Name	Abb.
1	AL- Abbas Sugar Mills	ALABS	36	Indus Motor Company	INDU
2	Abbot Laboratories Ltd	ABBOT	37	Ittehad Chem. Ltd	ICL
3	Atlas Battery Limited	ATBA	38	Japan Power Limited	JPGL
4	Atlas Honda Ltd	ATLH	39	karachi electric supply	KESC
5	Attock Refinery Limited	ATRL	40	Kohat Cement Limited	KOHC
6	Attock Cem.Pak.Ltd	ACPL	41	Kohat Textile Mills	KOHTM
7	Azgard Nine Ltd	ANL	42	Kohinoor Energy Ltd	KOHE
8	Best way Cement Ltd	BWCL	43	Kohinoor Mills Limited	KML
9	Biafo Industries Limited	BIFO	44	Kohinoor Sugar Mills	KOHS
10	Blessed Tex.	BTL	45	Kohinoor Textile	KTML
11	BOC Pakistan ltd	BOC	46	Lafarge Pakistan Ltd	LFPK
12	Byco Petroleum	BYCO	47	Lucky Cement Limited	LUCK
13	Century Paper	CEPB	48	Maple Leaf Cement	MLCF
14	Cherat Cement Company	CHCC	49	Mehmood Textile Mills	MEHT
15	Crescent Fibres	CFL	50	Mirpurkhas Sugar Mills	MIRKS

16	Crescent Sugar Mills	CSMD	51	Nadeem textile mills	NATM/F
17	Dawood Hercules	DAWH	52	National Refinery Ltd.	NRL
18	Dawood Lawrancepur	DLL	53	Nimir Ind.Chemicals	NICL
19	Dewan Auto Engg	DWAE	54	Nishat Mills Ltd.	NML
20	Engro Corporation Ltd	ENGRO	55	Oil and Gas Dev.Co	OGDC
21	Exide Pakistan Ltd.	EXIDE	56	Packages Limited	PKGS
22	Faisal Sinning Mills Ltd.	FASM	57	Pakistan Cables Ltd	PCAL
23	Fauji Cement Company	FCCL	58	Pak Telecommunication	PTC
24	Fauji Fertilizer Co. Ltd	FFC	59	Pakistan Intern. Airlines	PIAA
25	Fauji Fert Bin	FFBL	60	Pioneer Cement Limited	PIOC
26	Feroze 1888 mills limited	FML	61	Pakistan Oilfields Ltd.	POL
27	Ghandhara Nissan	GHNL	62	Premium Textile Mills	PRL
28	Ghani Glass Ltd	GHGL	63	Pakistan Refinery Ltd.	PRfL
29	Gharibwal cement	GWLC	64	Pakistan Tobacco Co.	PAKT
30	Glaxosmithkline	GLAXO	65	Quality Textile Mills Ltd	QUAT
31	Gul Ahmed Textile	GATM	66	Quetta Textile Mills Ltd.	QUET
32	HinoPak Motors Ltd	HINO	67	Rafhan Maize products	RMPL
33	Honda Atlas Cars Ltd	HCAR	68	Saif Textile Mills	SAIF
34	Hub Power Company	HUBC	69	Salfi Textile Mills	SALT
35	I.C.I Pakistan Ltd.	ICI PAK	70	Sazgar Engineering	SAZEW

Source: Website of Pakistan Stock Exchange

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