

Unpacking Financial Reporting Quality by Using MSCORE Model: Micro and Macro Insights

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Abstract

The reliability and relevance of finance reporting is key to building financial assertion between firms and their stakeholders. Financial statements are essential in the decision-making process such as investment decision, financing decision, dividend decision and working capital management decision. The consumers of financial statements needed good quality financial information to make productive decisions thus it is imperative and essential to maintain transparency of the financial statements. Financial statements may, however, be undermined by the high economic policy uncertainty and inflationary environment. One should also analyze the factors that affect transparency of financial reports and credibility. The proposed study will fill in the literature gap, by examining how the macroeconomic uncertainty and firm-level governance systems influence the determination of the financial reporting quality. The agency theory focuses on the macroeconomic and microeconomic factors as determinants of quality of financial reporting. Economic policy uncertainty and inflation are the macroeconomic factors. The microeconomic factors are corporate governance mechanisms and financial distress. The study uses logistic regression to analyze whether uncertainty in economic policy, inflation, corporate governance mechanism and financial distress is some of the factors that impact on the quality of financial reporting. The M-Score model, which involves the use of specific and total accruals, was utilized in this research by which the earnings manipulation in the financial reports was identified. The data used in the research is taken based on the non-financial firms listed in the Pakistan Stock Exchange (PSX) between the years 2013 and 2024. It was found that high economic policy uncertainty and inflation impact negatively on the quality of financial reporting. Financial reporting quality also has a negative correlation with financial distress. Conversely, corporate governance mechanism was found to have a positive correlation with financial reporting quality. The research deduced that uncertainty in economic policy, inflation and financial distress is a factor that decreases the quality of financial reports. Nevertheless, the earnings manipulation is mitigated by the strong corporate governance mechanism and improves the quality of finance reporting. The research can be helpful to the regulators to verify the quality of financial reporting. This paper showed that firms that have a high level of economic policy uncertainty, inflation and financial hardship must focus their financial statements to provide the transparency. Moreover, firms need to introduce an effective corporate governance system to reduce earnings management and improve the credibility of financial reports.

Keywords: FRQ, Economic Policy Uncertainty, Inflation, Financial Distress Corporate Governance, M-Score Model

The emphasis on reliability and credibility of financial statements is fast growing particularly after the major corporate scandals such as Xerox, Enron, WorldCom, and Maxwell. (Shah et al., 2024). The main areas of concern were the value of financial reporting, its accuracy, relevance and adherence to the existing accounting standards. In the ever-evolving relevant sphere, the credibility of such disclosures is the key to building the stakeholders' confidence in the organizations. Ensuring such adherence and standards for financial outcomes

is becoming a vital issue in organizations. The financial statement users needed to obtain good quality financial information to make robust decisions regarding their investments (Yusran, 2023). Mainstream stakeholders can obtain confidence regarding financial affairs using knowledge of what factors affect the financial outlays. Consequently, such relevant information should be affirmed in the financial statements without biasness. The quality of the information contained in the financial reports is high when it is not subject to earnings management.

According to Ahmad et al. (2023), earnings management refers to the intentional reporting of financial statements by the administration in order to deceive the stakeholders regarding the inherent economic performance of the company using subjective financial reporting tools. The faithfulness of financial reports is a leading priority among regulators, certified public accountants, and other stakeholders of financial reports. Financial reporting quality is related to all of the processes of a corporation, and it presents accurate financial information to ensure the quality of reporting transparency and exactly reflects the performance of the business (Ozer et al., 2024). The recent empirical research shows that accountability in most of the developing nations is ungrounded in accounting standards and is merely oriented in adherence to the applicable regulations (Yusran, 2023). The examples of the prominent corporate collapses in Pakistan includes but not limited to major banking sector companies, firms from textile sector and also from other major manufacturing sectors have brought out the critical role about how firms should be administered with the intent of ensuring proper relevant and faithful financial affairs of firms. The Pakistani ownership is not decentralized as it is in the modern countries, and families and important institutions hold significant positions in the major firms. The corporate governance effectiveness is obstructed by ownership form of the publicly traded corporations in Pakistan. The annual report of World Bank (2015) states that the country needs major gains in the fields of governance in order to release the potential of the country. The poor performance of Pakistan also makes it a significant concern regarding the reform efforts (Shah et al., 2024).

In this study, the researchers have also pointed out the importance of these factors such as the economic policy uncertainty, inflation, corporate governance and financial distress in explaining the integrity of financial reporting. The economic policy has a great influence on the different market players and the decisions they take. Economic policy uncertainty is a term that is used to describe the lack of predictability in the shift in policy that transforms the macroeconomic environment (He et al., 2020). The economic policy has a direct and indirect impact on the behavior of a company. It can also affect commercial trade, monetary policies, industrial laws, tax, and also influence business behavior outside the macroeconomic aspect (Lee & Jeong, 2024). Kim and Li (2018) believe that the uncertainty due to economic policies impacts the actual economy once the economic crisis has taken place. The ambiguity in economic policy has been academically pursued in establishing the impacts of economic policy on economic growth. Some investigators have noted the contribution of the economic policy uncertainty on the firm level along with the firm level factors (Viana et al., 2023). This uncertainty in economic policy would impact financial reporting accuracy in terms of an increased level of ambiguity, which could enable earnings manipulation due to the increased agency issues between internal and external stakeholders. As a result, the communication weaknesses in the shareholders, both external and internal, in combination with the asymmetry of the information enables the management to distort the performance of the company (Bermpei et al., 2022). Consequently, the amplification of economic policy uncertainty gives issues, and not an absolute impossibility, to recognize malpractices in gain by investors (Kim & Yasuda, 2021).

The studies by Yung and Root (2019) have shown that the more strategies of earnings manipulation are used by a company at the time when the state of economic policy uncertainty is high. Ma and Hao (2022) the increase in the financial pressure is based on the higher economic policy uncertainty that leads to the lower level of the stability of the cash flow. This is instability in finance which weakens the capacity to pay the debts and raises the expenses of financing. The result of such a behaviour will be that the firms will report the financial information in positive values rather than depicting the actual picture of the firm performance. The inflation impacts quality of the financial reporting. The study conducted by Viana et al. (2023) claims that one of the factors that cause inflation is increased macroeconomic instability. More pressure can be exerted on the developed countries to prepare financial statements in the inflationary environment as the market and the

regulators will conduct more scrutiny and care about the quality of financial reporting. Conversely, when the economy is in a situation of inflation, managers in the emerging markets are able to employ greater earnings management hence reporting exaggerated performance due to the weak institutional structure of such economies. The inflation can negatively affect the quality of the financial reporting as the increasing prices result in making it more difficult to define the financial reality to the population and analysts (Scholtens & Kang, 2013). The increased inflation rate leads to managers engaging in the earnings management habit thus compromising the quality of the financial reporting. In another research and literature by Rigamonti et al. (2024), the likelihood of a company applying real-based and accrual-based earnings management practices is greater in the high inflationary period.

Financial distress is the first microeconomic aspect that influences the quality of financial reporting. According to Sehgal et al. (2021), financial distress is a state that occurs when a company faces a challenge in the management of its cash flows in order to pay its contractual financial obligations. Failure to respond promptly to the financial problems of a company can cause insolvency (Aviantara, 2023). The management must critically examine financial statements of the company to ensure that the business survives. Low-end businesses are usually tempted to play with their profits. Zang (2012) pointed out that financially troubled firm and those that are below par in financial performance are more likely to engage in earnings manipulations, as opposed to financially sound, performance-based firms. The Zamri et al. (2022) study also indicated that the financial distress firms develop the earnings manipulation activities in order to achieve their financial goals. The reaction of investors to failure to achieve management projections is more pronounced in financially stricken firms compared to other organizations (Ranjbar & Amanollahi, 2018). Financial distress creates predatory behavior amongst managers who are given a chance to make earnings appear high and the quality of financial reporting is compromised.

The next microeconomic problem that influences the quality of financial reporting is corporate governance. Corporate governance also improves the quality of financial statements, hence lessening the agency conflict that exists (Waris & Din, 2023). The agency theory takes into consideration the relationship between the owners (principals) and the managers (agents) that is characterized by conflict of interests. The study is encouraged to make decisions that are more meaningful to his benefits due to their conflict with their interests (Susanto & Widayawati, 2019). The agency cost should imply the cost that is required to monitor and reduce the opportunistic behaviour of managers. According to Nguyen et al. (2024), the corporate governance is supposed to reduce the cost of the agency and to maximize the shareholder profit. Good corporate governance will reduce knowledge gap between the outsiders and insiders hence transparency. Development of an adequate accounting system would enhance governance and minimize the problems of agency between different parties. The management would effectively work in the interest of the shareholders as well as an increase in good governance structure with improved financial information (Sassi & Damak-Ayadi, 2023).

Although the macroeconomics variables like the policy uncertainty on the economy, and inflation have a tremendous impact on the firm information environment. However, relatively few studies have investigated the relationship between the macroeconomic policy uncertainty and the financial reporting quality in developed economies that have suggested further research on whether other characteristics like the company governance affects the financial reporting quality (Bermpei et al., 2022). In addition, the issue of quality of financial reporting is hardly addressed in the emerging markets, like in Pakistan (Shah et al., 2024). The current research is analyzing the impact of the economic policy uncertainty on the quality of financial reporting in Pakistan under the high rate of economic policy uncertainty and the high rate of inflationary environment that could also influence the quality of the financial reporting of the firms. Moreover, another microeconomics variable, which is under analysis in this paper, is the corporate governance and financial distress. One of the new markets in which these corporate reforms are striking cruel blows is Pakistan (Shakri et al., 2024). This study is addressing the gap through excavating these important micro and macro revelations that affect quality of financial reporting. This research outlines a solid evidence to the extent of our knowledge of the multifarious agents that influence the actions of financial reporting in that they have revealed that macroeconomic uncertainty and the systems of governance can be in various channels, this research gives credible evidence to the realization of the complexity of forces that affect corporate reporting behavior. The

research also excavates regarding the financially distressed companies, whether they are the opportunistic journalists or become more scrutinized. This puzzle has been resolved when it was discovered that distressed firms enjoy lower quality of financial reporting that supports the hypothesis of monitoring.

Literature Review

Agency Theory

Jensen and Meckling (1976) explained agency theory as a contractual relationship in which several individuals function as principals (shareholders) who engage various agents (managers) to operate effectively on behalf of the principals. When the agent seeks to enhance personal benefits at the cost of the principals' interests, it results in agency conflict. Agents possessing substantial expertise are endeavoring to make ambitious selections aimed at enhancing their own profit rather than that of the investors. The principal is unable to oversee the agent's operations on a daily basis, so exacerbating this gap and leading to increased conflict. Owing to a misalignment with the principal's interests, the agent endeavors to create selections that predominantly enhance his own benefits (Susanto & Widyaswati, 2019).

Macroeconomic and firm-level uncertainties could increase the intensity of the agency conflicts and the quality of the financial reporting. It leads to more information asymmetry and managerial discretion, which discourages the disclosure of financial reporting because of the economic policy uncertainty. As a result of increased uncertainty, which can further provide more opportunities at window dressing in the case of increased information mismatch between the management and the investors. Agency conflicts also increase the information asymmetry, which inhibits the ability of investors to make informed decisions on investment since false information is shared. Shareholders costs are benefits to the management because the shareholders are manipulated by the management in annual reports by managing the earnings and putting their interests above that of the investors thereby compromising the quality of financial reporting (Mos, 2024). The presence of inflationary conditions perverts real economic performance and increases the uncertainty. This increase in discretion rises agency issues and probabilities of opportunistic reporting thus diminishing financial reporting quality. Previous literature has supported that, the inflation makes the faithful representation and comparability of the accounting information difficult, also it can promote earnings management where the actual performance is distorted (Binz et al., 2024).

Financial distress at the firm level increases agency problems as managers under the survival pressure are likely to manipulate earnings or risk-shift to protect personal gain, but proper governance structure can detect distress earlier and lower agency cost (Aviantara, 2023; Awais, Ellahi, & Sher, 2019; Salehi et al., 2023). A good governance mechanism enhances the supervision of the reporting process and limits manipulation of earnings resulting in more transparent and reliable financial statements (Alrawashedh et al., 2025; Yaqub, Rehman, Awais, & Shafiq, 2018). The high levels of monitoring by the governance mechanism improve information asymmetry, hence improving financial reporting quality.

Financial Reporting Quality (FRQ)

A set of comprehensive corporate systems defines the quality of financial reporting, which allows the provision of accurate financial information to reflect the performance of a business and transparency (Ozer et al., 2024). Integrity of financial reporting is the most crucial part of decision-making because all decisions depending on the financial statements, including financing, investment, the working capital management and the policy on dividends are made. The financial statements must be of integrity in order not to compromise the decision-making of the users. Numerous research studies have emphasized that the management is willing to make financial reporting to meet their interests, and it is why they are involved in the earnings manipulation activities (Hasan et al., 2022). It develops when the managers are abusing their discretion to benefit themselves in reversing the direction of the contract by the information disclosed or when they misreport transactions in their financial reports.

Economic Policy Uncertainty (EPU) and Financial Reporting Quality (FRQ)

Various works have discussed the impact of EPU on the business cycles, the risk premia, and dynamics of investments and the equities (Baker & Bloom, 2013; Bianchi et al., 2014; Bidder & Smith, 2012; Christiano et al., 2014). Besides, the effects of uncertainty in business and aggregate levels on the decision made by managers regarding investments, spending on research and development and advertisement strategies where managers are more worried about the profits have also been examined by other scholars (Bloom, 2009; Gulen & Ion, 2016; Julio & Yook, 2012). Much of the accounting and finance knowledge has examined various circumstances when earnings are manipulated to achieve management goals alongside reactions to various business occurrences (Asthana & Kalelkar, 2020). In the situation of the agency conflict where the interests of the shareholders and the managers differ as well as the information asymmetry, the earnings may be managed as a result of the agency conflict. According to Bermpei et al. (2022), the economic policy uncertainty will cause information asymmetry that then causes managers to engage in earnings management activities, which consequently will result in poor quality of financial reporting. Nagar et al. (2019) indicate that the greater is the economic policy uncertainty, the more an investor would respond in reaction to the earnings shock. High economic policy uncertainty would mean that the earnings information is quite unpredictable and investors would not pay high value to it. As stated by Jin et al., (2019), investors find it hard to trace earnings management due to the uncertainty of estimating accruals. In addition to this, Kim and Yasuda (2021) found that earnings management predisposes the managers further when the shareholders are not attentive, which substantiates their claim that earnings management is effective in distracting investors. The economic policy uncertainty makes the shareholders to be distracted and focus on the actual performance and leave the managers manage the earnings, thereby affecting the quality of the financial statements.

H1: Economic Policy Uncertainty reduce the FRQ

Inflation and Financial Reporting Quality

Inflation is described as an increase in prices of an economy. The tendency towards the continuous rise in prices is known as inflation (Ghulam, Rizwan, & Awais, 2024; Katmas & Indarningsih, 2022; Sujarminto et al., 2024). Economies with inflation are faced with a very critical state. The managers of this firm during this time can be trying to distort the reported earnings and compromise the quality of the financial reporting. The authors recorded that inflation can positively affect earnings management because rising prices will make it difficult to grasp financial realities by the masses and analysts (Viana et al., 2023). These scholars also contended that many nations are recording increased inflation due to the macroeconomic instability. Earnings management is raising significant questions among the regulators of the rich countries. This is the pressure on the preparation of financial statements when it comes to focusing on the quality of financial reporting to curb the earnings management. On the other hand, in developing countries, the poor institutional structure can enable managers to meddle in a wider scope of earnings management during high inflation, thus giving inflated reported outcomes. The hypotheses of this study assume that the quality of financial reporting decreases with an increase in inflation.

H2: There prevails inverse association between inflation and FRQ

Corporate Governance and Financial Reporting Quality

One of the features that improve the level of financial reporting is the corporate governance structure. Board size, board independence, gender diversity, board meetings, gender diversity and audit committee are made up of a strong corporate governance mechanism. Board size is the critical factors of board structure that regulators emphasize on, in the context of corporate governance. The smaller size of the board is more effective because the risk to experience coordination and communication issues is lower. Smaller boards usually have a more active and efficient directors in terms of decision-making, thus increasing their control of the management team (Daily & Dalton, 1994; Jensen, 1993). Conversely, the researcher has recommended bigger boards such as those mentioned by Hillman et al. (2009) reported to provide the organization with additional resources. As Switzer and Wang (2013) emphasized, it is more difficult to have more influence on a relatively large board by the manager. Past researches on the correlation of board size show inconclusive

findings yet recorded that board size as per governance (the bigger board) exert greater control to the firm. The agency and resource dependency theorists provide the significance of external directors as an efficient mechanism of internal control over the issue of self-interestedness of managers and restricting managerial opportunism to enhance the effectiveness of boards, as well as enhancing the quality of the financial reporting (Alzoubi., 2024; Jensen & Meckling, 1976).

The board members must bring on board a competent and experienced input in order to achieve gender diversity. The ability of board diversity to enhance effectiveness of monitoring and controlling processes is a possibility. Resource dependency theory supports the advisory approach that asserts that the corporations leverage the diversity of the board members to have access to resources like knowledge, advice, reputation and networks that could lead to greater success and sustainability of the corporations (Hillman et al., 2000). The agency theorists will argue that the duality of the CEOs can reduce the ability of the board to question the management opportunism (Eisenhardt, 1989; Jensen, 1993). It may result in an increment in the agency cost and entrenchment problems (Fama & Jensen, 1983). According to Salleh and Othman (2016), the rate of board meetings can enhance corporate governance and the rate of board meetings can be improved, as the rate of board meetings increases. Board of directors sitting frequency is also increased thus fraud reduction and financial performance improvement becomes a reality. Audit committee is an important aspect in the corporate governance as it controls the financial reporting, internal control and audit processes of a company. It promotes transparency and accountability by safeguarding integrity of the financial statements and acting within the legislature (Al-Baidhani, 2014). These factors are combined, which is mentioned by the study of Thanh et al. (2024) and helps to build strong corporate governance mechanism. The better quality of financial reporting is attained through the enhanced governance mechanism.

H3: There is direct association between Corporate Governance mechanism and FRQ

The Interaction of FRQ and Financial Distress

The company in distress can perform poorly in meeting the expectations of its shareholders in terms of earnings and this will lead to a drop in its share price and the value of the company as a whole. Cost of debt is inflated among companies that are financially disadvantaged. In that regard, the supply of debt finance becomes even more important to businesses (Li et al., 2020). According to the previous studies, financially strained firms are more likely to use earnings management to alleviate losses and maintain a cordial relationship with shareholders (Haw et al., 2005; Jiang & Wang, 2008; Li et al., 2020). Moreover, Zang (2012) noted that the managers of organizations where health is substandard are more engaged in the practice of profit manipulation. Earnings management is used as a strategic tool in the stressful environments, where management aims at achieving immediate goals (Campa, 2015). These misleading earnings practices can affect the integrity of financial reporting. The main goal of companies is to become profitable and increase the wealth; however, organizations that suffer financial strain cannot improve their profitability in the predictable future since their debt burdens are significant (Ranjbar & Amanollahi, 2018). Managers become the decision-makers in the organization and rely on the methods of manipulating earnings in order to provide the organization with a positive image. The financial distress had a negative impact on the quality of financial statements. Previous studies show that in critical times, financially strained organizations make every effort to secure their survival and tend to increase the number of earnings management practices to show good company operations and undermine the quality of financial reporting (Kurniawati & Panggabean, 2020; Li et al., 2020; Zang, 2012).

H4: Financial Distress firms reduce the FRQ

Theoretical Framework

In the followings, theoretical framework is provided which highlights the relationship between variables guided by theory and relevant literature.

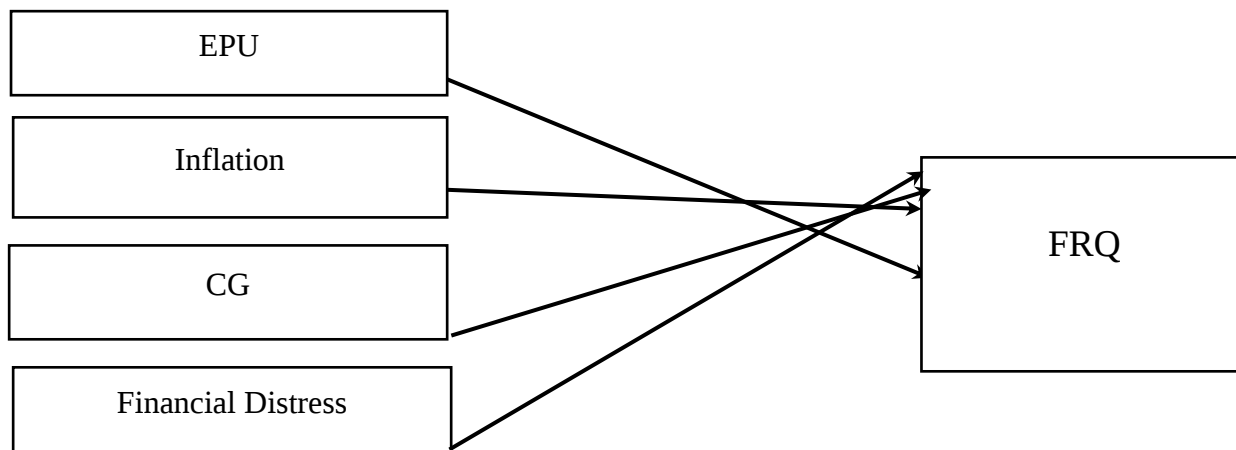


Figure 1 Study Framework

Methodology

In this research, the sample size of non-financial sector of Pakistan is being used to investigate the determinants of financial reporting quality. Masud et al. (2018) assert that inadequate shareholder protection is mostly experienced in the developing economies. Pakistan is a developing country and the literature that has been reviewed in the past has enlightened the governance and financial reporting issues in Pakistan that highlighted the necessity of exploring the issues that influence the quality of financial reporting (Shah et al., 2024). The given study has chosen the sample size of non-financial sector of Pakistan because the non-financial sector in Pakistan is a major contributing sector to the economy and its contribution to the GDP of the country is the highest (Rashid & Bilal, 2020). The data is gathered on the non-financial listed firms of Pakistan stock exchange (PSX). The 358 firms are chosen after the removal of the missing data firms. The data used in the analysis of this study has a time frame scope of 12 years, which is between the year 2013 and 2024. The research is dated back to 2013 due to certain contextual factors. The time was also chosen to study governance actions after the major reforms in corporate governance in 2012. The radical changes in the regulatory framework have enhanced the corporate governance framework and standards in Pakistan (Shakri et al., 2024). In the Companies Act of 2013, financial disclosure, auditor independence, and corporate governance were changed. SECP of Pakistan started on the process of reforming to improve financial transparency. Organizations that are non-financial are not included because their capital structures, legislation, accounting systems, disclosure standards, and governance structures differ with the ones of non-financial corporations, so that the homogeneity of the data can be maintained (Akter et al., 2024). The continuous variables (Economic policy uncertainty, Inflation, Financial Distress) were winsorized. The transformation replaces the extreme values with the closest non-extreme values without reducing the sample size and with limited impacts that the outliers have on the regression outcome (Leone et al., 2019).

M-SCORE Model

This undermines the integrity of financial quality when managers misuse financial reports and lie to stakeholders to improve profits by using accounting rules (Kateb, 2024). The alteration in the financial statements is done through earnings management. The quality of the financial statements is in question due to the nature of its earnings management. There are already a great number of methodologies that are used to identify the earnings manipulation of financial statements that undermine the financial reporting quality. The article by Jackson (2018) examined the earnings management and the implementation of the modified

Jones model to measure it. Putri and Sujana (2018) research was aimed at testing Dechow model of earnings management. As proposed by Alghamdi (2017); Kothari et al. (2005); and Le and Moore (2023) referred to the earnings management, which is explained by the discretionary model of accruals. Alhadab and Clacher (2018) utilized a Roychowdhury model, which measures the earnings management. M-Score model is a financial instrument employed in the financial sector to assess the earnings manipulation contained in the financial statements of the companies (Talab et al., 2017). M-Score model is considered to be a significant instrument of earnings management identification, and it has been applied in many studies (Holda, 2020). The new research is validating that, in the process of establishing the quality of the financial reporting, MSCORE is the most appropriate tool in the recognition of earnings management in the financial statements. To measure quality of financial reporting, we use a popular model, the Beneish M-Score (Beneish, 1999), which is used to find out the earnings and financial misreporting manipulation. M-Score is computed on eight financial ratios that indicate the distortion of financial statements in the form of days sales in receivables index, gross margin index, asset quality index, sales growth index, depreciation index, sales general and admin index, leverage index as well as total accruals to total assets. It is believed that companies whose M-score is above -2.22 are considered as potential manipulators following Beneish (1999). Firms that have M-Score lower than -2.22, on the other hand, are considered to be non-manipulators and this is a better quality of financial reporting. The non-manipulators and the manipulators firms are assigned value 1 and 0 respectively. This binary coding scheme, in turn, allows us to run the determinants of the reporting quality using the logistic regression, the higher values (FRQ = 1) are, the higher quality of financial reporting. The cut-off of -2.21 is well-tested in the available literature (Beneish et al., 2013) and is easily utilized in the studies of earnings manipulation.

$$M\text{-Score} = -4.84 + 0.920*DSRI + 0.528*GMI + 0.404*AQI + 0.892*SGI + 0.115*DEPI \\ - 0.172*SGAI + 4.679*TATA - 0.327*LVGI \dots\dots\dots (Eq 1)$$

- DSRI: (Receivables_{t-1}/Sales_{t-1}) / (Receivables_t/Sales_t)
- GMI: [(Sales_{t-1} – CGS_{t-1}) / Sales_{t-1}] / [(Sales_t – CGS_t) / Sales_t]
- AQI: [1 - (CA_t + PPE_t) / TA_t] / [1 - (CA_{t-1} + PPE_{t-1}) / TA_{t-1}]
- SGI: (Sales_t / Sales_{t-1})
- DEPI: [Dep_{t-1} / (PPE_{t-1} + Dep_{t-1})] / [Dep_t / (PPE_t + Dep_t)]
- SGAI: (SG & Admin Exp_t / Sales_t) / (SG & Admin Exp_{t-1} / Sales_{t-1})
- LVGI: [(CL + TLTD_t) / TA_t] / [(CL + TLTD_{t-1}) / TA_{t-1}]
- TATA: Δ CA - Δ Cash - (Δ CL – Δ LTD's current maturity- Δ Income-Tax payable) - Dep & Amor_t

EPU Quantification Criteria

To Measure the uncertainty of the economic policy, this study utilized a common index proposed by Baker et al. (2016), which measures the uncertainty of the economic policy, based on the frequency of coverage on the newspaper. Economic policy uncertainty index is constructed as a sum of those articles in the major newspapers that contain the key word in each of the three categories (1) economic terms (economy, economic, business), (2) policy terms (government, regulation, central bank, tax), and (3) uncertainty terms (uncertainty, unstable, risk). This is done by taking the number of articles in each newspaper and month which are economic policy related articles divided by the total number of articles published by the newspaper in the month. These series of scales are then converted to unit standard deviation and averaged out over all the newspapers to give a monthly composite index which is subsequently brought to mean of 100 over the sample period.

$$EPU\ Index_t = \frac{C_t}{T_t} \times 100 \dots\dots\dots (Eq 2)$$

Quantification Criteria for Inflation

The inflation is calculated by considering the percent variation in price index. The most required measure of inflation is consumer price index (ConPI). The average price of some products consumed by the people is determined by the Consumer Price Index (ConPI). The ConPI index has been used in recent research to determine the inflation rate of the economy.

$$\text{Inflation Rate} = \frac{(\text{ConPI } t - \text{ConPI } t-1)}{\text{ConPI } t-1} \times 100 \dots\dots\dots (\text{Eq 3})$$

Quantification Criteria for CG

Corporate governance (CG) is a general term that encompasses a lot of features that reflect the management system, processes, and aspects of culture of a company. According to the literature on corporate governance, the board size, board independence, gender diversity, CEO duality, the number of board meetings, and audit committee can be listed as the key elements of effective corporate governance (Idris et al., 2018). The mechanism of corporate governance is also computed in this analysis regarding corporate governance index (CGI) consisting of board size, audit committee, board meetings, gender diversity, board independence and CEO duality. When the size of a board of directors is larger than the minimum established by law, then such a firm has a better governance in a corporate governance index (Khan, 2022; Nguyen et al., 2024). The agency theory and resource dependence theory emphasize the importance of external directors as an essential internal control tool since they assist in controlling the managerial behavior and restraining managers acting on their own interests and priorities and minimizing the chances of opportunistic behavior. The efficacy of board members can be enhanced by ensuring that there are more non-executives directors in the board (Idris et al., 2018). According to Arun et al. (2015), the higher the number of female directors in the board, the lower the earnings manipulation. It implied that gender diversity will act as an indicator of the positive corporate governance mechanism (Abu-Afifa et al., 2024; Khan, 2022).

Lo et al. (2010) recorded that opportunistic behavior among the managers is encouraged by CEO duality. The system of governance becomes stronger when the CEO is not the chairman. Empirical evidence that is given by Salleh and Othman (2016) suggests that the number of board meetings can increase corporate governance. The board of directors meet frequently leading to reduction of cases of fraud and a better financial performance. An audit committee is a highly significant body in the corporate governance since it is mandated to take the role of overseeing not only financial reporting but internal control and auditing of a firm. This will ensure accountability and transparency by ensuring integrity of the financial statement and complying with legislation (Al-Baidhani, 2014). CG-Index is represented by an aggregate of all the components of corporate governance mechanism of the corporate governance comprising board size (BS), board independence (BI), gender diversity (GD), CEO duality (CD), board meetings (BM) and audit committee (AC) (Thanh et al., 2024).

Table 3.1: Measurement of Variables of Corporate Governance

Variable	Measurement Equation	Reference
Index 1 (BS)	Represents the composition of the board of directors. A value of 1 is assigned when the board size complies with the requirements of the corporate governance code; otherwise, 0 is assigned.	Khan, (2022)
Index 2 (BI)	Indicates the proportion of independent directors on the board. A value of 1 is assigned if the number of independent directors meets the corporate governance code requirements; otherwise, 0	Idris et al., (2018)
Index 3 (GD)	Captures the presence of female representation on the board. A value of 1 is assigned when at least one female director is present on the board; otherwise, 0.	Abu-Afifa et al., (2024)
Index 4(CD)	Reflects whether the roles of CEO and board chair are separated. A value of 1 is assigned if CEO duality does not exist; otherwise, 0 when both roles are held by the same individual.	Idris et al., (2018)
Index 5(BM)	Refers to the frequency of board meetings. A value of 1 is assigned if the number of meetings held complies with the corporate governance code; otherwise, 0.	Abu-Afifa et al., (2024)
Index 6(AC)	Indicates the existence of an internal audit committee. A value of 1 is assigned if an audit committee is established; otherwise, 0.	(Waris & Din, 2023)

Quantification Criteria for Financial Distress

The method that is applicable in the determination of the probability of a company to experience financial strain is Z-Score (Altman, 1968). The model employs various parameters in the measurement of the financial stability of a firm that consists of working capital, total assets, retained profits, earnings before interest and tax and book value of equity. It has been found that this model is very accurate with 97 percent of the non-bankrupt business and 90.9 percent of the bankrupt businesses and has garnered many positive reviews and fewer negative ones (Altman, 1968; Ntawumenyumunsi & Maringa, 2022). In this research, Altman Z-Score was used in calculating financial distress. A firm with an index value of more than 2.99 is said to lie in a non-bankrupt category and a firm with index of 1.81 to 2.99 is categorized as part of the grey region. The companies whose index is lower than 1.81 are regarded to be in a critical position and very vulnerable to bankruptcy. The following formula is Altman Z-Score;

$$\text{Z-Score} = 1.2 \times Z1 + 1.4 \times Z2 + 3.3 \times Z3 + 0.6 \times Z4 + 1.0 \times Z5 \dots \dots \dots (\text{Eq 4})$$

Table 3.2: Elements of Z-Score

Z1	WC / TA	The WC is working capital and measured by subtracting the currents liabilities from current assets while TA represents total assets
Z2	RE / TA	The RE is retained Earnings and these are part of equity which represents accumulated profits of losses over the period
Z3	EBIT / TA	EBIT is income before deducting tax expenses and interest expenses principally used for free cashflows.
Z4	MVoE / TL	THE MVoE represents Market value of Equity while TL represents total liabilities
Z5	S / TA	The S represents sales while this ratio represents the efficiency of business in utilizing the assets

To test the determinants of the level of financial reporting, a logistic regression model was used in this study. The logistic regression is appropriate as the quality of financial reporting is a dichotomous variable (1 = high quality, 0 = low quality). The model estimates chances of the quality of financial reporting to be equal to 1 in relation to independent variables rather than ordinary least squares that would yield biased and

inefficient estimates with a binary result (Hosmer et al., 2013). The empirical specification of the study is developed on the basis of the framework which is developed by the past studies which examined the determinants of the quality of the financial reporting. Specifically, the model used in this study is developed on the basis of Bermpei et al. (2022); Viana et al., (2023) with the introduction of macroeconomic variables and the firm-specific one that is typically applied in the study. Corporate governance is one of the key variables considered in this study, and the financial distress measures in Aljughairan et al. (2023) are utilized in line with Bermpei et al. (2022). The above frameworks are further expanded with the introduction of EPU and inflation in that it is not just that the quality of reporting depends on the firm-specific factors but also includes the macroeconomic factors. The study econometric model appears below:

$$P(FRQ_{it} = 1 | X) = \frac{1}{1 + e^{-z_{it}}}$$

where:

$$z_{it} = \beta_0 + \beta_1(EPU)_{it} + \beta_2(INF)_{it} + \beta_3(Corp_Gov)_{it} + \beta_4(Fin_Dis)_{it} + e_{it} \dots \dots \dots (Eq\ 5)$$

Alternatively, in log-odds form:

$$\ln\left(\frac{P(FRQ_{it}=1)}{1-P(FRQ_{it}=1)}\right) = \beta_0 + \beta_1(EPU)_{it} + \beta_2(INF)_{it} + \beta_3(Corp_Gov)_{it} + \beta_4(Fin_Dis)_{it} + e_{it} \dots \dots \dots (Eq\ 6)$$

- FRQ_{it} = Financial Reporting Quality for firm i in year t (1 = high quality, 0 = low quality)
- EPU_{it} = Economic Policy Uncertainty index
- INF_{it} = Annual inflation rate (%)
- $Corp_Gov_{it}$ = Corporate Governance Index
- Fin_Dis_{it} = Altman's Z-Score
- β_0 = constant term
- β_1 through β_4 = regression coefficients to be estimate
- E_{it} = error term

Results and Analysis

Table 4.1: Descriptive Statistics

Variables	N	Mean	SD	Min.	Max.
FRQ	4,296	0.689	0.462	0	1
EPU	4,296	112.698	50.813	61.001	190.362
INF	4,296	9.876	5.514	2.53	19.87
CORP_GOV	4,296	4.697	0.894	2	6
FIN_DIS	4,296	1.234	2.985	-4.351	4.893

The descriptive statistics of the variables used in the analysis were described in Table 4.1 as they are presented on 4,296 observations. Dependent variable, FRQ, is a binary variable that indicates that when finance reporting quality of the company is high it is coded as 1 otherwise it is coded as 0. FRQ is taking an average of 0.689 and SD of 0.462. This implied that 69 percent of the companies are recognized to have a high quality of financial reporting. The mean and standard deviation of the economic policy uncertainty are 112.698 and 50.813 respectively with a range of 61.003 to 190.362 showing that there is a lot of variability in the economic policy uncertainty over the period of observation. Standard deviation (INF) has the mean of 9.876 and standard

deviation of 5.514 with a great variance. The lowest and highest values are ranging between 2.53 and 19.87, meaning that there were significant macroeconomic fluctuations in the sample period. Corporate Governance (CORPGOV) has the mean of 4.697 and Standard deviation of 0.894; the minimum value of 2 and maximum value 6. This implied that most of the firms were practicing good governance with little variation. The FinDis is assessed using ZSCORE with an average of 1.234 and standard deviation of 2.985 with an acceptable range of [?]4.351 to 4.893. The values that depict that some firms are in sample size that are experiencing financial distress.

The descriptive statistics indicate that there is sufficient variation in all independent variables to analyze their relation to financial reporting quality. The wide range of the macroeconomic indicators allows the provision of enough heterogeneity needed to observe the influence of the economic conditions on the firm-level reporting behavior. Equally, the difference in firm-specific characteristics brings the required cross-sectional variations to determine the effects of corporate governance and financial health on the financial reporting quality. All these descriptive statistics provide a solid framework on for the multivariate analysis and give confidence to the subsequent hypothesis testing.

Table 4.2: Correlation Matrix

	FRQ	EPU	INF	CORP_GOV	FIN_DIS
FRQ	1				
EPU	-0.124**	1			
INF	-0.089***	0.567***	1		
CORP_GOV	0.156***	-0.078**	-0.046**	1	1
FIN_DIS	-0.098***	-0.235***	-0.178***	0.120***	

p < .05. ** p < .01. *** p < .001

Table 4.2 presented the coefficients of correlation between the key variables. The results show that the financial reporting quality has a negative and significant relationship with economic policy uncertainty with a correlation value of -0.124. The correlation value between the INF and financial reporting quality is -0.089. This implied that companies are more likely to indulge in earnings management and decrease the quality of financial reporting in periods of economic and price volatility. The quality of financial reporting showed a strong positive relationship with corporate governance of 0.156 indicating that firms which have strong corporate governance structures are trying to ensure a good financial reporting quality. The relationship between FRQ and FinDis is found to be -0.098 with an indication that the quality of financial reporting is low in financial distress firms. The economic policy uncertainty had a moderate positive relationship with INF with value of 0.567 which is in line with the notion that policy environment uncertainty often goes hand in hand with inflations. Economic policy uncertainty showed negative correlation with CORPGOV and FinDis with value -0.078 and -0.235 respectively. This means that in case of high degree of policy uncertainty, corporate governance scores are slightly low or vice versa; that stronger governed corporations exist in an environment with a slightly lower degree of policy uncertainty. In addition, the association of EPU and FinDis that indicates that companies go through increased financial distresses amid economic policy uncertainty. INF is having a negative correlation with CORPGOV and FinDis a value of -0.046 and -0.178 respectively. This pointed to the fact that increase in inflation regime is modestly associated with a low score on governance, but the economic implication is insignificant. Also, companies are more likely to be poor in terms of finances during high inflation rates; this falls in the concept of inflation that lowers the corporate profitability and financial stability. CORPGOV is co-relating with the value of 0.120 with FinDis, which implies that companies that have strong corporate governance systems are more likely to have optimal financial health.

The correlation matrix indicates that all of the independent variables have modest level of correlations, and no variable is showing the coefficient value which highlight the issue of multicollinearity. The correlations pattern is as expected theoretically, and supports the initial findings on the relationships suggested in the hypothesis. Based on the satisfactory results, the study moves on with the logistic regression analysis to test the hypotheses.

Table 4.3: Logistics Regression

Dependent Variable: Financial Reporting Quality

Variable	Coefficient	Std. Error	z	Prob.
EPU	-0.004	0.001	-3.75	0.000***
INF	-0.032	0.009	-3.28	0.001**
CORP_GOV	0.278	0.056	4.92	0.000***
FIN_DIS	-0.678	0.018	-3.59	0.003**
C	-0.457	0.235	-1.94	0.050*
LR chi2(4) = 234.56 Prob > chi2 0.000				

Table 4.3 revealed the regression results that examine the effect of the economic policy uncertainty, inflation (INF), corporate governance (CORPGOV) and financial distress (FinDis) on financial reporting quality. The model was statistically significant as indicated by a likelihood ratio chi-square (kh2) of 234.56 and $p = .001$ which revealed that the model had a strong fit, with the independent variables explaining a considerable amount of the likelihood of reporting quality of the financial ratings. The coefficient of economic policy uncertainty is also negative and has a statistically significant value of -0.004 and p value of 0.000. The findings that show that a rise in economic policy uncertainty decreases the chances of high financial reporting quality by 0.004. This observation implied that companies can seize the opportunity to use ambiguous policy regimes to commit opportunistic reporting. The findings are consistent with the analysis of Bermpei et al. (2022) that the economic policy uncertainty enhances information asymmetry, which subsequently forces managers to take part in the earnings management activities, which, in turn, decreases the quality of financial reporting. INF is exhibiting coefficient value -0.032 and p value of 0.001 which shows negative relationship of significant values with financial reporting quality. The findings are giving that, high inflation is lowering the chances of high financial reporting quality by 0.032. Study of Viana et al. (2023) had recorded that the higher the macroeconomic instability is oriented towards the inflation. The developed countries are able to push harder, as long as the preparation of the financial statements is concerned in terms of the market and regulating bodies being more concerned with incomes management. Quite the opposite, in emerging markets, where the management might believe freer to engage in higher earnings management in inflation periods and, consequently, to report higher results, which decreases the quality of financial reporting.

The greatest impact is observed in the case of CORPGOV that has a coefficient of 0.278 and the p value of 0.000 indicating significant association with the quality of financial reporting. These findings are pointing to the fact that corporate governance implies a probability of high financial reporting quality by 0.278. The observation proved that, increased corporate governance has a strong negative effect on earnings manipulation, thus explaining the relevance of governance in reducing unethical financial practices. Salehi et al. (2023) corporate governance is critically necessary because it safeguards the interests of stakeholders through the introduction of controls that organizations adopt to curb or reduce managerial misconducts. Baullay et al. (2017) believe that competent governance improves the level of conflict of interest reduction through the establishment of transparency, openness, and clarity in financial reporting. The findings of the results are showing that the earnings management is being mitigated in the firms where the corporate governance mechanism is strong. Therefore, a powerful corporate governance system improves the quality of financial reporting of the firms and helps the financial statement users to make effective decisions on their financial investments. The value of FinDis coefficient with the financial reporting quality is -0.678 p

value=0.003. It highlighted the fact that Fin_Dis lowers the chance of high financial reporting quality by 0.678. The negative sign of ZSCORE coefficient shows that with an increase in financial distress, the quality of financial reporting declines. That is, the more financially distressed firms are, the more likely they have lower financial reporting quality. Opportunistic behavior suggests that managers in financially troubled firms are under extreme pressure to declare positive financial performance to the stakeholders. Such pressure can either encourage earnings management, and fraudulent reporting to cover up poor performance, debt covenant testing and simply remain in the capital source. The study of Kurniawati and Panggabean (2020) indicated that financially challenged enterprises, confronting this critical period, strive to sustain their survival and are inclined to engage in increased earnings management operations to present an improved performance of the company. The results are indicating that financial distressed firms are more prone to engage in earnings management and effect the financial reporting quality of the firm.

Table 4.4: Logistic Regression Results (Odds Ratios)

Variable	Odds Ratio	Std. Error	z	Prob.
EPU	0.995	0.001	-3.75	0.000***
INF	0.968	0.009	-3.28	0.001**
CORP_GOV	1.321	0.074	4.92	0.000***
FIN_DIS	0.934	0.017	-3.59	0.003**
C	0.633	0.148	-1.95	0.050*

Note. Odds ratios are logit coefficients (e^{β}). Values < 1 indicate negative relationships; values > 1 indicate positive relationships.

Table 4.4 presents the odds ratios obtained with the help of the logistic regression analysis. The odds ratio of economic policy uncertainty stands at 0.9955 ($p = 0.000$), which means that an increase in economic policy uncertainty by one-unit increases representing a 0.45% decrease in odds of high FRQ. In the case of inflation, odds ratio, 0.9684 ($p = 0.001$), means that one-unit increases in the inflation will decrease the chances of high FRQ by 3.16%. Corporate governance presents odds ratio of 1.3218 ($p < 0.000$) that is, an improvement in governance by one unit raises chances of high FRQ by 32.18%. The odds ratio of ZSCORE is 0.9345 ($p = 0.003$) which means that a one unit rise in financial distress reduces the chances of high FRQ by 6.55%.

Table 4.5: Average Marginal Effects (AME)

Variable	dy/dx	Std. Error	z	Prob.
EPU	-0.001	0.0003	-3.67	0.000***
INF	-0.007	0.002	-3.25	0.001**
CORP_GOV	0.067	0.013	5.06	0.000***
FIN_DIS	-0.016	0.004	-3.67	0.000***

Note. Average marginal effects represent the change in probability of $FRQ = 1$ for a one-unit change in each predictor.

The average marginal effects are given in Table 4.5 and they are used to measure the difference in the probability of high FRQ with a unit change of each predictor variable. The findings indicate that the probability of high FRQ will go down by 0.11 percentage points when EPU increases by one unit. In the case of inflation, a one-percentage point increment decreases the likelihood of the high FRQ by 0.78 percentage points. With the highest marginal effect, corporate governance is found to have an improvement in one unit, which raises the likelihood of high FRQ by 6.78 percentage points. In the case of ZSCORE, the likelihood of having high FRQ reduces by 1.65 percent with a one-unit increase in the level of financial distress.

Table 4.6: Model Fitness and Specification Tests

Test	Statistic	Value	p-value	Interpretation
Likelihood Ratio Test	$\chi^2(4)$	234.56	0.000	Model with predictors fits
Pseudo R ²	-	0.088	-	8.8% improvement over null model
AIC	-	2,923.56	-	Lower is better
BIC	-	2,947.23	-	Lower is better
Hosmer-Lemeshow Test	$\chi^2(8)$	8.23	0.421	Good fit (p > 0.05)
Link Test	_hat	0.987	<.001	Model correctly specified
	_hatsq	-0.023	0.534	No specification error (p > 0.05)

The model fits well with a significant likelihood ratio chi-square (χ^2) of 234.56 and $p < 0.001$. The non-significant value of Hosmer-Lemeshow test is (χ^2) = 8.23 and $p = 0.421$ show that the model is fit. The link test verifies appropriate specification (_hatsq $p = 0.534$) and pseudo-R² values is 0.088 which indicated reasonable model adequacy and goodness of fit. AIC (2,923.56) and BIC (2, 947.23) also provided the statistics of baseline fit.

Table 4.7: Robustness Check with Probit Model

Variable	Baseline Model	Probit
EPU	-0.004	-0.002
INF	-0.032	-0.018
CORP_GOV	0.278	0.165
FIN_DIS	-0.067	-0.040
Pseudo R ²	0.088	0.087

The Probit coefficients have the identical trend in signs and significance with the logit model. Although the magnitudes vary due to the variation in the scaling of the Probit coefficients but the direction and statistical significance are in consistent with the results of baseline model.

Conclusion

This paper examined the micro and macro-economic factors of the quality of financial reporting. In this study, the economic policy uncertainty and inflation are the macro-economic variables that are taken as the foundation and the corporate governance mechanism and financial distress are micro-economic variables. The authors discuss the data in non-financial sectors in Pakistan between 2013 and 2024. The findings showed that the economic policy uncertainty had an impact on the financial reporting quality as in high economic policy uncertainty the probability of financial reporting quality declined. This observation indicates that companies can use the ambiguous policy conditions to get involved in opportunistic reporting behavior (Bermpei et al., 2022). In the same manner, inflation have also an impact on the quality of financial reporting of the firm. In the inflationary times, the company tried to turn towards the earnings management activities, companies found it hard to deal with such earning management techniques as they undermine the quality of financial reporting (Viana et al., 2023). The financial distressed companies are at a greater risk of lowering the quality of financial reporting through earnings manipulation. The financially strained

businesses, facing this difficult stage, seek to maintain their existence and are likely to resort to more earnings management activities to show a better company performance (Kurniawati & Panggabean, 2020) and lower the quality of financial reporting. The study also revealed that corporate governance mechanism is an important instrument that can be used to sustain the internal control. The corporate governance is critical because it protects the interests of the stakeholders by instituting controls that firms are engaged in to eliminate or restrain managerial malpractices. The proper administration improves the reduction of conflicts of interests by promoting openness, clarity, and transparency in the financial reporting (Baullay et al., 2017; Salehi et al., 2023).

This research will assist auditors, investors, regulators, and researchers with determination of the factors that influence quality of financial reporting. Businesses can improve the accessibility of accounting data to the masses and shareholders in enabling them to make productive decisions. This study hypothesized that when the economic policy is uncertain, it is the inflation and financial distress that makes the companies to concentrate on their financial statement to decrease the earnings management and preserve the quality of financial statements. Additionally, the companies should allow robust corporate governance system to reduce the management of earnings and enhance transparency and credibility of financial reports. In spite of the contribution, this research has its limitations. Though the study made attempts to include the right determinants of financial reporting quality, yet all the determinants could not cover in the study. Future research can involve other factors. The research is just restricted to the non-financial sector and it did not cover the financial sector since it had different capital structures, legislations, accounting systems, disclosure standards and governance structures. To improve the body of knowledge in future research, this study recommends the induction of the audit quality that can reduce the earnings management practices and further improve the quality of the financial statements. Besides, The risk factors can also involve the expansion of the research. It is also possible that the cross-country analysis can be performed to determine the impact of these components on the quality of financial reporting in other economies.

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