

**DOES ENVIRONMENTAL UNCERTAINTY AFFECTS PROFITABILITY
OF BANKS: MODERATING ROLE OF SUSTAINABILITY DISCLOSURES**

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ABSTRACT

This study is about impact of EPU on banks performance and moderating impact of sustainability disclosures (ESGD). This study is conducted on banks listed on Pakistan Stock Exchange and extend the growing literature on disclosures and sustainability and its impact on link between uncertainty and banks performance. There is strong evidence that policy uncertainty hurts business performance, but sustainability disclosure mitigates this damaging effect. Higher governance disclosures that demonstrate effective corporate governance also assist in reducing the negative performance effects of regulatory uncertainty. Our findings are resistant to alternative firm performance proxies and endogeneity problems.

KEY WORDS

Uncertainty, Disclosures, Sustainability, Performance.

INTRODUCTION

Policy uncertainty is an economic risk posed by ambiguous future legislative proposals and regulatory structures. This situation causes firms and consumers to postpone purchases and investments due to uncertainty in market (Al-Thaqeb & Algharabali, 2019; Dou et al., 2022). It can also be used to describe how participants in the monetary system act during higher uncertainty, such as the high uncertainty that prevailed pre, during, and following the worldwide financial crises. It is important to comprehend how ambiguous economic policy affects financial system. Different systematic changes during the World Financial Crisis from 2007-2009 defined the world financial market. The firmness of the whole monetary system was under jeopardy since the biggest financial institutions in the world were either bankrupt or had sustained significant losses.

The financial and economic sectors of the world as a whole experienced substantial instability as a result. In this context, Financial economists have been examining the factors behind increased EPU and changing policy-induced variation across financial system (Belke et al., 2018; Zhang et al., 2021). The aim of this study is banking industry because there has been recent discussion in the literature suggesting that EPU has negative effect on performance of companies. (Tran & Houston, 2021; Kim et al., 2021; Wang et al., 2022). Empirical literature reports the impact of various macroeconomics variables like monetary policy, market structure, GDP and productivity (Boubakri et al., 2023); (Boungou & Mawusi, 2022) but literature has not broadly studies the impact of uncertainty on performance of financial institutions. Furthermore, very few studies have

looked at how sustainability disclosures features influence the relation between EPU and performance of banks in order to ascertain how the impact of EPU on profitability of banks varies along different types of sustainability disclosures. In this study, we address this problem. We add to existing literature by exploring whether disclosures related to sustainability influence the EPU and bank performance.

Using a sample of banks listed on Pakistan Stock Exchange for 2015-2022 and using GMM System, our creative research problem seeks to examine the relationship among novel and newly researched important concerns, namely EPU and sustainability disclosure. Based on empirical findings, we contribute to the literature by demonstrating that greater sustainability disclosure can lessen the detrimental effects of EPU on the financial reporting and performance of banks. The research specifically explains the outcomes shown below: First, greater knowledge asymmetry and risk from unclear economic policy reduce corporate performance. Second, by reducing policy-induced information asymmetry, sustainability (ESGD) disclosure is a corporate policy that can attenuate and lessen the detrimental effects of EPU on firm performance. Third, social and environmental disclosure assist businesses build a reputation in the marketplace and lessen knowledge asymmetry brought on by policies between businesses and the market. Fourth, by better monitoring the external operational environment, governance disclosure that embodies efficient corporate governance lessens the inverse consequences of EPU on business profitability. These estimations are endorsed to endogeneity problems and various financial performance proxies.

The sequence of the paper goes as follow: Next part is about developing hypotheses of study based on previous studies. Section 3 discuss the research variables, data, sample, statistical models. Section 4 is about statistical findings. Last part is about conclusion including policy implications

LITERATURE REVIEW

Uncertainty in economic policy (EPU) and business performance Recent research on EPU reveals that it has social costs for the G7 countries as well as negative effects on their real economic production (Istiaq & Serletis, 2018). CFP is impacted by the business ecosystem, which includes economic policy as one of its many components.(Yousefi & Yung, 2022;Shen et al., 2021; (Denlertchaikul et al., 2022).Literature reports that cash holding, firm performance and value of firm all are affected by EPU (Boubakri et al., 2023;Peng et al., 2023; Iqbal et al., 2020).A study by La Rocca & Cambrea,(2019) reports that board diversity in 18 European countries is moderated by ecosystem of corporate and has effect on financial crisis. Further, literature also documents that in hand cash of companies is also affected by macro level ecosystem (La Rocca and Cambrea 2019) and then cash holding effects the performance of firm (Gull et al., 2023) reports that during EPU firms tend to have increase cash in hand.

While considering financial institutions, Uncertainty may force financial institutions to delay investment decisions and cut back on lending availability, which could reduce their performance. (Caglayan & Xu, 2019; Sha et al., 2020).Based on the all above arguments we can predict that during high EPU performance of banks can be reduced. It may happen due to more loan default, increasesd cost, higher interest rates and decrease in banks' lending, which in turn have depressive impact on the performance of financial institution (Caglayan & Xu, 2019; Ozili, 2022). In addition, policy uncertainty widens the information gap between managers and market players, which raises the capital cost and

lowers business output.(Shen et al., 2021). As result, first hypothesis of the study is as follow:

H₁: There is negative relation between performance of bank and EPU.

A meta analysis of 2200 studies positive impact of sustainability disclosures on performance of firm.This meta analysis documents that majority of studies reports positive impact which sustains over time (Friede et al., 2015).According to Quddus et al., (2022); Dou et al., (2022) disclosures related to sustainability has positive impact on the market worth of any company. A study by (Ahmed et al., 2020) reported direct impact of disclosures on firm worth. According to Gull et al., (2023) that sustainability disclosures may help to decrease EPU and asymmetric information .However, no study analyzed the moderating role of disclosures of sustainability ,EPU and banks performance of financial sector listed on Pakistan Stock exchange. Shareholder's theory states that the only target of organization is to maximize financial position of its shareholders. So investment by any organization in non financial ventures is not in line to its basic responsibilities. (Friedman, 1970). Recent research indicates, however, that a company's costs for making a social impact on society are equal to a decrease in the capital cost as a result of increased market confidence(Buallay, 2019). To increase their credibility and financial valuations, businesses provide environmental and social data (Mathews, 1997). In order to improve their reputation in the market, businesses sell socially responsible behaviour as a product.(Mackey et al., 2007). According to Gull et al., (2023) businesses operating in sensitive sectors may experience a greater impact on their market value than businesses in non-sensitive industries due to their environmental and social performance. In summing up the foregoing research and empirical output, we find EPU decreases performance by causing a greater asymmetry between the management and the stakeholders; however, disclosure may lessen this asymmetric information by reducing market scepticism of the banking sector.

H₂: Environmental disclosure (ED) moderates the link of bank performance and EPU

H₃: Social disclosure (SD) moderates the link of bank performance and EPU

According to Borghesi et al., (2019) the ability of businesses to perform better and create value is compromised by uncertainty in the corporate ecosystem. To reduce this risk, the companies utilize corporate governance (CG) and information disclosure regarding their governance structure. Some researchers discovered no connection between CG and company performance (Price et al., 2011) . According to Lins et al., (2017) when businesses and markets experienced a negative shock, they discovered that companies with strong CG earned increased profits and growth. In addition, Abdelhay et al., (2022) and Francis et al., (2015) support the role of women as competent monitors who enhance the value and performance of businesses. Effective corporate governance reduces the detrimental effects of the macro environment on firm output (Al-Gamrh et al., 2020) . Additionally, corporate governance (CG) has a favorable impact on a company's financial performance, particularly during times of financial difficulty (Hsu et al., 2016), and governance transparency raises the market worth of companies. Based on above given description, effective CG mechanism may develop good solutions to manage with EPU. The disclosure gauges the efficacy and efficiency of a firm's governance process. Therefore, we proceed as follows to develop our fourth hypothesis.

H₄: Governance disclosure (GD) positively moderates the relationship of bank performance and EPU

METHODS AND METRIAL DATA

We collected data for analysis from published annual financial reports of commercial banks listed on Pakistan Stock Exchange from 2105-2022. Sample size includes only banks as the regulatory requirements of commercial banks is different from non-financial institutions. All observations which do not have data of all variables are not included in study.

METHDOLOGY

This study's goals are to examine the influence of policy uncertainty on banks profitability as well as the moderating impact that sustainability disclosure (SD) plays in that connection. We study the effects of policy uncertainty on the performance of banks listed on PSX in our baseline model (H_1).The base line model is as follow:

$$ROA_{it} = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 EPU_{i,t} + \beta_2 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (1)$$

$$ROE_{it} = \beta_0 + \beta_1 ROE_{t-1} + \beta_2 EPU_{i,t} + \beta_2 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (2)$$

$$NIM_{it} = \beta_0 + \beta_1 NIM_{t-1} + \beta_2 EPU_{i,t} + \beta_2 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (3)$$

where ROA_{it} , ROE_{it} , NIM_{it} are proxies used to measure financial performance of banks. ROA_{it} is calculated dividing the net profit by total assets ROE_{it} is measured dividing the net income by equity while NIM_{it} is measured by subtracting interest income from interest expense and dividing by assets. $EPU_{i,t}$ is for economic policy uncertainty in all three models which is measured by applying EPU index. $control_{it}$ is for control variables of study. Control variables includes $MrkCap_{it}$ (shares outstanding*market value) A positive relationship is expected between $MrkCap_{it}$ and banks performance (Maudos & De Guevara, 2007; Quddus et al., 2022). The CAR_{it} is for capital requirement from central bank that banks must set aside to cover their potential risks and unanticipated losses. Because bank regulators will compel banks to maintain greater capital requirement when they take more risks to increase their profits, a positive relation between CAR_{it} and profitability is anticipated. GDP_{it} is for growth of an economy and Several studies have employed the real GDP_{it} growth rate GDP_{it} variable to account for the effect of changing economic cycles on bank profitability. According to Maudos & De Guevara, (2007) there will likely be a positive relationship between GDP_{it} and profitability because borrowers will be able to earn money from business endeavours and repay their loan during prosperous economic periods,

At next level, we also look into how environmental, social and governance disclosure affects the relation between policy uncertainty and banks profits as a moderator. Model for H_2 an, H_3 and H_4 are as follow:

$$ROA_{it} = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 EPU_{i,t} + \beta_3 ED_{i,t} + \beta_4 ED * EPU_{i,t} + \beta_5 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (4)$$

$$ROE_{it} = \beta_0 + \beta_1 ROE_{t-1} + \beta_2 EPU_{i,t} + \beta_3 SD_{i,t} + \beta_4 SD * EPU_{i,t} + \beta_5 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (5)$$

$$NIM_{it} = \beta_0 + \beta_1 NIM_{t-1} + \beta_2 EPU_{i,t} + \beta_3 GD_{i,t} + \beta_4 GD * EPU_{i,t} + \beta_5 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (6)$$

$$ROA_{it} = \beta_0 + \beta_1 ROA_{t-1} + \beta_2 EPU_{i,t} + \beta_3 ESGD_{i,t} + \beta_4 ESGD * EPU_{i,t} + \beta_5 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (7)$$

$$ROE_{it} = \beta_0 + \beta_1 ROE_{t-1} + \beta_2 EPU_{i,t} + \beta_3 ESGD_{i,t} + \beta_4 ESGD * EPU_{i,t} + \beta_5 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (8)$$

$$NIM_{it} = \beta_0 + \beta_1 NIM_{t-1} + \beta_2 EPU_{i,t} + \beta_3 ESGD_{i,t} + \beta_4 ESGD * EPU_{i,t} + \beta_5 \sum control_{it} + Country_FE + \varepsilon_{it} \quad (9)$$

Model 4 is for moderating effect of environmental disclosures on bank performance. Model 5 and 6 test the impact of social and governance disclosures on banks performance. Model 7, 8 and 9 test the impact of sustainability disclosure (combination of environmental, social and governance disclosure). An impact of financial institution on the environment, including the land, water, and air, as well as on entire ecosystems, is measured by environmental disclosure. Social disclosure evaluates a company's effectiveness in fostering societal, consumer, and employee loyalty and trust through its business practices. Governance disclosure gauges a company's corporate governance system's efficacy and efficiency.

RESULTS AND DISCUSSION

Table 1
Impact of EPU on Bank Performance

Variables	Performance of Banks		
	Col(1)	Col(2)	Col(3)
Lag_dep	-0.205***	0.263***	-0.012***
	(0.135)	(0.546)	(0.028)
<i>EPU_{i,t}</i>	0.029**	2.486***	-0.018**
	-(0.142)	(0.567)	(0.044)
<i>MrkCap_{it}</i>	-0.461	0.821	-0.028
	(0.181)	(0.133)	(0.042)
<i>CAR_{it}</i>	0.765	0.106	-0.205*
	(0.876)	(0.013)	(0.251)
<i>GDP_{it}</i>	0.012**	0.020**	-1.410**
	(0.010)	(.022)	(0.251)
AR1	-6.97***	-2.60***	-4.45***
AR1_P	0.000	0.000	0.000
AR2	1.20***	-1.19***	-1.76***
AR2_P	-1.490	-0.768	-1.201
Chi Sq	486.37***	139.35***	353.34***
Country_FE	YES	YES	YES

Table 2
Moderating Impact of Environmental, Social and Governance Disclosures

[illegible]

Table 3
Moderating Impact of Sustainability Disclosure
(Environmental, Social and Governance Disclosures)

Variables	Independent Variable		
	ROA	ROE	NIM
Lag_dep	0.278 ***	0.245 ***	0.794 **
	(0.134)	(0.195)	(0.465)
EPU_{i,t}	-0.123 **	-0.789 **	-1.215 **
	(0.180)	(0.232)	(0.721)
ESGD_{i,t}	0.347 **	0.241	1.230 *
	(0.198)	(0.121)	(0.581)
ESGD_{i,t} * EPU_{i,t}	-0.102	-0.265	-1.230
	(0.002)	(0.475)	(0.581)
MrkCap_{it}	-0.659 **	0.263 ***	-0.219 ***
	(0.416)	(0.546)	(4.101)
CAR_{it}	2.62 *	-2.486 ***	3.83 *
	(0.136)	(0.567)	(3.359)
GDP_{it}	-0.112 **	-2.42 **	-0.038 *
	(0.513)	(0.559)	(0.072)
Chi sq	67.061	76.606	75.211
AR1	-6.97 ***	-2.60 ***	-4.45 ***
AR1_P	0.000	0.000	0.000
AR2	1.20 ***	-1.19 ***	-1.76 ***
AR2_P	0.133	0.135	0.122
Country_FE	YES	YES	YES

DISCUSSION OF RESULTS

Table 1 reports the output of GMM system for model (1), (2) and (3). EPU_{i,t} index and firm-level control variables are included in Models 1, 2, and 3 to examine how policy uncertainty affects the performance of banks. Empirical output reports statistically significant negative impact of EPU_{i,t} on all measures of banks performance (H1). These findings help to understand how policy-induced uncertainty lowers European enterprises' market performance and accounting. These findings are consistent with those of a previous study conducted for S&P 500 companies. Where the authors discuss how information asymmetry and risk factors for investors and managers are exacerbated by policy-induced uncertainty. The findings are also supported by the results Quddus, et al., (2022). Further, results report significant positive link between current and one year lagged performance demonstrating how the past success of banks influences their current market and accounting performance. GDP_{it} is negatively correlated which proposed that financial sector faces lower profits during times of uncertainty and economic expansion. The result is same as expected as recessionary pressures are greater in the business environment during periods of high EPU. Bank customers may have trouble meeting their obligations to pay back loans and other fees to the banks as well as having trouble making money from their own enterprises. Bank profits will drop as a result of this.

Overall, the majority of the control variables show the anticipated signals, which are consistent with assumptions of study.

Statistical output of GMM system for model (4), (5) and (6) are reported in table (3). To study the impact of moderating variable sustainability disclosure on relation of EPU with banks' performance, a dummy indicator of all dimensions of sustainability disclosure is added in model (4),(5) and (6).Results shows significant impact of EPU on banks Performance and positive impact of dummy $ED_{i,t}$ and its interatcyion with EPU ($ED_{i,t} * EPU_{i,t}$) on performance of banks. These inverse/ direct correlations explain why decreased performance results from increased economic policy uncertainty. Higher environmental ($ED_{i,t}$) disclosure does, however, reduce the negative effects of policy uncertainty on company performance. Results reported in table (2) reports significant impact of EPU on banks Performance and positive impact of dummy $SD_{i,t}$ and its interaction with EPU ($SD_{i,t} * EPU_{i,t}$) on performance of banks. Higher social ($SD_{i,t}$) transparency, however, mitigates the negative effects of policy uncertainty on company performance. Uncertainty in economic policy lowers business performance by widening the information gap between the firm and the market. However, environmental and social initiatives undertaken by the firms narrow this information gap by improving their standing and legitimacy in the market. We find a substantial inverse relationship between economic policy uncertainty ($EPU_{i,t}$) and performance, as well as a significant positive relationship between government disclosure and economic policy uncertainty $GD_{i,t} * EPU_{i,t}$. These direct/ inverse correlations explain why decreased company performance results from increased economic policy uncertainty. But more government transparency ($GD_{i,t}$) mitigates the negative effects of policy uncertainty on banks'performance. Governance disclosure measures the efficiency and effectiveness of a firm's corporate governance mechanism. Financial institution with effective corporate governance reduce the negative effects of policy-induced uncertainty on firm performance by developing efficient strategies and making accurate as well as timely decisions.

ROBUSTNESS TEST

As we account for country fixed factors, there is no country bias in our findings. Table 3 reports the reliability of the findings, we utilize the combined score of the three sustainability disclosure dimensions ($ESGD_{i,t}$). Empirical findings report the same statistical significant estimations and thus endorse the previous findings. In addition, we examine the robustness of the findings using the combined score of the three sustainability disclosure dimensions ($ESGD_{i,t}$). Table (3) reports the results of model (7), (8) and (9). On all three proxies for company performance, we observe a similar significant positive connection between the dummy interaction of sustainability disclosure ($ESGD_{i,t}$) and economic policy uncertainty ($ESGD_{i,t} * EPU_{i,t}$).

CONCLUSION AND POLICY IMPLICATION

This study adds to the body of literature by examining the relationship between economic policy uncertainty ($EPU_{i,t}$), sustainability disclosure ($ESGD_{i,t}$), and banks performance. The study's findings support the conclusion that EPU reduces banks' performance listed on Pakistan Stock Exchange (PSX) by raising information asymmetry

and risk factors among investors and management. This study adds to the expanding body of research demonstrating that the influence of EPU on business performance is sufficiently strong to exceed the country's fixed effects (Buallay, 2019 ; Iqbal et al., 2020; Ahsan et al., 2021). The relationship between economic policy uncertainty and bank performance and sustainability disclosure, or between bank performance and risk and sustainability disclosure, as well as the relationship between economic policy uncertainty and firm risk, investments, and strategy, is a topic of increasing interest in empirical study.

Our research question is novel in a way that it examines the relationship between the two newly addressed key topics, namely policy uncertainty and sustainability disclosure. To be more precise, we contribute to the body of knowledge by demonstrating that increased sustainability disclosure can lessen the detrimental effects of policy uncertainty on banks performance by reducing information asymmetry. Policy ambiguity and sustainability disclosure tactics have an impact on a bank's success (Iqbal et al., 2020; Qureshi et al. 2020). As a result, a key factor in evaluating how policy uncertainty affects the performance of banks is their effective sustainability performance and transparency. By improving control and monitoring of resources through the value chain, mitigating risks through links and expertise, and providing strong leadership during uncertainty, a higher disclosure of environmental, social, and governance pillars based on robust sustainability mechanisms improves control and monitoring of resources. As a result, a decreased policy-induced information asymmetry aids in improving the performance of banks.

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