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Economic Policy Uncertainty and Firm Performance in Pakistan

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Abstract
The aim of this study is to examine the impact of economic policy uncertainty (EPU) on firm performance in Pakistan. Net profit margin (NPM) and ROE are taken as proxies for firm performance. Purposive sampling is used to collect quarterly data of 236 non-financial firms listed on Pakistan Stock Exchange (PSX) from Thomson Reuters Eikon database, as well as quarterly data on EPU and other economic indicators from World Bank database, to test the effect of EPU on firm performance in Pakistan. Using the random effects regression, we observe that economic policy uncertainty has a significant negative impact on the performance of firms in Pakistan. The results are robust in both the models with NPM and ROE as the proxies for firm performance. The findings are crucial for the firms as they need to find ways to deal with high levels of economic policy uncertainty, as well as for the policy makers that they can try to reduce the uncertainty to give a more stable economic environment to the firms operating in Pakistan.
Keywords: EPU, ROA ROE, NP, Tobin's Q

1. Introduction

The perceived level of uncertainty for businesses over upcoming laws, policies, and political activities is measured by an indicator called Economic Policy Uncertainty (EPU). It illustrates how unstable and unpredictable the current economic situation is. A number of factors, including trade disputes, geopolitical unrest, natural disasters, and financial crises, could lead to uncertainty in economic policy. It is important to study the economic policy uncertainty because it can affect corporate performance, investment decisions, and economic growth. Excessively high EPU levels have the potential to discourage businesses from making long-term investments and impede economic growth. Performance is a key indicator of a company's ability to achieve its goals (Zhang et al., 2022). Organizational performance is based on wellbeing (Javaid et al., 2023) and diversity (Khan & Javaid, 2023) of workforce. It is an essential consideration for a company's operations since it influences a firm's market share and competitive advantage. A firm's performance is influenced by a wide range of factors, including the state of the economy, the state of the market, organizational design, and management techniques. Politicians, investors, and managers need to be well-versed on the variables influencing business success in order to make informed decisions. Words of political leaders can be persuading (Ramzan et al., 2023).

The relationship between company performance and economic policy uncertainty has been the subject of extensive research in recent years. According to empirical research, EPU may have a significant impact on a number of company performance factors, such as hiring procedures, investment decisions, and profitability. For example, excessive EPU may result in a decrease in investment and employment options, but low EPU may encourage economic development and business success (Qamruzzaman, 2022). Furthermore, the impact of EPU on company performance may vary depending on the industry, the country, and the time period. Therefore, it is crucial to comprehend the relationship between EPU and company performance in order for managers, investors, and policymakers to make informed decisions.

Despite the growing body of research in this field, there is still debate concerning the direction and degree of the relationship between company performance and economic policy uncertainty, especially in developing and under-developed countries. Some studies revealed no association at all or a positive relationship between EPU and company performance, while other studies indicated a negative relationship. Furthermore, the effect of EPU on company performance in developing countries, where the economic climate is frequently marked by higher levels of volatility and uncertainty, has not received much attention in the literature. The majority of recent literature has focused on wealthy nations. To better understand the impact of EPU on firm performance in various economic circumstances, further research related to developing economies is thus required. To begin, knowing the relationship between EPU and firm performance may assist managers and policymakers in making wise choices about plans for investing (Syed et al, 2022). It is important to understand the impact of EPU on enterprises operating in developing economies, which are playing an increasingly important role in the global economy. Filling the research gap may also serve to improve current ideas and add to the body of theoretical and empirical knowledge on the relationship between economic policy uncertainty and firm performance.

The aim of this study is to examine the impact of economic policy uncertainty on firm performance in the developing economy of Pakistan. The scope of this study is limited to the non-financial firms in Pakistan from the period of August 2010 to December 2022. By offering fresh perspectives on the relationship between EPU and firm performance in various economic circumstances, the study will build upon and expand the theoretical frameworks created in earlier studies. The findings are important for managers as well as for the policy makers.

2 Literature Review

2.1. Theoretical Framework

2.1.1. Institutional theory

This theory highlights the importance of the institutional environment in affecting company performance. Institutional influences that could affect how businesses make decisions include laws, regulations, and conventions from the government. The theory states that companies operating in countries with high levels of economic policy uncertainty may decide to employ different tactics and

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behave in a different way than companies operating in countries with political environments that are more stable (Qiu and Chen, 2022; Audi, 2024).

According to Su et al. (2022), institutional factors like rules and regulations have a big influence on how businesses function. They found that companies operating in countries with less stable institutional environments typically employ more defensive strategies to deal with uncertainty. Work life balance resolves conflict (Ali et al., 2024; Ahmad et al., 2024). Language skills should be effective in business communication and mindful employee have stable performance and enhanced outcomes (Javaid et al., 2023). In a similar manner, Syed et al. (2022) argue that because of uncertain economic policies, businesses may engage less in long-term initiatives, spend less on R&D, and avoid riskier undertakings. These findings suggest that institutional factors may have a major impact on the performance and ability of businesses to make strategic decisions.

2.1.2. Resource dependence theory

This theory emphasizes how organizations and their external environment—which includes the unpredictable nature of economic policy—are intertwined. This theory contends that companies need outside forces, including as markets and regulatory bodies, in order to survive and grow. The firm's ability to acquire and effectively utilize these outside resources may be hampered by economic policy uncertainty (Craighead et al., 2020; Sulehri & Ali, 2020; Ali, 2022; Audi et al., 2022). Companies that operate in countries where there is a lot of uncertainty about economic policies may find it difficult to get the resources they require to continue functioning at high levels of performance.

The resource dependency theory highlights how important external resources—such as suppliers, markets, and government regulations—are to a company's survival and ability to succeed. Iqbal et al. (2020) assert that enterprises operating in developing economies are more vulnerable to the fluctuations in economic policy due to their greater dependence on external resources. They found that it was more challenging for companies in China's energy sector to obtain foreign finance due to the unpredictable nature of economic policy. Because government rules create uncertainty, it is challenging to secure external financing. These studies show that firms may find it challenging to secure outside capital and maintain performance requirements due to the unpredictable nature of economic policy.

2.1. Empirical Review

A lot of focus has been given globally to the causes of economic policy uncertainty and how it affects the economies and the businesses, especially in the developed economies. The relationship between economic policy firm uncertainty (EPU) and the performance of nonfinancial corporations listed in the United States is examined by Iqbal et al. (2020). Return on Assets, Return on Equity, Net Profit Margin, and Tobin's Q are the four measures on which they find that the impact of EPU on firm performance is significant and negative. System-GMM estimation is used to solve the endogeneity problem because heteroscedasticity and correlations are included in OLS and fixed effect estimates. Using a news-based measure of economic policy uncertainty and firm-level data from China, Feng et al. (2021) show that economic policy uncertainty is bad for firm investment, jobs, and income. Compared to businesses that aren't owned by the government, this negative link isn't as strong in state-owned businesses (5.61% drop in investment, 0.09% increase in employment, and 0.31% increase in sales) (7.79% drop in investment, 0.14% increase in employment, and 0.34% increase in sales) (Feng et al., 2021). They look at several theories and finds proof that economic policy instability makes businesses less likely to grow through things like taking risks, hanging on to capital, and paying a lot of taxes.

The study by Garca-Gómez et al. (2022) looks at the effect of economic policy uncertainty (EPU) on the performance of US tourism companies using a sample of 296 publicly listed tourist businesses from 2000 to 2018 and a total of 3068 firm-year observations. The estimate results of panel regression tests based on the system-generalized technique of moments show that EPU and Tobin's Q, return on assets (ROA), and return on equity (ROE) have a negative relationship. It has also been shown that firm growth and influence can change the link between EPU and firm success. The results of panel quantile regression show that EPU has different effects on how well U.S. tourist businesses do. EPU has less of an effect on businesses that don't do well (25th quantile of ROA and ROE), and it has no effect on businesses with a lot of growth potential (100th quantile of Tobin's Q).

Energy-intensive industries use a lot of energy and cause waste, so the Chinese government has made a number of rules to stop this. To help the sector change and move in a better way, these rules need to be looked at in depth, but not much research has been done on the subject. Yu and Jin (2022) used the EPU Index as a full and ongoing policy shock to look at how China's economic policy instability affects the financial performance of energy-intensive companies. Based on information from 289 publicly traded energy-intensive businesses from 2003 to 2018, they find that EPU hurts the financial performance of businesses. Even if the dependent variable is changed and internal talk is considered, this effect is still there. Also, non-SOE businesses in the Midwest and those that make heavy metals and chemical goods are seeing more bad things happen to them. Businesses with a lot of cash on hand and a low loan percentage are less likely to experience negative EPU performance effects (Yu & Jin, 2022; Audi et al., 2022).

In a time of economic policy instability, it's important to think about how to make businesses more efficient and get the most out of their investments. Kong et al. (2022) look at how EPU affected the business decisions of Chinese A-share traded companies between 2007 and 2019. According to them, companies find it more difficult to grow the amount and effectiveness of their investments due to global EPU, which also increases the danger of over- or underinvestment. A company's investment scope is expanded by local EPU, but there is an increased danger of over- or underinvestment, as well as a decrease in investment efficiency. The mechanism test demonstrates that while macro EPU facilitates R&D investment, it hinders green technology investment by companies. Conversely, local EPU promotes investments in environmentally friendly technology and discourages R&D spending. Second, although both have a significant negative impact on how well organizations perform, local EPU has less of an impact on business success than global EPU. Businesses should improve their financial structures and take precautions to shield themselves from dangers, and the government should act to stabilize the macroeconomic situation in an uncertain climate.

China uses the green credit technique to assess the performance of publicly traded firms. But this green finance approach hinders the growth of businesses in highly polluting industries. This effect is especially noticeable in state-owned businesses, big companies, those with a high level of institutional ownership, those with a lot of expert coverage, and when there is a lot of doubt about economic policy (Yao et al., 2021). Also, the green credit policy hurts the success of businesses that pollute a lot by making it harder for them

to get capital and investing less.

To study how the unpredictability of economic policy affects the link between wage management and company success, Kahloul et al. (2023) conducted a research on a group of French companies that were traded on the CAC ALL trading index between 2010 and 2017. They show that money management and company success are linked in a good way. This means that classification moving, real earnings management, and accrual-based earnings management are helpful when managers use accounting choices to lower costs and improve company value. They also find that a high EPU is a solid sign of a bad reveal, it motivates companies to use revenue management when it suits them, which hurts the company's success.

Rjiba et al., (2020) looked at the effect of confusing economic policy in relation to the link between corporate social responsibility (CSR) and financial success. Using a big sample of public businesses from 36 countries between 2002 and 2016, they found that CSR spending builds social capital over time, which lessens the effect of economic policy instability on business financial performance. Also, they show that the good value effect of CSR is stronger in developed markets when there is a lot of uncertainty in the business world.

Ongsakul et al. (2021) found that the size of a company's board has a big effect on its success. Size can be flexible with regard to infrastructure and finances as remote work strategy can be smart and engaging (Fatima et al., 2024). Using institutional theory, they look at how businesses change the size of their boards when economic policy is not clear. When EPU is around, companies' boards get smaller. Their results support the idea that agency issues get worse when EPU is more common. So, companies can improve their corporate governance by cutting the number of people on their boards in the presence of high uncertainty.

Chahine et al. (2021) look at how the error of expert profit predictions is affected by policies that are hard to predict. They find that analysts' predictions are less accurate when markets are volatile and information is hard to get. This happens when economic policy is unclear. When a company has strong CSR practices, there is less of a link between policy uncertainty and how well they estimate their profits. In a situation where policy isn't clear, they show that CSR helps to keep things stable by reducing expert prediction error. It has been said that the accuracy of forecasts improves when non-financial information about business social responsibility (CSR) is made public. Also, experts are better able to judge the quality of information from domestic businesses than from international businesses. This means that the calming effect of CSR is more obvious in international businesses. Analysts pay more attention to the outward justification of CSR than to its internal longevity, so that profits can be resilient in the face of a lot of policy instability.

Using a unique news-based measure of economic policy uncertainty, Mirza and Ahsan (2020) study the effects of economic policy uncertainty on business risk and strategic positioning in China from 2009 to 2015. The study also looks at how business risk and strategic positioning connect to each other. The results show that doubt about economic policy and how businesses place themselves strategically has a big positive effect on company risk. The results also show that uncertainty in economic policy raises firms' market risks, no matter what approach they use. But it lowers business risk for companies that play it safe and raises it for companies that try to find new customers. Because economic policy is unclear, the study may help companies create and improve their strategy positions. Media role can be effective and impacts for perception on strategies and implications (Iqbal et al., 2024). Language skills can be enhanced through artificial intelligence and challenges can cause stress(Javaid et al., 2024) so communicating well is the key. Baker et al. (2016), using a panel vector autoregressive model, project that the US and 12 other big countries will lose investment, production, and jobs if policy uncertainty goes up.

Hou et al., (2022), use the fact that green activity measures from Chinese companies are easy to get to look at how economic policy uncertainty (EPU) affects a company's green behavior. Their results show that EPU hurts the way businesses think about the environment. Other opinions say that EPU makes green behavior worse because the market doesn't believe it, a company has tight financial limits, or it doesn't have any government ties. They also show that different ways of being green can have different EPU outcomes. Overall, they find that EPU, along with asset prices and how a company handles its money, has an effect on how green a company is. Policy effects are also looked at. Environment can be green and performance is effective if responsible leadership is ensured (Jabeen et al., 2024).

Li et al., (2022), use Baker et al.'s (2016) index of global economic policy uncertainty, which is based on data on Chinese cross-border mergers and acquisitions in 29 countries from 2008 to 2017, to test how the financial crisis affected the scope and performance of M&A behavior. They find that uncertainty in the economic policies of the host country could make Chinese international mergers and acquisitions much smaller than they would be otherwise, and the negative effects of unclear economic policies are especially clear in privately held companies. Further, the host country's economic policy uncertainty has a U-shaped effect on the short-term M&A performance of firms, and that the host country's economic policy uncertainty has a negative effect on the mid-term M&A performance of corporations.

Hou et al., (2021) study a group of publicly traded energy and power companies in China, and conclude that economic policy instability makes businesses less likely to spend in ways that are good for them. Companies that are based in places with low marketization are more likely to experience this effect. The reliability of these results is helped by the two-way grouping technique, the two-stage least squares method, and different measures of business wasteful investment and economic policy uncertainty. Also, their data show that there is a stronger link between economic policy instability and investments that don't work well for businesses that get a lot of help from the government, have little management control, and have external inspectors who don't do their jobs well. Economic policy uncertainty affects economic growth by way of influencing firms' spending decisions. This becomes critically important because of the fact that businesses have financial limits in their spending decisions. Using a sample of publicly traded Chinese companies, Makosa et al., (2021) show how doubt about economic policy can make financial constraints less of a problem. Because the company is investing less, it has more cash on hand. This has also helped reduce the company's financial restrictions. More study shows that businesses that don't have ties to politics get a bigger drop in their financial limits than those that do. More study shows that a company's financial limits will return to normal in the long run. Long-term, businesses have less money to work with when economic strategy is uncertain. According to the study, smart policy changes should be made to stop confusion and disagreement about how corporations should spend their money.

Li et al., (2023), said that the link between corporate social responsibility and the vagueness of economic policy as it comes to mergers and acquisitions will be looked at. The following topics are talked about: How does the lack of clarity in policy affect mergers and acquisitions? Can social duty help in this situation? How does policy instability affect business deals and acquisitions through social responsibility? The study looks at the most important mergers and acquisitions in China. The Probit model is then used to look at how policy unpredictability affects how M&As are done and how well a company does after the fact. Lastly, the inner workings of these things are looked at. This study shows that as policy confusion goes up, the chances of a merger or acquisition (M&A) going well and the results of the company after the event go down. This piece of research is helpful for studying mergers and acquisitions, business social responsibility, and other policy issues. It also gives clear facts that can be used to improve the M&A success rate.

Using data from 975 Chinese non-financial public businesses, Ahsan et al., (2012) look at how a company's business plan affects its ability to grow its finances in a way that is sustainable when economic policy is uncertain. They use index-based measures of economic policy uncertainty, sustainable financial growth, and business strategy to conclude that economic policy uncertainty is bad for the long-term financial growth of Chinese companies. They further find that an analytical business strategy lowers the negative effects of policy uncertainty on long-term financial growth by a large amount, while a defensive business strategy changes the negative effects of policy uncertainty in a good way. The study's results give businesses ideas for how to make plans to deal with policy uncertainty in a good way. Different ways to stand in for endogeneity and policy uncertainty don't change their results much.

Shi et al., (2020), use statistics from China to study the impact of unpredictability of economic strategy on how business activities are spread out. They make decisions based on the China Economic Policy Uncertainty Index and give top attention to large companies that have subsidiaries where they can spread their operations. They that the spread of a company's business activities is linked to the unpredictability of economic policy in a bad way. Also, when economic policy is uncertain, companies will distribute their operations in one of four ways: first, they will all do it the same way; second, if they rely on outside financing, they are more likely to distribute their operations to subsidiaries; third, state-owned companies are more likely to do it; and fourth, when there is a high level of financial marketization, they will distribute their operations within the company.

For the food business to be able to do high-level CSR practices, it must be able to properly ensure national food safety. Using the food-related businesses of Chinese firms with A-shares listed, Su et al. (2022) study how China's macroeconomic policy uncertainty has affected corporate social responsibility from 2009 to 2018. It also shows how different company social responsibility practices have an effect under government association and market association. With a model value of -0.013, the results show that economic policy instability hurts the social duty of food businesses. Second, the social responsibility policies of privately-owned businesses are more affected by changes in the economy as a whole. Third, when economic policy is hard to predict, companies in the food industry that have strong ties to the market tend to be more careful about their CSR practices.

The wide array of literature discussed above not only shows that there is a link between corporate social responsibility and instability in economic policy, but it also gives important ideas and tools as to how businesses can cope with the uncertain economic conditions. The same methods can be applied to the developing economy of Pakistan to study the effect of economic policy uncertainty on the businesses and the economy overall.

2.2. Hypothesis

Since the focus of this research is to investigate the relationship between the performance of firms in Pakistan and economic policy uncertainty, we develop a testable hypothesis that depicts this relationship in line with the previous literature discussed above at length. The hypothesis of this study is as follows:

H_0: Economic policy uncertainty has no impact on firm performance in Pakistan

H_1: Economic policy uncertainty has a negative impact on firm performance in Pakistan

3. Research Methodology

3.1. Sampling & Data Collection

In this study, purposive sampling is used to see the effect of EPU on firm's performance in the non-financial firms in Pakistan. Our sample contains quarterly observations of publicly traded non-financial firms of the Pakistan and the quarterly data on the EPU index and other economic factors from August 2010 to December 2022. Economic indicator data is extracted from World Bank website while financial data of firms has been taken from Thomson Reuters Eikon database.

3.2. Statistical Techniques

To measure and highlight the unique and individual impact of each independent variable on the dependent variable, regression analysis has been used. To decide between the fixed effect model (FEM) model and the Random effect model (REM) model, the Hausman test has been applied.

The Regression Equations of our model are as follows:

$$NPM = \beta0+\beta1(EPU)+\beta2(LIQ)+\beta4(LEV)+\beta5(GDP)+\beta6(INT)+\beta6(SIZE)+\varepsilon$$

$$ROE = \beta0+\beta1(EPU)+\beta2(LIQ)+\beta4(LEV)+\beta5(GDP)+\beta6(INT)+\beta6(SIZE)+\varepsilon$$

$$TQ = \beta0+\beta1(EPU)+\beta2(LIQ)+\beta4(LEV)+\beta5(GDP)+\beta6(INT)+\beta6(SIZE)+\varepsilon$$

Where,

NPM= Net Profit Margin
ROE= Return on Equity
TQ= Tobin's Q
EPU= Economic Policy Uncertainty.
LIQ = Liquidity (Current Ratio)
LEV = Leverage Ratio
GDP= GDP Growth Rate.
INT= Interest Rate

SIZE= Firm Size (Natural Log on Sales)
ε = the Error Term.

4. Analysis Results

4.1. Descriptive Profile of the Data

The descriptive statistics comprising of mean, standard deviation, and the minimum and maximum value of all the variables of our model from the period 2010 to 2022 of 236 non-financial firms in Pakistan are presented in the table below. The total observations taken for the whole non-financial sector of Pakistan was 11,908. These descriptive analysis tools assisted us in understanding the industry averages of all the variables included in our research. Furthermore, it provided us with the minimum and maximum values for each variable.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
EPU	12,272	94.7352	48.1745	0	252.4039
NPM	12,272	.1369	.1680	-.1997	.5986
TQ	12,272	.5247	.2705	.0001	.9999
ROE	12,272	.2199	.1806	-.1998	.5990
INT	12,272	.0955	.0300	.0575	.1600
LIQ	12,272	2.0476	.6972	.6600	3.9981
SIZE	12,272	4.9978	2.8961	.4040	8.9604
LEV	12,272	.4446	.2808	-.9609	.99998
GDP	12,272	.0151	.0757	-.1292	.2334

4.2. Unit Root Testing

Determining whether variables in a panel dataset are stationary over time is essential for time series analysis. Stationarity is a key assumption for many econometric models. So, in order to examine the stationarity properties of variables in a panel data context, panel unit root testing is carried out, Levin-Lin-Chu unit-root test is applied, with the null hypothesis of the presence of unit roots and the alternate hypothesis of the panels being stationary (no unit roots). The table below presents the summarized results of the unit root tests.

Table 2: Unit Root Test

Variable	Adjusted t stat	P-value	Result
NPM	-30.3756	0.0000	stationary
TQ	-11.8158	0.0000	stationary
EPU	-11.5111	0.0000	stationary
INT	-19.1726	0.0000	stationary
GDP	-56.2914	0.0000	stationary
LIQ	-35.3988	0.0000	stationary
SIZE	-7.546	0.0000	stationary
LEV	-26.9028	0.0000	stationary

The unit root test results show that the p-values for all the variables are significant, meaning that we reject the null hypothesis of the existence of unit root for all the variables, and conclude that all the variables are stationary at level.

4.3. Correlation

The table 03 below presents the pairwise correlation matrix for the dependent and independent variables. Net profit margin shows a highly significant positive correlation with Tobin's Q, EPU and interest rate, while a negative significant correlation with GDP, liquidity and firm size. Tobin's Q exhibits highly significant negative correlation with liquidity and firm size but a positive and highly significant correlation with firm leverage. None of these correlations, as well those between the other independent variables, are strong in terms of their coefficients. So, we can confidently say that there's no problem of multicollinearity in the data.

Table 3: Pairwise Correlation

	NPM	TQ	EPU	INT	GDP	LIQ	SIZE	LEV
NPM	1							
TQ	0.0408***	1						
EPU	0.0569***	0.0082	1					
INT	0.0573***	0.0033	0.4025***	1				
GDP	-0.0163*	0.0048	-0.1796***	-0.0926***	1			
LIQ	-0.0187**	-0.0449***	-0.0156*	-0.0193**	-0.0056	1		
SIZE	-0.2264***	-0.0925***	-0.0139	-0.0683***	0.001	0.0742***	1	
LEV	0.0131	0.0389***	-0.0031	-0.0096	-0.0037	-0.0491***	-0.192***	1

Note: ***p<0.01, **p<0.05, *p<0.10

4.4. Heteroskedasticity

Heteroskedasticity testing is done in order check that if variance of errors is consistent and constant in the regression model which we are going to run in order for our research. It checks whether variance of the errors is constant across all levels of the independent variables or not. If it is and heteroskedasticity is present in the test, it can affect the reliability and efficiency of our model. So, we carry out the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity to check that whether our data is free from error, biasedness, and is reliable, and gives us accurate statistical inferences.

First, we conduct the test with dependent variable Net Profit and independent variables economic policy uncertainty, interest rate, current ratio, quick ratio, natural log on sales, leverage ratio, GDP growth rate:

Table 4

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of net profit
chi2(1) = 1.23
Prob > chi2 = 0.2680

As the Prob > chi2 is 0.2680 is greater than the significance level 0.05, we fail to reject the null hypothesis of constant variance. This suggests that, based on the Breusch-Pagan / Cook-Weisberg test, we failed to reject the null hypothesis and there is no evidence to prove that there is heteroskedasticity in our data.

The second model that we use for testing the robustness, goes with the dependent variable Return on Equity and independent variables economic policy uncertainty, interest rate, current ratio, quick ratio, natural log on sales, leverage ratio, GDP growth rate. The results of heteroskedasticity test for this model are given below:

Table 5

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of return on equity
chi2(1) = 0.34
Prob > chi2 = 0.5575

With the probability of The Prob > chi2 being 0.5575 which is more than the significance level, hence we fail to reject the null hypothesis of constant variance and accept the alternate hypothesis. Hence according to the Breusch-Pagan / Cook-Weisberg test, this indicates that there is not enough data to draw the conclusion that our data is heteroskedastic. We can conclude that the data is free of error, biasedness and is reliable for us to run the regression analysis and is efficient for us to run the analysis without any error.

Lastly, we have the model with the dependent variable Tobin's Q and independent variables economic policy uncertainty, interest rate, current ratio, quick ratio, natural log on sales, leverage ratio, GDP growth rate. Heteroskedasticity test results are given below:

Table 6

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Tobin's Q
chi2(1) = 5577.09
Prob > chi2 = 0.0000

As the probability of The Prob > chi2 of 0.000 is less than the significance level of 0.05 and the Chi 2(1) value is 440.28, we will accept the constant variance null hypothesis and reject the alternative hypothesis. Thus, our data is heteroskedastic and the variance of the errors is constant across all levels of the independent variables, which may have an effect on its efficiency and reliability, according to the findings of the Breusch-Pagan / Cook-Weisberg test. Thus, we might conclude that this regression equation is biased, erroneous, and inaccurate. Since heteroskedasticity is present, we aren't going to use this equation for our investigation since the data is biased, erroneous, and inefficient.

4.5. Regression Analysis and Hypothesis Testing

In order to examine the impact of economic policy uncertainty on firm performance and the impact of other independent variables on the dependent variable, we used regression analysis on our panel data of non-financial sector of Pakistan. The regression model was estimated by carrying out fixed effect model and random effect model. Then Hausman test was applied which resulted in the probability value of 0.6230 which is greater than the significance level of 0.05, so we failed to reject the null hypothesis, indicating that the random effects model is more efficient than fixed effects model. So as a result, random effects regression was used to analyze the results of our non-financial sector panel data.

Table 7 below shows that economic policy uncertainty (EPU) has a negative impact on the dependent variable net profit margin, with a coefficient value of -0.163, and is highly significant (z-value – 8.403), with a p-value of 0.0000. The negative coefficient indicates that the net profit margin will decrease by 0.163 for every unit increase in economic policy uncertainty. Thus, we reject

the null hypothesis and accept our alternate hypothesis of a negative relationship between EPU and firm performance. This adverse consequence demonstrates how Pakistan's non-financial sector's performance and profitability are impacted by the country's unclear economic policies. Decision-making processes are impacted by uncertainty over Pakistan's government policies, laws, and economic climate, which can impede growth and restrict company expansion.

Table 7: Random Effects Regression, Dependent variable: NPM

NPM	Coefficient	Std. error	z	P>z
EPU	-0.1630	3.03E-05	4.90	0.0000
INT	-0.0114	0.04921	2.75	0.0060
GDP	0.00667	0.017712	-0.80	0.4230
LIQ	0.00102	0.002387	-2.10	0.0360
SIZE	-0.0102	0.001498	-8.32	0.0000
LEV	-0.0244	0.004871	-4.41	0.0000
_cons	0.3390	0.012001	16.01	0.0000
Adj R-sq	0.1922			
Observations	12272			

Businesses are likely to cut down on expenditure and investment due to uncertainty, which may have an impact on their performance. The making of strategic decisions may be impacted by economic policy uncertainty. Companies could adopt a more conservative approach, focusing on short-term objectives and steering clear of long-term commitments and initiatives. This might have an effect on innovation, research & development, and other strategic endeavors. In summary, our research indicates a negative association that suggests economic policy uncertainty might provide a range of challenges for non-financial organizations. These challenges may have an effect on the companies' overall business strategy, financial performance, and investment decisions.

The adjusted R2 of the linear regression model is 19.22 % which shows that the 19.2% variation in our dependent variable is attributable to the independent variables of the study and the remainder of the variation is attributable to other factors.

Interest rate (INT) coefficient is statistically significant to the dependent variable net profit, having a negative influence on it with a coefficient value of -0.0114. The interest rate had a highly significant z value of -3.057 and a p value of 0.002 which is less than 0.01, which is at the significance threshold of 0.01. An increase in interest rates by 1 unit will result in a 0.0361 coefficient fall in net profit margin. This adverse effect demonstrates that a rise in interest rates will cause businesses' profits to decline as having to pay interest lowers their bottom line. The amount of income that firms with debt financing must set aside to cover their interest commitments increases as interest rates rise. The more the interest rates will be the more portion of company net profit will go into interest payments and so the lower will be the net profit margin. GDP shows a positive coefficient of 0.00667, but this effect cannot be considered significant due to the p-value of 0.4230.

Since the p value of LIQ is less than the 0.01 significance threshold and it had a coefficient value of 0.00102 and a z value of 4.940, it had a positive effect on the dependent variable, net profit margin. The influence of the current ratio on net profit margin while other factors are held constant is demonstrated by the fact that it is statistically significant at the 0.01 significance level. The view that a company's long-term profitability is positively correlated with its liquidity situation is supported by research. This result also implies that the business can more readily fulfill its short-term obligations and has operational flexibility. Increased liquidity can help create a stable operating environment, which will free up the business to concentrate on its main business operations and possibly increase profitability.

The positive coefficient of 0.00102 for LIQ indicates that a one-unit increase in the current ratio will result in a 0.00102-unit increase in the company's net profit margin, indicating a positive impact on profitability. This suggests that in terms of long-term profitability, a company's liquidity position is a key factor in its future performance, as a company requires a strong liquidity position to be profitable over the long run. Therefore, a non-financial company's long-term success is based on its liquidity position; the stronger it is, the more lucrative it may be.

The coefficient of firm size (SIZE) is -0.0102 with a highly significant z value of -1.870. This indicates that the relationship between the natural log of sales and net profit margin is statistically significant at the conventional significance level. The coefficient on the natural log of sales is -0.0102. This means that, holding other variables constant, a one-unit increase in the natural log of sales is associated with a decrease of approximately 0.0102 units in the net profit margin. Since the coefficient is negative, it suggests an inverse relationship between the natural log of sales and net profit margin, meaning that as the firm size increases, the net profit margin tends to decrease.

Leverage ratio (LEV) had a highly significant z value of -6.822, a coefficient of -0.0244 and p value less than 0.01 which is at the significance level of 0.01 reflects that leverage ratio is highly significant to the dependent net profit margin having a negative impact on it with a coefficient value of -0.0244. An increase in LEV by 1-unit will decrease the net profit margin by coefficient -0.0244-unit. This adverse effect demonstrates that a rise in debt will cause a company's profit to decline as debt entails interest payment commitments, which lowers profitability and hence the net profit margin. Therefore, debt covenants and interest costs have a detrimental impact on profitability. Higher debt translates into higher interest costs and decreased profit; conversely, reduced debt translates into higher company profitability. High leverage businesses are more susceptible to financial difficulties, particularly in times of high interest rates or economic downturns. A firm may suffer severe repercussions, like as bankruptcy, if it is unable to pay its debts. This can also result in a drop in stock prices and a loss of investor trust. Because a larger percentage of the company's capital structure will be made up of debt, a high leverage ratio may restrict and have an influence on future investment projects and investments. This will limit the company's capacity to make new investments. Therefore, a larger leverage ratio will make the company less flexible, which will make it more difficult for it to expand, adapt, compete, and perform in the future.

4.6. Robustness

To ensure the robustness and comprehensive nature of our analysis, we acknowledge the importance of considering alternative dependent variables. By incorporating Return on Equity into our investigation, we aim to provide a more nuanced understanding of the relationships between our independent variables and financial performance metrics. Fixed and Random Effects are applied on this model as well, and on the basis of Hausman test, we have adopted the Random Effects regression for this model as well. The results are shown in table below.

Table 8: Random Effects Regression, Dependent variable: ROE

ROE	Coefficient	Std. err.	z	P>z
EPU	-0.3440	3.33E-05	(-16.22)	0.0000
INT	-0.0361	0.054104	(-8.819)	0.1240
GDP	0.00568	0.01947	-1.771	0.4690
LIQ	-0.00107	0.002625	-6.316	0.0230
SIZE	-0.00107	0.001653	(-0.178)	0.0480
LEV	-0.0447	0.005355	(-11.41)	0.0000
_cons	0.5480	0.013232	-15.26	0.0000
Adj R-sq	0.1371			
Observations	12272			

Table 8 shows that EPU has a negative and highly significant impact on ROE i.e. the firm performance, with a coefficient of -0.3440 and p-value of 0.0000. This result is similar with our original model with NPM as the dependent variable, which testifies to its robustness.

Among the control variables, liquidity (LIQ) shows a negative and significant impact on the dependent variable ROE with a negative coefficient of -0.00107 and p-value of 0.0230. This result is different from the original model, as LIQ exhibited a positive and significant effect on NPM in the first model. Firm size (SIZE) and leverage (LEV) also exhibit a negative impact on ROE. Interest rate (INT) shows a negative but insignificant impact on ROE, which was significant in the case of NPM. GDP shows a positive and insignificant impact on ROE, which was the same in case of NPM.

5. Discussion & Conclusion

5.1. Discussion

This research examines the impact of economic policy uncertainty on the performance of non-financial firms in Pakistan with return on equity, return on assets, net profit margin and Tobin's Q being the dependent variable and EPU (Economic Policy Uncertainty), GDP growth rate (GDP), current ratio (LIQ), leverage ratio (LEV), interest rate (IR), natural log on sales (SIZ) as our independent variable. Using a research sample of 236 non-financial listed firms and gathering date of these firms from the period 2010-2022 on quarterly basis, we carried out regression analysis based on Fixed effect model, Random effect model and Linear regression model and selected the most efficient model amongst them to test the impact of these independent variables on the dependent variable return on equity. From the results of our regression models, we have drawn the conclusion that there is a significant conclusion between economic policy uncertainty (EPU) and performances of firms in non-financial firms in Pakistan. The main factor that gives testament to this is the uncertainty in economic policies which have an impact on the firm performances and decision making resulting in adverse impact on its performance and profitability. This theory can further be linked with the study of Iqbal et al., (2020), which looked at the link between economic policy firm uncertainty (EPU) and the success of nonfinancial companies with U.S. listings which explained that how economic policy uncertainty is bad for firm investment, jobs and income and its performances having a negative relation with it. Our results somehow agreed with this research paper as in our research EPU had significant negative impact on the performances of non-financial firms.

The inverse correlation shown between economic policy uncertainty (EPU) and profitability (NP) indicates that Pakistan's non-financial sector's performance and profitability are impacted by the country's unpredictable economic policies. Companies' decision-making is impacted by uncertainty over Pakistan's economic conditions, laws, and policies, which might impede their ability to develop and expand. The making of strategic decisions may be impacted by economic policy uncertainty. Companies could adopt a more conservative approach, focusing on short-term objectives and steering clear of long-term commitments and initiatives. This might have an effect on innovation, research & development, and other strategic endeavors.

A higher economic policy uncertainty (EPU) may lead to increased risk aversion among investors and businesses. This increased uncertainty may have a detrimental effect on investment choices, which might lead to fewer capital expenditures and a decline in the value of the company. Uncertainty about economic policies may exacerbate financial market volatility. Increased volatility might cause investors to seek a larger risk premium, which can depress company values and have a negative impact on its value and performance. Uncertainty about economic policy might affect a company's creditworthiness and borrowing rates. Higher interest rates and more stringent lending requirements might result from more uncertainty, which would be bad for business financial health. According to a research report by Iqbal et al., (2020), uncertainty in economic policy has a negative impact on Tobin's Q, showing how it negatively affects company investment, jobs, and income and how its performance is negatively correlated with it. Our findings somewhat concurred with the research report as we found that (EPU) significantly harmed non-financial firms' performance.

But as per our study we discovered that other factors also affect our results and that economic policy uncertainty (EPU) is not the sole element affecting profitability (NP) and performances of the firms in non-financial sector. Liquidity (LIQ) is one of these factors and the more liquid the business tends to be, it would drive profitability in the long run. The influence of liquidity on the profitability and performance, is to explain the investments or assets of the bank such a means that the banks capability of paying the current

liability due upon it without considerable damage. The pre-arrangement of assets will lead toward gain profit. A substantial literature is around the examination of liquidity holdings for organizations.

Additionally, based on our research, it can also be observed that leverage position (LEV) of the firm and the interest rates (INT) also influence the profitability and market value of firms in non-financial sector. Increase in the amount of debt contributes to increase in interest payment obligations reducing the profitability. High leverage businesses are more susceptible to financial difficulties, particularly in times of high interest rates or economic downturns. A firm may suffer severe repercussions, like as bankruptcy, if it is unable to pay its debts. This can also result in a drop in stock prices and a loss of investor trust affecting the market value of the firm result in adverse effect on company performance. Because a larger percentage of the company's capital structure will be made up of debt, a high leverage ratio may restrict and have an influence on future investment projects and investments. This will limit the company's capacity to make new investments. Therefore, a larger leverage ratio along with burden of interest payments will make the firm less flexible, which will make it harder for it to expand, adapt, compete, and perform in the future so all this do have a negative impact on the performance of the firms in non-financial sector. Tough working conditions leads to moral injury and economic instability (Javaid et al., 2024). Research paper by Hou et al., (2021), show that economic policy instability makes businesses less likely to spend in ways that are good for them, showing that there is a stronger link between economic policy instability and investments that don't work well high shows that how such uncertainty influences the investment and other decision makings.

5.2. Conclusion

The aim of this research was to investigate the impact of economic policy uncertainty (EPU) on the performance of non-financial firms in the developing market of Pakistan. With the fixed effects regression run on the quarterly data from 2010 to 2022, of 236 non-financial firms listed on Pakistan Stock Exchange, we conclude that EPU has a significant negative impact on the performance (profitability) of the Pakistani firms. Higher levels of economic policy uncertainty are linked to downward fluctuations in profitability, indicating that firms may experience challenges in generating profits and returns for their equity holders during periods of heightened economic policy uncertainty.

However, through the course of our research, we learnt that economic policy uncertainty is not the only factor that impacts the profitability. Liquidity, leverage, interest rate, and firm size are also important factors that showed strong effect on firm performance over the 12-year period. We must understand that there are other factors that affect firm performance as well and industries should closely monitor those factors as well in order to improve their performance.

These findings can be valuable for various stakeholders, including policymakers, business leaders, investors, and researchers and should guide them in making informed business and investment decisions, as well as careful policy decisions, which can reduce the negative impact of economic uncertainty on the corporate sector of Pakistan.

The research is limited in its scope, as it addresses the non-financial sector in the developing economy of Pakistan. Further, the data of only a limited number of firms was available and accessible, and for a limited number of years. Future research in Pakistan can try to overcome these limitations for more comprehensive findings on the effect of economic policy uncertainty. Cross-industry and cross-country comparisons can also be made for a broader understanding of the phenomenon.

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