

Economic Policy Uncertainty, Corporate Risk-Taking and Abnormal Audit Fees

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Abstract

As a result of economic imbalances, global turmoil, and catastrophic global health events, economic policy uncertainty is rising across countries, and corporate risk taking is heterogeneous, which can affect auditors' decisions. This paper explores the impact of economic policy uncertainty on abnormal audit fees based on a corporate risk-taking perspective, using A-share listed companies in China from 2007-2019 as a research sample. According to the research, the level of abnormal audit fees increases as economic policy uncertainty increases, and corporate risk-taking worsens the correlation. Further research shows that higher economic policy uncertainty leads auditors to increase additional inputs and charge a higher compensation for audit risks, resulting in a larger positive and negative abnormal audit fee. Additionally, the positive association between economic policy uncertainty and abnormal audit fees is present in non-state-owned enterprises, while it is not significant in state-owned enterprises.

Keywords: economic policy uncertainty, corporate risk-taking, abnormal audit fees

1. Introduction

In recent years, academic research has focused on how uncertainty of economic policies impacts enterprises. Through the constructed economic policy uncertainty index, researchers mainly investigate the linkage effects of policy uncertainty across different economies and markets. It has been shown that global financial markets are strongly influenced by policy uncertainty, both from an economic and statistical standpoint (Smales, 2020). Meanwhile, some researchers have explored the effect mechanisms of economic policy uncertainty on firms, and they have focused on M&A (Sha et al., 2020), capital structure (Li & Qiu, 2021), investment and financing decisions (Julio & Yook, 2012; Liu & Zhang, 2020), R&D (Cui et al., 2021), cash holdings (Duong et al., 2020; Phan et al., 2019), social responsibility (Vural-Yavas, 2021), tax burden (Dang et al., 2019), and so on. However, the impact of economic policy uncertainty on auditing has not yet received enough attention.

Presently, the international environment is becoming more and more complex, coupled with the widespread and far-reaching impact of the COVID-19 pandemic, resulting in a global economic situation that has never been seen in a century. The treacherous economic environment and the turbulent health environment have led to various uncertainties and instabilities, and governments have adopted policies as a powerful tool to regulate the economy, and economic policy uncertainties have risen, and China is no exception. As the world's second-largest economy, China's market has been showing a strong "magnetic force", and its unique market economy has a spillover impact on global economic development, from the integrated efforts inculcating 21 pilot free trade zones to the construction of Hainan Free Trade Port, to the enactment of the Foreign Investment Law and the signing of the Regional Comprehensive Economic Partnership Agreement (Zhang et al., 2019). China's economic development is still unbalanced and inadequate, and its economy is facing a challenging international environment, which has greatly compressed its external development space. In the face of the great changes unseen in a century, the Chinese government has issued a series of policies, which propose to build a new economic development pattern with a large domestic cycle as the mainstay and dual domestic and international cycles promoting each other. With the deepening of the "administrative and service" reform and the optimization of the business environment in the Chinese market, a solid foundation has been laid for the stable operation of the economy, and the policy-oriented role of the Chinese government should not be underestimated, but at the same time, the economic policies uncertainty has increased for enterprises in the market.

The logic of the effect of economic policy uncertainty on audit fees is that economic policy uncertainty increases the inherent risks of enterprises which may lead to an audit fee premium (Pastor & Veronesi, 2013). Classical economic theory suggests that under the environment of increasing external uncertain factors, entrepreneurs are more willing to take risks and constantly pursue excess profits. And the willingness and tendency of enterprises to pay the price for the pursuit of excess profits is reflected in the level of corporate risk-taking (Boubakri et al., 2013). The risk-oriented auditing requires auditors to take risk-oriented audit as the entry point in their work and pay attention to the potential or existing risks of material misstatement of enterprises, which will undoubtedly intensify the risk of auditing, and the audit fees will naturally rise. Researchers based on data from corporations in eight countries - Canada, Germany, France, India, Italy, Spain, the United Kingdom, and the United States - have found that audit fees charged by Big Four and non-Big Four accounting firms decrease as economic policy uncertainty increases (Zhang et al., 2018). During the development of China's emerging markets, a high standard of audits has become more important, and a new era of development has influenced the way audits are conducted, their efficiency, and their responsibilities. Despite this, the current state of China's audit market is more fragmented and competitive. This is also accompanied by global disruptions such as the COVID-19 pandemic and trade frictions. A detailed exploration of how economic policy uncertainty may impact audit fees in the Chinese market would be valuable.

Previous literatures have classified audit fees into normal audit fees and abnormal audit fees. Simunic (1980) proposed an audit pricing model that states that normal audit fees include audit investments, risk compensation, and normal profit gains, and that general audit investments tend to affect normal audit fees, while abnormal audit fees are deviations from normal audit fees (Doogar et al., 2015). Positive abnormal audit fees reflect the additional input and attention of the auditor in performing the audit, and may be compensation for the higher risk premium charged by the auditor; negative abnormal audit fees reflect the cost savings from the market phenomenon of "low-bidding" and the "learning effect". Therefore, in the current situation of a volatile macro-economic environment, and in the specific institutional context of the Chinese government's frequent policies to intervene in economic operations and the existence of a large number of state-owned entities, auditing plays an influential role in deepening reforms and promoting the implementation of major national decisions. In order to understand how economic policy uncertainty impacts abnormal audit fees through the coordination effect of corporate behavior, it is necessary to define how economic policy uncertainty affects abnormal audit fees.

Based on the Chinese market environment and institutional environment, this paper explores the relationship between economic policy uncertainty and abnormal audit fees based on the perspective of corporate risk-taking, using A-share listed companies from 2007-2019 as the research sample. The research contributions and innovations of this paper are as follows: (1) Based on the core ideas of the Contingency Theory, this paper tests the relationship between economic policy uncertainty and the impact of abnormal audit fees. And it further discusses the reasons for the increase of abnormal audit fees and provides relevant empirical evidence for audit decisions. Taking into account economic policy uncertainty, this paper provides proof of the audit insurance hypothesis and audit risk-oriented theory. (2) The previous literatures have mainly discussed the impact of corporate risk-taking on capital allocation, R&D, M&A, and so on. This paper further considers the effect of economic policy risk on audit pricing from the standpoint of corporate risk-taking to enrich the research on the impact of economic policy uncertainty on auditing. It expands the research boundary of the economic consequences of economic policy uncertainty from the perspective of the auditor, an external subject, and also provides insights for corporates to cope with the risk of economic policy changes.

The remainder of this study is structured as follows: Section 2 discusses relevant prior literature and hypothesis; Section 3 describes the research method; Section 4 presents descriptive statistics and a discussion of the sample; Section 5 shows regression results and robustness checks, while Section 6 presents further research. Section 7 concludes.

2. Theoretical Analysis and Hypothesis

2.1 Economic Policy Uncertainty and Abnormal Audit Fees

The Proposals for formulating the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035 states that China's development environment is currently undergoing profound and complex changes. The possibility that the COVID-19 pandemic could lead to global financial risks remains non-negligible. In addition, unilateralism and protectionism have the effect of harming the peaceful development process, resulting in greater trade barriers, resource restrictions and environmental constraints, as well as a lack of innovation capacity, which is

incompatible with a quality development process. As a result of the complicated environment domestically and internationally, the Chinese government exercises its “visible hand” in regulating and controlling market resources. Resource Dependence Theory holds that enterprises that rely on resources must operate sustainably to succeed, but when resources are scarce, the environment inhibits growth. Regulated by government through policies, economic policy creates uncertain policy conditions, which in turn makes business operations more unpredictable since corporations cannot predict with certainty how economic policy will be introduced and changed. Thus, operational and strategic risks of the corporate rise, and the inherent risks and control risks inherent in production operations can result in a higher audit risk premium (Yang et al., 2018). The previous literatures suggest that economic policy uncertainty has a real option effect on firms, increasing the value of waiting options and boosting investment opportunity costs. Based on The Deep Pocket Theory, economic policy uncertainty increases the risk of investment failure resulting in losses to shareholders, greater liability on the auditor, and a greater litigation risk charged to the auditor. This results in higher audit risk compensation charges.

Segal et al. (2015) distinguish between “good” and “bad” uncertainty, arguing that “good” uncertainty has a positive impact on economic activity and “bad” uncertainty has a negative impact. The “bad” ones have a negative impact. Because of China’s unique domestic conditions, economic policy has a visible guiding role in influencing corporate behaviors, particularly their investment strategies. For example, in September 2020, at the 75th session of the United Nations General Assembly, China for the first time clarified the time point for achieving carbon neutrality, with CO₂ emissions striving to peak by 2030, and striving to achieve carbon neutrality by 2060. In March 2021, the 14th Five-Year Plan and the 2035 Vision also proposed to actively address climate change, implement the 2030 national autonomous contribution target to address climate change, and formulate an action plan to reach the peak of carbon emissions by 2030. The introduction of corresponding policies has pushed companies to make energy restructuring and promote investment in carbon performance, and the proportion of environmental spending has increased significantly. However, investment in emerging markets can also result in an increase of unpredictability in earnings, which in turn can lead to greater chances of material misstatement risks in corporate financial statements. Meanwhile, investments in emerging areas complicate the auditor’s work in comparison to the previous audit practice environment, and economic policy changes impact the auditor’s practice environment. In addition, the risk appetite of corporate decisions is also affected by the characteristics of the decision makers, such as gender, professional experience, and social capital (Faccio et al., 2016; Ferris et al., 2017). An uncertain economic environment makes rent-seeking and opportunistic behavior by the management apparent, as does the chance of their overriding internal controls, thus exposing the enterprise to material misstatement risks. This in turn increases the inherent risks for the auditor. Besides receiving compensation for audit risks, auditors respond to perceived risks by increasing audit investment, for example, by extending audit time, hiring more specialized auditors, and conducting more audit procedures as a means of decreasing audit failure.

As shown above, economic policy uncertainty will increase the likelihood of material misstatement risk in enterprises, and audit risk will rise, so auditors will compensate the company for this possible loss by increasing audit input and charging additional risk compensation, which leads to a rise in abnormal audit fees. Therefore, this paper proposes hypothesis 1.

H1: The higher the economic policy uncertainty, the higher the abnormal audit cost.

2.2 Economic Policy Uncertainty, Corporate Risk-Taking and Abnormal Audit Fees

Economic policy uncertainty exacerbates the operating risk of enterprises and increases the level of information asymmetry between managers and auditors. Audit insurance theory clearly suggests that the higher the economic policy uncertainty, the higher the operating risk and agency cost of the enterprise (Mirza & Ahsan, 2020). In a changing economic environment, the auditor’s decisions and opinion are constrained, and the higher the audit risk the auditor faces, the higher the likelihood of issuing a non-standard audit opinion (Lennox, 2000). Furthermore, according to risk-oriented audit theory, when auditors perceive higher corporate risks, they are highly motivated to avoid risks by applying additional audit procedures and allocating additional resources to reduce the possibility of future economic and reputational losses. National political systems, macro-economic policies, laws, cultures, and religious beliefs all play a role in the level of corporate risk-taking, while internal corporate governance such as governance structures, strategic choices, compensation systems, and political affiliations can also affect the level of corporate risk-taking (Boubakri et al., 2013; Cohen et al., 2013; Diez-Esteban et al., 2019). Capital Asset Pricing Model suggests that high risk brings high return, and opportunities arising from changes in the economic policy environment motivate enterprises to seek opportunities for high returns amidst environmental uncertainty, and corporate risk-taking levels increase (Zhang et al., 2021). Palmer and Palmer and Wiseman (1999) argue that higher levels of corporate risk-taking are

associated with greater performance volatility. Fluctuations in performance may lead to an increase in operational and financial risk, and a higher likelihood of corporate material misstatement risk. Audit, as a risk transfer mechanism, naturally generates extraordinarily high abnormal audit fees for risk compensation when taking on risk. However, the uncertain environment may hide new technologies and new development opportunities that will stimulate the ability of enterprises to innovate and dynamically adjust to facilitate strategic change. Faccio et al. (2016) also found that the level of corporate risk-taking is closely related to the efficiency of capital allocation, and that too low a level of corporate risk-taking can result in underinvestment and inefficient capital allocation dilemma. High efficiency of corporate capital allocation will promote the country's total factor productivity, which is the basis of macroeconomic growth, while a high level of capital allocation efficiency is an important factor in promoting corporate development. In accordance with the above academicians, enterprises that seize new development opportunities and allocate capital efficiently under uncertain economic policy conditions will reap high returns, and their risk resilience with the improvement of capital allocation efficiency will be enhanced, so they will be able to better deal with economic policy uncertainty and avoid losses. As a result, auditors face lower practice risk, with a consequent decline in deep pocket liability and a resulting reduction in abnormal audit fees. Based on the above analysis, this paper proposes competing hypothesis 2.

H2a: Corporate risk-bearing intensifies the positive correlation between economic policy uncertainty and abnormal audit fees.

H2b: Corporate risk-bearing reduces the positive correlation between economic policy uncertainty and abnormal audit fees.

3. Research Design

3.1 Research Sample and Data

The China economic policy uncertainty data in this paper are obtained from the China Economic Policy Uncertainty Index developed by Baker et al. The financial data used are from the China CSMAR database. The sample is selected from A-share listed companies from 2007-2019, because the measurement of corporate risk-taking requires a three-year rolling period, so the actual time window is 2007-2017. The sample is optimized as follows: (1) exclude listed companies in the financial sector; (2) exclude companies listed for less than 5 years and those that have been delisted; (3) exclude all sample companies in ST, *ST, and PT; (4) exclude other companies with missing key financial data; (5) to avoid the effect of extreme values, all continuous variables are subjected to an upper and lower 1% tail shrinkage. After data processing by Excel and stata16.0, a total of 19,297 pieces of data were obtained.

3.2 Variable Description

3.2.1 Economic Policy Uncertainty

Economic policy uncertainty is measured using the monthly Chinese economic policy uncertainty index compiled by Baker et al. (2016). The index provides a monthly count of articles on economic policy uncertainty in the South China Morning Post and then divides it by the total number of articles published in that month and normalizes the resulting series to a mean value of 100 to finally obtain the monthly economic policy uncertainty index. This paper uses the Chinese economic policy uncertainty index as a proxy variable for economic policy uncertainty which is averaged by year and then divided by 100 to determine the annual level of economic policy uncertainty.

3.2.2 Corporate Risk-Taking

The existing literature measures the level of corporate risk-taking, such as volatility of earnings, volatility of stock returns, gearing, and R&D expenditures. Due to the high volatility of the Chinese stock market, the existing literature widely adopts earnings volatility to measure the level of corporate risk-taking, and this approach is also adopted in this paper. Drawing on Boubakri et al. (2013), the degree of volatility of corporate return on assets (ROA) is used to measure the level of corporate risk-taking, with higher volatility indicating a higher level of corporate risk-taking. ROA is the ratio of corporate EBITDA to total assets at the end of the year for the corresponding year, and to reduce the effect of industry, corporate ROA is subtracted from the annual industry average to obtain industry-adjusted. The degree of volatility of ROA is measured by the standard deviation and extreme deviation of Adj_ROA calculated over a rolling three-year window. The calculation is shown in the following formula.

$$Adj_ROA_{i,t} = \frac{EBIT_{i,t}}{ASSET_{i,t}} - \frac{1}{X} \sum_{k=1}^X \frac{EBIT_{i,t}}{ASSET_{i,t}} \quad (a)$$

$$Risk_{i,t} = \sqrt{\frac{1}{T-1} \sum_{t=1}^T (Adj_ROA - \frac{1}{T} \sum_{t=1}^T Adj_ROA)^2} \quad | T = 3 \quad (b)$$

$$Risk2_{i,t} = Max(Adj_ROA_{i,t}) - Min(Adj_ROA_{i,t}) \quad (c)$$

3.2.3 Abnormal Audit Fees Model

Abnormal audit fee is the part of audit fee that cannot be explained by visible factors; therefore, we can use an audit pricing model to estimate normal audit fees, and the difference between actual audit fees and normal fees for the year (residual term) is the abnormal audit fee. According to Simunic (1980), Blankley, Hurtt, and MacGregor (2012), audit fees are mainly influenced by factors such as audit client size, audit complexity, audit risk, and auditor characteristics. We will use the following model (d) to estimate normal and abnormal audit fees.

$$Auditfee_{i,t} = \alpha_0 + \alpha_1 Size_{i,t} + \alpha_2 Inv_{i,t} + \alpha_3 Rec_{i,t} + \alpha_4 Roa_{i,t} + \alpha_5 Lev_{i,t} + \alpha_6 Switch_{i,t} + \alpha_7 Big4_{i,t} + \alpha_8 Auditopinion_{i,t-1} + \alpha_9 Share10_{i,t} + \alpha_{10} Soe_{i,t} + \alpha_{11} Loss_{i,t} + \alpha_{12} Age_{i,t} + \sum Year + \sum Ind + \varepsilon_{i,t} \quad (d)$$

3.2.4 Control Variables

To control for the effects of other factors, drawing on the study of Zhang et al. (2018), we also control for corporate size, return on total assets, audit complexity, corporate growth, gearing, quick ratio, profitability, corporate type, nature of ownership, equity concentration, corporate change, and audit opinion. The specific variable interpretations are shown in Table 1.

Table 1. Variable definition

Variable	Definition
Abfee	Residuals of model d.
Auditfee	Natural log of audit fees.
EPU	The monthly China economic policy uncertainty index developed by Baker et al. is normalized by dividing it by 100 after averaging it on an annual basis.
Risk1, Risk2	Standard deviation, extreme deviation of ROA for companies with three-year observation period adjusted for industry.
Size	Natural log of total assets for the year.
Roa	Ratio of Net profit to average total assets.
Complex	Ratio of the total value of accounts receivable and inventory to total assets.
Growth	Ratio of change in total assets during the period to total assets at the beginning of the period.
Lev	Ratio of total liabilities to total assets.
Quick	Ratio of the difference between current assets and inventory to current liabilities.
Loss	Dummy variable, which equals 1 when a firm's net profit is less than 0 and 0 otherwise.
Big4	Dummy variable, which equals 1 when a firm is audited by one of the Big 4 auditors and 0 otherwise.
Soe	Dummy variable, which equals 1 when a firm is State-owned and 0 otherwise.
Share10	The sum of the squared shareholdings of the top ten shareholders.
Switch	Dummy variable, which equals 1 when a firm changes its accounting firm in the current period and 0 otherwise.
Auditopinion	Dummy variable, which equals 1 when a firm's audit opinion is standard unqualified and 0 otherwise.
Age	Year of launch.
Inv	Ratio of total inventory to total assets at the end of the year.
Rec	Ratio of total accounts receivable to total assets at the end of the year.
Year	Set by year.
Ind	China Securities Regulatory Commission Industry Classification 2012 Edition.

3.3 Model Design

In this paper, model (1) is constructed to test the relationship between economic policy uncertainty (EPU) and abnormal audit fees (Abfee), and if β_1 is significantly positive, hypothesis H1 holds. To test hypothesis H2, model (2) adds Risk×EPU on the basis of model (1) to test the moderating effect of corporate risk taking. If β_3 in model (2) is significantly positive, hypothesis H2a holds, indicating that corporate risk-taking exacerbates the positive relationship between economic policy uncertainty and abnormal audit fees; if β_3 is significantly negative, hypothesis H2b holds, indicating that corporate risk-taking can significantly reduce the impact of economic policy uncertainty on abnormal audit fees.

$$Abfee = \beta_0 + \beta_1 EPU + \beta_2 Size + \beta_3 Roa + \beta_4 Complex + \beta_5 Growth + \beta_6 Lev + \beta_7 Quick + \beta_8 Loss + \beta_9 Big4 + \beta_{10} Soe + \beta_{11} Share10 + \beta_{12} Switch + \beta_{13} Auditopinion + Year + Ind + \varepsilon \quad (1)$$

$$\begin{aligned}
Abfee = & \beta_0 + \beta_1 EPU + \beta_2 Risk + \beta_3 Risk \times EPU + \beta_4 Size + \beta_5 Roa + \beta_6 Complex + \beta_7 Growth + \beta_8 Lev \\
& + \beta_9 Quick + \beta_{10} Loss + \beta_{11} Big4 + \beta_{12} Soe + \beta_{13} Share10 + \beta_{14} Switch + \beta_{15} Auditopinion \\
& + Year + Ind + \varepsilon
\end{aligned} \tag{2}$$

4. Analysis of Empirical Results

4.1 Descriptive Statistics

Table 2 reports the results of descriptive statistics for the variables. The mean and standard deviation of abnormal audit fees are -0.001 and 0.404, respectively, with a minimum value of -0.997 and a maximum value of 1.198, which indicates that the abnormal audit fees vary significantly across enterprises. Compared to the market expectations, audit fees on the Chinese audit market are lower than expected, with the “learning effect” of the market and the prevalence of “low price” phenomena bringing about savings in audit costs. According to the Chinese Institute of Certified Public Accountants (CICPA) data, the Big Four’s total revenue in the Chinese audit market accounts for more than 30% of total revenue of 100 firms, and this market is highly competitive, with the phenomenon of low pricing. The mean value of economic policy uncertainty is 2.018, the minimum value is 0.822, and the maximum value is 3.648, which indicates that there is a large volatility in the change of economic policy volatility index in China. The distribution of corporate risk-taking level is uneven, with Risk1 mean value of 0.047, minimum value of 0.002, and maximum value of 0.459; Risk2 mean value of 0.088, minimum value of 0.003, and maximum value of 0.851 calculated by extreme difference, indicating that there is a large heterogeneity in the risk-taking level of Chinese enterprises. From the full sample, the distributions of the control variables are all within a reasonable range.

Table 2. Descriptive statistics

Variable	Count	Mean	SD	Min	Median	Max
Abfee	19297	-0.001	0.404	-0.997	-0.009	1.198
EPU	19297	2.018	0.993	0.822	1.790	3.648
Risk1	19297	0.047	0.066	0.002	0.025	0.459
Risk2	19297	0.088	0.122	0.003	0.048	0.851
Size	19297	22.05	1.301	19.31	21.89	25.98
Roa	19297	0.043	0.057	-0.170	0.038	0.232
Complex	19297	0.265	0.173	0.004	0.241	0.762
Growth	19297	0.213	0.465	-0.306	0.104	3.390
Lev	19297	0.453	0.215	0.050	0.451	0.987
Quick	19297	1.760	2.316	0.140	1.039	15.41
Loss	19297	0.090	0.286	0	0	1
Big4	19297	0.061	0.239	0	0	1
Soe	19297	0.471	0.499	0	0	1
Share10	19297	0.570	0.154	0.222	0.577	0.903
Switch	19297	0.138	0.344	0	0	1
Auditopinion	19297	0.968	0.176	0	1	1
Auditfee	19297	13.62	0.741	12.26	13.51	16.36
Inv	19297	0.160	0.151	0	0.120	0.751
Rec	19297	0.104	0.098	0	0.079	0.444
Age	19297	10.14	6.246	0	10	27

4.2 Analysis of Test Results

In order to maintain the consistency of data caliber, the explanatory and moderating variables were centered in testing the moderating effect. Meanwhile, the Hausman test results indicate the suitability of a fixed effects model with panel data, and the year and industry of the sample are further controlled for on the basis of fixed effects to ensure the robustness of the results. Column (1) of Table 3 shows the test of the effect of economic policy uncertainty on abnormal audit fees. The results show that the regression coefficient of economic policy uncertainty (EPU) is 0.030 and significant at the 1% level, indicating that higher economic policy uncertainty is associated with higher abnormal audit fees, which verifies hypothesis H1. Columns (2) and (3) show the regression results after adding EPU × Risk1 and EPU × Risk2, respectively, and the results show that the regression coefficient of EPU × Risk is significantly positive. It shows that enterprises with high economic policy uncertainty and high level of corporate risk-taking lead to higher abnormal audit fees, indicating that corporate risk-taking

exacerbates the positive relationship between economic policy uncertainty and abnormal audit fees, and hypothesis H2a holds.

Table 3. Economic policy uncertainty, corporate risk taking and audit fees

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Abfee	Abfee	Abfee	Abfee	Abfee
EPU	0.030 ^{***} (7.51)	0.028 ^{***} (6.65)	0.028 ^{***} (6.64)	0.025 ^{***} (5.82)	0.027 ^{***} (6.32)
Risk1		0.061 (0.93)			
EPU×Risk1		0.071 ^{**} (2.36)			
Risk2			0.037 (1.05)		
EPU×Risk2			0.039 ^{**} (2.40)		
LevRisk				-0.044 (-0.99)	
EPU×LevRisk				0.076 ^{***} (2.92)	
Risk3					0.003 (0.05)
EPU×Risk3					0.120 ^{***} (4.01)
Size	-0.053 ^{***} (-11.75)	-0.052 ^{***} (-11.47)	-0.052 ^{***} (-11.44)	-0.050 ^{***} (-10.91)	-0.053 ^{***} (-11.76)
Roa	0.061 (1.19)	0.050 (0.98)	0.049 (0.97)	0.060 (1.17)	0.050 (0.97)
Complex	-0.087 ^{***} (-3.77)	-0.078 ^{***} (-3.37)	-0.078 ^{***} (-3.35)	-0.082 ^{***} (-3.52)	-0.076 ^{***} (-3.25)
Growth	-0.030 ^{***} (-7.22)	-0.029 ^{***} (-7.02)	-0.029 ^{***} (-7.01)	-0.031 ^{***} (-7.38)	-0.030 ^{***} (-7.10)
Lev	-0.025 (-1.29)	-0.034 [*] (-1.72)	-0.035 [*] (-1.76)	-0.034 [*] (-1.71)	-0.034 [*] (-1.69)
Quick	-0.005 ^{***} (-3.53)	-0.005 ^{***} (-3.42)	-0.005 ^{***} (-3.42)	-0.005 ^{***} (-3.62)	-0.005 ^{***} (-3.26)
Loss	-0.078 ^{***} (-9.42)	-0.083 ^{***} (-10.05)	-0.084 ^{***} (-10.10)	-0.079 ^{***} (-9.53)	-0.083 ^{***} (-10.04)
Big4	-0.429 ^{***} (-24.61)	-0.428 ^{***} (-24.56)	-0.428 ^{***} (-24.56)	-0.428 ^{***} (-24.57)	-0.428 ^{***} (-24.55)
Soe	0.080 ^{***} (6.00)	0.082 ^{***} (6.21)	0.082 ^{***} (6.22)	0.081 ^{***} (6.14)	0.085 ^{***} (6.39)
Share10	0.051 ^{**} (2.14)	0.054 ^{**} (2.25)	0.054 ^{**} (2.26)	0.050 ^{**} (2.12)	0.057 ^{**} (2.40)
Switch	0.031 ^{***} (5.87)	0.031 ^{***} (5.86)	0.031 ^{***} (5.85)	0.031 ^{***} (5.88)	0.030 ^{***} (5.83)
Auditopinion	-0.017 (-1.36)	-0.005 (-0.42)	-0.005 (-0.39)	-0.011 (-0.90)	-0.003 (-0.27)
Year&Ind	Yes	Yes	Yes	Yes	Yes
Constant	1.015 ^{***} (9.98)	0.979 ^{***} (9.56)	0.975 ^{***} (9.52)	0.950 ^{***} (9.16)	1.004 ^{***} (9.82)
Observations	19,297	19,297	19,297	19,297	19,297
R-squared	0.076	0.078	0.079	0.078	0.079
Number of stkcd	2,266	2,266	2,266	2,266	2,266

Note. *, **, *** in the table represent significant at 10%, 5% and 1% levels respectively. t-statistics in parentheses.

5. Robust Test

This paper uses a fixed-effects model for regression testing, which reduces the endogeneity problem to a certain extent. In order to further verify the validity of the conclusions of this paper and ensure the robustness of the research findings, the following robustness tests are conducted in this paper.

First, the measure of corporate risk-taking is changed. The corporate risk-taking measure in the above analysis is replaced with the standard deviation of the three-year observation period of corporate gearing adjusted for industry (LevRisk) and the standard deviation of ROA calculated over a rolling five-year period (Risk3), and the regression test results are shown in column (4) and column (5) of Table 3; the conclusions are consistent with the previous paper, and the test results continue to show that the cross product terms $EPU \times LevRisk$, $EPU \times Risk3$ are significantly and positively related to abnormal audit fees, and the higher the level of corporate risk-taking in an environment of high economic policy uncertainty, the higher the abnormal audit fees. Second, macro control variables are added. Since economic policy uncertainty is influenced by changes in macroeconomic development, with which business operations are closely related, further macro control variables are added for robustness testing. The annual GDP growth rate (GGDP) is used to measure the macroeconomic situation, and column (1) and column (2) of Table 4 show the test results, and the findings are consistent with the previous paper. Third, dummy variables are used to measure economic policy uncertainty. The dummy variable of economic policy uncertainty (EPU_D) is constructed by taking the value of EPU greater than the median of the sample as 1 and 0 otherwise, and the test results are shown in column (3) and column (4) of Table 4, and the conclusions are consistent with the previous paper. Fourth, economic policy uncertainty with one period lag (LEPU) is used to test the robustness of the results, and the test results are shown in column (5) and column (6) of Table 4, and the conclusions are still consistent with the previous paper.

Table 4. Robustness tests results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Abfee	Abfee	Abfee	Abfee	Abfee	Abfee
EPU	0.038*** (3.40)	0.034*** (3.03)				
Risk1		0.061 (0.93)		0.154*** (3.96)		0.099 (1.61)
EPU×Risk1		0.071** (2.36)				
EPU_D			0.084*** (7.51)	0.084*** (7.20)		
EPU_D×Risk				0.127** (2.02)		
LEPU					0.029*** (7.51)	0.028*** (6.74)
LEPU×Risk						0.058* (1.82)
Size	-0.053*** (-11.75)	-0.052*** (-11.47)	-0.053*** (-11.75)	-0.051*** (-11.41)	-0.053*** (-11.75)	-0.051*** (-11.42)
Roa	0.061 (1.19)	0.050 (0.98)	0.061 (1.19)	0.052 (1.01)	0.061 (1.19)	0.052 (1.02)
Complex	-0.087*** (-3.77)	-0.078*** (-3.37)	-0.087*** (-3.77)	-0.078*** (-3.34)	-0.087*** (-3.77)	-0.078*** (-3.36)
Growth	-0.030*** (-7.22)	-0.029*** (-7.02)	-0.030*** (-7.22)	-0.029*** (-7.00)	-0.030*** (-7.22)	-0.029*** (-7.00)
Lev	-0.025 (-1.29)	-0.034* (-1.72)	-0.025 (-1.29)	-0.035* (-1.78)	-0.025 (-1.29)	-0.035* (-1.79)
Quick	-0.005*** (-3.53)	-0.005*** (-3.42)	-0.005*** (-3.53)	-0.005*** (-3.43)	-0.005*** (-3.53)	-0.005*** (-3.46)
Loss	-0.078*** (-9.42)	-0.083*** (-10.05)	-0.078*** (-9.42)	-0.084*** (-10.06)	-0.078*** (-9.42)	-0.083*** (-10.04)
Big4	-0.429*** (-24.61)	-0.428*** (-24.56)	-0.429*** (-24.61)	-0.428*** (-24.55)	-0.429*** (-24.61)	-0.428*** (-24.58)

Soe	0.080*** (6.00)	0.082*** (6.21)	0.080*** (6.00)	0.082*** (6.19)	0.080*** (6.00)	0.082*** (6.20)
Share10	0.051** (2.14)	0.054** (2.25)	0.051** (2.14)	0.052** (2.21)	0.051** (2.14)	0.052** (2.20)
Switch	0.031*** (5.87)	0.031*** (5.86)	0.031*** (5.87)	0.031*** (5.86)	0.031*** (5.87)	0.031*** (5.87)
Auditopinion	-0.017 (-1.36)	-0.005 (-0.42)	-0.017 (-1.36)	-0.006 (-0.44)	-0.017 (-1.36)	-0.006 (-0.45)
GGDP	0.192 (0.88)	0.139 (0.63)				
Year&Ind	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.964*** (8.52)	0.942*** (8.28)	1.040*** (10.09)	0.993*** (9.59)	1.019*** (10.00)	0.976*** (9.52)
Observations	19,297	19,297	19,297	19,297	19,297	19,297
R-squared	0.076	0.078	0.076	0.078	0.076	0.078
Number of stkcd	2,266	2,266	2,266	2,266	2,266	2,266

Note. *, **, *** in the table represent significant at 10%, 5% and 1% levels respectively. t-statistics in parentheses.

6. Further Research

6.1 Rising of Abnormal Audit Fees: Distinguishing Between Audit Inputs and Risk Compensation

Economic policy uncertainty increases abnormal audit fees, but the increase in abnormal audit fees may be due to an increase in audit input or a risk premium charged to compensate for the increased audit risk. Audit latency reflects the time taken by the auditor to complete the audit and thus can reflect the level of auditor effort i.e. audit input (Bailey et al., 2018). To further investigate whether the increase in abnormal audit fees due to economic policy uncertainty stems from an increase in audit input or audit risk premium, this paper uses audit delay (Delay), which is the natural logarithm of the number of days between the fiscal year end date and the audit report issuance date in that year, to measure audit input, and if increased economic policy uncertainty leads to additional auditor input, then economic policy uncertainty and audit time lag is significantly and positively correlated, and then audit input is added to model (1). If economic policy uncertainty still raises abnormal audit fees after controlling for audit input, then it indicates that the rise in abnormal audit fees is also partly due to audit risk premiums. Columns (1) and (2) of Table 5 show the regression test results, when the explanatory variable is audit input, economic policy uncertainty is positively related to audit input and significant at the 1% level, indicating that economic policy uncertainty causes auditors to increase additional input; after controlling for audit input, economic policy uncertainty remains significantly and positively related to abnormal audit fees, which suggests that the increase in abnormal audit fees is result of the combined effect of auditors adding additional inputs and charging a risk premium.

6.2 Distinguish between Positive and Negative Abnormal Audit Fees

Abnormal audit fees include both positive abnormal audit fees and negative audit fees, which are positive when the actual audit fees are higher than expected and negative when the actual audit fees are lower than expected. The abnormal audit fees in different directions reflect the bargaining power between the auditor and the client, which is the balance of the auditor's bargaining power with the client (Asthana & Boone, 2012). This paper further explores the effect of economic policy uncertainty on abnormal audit fees in different directions to determine whether there is a differential impact of economic policy uncertainty on the two. Following the treatment of Asthana and Boone (2012), we define two independent variables HABfee and LABfee. If Abfee>0, then HABfee =Abfee, and 0 otherwise. If Abfee≤0, then LABfee=|Abfee|, and 0 otherwise. This allows to examine the relationship between independent variables and positive and negative abnormal audit fees separately. The empirical results in column (3) and column (4) of Table 5 show that economic policy uncertainty can significantly increase positive abnormal audit fees. For negative abnormal audit fees, the absolute value of negative abnormal audit fees decreases as economic policy uncertainty rises, i.e., abnormal audit fees increase. The reason for this may be that in an environment of high economic policy uncertainty, the higher risk of material misstatement faced by enterprises leads to higher audit risk, prompting auditors to abandon the "low price" and "learning effect" savings in audit costs, increase audit investment and charge a higher compensation for audit risk.

6.3 Differential Test of the Nature of Property Rights

State-owned enterprises (SOEs) account for about 40% of the capital market in China, and SOEs share a certain amount of social responsibility for the Chinese government and have close ties with the government. When SOEs face business crises, the state provides implicit guarantees for SOEs, and the government will guarantee social stability and stimulate employment by providing financial support, tax relief, bank loans, and other assistance. The soft budget constraint of SOEs will also reduce SOEs' operational and financial risks, thus influencing auditors' judgment on the inherent risks of enterprises. Compared with state-owned enterprises, the inherent risk of non-state-owned enterprises is high, and the auditor faces increased objective audit risk and the possibility of charging abnormal audit fees. This paper further analyzes the variability in the nature of property rights to examine the mechanism of the effect of different property rights nature on the relationship between economic policy uncertainty and abnormal audit fees. The results of the test are shown in column (5) and column (6) of Table 5, where economic policy uncertainty is significantly and positively related to abnormal audit fees in non-state-owned enterprises, but there is no significant effect on state-owned enterprises.

Table 5. Further studies

VARIABLES	(1)	(2)	(3)	(5)	(6)	(7)
	Del	Abfee	HAbfee	LAbfee	Abfee	Abfee
EPU	0.018*** (4.45)	0.029*** (7.28)	0.013*** (4.82)	-0.017*** (-7.19)	0.006 (1.11)	0.045*** (7.03)
Del		0.030*** (3.94)				
Size	0.072*** (16.02)	-0.054*** (-11.95)	-0.014*** (-4.78)	0.039*** (14.23)	-0.041*** (-5.70)	-0.066*** (-10.54)
Roa	-0.433*** (-8.42)	0.078 (1.51)	0.085** (2.56)	0.025 (0.80)	-0.089 (-1.14)	0.063 (0.95)
Complex	0.051** (2.19)	-0.088*** (-3.79)	-0.056*** (-3.68)	0.032** (2.26)	0.014 (0.39)	-0.073** (-2.35)
Growth	-0.022*** (-5.16)	-0.030*** (-7.14)	-0.003 (-1.28)	0.027*** (10.52)	-0.046*** (-7.14)	-0.022*** (-4.27)
Lev	-0.084*** (-4.26)	-0.023 (-1.18)	-0.009 (-0.72)	0.016 (1.36)	-0.128*** (-4.27)	-0.014 (-0.53)
Quick	-0.002 (-1.10)	-0.005*** (-3.49)	-0.002** (-2.51)	0.003*** (3.12)	-0.001 (-0.20)	-0.003** (-2.10)
Loss	0.039*** (4.67)	-0.078*** (-9.43)	-0.035*** (-6.49)	0.043*** (8.55)	-0.091*** (-8.19)	-0.072*** (-6.15)
Big4	0.008 (0.48)	-0.426*** (-24.27)	-0.193*** (-16.95)	0.237*** (22.35)	-0.499*** (-22.95)	-0.347*** (-12.09)
Soe	0.012 (0.90)	0.080*** (6.02)	0.044*** (5.13)	-0.035*** (-4.38)		
Share10	-0.088*** (-3.69)	0.054** (2.26)	-0.002 (-0.14)	-0.053*** (-3.68)	0.083** (2.10)	0.054* (1.75)
Switch	0.007 (1.33)	0.030*** (5.68)	0.015*** (4.30)	-0.016*** (-5.06)	0.014** (2.02)	0.040*** (5.31)
Auditopinion	-0.101*** (-8.09)	-0.015 (-1.18)	-0.026*** (-3.27)	-0.009 (-1.26)	0.006 (0.31)	-0.031* (-1.83)
Year&Ind	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.133*** (30.68)	0.905*** (8.63)	0.388*** (5.86)	-0.627*** (-10.16)	0.917*** (5.84)	1.293*** (8.20)
Observations	19,195	19,195	19,297	19,297	9,086	10,211
R-squared	0.077	0.076	0.040	0.074	0.131	0.081
Number of stkcd	2,266	2,266	2,266	2,266	997	1,427

Note. *, **, *** in the table represent significant at 10%, 5% and 1% levels respectively. t-statistics in parentheses.

7. Conclusions

This paper explores the logical relationship between economic policy uncertainty and abnormal audit fees both

theoretically and empirically, and tests the moderating role of corporate risk-taking. The findings show that higher economic policy uncertainty increases abnormal audit fees, that this positive relationship is exacerbated by the level of corporate risk-taking, and that the increase in abnormal audit fees is the result of the auditor's combined effect by increasing inputs and charging a risk premium. To differentiate the direction of abnormal audit fees, this paper finds that a higher level of economic policy uncertainty is significant both for positive and negative abnormal audit fees. Further considering the heterogeneity in the nature of property rights, economic policy uncertainty is significantly and positively related to abnormal audit fees in non-state-owned enterprises, while such effect is not significant in state-owned enterprises.

This paper further enriches the study of economic policy uncertainty and the economic consequences of corporate risk-taking by examining the impact of economic policy uncertainty on auditing from the perspective of corporate risk-taking, and the findings of this paper are revealing. For enterprises, opportunities and challenges coexist in an environment of economic policy uncertainty, and they should reasonably judge the future policy situation and global economic trends, find and utilize the "good" uncertainties, pay attention to and prevent the "bad" uncertainties, and adjust their business strategies in a timely manner. Promote the upgrading of industrial structure, ensure the stability of corporate income, and reduce the level of corporate risk. For auditors, research shows that economic policy uncertainty has obvious negative effects, and in an environment of high economic policy uncertainty, it is necessary to pay more attention to the risk-taking level of enterprises, improve audit bargaining power, comprehensively assess the audit risk of enterprises, timely increase audit input and adopt certain risk response strategies to reduce audit risk and prevent audit failure. In addition, it also has a certain reference role for the government to formulate audit supervision policies.

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