

The impact of economic uncertainty on the firm financialization: Evidence of the Chinese enterprises

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Keywords: Economic policy uncertainty; investment; profitability

Abstract: In recent years, it is apparent that the trend of finance and financial development has been increasing in China. However, due to the fluctuation of the economy, it is crucial to guarantee the sustainability of enterprises. Domestic and foreign studies have shown that the increase of economic policy uncertainty (EPU) significantly inhibits enterprises' investment in the real economy. Then, this conclusion arouses the debate of whether the financialization of enterprises results from the increase of economic policy uncertainty. Based on a panel vector autoregressive model, this paper researches the connections among economic policy uncertainty, enterprise investment and enterprise profitability. It gives the new conclusion that (EPU) has a detrimental impact on both enterprise investment and enterprise profitability, while investment and profitability influence EPU simultaneously. The result shows that economic policy certainty greatly promotes investment behavior of the enterprise and conduce to enterprise profitability. Thus, confining the research perspective to the relation among those three factors is of great value. Therefore, the government should limit the instability of economic policy to consolidate enterprises' profitability and investment behavior.

1. Introduction

The operating environment can be regarded as one of the most significant elements for the survival of an enterprise since it influences the investment behavior and profitability of firms [1]. Exogenous and endogenous factors are two factors of the uncertainty of the operating environment, which means that the unpredictability of the economic environment, suppliers, consumers, the degree of productions, and the convert of the technology have impacts on enterprises unavoidably [1]. Currently, coronavirus disease 2019 (COVID-19) has contributed to the main uncertainty in the global economy, leading the International Monetary Fund (IMF) to decrease the economic growth forecasts of all countries. The majority of enterprises are passively under pressure during the outbreak. The adjustment of national macroeconomic policy and enterprises' behaviors will greatly affect enterprise development. Although there are many papers related to the economic policy uncertainty, they tend to explore the typical industry, such as real estate. Unlike those explorations, the author confines the research perspective to the connection between economic policy uncertainty, enterprise investment, and profitability. The research in this paper illustrates the relationship among three factors and gives reference to the enterprises and the government.

However, with the frequent occurrence of natural disasters, epidemics and China's domestic sustainable development strategies, the problem of policy uncertainty will become conspicuous in the future. Therefore, an increasing number of researchers focus on the impact of economic policy uncertainty on the economy, and it has gradually become a hot topic. This is because EPU can generate high risks and create numerous investment opportunities, and enterprises have to balance the waiting value and opportunity cost [2]. Researchers found that EPU increases the waiting value and inhibits the current investment of enterprise [3]. In this study, EPU is regarded as an exogenous variable since it is a macro indicator. Nevertheless, as a significant part of the market, investment behavior directly

influences economic growth policies. In other words, economic policy uncertainty not only may affect but also may be affected by enterprise investment.

In addition, according to the theory of resource dependence, enterprises have to search for resources from the environment to develop. Thus, under no circumstance can we neglect the interaction between enterprise operating uncertainty and environment uncertainty. However, as one of the important aspects of the environment, EPU will affect enterprise profitability inevitably. In previous studies, most researchers just analyzed the relationship among these three variables roughly, but few studies have considered profitability in examining the relationship between EPU and investment. Therefore, this paper will concentrate on relationships among three variables roundly.

The research contribution of this paper can be listed as follows. Firstly, theoretically, enrich the research results of the EPU through exploring the relationship between EPU, enterprise investment and profitability. Current researches tend to define the EPU as an exogenous variable rather than consider the impacts of enterprise investment on EPU. Therefore, this paper plays a significant role in guiding the government on enterprise investment and profitability. This approach can improve the investment and profitability of enterprises and decline the entail for changing economic policies and maintaining the stability of policies.

The structure of the paper can be listed as follows. Section 2: Introduces the model, variable definitions, and data sources. Section 3: Analyzes the empirical test results, and Section 4: Give conclusions and effective advice.

1.1 Literature Review and Hypothesis Development

Our research orientations can be divided into two separate parts: uncertainty and investment.

Real options theory is regarded as one of the most recognized explanations for enterprise investment [4]. As Myers put forward the concept of real options in 1997, enterprises must consider investment costs and options. Furthermore, according to Dixit et al. [5], values of waiting for more information tends to be more useful under high uncertainty, which promotes managers to defer investment with high sunk costs. As a result, enterprises can avoid mistakes and wait for more information about uncertain futures through postponing and maintaining this choice [6]. Due to the irreversible framework of the real options, a number of theories and researches explore the influence of uncertainty on investment decisions. Various uncertainties, especially the EPU, has an apparently negative impact on the investment [7]. Innovation entails a huge investment in intangible assets, owing to its unique nature [8]. As Wang et al. witnessed in 2017 that EPU has a detrimental impact on R&D investment in China. In addition, Xu analyzes the influence of economic policy uncertainty on corporate innovation, which shows that The EPU increases the cost capital of enterprises and declines R&D investment in turn.

Based on the above analysis, the author reckons that enterprises with high EPU exposure, which suggests that they will suffer more from the adverse effects of macro-level EPU. Therefore, the author proposes the following hypothesis:

EPU is positively correlated with enterprise investment and enterprise profitability.

According to the current research, few of them explore the relationship between enterprise investment and profitability. The majority of them analyze the impact of profitability and investment on the nation from the macro perspective. Through comparing the profitability of China, Japan and the United States, Sun found that China's investment rate is much higher than that of any other country due to the high profitability [9]. In addition, Zhang found that profitability plays a significant role in enterprise investment [10]. Furthermore, the relationship between EPC and enterprise profitability needs exploring as well because there is no apparent and specific evidence to define this relationship. As Demir claimed, macroeconomic uncertainty and macroeconomic volatility have a negative impact on enterprise profitability [11].

In summary, there is a complex relationship between EPU, enterprise investment and enterprise profitability.

2. Research Design

2.1 Sample and Data

The author uses the economic policy uncertainty index constructed by Baker et al. [12] to directly measure this factor. Chinese economic policy uncertainty index in 2002–2020 is shown in Figure 1. Calculated from data from the Economic Research, the index reports the uncertainty of China's economic policy as a percentage of the total number of articles in the current month. Researchers have widely used this method of measuring economic policy uncertainty based on a news index due to its high degree of fit with the trend of uncertain events over time. For consistency with the quarterly data structure of enterprises, the original monthly data of the EPU index are aggregated to obtain a quarterly EPU index. To match the meaning of the other two indicators, first-order difference processing is carried out to obtain the EPU index used in this paper.

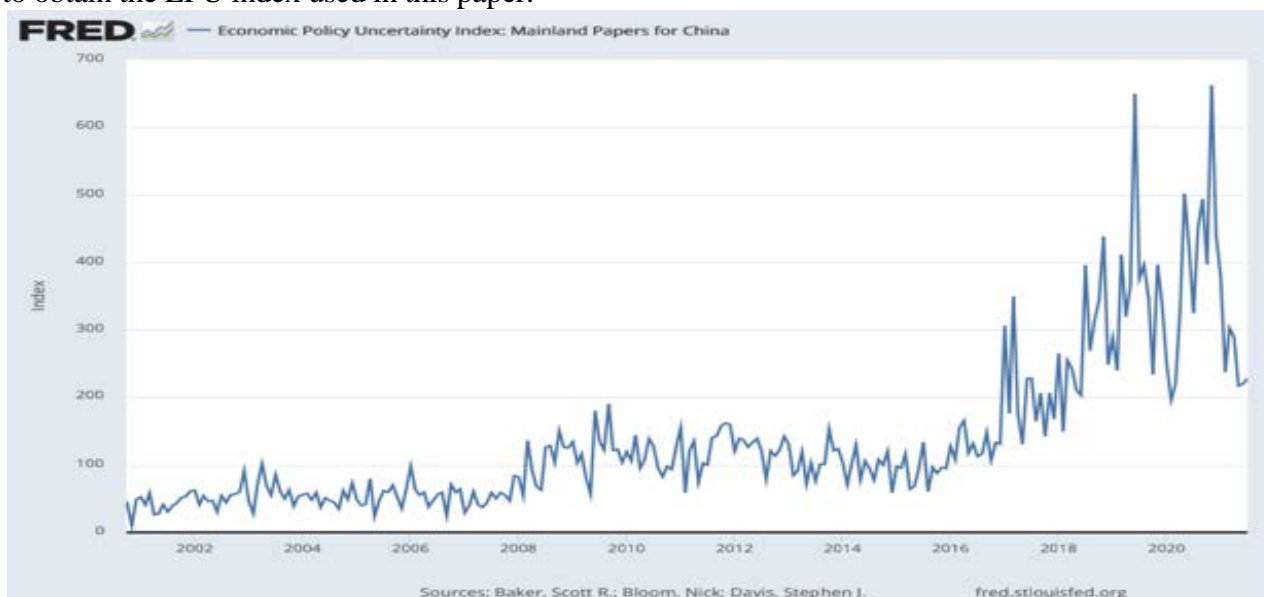


Figure 1. Chinese Economic Policy Uncertainty Index.

Following Guo et al. [13], the author uses the sample companies in Shanghai and Shenzhen, China. The sample period is from the first quarter of 2003 to the third quarter of 2018. And the following rules are applied for the selection: (1) to avoid the influence of the particularity of the capital structure of financial companies, financial companies are excluded (2) Companies in the ST (Special treatment), and ST categories are excluded. This is because due to the abnormal financial conditions of those companies, merger and reorganization issues are common, and their investment behavior is more susceptible to other external factors. (3) Companies missing major financial data are excluded. After the selection mentioned above and balance panel data processing, the sample finally includes 389 companies and 24,507 company-quarter observations, distributed in three major regions and 31 provinces across the country.

2.2 Variable Construction

There are three variables: EPU, INV and ROA. EPU means economic policy uncertainty index; INV means enterprise investment level; ROA means asset return. And their calculation methods can be listed as follows: First-order difference arithmetic mean of the three months in the current quarter; Cash paid for acquisition and construction of fixed assets, intangible assets, and other long-term assets–Net cash recovered from the disposal of fixed assets, intangible assets, and other long-term assets or Total assets; Earnings before interest and taxes or Average total assets at the beginning and end of the period \times 100%.

2.3 Model specification

Before estimating the PVAR model, to ensure the validity of the regression results and avoid spurious regression problems caused by the nonstability of the data, we needed to test the stability of

the data. An ADF test was carried out for the time-series EPU data, and the results are shown in Table 1. As observed, all variables reject the original hypothesis at a significance level of 1%. Thus, it can be judged that the original sequence of each variable is a stable variable, which meets the basic entails for establishing a PVAR model. (Table 1)

Table 1. Stationarity test of variables

Variables	LLC Test	IPS Test	HT Test	ADF-Fisher Test	ADF Test	Stationarity
whole sample						
INV	-41.626 *** (0.000)	-55.663 *** (0.000)	0.382 *** (0.000)	1198.121 *** (0.000)		stationary
ROA	-85.770 *** (0.000)	-79.926 *** (0.000)	0.279 *** (0.000)	1312.794 *** (0.000)		stationary
EPU					-8.060*** (0.000)	stationary

Notes: The original hypothesis of the test methods is the existence of a unit root; *** indicate significance at the 1% levels.

The Granger causality test (Table 2) is further used to analyze the causality among EPU, enterprise investment, and enterprise profitability. The Granger causality test result is closely related to the selection of the lag order.

Table 2. Granger causality test results of the whole sample.

Equation	Excluded	Whole Sample Chi ²	df	Prob > Chi ²
EPU	INV	803.511	6	0.000
	ROA	368.096	6	0.000
	ALL	1401.466	12	0.000
INV	EPU	262.763	6	0.000
	ROA	110.332	6	0.000
	ALL	415.583	12	0.000
ROA	EPU	282.085	6	0.000
	INV	132.715	6	0.000
	ALL	520.959	12	0.000

3. Empirical Results

Through relationships between the variables (Table 3), it is apparent for us to see that the investment activity of a company lags 1–6 periods and has a negative impact on the current EPU at a significant level. Enterprise profitability lags 1–6 periods and has a negative impact on the current EPU at a significant level, indicating that the enterprise’s previous profitability restrains the current EPU. EPU lags 1–6 periods, except that the lag-3 period positively impacts current enterprise investment activities. The EPU with other lags shows a negative correlation under the condition of the significance level, which indicates that previous EPU constrains current enterprise investment activities. In terms of the coefficient and significance level combination, the impact of previous profitability on the investment increase in the current period is relatively small; in lag period 4, this impact plays a promoting role, and in the other lag periods, it shows a slight inhibitory effect.

In conclusion, EPU, enterprise investment and enterprise profitability interact with each other to a great degree. The stronger the economic policy uncertainty is, the weaker the enterprise investment and profitability are. Simultaneously, the lower the enterprise investment and profitability level, the greater changeable the economic policy uncertainty is.

Table 3. PVAR model estimation results of the whole sample.

	EPU _t	INV _t	ROA _t
EPU _{t-1}	-0.141 *** (0.010)	-0.000 *** (0.000)	-0.002 *** (0.000)
EPU _{t-2}	0.066 *** (0.009)	-0.000 *** (0.000)	-0.003 *** (0.000)
EPU _{t-3}	-0.140 (0.009)	0.000 *** (0.000)	0.002 *** (0.000)
EPU _{t-4}	-0.242 *** (0.010)	0.000 (0.000)	-0.000 (0.000)
EPU _{t-5}	-0.485 *** (0.010)	-0.000 *** (0.000)	0.001 (0.000)
EPU _{t-6}	-0.168 *** (0.015)	-0.000 *** (0.000)	-0.005 *** (0.001)
INV _{t-1}	-73.947 ** (18.966)	0.477 *** (0.019)	-3.380 *** (1.210)
INV _{t-2}	-252.256 *** (18.337)	0.043 *** (0.016)	-2.472 ** (1.166)
INV _{t-3}	-122.419 *** (18.473)	-0.013 (0.013)	1.786 (1.285)
INV _{t-4}	-14.703 (16.933)	0.410 *** (0.013)	7.489 *** (1.211)
INV _{t-5}	9.948 (14.275)	-0.175 *** (0.012)	-3.838 *** (1.134)
INV _{t-6}	-245.072 *** (14.114)	-0.037 ** (0.011)	-3.051 *** (0.941)
ROA _{t-1}	-0.619 *** (0.147)	-0.000 (0.000)	0.283 *** (0.013)
ROA _{t-2}	-2.071 *** (0.151)	-0.000 (0.000)	0.065 *** (0.010)
ROA _{t-3}	-0.650 *** (0.161)	0.000 (0.000)	0.105 *** (0.011)
ROA _{t-4}	0.238 (0.152)	0.000 *** (0.000)	0.164 *** (0.013)
ROA _{t-5}	-0.229 * (0.137)	-0.000 * (0.000)	0.036 *** (0.010)
ROA _{t-6}	-1.519 *** (0.146)	-0.000 *** (0.000)	-0.073 *** (0.009)

Notes: The original hypothesis of the test methods is the existence of a unit root; ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

4. Conclusion

Based on sample data of 389 companies in 63 quarters from the first quarter of 2003 to the third quarter of 2018, this paper uses a PVAR model to estimate and analyze the static and dynamic interactions among economic policy uncertainty, enterprise investment, and enterprise profitability. The main conclusions are as follows:

1. There is a close relationship between EPU, enterprise investment and enterprise profitability. All of them interact with each other. Specifically, the stronger the economic policy uncertainty is, the weaker the enterprise investment and profitability are. Simultaneously, the lower the enterprise investment and profitability level, the greater changeable the economic policy uncertainty is.

2. During the period of economic policy uncertainty, enterprise profitability can promote the increase of enterprise investment in the short term.

The research of this paper can provide reference to the related enterprise and the government. Through the research, the author suggests that it is crucial for the government to maintain the certainty of economic policy, which greatly affects the development of enterprises.

References

- [1] Lopez, J. M. R., Sakhel, A., & Busch, T. (2017). Corporate investments and environmental regulation: The role of regulatory uncertainty, regulation-induced uncertainty, and investment history. *European Management Journal*, 35(1), 91–101. <https://doi.org/10.1016/j.emj.2016.06.004>
- [2] Bernanke, B.S. Irreversibility, Uncertainty, and Cyclical Investment. NBER Work. Pap. **1983**, 98, 85–106.
- [3] Li, F.Y.; Yang, M.Z. Can Economic Policy Uncertainty Influence Corporate Investment? The Empirical Research by Using China Economic Policy Uncertainty Index. *J. Finan. Res.* 2015, 4, 115–129.
- [4] Gulen, H., & Ion, M. (2016). Policy uncertainty and corporate investment. *Review of Financial Studies*, 29(3), 523-564.

- [5] Dixit, A. K., Dixit, R. K., & Pindyck, R. S. (1994). *Investment under uncertainty*. Princeton University Press.
- [6] Atanassov, J., Julio, B., & Leng, T. (2015). The bright side of political uncertainty: The case of R&D. Available at SSRN 2693605.
- [7] Wang, Y., Wei, Y., & Song, F. M. (2017). Uncertainty and corporate R&D investment: Evidence from Chinese listed firms. *International Review of Economics and Finance*, 47, 176-200.
- [8] Hsu, P. H., Tian, X., & Xu, Y. (2014). Financial development and innovation: Cross-country evidence. *Journal of Financial Economics*, 112(1), 116-135.
- [9] Sun, W.K.; Xiao, G.; Yang, X.K. Impact of Return on Capital on Investment Rate: A Comparative Study of China, the United States and Japan. *J. World Econ.* 2010, 33, 3–24.
- [10] Zhang, Q.C.; Yang, D.C. Government Motivation or Capital Return Inducing—Empirical Analysis on Determinants of Regional Investment Behavior. *J. Shanxi Univ. Finan. Econ.* 2018, 40, 1–14.
- [11] Demir, F. Financialization and Manufacturing Firm Profitability under Uncertainty and Macroeconomic Volatility: Evidence from an Emerging Market. *Rev. Dev. Econ.* 2010, 13, 592–609. [CrossRef]
- [12] Baker, S.; Nicholas, B.; Steven, J.D. Measuring Economic Policy Uncertainty. *Quart. J. Econ.* 2016, 131, 1593–1636. [CrossRef]
- [13] Cui X, Wang C, Liao J, et al. Economic policy uncertainty exposure and corporate innovation investment: Evidence from China [J]. *Pacific-Basin Finance Journal*, 2021, 67: 101533.
- [14] Xu, Z. (2020). Economic policy uncertainty, cost of capital, and corporate innovation. *Journal of Banking & Finance*, 111, 105698.