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Research on the Predictive Ability of Economic Policy Uncertainty on Stock Returns of Industries

Yuxuan Liu *

School of Nanjing University of Science and Technology, Nanjing, China

* Corresponding Author Email: lyx18795969877@163.com

Abstract. In recent years, the emergence of economic policy uncertainty has had a certain impact on stock returns. It can be used as a research object to explore whether economic policy uncertainty can significantly predict future stock returns. This paper studies the predictive ability of economic policy uncertainty based on relevant data from major industries in the United States from January 1985 to December 2023, including Food industry (Food), Retail Stores industry (Rtail), Fabricated Products industry (FabPr), Drugs, Soap, Perfumes, Tobacco industry (Cnsum), Construction and Construction Materials industry (Cnstr), Consumer Durables industry (Durbl), Automobiles industry (Cars), Textiles, Apparel & Footwear industry (Clths), Machinery and Business Equipment industry (Machn), Chemicals industry (Chems), and Transportation industry(Trans), Utilities industry (Utils), Steel Works Etc industry (Steel), Mining and Minerals industry(Mines), Oil and Petroleum Products industry (Oil), and Banks, Insurance Companies, and Other Financials industry (Finan). Through both in-sample and out-of-sample examines, it is found that economic policy uncertainty is a reliable indicator for predicting stock returns, and its predictive performance is better in Food industry, Retail Stores industry, Fabricated Products industry, Transportation industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Drugs, Soap, Perfumes, Tobacco industry than in Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry. Meanwhile, by replacing the measurement indicator of economic policy uncertainty, conducting long-horizon forecasting, and using different evaluation periods for robustness checks, it is found that the research conclusions are robust.

Keywords: Economic Policy Uncertainty; Stock Returns of Industries; Predictability.

1. Introduction

The predictability of stock returns is an important topic in financial research fields such as asset pricing and risk management, which can provide effective reference for the decision-making of investors and policy makers. Scholars in the academic community have proposed some classic commonly used predictive indicators early on, such as dividend price ratio, dividend yield, default yield spread, book-to-market ratio, long term yield and inflation rate, etc. In addition, scholars have been exploring other predictive variables to better predict future stock returns, and economic policy uncertainty (EPU) is one of the variables that has attracted much attention.

After the outbreak of the financial crisis in 2008, in order to stabilize the economy, governments of various countries have increased the intensity and frequency of policy regulation and actively introduced various policy measures. However, these actions have not only promoted economic development, but also created new problems. The government makes frequent changes and adjustments to economic policies in fiscal, monetary, regulatory and trade aspects, making it difficult for economic entities such as enterprises and individuals to clarify the direction and intensity of policy expectations, implementation and position changes, bringing significant uncertainties to the market, that is, the economic policy uncertainty. The stock market is an important component of the economic system, and its performance is closely related to changes in economic policies, so, when economic policy uncertainty becomes prominent, future stock returns may be significantly affected. As a result,

more and more investors and decision-makers are paying attention to whether economic policy uncertainty is also a reliable predictor of stock returns, which is a question worth exploring.

In recent years, some studies have conducted empirical analysis to test the ability of economic policy uncertainty to predict stock returns. For example, Chen et al. [1] explored the predictive ability of the EPU indices for US stock market returns. The empirical results show that EPU has a significant predictive effect on stock market returns, and some categorical EPU indices is better than the Three Component EPU Index and popular predictors in predicting stock returns. Furthermore, the diffusion indices based on EPU categories, especially those using partial least squares (PLS) to extract the principal components, make more effective use of the forecast information in categorical EPU indices, thereby improving prediction performance. Li et al. [2] studied the predictive effect of U.S. trade policy uncertainty (TPU) on stock returns. In theoretical analysis, they believe that the trade policy uncertainty can have a negative impact on stock market and economic system through exporter/importer and investor sentiment channels, while empirical research results confirm that the trade policy uncertainty can significantly predict U.S. stock market excess returns. From the existing literature, it can be known that most of the research findings indicate that EPU is an excellent predictor for stock returns.

However, currently most literature mainly tests the predictive ability of EPU on the overall returns of the stock market, and there is relatively little research on different industries. This paper focus on 16 major industries in the United States, including Food industry, Retail Stores industry, Fabricated Products industry, Drugs, Soap, Perfumes, Tobacco industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Transportation industry, Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry. And based on the U.S. economic policy uncertainty and industry excess returns data from January 1985 to December 2023, both in-sample and out-of-sample examines are conducted in this paper, to analyze the predictive ability of economic policy uncertainty on stock market returns across various industries of the United States. In addition, this paper also conducts robustness tests, by replacing the measurement indicator of economic policy uncertainty, conducting long-horizon forecasting, and using different evaluation periods to test the robustness of the research conclusions.

The contribution of this paper lies in the analysis of different industries separately. Most existing literature studies the predictive ability of EPU for overall stock market returns, but lacks exploration of specific industries. Therefore, this paper studies the predictive ability of economic policy uncertainty on stock returns of different industries in the United States, which to some extent enriches existing literature. Moreover, it can provide more reference and guidance for policy makers and investors in their decision-making.

The remainder of the paper is organized as follows. Section 2 describes our data. Section 3 reports empirical results, mainly including the results of in-sample and out-of-sample analyses. Section 4 conducts robustness checks. Section 5 provides potential explanations. Finally, Section 6 concludes.

2. Data

2.1. Sample Selection and Data Sources

This paper selects 16 major industries (excluding the other industry category) in the United States from the homepage of the Kenneth R. French Data Library as the research objects, including Food industry(Food), Retail Stores industry (Rtail), Fabricated Products industry (FabPr), Drugs, Soap, Perfumes, Tobacco industry (Cnsum), Construction and Construction Materials industry (Cnstr), Consumer Durables industry (Durbl), Automobiles industry (Cars), Textiles, Apparel & Footwear industry (Clths), Machinery and Business Equipment industry (Machn), Chemicals industry (Chems), and Transportation industry (Trans), Utilities industry (Utils), Steel Works Etc industry (Steel),

Mining and Minerals industry (Mines), Oil and Petroleum Products industry (Oil), and Banks, Insurance Companies, and Other Financials industry (Finan). The data of stock returns of various industries in the United States, the U.S. economic policy uncertainty index, and the three-month U.S. Treasury bill rate which is taken as the risk-free rate used in the empirical analysis is sourced from the Kenneth R. French Data Library [1], the Economic Policy Uncertainty website [2], and the FRED website [3], respectively. The sample period is from January 1985 to December 2023.

2.2. Variable Introduction and Data Description

2.2.1. Industry excess returns.

This paper selects the stock returns of 16 major U.S. industries (excluding the other industry category) to study, and combines the three-month U.S. Treasury bill rate as the risk-free rate to calculate the excess stock returns of each industry. The formula can be expressed as

$$r_t = ln(1 + R_t) - ln(1 + r_{f,t}). \quad (1)$$

Where r_t is the excess return of industry in month t, R_t is the average value weighted return of industry in month t, and $r_{f,t}$ is the risk-free rate in month t.

2.2.2. Economic policy uncertainty index.

This paper uses the U.S. economic policy uncertainty index constructed by Baker, Bloom, and Davis [3], which is included on the Economic Policy Uncertainty Website, as a measure of the economic policy uncertainty. The U.S. economic policy uncertainty index can be divided into the Three Component EPU Index and the News Based EPU Index. The former is construct by three types of underlying components, namely News Index, Economic Forecaster Disagreement Index, and Tax Code Expiration Index, and the News Based EPU Index only includes the News Index. This paper records the Three Component EPU Index as EPU1, which is used in the benchmark model, and the News Based EPU Index is recorded as EPU2, which is used as a replacement measure indicator in robustness tests. In empirical analysis, the data obtained by dividing the original value of the EPU index by 100 is used.

2.2.3. Descriptive statistics.

Table 1 reports the descriptive statistics of each data. It is found that the volatility of excess returns in each industry is not significant. The mean values of both EPU indices are relatively high, indicating that economic policy uncertainty is generally high, Moreover, the minimum and maximum values of each EPU indicator differ significantly, with high variance, indicating significant fluctuations in economic policy uncertainty.

Table 1. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Excess returns (Food)	-0.021	0.047	-0.260	0.102
Excess returns (Mines)	-0.024	0.084	-0.446	0.199
Excess returns (Oil)	-0.022	0.068	-0.428	0.283
Excess returns (Clths)	-0.022	0.069	-0.437	0.213
Excess returns (Durbl)	-0.025	0.065	-0.351	0.258
Excess returns (Chems)	-0.022	0.065	-0.387	0.181
Excess returns (Cnsum)	-0.020	0.048	-0.271	0.106
Excess returns (Cnstr)	-0.020	0.066	-0.405	0.164
Excess returns (Steel)	-0.025	0.090	-0.425	0.229
Excess returns (FabPr)	-0.022	0.062	-0.396	0.172
Excess returns (Machn)	-0.021	0.075	-0.390	0.165
Excess returns (Cars)	-0.022	0.081	-0.376	0.331
Excess returns (Trans)	-0.022	0.061	-0.403	0.181
Excess returns (Utils)	-0.023	0.046	-0.164	0.098
Excess returns (Rtail)	-0.021	0.057	-0.387	0.166
Excess returns (Finan)	-0.022	0.061	-0.299	0.156
the Three Component EPU Index	1.154	0.395	0.572	3.505
the News Based EPU Index	1.235	0.572	0.448	5.040
the three-month U.S. Treasury bill rate	0.031	0.025	0.000	0.088

3. Empirical Results

3.1. Predictive Regression

This paper uses the simple univariate predictive regression, which can be given by

$$r_{t+1} = \alpha_t + \beta_t EPU_t + \varepsilon_{t+1}. \quad (2)$$

Where r_{t+1} is the excess return in month t+1, and EPU_t denotes the EPU predictor whose predictive ability is of interest in month t. ε_{t+1} is the disturbance term. This paper uses a heteroscedasticity consistent t-statistic based on Newey–West standard errors to test $H_0: \beta = 0$ against $H_A: \beta \neq 0$.

3.2. In-Sample Analysis

Firstly, in-sample examines are carried out to study whether the economic policy uncertainty have predictive ability for stock returns of different industries. The method is to estimate the parameters of the predictive regressions by ordinary least squares estimate (OLSE), and then observe whether the β coefficients for EPU are significant and whether the R^2 values of predictive regressions are appropriate. The sample period of in-sample examines is from January 1985 to December 2008 in this paper. The results of β coefficients, t-statistics, and R^2 values (in percentage) of the predictive regressions for 16 industries in the United States are shown in the table 2.

Table 2. In-sample results

Industry	β	t-stat	R^2(%)
Food	0.029***	5.527	6.097
Mines	0.036***	3.291	2.925
Oil	0.031***	2.813	3.383
Clths	0.046***	5.452	6.929
Durbl	0.048***	5.489	8.278
Chems	0.040***	4.582	6.093
Cnsum	0.029***	5.521	5.871
Cnstr	0.047***	5.795	7.986
Steel	0.035***	3.081	2.385
FabPr	0.043***	5.565	7.397
Machn	0.041***	4.915	4.721
Cars	0.059***	4.539	8.165
Trans	0.036***	4.785	5.549
Utils	0.024***	4.440	4.216
Rtail	0.038***	5.827	7.093
Finan	0.031***	3.870	4.015

Notes: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The sample period of in-sample analysis is from January 1985 to December 2008.

According to the in-sample results, it is found that the β coefficients of the corresponding predictive regressions for 16 industries are all positive and significant at the 1% level, indicating that the economic policy uncertainty index has a significant predictive effect on excess returns in various industries. Moreover, results show that the R^2 values are all relatively large, which suggests that the EPU index can explain a high proportion of future excess stock returns. Furthermore, the R^2 statistics of 11 industries including Food industry, Retail Stores industry, Fabricated Products industry, Transportation industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Drugs, Soap, Perfumes, Tobacco industry are all greater than or close to 5%, which are higher than the R^2 statistics of 5 industries including Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry, indicating that the predictive ability of EPU in the 11 industries mentioned earlier is more prominent.

3.3. Out-of-Sample Analysis

According to Welch and Goyal's method [4], this paper uses an expanding estimation window to conduct out-of-sample analysis, and the out-of-sample evaluation period ranges from January 2009 to December 2023.

The out-of-sample prediction process is as follows. For the convenience of representation, the number of observations included in the in-sample and out-of-sample empirical analysis are denoted as p and q, respectively, and the number of observations in the entire sample period is denoted as T.

The first out-of-sample forecast of stock return is obtained by

$$\hat{r}_{p+1} = \hat{\alpha}_p + \hat{\beta}_p EPU_p. \quad (3)$$

Where $\hat{\alpha}_p$ and $\hat{\beta}_p$ are the OLS estimated coefficients from univariate regressing $\{r_t\}_{t=2}^{p}$ on a constant and $\{EPU_t\}_{t=1}^{p-1}$. EPU_p is the EPU index in month p. $\hat{r}_{p+1}$ is the initial stock return forecast based on the $\hat{\alpha}_p$, $\hat{\beta}_p$ and EPU_p.

Similarly, the second out-of-sample forecast of stock return is computed as

$$\hat{r}_{p+2} = \hat{\alpha}_{p+1} + \hat{\beta}_{p+1} EPU_{p+1}. \tag{4}$$

Where $\hat{\alpha}_{p+1}$ and $\hat{\beta}_{p+1}$ are the OLS estimated coefficients from univariate regressing $\{r_t\}_{t=2}^{p+1}$ on a constant and $\{EPU_t\}_{t=1}^{p}$. EPU_{p+1} is the EPU index in month p+1. $\hat{r}_{p+2}$ is the stock return forecast based on the $\hat{\alpha}_{p+1}$, $\hat{\beta}_{p+1}$, and EPU_{p+1}.

Repeat the above prediction process q times, and q out-of-sample forecasts of stock returns $\hat{r}_{p+j}$ (j=1, 2, ..., q) are generated.

After that, this paper uses the out-of-sample R^2 (R^2_{OOS}) statistic established by Campbell and Thompson [5] to examine the out-of-sample predictive ability of the above predictive regression model in comparison to the historical average benchmark model.

The historical average benchmark model is as follows:

$$\bar{r}_{t+1} = \frac{1}{t}\sum_{j=1}^{t} r_j. \tag{5}$$

The R^2_{OOS} is computed as

$$R^2_{OOS} = 1 - \frac{\sum_{j=1}^{q}(r_{p+j} - \hat{r}_{p+j})^2}{\sum_{j=1}^{q}(r_{p+j} - \bar{r}_{p+j})^2}. \tag{6}$$

Where r_{p+j} is the actual stock return. $\hat{r}_{p+j}$ is the out-of-sample forecast of stock return. $\bar{r}_{p+j}$ is the stock return forecast of the historical average benchmark model. p and q are the number of observations included in the in-sample and out-of-sample analysis, respectively. T is the number of observations in the entire sample period.

If R^2_{OOS} is greater than 0, then the $\hat{r}_{p+j}$ is closer to the actual stock return than $\bar{r}_{p+j}$, which means the univariate predictive regression model outperforms the historical average benchmark model. Meanwhile, if R^2_{OOS} is greater than 0.5%, it indicates that the EPU variable in the predictive regression model has a good predictive effect. The benchmark setting of 0.5% refers to Campbell and Thompson [5] and Neely et al. [6].

In addition, this paper tests the significance of R^2_{OOS} using the Clark and West's [7] MSFE-adjusted statistic.

The R^2_{OOS}, MSFE-adjusted statistic and corresponding p-values results are shown in Table 3.

Table 3. Out-of-sample results

Industry	$R^2_{OOS}(\%)$	MSFE-adjusted	p-value
Food	14.585***	4.887	0.000
Mines	6.029***	2.827	0.002
Oil	4.188***	2.351	0.009
Clths	12.892***	4.240	0.000
Durbl	13.811***	4.083	0.000
Chems	10.730***	3.900	0.000
Cnsum	14.116***	4.868	0.000
Cnstr	13.996***	4.338	0.000
Steel	4.135***	2.725	0.003
FabPr	15.025***	4.489	0.000
Machn	13.067***	4.355	0.000
Cars	13.137***	2.949	0.002
Trans	10.329***	3.796	0.000
Utils	8.362***	4.273	0.000
Rtail	15.450***	4.130	0.000
Finan	7.000***	3.432	0.000

Notes: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The out-of-sample evaluation period ranges from January 2009 to December 2023.

According to the results in the table 3, it can be seen that the predictive effect of the EPU index on the excess stock returns in 16 U.S. industries is significant at the 1% level, and the R^2_{OOS} statistics are far greater than 0.5%, indicating that the EPU index has a strong predictive ability for stock returns. More specifically, the R^2_{OOS} statistics of the 11 industries including Food industry, Retail Stores industry, Fabricated Products industry, Transportation industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Drugs, Soap, Perfumes, Tobacco industry are relatively higher, all greater than 10%, while the R^2_{OOS} values of the 5 industries including Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry are all less than 10%, which indicates that the economic policy uncertainty index has a more significant predictive effect on the excess stock returns of the former 11 industries.

To observe the predictive performance of the EPU index more intuitively, this paper also analyzes the error of the EPU index in predicting the excess returns of 16 U.S. industries over time, and calculated and plotted the time series of the Cumulative Squared Forecast Error (CSFE) of the EPU index predictive regression model relative to the historical average model, as shown in Fig. 1.

The calculation formula for CSFE is:

$$\mathrm{CSFE} = \sum_{t=p+1}^{q}(e^2_{bench_t} - e^2_{model_t}). \tag{7}$$

Where e_{bench_t} is the forecast error of the historical average benchmark model in month t, and e_{model_t} is the forecast error of the predictive regression model in month t.

The method for comparing the predictive performance of the benchmark model and the predictive regression model based on the CSFE value is that if CSFE shows an upward trend over time, it indicates that the forecast error of the predictive regression model is mostly smaller than that of the benchmark model, which means that the predictive ability of the predictive regression model is better than that of the benchmark model.

According to the trend of CSFE in the 16 U.S. industries shown in Fig. 1, it can be observed that CSFE in each industry is generally positive and shows an upward trend. This indicates that the forecast error of the predictive regression model is lower than that of the benchmark model in most periods, which means that the predictive effect of the predictive regression model is good and stable, that is, EPU has significant predictive ability for stock returns of the 16 industries.

Furthermore, based on the values of CSFE, it can be seen that the CSFE values of 11 industries including Food industry, Retail Stores industry, Fabricated Products industry, Transportation industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Drugs, Soap, Perfumes, Tobacco industry are mostly high, while the CSFE values of 5 industries including Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry are mostly low compared to the former 11 industries. This suggests that the forecast error of the corresponding predictive models for 11 industries are much smaller than those of the benchmark model. Therefore, the predictive performance of the predictive models for these 11 industries is better. This is consistent with the conclusion of the R^2_{OOS} statistics, and the CSFE graph provides a more intuitive representation of the out-of-sample results.

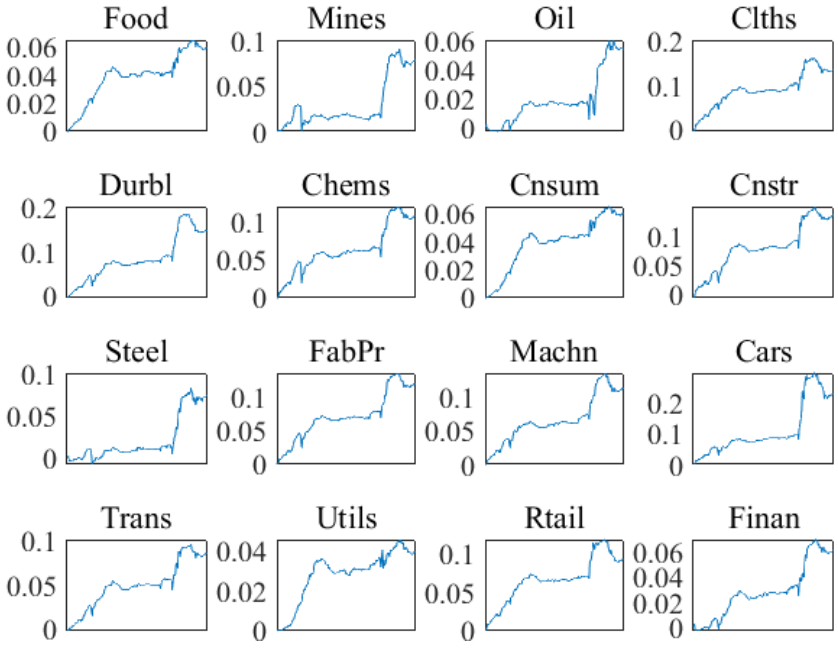

Figure 1. Cumulative Squared Forecast Error (CSFE) for 16 industries

4. Robustness Checks

To verify the robustness of the conclusions obtained from the empirical analysis above, this paper conducts robustness tests. Specifically, this section considers three methods: replacing the measurement indicator of economic policy uncertainty, conducting long-horizon forecasting, and using different evaluation periods. Next, this paper mainly displays the out-of-sample results.

4.1. Replacing the Measurement Indicator of Economic Policy Uncertainty

In this subsection, this paper replaces the Three Component EPU Index used in the previous empirical analysis with the News Based EPU Index. After further analysis, the out-of-sample results are shown in Table 4.

According to the results, it can be found that the EPU index has a significant predictive effect on the excess stock returns of the 16 U.S. industries, and the R^2_{OOS} statistics are far greater than 0.5%, indicating that the EPU index has strong predictive ability for stock returns. These discoveries are

consistent with the empirical analysis results in the third part of this paper, then the conclusions obtained are robust. At the same time, the R^2_{OOS} statistics of 11 industries, including Food industry, Retail Stores industry, Fabricated Products industry, Transportation industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Drugs, Soap, Perfumes, Tobacco industry, are relatively high, all greater than 10% or close to 10%. However, the R^2_{OOS} values of Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry are far less than 10%. These findings are similar to the results in the third section, which also suggest that EPU has a better predictive effect on stock returns of the former 11 industries.

Table 4. Out-of-sample results after replacing EPU measurement indicator

Industry	$R^2_{OOS}(\%)$	MSFE-adjusted	p-value
Food	12.014***	4.312	0.000
Mines	6.551***	2.957	0.002
Oil	3.479**	2.238	0.013
Clths	10.707***	3.890	0.000
Durbl	12.257***	3.779	0.000
Chems	9.106***	3.598	0.000
Cnsum	12.393***	4.413	0.000
Cnstr	12.977***	4.041	0.000
Steel	4.692***	2.885	0.002
FabPr	13.541***	4.333	0.000
Machn	13.599***	4.410	0.000
Cars	13.866***	2.957	0.002
Trans	9.794***	3.653	0.000
Utils	7.466***	4.000	0.000
Rtail	13.850***	3.830	0.000
Finan	7.690***	3.574	0.000

Notes: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The out-of-sample evaluation period ranges from January 2009 to December 2023.

4.2. Long-horizon Forecasting

In this part, this paper tests the predictive power of EPU in forecasting long-term stock returns. The formula can be expressed as

$$r_{t+1:t+h} = \alpha + \beta EPU_t + \varepsilon_{t+1:t+h}. \quad (8)$$

Where $r_{t+1:t+h} = \frac{1}{h}(r_{t+1}+\ldots+r_{t+h})$ is the excess return from month t+1 to month t+h. h is the forecasting horizon. EPU_t denotes the EPU measurement indicator in month t. $\varepsilon_{t+1:t+h}$ is the disturbance term.

The out-of-sample results of long-horizon forecasting are shown in Table 5.

Table 5. Out-of-sample results of long-horizon forecasting

	h=3		h=6		h=12	
Industry	$R^2_{OOS}(\%)$	MSFE -adjusted	$R^2_{OOS}(\%)$	MSFE -adjusted	$R^2_{OOS}(\%)$	MSFE -adjusted
Food	14.809***	4.778	14.648***	4.631	15.578***	4.743
Mines	6.032***	2.640	5.881***	2.519	6.470***	2.833
Oil	4.514**	2.103	4.783**	2.126	4.409**	2.009
Clths	13.231***	4.155	13.414***	4.090	15.284***	4.273
Durbl	13.906***	3.970	13.662***	3.810	14.989***	3.940
Chems	10.908***	3.703	11.486***	3.701	13.084***	4.008
Cnsum	14.237***	4.777	13.557***	4.585	13.801***	4.586
Cnstr	14.523***	4.245	14.519***	4.181	15.404***	4.296
Steel	4.280***	2.613	3.861***	2.429	4.836***	2.991
FabPr	15.413***	4.363	15.082***	4.244	16.346***	4.411
Machn	13.225***	4.242	13.308***	4.143	14.331***	4.299
Cars	13.364***	2.925	13.063***	2.950	13.575***	2.946
Trans	10.781***	3.709	10.453***	3.578	10.933***	3.633
Utils	8.330***	4.196	7.615***	3.952	7.498***	3.928
Rtail	15.682***	4.078	15.568***	4.056	16.548***	4.103
Finan	7.048***	3.273	6.885***	3.181	7.863***	3.430

Notes: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The out-of-sample evaluation period ranges from January 2009 to December 2023.

From the results, it can be seen that the long-horizon forecasting with h values of 3, 6, and 12 all show that the EPU index has a significant predictive effect, and the R^2_{OOS} statistics are much greater than 0.5%, indicating that the EPU index has a strong predictive ability for stock returns. Furthermore, the R^2_{OOS} statistics of 11 industries mentioned earlier are still higher, far exceeding 10%, while the R^2_{OOS} values of the other 5 industries are still lower, all less than 10%. This suggests that EPU has a better predictive effect on stock returns of 11 industries, consistent with previous conclusions, indicating that the conclusions obtained are robust.

4.3. Different Evaluation Periods

In this subsection, this paper adjusts the out-of-sample evaluation period and sets the initial time forward and backward by 6 months on the basis of the original, with the termination time unchanged, respectively referred to as Group B and Group C. The original out-of-sample evaluation period used in Section 3 is referred to as Group A.

The out-of-sample results for the three evaluation periods are shown in the table 6. It was found that the EPU index has a significant predictive effect on the excess returns of 16 U.S. industries at the 1% level, and the R^2_{OOS} statistics are far greater than 0.5%. This indicates that the EPU index has a strong predictive ability for excess stock returns. Moreover, the results also show that the 11 industries mentioned earlier have higher values, while the other 5 industries have lower values, consistent with previous empirical analysis findings, then the conclusions are robust.

Table 6. Out-of-sample results for different evaluation periods

	Group A		Group B		Group C	
Industry	$R^2_{OOS}(\%)$	MSFE -adjusted	$R^2_{OOS}(\%)$	MSFE -adjusted	$R^2_{OOS}(\%)$	MSFE -adjusted
Food	14.585***	4.887	13.270***	4.685	14.857***	4.784
Mines	6.029***	2.827	4.245***	2.526	6.444***	2.820
Oil	4.188***	2.351	4.032***	2.359	4.483***	2.414
Clths	12.892***	4.240	9.536***	3.653	13.359***	4.108
Durbl	13.811***	4.083	10.853***	3.624	15.867***	4.058
Chems	10.730***	3.900	7.896***	3.386	11.206***	3.780
Cnsum	14.116***	4.868	13.285***	4.809	14.980***	4.847
Cnstr	13.996***	4.338	11.826***	4.005	14.450***	4.248
Steel	4.135***	2.725	3.006***	2.371	4.773***	2.825
FabPr	15.025***	4.489	12.217***	4.087	15.529***	4.386
Machn	13.067***	4.355	10.781***	4.019	13.391***	4.222
Cars	13.137***	2.949	11.350***	2.772	13.543***	2.860
Trans	10.329***	3.796	9.087***	3.599	11.270***	3.781
Utils	8.362***	4.273	7.839***	4.231	8.993***	4.294
Rtail	15.450***	4.130	13.289***	3.900	14.986***	3.961
Finan	7.000***	3.432	5.961***	3.210	8.823***	3.587

Notes: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5. Explanation

The prominent uncertainty of economic policies brings some new information to the market. Investors use the new information related to changes in economic policies to price stocks, and then make relevant investment decisions based on market conditions that have not yet reflected the new information to benefit from it. At this time, economic policy uncertainty brings a certain arbitrage space, resulting in higher future stock returns. Therefore, economic policy uncertainty has a positive impact on the future excess returns to a certain extent. This provides potential explanations for the results of this paper.

EPU shows significant positive predictive effects in all studied industries, but due to differences in the nature of each industry and the varying information content related to each industry in economic policies, the predictive performance of EPU is better in some industries such as Food, Retail Stores, Fabricated Products, Transportation, Construction and Construction Materials, Consumer Durables, Automobiles, Textiles, Apparel & Footwear, Machinery and Business Equipment, Chemicals, and Drugs, Soap, Perfumes, Tobacco than in some industries such as Utilities, Steel Works Etc, Mining and Minerals, Oil and Petroleum Products, and Banks, Insurance Companies, and Other Financials.

6. Conclusion

This paper selects 16 major industries in the United States as research objects to explore whether economic policy uncertainty has a significant predictive ability for stock returns. Based on relevant data from January 1985 to December 2023, through both in-sample and out-of-sample examines, it is found that economic policy uncertainty is a reliable predictor, and the predictive performance of EPU is better in Food industry, Retail Stores industry, Fabricated Products industry, Transportation industry, Construction and Construction Materials industry, Consumer Durables industry, Automobiles industry, Textiles, Apparel & Footwear industry, Machinery and Business Equipment industry, Chemicals industry, and Drugs, Soap, Perfumes, Tobacco industry than in Utilities industry, Steel Works Etc industry, Mining and Minerals industry, Oil and Petroleum Products industry, and Banks, Insurance Companies, and Other Financials industry. Furthermore, by replacing the

measurement indicator of economic policy uncertainty, conducting long-horizon forecasting, and using different evaluation periods for robustness tests, it is found that the above conclusions are robust.

The conclusions drawn from this study have significant implications for investors and policy makers. Due to the reliable positive predictive effect of economic policy uncertainty on stock returns, investors can improve their trading strategies based on the EPU indicator when making investment decisions. When the EPU increases, investors can adjust their investment strategies in a timely manner based on information, strengthen portfolio management, and thus improve stock investment returns. For policy makers, it is necessary to pay attention to the impact of economic policy uncertainty on the financial market, fully consider the potential reactions of investors when formulating economic policies, and try to avoid frequent policy changes to reduce systemic financial risks and ensure the stable development of the financial market.

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