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WENZHOU-KEAN UNIVERSITY

**The impact of Government infrastructure plans on the new energy industry of the US stock market**

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XU Kexin

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# The impact of Government infrastructure plans on the new energy industry of the US stock market

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Kexin Xu [a,*]

[a] *School of Accounting and Finance, College of Business and Public Management, Wenzhou-Kean University, Wenzhou 325060, China.*

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## Abstract

This paper takes Biden's new infrastructure Plan as an example to study the relationship between the relevant US. Government policies and new energy stock market in America. Due to the intensification of pollution from burning fossil fuels which causes global warming, most countries are committed to developing new energy and realizing industrial transformation. In recent years, the importance of the new energy industry can be seen from the government policies in the USA. Power is usually closely related to the economy, and policy changes can easily influence the new energy stock market. Therefore, the impact of the American government's infrastructure plans on the US's new energy stock market is an essential topic. The stock price is an indicator of the volatility of the renewable energy stock market, which contains some representative companies of solar energy, wind energy, new energy vehicles, and nuclear energy. Since Biden's infrastructure is a new policy that has just been issued for half a year, I can only get limited data and analyze its impact on the new energy stock market in the short term (1 year). The vector autoregression (VAR model) and generalized autoregressive conditional heteroskedastic

[*] Corresponding author. Email address: kexinx@kean.edu

model (GARCH model) are used to compare the changes of stock prices expected to return before and after the release of the policy. The Robustness Check proves there are no structural changes. Generally speaking, the government's policy of supporting the development of new energy will promote industrial production and consumption to a certain extent and stimulate the rise of stock prices. Due to some limiting factors, my analysis results can not directly prove that Biden's new plan significantly impacts the return of new energy stocks. Still, it can be seen that contrary to expectations, this impact may not be undeniable in the short term, and even the opposite trend can be seen from some stocks. However, it is foreseeable that this policy will positively impact the long-term development of new energy. Also, this research can help the government formulate new infrastructure plans in the future.

*JEL Classification*: G18, G28, G38

*Keywords*: new energy, stock market, government policies

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# 1. Introduction

For a long time, energy choice affected the environment and influenced the relevant economic fields. Nowadays, the United States has been at the world-leading level in all aspects, and the economy is certainly no exception. People gradually focus on the legacy problems of rapid economic development, and environmental pollution is a significant part. There is no doubt that the relationship between politics and the economy has always been an eternal topic. Therefore, a new policy action on the financial market trend quickly gets people's attention. The stock market is no exception. Its development is closely related to government policies. Since the 20th century, the United States has issued four infrastructure investment plans with large scale and significant historical impact: Roosevelt's The New Deal, Eisenhower's Federal-Aid Highway Act, Clinton's National Information Infrastructure (NII plan), and Obama's The American Recovery and Reinvestment Act (ARRA act). Those four policies all stimulated the U.S. domestic economy, boosted GDP growth, and even promoted the long-term development of the U.S. stocks market as well as related industries. The new plan proposed by Biden this year will be the fifth American large-scale infrastructure policy. In addition to the same part as the previous policies to strengthen the construction of ordinary infrastructure and improve employment, this new plan also emphasizes green energy. On March 31, 2021, U.S. President Joe Biden unveiled a massive infrastructure plan in which spending $2 trillion aims to improve domestic infatuation and deliver an equitable clean energy future. Although this policy has just been introduced for several months, its impact on the clean energy stock market can be seen from the rising stock prices.

According to U.S. Energy Information Administration (EIA), burning fossil fuels is one of the leading causes of greenhouse gas emissions, which accounts for about one-third of the carbon dioxide emissions in the United States.[1] Since persistent climate crisis promotes the transformation of energy structure in the United States, the demand for new energy is growing, which is also reflected in the development of new energy stocks. However, although the clean energy economy has developed rapidly in recent years, the COVID-19 has damaged it. For example, it has increased the risk of new energy stock transformation. Biden's plan considers green energy an essential part by accelerating the promotion of electric vehicles, strengthening the construction of clean energy infrastructure, and promising to achieve a 100% clean energy economy by 2050. The plan will cause volatility in new energy stock prices.

The implementation of Biden's new plan is predicted to affect all aspects of the U.S. economy. How will it reflect the trend of new energy stock? Which stocks will be included? What are the specific changes? They are of great significance to the United States and other countries due to the position of the USA as a superpower. This paper mainly focuses on the new energy stock market to analyze how the U.S. Government policies can influence the relevant stock market and the specific stock types involved (new energy vehicle, wind energy, solar energy, nuclear energy). The analysis involves a few essential policies, but mainly on Biden's new infrastructure plan. The stock return (SR) is the dependent variable. Some financial indicators are regarded as criteria for measuring stock market performance, such as turnover rate (TR), Row Stochastic Value (RSV), Price Earnings Ratio (PE), Price to Book Ratio (PB), and stock volume (volume).

[1] EIA, 1998. Emissions of carbon from energy sources in the United States 1997 flash estimate.

I get the following results from the stock analysis of 40 new energy companies by VAR, GARCH, OLS, and other regression models. I use the predictive test in the Robustness check. One of the tables involves the total data, and the other is the subperiod composed of the data collected after the policy release. Both tables show that the variables all significantly correlate with stock returns. And there is no structural change in the forecast period at a given significance level. My research can not directly prove that Biden's new infrastructure plan significantly stimulates the new energy stock market. Still, we can see that the most noticeable change after the introduction of the policy is the relationship between the P/E ratio and stock return, which shows that the investment value of these stocks has increased. Thus, the guiding role of the government can not be underestimated.

This study will help the U.S. government plan future policies to reasonably promote the development of the new energy industry and the stock market. The research results mentioned above are of reference significance for formulating and implementing practical policies. Even in a capitalist society, we can not ignore the influence of the government on the market. Therefore, it is very feasible to continue implementing such infrastructure policies that positively affect new energy, which will try to make the development of the new energy industry more stable and promote the growth of a new energy stock market. A supportive government policy is beneficial to solve environmental problems and has a far-reaching impact on the country's economic development.

In the rest of my paper, section 2 is the literature review and hypotheses development, section 3 is data and methodology, section 4 is results and discussions, and section 5 is conclusions.

## 2. Literature Review and Hypotheses Development

New energy refers to various forms of energy other than traditional energy. They are usually developed and utilized for a short time. As alternative energy, they are actively studied and promoted. Some presentative sources are solar energy, geothermal energy, wind energy, ocean energy, biomass energy, and nuclear fusion energy. Although the new energy industry was developed relatively late, the impact of multiple infrastructure construction in the history of the United States has shown that new energy stocks are closely related to government policies. The policy stimulus exists towards the new energy market. This section introduces some relevant research in this field, and the relationship between the new energy stock market and government policies is analyzed. For more profound and slighter research, the example that study similar issues in another country is also compared.

Currently, global energy development is transforming from fossil fuels to new and renewable energy (Geng et al., 2016). In recent years, global warming has intensified. Carbon emissions which refer to greenhouse gases released into the air because of various human activities are the leading cause of this phenomenon (Khan, 2020). The point is that fossil fuels seem to be the final reason for carbon emissions. Although several scholars like Steenhof and Fulton (2007) as well as Wang et al. (2011) held the view that fossil fuels will still be the primary energy source in the coming decades, the government is still formulating relevant policies and trying to promote the reform of energy structure. Since the USA is the second-largest contributor to carbon emissions (Boden et al., 2017), it is urgent to develop alternative energy sources. The renewable energy policies that have been issued have two directions: one is to emphasize efficiency, and the other is to consider pragmatism which is more feasible sub-optimal policies politically (Kalkuhl et al.,

2013). The promising growth prospects and the expectation of increased government support led to a surge in the stock index. The rapid growth and deployment of renewable energy have been promoted worldwide (Bohl et al., 2015). Sustainable energy, permanent climate change, and technological progress are essential factors to support it (Kazemilari et al., 2018). Renewable energy development needs to be rooted in the traditional financial market, especially the stock market. The stock market can provide stable financial support for the development of renewable energy. Fluctuations in the entire stock market will also significantly impact renewable energy stocks (Liu and Hamori, 2020).

According to Özdurak (2021), when Joe Biden ran for president of the United States, he took clean energy as the central issue. In October 2020, when Biden's chances of winning the election increased significantly, the stock market value of the world's largest solar and wind power companies exceeded that of significant oil and gas companies like ExxonMobil who is Trump's great supporter. It proves that American politics affects the stock market all the time. At present, many states, cities, and companies have substantial reserves of renewable energy or set clean energy standards in the USA (Fakhry and Yeh, 2021). As for how the stock market reacts to government policies, Geng et al. (2021) argued that the asymmetric influence exists in the information transmission, which means that bad news contributes more to the systematic risk of news energy company's stock return than good news. Besides, it is unnecessary to worry about the impact of energy price shock on the stock market when studying government policies; according to Benkraiem et al. (2018), the transmission of energy price shock to the total price of the American stock market is nonlinear and asymmetric. Government policies also affect investor psychology because capable business people and investors regard the policy environment as the dominant factor in supporting clean energy technologies (Boyer and Filion, 2007).

When it comes to new energy stocks, the relationship between crude oil prices and new energy stock prices is usually a hot topic (e.g., Zhu et al., 2019; Ma et al., 2019). At present, only a few papers have already investigated the impact of government policies on the company's stock price. Thorbecke (1997), Rigobon and Sack (2004), and Bernanke and Kuttner (2005) all had studied the affection of monetary policy on the stock price. How government legislation can affect companies' stock prices has been explored by Cohen, Diether, and Malloy (2012). In addition, Pastor and Veronesi (2012) and Veronesi and Pastor (2011) paid attention to the linkage between the stock price and government policies and how the stock price reacts to changes of regulations constituted by the government. Most of the existing literature focused on the relationship between policy and the stock market in a general way; only a few scholars concretized the research content to new energy or green energy stocks. For example, Masini and Menichetti (2012), Sadorsky (2012), and Donovan and Nuñez (2012) focused on policy implications behind investment decisions and equity costs of renewable energy companies. Kazemilari et al. (2019) researched the network topology characteristics of American renewable energy companies based on stock return. Overall, it is difficult to find literature that comprehensively analyzes the impact of U.S. government policies on domestic new energy stocks, let alone involving a specific aspect or type of policy. In this case, some similar studies on other countries can be drawn lessons from.

Here, taking China as a prominent example. China and the United States are facing a similar situation. As the world's largest carbon dioxide emitter, China must actively develop new energy and improve energy structure to solve the contradiction between environmental pollution and energy consumption growth (Xu and Lin, 2018). During China's 12th and 13th Five-Year Plan periods, more energy was installed to optimize the power generation mix (Ming et al., 2013). The new energy policy has played a crucial role in China's new energy development (Zeng et al., 2013).

Therefore, as a vital financing channel for developing new energy, China's new energy stock market has also developed rapidly. The new energy industry mainly depends on favorable government policies. China's new energy policies may be crucial to form a risk-return balance and reduce the regulatory risk of new energy companies. It encourages investment in the new energy market (Reboredo and Wen, 2015). Although many other factors may affect the formulation and implementation of policies, it can be proved that active government policies can boost the development of new energy stocks.

Since the United States and China situation is generally similar, the following hypothesis can be drawn based on the above discussion.

**Hypothesis:** There is a positive relationship between US. Government policies and the new energy stock market development.

In a conclusion, government policies directly and indirectly influence the new energy stock market in different aspects. Exploring the relationship between them is a relatively new area, and specific data and results will be displayed in the following sections.

# 3. Data and Methodology

I select some representative companies in the new energy industry, involving solar energy, wind energy, new energy vehicles, and nuclear energy. Yahoo! Finance is the main data sources applied to this study. Since Biden's Infrastructure Plan is a new policy, my research can only focus on its short-term impact (one year) and make a reasonable prediction on the long-term development by comparing it with similar policies.

From Yahoo! Finance, I obtain the daily stock prices of those companies from November 2020 to October 2021. The prices are all in U.S. dollars, and the lowest price, highest price, opening price, closing price, adjust closing price, and volume of each day are marked. In addition, I can also find the revenue, earnings per share and book value per share of each company. According to the known data, Price Earnings Ratio (P/E ratio), Raw Stochastic Value (RSV), Price to Book Ratio (PB ratio), and turnover rate. All of them and volume of the stock are regarded as independent variables. The stock return is an excellent tool to reflect the company's profitability and industrial prospects. In my research, the stock return is the dependent variable which is calculated based on the closing price. Calculating the standard deviation, skewness, and kurtosis of those variables can evaluate the volatility of the stock market.

Through the data found for further research, I will use two financial models. According to Angelidis et al. (2004), the VAR model is calculated according to Dow Jones European stoke index. It is widely used to explain the predictability of returns and test the weak form of market efficiency in the stock return modeling literature. Since my research focuses on the response of the new energy stock market to government policies, this model has great practical significance to reflect the changes in stock returns. Here is a VAR(p) in two variables written in matrix form. My research actually have 5 variables. Each variable in the model has the same equation and *t* is the current time which depends on the variable's lagged values as well as on the lagged values of each other variable in the VAR.

$$\begin{bmatrix} y_{1,t} \\ y_{2,t} \end{bmatrix} = \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} + \begin{bmatrix} a_{1,1} & a_{1,2} \\ a_{2,1} & a_{2,2} \end{bmatrix} \begin{bmatrix} y_{1,t-1} \\ y_{2,t-1} \end{bmatrix} + \begin{bmatrix} e_{1,t} \\ e_{2,t} \end{bmatrix} \tag{1}$$

Another crucial means is the GARCH model, which is based on the characteristic of wave aggregation. Volatility aggregation tells us that the current volatility is related to the past volatility.

It is an extension of the ARCH model, so the GARCH model can accurately simulate the fluctuation of time series variables, and the volatility can be grasped more accurately. We can assume that $\varepsilon_t$ is income. The results are presented in the form of variance series. The formula is given:

$$\delta^2_t = \alpha_0 + \alpha_1 \varepsilon^2_{t-1} + \cdots + \alpha_p \varepsilon^2_{t-p} + \beta_1 \delta^2_{t-1} + \cdots + \beta_p \delta^2_{t-p} \tag{2}$$

# 4. Results and Discussions

## 4.1. Main Results

The analyzed data have been presented in Tables 2 and 3, and the results of these two tables are not mutually exclusive. According to the correlation research, there is a positive correlation between stock return and RSV, and there is no correlation between stock return and PB. However, they do not have a strong relationship with the rest of the variables. There is no significant positive correlation between stock return and volume, no significant negative correlation between stock return and turnover rate, and even totally no correlation between stock return and P/E ratio.

The results in Table 3 are statistically significant, supporting the main conclusion. It is proved that both volume and RSV significantly positively impact stock return while the P/E ratio has a slightly negative effect on stock return. Another two variables, turnover rate, and PB have little or no impact on stock returns. In addition, the results show that the volatility of all indexes is quite persistent, and the asymmetric volatility effect is significant in all indexes and norms, which is common in financial time series. In general, Biden's new infrastructure construction plan impacts

the new energy stock market. However, due to the short observation time, the data will be unstable, so that several results may have deviation to some degree. In the short term, the promulgation of this new policy will promote the new energy stock market, but more apparent evidence may not be obtained before long-term research is done.

## 4.2. Additional Results

My research targets finding out whether there are changes in the new energy stock market after the promulgation of the policy. It is a time series problem. Therefore, GARCH Model and VAR Model are useful to analyze it. The result shows that the Alpha is RESID(-1) $^2$, Beta is GARCH(-1), so Alpha plus Beta is less than 1 satisfies the constraints. As for others, the main factor is the p-value of the regression coefficient. The p-value corresponding to the regression coefficient of RESID(-1) $^2$ is 0.000, less than 0.01. Rejecting the original hypothesis shows that the regression coefficient and zero difference are significant. This independent variable has a significant impact on the dependent variable. The p-value of the coefficient of GARCH (-1) is 0.9989, greater than 0.1, which fails the test, indicating that the impact of this independent variable on the dependent variable is not statistically significant.

Moreover, I assume that market volatility is random and there is no autocorrelation, and then the VAR Model is applicable (Table 5). R-square is 0.98, which is close to 1. It indicates that the goodness of fit is quite good.

## 4.3. Robustness Checks

I choose the predictive test in the Robustness Checks. Firstly, OLS regression is performed under the large synthetic samples of two time periods (Table 6). Then OLS regression is made for

the subsamples composed of the data collected before the policy release (Table 7). The results of both tables show that the p-values of all five variables are less than 0.01. It means that the variables all have a significant correlation with stock returns. Their R-squares are about 0.67 and about 0.68, which demonstrates pleasant the goodness of fit as well. Overall, there is no structural change in the forecast period at a given significance level.

# 5. Conclusions

The new energy industry in the United States has developed rapidly. With the support of a clear policy framework to provide incentives for moving towards the new energy future, the government's attention to the new energy industry has also promoted more and more new energy companies to be listed on the new energy stock market. This paper takes Biden's new infrastructure Plan as an example to analyze the function of government infrastructure policy on the new energy stock market. I explored the changes in overall stock returns and related influencing factors after the introducing this policy. Understanding the stock market to energy policies can better help decision-makers raise relevant policies and stimulate new energy investment to realize long-term and effective new energy development in the future.

In this study, I use some regression models to analyze the daily change of 40 new energy stocks in the half-year before and after the introduction of Biden's new infrastructure plan. The result of the primary regression proves that the turnover rate and the row stochastic value have a positive relationship with the stock return. In contrast, volume and PB ratio negatively affect the stock return. The P/E ratio has almost no influence on the dependent variable. The result of the GARCH Model satisfies the constraints, and the effect of the VAR Model indicates that the

goodness of fit is quite good. I also use predictive tests in Robustness Check. One table involves total data, and the other is a subsample composed of data collected after policy publishing. Both tables show that all independent variables are significantly correlated with stock returns. Besides, there is no structural change in the forecast period under the given significance level. My research cannot directly prove that Biden's new infrastructure plan has significantly stimulated the new energy stock market. However, we can see that the most significant change after the introduction of the policy is the relationship between the P/E ratio and stock return, which indicates that the investment value of these stocks has increased. Therefore, the leading role of the government should not be underestimated.

There are also certain limitations in my research. Since Biden’s Plan has only been promulgated for half a year, the study time must be short, and long-term research results can not be obtained. I mainly focus on the infrastructure construction plan to promote the development of new energy or the government policies favorable to the new energy market. Many other factors will affect the new energy industry, which is difficult to control. For example, the impact of regulatory risk on enterprises cannot be eliminated. Besides, my research can not prove that Biden's new infrastructure plan has an apparent stimulating effect on the stock return of the new energy market. Still, these independent variables I selected are closely related to the stock return. After introducting the policy, the relationship of price to book ratio and the stock return has changed significantly. It shows that the investment value of these stocks has increased, which means that government policies still influence the market.

The government still plays a crucial role in developing the new energy market, especially the long-term outcome. It is better to invest in new technologies to support for further energy

utilization. The government also needs to continue formulating favorable policies to create a good atmosphere for developing the new energy industry, which is also essential.

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**Table 1: Sample statistic of New Energy Stocks**

The table reports descriptive statistics for the sample of 40 new energy stocks from November 2020 to October 2021, which involves solar energy stocks, nuclear energy stocks, wind energy stocks, and new energy vehicles stocks. *SR* is the stock return of the whole new energy stock market. It is calculated based on their daily stock prices. The turnover rate (*TR*), Price to earnings ratio (*PE*), Row stochastic value (*RSV*), Price to book value ratio (*PB*), and the volume (*Volume*) of the stock can show their general profit and loss, reflecting volatility in the whole year. Through the statistics in the table, we can preliminarily get the fluctuations they experienced this year.

| Variables | Number of Obervations | Mean | StdDev | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| *SR* | 6,603 | 0.36 | 2.77 | -0.31 | 27.76 | 7.68 | 58.74 |
| *TR* | 6,603 | 0.03 | 0.08 | 2.24E-06 | 0.99 | 8.59 | 83.43 |
| *Volume* | 6,603 | 9.14m | 24.90m | 2200.00 | 577.19m | 7.76 | 93.20 |
| *PE* | 6,603 | 95.18 | 120.79 | 0.64 | 444.40 | 2.12 | 5.04 |
| *RSV* | 6,603 | 0.50 | 0.30 | 0.00 | 1.00 | 0.03 | -1.28 |
| *PB* | 6,603 | 5.75 | 7.76 | 0.01 | 44.53 | 2.46 | 6.06 |

**Table 2: Correlation**

Using correlation analysis, this table shows the correlation between stock return, *volume*, *PE*, *turnover rate*, *RSV*, and *PB*. The Pearson correlation coefficient is applied to express the strength of the correlation. The correlation coefficient between *RSV* and turnover rate is -0.068 with *** in *p-value*, indicating a significant negative correlation between *RSV* and turnover rate. The correlation coefficient between *the PB ratio* and the *PE* is 0.053 with *** in *p-value*. Therefore, there is a significant positive correlation between *PB* and *PE*. The correlation coefficient between volume and the *PE* is -0.164 with *** in *p-value*, indicating a negative correlation between volume and *PE*. The correlation coefficient between stock return and *PE* is 0.028 with ** in *p-value*, showing a relatively significant correlation between them. The significant level of *p-value*: *** at 0.01 level; ** at 0.05 level; * at 0.1 level.

| | *PE* | *TR* | *RSV* | *PB* | *Volume* | *SR* |
|---|---|---|---|---|---|---|
| *PE* | 1.000 | | | | | |
| *TR* | -0.002 | 1.000 | | | | |
| *RSV* | 0.000 | -0.068*** | 1.000 | | | |
| *PB* | 0.053*** | 0.001 | 0.023 | 1.000 | | |
| *Volume* | -0.164*** | 0.013 | 0.043*** | 0.037*** | 1.000 | |
| *SR* | 0.028** | 0.309*** | -0.009 | -0.015 | -0.003 | 1.000 |

**Table 3: Main Regression Results**

The linear regression method is essential to get the main regression result. It is proved that both volume and RSV significantly positively impact stock return while the P/E ratio has a slightly negative effect on stock return. Another two variables, turnover rate, and PB have little or no impact on stock returns. In addition, the results show that the volatility of all indexes is quite persistent, and the asymmetric volatility effect is significant in all indexes and norms, which is common in financial time series. The significant level of *p-value*: *** at 0.01 level; ** at 0.05 level; * at 0.1 level.

| | Non standardized Coefficient |
|---|---|
| *Volume* | -1.985E-10*** |
| | (-0.150) |
| *P/E Ratio* | 0.000*** |
| | (2.478) |
| *Turnover rate* | 0.864*** |
| | (26.431) |
| *RSV* | 0.118*** |
| | (1.055) |
| *PB* | -0.007*** |
| | (-1.497) |
| Adjusted R-square | 0.676 |
| Number of observations | 6,603 |

**Table 4: GARCH Model**

The result shows that the Alpha is RESID(-1) ², Beta is GARCH(-1), so Alpha plus Beta is less than 1. It satisfies the constraints. As for others, the main factor is the p-value of the regression coefficient. The p-value corresponding to the regression coefficient of RESID(-1) ² is 0.000, less than 0.01. Rejecting the original hypothesis shows that the regression coefficient and zero difference are significant. This independent variable has a significant impact on the dependent variable. The p-value of the coefficient of GARCH (-1) is 0.9989, greater than 0.1, which fails the test, indicating that the impact of this independent variable on the dependent variable is not statistically significant. The significant level of *p-value*: *** at 0.01 level; ** at 0.05 level; * at 0.1 level.

| | STOCK_RETURN |
|---|---|
| CONSTANT | 0.0347*** |
| RESID(-1) ² | 0.5342*** |
| GARCH(-1) | -0.0001 |
| Adjusted R-squared | -0.0173 |
| Number of Observations | 6,603 |

**Table 5: VAR Model**

Using the VAR Model, we can assume that market volatility is random and there is no autocorrelation. The result shows that R-square is 0.983841, which is close to 1. It indicates that the goodness of fit is quite good. The significant level of *p-value*: *** at 0.01 level; ** at 0.05 level; * at 0.1 level.

| | STOCK_RETURN |
|---|---|
| STOCK_RETURN(-1) | 0.9343** |
| STOCK_RETURN(-2) | 0.0580** |
| CONSTANT | 0.0028*** |
| Adjusted R-squared | 0.9838 |
| Number of Observations | 6,603 |

**Table 6：Robustness Checks**

The predictive test is applied. Firstly, OLS regression is performed under the large synthetic samples of two time periods in table 6 (October 2020 to October 2021). Then, in table 7, the OLS regression is made for the subsamples composed of the data collected after the policy release (April 2021 to October 2021). The results of both tables show that the p-values of all five variables are less than 0.01. It means that the variables all have a significant correlation with stock returns. Their R-squares are about 0.67 and about 0.68, which demonstrates the goodness of fit of these two periods is similar. Overall, there is no structural change in the forecast period at a given significance level. The significant level of *p-value*: *** at 0.01 level; ** at 0.05 level; * at 0.1 level.

| Variable | Coefficient |
|---|---|
| PB | -0.009*** |
| PE | 0.000*** |
| RSV | -0.341*** |
| TURNOVER_RATE | 29.702*** |
| VOLUME | -2.13E-08*** |
| Adjusted R-squared | 0.672 |
| Number of Observations | 6,603 |

**Table 7: Subperiod Analysis**

The data obtained after OLS regression in the two stages are the same. Only PB has some changes. The P-value of the PB ratio is 0.27, so the PB ratio of the stocks has no significant correlation with the stock return. It means that the introduction of Biden's plan may influence the relationship between the PB ratio and the stock return. The significant level of *p-value*: *** at 0.01 level; ** at 0.05 level; * at 0.1 level.

| Variable | Coefficient |
|---|---|
| PB | -0.006 |
| PE | 0.000*** |
| RSV | -0.485*** |
| TURNOVER_RATE | 30.298*** |
| VOLUME | -2.15E-08*** |
| Adjusted R-squared | 0.676 |
| Number of Observations | 3,572 |