Università
Ca'Foscari
Venezia

Master's Degree programme -
Second Cycle (*D.M. 270/2004)*

in Economia e Finanza -
Economics and Finance

Final Thesis

The impact of policy uncertainty on the performance of mutual funds: empirical evidence from the U.S.

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Matriculation number 877494

Academic Year

2020-2021

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ABSTRACT

The aim of this thesis is to investigate the effect of economic policy uncertainty on the performance of US mutual funds. Our analysis is based on monthly returns of 30 mutual funds, the Fama French 4 factor model, and EPU indices during the period of January 2000 to February 2021 covering more than 20 years. The empirical findings demonstrate a substantial positive association between the unpredictability of economic policy, and the risk level of the mutual fund. Furthermore, when the uncertainty is high, mutual funds that performed well in the previous period are more eager to increase their risk levels. When market sentiment is gloomy, mutual funds may nonetheless take a risk to chase the limited money. Moreover, increased changes in economic policy uncertainty have a negative impact on the performance of the US mutual funds.

INTRODUCTION

This study investigates the impact of Economic Policy Uncertainty (EPU) on the United States mutual funds. A Political decision is the government's principal means of implementing macroeconomic regulation. Since the 2008 global financial crisis, governments have taken numerical policies to rescue the economy in the coming years. In general, these policy actions have had beneficial effects in the near term for the economy and financial market and have generated macroeconomic uncertainty and frequent policy change. (Johannsen, 2014, s. 2). Academics have, therefore, recently attracted considerable attention in the topic connected to economic policy uncertainty. Scientists, in particular, sought to explain the actions of companies and investors to explore the possible damage resulting from frequent policy changes when the market is highly unpredictable (King and Wadhwani 1990). The international economy is more connected worldwide than ever in recent decades. The economy of adjacent countries and other nations worldwide can be affected indirectly and directly by events in one country. When transmission comes from a major global economy, the influence can be considerably powerful (Cornell, 1999). It is essential to investigate the possible value of the EPU. As a result of globalization and new technology, the globe has become interconnected. In the previous several years, the globe has gotten increasingly complex. We have seen several crises, such as the Arab Spring, Russia's Crimean takeover, US-North Korea, and Brexit concerns. Moreover, there are also changes in the global political sphere. As the world's new powerhouse, China is taking the stage, and the U.S. has been afraid. All these occurrences indicate that a possible crisis may have severe consequences for other world regions (Al-Thaqeb & Algharabali, 2019). The situation over COVID-19 is a recent example with severe consequences. The emergence of this epidemic in China has seriously affected the international economy, people's lifestyle, and work worldwide.

The mutual fund has become one of the most important institutional investors in the U.S. financial market among all sorts of investors. According to the Asset Management Association of the United States, eight thousand mutual funds are running by the end of 2019. Generally

speaking, various differential products provide several alternatives to individual investors. But the fund which suits your desire and prospects correctly is likewise tricky for individuals to differentiate (Lipset 1959). There are, therefore, more investors and academics in the actions of mutual funds showing their investing style and risk preference nowadays. A political system lacks stability and uncertainty produced by a political climate, limiting private and economic investment and can have a detrimental impact on economic growth. Moreover, uncertainty can affect economic development directly by changing the type of investment or modifying the governmental expenditure structure, for example, during elections (Barro 1997, Easterly and Levine 1997, Sachs and Warner 1997). Theoretical and practical research on this matter also demonstrates that economic progress is hampered by political instability. Investigating a risk adjustment for mutual funds is helpful for investors, especially in the macroclimate, to choose up acceptable goods and for managers to keep a financial market stable (Christopher Thiem 2018). In this thesis, based on the preceding, we discussed the effects of economic policy uncertainty on the risk adjustment behavior of the U.S. mutual fund. This enables us to deeply understand how investors and the financial market are affected by the unstable environment. In addition, it gives further empirical proof of the behavior of mutual funds in various scenarios. Our results show that frequent policy modifications might lead to more risky mutual funds since they need to make limited financial market gains in an area of uncertainty (Gulen & Ion, 2013). Macro variables such as economic policy incertitude must also be considered when evaluating the performance of mutual funds.

This study aims to investigate and evaluate for more than 20 years the influence of the economic policy uncertainty on the U.S. To that end, Armelius et al. l (2016) has made an index of economic policy uncertainty. This index has been designed to measure economic policy uncertainty. The writers used the Baker et al. technique for the construction of the index (2016). The findings will show if the effect is negative, positive, or ambiguous. This information can assist investors and big institutions in understanding how equities are valued during periods of uncertainty in economic policy.

CHAPTER 1

THE MUTUAL FUNDS

1.1 GENERAL INFORMATION ABOUT MUTUAL FUNDS

Mutual funds are funds formed to invest in different securities with a certain capital and are marketed to investors on a contract basis. Fund managers run all assets as a group. Mutual funds are created by banks or financial firms and distributed to customers by allocating them to specific securities. In exchange for their stake, investors who purchase these shares become partners of the fund.

Mutual funds are standard investing instruments that have increased in popularity over the last few decades. Assets saved in mutual funds account for a sizable portion of private sector deposits in the United States. To demonstrate the financial value of the mutual fund industry in the United States, figures indicate that at the end of 2016, U.S. mutual funds had gross fund assets of $ 16.3 trillion, with over half of U.S. households invested in mutual funds (Investment Company Institute 2017). In other words, mutual funds are pooled venture vehicles that offer liquidity and enable investors to benefit from economies of scale by having access to well-diversified portfolios of shares, which are often segregated based on styles such as aggressive expansion, growth, or small businesses, Markowitz (1952) and Tobin (1958). A pooled investment program is a mutual fund, which means that a fund run by the fund manager receives funds from investors and invests them in a diversified pool of stocks, shares, or other assets. It offers different benefits to mutual funds from the perspective of clients, such as diversification, liquidity, ease, and competent wealth management. Mutual funds are much more common and significant in countries with affluent populations and higher levels of education and countries with strict financial controls and rules (Sanders 2012). Mutual funds may be split into active and passive funds based on how they are handled. Active management implies that the portfolio manager constantly makes decisions on the fund's assets to outperform the benchmark index, such as the S&P 500 index. Although approximately 90% of

retail funds in the United States are actively managed, the equivalent figure for corporate funds is around 70% (Hausmann and Wongswan 2011). More precisely, the term "active" refers to mutual funds that tend to pick the timing abilities of mutual fund managers who outperform abnormally performing "winning stocks" and are attempting to time the market successfully. The market timing includes the portfolio manager's bets on systematic risk factors based on benchmarks, as with all sectors. Actively managed funds often incur higher wealth management costs than tracker funds, which often track large market indices.

The reasoning behind passive fund management, on the other hand, is that the passive investor attempts to watch the index composition and thereby meets the benchmark. This can be accomplished by replicating a benchmark's return by using a technique of keeping all or at least most index shares at real index prices. Since the idea holds that investors cannot reliably outperform the economy, proponents of passive investing often believe in EMH values and the knowledge utility of financial markets. The passive approach seeks to minimize administration and other trading costs, as well as monitoring mistakes. Tracking error, or more precisely tracking error volatility, is a built-in metric for assessing asset management. It can be very well characterized as the time arrangement standard deviation of the distinction between a portfolio return and the benchmark index return of a portfolio.

The formula is as follows :

$$\text{Tracking error} = St_{dev}\left[R_{portfolio,t} - R_{index,t}\right] \qquad (1.1)$$

It emphasizes that an aggressive fund manager aims for a low monitoring loss, which, in addition to his attempt to outperform the corresponding index, implies managers' ability to minimize the chance of doing considerably worse than the benchmark. Many studies were done in the literature of the mutual fund on alpha generation and risk-adjusted return comparisons between active and passive funds (Awad & Goodwin, 1998; Chinn & Frankel, 2004; Ehrmann, Fratzscher, & Rigobon, 2011).

Mutual funds are classified into two types: type A and type B. Since Type A mutual funds contain a certain number of securities, price changes in the stock market affect them. As a result, Type A mutual funds are riskier than Type B mutual funds; the expected return is higher in direct proportion to the risk. The significant distinction between Type A and Type B funds

is the tax benefit afforded to Type A funds. According to the relevant articles of the Corporate Tax Law, both Type A and Type B mutual funds are excluded from Corporate Tax. From the lender's standpoint, regardless of the number of actual individual investors, all A and B Type fund profits are excluded from the application of the declaration. Taxable legal entities (for example, corporations) are expected to tax their earnings, which they receive from A and B. Type funds or are contained in their account at the balance sheet date and measured according to the unit price of the day, counting them in corporate income.

1.2 The Advantages of Mutual Funds

Common funds, corporations, or businesses with experienced management taking capital from customers and spending them in equity markets, stock exchanges, futures markets, and other securities. Investors who invest in mutual funds benefit from the following advantages:

Professional Management - The investor has access to experienced and qualified providers. Professionals assisted by a devoted investment consulting team analyze and select businesses' results and aspirations.

Diversification - Investment by mutual funds in a diverse variety of businesses and sectors. This diversification decreases exposure because it is unlikely for all stocks to collapse simultaneously and the exact cost. A Mutual Fund will have this diversification.

Low cost - Because of the advantages of a scale of brokerage, custody, and other fees, low-cost mutual funds are a comparatively less costly investing option than investing directly in stock markets, resulting in lower costs for investors.

Liquidity - An investor will recover his money immediately with open-ended plans—the net asset price. Included plans allow investors to own exchange units at the current market price or direct purchases from certain closed-end and interval programs at NAV-related prices.

Flexibility - Investors are systematically responsible for features like systematic savings strategies, regular retirement plans, and dividend replacement plans. Cash deposit or withdrawal as required and convenient.

Affordability- Even small investors will benefit indirectly from mutual funds: An individual investor could not invest in extensive business securities because of their insufficient money supply.

Based on the above explanations and general assessments in this context, it can be stated that the following benefits and services are offered to investors by mutual funds (Croce, Nguyen, and Schmid 2012) :

- Professional portfolio management services are provided within the scope of mutual funds.
- A Smooth and convenient management service is offered.
- It is possible to eliminate risks through diversification.
- Innovative solutions are offered that meet a range of investment goals and evolving investor needs.
- Access to domestic and foreign investment opportunities is provided that investors cannot directly access.
- Liquidity is provided quickly, allowing investors to respond to their demands on their conditions.
- Access to investment is provided for all types of investors, including those who prefer to invest small amounts regularly.
- Full service, different purchasing methods, and choice of fee structures are allowed.
- An accountable service is provided to investors through legal regulations and transparency.

When investing in mutual funds, investors should not overlook the risks. You can risk losing your core resources at all times. The fund's price shall be calculated every day by the amount of the stocks in the portfolio, outstanding stock, for the overall value of the closing fund. The buying price of the investor could be above or below the share price, like most investments. External investors, founders and administrators, targets, circulars, quarterly accounts, monthly notes, cumulative fees, and comparable funds for mutual fund investments

1.3 The Performance Measurement of Mutual Funds

To compare the performance of mutual funds, it is essential to identify the models used in performance analysis. Due to the prominence of fund efficiency, mutual funds' performance is being measured in the empirical literature and rising numbers by various models and methods. Much of the literature on fund efficiency is focused on the estimation of the standard lesser squares (OLS) of factor model regression. After initial experiments by the single-factor model, Jensen (1968) developed and added value to the explanations of predicted returns. Level models entered on factor forecasts. The Capital Asset Pricing Model (CAPM) is a critical model in the literature output of the fund and is also derived from other models. Measurements are often built on the same beliefs, and as a result, they usually have the same flaws.

Mutual funds are portfolios that contain a large number of securities. Two basic approaches are commonly applied to the performance valuation of mutual fund portfolios.

The first approach is to compare the risk-adapted returns of mutual funds with the returns of similar funds or the return of the benchmark representing funds. In this approach, mutual funds can be sorted according to their performance, or the fund's performance can be determined according to the comparison criteria. The second approach is to determine whether the timing of the trading of securities, which are mutual fund components of fund managers, is correct. This approach, referred to as market timing, represents the fund manager's ability to predict the market's direction. (Kılıc, 2002: 39)

The first of the general objectives of evaluating the performance of mutual funds is to determine whether the performance of funds that are actively managed by portfolio managers and the implementation of passive funds is different. Another goal is to compare the performance of actively managed funds with each other. The third purpose of evaluating mutual funds is to determine the portfolio manager's success and prevent inadequacy (F. Pietrovito 2009).

The concept of performance, often translated with the word success (result achieved), is used in the same sense as return, i.e., asset growth. Return is a measure of profitability and refers to the investment success of a portfolio in a period. Investment success generally consists of three components (Fettahoglu, 2003:520). These are the ones that are going to:

- Interest and dividend income
- Sales profit or loss
- Capital gains or losses that cannot be realized

Among the requirements for evaluating the performance of investments, it is necessary to create a comparison portfolio that can be a precedent for the relevant asset. Therefore, in creating criteria, comparison criteria with characteristics that can effectively represent investment should be obtained from the available portfolios related to investment (Jones, 1999: 577). In this way, it will be possible to make comparisons.

However, the return-only is inadequate to create a performance indicator. In parallel with this situation, in the mid-1960s, average-risk-adjusted performance metrics based on variance matched the model of pricing capital assets appeared in a timely way. In this context, one of the main criteria well known in the analysis of portfolio performance is the Sharpe rate, calculated by dividing adjusted fund returns by risk-free interest rate by the standard deviation of the return. The Sharpe ratio, one of the precursor performance measurement methods, is based on absolute risk, while the Treynor index and Jensen alpha are based on systematic risk. Treynor (1965), Sharpe (1966), and Jensen (1968).

1.3.1 Sharpe ratio

The Sharpe ratio, also known as the "reward-variability" ratio, is a commonly used efficiency metric in the mutual fund industry. Sharpe named the ratio of premiums to variations when he demonstrated that the optimal portfolio exceeds the standard deviation by the maximum risk premium. The ratio calculates the association between the average excess return of the portfolio and the normal excess return variation. This means that the Sharpe ratio calculates the excess profit in a portfolio per unit of divergence. The metric Sharp is derived from the capital market line (CML) as the excessive on a portfolio is based on the portfolio's overall risk. The Sharpe ratio's efficiency benchmark depends on CML's slope, which represents the excess return on demand separated by its standard deviation. When the Sharpe ratio of a portfolio exceeds the slope of the CML, it can be shown that the portfolio outperforms the industry benchmark. The Sharpe ratio is a meaningful indicator of success because an investor's risk can be calculated by standard deviation, and/or fund returns are usually distributed since it is dependent on the mean-variance theory.

Sharpe ratio is calculated as follows:

$$\text{Sharpe ratio} = \frac{r_p - r_f}{\sigma_p} \quad (1.2)$$

R_p – is the portfolio's average compound return

R_f – is the risk free rate

σ_p – is the standard deviation of portfolio p returns

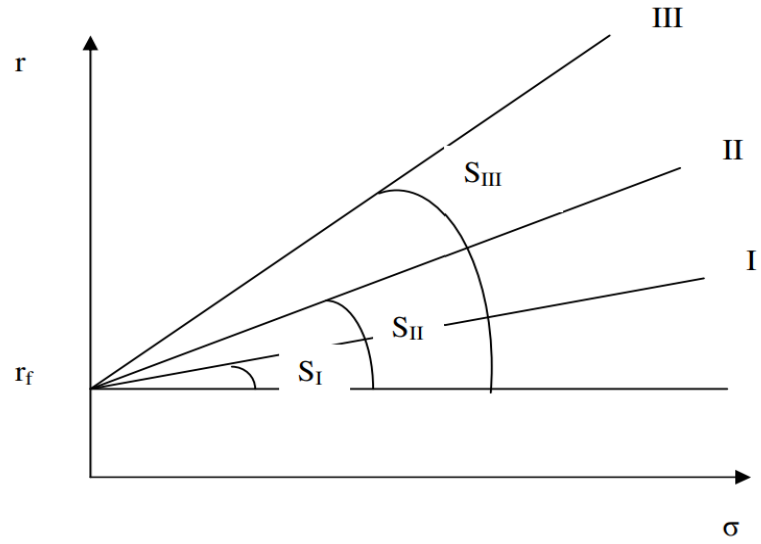

Figure 1.1 Sharpe Ratio. Source: Seda Guclu (2007)

As seen in Figure 1.1, it is possible to compare three securities in the standard deviation-expected return chart. It can be said that the securities that provide the highest additional return at a certain standard deviation level, that is, exceeding the risk-free interest rate for the same total risk, have a larger sharp rate and therefore perform better. It is seen that the securities numbered III outperforms the securities seen in the graph over the securities numbered I and II. While it is possible to evaluate the performance of securities among themselves with the Sharpe ratio, it is also possible to compare the performance of these securities with market performance. Thus, it is understood whether security remains below or above market return (Seda Guclu 2007).

Sharpe is a criterion that adds total risk to the calculation. It is more concerned with the total risk that refers to the standard deviation of returns, than beta, which refers to systematic risk. Because the risk premium of the portfolio refers to the risk premium gain obtained for the total risk per unit, this benchmark is similar to the capital market line used in the capital asset pricing model. (Ornelas et al., 2012).

If we look again at the expected return, risk, and relationship between them, which is the key to portfolio analysis to better understand the Sharpe criteria; If there is a choice of assets that are not priced correctly in mutual fund management, effective diversification and the creation of a portfolio at a certain risk level will cause a different performance of the funds. Two criteria can define the estimate of a portfolio performance; the expected value of the return and the estimate of risk or variability known as the standard deviation of the return. All investors can borrow at the same risk-free interest rate. Therefore, at any given time, all investors share the exact estimates of the future performance of assets and, thus, their portfolios. Under these assumptions, the expected return of all active portfolios is achieved by adding a risk premium above the risk-free interest rate. The risk premium will be positive, considering that all investors avoid risk.

Sharpe's model of pricing capital assets can be explained as follows. The model acknowledges that investors avoid risk when it comes to expectations about the future performance of financial assets and that lending rates are made at a risk-free interest rate. This relationship is linear and pronounced. Funds with large average returns have greater variability than funds with smaller average returns. When comparing the index value of the portfolio with the index value calculated for the indicator market or portfolio, it can be said that the portfolio performs better than the market, only as a result of the portfolio has a higher index value (John and Donald 2011).

When considering the additional return that exceeds the risk-free interest rate, a Sharpe rate on a total risk basis; is deemed to be based on β, which is a systematic risk in the rate of the trailer. This is because Treynor has developed this measurement method, acknowledging that non-systematic risk can be eliminated by diversification. Due to this difference, the performance of securities may differ when calculated in both ways. For example, securities with a high non-systematic risk outperform the market according to the Treynor performance measure; the same securities perform below the market according to Sharpe performance criteria. If so, it can be concluded that securities with a high rate of the trailer and a low Sharpe ratio have a high non-systematic risk. Therefore, the portfolio must be very well diversified for both performance measures to produce similar results.

Disadvantages of The Sharpe ratio

Mainly, The Sharpe ratio has two limitations :

o Use Total Risk (only if the investor has no other assets)

o Does not provide any information other than the investment ranking.

1.3.2 Treynor ratio

To identify the risk posed by market fluctuations, Treynor has demonstrated the characteristic truth for the first time, indicating the relationship between the portfolio's rate of return and the market portfolio-specific rate of return. The Trailer index measures the portfolio's risk premium. The risk premium is equal to the difference between portfolio return and risk-free interest rate. This criterion is based on concepts related to the characteristic truth of the portfolio. Beta, which is the slope of the characteristic truth of the portfolio, is also indicative of the variability of its returns towards the market. Therefore, the higher the correct slope, the larger the beta and the riskier the portfolio. Treynor has also used the slope of characteristic truth to scale the relative volatility of the portfolio's return associated with the entire market return. It was stated that the slope of truth was also the beta coefficient of the portfolio. A portfolio with a high slope, i.e., beta coefficient, refers to the sensitivity to market return and greater market risk.

Treynor's portfolio performance measure is obtained by beta or dividing the difference between the average return of the fund and the risk-free interest rate. In its criteria, Treynor uses beta, which refers to the systematic risk that hedge funds eliminate by identifying diversification and risk groups.

As a measure of portfolio performance, the Treynor ratio is formulated as follows:

$$\text{Treynor ratio} = \frac{r_a - r_f}{\beta_a} \quad (1.3)$$

R_a– arithmetic average of returns

R_f – Arithmetic average of Treasury Note yield

β_a – Systematic risk of returns (beta)

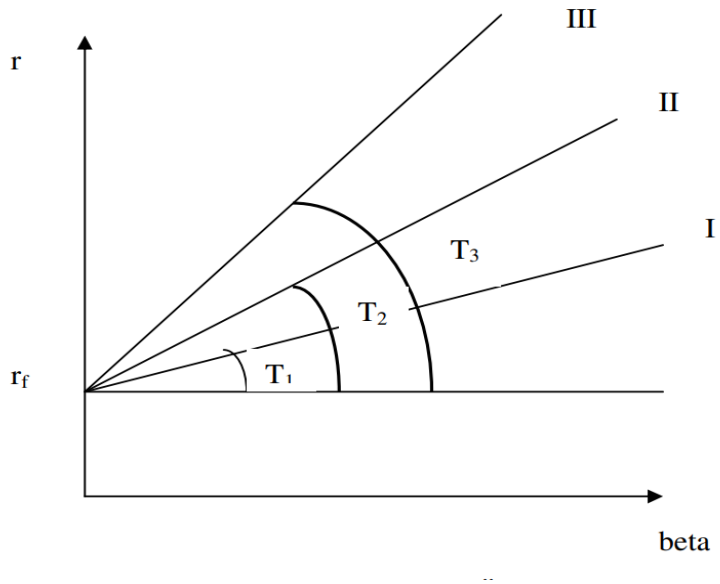

Figure 1.2 Treynor Ratio. Source: Seda Guclu (2007)

As shown in Figure 1.2, it is possible to compare performance for three different securities in the beta-expected return chart. Since the measure of Treynor represents the risk premium in exchange for systematic risk, it is said that the ratio of the securities that achieve more returns at a certain beta level, that is, the same level of risk, is high, and its performance is relatively higher. Figure 1.2 states that securities III outperform securities numbered I and II. In addition, the calculated trailer rates of securities can be compared with the trailer ratio of the market to decide whether those securities perform better or worse than the market (Seda Guclu 2007).

Instead of total risk, Treynor addresses systematic risk. The criterion refers to the total gain per systematic risk. The higher or more inclined the benchmark finds the slope of any possible portfolio between a mutual fund and a risk-free interest rate, the better the portfolio performance (Lahbitant 2006).

A large T value means that the slope is high. Because the share of the ratio indicates the risk premium, that is, the risk measurement value, which is the measure of risk. The entire ratio indicates the risk premium gain obtained for the risk per unit. All risk-adverting investors prefer this rate to be high. If it is remembered again that the beta measures systematic risk and does not mean anything if the portfolio is diversified, it is strictly assumed that the portfolio is fully diversified, which links systematic risk to risk measurement.

In excellent capital markets, no asset can be priced incorrectly. Fully diversified portfolios act with the market. In this case, when the market rises, they get high returns, low returns when the market falls. The Treynor index uses volatility, or beta, instead of Sharpe's variability, standard deviation and explains the relationship between the market and the portfolio in this way. According to Sharpe, performances vary significantly if relatively unscathed funds are added to the portfolio. The Treynor index cannot fully explain this variability due to the lack of diversification. Therefore, according to Sharpe, the Treynor index cannot be a qualified benchmark for past performances. Still, it is also a better benchmark for predicting future performances for the same reason.

Sharpe and Treynor performance measurement results may be problematic when the market risk premium is negative, and the portfolio is valued based on higher risk, lower average return, and larger performance value than the market portfolio (Grinblatt and Titman 2004)

The Limitations of Treynor Ratio:

o Negative values for excess earnings (and/or beta) are meaningless.

o Helps to specify the investment order.

1.3.3 Jensen index

Like the Treynor performance criterion, the Jensen performance criterion was used to rank and compare the performance of the diverse portfolio when they were first developed (Jensen, 1967: 389). Jensen's criteria are similar to previous criteria because they are CAPM-based. Jensen uses the security market line to evaluate the fund's performance and sees the security market line as a benchmark. The Jensen performance measure is defined as the difference between the expected return rate of the portfolio and the expected return rate of a portfolio with the risk level of this portfolio on the securities market (Fettahoglu, 2003: 544). The "Jensen alpha," which measures the deviation of any portfolio from the securities market, can be considered the difference between the realized return and the expected return. (Kılıç, 2002: 61).

If there are multiple periods, we can use the average risk-free rate. A positive (negative) alpha shows that the portfolio has performed better (performed worse) than the market. With Alpha, we can evaluate and quantify the outcome of another investment.

The expected return on the Financial Asset Pricing Model can be calculated as follows:

$$E(r_i) = r_f + \beta_i\,(E(r_m) - r_f) \quad (1.4)$$

$E(r_i)$ – Expected return of i portfolio

β_i –systematic risk of i portfolio

$E(r_m)$ – expected return of market portfolio

R_f – Risk free rate

Jensen alpha is defined as the difference between the realized return of the portfolio and the expected return on the assumption that it is located on the Financial Asset Market Line

$$\alpha i = \text{Return on Portfolio} - \text{Expected Return of portfolio}$$

$$\alpha i = ri - E(ri) = ri - \{rf + \beta i(rm - rf)\} \quad (1.5)$$

αi : Jensen alpha of i portfolio

ri : realized return of i portfolio

$E(r_i)$: Expected return of i portfolio

β_i : systematic risk of i portfolio

$E(r_m)$: expected return of market portfolio

r_f: Risk free rate

The Jensen ratio as a measure of portfolio performance can be formulated as follows:

$$r_{a,t} = r_{f,t} + (r_{m,t} - r_{f,t}) \beta_a + e_{at} \quad (1.6)$$

or

$$(r_{a,t} - r_{f,t}) = (r_{m,t} - r_{f,t}) \beta_a + e_{at} \quad (1.7)$$

The left side of this formula is the risk premium and is equal to the sum of the margin of error with (rm,t – rf,t) βa. When we apply this formula to a managed portfolio, we can tell if the manager is a good forecaster. If the manager has good forecasting ability, the portfolio will earn more than the normal risk premium at the same level of risk. Therefore, a constant number is needed for such a prediction ability to be included in the formula (Brown et al., 2009). This constant number, called alpha, will be included in the formula as follows;

$$(r_{a,t} - r_{f,t}) = \alpha + (r_{m,t} - r_{f,t}) \beta_a + e_{at} \quad (1.7)$$

The expected value of the new margin of error eat in this formula is equal to zero. Thus, if the portfolio manager can accurately predict the stock market, the fixed number in the procedure will be alpha positive. If the stocks taken into the portfolio are selected and held by chance, the alpha value will be equal to zero. If the fund manager can't get as many returns as the accidental buy-and-hold strategy, the alpha value will be negative. Therefore, the more positive and high the alpha value re-formulated below, the higher the performance of the fund.

$$\alpha = r_{a,t} - [rf,t + (rm,t - rf,t) \beta a] \quad (1.8)$$

According to the formula in question, alpha represents the difference between the average return of the fund realized and the return that should theoretically be according to the SML, that is, the vertical distance between the fund and the SML.

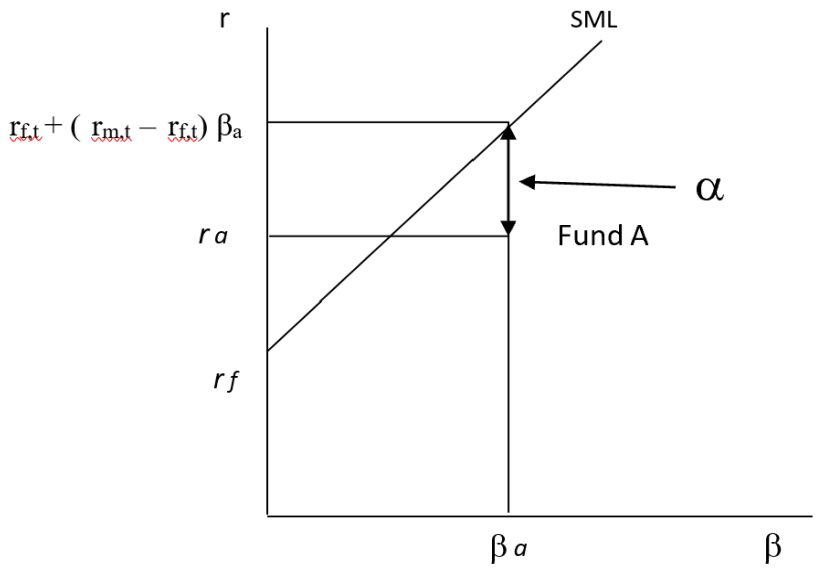

Figure 1.3 Jensen Measurement (alpha). Source: Kılıc, (2002), p.55,

Jensen performance criteria use different r_{ft} in each different period during the period discussed. For example, to measure the performance of a fund manager over 10-years, over an annual period, it is necessary to associate the return of the risk-free asset from the annual return of the fund for each year and the return of the same risk-free asset from the annual return of the market portfolio (Ebru 2008). In addition, like the Treynor criterion, the Jensen criterion does not evaluate the portfolio manager's ability to diversify because it measures the risk premium in terms of systematic risk.

The Jensen portfolio performance criterion refers to being an absolute measure other than comparative performance measurement. If a portfolio is well managed, the portfolio will earn more than the total risk premium at the same risk premium level (Bilson et al., 2005).

The higher the fixed number alpha positive and the higher the portfolio performance. Alpha also shows the difference between the fund's average return and the theoretical return that should be according to the SML. The alpha value also indicates the portfolio manager's market timing or asset selection. Jensen criteria can be negative if a fund manager has superior scheduling information.

1.3.4 Fama Performance Measurement

Fama developed an alternative method of investment performance that analyzed portfolio performance in great detail. The method it develops is based on the fund's ability to buy the

best securities at a certain risk level, namely the ability to predict "selectivity" and general market price movements, i.e., "timing." Fama measured the return that exceeded the expected return based on the total risk premium and argued that a portfolio's return consists of returns from securities selectivity and returns from risk taken.

F_p = Return on funds - risk free return - return based on total risk

$$F_p = (r_p - r_f) - \left[\frac{\sigma p}{\sigma_m}\right] (r_m - r_f) \quad (1.9)$$

F_p: Fama measure

r_p: Portfolio return

r_f : risk free rate

r_m : Return on the market portfolio

σp : Standard deviation of the portfolio

σ_m:Standard deviation of the market portfolio

– Fama French 3 factor

Despite its prominence and scientific significance, the CAPM model has been widely criticized in the financial literature for not always being a suitable model in reality and for possibly providing inaccurate interpretations of alpha effects. The three-factor model, by incorporating two risk factors to CAPM, seeks to clarify portfolio return changes more clearly and can be articulated mathematically Fama et al. (1992) :

$$E(r_i) - r_f = b_i[E(rm) - rf] + s_iE (SMB) + h_iE (HML) \quad (1.10)$$

- $E(r_i)$ – expected return of the portfolio
- $E(r_m)-r_f$,
- E(SMB) and E(HML) – are premiums to be predicted for the three factors
- B_i, s_i, h_i – are factor loadings

They reflect time series regression slopes that can be calculated as follows:

$$r_i - r_f = \alpha_i + b_i (r_m - r_f) + s_i (SMB) + h_i(HML) + \varepsilon_i \quad (1.11)$$

Compared to the standard CAPM, the Fama and French 3-factor model has been commonly used to describe mutual fund return behaviors and has proven to be more capable of estimating fund returns. As a result, it can demonstrate a more precise measurement of fund performance Kothari et al. (1995). The model notes that the predicted excess return on a portfolio is described by the sensitivity of its return to three factors mentioned below, as seen in the equations above:

o The surplus return on the market portfolio, also known as market premium (rm rf).
o The gap in return between diversified limited equity portfolios (small-capitalization) and large-capitalization portfolios (size premium) (SMB factor, small minus big)
o The disparity between the returns on diversified portfolios of high book to market (value) and low book to market (growth) securities, known as the value premium (HML factor, high minus low)

Considering the SMB factor's aim of capturing the gap between the returns on large and small-capitalization stocks, the fact that these companies are more vulnerable to macroeconomic factors will exemplify the more danger to small inventories. For example, in a long-term economic crisis, small businesses are more likely to fail than larger businesses.
Fama and French (1998) examined further the value price aspect, showing that stocks exceeded return-oriented growth stocks in 12 of the 13 main markets worldwide between 1975 and 1995. The need to capture the benefit premium associated with related anxiety is therefore well justified. The risk factor is HML. Overall, Fama and French findings (1998) suggest that an expanded pricing model for international capital assets with a premium component provides clearer explanations of the average returns on a single factor CAPM.

– Carhart 4 factor model

Recent observational findings indicate that Jegadeesh et al. (1993) and later various studies have not recorded the Fama - French three-factor model. As a result, Carhart (1997) has further established the Fama-French cost-return, which introduced the fourth systemic risk factor, the price momentum factor. The factor market momentum refers to a dynamic approach stating that stocks with recent negative returns appear to generate negative future returns, and stocks with recent positive returns tend to produce positive future returns (Bello 2008). Thus, the expansion to the 3-factor model of Carhart can be written as follows:

$$r_i - r_f = \alpha_i + b_i (r_m - r_f) + s_i (SMB) + h_i(HML) + m_i(MOM) + \varepsilon_i \qquad (1.12)$$

If the dynamic rate component (MOM) denotes the average securities return with the highest return of 11 months, lagging at one month behind the average security return with the lowest corresponding return. The factor "WML," meaning winner less loser, is often referred to as "WML" as a factor. (Rosenberg 1985, Banz 1981 and Basu 1983).

1.3.5 Valuation Rate

Based on systematic risk, the Jensen Alpha and Treynor index assumes that the fund does not have a non-systematic risk. Therefore, the valuation rate corrects alpha value, considering non-systematic risk (Bodie, Kane, and Marcus, 2004:46). In this method, performance is measured by proportioning selective abilities (αp) to the risk (σεp) of their choices made.

$$\text{Valuation rate} = \frac{Jenshen\ alpha}{Non\ systematic\ risk} = \frac{\alpha p}{\sigma \varepsilon p} \qquad (1.13)$$

Here, you can see that The Jensen Alpha of the α_p fund refers to the $\sigma_{\varepsilon p}$ non-systematic risk. The high rate indicates that the manager has succeeded.

CHAPTER 2

LITERATURE REVIW

Some articles, magazines, and news are examined in this thesis, research and answer certain topics. This article is mostly concerned with uncertainty in economic policy. Thus, to get the theme of this thesis, a discussion in The Quarterly Journal on economics, Volume 131, Issue 4 of 1 November 2016 was made on the subject of 'Measuring Economic Policy Uncertainty' by Scott R. Baker, Nicholas Bloom, and Steven J. Davis. The influence of uncertainty on the economy was discovered in this publication by Scott R. Baker, Nicholas Bloom, and Steven J. Davis (2009). "That insecurity in US/EU fiscal, regulatory, and monetary policies contributed to a dramatic economic downturn in 2008–2009, with the sluggish rebound," said the Federal Open Market Committee (2009) and the IMF (2012- 2013). [Scott R. Baker, and Steven J. Davis, Nicholas Bloom, 2016, p. 1]. In addition to this, Scott R. Baker, Nicholas Bloom, and Steven J. Davis (2016) observed that Bernanke (1983) states that excessive uncertainty provides companies with incentives to delay investment and recruitment when investment projects are expensive to dismiss or when workers are expensive to recruit. It is quite likely that companies would expand recruitment and investment to satisfy upward demand when the incertitudes are decreasing. "Other factors contributing to the depressing effects of uncertainty include prudent cuts in household spending, increased financial cost pressures (e.g., Pastor and Veronesi 2013; Gilchrist, Sim, and Zakrajsek 2014), aversive management risk (e.g., Panousi and Papanikolaou 2012), and Interactions between them include nominal stiffness and navigational friction (Basu and Bundick 2012; Leduc and Liu 2015) "Bloom et al. (2016) (p.2). A.Kontonika (2004), "U.S. Inflation and Inflation Uncertainty, Evidence of Garch Modeling," to study the theoretical logic for understanding whether U.S. inflation uncertainty is related to inflation. It can affect economic policy uncertainty and lead to stock market performance and susceptibility to corporate investment. The authors of this journal emphasized that low average inflation results in economic benefits and low inflationary uncertainty. "The idea that rising inflation levels increase future inflationary uncertainty is important in Friedman's (1977) Nobel

speech." (A. Kontonika, 2004, p. 526). In connection with that name, the author said that when inflation is low, policymakers strive to maintain it, reducing uncertainty for future gains. In addition, policymakers are maximizing political motivation goals that are positively associated with economic stimulus and negatively associated with call growth through financial surprises. This makes sense because the uncertainty of short-term inflation can reflect the uncertainty of short-term aggregate demand that can be affected by many types of economic policies. Monetary policy is interested in stabilizing inflation in the long run. Hassett and Metcalf (1999), in a research paper that considered the impact of tax policy uncertainty on firm-level investment, argues that large changes in U.S. tax policy have altered the cost of capital and return on investment. "The prospect that tax uncertainty has a negative effect on investment is highly dependent on the irreparable randomness of household production prices that delays investment in such models (Pindyck) 1998). "Hassett and Metcalf, 1999, p.). Some businesses may invest today to see the input tax credits being introduced, while others may delay investing to see the existing input tax credits being repealed. Businesses typically use this strategy to reduce the risk of paying taxes on the performance of their business.

Bahmani-Oskooee and Saha evaluated the impact of EPUs on stock prices in 13 countries, including the United States. They found that in almost all 13 countries, increased uncertainty negatively affected stock prices in the short term but not in the long term. Another study analyzed monthly data from EPU's and stock indices for 11 countries, including China, Russia, UK, Spain, France, India, Germany, the US, Canada, Japan, and Italy. In this investigation, it was found that EPU mainly adversely affects stock prices, except for periods of low to high-frequency cycles. This study used data from 1998 to 2014. Using data from 1900 to 2014, Arouri, Estay, Rault, and Roubaud measured the impact of EPUs on U.S. stock markets and found weak but lasting adverse effects of EPU's on stock market returns. Inflation was a control variable in which default spreads and fluctuations in industrial production were used. The study also found that when EPU is volatile, it negatively impacts stock market returns.

Wu, Liu, and Hsueh analyzed the relationship between EPU and the performance of stock markets in Canada, Spain, the UK, France, Italy, China, India, the USA, and Germany. Analysis of monthly data from January 2013 to December 2014 showed that not all stock markets under investigation respond similarly to EPU's. According to the survey, the U.K. stock market is the worst-performing negative EPU market, but markets in Canada, the US, France, China, and Germany remain unaffected. Next, Christiansen and Hou measured the relationship between EPUs and U.S. (S&P 500) and U.K. (FTSE 100) stock markets. This

study used daily data from stock indices and monthly data from EPU's. The paper found that U.S. stock market volatility depends on US EPU's and U.K. stock market volatility depends on U.S. and UK EPU's.

Liu and Zhang investigated the effect of EPU on the volatility of the stock market in the S&P 500 from January 1996 to June 2013. Pirgaip's analysis of stock market volatility in OECD14 countries based on monthly data from March 2003 to April 2016 for Japan, France, Germany, Chile, Canada, Italy, Australia, the USA, the UK, Sweden, Spain, and the Netherlands. The focus was on relationships. Australia, Korea. Adopting the Granger Causality Law of Bootstrap Panels, the study found that EPU's affect stock prices in all countries except the US, Germany, and Japan.

The reviewed literature on policy stocks draws contradictory conclusions. See, for example, Bahmani-Oskooee and Saha, Christiansen, and Hou; Christou, Cunado, Gupta, and Hassapis; nose and lee; They also found that the U.S. stock market was negatively correlated with changes in EPU Arouri, Estay, Rault, Roubaud, and Wu, Liu, Hsueh, and Pirgaip who did not record the influence of the U.S. Sum clarifies the republican relationship that exists between uncertainty in the U.S. and European economies and has ripple effects across borders and financial markets. The literature refers to Arouri, Estay, Rault, Roubaud, and the United States with a few exceptions, such as Bahmani-Oskooee and Saha, which assume a linear relationship between EPU and stock price and rely on the conventional republican approach to Pesaran, Shin, and Smith. . Find the long-term dynamics of EPU and stock prices. Arouri, Estay, Rault, and Roubaud showed persistent negative impacts between high volatility regimes, which generally subject to weak negative impacts in the long run. But Bahmani-Oskooee and Saha have found negative effects in the short term and have no impact in the long term.

A series of literature that relies on the existing republic minutes to model the relationship between policy and stock prices follows the view of the symmetric assumption that an increase in EPU adversely affects other macroeconomic variables, and a decrease in EPU increases this variable. However, this may not be true, as investors' reactions may differ from an increase in EPU and a decrease in EPU. Increased uncertainty allows investors to move equity assets to safer assets and portfolios to the stock market as uncertainty decreases (assuming the change in P.U. is less than the increase). The decrease in uncertainty is short-lived, then we expect an asymmetry to occur. Figure 1 presents the theoretical framework based on the reviewed paper. Mathematics 2020,8, x FOR PEER REVIEW 6 of 19 U.S. stock markets are negatively

correlated with changes in Wu, Liu, Hsueh, and Pirgaip, not recording P.U. and U.S. influence. Sum clarified the republican relationship that exists between uncertainty in the U.S. and European economies and has ripple effects across borders and across financial markets. The literature mentions Arouri, Estay, Rault, Roubaud, and the United States with a few exceptions, including Bahmani-Oskooee and Saha, which assume a linear relationship between P.U. and stock price and rely on the traditional republican approach to Pesaran, Shin, and Smith. I did. Find the long-term dynamics of P.U. and stock prices. Arouri, Estay, Rault, and Roubaud generally showed weak long-term effects and continued adverse effects between the high volatility regimes. However, Bahmani-Oskooee and Saha found short-term adverse effects.

Another literature review, outside of that topic, is about the impact of economic policy uncertainty on stock market performance. Because economic policies change from year to year, many macroeconomic and financial economists are exploring different economic policies to investigate and explain the role of uncertainty in the real economy and its significant impact on asset market returns. This is because uncertainty in economic policy can affect the behavior and perceptions of market participants in good markets and capital markets. For example, according to Bernanke (1983, p.4), rather than deliberately lowering stocks, the behavior of investors in recessions is better explained by scrutiny, a resolution of commitment to the long-term status of both the national economy and investors. 'Your fate is well known. In times of recession and uncertainty about economic policy, banks may have less confidence and concerns about the market, limiting their availability of credit. Higher financial costs associated with a bank's limited credit supply can increase the financial risk perceived by banks and creditors.

Similarly, when uncertainty about future tax spending levels, regulations, health reforms, and interest rates is high, consumers and businesses tend to postpone spending on investment projects and consumption of goods or services (Baker, Bloom & Davis, 2012, p. .2). I am reading it thoroughly in the journal titled "Policy Uncertainty and Private Investment in Developing Countries" by Danny Rodrik (1991). The authors of the cited papers have developed links to policy uncertainty about supporting private investment. However, Rodrik (1991) shows that investment activity is negatively correlated with increased policy uncertainty. "Measurement of uncertainty is based on the variance of the optimistic cross-sectional area of the future business conditions of the industry in which the company operates" (Driver et al., 2004, p.1). Driver et al. There are opposite results compared to the article by Rodrik (1991). However, another study by Rodrik (1991) shows that delays in corporate investment are associated with policy uncertainty (Julio and Yook, 2012, p. 46). It also

empirically documents the negative relationship between political uncertainty and investment activity claimed by Sum V (2012, p. 3) (Julio and Yook, 2012). A study by Vichet Sum (2012) OLS predicted negative price-earnings ratios due to changes in the uncertainty index of economic policy. Bansal and Yaron (2004, p.1) found that fluctuating economic uncertainties (fluctuations in consumption conditions) directly affect prices-dividend rates, and as economic uncertainties increase, asset prices fall. I will propose. To the extent that external finance is exposed to institutional and/or moral hazard issues through both debt and stock markets, the increase in uncertainty raises users' cost of capital. It leads to reduced investment spending—Gilchrist et al. (2010, p.1). Reading various articles and journals, you can see that the uncertainty of economic policy does not affect the stock market's performance under various local circumstances, time points.

"Political Uncertainty and the Risk Premium" by Rubos Pastoru and Pietro Veronezi, Rev. and Veronezi (2011), in their article that uncertainty can have a positive effect if governments respond appropriately to unexpected shocks. It is also argued that political uncertainty can negatively impact because it cannot be fully diversified. There are three types of shocks that move stock prices amid economic and political uncertainty. They are called capital shock shock shock political shock. In this paper, the investigation will focus more on stock prices attributed to political shocks. The minister and Bello Indonesia (2013) also said that when the economy is weakened, the government is more likely to adopt new policies. Therefore, news and political implications about what new policies may be adopted will significantly impact stock prices.

Further political uncertainty slides and pastes not only the risk premium on equities but also fluctuations and correlations in price-earnings ratios (Lubos Pastor and Pietro Veronesi, 2013, p. 4). Tax uncertainty, apart from political change, affects asset prices. "Tax uncertainty is also addressed by Croce, Kung, Nguyen, and Schmid (2012). These firms are examining the impact of asset prices on production economies following recursive preferences. Croce, Nguyen, and Schmid (2012) suggest that the model Facing Uncertainty We are investigating the impact of financial uncertainty on long-term growth when agents worry about worst-case scenarios" (Ľuboš Pástor and Pietro Veronesi, 2013 p.5).

Investors liked to withdraw funds from higher risk concerns such as the stock market, hoping to invest in safer markets such as the U.S. and Japan. "Voting can indicate that major democracies are susceptible to the influence of populist political movements" (Peter S. Goodman, 2016). "Perhaps one of the most comprehensive works done on the economic

consequences of personal attacks was done by the U.S. government in the aftermath of 9/11 abuse" (Ian King, 2017). According to the example of other countries like the United States, the attack on New York suffered a loss of $ 2.9 billion in New York, with little loss of tax revenue between $ 2.5 billion and $ 2.9 billion. The U.S. economy was already at a level where it had begun to slow down before the attack, so reporters said the losses were not entirely due to the attack. In an article entitled "Suggestions of Government Economic Policy Uncertainty Asset Prices" by Jonathan Brogaard and Andrew Degel (2012), current economic policy uncertainty and future market return. It is a study to investigate the relationship between. "Due to different specifications of a simple OLS regression setup, there is a simultaneous negative correlation between changes in EPU and market returns, and a positive correlation between the current level of uncertainty in economic policy and future market returns" (Jonathan Brogaard and Andrew Detzel 2012, p. 5). However, Jonathan Brogaard and Andrew Detzel (2012) also found that a positive shock to economic policy uncertainty is consistent with falling prices but high future returns. The findings show that uncertainty in economic policy affects the price of real assets. Also, the impact of economic policy uncertainty on market returns and stock performance does not usually occur in the same year. The impact on the stock market can take years from this year when economic policy is uncertain.

According to Julio and Yook (2012), who are undergoing a national leadership change, when political uncertainty is high, elections provide regular events that help isolate the impact of uncertainty in investment policy from other complex factors. Elections can have bad consequences from a business perspective, and businesses can delay investments waiting for policy uncertainty to be resolved. "The relationship between uncertainty and actual investment is modeled specifically by Bernanke (1983) and Bloom, Bond, and Van Reenen (2007)" (Julio and Yook, 2012, p.2). Bernanke et al. The model shows that companies face uncertainty and are cautiously patient with their investments. Many scholars have modeled the effects of political uncertainty in the context of macroeconomics, such as Rodrik's (1991) paper, but this is due to the uncertainty caused by political change, which makes companies more likely. It indicates that we will choose a lower investment level. An empirical study by Julio and Yook (2012) shows a strong positive correlation between economic growth and the potential for early elections. Corporate investment participation has a net effect in reducing the effects of election uncertainty in investments, including regular elections, as it has a positive relationship to economic growth. Adam Yonce (2009) empirically found that lower corporate permeability was associated with policy uncertainty regarding potential changes in government. 2010) Paper

is being made. The results of a Durnev (2010) paper show that the uncertainties that arise during the election period can affect how a company's investment reacts to equities. According to Durnev (2010), investments appear to be 40% less sensitive to share prices in global elections compared to non-election years during the election period. This is due to the lack of stock price information elsewhere to focus managers' attention as they track and track changes in stock prices during elections. The authors also suggest that when election results are uncertain, poor investment-to-price sensitivity increases in countries with high corruption, high state ownership, weaker disclosure standards by politicians, and election uncertainty leads to inefficiency. Political uncertainty can also affect the stock market's performance if a company's performance has deteriorated, as uncertainty in economic policy includes support for the news and Verora research papers. (2011), the authors suggest that returns rise after several years of a presidential term when political uncertainty during the election and related government spending policies are resolved. Apart from uncertainty itself, other factors can increase the sensitivity of corporate stock market stocks. "Discovered a large anomaly that could be interpreted as evidence of lack of risk. Firms with higher exposure to government spending are likely to be firms with higher sensitivity to potential political risk factors" (Belo et al., 2011). P. 28). A detailed study of the correlation between elections and presidential seasons, including political uncertainty, a paper by Santa Clara and Rossen Valkon (2003), documents whether excess returns are associated with presidential and partisan cycles. According to the authors, it appears that the presidential cyclical variables encapsulate information about returns that are not correlated with the cyclical variables. The findings may indicate that the election of a new president who opposes Verora's findings may indicate that earnings and solid stock returns are likely unaffected. (2011). Again, research papers found no relationship between political uncertainty and the political cycle and corporate investment. Referring to the study of Adam Yonce (2009), after controlling for endogenous cash flow and potential autocorrelation as an error term, the author argues that investment in a sample of companies under investigation does not appear to be related to external political cycles. Impact on the financial environment.

Reading more about political instability is ongoing, and Mario Levis's book Does Political Instability in Developing Countries Affect the Flow of Foreign Investment? There is an article titled '. While the decline in Latino investment flows in the United States is likely due to different accounting procedures and investment strategies, investor concerns about epidemic political turmoil across Latin America appear to be major factors. Mario Levis wrote that Basil and Aharon concluded that political risk is a major determinant of foreign investment decisions,

and Piper seems to doubt it. "Based on a postal survey of more than 300 international executives, Bashi's second study found that the level of political unrest in a country and the degree of market viability were the two most important factors in foreign investment decisions" (Mario Levis, 1979).

However, there is a contrasting opinion from Green and Cunningham 10. A survey-based on 25 countries found that political instability was not significantly related to foreign investment.

CHAPTER 3

POLICY UNCERTAINTY

The linking of political risk to scrutiny in economic research dates back to the late twentieth century, through expropriation policies that have been widespread in developing countries since the 1970s, countries' decisions to have rights over investors' assets and incomes have triggered research into the determinants and consequences of political risk.

Political risk is caused by uncertainties in relations in the political, social, and economic environment. In other words, political risks include the negative effects that political forces can have on economic life. (Baker, Davis, and Bloom, 2012, p. 21)

Political risk, which is a factor to consider especially in terms of international investments, refers to government activities that a business faces during its international investments and can negatively affect cash flows (Franzoni and Schmalz 2017).

3.1 Causes of Political Risk

Political risk is defined as the result of political practices in countries, which reveals changes in liquidity. Wars, political crises, coups, interpersonal, intellectual conflicts, and the resulting actions, divisive activities are factors that cause political risk (Lawson, 1988, p. 48).

Corruption in the country also creates serious problems, increasing the risk of the country. Incorrupt host countries, can cause concern for investors and cause uncertainty and cost increase. Thus, corruption plays an obstructive role in preventing investments (Johansen 2014). The policy risk assessment aims to assess the impact of countries on foreign investments by measuring their political stability. In doing so, there are priority questions to be taken. First of

all, they should be searched for answers. Political risk assessment should be carried out taking into account many factors such as the state of the political structure of the country discussed, the existence and frequency of military coups, the existence of protectionist policy thinking, the state of unemployment level, the existence of political currents and the number of parties in the country.

3.2 Determinants of Political Risk

Among the determinants of political risk; it is possible to show competing political currents, social chaos, confusion and unrest, the endangerment of the view of political independence, military conflicts, civil unrest, and terrorism, acquired rights, political unions, political uncertainties, and political interruptions concerning fundamental business groups.

The existing policies established in the invested country manifest themselves in any area in which they can implement in the country. Therefore, apart from military chaos, civil unrest, and similar reasons, the primary source is political trends in the country.

When examined in terms of the country's way, it is possible to say that the democratic system is valid in the world. However, there are also management philosophies that are predominantly based on certain ideologies. The ideological management approach, which can create social turmoil within the country, can negatively influence foreign investment. (Borch, 1963, p. 2).

The foreign investor will closely monitor the political stability in the country in which he will invest. The political environment in the country, the continuity of bureaucracy, business relations, significantly depending on the strength of governments, are developing (Alada, 2004, p. 8). Within the system, the policies implemented by the government are in line with its power. The continuity of the government will depend on the adequacy of the staff, its success in its plans and programs, its public image, and enforcement power.

The continuity of the political parties in power is an essential factor for the investor. The investing businesses will also want the continuity of specific economic policies and practices with a maturity of at least 5-10 years. Investor businesses will not take good care of the change of interlocutor in the country's bureaucracy (Tashman 2000).

The risk of expropriation is the possibility that the state will seize the property owned by individuals. Therefore, it manifests itself as the harshest and most prominent source of political

risk. The application of expropriation can be seen as the nationalization of the whole industry or country; that is, the entire industry falls into the hands of the state without discriminating between domestic and foreign, as it can be seen for a certain number of foreign companies according to its scope.

Macroeconomic indicators of a country's economic climate, budget deficits, debts, interest rates, inflation rates, employment rates in that country, and the government's investment environments change attitudes and expectations. Investors can direct their investments here because they find countries with sound economic indicators more reliable and lower risks (Brogaard and Detzel 2015).

The political climate is defined in the literature as differences or changes in the political ideology of a state. Thus, the political climate includes both a state's approach/willingness to change its policies, that is, its political ideology and its capacity to manage these policies. That is, the political climate is developing uniquely for each country and consists of several elements (Cantillon 2008).

3.3 Effects of Political Risk

Businesses that invest internationally want to monitor specific political events and developments. If an investment decision is made, analyses are started. In the meantime, the activities and policies of the host government will be of close interest to the investor business. The objectives and policy of the government in the country are considered part of the process during and after the investment. It implements strategies such as identifying, retreating, and responding to political challenges in the country.

As a result of appropriation, the fields of activity of enterprises are limited and can lead to loss of capital and property. Uncertainties in tax laws can significantly affect the profits of businesses. In addition, the obstructive changes in the foreign exchange regime lead to the inability to transfer profits. The obstacles in the foreign trade regime restrict imports and exports and, as a result, can cause production to slow down (Bekiros et al., 2016). In addition, damage to property, personnel riots, riots, terrorist movements, and wars lead to a partial or complete halt to production and sale. As well as the political developments in the country, the political events of the country they are investing in, and their political relations with other countries, pose a risk.

3.4 Measuring Economic Policy Uncertainty

Concerns about policy uncertainty and partisan policy disagreements in the United States have been concentrated in the face of various crises in the Eurozone and the Global Financial Crisis. The Federal Open Market Committee (FED) (2009) and the International Monetary Fund (IMF) (2012,2013) uncertainty about the public finances, legislation, and monetary policy of the United States and the European Union led to a sharp economic downturn in 2008-2009 and a slower recovery afterward (Cochrane, 2008, 2011; Campbell et al., 2010; and Huang et al., 2015).

To reveal the role of policy uncertainty, Baker, Bloom, and Davis (2015) developed an index of economic policy uncertainty for the United States and the evolution of economic policy uncertainty starting in 1985. Their index reflected the frequency of articles in the ten leading U.S. journals, including the words economy or economic, uncertain or uncertain, one or more passing congresses (U.S. national legislatures), budget deficits, U.S. central bank, law, legal regulation, or the White House. The study is compiled from newspaper articles in this way because more accurate analyses can be made about countries with data problems, as well as that it is a useful proxy variable for economic and political situations dating back 10 or 20 years. In addition, Baker, Bloom, and Davis created an Economic Policy Uncertainty Index (EPU index) that includes all G10 economies using a similar method. Thus, this index is much more useful for countries that have fewer alternatives to measuring uncertainty.

Baker, Bloom, and Davis's (2015) approach to measuring policy uncertainty raises potential concerns about the paper's credibility, accuracy, inclination, and consistency. To eliminate these concerns, they evaluated the EPU index in several different dimensions:

1. It was concluded that there was a strong correlation between the measurement of economic policy uncertainty developed by Baker, Bloom, and Davis and other measures of policy uncertainty.
2. The index developed was compared with the policy uncertainty mentioned in the U.S. Federal Reserve's Beige Books.
3. It was concluded that it acted similarly in EPU indicators based on right-leaning and left-leaning newspapers. The political outlook did not significantly distort the developed EPU index.
4. There was intense scrutiny of 1,200 randomly selected articles from major US newspapers.

Some students went through various educational processes, and, under the supervision of the authors, the overlapping sets of articles were carefully read. The data obtained afterward were compared with the indicators created by the human hand and the indicators obtained by the computer-developed method and concluded that there was a high degree of relationship between them.

3.5 Economic policy uncertainty for the U.S

The monthly EPU index for the United States is based on ten leading newspapers, including Wall Street Journal, New York Times, Dallas Morning News, San Francisco Chronicle, Boston Globe, Los Angeles Times, Washington Post, Chicago Tribune, Miami Herald, and USA Today. Since January 1985, the digital archives of each newspaper have been searched to find out the number of times articles containing words such as economy or economic, uncertainty or uncertainty, one or more passing congresses (U.S. national assembly), budget deficit, U.S. central bank, law, legal regulation, or White House has passed 28 times per month. The same month and the total number of articles in the newspaper and raw figures were determined, and a monthly EPU series was obtained for each newspaper. From 1985 to 2010, the level value series of each newspaper was converted into one unit of standard deviation and then taken on a monthly average for ten newspapers. Finally, from 1985 to 2009, the series of 10 newspapers was converted to an average of 100. (Baker, Bloom and Davis 2013)

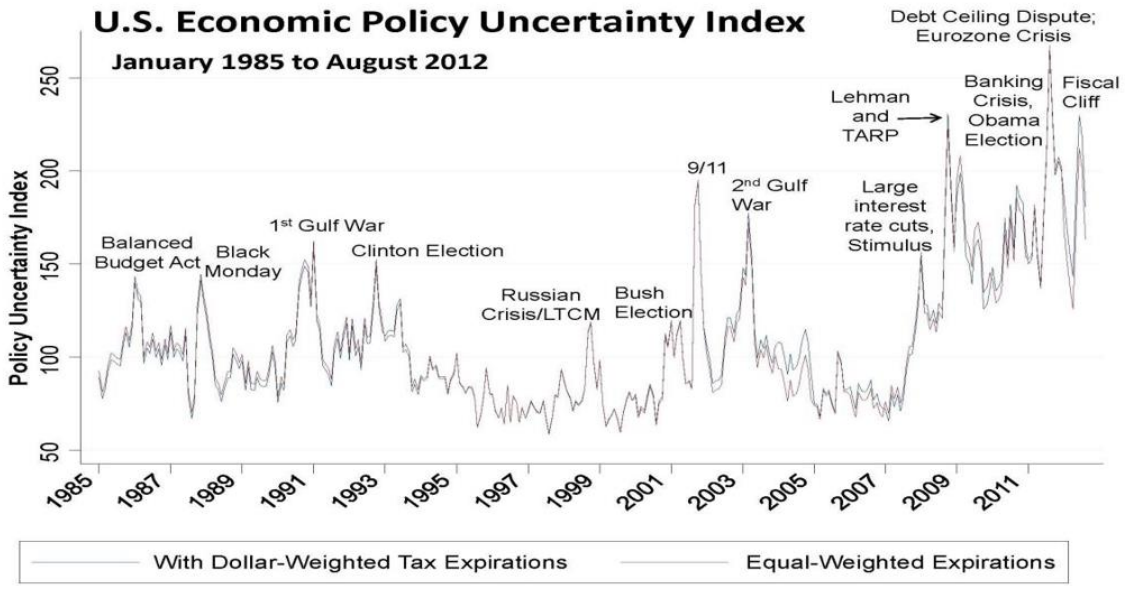

Figure 3.1 E.P.U. measured for the United States. Source: Scott R. Baker et al., (2016)

Gulf Wars, upcoming presidential elections, the 9/11 event, the incentive controversy in 2009, the bankruptcy of Lehman Brothers, the Troubled Asset Relief Program (TARP) law in late 2008, the debt ceiling debate in the summer of 2011, the intense debate over the fiscal cliff in late 2012, as well as other events and developments, the index results of the events that can be counted correspond to the extreme values in Figure 3.1. (Bloom, 2013)

3.6 Compare economic policy uncertainty with other policy uncertainties

Compared to the EPU index, other measures of uncertainty, or policy uncertainty, the clearest comparison can undoubtedly be made with the VIX. VIX S&P500 is an index that shows 30 days of implied volatility in the stock index. The VIX and EPU index often work together; however, it also shows different variations. For example, if you want to use While the VIX reacted strongly to the Asian financial crisis and the collapse of Lehman Brothers due to its strong financial and stock market connectivity, it also reflected the EPU index's main political concerns, such as events that included political concerns; Intense discussions on public spending and taxes, the election of a new president, and the war in the Gulf region have all resulted in a stronger response (Chava et al., 2015). The presence of these events, of course, also affects stock market volatility. The two measurement methods differ conceptually from different angles (Canes-Wrone and Park, 2012; Baker et al., 2013). The VIX index reflects implied volatility over the 30-day forward period; The EPU index does not contain any clear views. The VIX reflects information on uncertainty regarding return on equity; The EPU index reflects information about uncertainty regarding return on equity and policy uncertainty. The VIX also covers only publicly traded firms, accounting for about a third of private employment (Kraay 2014). The EPU index was tried to be improved by looking at the uncertainty indicator based on the Beige Book, each published before their regularly scheduled meetings by Federal Open Market Committee (FOMC). The Beige Book, published eight times a year, sums up the views and concerns expressed by business and other circles about the 12 regional central banks in roughly 15,000 words. It was normalized by taking into account the change in the number of words by counting the frequency of the word ambiguous in the book. Beige Book has been shown to reflect many of the similar shocks and policy developments reflected by the EPU index. The Beige Book's gauge of policy uncertainty showed little immediate reaction to the

financial crisis but began to increase in the second half of 2009 and remained extremely high from 2010 to 2013. The Beige Book also points to fiscal policy as the most important source of recent high policy uncertainty. (Moe, 2016) Concerns about financial regulations and public debt are discussed in the Beige Book much more prominently than in newspapers. But the Beige Book hardly emphasizes monetary policy uncertainty.

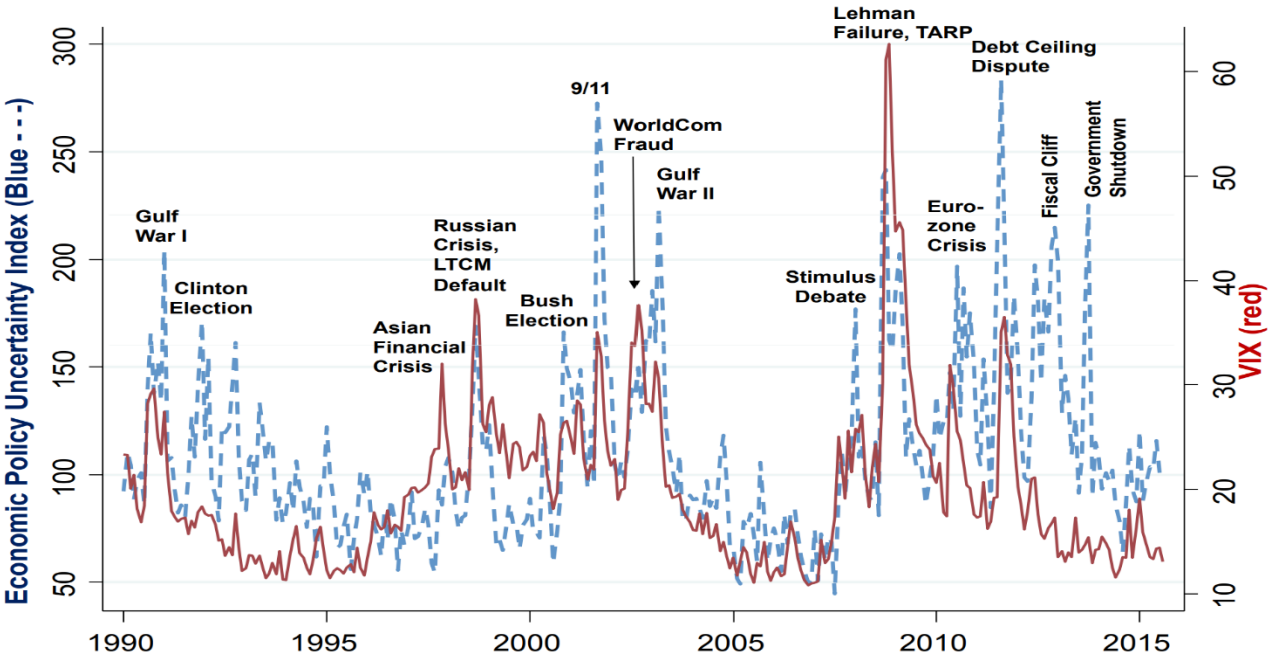

Figure 3.2 U.S. EPU Compared to 30 - Day VIX. Source: Erica Jiang et al.,(2018)

The VIX and EPU index commonly move the correlation of 0.58, as shown in Figure 3.2., but are also different. The VIX reacts more strongly to the financial crisis in Asia, the collapse of WorldCom Fraud, and Lehman Brothers – events that have a significant relationship between the finances and stock markets. In contrast, the EPU index demonstrates more significant responses to wars in the Gulf area, the election of a new president, and political struggles over fiscal matters and government expenditures (Rapach et al.,2017)

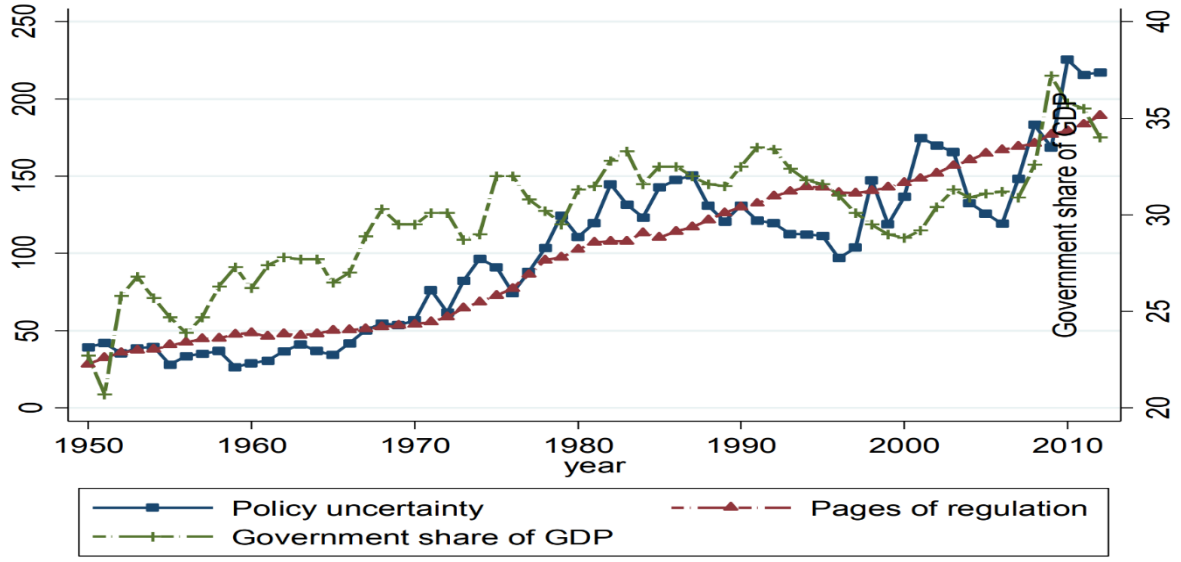

Figure 3.3. U.S. E.P.U. and Government Activity. Source: Nicholas Bloom et al., (2016)

Figure 3.3 shows two measurements for the government activity scale together with the EPU index. Figure 3.3. One metric suggests that government expenditure increased from around 20% of GDP at the 1950s to approximately 35% by 2010. It is anticipated that this secular development would lead to more and more worries over the uncertainties about government expenditure programs, tax rates, and restrictions (Campbell et al., 2018). Figure 3.3 also includes a page count index for the Code of Federal Rules, a yearly publication that aggregates all federal regulations in force during the previous year. After 1950, the index climbed more than six times and emphasized a considerable increase in federal rules' scope and complexity (Dakhlaoui and Aloui, 2017). Uncertainty regarding the presence, meaning, and enforcement of government rules is expected to grow in proportion to their size and complexity. In recent decades, the breadth and complexity of the U.S. tax law have likewise increased considerably.

In short, the secular increase in government spending and taxes on GDP and the growing scope and complexity of both governmental and fiscal rules undoubtedly contribute to the increase in economic policy uncertainty. Increasingly, government activities and regulations vulnerable to change impact the payouts for private economic actions. Many financial laws are also aimed at reducing financial crisis uncertainty and their impact on the rest of the economy. However, Figure 3.3. implies that secular government development is one cause of increased political instability. The VIX and EPU index commonly move the correlation of 0.58, as shown in Figure 3.2., but are also different. The VIX reacts more strongly to the financial crisis in Asia, the

collapse of WorldCom Fraud, and Lehman Brothers – events that have a significant relationship between the finances and stock markets. In contrast, the EPU index demonstrates more tremendous responses to wars in the Gulf area, the election of a new president, and political struggles over fiscal matters and government expenditures (Rapach et al.,2017)

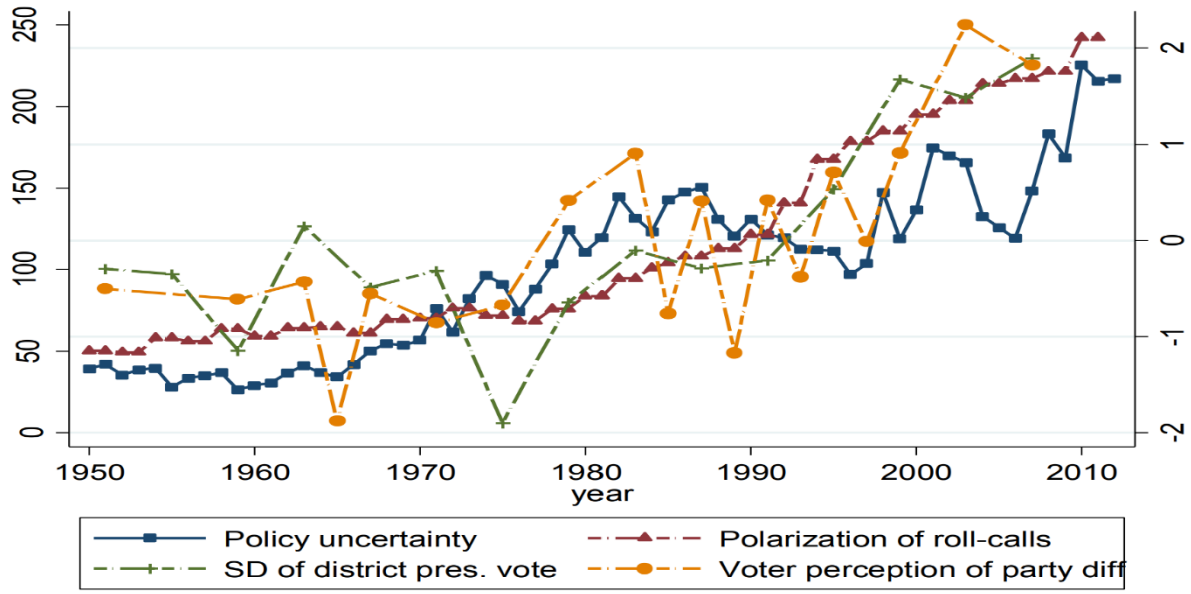

Figure 3.4. U.S. E.P.U. and Political Polarization. Source Steven J. Davis et al., (2016)

Another set of theories for increased policy uncertainty. Figure 3.4 emphasizes the risk of political polarization leading to more radical policies, less policy stability, and policymakers' inability to handle important issues. In recent years, the conventional concept of two-party voting seems to run counter to American politics. The economic policies of the most influential leaders of Parties differed substantially instead of converging on the median voter's views. Simultaneously, political control of Congress has regularly shifted, and presidential elections have been contested (Jegadeesh and Titman, 2017). As a result, national elections frequently result in a surge in policy uncertainty, particularly during tight presidential campaigns.

In more subtle ways, political division can also exacerbate political uncertainty. Both parties' Presidents increased politicized bureaucracy through the appointment of party loyalists and the move to White House officials who were not confirmed in the Senate of the European Union. The policies are now more likely to shift rapidly between an aggressive and a more disrupted

approach than the early post-war period when appointed regulators held a halt to the political appointees. When presidents respond to parliamentary deadlock by enacting policy objectives through executive orders and other kinds of "unilateral action," the propensity to alter regulatory regimes accelerates. The result is to generate long-term political instability, as the subsequent president may quickly reverse the unilateral executive activities (Griffin et al., 2011)

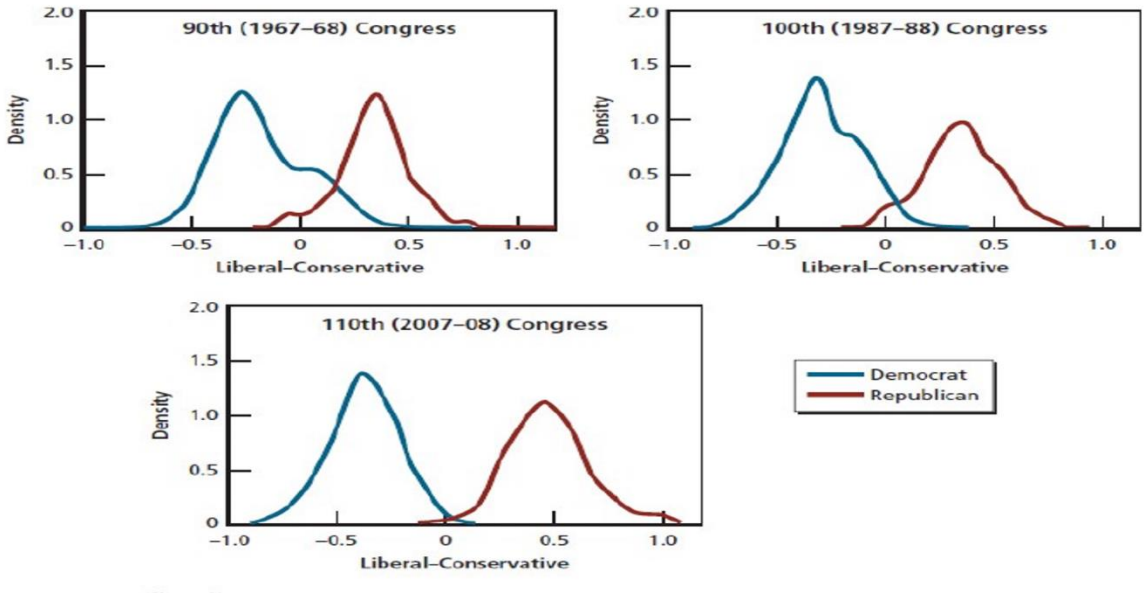

Figure 3.5 Political Polarisation intensified over time in Congress, Source: Laura T. Starks and Sophia Sun (2018)

In 1967/68, 1987/88, and 2007/08, Figure 3.5 demonstrates the trends in Congress. During the 90th Congress of 1967-68, the voting patterns of Democrats and Republicans were overlapped with liberal and conservative matters, which allowed more significant compromises. But the 100th Congress of 2007-08 effectively failed to overlap the vote (Franzoni and Schmalz 2017).

This drift to the extremes is partly because of the power of the incumbents to modify political districts to maximize their prospects of re-election. This leads to primary election campaigns not to make more moderate voters but to pander to their most radical political bases.

However, political growth goes beyond the gerrymander effect as the Senate is similarly ideologically divided, where state borders are determined. The principal explanation seems to be that the United States as a whole is more politically geographically separated. Democrats

are growing closer to other democrats — and Republicans close to Republicans (Spiegel and Zhang 2018).

Time period	1985:1-1990:6	1990:7-1991:12	1992:1-2001:8	2001:9-2002:12	2003:1 – 2007:6	2007:7-2008:8	2008:9-2009:12	2010:1-2013:10	1985:1-2014:12
	Mid 80s to Gulf War I	Gulf War I	1990s boom to 9/11	9/11 attacks	2000s boom	Early Credit Crunch	Lehman collapse & recession	Fiscal Policy Battles	Overall Average
Overall Economic Uncertainty	218.2	349.8	185.9	326.9	159.8	184.8	370.9	252.1	219.3
Economic Policy Uncertainty	109.6	141.9	88.1	128.5	71.4	83.4	132.1	127.5	100.0
Fiscal Policy	49.6	59.6	35.9	55.4	32.3	33.1	61.5	78.3	46.1
- Taxes	39.9	48.4	31.9	51.2	30.2	31.4	56.9	68.1	40.3
- Government Spending & Other	22.7	26.8	12.1	17.3	8.5	6.6	17.1	33.2	17.1
Monetary Policy	32.7	41.8	26.1	45.2	22.2	31.6	27.8	26.1	28.1
Healthcare	7.0	15.4	14.9	18.4	13.1	13.4	29.3	39.3	17.3
National Security	25.0	53.6	18.0	54.8	25.4	15.9	21.3	19.8	23.8
Regulation	15.7	23.0	14.5	19.6	11.2	15.5	29.2	28.1	17.4
- Financial Regulation	3.3	7.0	1.3	5.3	1.7	3.6	10.2	6.1	3.3
Sovereign Debt & Currency Crises	1.4	0.6	2.3	0.5	0.4	0.3	0.4	3.9	1.6
Entitlement Programs	7.3	12.6	11.5	18.7	8.8	8.2	15.3	24.7	12.4
Trade Policy	3.8	4.0	6.3	2.6	1.7	2.0	1.4	2.1	3.8
Sum of Policy Categories	142.5	210.7	129.5	215.1	115.2	120.0	186.3	222.2	150.6
Ratio of EPU To Overall EU	0.50	0.41	0.47	0.39	0.45	0.45	0.36	0.51	0.47

Table 3.1 Economic Policy Uncertainty by Policy Category and Time Period,1985 to 2014, Source: Scott R. Baker, Nicholas Bloom, and Steven J. Davis (2016)

The 11 category-specific EPU indices are reported in Table 3.1. It also gives an overall indicator of economic insecurity that reduces the EPU index policy need. The first two rows report the EU and the EPU average values for these periods, expressed concerning the EPU average values between 1985 and 2014. For example, EU value 218.2 shows that between 1985:1 and 1990:6, the frequency of EU articles is somewhat more than twice the EPU average of papers between 1985 and 2014. For specific policy categories and periods, the next 11 rows show relative frequency values. For example, the 54.1 for "National Safety" values indicated a frequency for Articles 2001:9 to 2002:12, which refers to domestic security issues, which is 54% of the average frequency of EPU from 1985 to 2014 and 42% (54.1/128.5) of the frequency of EPU from 2001:9 to 2002:12 (Scott R. Baker, Nicholas Bloom, and Steven J. Davis 2016)

Table 3.1, especially during recent years, shows fiscal issues, notably tax policies, as the most significant source of political instability. From 2008:09 to 2009:12 and from 2010 to 2013, the budgetary policy EPU index grew from levels of around 33 in pre-crisis years to 61.5. The second greatest source of higher EPU's in recent years is health policy. Though initially at lesser levels, political uncertainty concerning financial rules and entitlement programs also increased rapidly after 2008. During the years 2010-2013, concern over the national debt and monetary crises rose in magnitude, albeit with a modest level of effect on the EPU overall index. Throughout the 1985-2014 period, EPU worries about monetary policy were significant, but our measure, perhaps unexpectedly, did not heighten them in recent years. This conclusion, we believe, reflects recent years of low and steady inflation rates, which appear to drive media coverage more than disagreements among professional economists on unorthodox monetary policy.2018).

3.7 How Political Uncertainty can affect the stock markets.

In recent years the public discourse has focused on political instability. Political uncertainty imposes a risk premium, the scale of which increases with deteriorating economic situations. The value of the implicit protection provided by the Government to the market is reduced by political instability. Governments modify these restrictions sometimes, causing financial-market price movements. These are modest reactions if the shift is generally expected, but they can be very robust if the markets are surprised. Following downturns in private sector performance, the Government tends to adjust policies. It also increases the volatility and correlation of equities when the economy is poor.

Furthermore, government policy cannot be assessed by the response of the stock market to its announcement. More profound reform announcements tend to produce less positive stock responses. (Welch and Goyal 2017).

Two kinds of uncertainty exist. The first sort of uncertainty is that the existing policies in the Government will change. This is called political uncertainty. The second type, called uncertainty regarding the effects of a new government policy on the profits of the private sector, correlates to uncertainty. Additionally, we are not sure what the Government will do, nor do

we know what the consequence is going to be of its action. Both kinds of insecurity have a significant impact on stock prices.

The Government is driven by economic and non-economic aims when deciding on its policy: it optimizes investor welfare. It considers the political costs or advantages associated with adopting any certain policy. The investors who cannot wholly foresee the Government's policies are unknown about these charges. We call "political uncertainty" the investors' uncertainty about the political costs. Investors learn the political costs by following political signals that we understand as results of different political occurrences.

A policy is much more likely to be enacted when its political costs are lower. Its influence on profitability is considered more or less unknown to be the ideal government policy choice. Policies that have more or more definite impacts improve wellbeing. Under poor economic conditions, this indicates that policy changes are more likely to be regarded as damaging in the existing policy (Shiller 2002). The Government successfully offers market protection by changing low-performance policies in tough times.

The stock prices are influenced by three different forms of shocks, called capital shocks, impact shocks, and political shocks. The first two shocks are pushed to the aggregation of capital by these shocks. These fundamental economic shocks affect stock prices both directly and indirectly because they change the amount of capital and encourage investors to re-examine their convictions on the effects of government policies. The direct impact is called capital shocks, and the indirect effect is called impact shocks. We also call capital as well as effects shock economic shocks together. The third sort of shock is economically orthogonal. Political shocks occur as a result of knowledge of the political consequences of possible new policies. These shocks, which reflect the flow of political news, force investors to revisit their opinion that government policy choices are likely to be made (Vassalou and Xing, 2008).

Research reveals that the price of stocks drops when a policy change is announced. Typically, positive rates of the announcement are low because they tend to occur in countries in which investors are predicted to make a major change in the policy. Given the economic goal of the Government, any changes in policies that raise stock values are expected; therefore, most of the effect is predicted before the announcement. In contrast, negative notification returns are usually more remarkable because they occur when the policy change announcement has a major element of surprise (Flood et al., 2012). This anticipated response to the statement is more negative if government policy is more unpredictable. If political uncertainty is greater,

the announcement of a political shift is also an element of surprise. Returns are negative, particularly following brief or brief downturns. Returns on advertising can also be positive, especially after lengthy or profound downturns. But such positive returns tend to be minimal since policy adjustments are typically anticipated after protracted or deep downturns. Investors are unsure about whether policy changes will occur before the policy decisions are announced. If it changes, stock prices tend to leap down: they tend to shoot up if it doesn't change. When announcing a policy decision, the predicted stock price rise reflects the risk premium sought by investors when they are holding stocks. The conditional jump risk premium may be both good and bad, but the unconditional premium is always good and growing in the face of political uncertainty and insecurity (Frankel and Wei, 2015).

The amount of the share risk premium depends heavily on the state. Especially under poor economic times, the political risk premium is higher. The political risk premium is the most significant component of the equity premium in our baseline calibration when conditions are awful. The Government is more inclined to pursue a new policy with a weaker economy. Thus, the announcement that the new "political shocks" policy should be imposed has a greater influence on the poorer economy on stock prices. The political risk premium is minor in robust economic conditions, but the "impact shock" component of the stock premium is high. When the times are good, the existing policy will probably remain in force. Therefore news about the effects of "impact shocks" on stock prices in the present policy has a major influence. The effect shocks are less critical when times are wrong as the existing policy may be replaced, and the result of this policy is therefore transient. It is interesting to note that impact shocks frequently matter, most when times are no good and no terrible. In such middle states, investors are most confused about the retention of the existing policies. Impact shocks influence stock prices, thus changing investors' understanding of projected profitability and their understanding of the probability of policy change. Investors so seek more reimbursement of owning stocks, with equity premiums dependent on the economic situation hump-shaped (Meghir and Pistaferri 2011). Two conflicting forces impact the stock premium in bad economic circumstances. The Government's implied choice to modify its policies in a poor economy is, on the one hand, a drawdown of premium. With this put option, the equity premium is reduced by temporarily changing the impacts of shocks and so reducing the impact component of the compensation. On the other hand, as previously established, the premium is boosted by political uncertainty. The two impacts cancel roughly in our baseline calibration. Political uncertainty

more generally decreases the value of the Government's implied market choice (Lucas and Van Wincoop 2014)

The stock premiums and the volatility, and the correlations of stock returns are characterized by solid-state dependency. In general, the stocks are more volatile and more correlated, mainly because of political instability, when the economic circumstances are low. More politics indicates higher risk premia and lower stock values, but only if there is a bad economy. Furthermore, when prospective new policies are considered more varied a priori, volatility and correlations are higher.

When the economy is weak, the Government tends to adjust its policies, successfully protecting the stock market. But political uncertainty reduces the value of this implied alternative. That uncertainty has a premium in terms of risk, yet the underlying economic shocks of politics are orthogonal. The political uncertainty risk premium is substantial, mainly if economic conditions are weak. In these circumstances, the equity premium is primarily driven by the interactions between the Government's choice and political concerns, whereas economic uncertainty drives it under excellent circumstances (Kalemli-Ozcan et al., 2013). The premium is generally the biggest in intermediate conditions below average, where investors confront the most doubt as to whether the state would modify its policies.

Arouri et al. (2016) confirmed this in an empirical study. An autoregressive distribution lug (ARDL) model was used to quantify the effect of changes in EPU on S&P 500 returns over the period 1900 to 2014. Their findings suggest that increased policy uncertainty reduces stock returns in the near term. They also found that the impact is more significant during periods of high volatility in the stock market. Antonakakis found similar results. (2013). Using the DDC (Dynamic Conditional Correlation) model and data from January 1987 to January 2013, they used policy uncertainty and S&P 500 yields, except during periods of a significant financial crisis. We found that the dynamic correlation between them was continuously negative over time. There are also some studies to investigate the impact of EPU on the rate of return on stock markets in other countries. Christou et al. (2017) discovered the fact that EPU has a negative impact on stock market returns in the short term in Australia, Canada, China, Japan, and South Korea. They used a panel vector autoregression (VAR) model and data between January 1998 and December 2014. Comparing with the above results, a consistent effect was found by Chang et al. (2015). They investigated the relationship between policy uncertainty and stock market returns in Canada, France, Germany, Italy, Spain, the United Kingdom, and the United States.

Using the Bootstrap Panel Causality Test, they found that uncertainty positively affected stock markets in the US and UK. However, the sign of the effect is based on the sum of the coefficients for all delays and does not necessarily mean that the effect is a positive for effect. For example, Kang and Ratti (2013) found that the impact of EPU on the rate of return on the stock market is negative when affected but positive as the time difference increases. All referenced studies use the EPU index constructed by Baker et al. (2016) or Baker et al. It was constructed using the same methodology. Also, most focus only on short-term dynamics and do not test for the existence of a co-integral between the EPU and stock market indices.

There are several models available for the valuation of stocks. A few methods look different, but most of their primary purpose is to measure the present value of a shareholder's future returns. One commonly used model for valuing stocks is the discounted dividend model known as the Gordon Growth Model (Gordon, 1956). The model's primary assumption is that a stock is equal to the sum of the present value of all future dividends. Therefore, the stock price is affected by both the size of the premium and the discount rate (Equation 3.1). Since the discount rate is the denominator, the higher the discount rate, the less valuable the stock. Note that this method can only be used if the company pays dividends. Another standard method used in stock valuation calculates future cash flows' present value (Danthine & Donaldson, 2001). This is done by forecasting future cash flows and discounting them to their present value (Equation 3.2). You can then calculate the stock's intrinsic value by dividing this value by the number of shares outstanding. Like the Gordon growth model, discount rates are used to calculate the present value of cash flows:

$$Price_0 = \sum_{t=1}^{\infty} Dividend_0 \frac{(1 + \mathrm{E}[Dividend\ growth])^t}{(1 + discount\ rate)^t} \tag{3.1}$$

In equation (3.1), $Dividend0$ represents the dividend at time 0 and t represents time.

$$Value_0 = \sum_{t=1}^{\infty} \frac{\mathrm{E}[Cash\ flow_t]}{(1 + discount\ rate)^t} \tag{3.2}$$

The above model seems very simple. They are just discounting dividends or cash flows to present value. The problem, however, is that the appropriate discount rate is not an easily accessible variable. You have to predict. We usually use a discount rate that corresponds to the expected return of the stock of interest. The discount rate is a function of the Muwihom interest rate and the so-called risk premium (see Equation 3.3). Risk premiums provide compensation for investors in exchange for holding risk assets. Another difficulty with the model is estimating future dividends and cash flows.

$$Discount\ rate = riskfree\ rate + \pi \tag{3.3}$$

Where π is a dangerous premium.

Looking at equation (3.3), we can conclude that as the risk premium increases, so does the discount rate.

Assessment of venture store execution

The presentation estimation of an oversaw portfolio has pulled in a great interest in monetary and monetary writing. From an overall view, two fundamental methodologies to execution estimation might be perceived and followed. The primary method thinks about the profits of oversaw portfolios, and its motivation is to characterize and decipher traditional award to-hazard measures under symmetric conditions. The subsequent methodology examines the earnings of managed portfolios and focuses on using and presenting the estimates, which make it conceivable to surmise the decisions made by venture administrators under topsy-turvy conditions. Conventional investigations on shared asset execution measure the estimation of dynamic asset the executives by testing the capacity of asset directors to procure unusually brings relatively back to a factor model that acclimates to the danger level of the asset (Sørensen et al., 2009). Experimentally, this is normally actualized by contemporaneously contrasting every day or month to month store get back with different monetary market lists through relapse examination.

Uncertainty assessment proportions

Uncertainty proportions measure the dangerous unpredictability of stock and address that hazard with straightforward numbers. The five usually acknowledged danger proportions are alpha, beta, r-squared, standard deviation, and Sharpe. Alpha and beta are two of the most effortless to comprehend and consequently are utilized for the legitimate assessment of speculation hazard. Alpha is a danger proportion that applies to common assets. This number measures how much worth the portfolio director brings to the common asset. Alpha looks at the substance of common asset ventures with a benchmark record (Bai and Zhang 2012). This is an extravagant method of saying that alpha looks at how the asset might perform without the executives? What may occur on the off chance that the asset was left alone to follow alongside the market benchmark? The exhibition of the presented benchmark is deducted from the genuine presentation of the asset. The thing that matters is the alpha. A positive number implies how much worth an asset administrator adds to the shared asset. A negative number implies that the asset administrator is making the asset fail to meet expectations :

$$\alpha = r_a - r_f - \beta \cdot (r_b - r_f), \tag{3.4}$$

r_a – the rate of return,

r_b – the benchmark index's rate return,

r_f – the risk-free rate,

β – beta ratio.

Beta is determined utilizing relapse examination as the inclination of safety gets back to react to swings on the lookout. A beta of 1 demonstrates that security costs will move along with the market. If beta is under 1, it implies that security will be less unpredictable than the market. A beta of more noteworthy than 1 demonstrates that security costs will be more unstable than the market (Lane and Milesi-Ferretti, 2009). For instance, if the stock beta is 1.2, it is hypothetically 20% more unpredictable than the market:

$$\beta_a = \frac{Cov(r_a, r_b)}{Var(r_b)},$$

r_a – fund rate of return,
r_b – rate of return of the benchmark index,
$Cov(r_a, r_b)$ – covariance between rates or return,
$Var(r_b)$ – value at risk of the benchmark index. (3.5)

Standard deviation is an accurate estimate that provides insight into verifiable instability. For instance, the unstable stock will have an exclusive requirement deviation while the deviation of a steady blue-chip stock will be lower (Chinn and Ito, 2008). Enormous scattering reveals to us how much profit from the asset goes astray from the anticipated expected returns::

$$\sigma = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}},$$

x_i – rate of return,
$\bar{x}$ – average rate of return,
n – number of periods. (2.6)

3.8 Presidential cycles on the stock returns

As already noted, there is also an intriguing connection between the uncertainty in economic policies and the presidential cycle. The " Minister's mystery" has been recorded by Santa-Clara & Valkanov (2003), and the link between American pricing percentages and the political process has been examined. The writers carried out a study from 1927 to 1998 over a reasonably lengthy period. The results were discovered significantly higher for the presidents of Democracy than for the presidents of the Republic. In the Democratic ruling, the excess return of a weighted CRSP portfolio (equal) is by average 9% (16%) greater. Business cycle factors cannot explain the observed difference in over return across administrations.

Further, Santa-Clara & Valkanov (2003) indicate that the excess returns around presidential elections have not changed much. The authors also find that market volatility in Republican

governments is higher. Santa Clara and Valkanov, Pastor, and Veronesi (2003) concur (2017) that ,the return difference is much stronger for a more recent era. The return gap between 1999 and 2015 is 17.5%. The authors explain why the return gap was created. They stress that it is not what presidents are doing but rather the time they are elected. In the "presidential dilemma," the authors developed a balancing model. The model is based on the premise that the risk is different in time. If projected future profits are high or the aversion to risk is strong, a democratic president is usually elected. If the risk aversion is low, a Republican president is generally chosen.

Consequently, the authors conclude that under the Democratic Presidents, risk aversion is stronger, leading to a larger equities risk premium resulting in higher returns. The authors examine the recent history of leadership transitions throughout several crises. The Republican President was replaced by the Democratic President in the Great Depression, and Barack Obama was substituted in the financial crisis of 2008 with George Bush (REP) (DEM). The model results show that both the return on stocks and economic growth under Democratic Presidents are higher than under republican presidencies. Belo et al. (2013) expand research to cover the cross-sectional inventory returns and link political cycles. They examine how political cycles impact the cross-section of stock revenue through public expenditure. In the United States, the authors research 1947 and 2002. The authors show that companies with a great deal of government exposure outperform those with low public exposure. This overall annual surplus is about 6.1 percent. But under a Republican administration, this impact has been reverted. In Republican power, companies in businesses with a high level of exposure to government underperform in areas with minimal exposure to the government. This deficiency is about 4.8 percent every year. After checking firm-level features, this pattern is robust.

The results of this research suggest that the Santa-Clara and Valkanov (2003) document presidential dilemma is more evident in areas that are more exposed to government expenditure than industries with little government exposure. The guiding industries exposed to high exposure include; construction and repair, oil and gas production. Low-exposure industries include the manufacture of tobacco products, the production of soft drinks and ice. Belo et al. (2013) have also developed an investment that seeks to utilize the influence of the presidential cycle. During the Democratic presidencies, the writers spend a considerable amount of time in a portfolio of very governmental and short-sighted enterprises. This technique produces an extraordinary 6.9 percent return every year. This overhaul is centered mostly on presidencies in the second and third years.

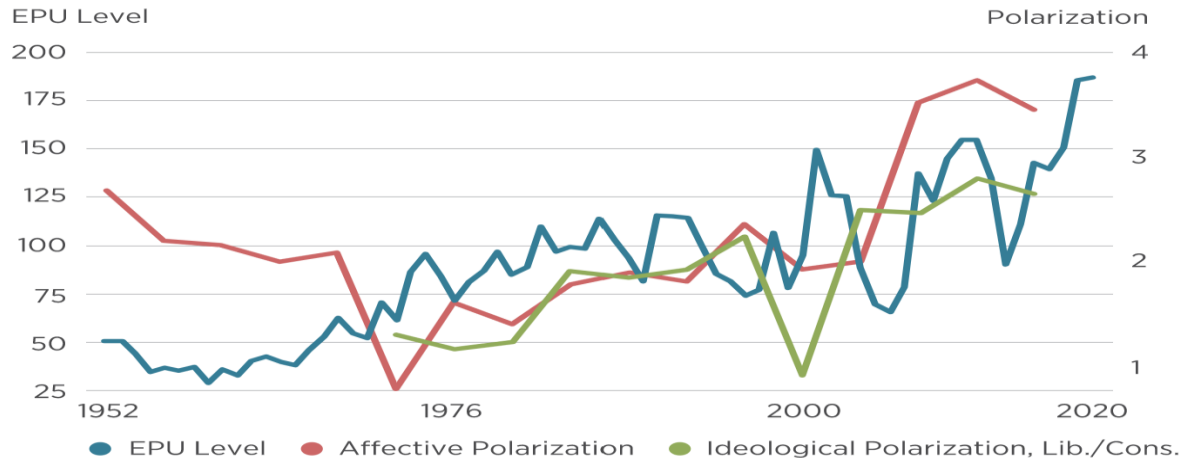

Figure 3.6 Polarization in US Presidential Election and EPU. Source: Becker Friedman Institute working paper

Figure 3.6 shows time-series measurements of sentiment polarization and uncertainty in US policy during the 1952-2016 elections. Policy uncertainty (left axis) averaged 100 points each month from 1985 to 2009. 2020 will only include data up to February. Sentiment polarization is measured by the mean absolute difference in emotions between parties that weighs the mean demographic weights (right axis) of all respondents. Idealism polarization is a similar measure calculated by the mean absolute difference of ideological positions on a liberal, conservative scale weighted by the mean demographic weights (right axis) of all respondents.

In a recent paper, Election Political Polarization and Uncertainty in the Economy, Scott R. Baker, Aniket Bakushi, Nicholas Bloom, Stephen J. Davis, and Jonathan Rodden argue that uncertainty in economic policy (EPU) is particularly polarized and close to national elections. Given the ongoing political polarization in many democracies, the impact of this uncertainty is likely to intensify in many upcoming national elections around the world. National elections provide clear signals about the future of national economic policy in the years to come, and expectations coincide when certain candidates appear ready to win. However, fierce competition with uncertain outcomes can impact policies and the investment climate.

The link between presidential elections in academia and economic policy uncertainty is fairly new. But recently, Goodell et al. investigated the link between elections, policy, and market uncertainty (2020). They found that changes in the election potential of incumbent parties had a significant impact on the political and economic uncertainty of election uncertainty.

Pastor & Veronesi (2017) show that Santa -Clara & Valkanov's (2003) reported return gap is explained by the election of presidents, not by individual Presidents' activities. The authors claim that when risk aversion is strong, democratic presidents likely to be elected. During these times, investors are demanding additional social insurance from Democratic regimes. Typically, avert danger increases during a crisis or global instability, leading to a Democrat win. Therefore, EPU is also increasing during crises or global instability. I have made the following hypothesis based on the aforementioned scholarly evidence: In the democratic presidencies, excess returns from an EPU component are more evident than during the Republican presidencies.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 HYPOTHESIS DEVELOPMENT

Policy on Economic Uncertainty, the unpredictability of government policy changes significantly impacts corporate rentability and operations. The EPU research broadly covers two elements of this research (Gulen & Ion, 2015). One is to investigate companies' financial and operational behavior, such as investment behavior in a high EPU environment. The other is to explore the possible impact of the EPU on the return and volatility of all types of assets. As a strong professional investor, the mutual fund progressively becomes the subject of relative study since it is strongly impacted by the macro-environment in its investment strategy (Liu & Zhang, (2015). Currently, scientists largely concentrate on holdings of mutual funds and an unclear approach. For instance, amid political instability situations calling a flight to quality, demand for financial reporting and earning rate is increased addition, managers may sell stocks that are illiquid in the first place or keep additional non-risk assets such as cash in totain the normal functioning of mutual funds while confronting a possible uncertainty redemption. These study studies generally assume that the growth in EPU makes it more possible for mutual funds to fail to fulfill investors' expectations, therefore preventing managers from carrying out hazardous assets (Pastor & Veronesi (2011) (2012)). The essence of the fund industry, however, is much more like a cash flow rivalry. Therefore, management scale cannot be maintained simply by avoiding excessive uncertainty in investing hazardous assets when investors usually boost their return expectations. They risk more in this circumstance by retaining funds. To discuss the probable behavior of mutual funds, such as risk adjustment induced by EPU, it must thus be combined with investor returns requirements (Ben-Rephael, 2017; Li, Shi, & Yang, 2015).

As a unique macro factor, the EPU largely influences investor preference for hazardous assets via ambiguity that points to the uncertain likelihood of achieving the projected return. As a result of ambiguity aversion, investors typically favor definite returns. Ambiguity positively impacts projected returns insulated from risk and changes in investors' expectations that the return will be attained (Kang, 2013). Only when the returns match their requirements can investors maintain hazardous assets, such as the mutual fund. Moreover, academics have shown that when the EPU boosts the mutual fund flow, investors exit the financial sector. These study findings demonstrate that investors have tighter return criteria or decrease financial market participation in hazardous assets (Chen, Hope, Li, & Wang, 2018; Peng, Xiao, & Zhou, 2018). Consequently, mutual fund managers may increase their portfolio risk level to pursue better returns to maintain their product attractiveness. Based on the preceding discussion, we propose our initial hypothesis.

H1: When economic policy uncertainty grows, the amount of risk is increased by mutual funds.

Past returns have an impact on the desire of the mutual fund to alter risk levels. Some researches have demonstrated that management incentives and job risk primarily impact the motivation of managers to modify their portfolio risk level. (Thiele, Kempf, & Ruenzi 2009; Wang, Xiao, Xu, & Peng 2016). Investors prefer to retain low-risk assets and withdraw mutual funds if EPU is high. In this circumstance, employment risk dominates, making losers more conservative than winners in reducing their risk.

H2: Increasing economic-political instability makes winners willing to increase portfolio risk.

4.2 Variable and model

Comparative research that has previously been done generally uses return volatility as a risk level evaluation. However, it is difficult to demonstrate the true purpose of adapting the risk level of the portfolio of the mutual fund by this means. Initially, the Intended Risk Adjustment was created to assess the risk level adjustment by utilizing holding data rather than returning data. This variable is calculated in this article to show adjustments in the risk. The detailed techniques used in relevant investigations are provided below.

First, we take half a year for the current reporting period and calculate the anticipated risk level, based on the monthly return volatility in the last portfolio period, after the current reporting period. Then we calculate the risk level achieved in the prior period, the basis of monthly return

volatility achieved by the fund in the latter period. Finally, the planned risk adjustment ratio is calculated based on the expected level of risk for the present reporting period to the risk level it has realized for the previous reporting period. In the same way, we compute the anticipated degree of risk adaptation based on the difference between the intended level of risk for the current period and the level of risk achieved during the last period.

$$\text{Intended Risk Adjustment Ratio} = \sigma_1 / \sigma_2 \qquad (3.1)$$

$$\text{Intended Risk Adjustment Level} = \sigma_1 - \sigma_2 \qquad (3.2)$$

Mutual funds

We select 30 U.S. mutual funds monthly adjusted returns, starting from the year 2000:01 through the year 2021:02, more than historical 20 years data set from the website of https://finance.yahoo.com/screener/predefined/top_mutual_funds

Economic Policy Uncertainty

We employ a 19-country EPU index dividing North America, Europa, Asia, and Australia into five different categories. The Economic Policy Uncertainty Index websites, situated at the https://www.policyuncertainty.com/, develop this Index by Baker, Bloom, and Davis, obtaining monthly data on economic policy uncertainty 2000:1-2021:2. Readers are encouraged to read a thorough methodology for how an index is built by viewing a webpage at http://www.policyuncertainty.com/methodology.html under the methodology part of the economic policy uncertainty index.

Fama French 4 Factors Model

We utilized monthly data from 2000:01-2021:02, more than 20 years, the site of the https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html in this thesis, Fame French 4 Factors Model (Mkt-Rf, SMB. HML, and MOM)

4.3 Model Design

Multiple linear regression models apply linear equations to observed data samples to study the linear relationship between the dependent variable and multiple independent variables (Coelho Barros et al., 2008).

In our thesis research, the panel data are analyzed using a multivariate regression approach in this document. The following regression model is precisely estimated.

$$Ri_t - Rf_t = \alpha + \beta_1*(Mkt\text{-}rf) + \beta_2*SMB + \beta_3*HML + \beta_4*MOM + \beta_5*pol\_uncertainty\_N.A + \beta_6*pol\_uncertainty\_S.A + \beta_7*pol\_uncertainty\_Europa + \beta_8*pol\_uncertainty\_Asia + \beta_9*pol\_uncertainty\_Australia + \varepsilon_{it} \quad (3.3)$$

Our dependent variables are mutual funds and like independent variables, we use the monthly returns of EPU and Fama French 4 Factors Model.

4.4 Regression analysis

The regression analysis of our first mutual fund is shown in Table 4.1 and Table 4.2 (HSSAX). This tables show the analyses of HSSAX Fund just for Fama French 4 factor model and Fama French and Policy uncertainty indexes together.

SUMMARY OUTPUT				**HSSAX**
				1
Regression Statistics				
Multiple R	0.812039			
R Square	0.659408			
Adjusted R Square	0.653914			
Standard Error	0.03405			
Observations	253			
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.00022	0.002171	-0.09986	0.92054
Mkt-RF	0.73123	0.054202	13.49088	1.78E-31
SMB	0.539048	0.071005	7.591728	6.4E-13
HML	0.782293	0.067975	11.5085	7.69E-25
Mom	0.029586	0.04521	0.654424	0.513445

Table 4.1 The first regression analysis of HSSAX

Alpha is a measure of investment performance according to risk adjustment criteria. Compare the risk adjustment results with the benchmark index, considering fluctuations in the securities or fund portfolio (price risk). The Benchmark index rate of return excess return on investment is alpha. Alpha and beta are two major measures used to assess the performance of a stock, fund, or investment portfolio. Alpha measures the amount returned by comparing it to the market index or other large benchmarks being compared. From the results, alpha is 0.3 on the first regression (0.00022), similar to annual alpha (the p-value is 0.9). A negative alpha means that the fund's performance is 0.3% worse than the market. The second regression analysis shows the same alpha prize scenario, which is negative (0.015) and is displayed at 18.5 per year (p-value basis 0.02).

The beta value of the regression analysis is a measure of investment volatility. Investors use both alpha and beta percentages to calculate, compare, and forecast return on investment. Use both of the two benchmark indexes for both proportions. Fluctuations are another component of the level of risk associated with a given asset. Beta, also known as the beta factor, measures volatility and systematic risk across the market and related securities and portfolios. The beta version provides ideas for investment trends that respond to market changes calculated using regression.

The first regression analysis shows that all beta values are positive and less than 1. This means that the securities price fluctuates below the market average, and the second regression provides the same results for all beta values of the Fama French factor. Positive, less than one.

Second regression analysis shows the impact of policy uncertainty on HSSAX mutual funds. β5, β6, β7, and β9 are positive, less than one but β8 is very negative. This means it tends to move in the opposite direction of security.

SUMMARY OUTPUT				HSSAX
				1
Regression Statistics				
Multiple R	0.819119			
R Square	0.670956			
Adjusted R Square	0.658769			
Standard Error	0.033811			
Observations	253			
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.01538	0.006589	-2.33354	0.020436
Mkt-RF	0.74171	0.056197	13.1984	2.37E-30
SMB	0.539265	0.070857	7.61063	6E-13
HML	0.823431	0.070204	11.72906	1.8E-25
Mom	0.040527	0.045335	0.893946	0.372235
N. America	0.055198	0.06044	0.913271	0.362005
S. America	0.083722	0.058961	1.419951	0.156904
Europa	0.009557	0.082555	0.115767	0.907933
Asia	-0.0456	0.046983	-0.97056	0.33273
Australia	0.009699	0.048432	0.200262	0.841443

Table 4.2 The second regression analysis of HSSAX

R-squared is the ratio of the variance of a response variable that can be explained by the predictor variable, also known as the coefficient of determination. For example, the first regression R2 is 65, and the second regression is 67. These regressions implied 65% and 67% of the variance in HSSAX mutual funds accounted for by the independent variable.

Regression r-squared is the percentage of change in the dependent variable explained (or predicted) by the independent variable. R-squared is usually the second most important unless your primary concern is making accurate predictions using regression equations. The p-value shows how confident you can be that an individual variable has a correlation with the dependent variable.

So, one more number to note is the p-value across the regression. Since independent variables, a condition known as multicollinearity, can be correlated, the coefficients of the individual variables may not be significant if the regression as a whole is significant. Intuitively, this is because the highly correlated independent variable explains the same part of the variability of the dependent variable, and its explanatory power and the significance of its coefficients are 'divided up' between them.

Therefore, the next step should be emphasized as the entire regression model is statistically significant if the alpha and beta p-values are less than 5%. Also, if the p-value is less than the significance level, there is sufficient evidence to conclude that the regression model fits the data better than the model without predictors. If the p-value is less than 0.05, you can reject the null hypothesis. Otherwise, the null hypothesis is maintained. A change in the value of the predictor is associated with a difference in the reaction variable, so a predictor with a lower p-value may be a more meaningful addition to the model. It is one of the essential steps to reject or accept the null hypothesis. This number is not statistically significant in the first regression analysis because the p-value of alpha is higher than 5%. Still, in the second regression, this regression analysis is statistical because the p-value is less than 5%. It will be significant.

The p values for β1, β2, and β3 are less than 5%. This is a statistically significant number, but β4 means that it is above 5% in both regressions in Tables 4.1 and 4.2. Also, all p values are 5% or higher. The standard error (S.E.) of the regression is more convenient to know than the model r-squared because it provides the actual unit. It is straightforward to understand that the model is correct to be used for predictions using the S.E. regression model. The observed value is the average distance that falls from the regression line. The standard error is a measure of the uncertainty of the coefficient estimates for each variable. The standard error of the analysis is 0.03 and 004, which means that the unit widths are 0.06 (2 * 0.03) and 0.08 (2 * 0.04), respectively. This number is highly recommended for analytical performance.

T-statistics is the coefficient divided by the standard error. The standard error is an estimate of the standard deviation of the coefficients and is a case-by-case quantity. This can be thought of as a measure of the degree to which the regression coefficient is measured. We observe this conclusion in the regression analysis, unlike probably zero if the coefficients are significant compared to the standard error.

In next step we can focus on the our another mutual fund which is TRBCX and the table 4.3 and 4.4 show the regression analyses results.

SUMMARY OUTPUT				**TRBCCX**
				17
Regression Statistics				
Multiple R	0.9617			
R Square	0.924867			
Adjusted R Square	0.923655			
Standard Error	0.013535			
Observations	253			
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.000687	0.000863	0.795998	0.426794
Mkt-RF	1.067888	0.021546	49.56356	1.1E-130
SMB	-0.1664	0.028225	-5.89541	1.22E-08
HML	-0.21638	0.027021	-8.00795	4.53E-14
Mom	0.031508	0.017971	1.753237	0.080797

Table 4.3 The first regression analysis of TRBCX

In our tables, the alpha value of the first regression analysis is 0.0007 (0.4 p-value), depending on the annual alpha about 0.8. It is a positive alpha and means that the fund has outperformed its index of 0.8%. A positive alpha is a better time for the decisions of investors. In addition, the second analysis of the TRBCX foundation is positive alpha, since 0.006 (according to p-value 0.02) and the annual price is 7.5%. In the next step, we should focus on p values to improve their meaningful results. The p-value of alpha in the first regression analysis was higher than 5%, and that is, there is strong evidence for a short hypothesis and no correlation. However, in the second regression analysis, the p-value alpha is lower than 5% and indicates that the analysis results are statistically significant amounts.

The first regression analysis shows the various effects of the French Fama element model on the TRBCX fund. B1 is a positive number such as 1.07 and lower p-value, which easier to fluctuate 7% than the market. But β2 and β3 are equivalent to 0.2 with lower p values. The final value of our first regression analysis shows a positive number than 0.03, but with a higher p-value.

SUMMARY OUTPUT				TRBCX
				17
Regression Statistics				
Multiple R	0.963628			
R Square	0.928579			
Adjusted R Square	0.925934			
Standard Error	0.013332			
Observations	253			
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.006257	0.002598	2.408246	0.016775
Mkt-RF	1.073356	0.022159	48.43888	7.6E-127
SMB	-0.17377	0.027939	-6.21944	2.16E-09
HML	-0.21946	0.027682	-7.92784	8.08E-14
Mom	0.030635	0.017876	1.713768	0.087846
N. America	0.062945	0.023832	2.641159	0.008798
S. America	-0.0295	0.023249	-1.26884	0.205713
Europa	-0.04841	0.032552	-1.48703	0.138304
Asia	-0.0337	0.018526	-1.81888	0.07016
Australia	0.000552	0.019097	0.028916	0.976955

Table 4.4 The second regression analysis of TRBCX

The following regression analysis determines the effect of EPU and shows almost the same numbers and scenarios for the Fama French factor. The values of β5 and β9 are positive numbers, but the p-value of β5 is lower than 5%, unlike the other, This fund will be less volatile than the market by β5. However, the proportions of β6, β7, β8 are negative, all p values are less than 5%, showing a statistically significant number. This fund tends to move inversely to the direction of the overall market.

The r-squared of the first regression is 92, and the second is 93. These regression analyses mean that independent variables explain 92% and 93% of TRBCX investment fund diversification. But this doesn't tell us how correct our prediction interval is. The standard error of the two analyses is deficient, so the unit width is very low. Even the low price of standard error affects t-stats.

The table 4,5 and 4.6 show the regression analyses of the JAENX fund.

SUMMARY OUTPUT				**JAENX**
				26
Regression Statistics				
Multiple R	0.922826			
R Square	0.851608			
Adjusted R Square	0.849215			
Standard Error	0.024007			
Observations	253			
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-0.0035	0.001531	-2.28576	0.023112
Mkt-RF	1.077007	0.038214	28.18324	2.78E-79
SMB	0.472039	0.050061	9.429247	3.08E-18
HML	-0.36123	0.047925	-7.53731	8.99E-13
Mom	0.014108	0.031875	0.442618	0.658428

Table 4.5 The first regression analysis of JAENX

The alpha value of the first regression analysis of the JAENX fund is 4.2% at 0.0035 (p value 0.02 standard) like the annual alpha. This is a negative alpha, which means the fund has underperformed 4.2% of the index. Also, the alpha value of the second regression analysis is 0.007, and the annual alpha is about 8.9%. Research shows that the fund exceeds the benchmark index performance by 8.9%. However, in the second regression analysis, the p value of alpha is 5%, and looks like a statistically meaningless number.

The first regression analysis shows the impact of the Fama French 4-factor model on the JAENX fund. β_1 is positive, such as 1.08, which means it is more than 8% more volatile than markets with low p values. Also, β2 is 0.05 due to a very low p value and β3 is 0.04 again due to a deficient p value. However, the Mom value has a p value of 0.01 rather than 5%.

SUMMARY OUTPUT				JAENX
				26
Regression Statistics				
Multiple R	0.928426			
R Square	0.861976			
Adjusted R Square	0.856864			
Standard Error	0.02339			
Observations	253			
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.007403	0.004558	1.623996	0.105673
Mkt-RF	1.056206	0.038877	27.16799	1.34E-75
SMB	0.47708	0.049018	9.732675	4.08E-19
HML	-0.40554	0.048567	-8.35003	5.22E-15
Mom	-0.00128	0.031363	-0.04081	0.967481
N. America	-0.07105	0.041812	-1.69923	0.090555
S. America	-0.06736	0.040789	-1.6515	0.099929
Europa	0.094457	0.057111	1.653907	0.099438
Asia	0.005959	0.032503	0.183354	0.854673
Australia	-0.04686	0.033505	-1.39862	0.163202

Table 4.6 The second regression analysis of JAENX

The following regression analysis of the JAENX fund also determines the effectiveness of EPU and displays the same number and scenarios of Fama Fauna. The value of β5 and β6 is the same negative number (0.07) by lower p values. The influence of North America and South America on the TRBCX fund tends to move towards the overall market inverse. Also β7 proves to be 0.09 with lower p value and means less volatile. However, p values β8 and β9 are 5% higher and means there is no correlation.

R-square in the first regression is 85 and the second is 86. This regression analysis means 85% and 86% of the variables in the JAENX investment fund of independent variables. However, this does not tell us about our predictable interval. Standard errors in both analyzes are very low numbers, so that the unit wide is very low. Low prices in standard errors also affects t-stats.

Tricker	Name	Alpha	Mkr-Rf	SMB	HML	MOM	S.E.	R^2
HSSAX	Emerald Banking and Finance Fund Class A	-0.30%	0.73***	0.54***	0.78***	0.03	0.03	66%
BFOCX	Berkshire Focus Fund	-4%	1.6***	0.53***	-1.25***	-0.1	0.06	68%
SSETX	BNY Mellon Growth Fund Class I	-8.6%***	1.1***	0.9***	-0.3***	0.2***	0.04	72%
UOPIX	Pro Funds UltraNASDAQ-100 F.I.C.	-4.10%	2.5***	0.34***	-1.5***	-0.2***	0.05	88%
FBSOX	Fidelity Select IT Services Portfolio	2.40%	1.04***	-0.05	-0.02	-0.02	0.03	74%
BCSIX	Brown Capital Management Small Company F.I.C.	-0.80%	1.01***	0.73***	-0.2***	0.04	0.03	79%
JEMSX	JPMorgan Emerging Markets Equity Fund Class I	1.90%	1***	0.14*	-0.07	-0.08*	0.04	62%
HACAX	Harbor Capital Appreciation Fund Institutional Class	-2.70%*	1.07***	-0.05	-0.42***	0.01	0.02	84%
PRNHX	T. Rowe Price New Horizons Fund	-2.40%	1.06***	0.54***	-0.32***	0.008	0.03	82%
FADTX	Fidelity Advisor Technology Fund Class A	-2.10%	1.4***	0.4***	-0.8***	-0.2***	0.03	84%
FTHCX	Fidelity Advisor Technology Fund Class C	-3.10%	1.4***	0.4***	-0.8***	-0.01***	0.03	84%
FNORX	Fidelity Nordic Fund	-1.60%	1.1***	0.06	-0.07	-0.01	0.03	69%
PARNX	Parnassus Mid Cap Growth Fund – Investor	-3.90%*	0.92***	0.1*	-0.09	-0.2***	0.03	68%
BPTRX	Baron Partners Fund Retail Shares	3.60%	1.4***	0.2***	-0.04	0.06	0.04	76%
QUAYX	AB S.C.G. Portfolio Advisor Class	-3.00%*	1.2***	0.6***	-0.2***	0.08**	0.03	85%
FTRNX	Fidelity Trend Fund	-2.50%*	1.04***	-0.08**	-0.2***	0.03	0.02	85%
TRBCX	T. Rowe Price Blue Chip Growth Fund	0.80%	1.07***	-0.2***	-0.2***	0.03*	0.01	92%
WAAEX	Wasatch S.C.G. Fund Investor Class	-3.80%	1.05***	0.6***	-0.1*	-0.02	0.03	74%
FIMPX	Nuveen S.C.G. Opportunities Fund Class I	-6.60%**	1.2***	0.9***	-0.2***	0.02	0.04	80%
BARAX	Baron Asset Fund Retail Class	-3.80%*	1***	0.2***	-0.0005	0.03	0.03	73%
APGAX	AB Large Cap Growth Fund Class A	-2.50%	1.05***	-0.2***	-0.3***	-0.03	0.02	83%
TWSIX	American Century Select Fund I Class	-2.60%**	1.01***	-0.2***	-0.2***	0.03	0.02	87%
PRMTX	T.Rowe Price Communications & Technology F.I.C.	2.50%	1.1***	0.02	-0.6***	-0.1***	0.03	77%
JANVX	Janus Henderson Venture Fund Class D	8%***	1.1***	0.8***	-0.4***	-0.05	0.03	82%
RPMGX	T. Rowe Price Mid-Cap Growth Fund	-1.95%	1.02***	0.2***	-0.07*	-0.02	0.02	83%
JAENX	Janus Henderson Enterprise Fund Class T	-4.20%**	1.08***	0.5***	-0.4***	0.01	0.02	85%
SVSPX	State Street S&P 500 Index Fund Class N	-2.10%**	1.02***	-0.2***	0.003	-0.02	0.01	92%
VIIIX	Vanguard I.I.F. Institutional Plus Shares	-0.20%	1***	-0.2***	0.01	-0.03***	0.005	99%
RYOIX	Rydex Biotechnology Fund Class Investor	-0.30%	0.94***	0.9***	-0.6***	0.14**	0.05	58%
CFIMX	Clipper Fund	-0.90%	0.84***	-0.2***	0.4***	-0.1****	0.02	77%

Table 4.7 The first regression analysis of all 30 mutual funds resuls.

FIC-Fund Investor class, SCG- Small Cap Growth. IIF- Institutional Index Fund, MKT-RF- Market Factor Exposure, SMB-Size Factor Exposure, HML-Value Factor Exposure, MOM- Momentum Factor.

P- values are shown in brackets. *** denotes p-value <0.01, ** denotes p-value < 0.05, * denotes p-value < 0.1, If p-value if higher than 0.1 I will not use any brackets.

Most authors refer to statistically significant as $P < 0.05$ and statistically highly significant as $P < 0.001$ (less than one in a thousand chance of being wrong).

Tables 4.7 and 4.8 use the investment fund's planned risk-adjusted multivariate regression to examine how the variables in the EPU and Fama French factors affect each other. In Table 4.7, the data show mainly negative impacts. Table 4.8 shows that the relationship between EPU and projected adjustments to risk in investment trusts is good and statistically significant. It mainly focuses on all funds' alpha and beta values and presents the price of its r-square standard error. Alpha is commonly used in regression analysis. Statistical alpha is the significance level. The concept of alpha was born from the introduction of weighted index funds that replicate the performance of the market as a whole and give each area of investment a corresponding weight. The development of investment strategies has developed new performance standards. Investors start investing in passive index funds and start looking for portfolio managers of actively traded funds to generate returns beyond what investors can expect. It is written as an indicator comparing alpha active and index investments. Alpha measures return on investment in a market index as return on investment. The excess return of the investment on the return of the investment alpha index. In the first regression, the alpha values are mostly negative. A negative alpha indicates that security cannot generate revenue at the same rate as the broader sector. So, by this definition, stocks with negative alpha are underperforming. However, alpha is just one indicator that needs to be analyzed when formulating an investment strategy. As with other indicators, it is important to get a comprehensive picture of the relative risk of an investment rather than making decisions based on just one value.

Beta values are being used to measure variability in regression analysis. The first beta value in Table 4.7, MKT-RF, shows a high price and a very low p-value compared to the other variables. The SMB and HML factors of mutual funds vary from fund to fund, with positive and negative numbers representing very different approaches. Also, from most calculation results, the values of beta3 and beta4 are less than 5%. The last independent variable that affects funding is MOM. In general, beta4 p-values are higher than 5%, unlike SSETX, UOPIX, FADTX, and FTHCX, which means that these numbers are not statistically significant. It has a huge impact on these investment trusts.

Tricker	Name	Alpha	Mkt-Rf	SMB	HML	MOM	N.A.	S.A.	Europa	Asia	Australia	S.E.	R2
HSSAX	Emerald Banking and Finance Fund CLass A	-18.50%***	0.7***	0.5***	0.8***	0.04	0.05	0.08	0.01	-0.04	0.01	0.03	67%
BFOCX	Berkshire Focus Fund	25%*	1.64***	0.5***	-1.3***	-0.1	0.03	-0.1	-0.1	-0.05	0.09	0.06	69%
SSETX	BNY Mellon Growth Fund Class I	11.50%	1.1***	0.9***	-0.3***	0.2***	0.1*	-0.1*	-0.1	0.02	-0.01	0.04	73%
UOPIX	Pro Funds UltraNASDAQ-100 F.I.C.	14.02%	2.5***	0.3***	-1.6***	-0.3***	-0.1	-0.05	-0.001	-0.01	0.1	0.05	89%
FBSOX	Fidelity Select IT Services Portfolio	14.10%**	1.05***	-0.06	-0.02	-0.02	0.07	-0.07	-0.1*	0.02	0.02	0.03	75%
BCSIX	Brown Capital Management Small Company F.I.C.	10.90%*	1.02***	0.7***	-0.2***	0.04	0.1*	-0.1	-0.1	-0.1	0.04	0.03	80%
JEMSX	JPMorgan Emerging Markets Equity Fund Class I	23.20%***	0.9***	0.1**	-0.1*	-0.1*	-0.001	-0.01	-0.1	0.1	-0.1*	0.04	65%
HACAX	Harbor Capital Appreciation Fund Institutional Class	9.20%*	1.1***	-0.06	-0.4***	0.01	0.1**	-0.1**	-0.04	-0.04	0.0001	0.02	85%
PRNHX	T. Rowe Price New Horizons Fund	13.90%**	1.06***	0.5***	-0.3***	-0.0002	0.06	-0.1*	-0.03	-0.04	-0.02	0.03	82%
FADTX	Fidelity Advisor Technology Fund Class A	15.30%**	1.4***	0.3***	-0,8***	-0.1***	-0.04	-0.001	-0.1	0.006	0.06	0.03	85%
FTHCX	Fidelity Advisor Technology Fund Class C	14.80%**	1.4***	0.3***	-0.8***	-0.15***	-0.04	-0.004	-0.1	0.001	0.07	0.03	85%
FNORX	Fidelity Nordic Fund	17.10%	1.1***	0.05	-0.1*	-0.02	0.02	-0.01	-0.04	-0.02	-0.1*	0.03	71%
PARNX	Parnassus Mid Cap Growth Fund – Investor	2.10%	0.9***	0.1	-0.1	-0.2***	0.01	-0.1	-0.02	0.01	0.004	0.03	68%
BPTRX	Baron Partners Fund Retail Shares	5.60%	1.4***	0.2***	-0.03	0.06	0.05	0.03	-0.2**	0.1**	-0.01	0.04	77%
QUAYX	AB S.C.G. Portfolio Advisor Class	7.50%	1.2***	0.6***	-0.2***	0.08**	0.06	-0.09*	0.009	-0.03	0.008	0.03	85%
FTRNX	Fidelity Trend Fund	9.80%**	1.04***	-0.09**	-0.2***	0.02	0.06*	-0.04	-0.08	-0.02	-0.01	0.02	85%
TRBCX	T. Rowe Price Blue Chip Growth Fund	7.50%**	1.07***	-0.2***	-0.1***	0.03*	0.06***	-0.03	-0.05	-0.03*	0.0005	0.01	93%
WAAEX	Wasatch S.C.G. Fund Investor Class	11.30%	1.09***	0.6***	-0.2*	-0.01***	0.2	-0.06**	-0.2	-0.05	0.06	0.03	76%
FIMPX	Nuveen S.C.G. Opportunities Fund Class I	4.40%	1.2***	0.9***	-0.2***	0.02	0.04	-0.04	-0.1	-0.01	0.05	0.04	80%
BARAX	Baron Asset Fund Retail Class	15.30%**	0.9***	0.2***	-0.03	0.02	0.02	-0.06	-0.05	0.03	-0.07*	0.03	74%
APGAX	AB Large Cap Growth Fund Class A	4.90%	1.05***	-0.2***	-0.3***	-0.03	0.08**	-0.05	-0.05	-0.004	-0.005	0.02	83%
TWSIX	American Century Select Fund I Class	4.96%	1.01***	-0.2***	-0.2***	0.03	0.07***	-0.07	-0.05	-0.03	0.005	0.02	87%
PRMTX	T.Rowe Price Communications & Technology F.I.C.	23.04%	1.09***	0.02***	-0.6	-0.1***	0.01***	-0.04	-0.04	-0.01	-0.05	0.03	78%
JANVX	Janus Henderson Venture Fund Class D	3.90%	1.08***	0.8***	-0.5***	-0.06	-0.03	-0.08	0.08	0.008	-0.05	0.03	82%
RPMGX	T. Rowe Price Mid-Cap Growth Fund	15.50%***	1.02***	0.1***	-0.1**	-0.03	0.06	-0.06*	-0.08	-0.02	-0.02	0.02	84%
JAENX	Janus Henderson Enterprise Fund Class T	8.90%*	1.06***	0.5***	-0.4***	-0.0001	-0.07*	-0.07*	0.09*	0.006	-0.05	0.02	86%
SVSPX	State Street S&P 500 Index Fund Class N	2.01%	1.03**	-0.2**	0.0007	-0.02	0.02	-0.03	0.0001	0.04**	0.03	0.01	92%
VIIIX	Vanguard I.I.F. Institutional Plus Shares	1.80%	0.98***	-0.2***	0.01	-0.03***	0.006	-0.02*	-0.002	-0.002	0.001	0.005	99%
RYOIX	Rydex Biotechnology Fund Class Investor	0.97%	0.99***	0.88***	-0.6***	0.1**	-0.1	0.01	0.02	-0.03	0.2**	0.05	60%
CFIMX	Clipper Fund	4.06%	0.84***	-0.2***	0.4***	-0.1***	0.08**	0.001	-0.06	-0.04	-0.03	0.02	78%

Table 4.8 The second regression analysis of all 30 mutual funds results

P- values are shown in brackets. *** denotes p-value <0.01, ** denotes p-value < 0.05, * denotes p-value < 0.1, If p-value if higher than 0.1 I will not use any brackets

Table 4.8 shows the results of all regression analyses of 30 mutual funds. The second regression is primarily positive, which is high compared to other tables. A positive alpha indicates that it is outperforming the security market. Positive Alpha shows that portfolio managers outperformed their expectations based on the risk they took of the fund as measured by the fund's beta. In the next step, we need to focus on the beta values in Table 4.8. The Fama French 4 factor shows almost similar numbers in the fund regression analysis compared to the 4.7 table. Table 4.8 also shows the effect of EPU on the Fund. North America has a very strong impact on TRBCX, WAAEX, and TWSIX funds, and their p values are also very low, below 5%. The second EPU indicator in our analysis is South America. It has a very noticeable effect on your funds.

For example: QUAYX, TWSIX. Europe doesn't have that much of an impact on US mutual funds, except for WAAEX. Table 4.8 shows that Asian indicators are having a very noticeable effect on HACAX and BPTRX funds. The last EPU indicator is Australia, except FTHCX, FNORX, and FIMPX, although there is no visible effect on these 30 US mutual funds. The R-square of the regression analysis mainly exceeds 60% and contains more than 90% of the regression analysis TRBCX, WIIIX, and SVSPX funds. Being very low numbers of the standard errors mean that the unit wides are very low in both tables. The data supports our first assumption that investment trusts increase risk when uncertainty in economic policy increases.

On the other hand, by analyzing the frequency factor that describes the characteristics and style of the fund, it is possible to discover large funds and the intensity of large funds to minimize risk. Expensive institutional investors who own more or the money they need can increase risk. The two results set the hypothesis that mutual funds must maintain a balanced risk level that lowers the risk level during the last period of high-risk exposure. Consistent performance degradation can be a significant risk signal. However, by using the rate of return of the market as a performance metric, Alpha assumes that the individual security risk levels, called enterprise-specific risks, are similar to the market risk levels of system risk. Therefore, Alpha is more useful in complete portfolio analysis because diversification is possible by distributing investment capital across different securities. Being very low numbers in standard errors mean that the unit wides are very low.

CONCLUSION

In light of financial globalization, the confirmation of high spillovers between country-specific EPU indexes shows that policymaking has global influence. The asymmetric relationship between EPU and the stock market is essential to financial stability and risk management. We aim to figure out how EPU indexes affect the stock market and clarify the relative importance of some critical EPU indexes. The U.S. stock market plays a leading role in the global market, so we focus on the spillovers between international EPU and the U.S. stock market to analyze the source of risk in the U.S. stock market. Using monthly data, we find that the U.S. stock market is a net recipient and that the downside risk is more sensitive to shocks to representative EPU. Our results indicate that international investors and policymakers should pay attention to the adverse effect of EPU on the downside stock market risk. Our paper builds on the framework of EPU and the stock market by providing asymmetric effect characteristics, which help to maintain financial stability. However, there are still some limitations. Future studies may focus on the influence channels of EPU by providing evidence of how EPU indexes affect investors, enterprises, and fund managers that lead to the asymmetry of risk spillovers. The findings may help investors and large institutions to understand how stocks are priced during times of economic policy uncertainty. They also show the importance of authorities and the government to maintain transparency to keep the stock market less volatile.

Most studies note that due to economic policy and political uncertainty, financial crises, wealth holdings, and investor decision-making have implications for the stock market. However, some academic research papers provide evidence that stocks have little or no impact when economic policy is uncertain in certain circumstances, cases and limits. Looking at the results of our experience investigating the relationship between economic policy uncertainty and 30 mutual funds, we can see that there is a positive relationship between economic policy uncertainty and stock price fluctuations. These results suggest that as economic policy uncertainty increases, corporate investment levels are affected and decline. We can also see that the outflow between the U.S. stock market and the North American EPU is the largest, while the outflow of the Australian EPU is the least.

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ACKNOWLEDGEMENT

It was a challenging but rewarding project to write this master's thesis. Finding motivation was sometimes tricky, but the difficulties faced make this result even more proud. In addition, while writing this thesis, I learned a lot about myself.

Thanks to my supervisor, Professor Stefano Colonnello, for your patience, guidance, and support. Thanks to your wealth of knowledge and meticulous editing, it has been a great help. Thank you for accepting me as a student and continuing to believe me.

Most importantly, I am grateful for the unconditional affectionate support of my family.

Sincerely, Abasagha Hasanov