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HOW ECONOMIC POLICY UNCERTAINTY DRIVES LONG-TERM INDUSTRY BETA: EVIDENCE FROM NORTH AMERICA

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ABSTRACT

Purpose: This study aims to evaluate the nature of the relationship between economic policy uncertainty and industry beta and the cross-sectional heterogeneity between them.

Theoretical Framework: Industry Return is derived from the annual market capitalization of each industry by taking a summation of all firms' market capitalization values to find out the industry beta variable. The categorization of 48 industries according to the Fama-French model has been defined as the industry in this study. The main explanatory variable for this research strategy is the Economic Policy Uncertainty or the EPU. Economic policy uncertainty is measured based on the given index by Baker, Bloom, and David index. Baker, Bloom, and Davis, or BBD, perceive that there are different manners by which the economic policy uncertainty can be evolved. For instance, economic policy uncertainty can be influenced by what different types of discussions related to economic policies are going to be undertaken. BBD has tried looking into the landscape regarding the economic policy uncertainty overall through the eyes of newspapers based in the USA. In addition, there has been textual analysis by Baker, Bloom, and Davis or BBD over different types of digital archives for the top 10 U.S. newspapers for obtaining the count of articles on a monthly basis for every newspaper so that they can be able to focus on the specific economic policy uncertainty.

Methodology: Positivist research philosophy has been implicated in conducting this research study. From the research approach perspective, the deductive research approach has been implemented. In addition, a quantitative research strategy has been used for modeling purposes and explanation. Furthermore, an experimental research design has been incorporated into this research strategy. The required data set has been gathered from secondary sources, including the WRDS and BBD databases. Industry return has been calculated based on industry market capitalization. From a modeling perspective, a baseline time series regression model has been incorporated. In this research conduction, there has been an analysis of 10 U.S. industries. The time span is from 2000 to 2020. In addition, there has been an analysis of different policy uncertainties based on the decomposition of EPU.

Results & Conclusion: First, the impact of the economic policy uncertainty in the combined form on the industry-level betas has been analyzed. In this case, the entire time scale of 19 years has been divided into three classes: the financial turmoil period from 2001 to 2006, the financial turmoil period from 2007 to 2010, and finally, the financial turmoil period from 2011 to 2020. It has been pointed out that overall, there

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has been a statistically significant positive impact of economic policy uncertainty on industry level-betas mostly on all industries. In addition, when there has been a decomposition of the economic policy uncertainty index, a statistically significant positive association has been found regarding monetary policy uncertainty and fiscal policy uncertainty.

Originality: The significance of this research is that there has been a one-to-one relationship finding on the impact of EPU on industry-level beta. Very few literatures have covered this issue broadly. One notable literature on this topic was conducted by Yu et al. in 2017. However, this research study has analyzed another ten industries in North America that have not been previously analyzed. In addition, for deep insight, the research framework has been divided into three parts: overall period analysis, pre-financial crisis turmoil, and post-financial crisis turmoil periods. In addition, there has been an analysis of the impact of component-wise seven policy uncertainty index on industry-level beta.

Contribution: Different factors, including macroeconomic phenomena, can influence industry-level beta or systematic risk. In recent times, economic policy uncertainty analysis has become inevitable for measuring the policy implications and their impacts on industry-level risk to determine their dynamics. The relationship between the economic policy uncertainty index and the industrial structural model of risk dynamics has been established by this research study.

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COMO A INCERTEZA DA POLÍTICA ECONÔMICA MOSTRA A INDÚSTRIA A LONGO PRAZO: PROVAS DA AMÉRICA DO NORTE

RESUMO

Objetivo: Este estudo visa avaliar a natureza da relação entre a incerteza da política econômica e o fator Beta da indústria e a heterogeneidade transversal entre elas.

Enquadramento Teórico: o retorno do setor deriva da capitalização anual do mercado de cada setor, tirando uma soma dos valores de capitalização do mercado de todas as empresas para descobrir a variável beta do setor. A categorização de 48 indústrias segundo o modelo Fama-Francês foi definida como a indústria neste estudo. A principal variável explicativa dessa estratégia de pesquisa é a Incerteza da Política Econômica ou UPR. A incerteza da política econômica é medida pelo índice do Baker, Bloom e David. Baker, Bloom e Davis, ou BBD, percebem que há diferentes formas de a incerteza de política econômica se desenvolver. Por exemplo, a incerteza da política econômica pode ser influenciada pelos diferentes tipos de discussões de política que terão lugar. A BBD tem tentado olhar para as perspectivas relativas à incerteza da política econômica em geral, através dos olhos dos jornais com base nos EUA. Além disso, Baker, Bloom e Davis, ou BBD, realizaram análises textuais de diferentes tipos de arquivos digitais nos 10 principais jornais americanos para obter a contagem mensal de artigos de cada jornal, para que eles possam se concentrar na incerteza específica da política econômica.

Metodologia: A filosofia da pesquisa positivista tem sido envolvida nessa pesquisa. Na perspectiva da investigação, foi aplicada a abordagem da investigação dedutiva. Além disso, foi utilizada uma estratégia quantitativa de investigação para a modelização e explicação. Além disso, uma concepção de investigação experimental foi incorporada nesta estratégia de investigação. O conjunto de dados necessário foi coletado de fontes secundárias, incluindo bancos de dados WRDS e BBD. O desempenho do setor foi calculado com base na capitalização do mercado do setor. Na perspectiva da modelização, foi incorporado um modelo de regressão das séries cronológicas de referência. Nessa pesquisa foi feita uma análise de 10 indústrias nos Estados Unidos. O período de tempo é de 2000 a 2020. Além disso, foi realizada uma análise das diferentes incertezas políticas baseadas na ruptura da UEP.

Resultados e Conclusão: Em primeiro lugar, foi analisado o impacto combinado da incerteza de política econômica nas apostas a nível do setor. Neste caso, a totalidade do período de 19 anos foi dividida em três classes: o período de turbulência financeira de 2001 a 2006, o período de turbulência financeira de 2007 a 2010 e, por último, o período de turbulência financeira de 2011 a 2020. Verificou-se que, em geral, a incerteza em termos de política econômica teve um efeito positivo estatisticamente significativo nos níveis industriais, em particular em todas as indústrias. Além disso, quando se desagregou o índice de incerteza da política econômica, observou - se uma associação positiva estatisticamente significativa entre a incerteza da política monetária e a incerteza da política orçamental.

Originalidade: a importância dessa pesquisa é que se encontrou uma relação um-para-um no impacto do UPR no nível beta do setor. Muito poucas publicações abordaram amplamente esta questão. Em 2017, Yu et al. publicou uma importante bibliografia sobre o assunto. No entanto, esse estudo analisou outras dez indústrias na América do Norte que ainda não haviam sido analisadas. Além disso, para um entendimento mais profundo, o quadro de investigação foi dividido em três partes: análise de períodos gerais, turbulência pré-financeira e períodos pós-crise financeira. Além disso, foi realizada a nível do setor uma análise de impacto de sete índices de incerteza política para as componentes do beta.
Contribuição: Diferentes fatores, incluindo fenômenos macroeconômicos, podem influenciar o nível da indústria beta ou o risco sistemático. Recentemente, a análise da incerteza da política econômica tornou-se inevitável na medição das implicações políticas e do seu impacto no risco a nível da indústria para determinar a sua dinâmica. A relação entre o índice de incerteza das políticas econômicas e o modelo estrutural industrial de dinâmica de risco foi estabelecida por este estudo.

Palavras-chave: Nível da Indústria Beta, Política Econômica, Política Monetária, Incerteza da Política Orçamental.

CÓMO LA INCERTIDUMBRE DE LA POLÍTICA ECONÓMICA IMPULSA LA INDUSTRIA A LARGO PLAZO: EVIDENCIA DE AMÉRICA DEL NORTE

RESUMEN
Objetivo: Este estudio tiene como objetivo evaluar la naturaleza de la relación entre la incertidumbre de la política económica y la beta de la industria y la heterogeneidad transversal entre ellas.
Marco Teórico: El retorno de la industria se deriva de la capitalización de mercado anual de cada industria al tomar una suma de los valores de capitalización de mercado de todas las empresas para averiguar la variable beta de la industria. La categorización de 48 industrias según el modelo Fama-French se ha definido como la industria en este estudio. La principal variable explicativa de esta estrategia de investigación es la Incertidumbre de la Política Económica o EPU. La incertidumbre de la política económica se mide en base al índice dado por el índice de Baker, Bloom y David. Baker, Bloom y Davis, o BBD, perciben que hay diferentes maneras en las que se puede desarrollar la incertidumbre de la política económica. Por ejemplo, la incertidumbre en materia de política económica puede verse influida por los distintos tipos de debates que se vayan a celebrar en relación con las políticas económicas. BBD ha intentado mirar el panorama con respecto a la incertidumbre de la política económica en general a través de los ojos de los periódicos con sede en Estados Unidos. Además, Baker, Bloom y Davis o BBD han realizado análisis textuales de diferentes tipos de archivos digitales de los 10 principales periódicos de Estados Unidos para obtener el recuento mensual de artículos de cada periódico, de modo que puedan centrarse en la incertidumbre específica de la política económica.
Metodología: La filosofía de la investigación positivista ha sido implicada en la realización de este estudio de investigación. Desde la perspectiva del enfoque de investigación, se ha implementado el enfoque de investigación deductiva. Además, se ha utilizado una estrategia de investigación cuantitativa con fines de modelización y explicación. Además, se ha incorporado un diseño experimental de investigación a esta estrategia de investigación. El conjunto de datos necesario se ha recopilado a partir de fuentes secundarias, incluidas las bases de datos WRDS y BBD. El rendimiento del sector se ha calculado sobre la base de la capitalización del mercado del sector. Desde la perspectiva del modelado, se ha incorporado un modelo de regresión de series de tiempo de referencia. En esta conducción de investigación, se ha realizado un análisis de 10 industrias de Estados Unidos. El lapso de tiempo es de 2000 a 2020. Además, se ha realizado un análisis de las diferentes incertidumbres políticas basadas en la descomposición de la UEP.
Resultados y Conclusión: En primer lugar, se ha analizado el impacto de la incertidumbre de la política económica en forma combinada sobre las betas a nivel de la industria. En este caso, toda la escala temporal de 19 años se ha dividido en tres clases: el período de turbulencia financiera de 2001 a 2006, el período de turbulencia financiera de 2007 a 2010 y, por último, el período de turbulencia financiera de 2011 a 2020. Se ha señalado que, en general, la incertidumbre en materia de política económica ha tenido un efecto positivo estadísticamente significativo en los niveles industriales, sobre todo en todas las industrias. Además, cuando se ha producido una descomposición del índice de incertidumbre de la política económica, se ha observado una asociación positiva estadísticamente significativa entre la incertidumbre de la política monetaria y la incertidumbre de la política fiscal. Originalidad: La importancia de esta investigación es que se ha encontrado una relación uno a uno sobre el impacto de la EPU en la beta a nivel de la industria. Muy pocas publicaciones han abordado ampliamente esta cuestión. En 2017, Yu et al. publicaron una bibliografía destacada sobre este tema. Sin embargo, este estudio de investigación ha analizado otras diez industrias en América del Norte que no han sido analizadas previamente. Además, para una comprensión más profunda, el marco de investigación se ha dividido en tres partes: análisis de períodos generales, agitación previa a la crisis financiera y períodos posteriores a la crisis financiera. Además, se ha realizado un análisis del impacto de siete índices de incertidumbre de políticas en lo que respecta a los componentes en la beta a nivel de la industria.

Contribución: Diferentes factores, incluidos los fenómenos macroeconómicos, pueden influir en el nivel de la industria beta o en el riesgo sistemático. En los últimos tiempos, el análisis de la incertidumbre de la política económica se ha vuelto inevitable para medir las implicaciones de la política y sus impactos en el riesgo a nivel de la industria para determinar su dinámica. La relación entre el índice de incertidumbre de la política económica y el modelo estructural industrial de la dinámica del riesgo ha sido establecida por este estudio de investigación.

Palabras clave: Beta Nivel Industrial, Política Económica, Política Monetaria, Incertidumbre en la Política Fiscal.

INTRODUCTION

For considering long-term phenomena on investment and other corporate decisions, it is important to consider industry beta and its factors. Industry beta measures a particular sector or industry's systematic risk or volatility. Industry beta provides insights regarding the risk profile of a particular industry. In addition, by analyzing industry-level beta, investors and other financial analysts can access the level of the market risk associated with investment in that particular industry. Different factors can influence industry level better or systematic risk of a particular industry. Economic factors or macroeconomic phenomena have recently become one of the most important considerations for investment and other corporate financial decisions.

One of the macroeconomic factors is known as economic policy uncertainty or EPU, which measures the uncertainty level regarding future economic policies and their impacts on the overall economy of any country. Economic policy and certainty mainly capture the ambiguity and unpredictability of government regulations, policies, and other effects. That industry movement or risk depends on macroeconomic factors; hence, it is imperative to determine the impact of economic policy uncertainty on the industry level beta for measuring the industry system risk.

Different factors, including macroeconomic phenomena, can influence industry-level beta or systematic risk. In recent times, economic policy uncertainty analysis has become inevitable for measuring the policy implications and their impacts on industry-level risk to determine their dynamics. For this reason, the problem statement of this projective paper is to find out the impact of the economic policy uncertainty index on industry-level beta.

The significance of this research is that there will be one-to-one relationship findings on the impact of EPU on industry-level beta. Very few literature have covered this issue broadly. One notable literature on this topic was conducted by Yu et al. in 2017. However, in this research study, there will be an analysis of another ten industries in North America that have not been previously analyzed. In addition, for deep insight, the research framework has been divided into three parts: overall period analysis, pre-financial crisis turmoil, and post-financial

crisis turmoil periods. In addition, there will also be an analysis of the impact of the Wise Seven policy uncertainty index on industry-level beta.

LITERATURE REVIEW

Baele and Londono 2013 have modeled and explained the market beta dynamics for 30 different industry portfolios of the U.S. market. In this analysis, they have used a data set from 1970 to 2009. They have performed Kernel and MIDAS regression techniques for standard ex-post measurement (Baele & Londono, 2013). The analysis has found that industry betas are influenced by ranking variability, time variation, substantial persistence, and heterogeneity in the business cycle exposures. In addition, they have pointed out that there has been only a very limited amount of structural breaks during individual industry betas. However, among thirty different industry portfolios of the U.S. market, a common or identical structural break occurred during March of 1998, the DotCom bubble (Baele & Londono, 2013). In addition, they have also pointed out the dispersion in cross-sectional industry betas for being negatively and counter-cyclically related to future market returns. They have also figured out that the estimated industry betas have outperformed other measurements of industry betters for limiting the downside risk exposure for a minimum variance strategy (Baele & Londono, 2013).

Arouri et al., in their paper from 2016, analyzed the effect of the economic policy uncertainty on the return of the stock market in the U.S. for 134 years. This analysis used a data set from 1900 to 2014 (Arouri et al., 2016). In addition, they have focused on long-run evidence regarding this particular relationship from the U.S. market context. The authors have pointed out that increased economic policy uncertainty reduces stock market returns significantly (Arouri et al., 2016). In addition, they have also shown that this influence is very persistent and strong when there are high extreme volatility time spans (Arouri et al., 2016).

Bekiros et al. 2016 focused on incorporating economic policy uncertainty in the equity premium model of the U.S. stock market. In this analysis, the authors have focused on how information on economic policy uncertainty matters in the prediction of the equity premium in the U.S. market (Bekiros et al., 2016). The authors used monthly data sets from 1900 to 2014 for this analysis. In this 114-year data set, the authors have focused on nonlinearities and structural instabilities by focusing on a quantile predictive regression model. The authors have pointed out that a high jump in the economic policy uncertainty proxy significantly enhances the stock return predictability (Bekiros et al., 2016). In addition, this particular significant

association is more observable during market neutrality. On the other hand, the association is not observed to that extent when there is a high bullish market condition (Bekiros et al., 2016).

Liu & Zhang, in 2015, focused on the influence of the economic policy uncertainty on the stock market return on the U.S. market data. In this analysis, the authors have investigated the predictability of the economic policy uncertainty on the stock market variability or volatility. The authors used the data set from 1996 to 2014 (Liu & Zhang, 2015). In these 18 years of analysis, the result suggests that a high index on the economic policy uncertainty will significantly increase the stock market. In addition, if this economic policy uncertainty is incorporated as the additional variable in predicting the existing volatility model of stock market return, then this new model significantly improves the forecasting capability of the stock market models (Liu & Zhang, 2015). In addition, the result of the improvement is significantly robust for the model specifications (Liu & Zhang, 2015).

Yu et al. in 2017 have tried to focus on industry-level betas on the influences of economic policy uncertainty changes. In this analysis, the authors have used data sets from 1993 to 2015 (Yu et al., 2017). The authors have used a MIDAS conceptual framework for estimating long-term data from 10 different industries across the U.S. market. The authors have pointed out that economic policy and certainty variables drive significantly the industry betas (Yu et al., 2017). In addition, the driving impacts on different industries have been analyzed along with the additional stock market turmoil condition. The authors have also presented different results on component-wise policy uncertainty influence on industry betas (Yu et al., 2017). That is why the findings are necessary for characterizing the dynamics of industry significant risk based on different categories and combined economic policy uncertainty index (Yu et al., 2017).

RESEARCH METHODOLOGY

Research Philosophy

Holistic procedures for different beliefs and different assumptions regarding the development of research knowledge are known as the research philosophy. Precisely, research philosophy is the belief of the author or the researcher on which he or she will build the entire research project in a particular discipline. Different types of beliefs and assumptions are used for effective research philosophy determination. Those assumptions are named Ontology assumptions, Axiology assumptions, and Epistemology assumptions. Ontology assumptions are related to the realities that can be encountered in the process of the research

conduction. That means if the research reflects reality, it will follow ontology assumptions. When the values or integrities of the researcher will significantly impact the entire process or procedure of the research conduction, those assumptions are known as axiology assumptions. That means, in this case, the main valuable point is the value of the researcher or the ethical context of the researcher himself or herself. Finally, epistemology assumptions are related to the knowledge of the human regarding their research discipline. That is why the researcher can use different types of numerical data, including textual and visual representation, to gain more insight into generations. Based on those assumptions, research philosophies can be classified into different segments like interpretivism research philosophy, positivism research philosophy, pragmatic research philosophy, etc. A positivist research philosophy has been used based on those three crucial assumptions for this research project. Positivism research philosophy mainly deals with the philosophical status of working with the realism of identifiable phenomena to emphasize generalizations. In this research project a perfect incorporation of the scientific methodology can be found for conducting this research project, which is the main crucial point of the positivist research philosophy. In addition, this study is focused on different types of observable and measurable facts and information for gaining generalized insights regarding the impact of economic policy uncertainty on industry-level risk. In the same way, it emphasizes the causal impact explanation regarding the variables for gaining their sole impact on the industry-level betas.

Research Theory Build-up

The theory of the research project can also be named as the research project's approach. Not approach mainly indicates the generalized procedures and planning based on which the researcher will conduct that research. There are different research theory build-up methods like inductive or deductive approaches. When the research is initiated with the perspective theory, developed from going through different academic literatures, including the researcher's design, it will be known as the deductive approach. On the other hand, the inductive research approach initiates the research data collection for exploring a particular social phenomena for building a social theory. For this particular research project, deductive research methodology has been used. In this case, first of all, a theory regarding how economic policy uncertainty can influence industry-level risk has been built, and hence, different hypotheses regarding their associations have also been developed. In addition, different sorts of academic literature for conducting the

research process have been gone through, and finally, the required data has been set for finding the actual results and discussions.

Research Method

There are mainly two types of research strategies: qualitative research strategy and quantitative research strategy. When the required data set reflects behaviors, social life experiences, values of different individuals, emotions, or some meanings of particular phenomena, such a strategy will be qualitative. That means when the research data set and research procedure will generate non-numerical information and data, then it will be named a qualitative research methodology. On the other hand, when the research deals with lots of numerical data or quantitative numbers for the research study conduction, it will be named the quantitative research methodology or research strategy. Observations or survey questionnaires are mainly emphasized for collecting data for a quantitative research strategy. The analysis will also focus on quantitative tools and techniques in quantitative research methodology. In this case, the researcher mainly tries to find the association among different variables according to the development of their research theory. For this research project, I have used a quantitative research strategy for the entire research conduction. The reason for choosing this particular quantitative research strategy is that my stands for this research conduction exactly match the features and characteristics of this quantitative research strategy. This research study focuses on financial statement data and economic policy uncertainty index from a public database in the quantitative or numerical format. That is why it experiments with designing a research strategy in a numerical format. In addition, different quantitative tools and techniques like graphical representation, summary statistics, and statistical analysis have been used to find the association between economic policy uncertainty and industry-level risk, measured as industry-level beta.

Research Strategy

The required action plan for achieving some specific objective or specific goal by conducting any research project is known as the strategy of research. That means the research strategy will describe the plan or procedures for how the researcher will answer different research questions by conducting the entire research strategy. There are mainly two types of research strategy: archival strategy of research and experimental strategy of research. In the archival strategy of research, the required data set will be gathered from different types of archives or online databases. On the other hand, when the researcher is conducting the research

process like natural science and is driven to find out the experimental causality among the variables, it is known as the experimental strategy of research. For this particular study, the experimental research design has been focused on and developed the association between industry-level risk and economic policy uncertainty by collecting the required data set in a structured way.

Data Nature

There are mainly two types of data used in any research project, which are known as primary data and secondary data in nature. For conducting this research project particularly, secondary data have been used. There are different types of benefits to using secondary data in research projects. First, collecting the required data set from a secondary source requires less time. In addition, secondary data collection is less expensive than the primary data collection method. In addition, the researcher can get the modified data according to the requirement of the research study if such data can be collected from secondary sources. In this research project, the required database has not been publicly available in the domain of public databases.

Data Sources

The time frame of this particular research spans from 2001 to 2020. That researcher has collected annual data for all the listed firms in the U.S. market. For this research study, the data from the balance sheet for the dependent variable, the number of shares, and the prices at the year's end have been used. The data of those variables have been extracted from the Wharton Research Data Service or WRDS database. In addition, the economic policy uncertainty data in an aggregate form and component-wise form have been removed from the bubbly available domain named Bloom-Baker-Davis or BBD database. The research data have been gathered for ten industries to be analyzed –

Sl.	**Industry Names**
1	Agriculture
2	Food Products
3	Candy & Soda
4	Beer & Liquor
5	Tobacco Products
6	Recreation

Sl.	Industry Names
7	Entertainment
8	Printing and Publishing
9	Consumer Goods
10	Apparel

Source: The authors.

Data Management

This study used STATA software to manage the entire data set and find out the required research results to get a sound out. Stata codes have been used for managing the required data set. The required management of this research data includes –

- First, missing values in different cells have been identified for the number of outstanding shares at the year-end and share price of the year-end for all the listed firms in the U.S. Then, all the cells with missing values for those two variables have been erased.
- The cells with different negative values for the share price at the year-end and the number of outstanding shares at the year-end have also been deleted.
- Then, the market capitalization of different industries has been calculated based on the capitalization level of individual firms in the U.S. market. Then, the industry-level return has been calculated based on the annual capitalization level of that particular industry.
- Finally, this study has taken at a 5% level for managing the outliers from the research data.

Conceptual Framework

Dependent variable

To determine the influence of the economic policy uncertainty index on different industry-level risks, the dependent variable Industry Beta annual market capitalization of each industry by summating all firms' market capitalization value to determine the industry beta variable studied. The categorization of 48 industries according to the Fama-French model has been defined as the industry in this research project. The data set of industry beta for financial service, utilities, insurance, and banking industries has been dropped from that data set.

Main Explanatory Variable

The main explanatory variable for this research strategy is the Economic Policy Uncertainty or the EPU. I have measured the economic policy uncertainty based on the given index by Baker, Bloom, and David index. This particular index is known as the BBD index popularly. The next section will discuss the construction procedures of the BBD index for economic policy uncertainty values. In addition, the next section will also discuss the inherent beliefs or philosophy of Baker, Bloom, and Davis, by which they have constructed the economic policy uncertainty index. Additionally, how the index is robust for representing the aggregate macro level of the policy uncertainty that is prevailing in a particular economy will also be analyzed in the next section.

Baker, Bloom, and Davis, or BBD, perceive different ways economic policy uncertainty can evolve. For instance, economic policy uncertainty can be influenced by what different types of discussions related to economic policies are going to be undertaken. Economic policy uncertainty can also be developed by discussing policy action and how it will be taken and measured. In addition, different non-economic results or considerations can be expected from taking the policy action in this case, which also influences the economic policy uncertainty. BBD has tried looking into the landscape regarding the economic policy uncertainty overall through the eyes of newspapers based in the USA. That means they have tried to capture both the short-term and long-term concerns for policies for measuring economic policy uncertainty. For instance, in the short term, policy concerns might include the impact of policy for changing the Fed's benchmark interest rate or reference rate in the forthcoming month or quarter. On the other hand, long-term policy concerns might include the entitlements' funding channel sustainably.

In addition, there has been textual analysis by Baker, Bloom, and Davis or BBD over different types of digital archives for the top 10 U.S. newspapers for obtaining the count of articles on a monthly basis for every newspaper so that they can be able to focus on the specific economic policy uncertainty. To meet the index criteria postulated by BBD, that chosen article must contain at least or minimum one term from those three categories, which are "economy," "uncertainty," and "policy." Under the category of "Economy," BBD tries to look out for mainly two terms, namely "economy." Under the category of "Uncertainty," BBD has looked out for mainly three terms, which are "uncertain," "uncertainty," or "uncertainties," which is a variant of the plural form. Finally, under the "Policy" category, BBD has focused on mainly six terms, which are known as "regulation," "Congress," "legislation," "Federal Reserve," or "deficit" or

"White House." In addition, there are also "The Fed" and "regulatory" for another two variants. In this way, the raw counting for policy uncertainty-related articles has been normalized for every month and every newspaper in the top 10 categories in the U.S. market.

The Philadelphia Federal Reserve Board requests different types of professional or industry forecasters routinely to predict the total purchase value of the goods and services quarterly by state, local, and federal governments for every year in the future. In this case, BBD uses mainly the interquartile range for those individual professional forecasts for estimating the policy uncertainty in terms of fiscal uncertainty. The Philadelphia Federal Reserve Board also requests that professional or industry forecasters routinely predict the consumer price index annually in the future. In this case, BBD mainly uses interquartile ranges for individual industry or professional forecasts to estimate the monetary policy uncertainty. In addition, there is a systematic process or tendency for extending that temporary tax provision to the federal system at the very last moment by the U.S. Congress. That is why it will spur the economic uncertainty as well. In this case, BBD mainly calculates the current or present value of and every new impact of those temporary tax provisions of a federal system for estimating policy uncertainty related to the tax system in the macroeconomy. The tax provisions are to expire within the next ten years.

First, those four major components of the policy uncertainties are normalized before making the aggregate index for economic policy uncertainty. The aggregate or the combined index for policy uncertainty is mainly the weighted average of all the above four components of policy uncertainty. The weighting system is given below as follows –

- Around 50% of the overall weight has been given to the policy uncertainty on U.S. news.
- Around 16.67% of the overall weight has been given to the policy uncertainty related to fiscal policies.
- Around 16.67% of the overall weight has been given to the policy uncertainty related to monetary policies.
- Finally, 16.66% of the overall weight has been given to the policy uncertainty related to tax policies.

Control Variable

For predicting the appropriate or the required "partial effect" of the economic policy uncertainty on the industry risk by industry beta. This research model has no incorporation in

any macroeconomic controls or industry controls. In this case, the framework postulated by Yu et al. (2017) has been followed.

Modelling

The time series regression model has been run to understand the nature of the "partial effect" of the economic policy uncertainty on industry risk measured by industry betas. That regression model has been presented in the baseline formation in the following format or expression –

Industry beta $_{i,t}$ = f (Policy uncertainty index$_t$)

There have been no specific techniques or tool implications for tackling the endogeneity issues. For addressing the potential problem in terms of heteroskedasticity, the researcher has opted for implicating robust standard error for effective estimation.

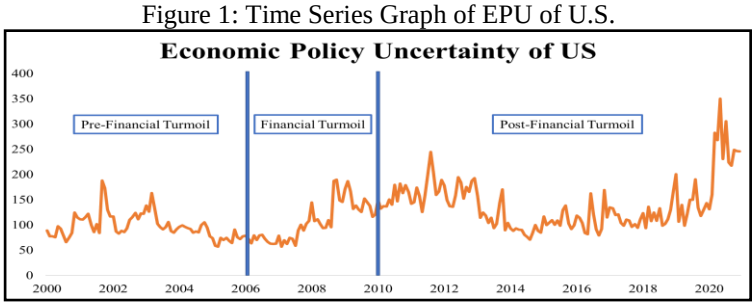
Research Reliability & Validity

The same procedures for collecting the secondary data set and implementation of the same analytical procedures according to the previous research articles in this discipline make this study more reliable. In addition, consistent or equivalent results are found in this research study. Furthermore, this study has internal validity because of statistical and significant associations by properly implicating the model in this research study. Finally, there have been generalizations for the association between economic policy uncertainty and industry-level beta; hence, this research is also externally valid.

EMPIRICAL ANALYSIS & DISCUSSIONS

Economic Policy Uncertainty Scenario of U.S.

Figure 1: Time Series Graph of EPU of U.S.



Source: Author.

Economic policy uncertainty in the U.S. has been divided into three different time scales. The first scale from 2000 to 2006 which has been named the pre-financial turmoil timescale. There was financial turmoil from 2007 to 2010 in the middle. The final class has post-financial turmoil periods, starting from 2011 to 2020. The above graphical plot shows that the U.S. market's economic policy uncertainty is declining during the pre-financial turmoil timescale. The reason is that after the Dot Com Bubble, the U.S. government has taken different initiatives regarding the regulations, and hence, uncertainties regarding different policies in people's minds have been declining. However, when financial turmoil or crisis hit the U.S. market and the entire global stock market, one of the prime factors for economic progress, uncertainties regarding policies and policy implementation have increased. When the situation has been stable after two or three years of financial crisis, the economic uncertainty index has again started falling significantly. However, another major spike can be seen from the above graph for the COVID-19 pandemic situation. That is why, during 2020 and afterward, that economic policy uncertainty has hit its highest in the last 20 years.

Impact of Economic Policy Uncertainty on Industry-Level Beta

In this section, there has been the presentation of the modeled framework on the impact of economic policy uncertainty on industry-level betas. The analysis is given below as follows based on different industry categorizations–

Table 1: EPU's Impact on Agriculture Industry Beta

Agriculture

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.02196**	0.00406**	0.00618**
	(0.250)	(1.201)	(0.529)
Constant	-0.477	0.499	-1.266
	(-0.525)	(1.711)	(-0.837)
Observations	19	5	11
R-squared	0.004	0.325	0.030

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the agricultural industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase agricultural industry-level risk, measured by industry-level beta. In addition, the positive association between

agricultural industry level beta and economic policy uncertainty index exists for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, it will increase agricultural industry risk by 2%. This result is statistically significant at a 5% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if one unit increases the economic policy uncertainty index, it will increase agricultural industry level risk by 0.4%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase agricultural industry level risk by 0.6%. This association is statistically significant at a 5% significance level. This statistically significant positive association in all three-time scales is because if there is higher policy uncertainty among the agricultural industry practitioners, it will lead to uncertainty regarding their investment decisions, negatively impacting the agricultural industry capitalization and increasing the industry risk. From the R-squared value, it can be pointed out that around 33% variability in the agricultural industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 3% variability in the agricultural industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 0.4% variability can be gathered by focusing on economic policy uncertainty regarding the variability on the agricultural industry level risk, an overall period of 19 years.

Table 2: EPU's Impact on Food Products Industry Beta

Food Products

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.023359**	0.000476	0.000122**
	(0.569)	(0.302)	(0.248)
Constant	0.0815	0.109	0.0689
	(1.118)	(0.804)	(1.088)
Observations	19	5	11
R-squared	0.019	0.029	0.007

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index has a positive relationship with the food products industry level return in terms of industry beta. That means an increase or rise in the economic policy uncertainty index will increase food products' industry-level risk, measured by industry-level beta. In addition, the positive association between the food products industry level beta and economic policy uncertainty index is there for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, it will increase food products industry risk by 2.33%. This result is statistically significant at a 5% significance level. In addition, during the pre-financial crisis span from 2001 to 2006, the result shows that if there is one unit increase in the economic policy uncertainty index, it will increase food products industry level risk by 0.04%. This association is not statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase food products industry level risk by 0.01%. This association is statistically significant at a 5% significance level. This statistically significant positive association in all three-time scales is because if there is higher policy uncertainty among the food products industry practitioners, it will lead to uncertainty regarding their investment decisions, negatively impacting the food products industry capitalization and increasing the industry risk. From the R-squared value, around 3% variability in the food products industry risk can be captured by the economic policy uncertainty index variations during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 0.7% variability in the food products industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 2% variability can be gathered by focusing on economic policy uncertainty regarding the variability of the food products industry level risk, an overall period of 19 years.

Table 3: EPU's Impact on Candy & Soda Industry Beta

Candy & Soda

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.000291**	0.0000284**	0.000126**
	(0.373)	(0.0112)	(0.214)
Constant	0.0739	0.0151	0.0768
	(0.819)	(0.0689)	(1.012)
Observations	19	5	11
R-squared	0.008	0.00001	0.005

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the candy and soda industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase candy and soda industry level risk, measured by industry level beta. In addition, the positive association between candy and soda industry level beta and economic policy uncertainty index is there for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase the candy and soda industry risk by 0.03%. This result is statistically significant at a 5% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if there is one unit increase in the economic policy uncertainty index, it will increase the candy and soda industry level risk by 0.002%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase the candy and soda industry level risk by 0.02%. This association is statistically significant at a 5% significance level. The reason for this statistically significant positive association in all three-time scales is that if there is higher policy uncertainty among the candy and soda industry practitioners, then it will lead to uncertainty regarding their investment decisions, which negatively impact the candy and soda industry capitalization and hence it increases the industry risk. From the R-squared value, it can be pointed out that around 0.001% variability in the candy and soda industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 0.5% variability in the candy and soda industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 0.8% variability can be gathered by focusing on economic policy uncertainty regarding the variability of the candy and soda industry level risk over 19 years.

Table 4: EPU's Impact on Beer & Liquor Industry Beta

Beer & Liquor

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.004223***	0.000320	0.000065**
	(0.233)	(0.168)	(0.0796)
Constant	0.0684	0.102	0.0378
	(0.616)	(0.619)	(0.357)
Observations	19	5	11
R-squared	0.003	0.009	0.001

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index has a positive relationship with the beer and liquor industry level return in terms of industry beta. That means an increase or rise in the economic policy uncertainty index will increase beer and liquor industry level risk, measured by industry level beta. In addition, the positive association between beer and liquor industry level beta and economic policy uncertainty index is there for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase beer and liquor industry risk by 0.4%. This result is very statistically significant at a 1% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if one unit increases the economic policy uncertainty index, it will increase beer and liquor industry risk by 0.03%. This association is not statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase beer and liquor industry level risk by 0.006%. This association is statistically significant at a 5% significance level. The reason for this statistically significant positive association in all three time scales is that if there is higher policy uncertainty among the beer and liquor industry practitioners, then it will lead to uncertainty regarding their investment decisions, which negatively impact the beer and liquor industry capitalization and hence it increases the industry risk. From the R-squared value, it can be pointed out that around 0.9% variability in the beer and liquor industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006.

On the other hand, only 0.1% variability in the beer and liquor industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 0.3% variability can be gathered by focusing on economic policy uncertainty regarding the beer and liquor industry level risk variability over 19 years.

Table 5: EPU's Impact on Tobacco Products Industry Beta

Tobacco Products

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.020698**	0.00114***	0.000143
	(0.667)	(0.549)	(0.111)
Constant	0.0947	0.230	0.0153
	(0.782)	(1.284)	(0.0916)
Observations	19	5	11
R-squared	0.025	0.091	0.001

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the tobacco products industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase tobacco products' industry-level risk, measured by industry-level beta. In addition, the positive association between the tobacco products industry level beta and economic policy uncertainty index is there for all the time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase tobacco products industry risk by 2%. This result is statistically significant at a 5% significance level. In addition, during the pre-financial crisis span from 2001 to 2006, the result shows that if there is one unit increase in the economic policy uncertainty index, it will increase tobacco products industry level risk by 0.1%. This association is statistically significant at a 1% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase tobacco products industry level risk by 0.01%. This association is not statistically significant at a 5% significance level. This statistically significant positive association in all three-time scales is that higher policy uncertainty among the tobacco products industry practitioners will lead to uncertainty regarding their investment decisions, negatively impacting the company capitalization and increasing the industry risk. From the R-squared

value, it can be pointed out that around 9% variability in the tobacco products industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 0.1% variability in the tobacco products industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 2.5% variability can be gathered by focusing on economic policy uncertainty regarding the variability of the tobacco products industry level risk over 19 years.

Table 6: EPU's Impact on Recreation Industry Beta

Recreation

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.040800***	0.00278**	0.00201
	(0.489)	(0.567)	(1.110)
Constant	-0.0700	0.270	-0.178
	(-0.370)	(0.638)	(-0.761)
Observations	19	5	11
R-squared	0.014	0.097	0.120

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the recreation industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase recreation industry-level risk, measured by industry-level beta. In addition, the positive association between the recreation industry level beta and economic policy uncertainty index is there for all the time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase recreation industry risk by 4%. This result is statistically significant at a 1% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if one unit increases the economic policy uncertainty index, it will increase recreation industry level risk by 0.2%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase recreation industry level risk by 0.2%. This association is

statistically not significant at a 5% significance level. This statistically significant positive association in all three time scales is because if there is higher policy uncertainty among the recreation industry practitioners, it will lead to uncertainty regarding their investment decisions, negatively impacting the recreation industry capitalization and increasing the industry risk. From the R-squared value, it can be pointed out that around 10% variability in the recreation industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 12% variability in the recreation industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 1% variability can be gathered by focusing on economic policy uncertainty regarding the recreation industry level risk variability over 19 years.

Table 7: EPU's Impact on Entertainment Industry Beta

Entertainment

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.030245*	0.000063**	0.00101*
	(0.0762)	(0.0151)	(0.940)
Constant	0.0297	0.157	0.0325
	(0.0796)	(0.438)	(0.235)
Observations	19	5	11
R-squared	0.0002	0.0001	0.089

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the entertainment industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase entertainment industry level risk, measured by industry level beta. In addition, the positive association between the entertainment industry level beta and economic policy uncertainty index is there for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase entertainment industry risk by 3%. This result is statistically significant at a 10% significance level. In addition, during the pre-financial crisis span from 2001 to 2006, the result shows that if there is one unit increase in the economic policy uncertainty index, it will increase

entertainment industry level risk by 0.006%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase entertainment industry level risk by 0.1%. This association is statistically significant at a 10% significance level. This statistically significant positive association in all three-time scales is because if there is higher policy uncertainty among the entertainment industry practitioners, it will lead to uncertainty regarding their investment decisions, negatively impacting the entertainment industry capitalization and increasing the industry risk. From the R-squared value, around 0.01% variability in the entertainment industry risk can be captured by the economic policy uncertainty index variations during the pre-financial turmoil from 2001 to 2006. On the other hand, only 9% variability in the entertainment industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 0.02% variability can be gathered by focusing on economic policy uncertainty regarding the entertainment industry level risk variability over 19 years.

Table 8: EPU's Impact on Printing and Publishing Industry Beta

Printing and Publishing

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.060200**	0.000290**	0.000117*
	(0.121)	(0.135)	(0.0704)
Constant	-0.0118	0.00424	0.00419
	(-0.0618)	(0.0229)	(0.0196)
Observations	19	5	11
R-squared	0.001	0.006	0.001

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the printing and publishing industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase printing and publishing industry-level risk, measured by industry-level beta. In addition, the positive association between printing and publishing industry level beta and economic policy uncertainty index is there for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is a unit increase in the economic policy uncertainty index, then it will increase the printing and publishing industry risk by 6%. This

result is statistically significant at a 5% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if there is one unit increase in the economic policy uncertainty index, it will increase the printing and publishing industry level risk by 0.2%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase printing and publishing industry level risk by 0.1%. This association is statistically significant at a 10% significance level. The reason for this statistically significant positive association in all three time scales is that if there is higher policy uncertainty among the printing and publishing industry practitioners, then it will lead to uncertainty regarding their investment decisions, which negatively impact the printing and publishing industry capitalization and hence it increases the industry risk. From the R-squared value, it can be pointed out that around 0.6% variability in the printing and publishing industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 0.1% variability in the printing and publishing industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 0.1% variability can be gathered by focusing on economic policy uncertainty regarding the variability of the printing and publishing industry level risk over 19 years.

Table 9: EPU's Impact on Consumer Goods Industry Beta

Consumer Goods

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.080307**	0.000252	0.000638**
	(0.466)	(0.166)	(1.351)
Constant	0.0160	0.0364	-0.00316
	(0.209)	(0.278)	(-0.0517)
Observations	19	5	11
R-squared	0.013	0.009	0.169

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the consumer goods industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase consumer goods

industry-level risk, measured by industry-level beta. In addition, the positive association between consumer goods industry level beta and economic policy uncertainty index is there for all three-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase consumer goods industry risk by 8%. This result is statistically significant at a 5% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if one unit increases the economic policy uncertainty index, it will increase consumer goods industry level risk by 0.02%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase consumer goods industry level risk by 0.06%. This association is statistically significant at a 5% significance level. This statistically significant positive association in all three-time scales is that if there is higher policy uncertainty among the consumer goods industry practitioners, it will lead to uncertainty regarding their investment decisions, negatively impacting the consumer goods industry capitalization and increasing the industry risk. From the R-squared value, around 0.9% variability in the consumer goods industry risk can be captured by the economic policy uncertainty index variations during the pre-financial turmoil from 2001 to 2006. On the other hand, only 16% variability in the consumer goods industry risk can be captured by variability in the economic policy uncertainty index during post-financial turmoil from 2010 to 2020. Finally, only 0.1% variability can be gathered by focusing on economic policy uncertainty regarding the variability of the consumer goods industry level risk, an overall period of 19 years.

Table 10: EPU's Impact on Apparel Industry Beta

Apparel

VARIABLES	(1) Overall period	(2) Pre-financial-turmoil	(3) Post-Financial-Turmoil
EconomicPU	0.060548***	-0.00188**	0.000935**
	(0.457)	(-0.442)	(1.431)
Constant	0.0264	0.297	0.0149
	(0.191)	(0.807)	(0.176)
Observations	19	5	11
R-squared	0.012	0.061	0.185

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Author.

The above tabulation shows that the economic policy uncertainty index positively correlates with the apparel industry level return regarding industry beta. That means an increase or rise in the economic policy uncertainty index will increase apparel industry-level risk, measured by industry-level beta. In addition, the positive association between apparel industry level beta and economic policy uncertainty index is there for 2-time scales. From the overall time scale of 2001 to 2020, it can be seen from the above tabulation that if there is one unit increase in the economic policy uncertainty index, then it will increase apparel industry risk by 6%. This result is statistically significant at a 1% significance level. In addition, during the pre-financial crisis turmoil from 2001 to 2006, the result shows that if one unit increases the economic policy uncertainty index, it will decrease apparel industry level risk by 0.1%. This association is statistically significant at a 5% significance level.

On the other hand, during the post-financial crisis turmoil time span between 2011 to 2020, it can be seen from the table that one unit increase or rise in the economic policy uncertainty index will increase apparel industry level risk by 0.09%. This association is statistically significant at a 5% significance level. This statistically significant positive association in all three-time scales is because if there is higher policy uncertainty among the apparel industry practitioners, it will lead to uncertainty regarding their investment decisions, negatively impacting the apparel industry capitalization and increasing the industry risk. From the R-squared value, it can be pointed out that around 6% variability in the apparel industry risk can be captured by the variations in the economic policy uncertainty index during the pre-financial turmoil time scale of 2001 to 2006. On the other hand, only 18% variability in the apparel industry risk can be captured by variability in the economic policy uncertainty index post-financial turmoil from 2010 to 2020. Finally, only

1% variability can be gathered by focusing on economic policy uncertainty regarding the variability on the apparel industry level risk, an overall period of 19 years.

CONCLUSION

This research study shows the postal relationship between economic policy uncertainty and the industry level betas. From the empirical analysis and discussion section, it can be easily understood that a significant positive relationship or association exists between different industry-level betas and the economic policy uncertainty index. If there is a rise or increase in economic policy uncertainty, it increases industry-level risk, measured by industry-level beta. Any policy-related uncertainties for future time scales will hinder the industry practitioners or the industrial companies from forecasting a predictive future regarding their investment opportunities and other corporate finance decisions. It will, in turn, increase the variability or volatility in the industry output, increasing the industry-level risk. That is why it can be stated that the overall economic policy uncertainty index has a positive association with industry-level betas.

In addition, from the empirical study, it has been identified that most industries have a positive and statistically significant result for this positive association between industry beta and economic policy uncertainty. For deeper insight generation, overall sample data have been classified into two sections – pre and post-financial turmoil. It has been figured out that the relationship between economic policy uncertainty and industry-level betas depends on the time frame. It has been identified that different industries like beer and liquor, tobacco, recreation, and consumer goods do not have a significant positive association between economic policy uncertainty and industry level beta for both time scales. In most cases, the pre-financial time span did not produce statistically significant results. That is why it can be stated that the association between industry-level risk and economic policy uncertainty evolves or depends on time frames based on different structural breaks. In addition, it has been found that different industries have different slopes in different time scales. And that is why this model has no cross-sectional heterogeneity or cross-sectional dependency. For every industry, the coefficients of industry data are statistically different. In addition to getting into the deep of policy uncertainties, seven individual policy uncertainty has been used to determine the relationship between industry-level risk and each policy uncertainty. Almost every policy uncertainty has been identified as statistically significant except trade-related uncertainties. In addition, monetary and fiscal policy uncertainty has a direct positive and statistically significant

association with industry-level risk. Tax policy uncertainties, government policy uncertainties, and regulatory uncertainties have positive and negative associations for some industries.

Policy uncertainty is indeed a macroeconomic sector. However, it is statistically significant for determining the dynamics in the industry-level risk analysis. If there is a high level of policy uncertainty among industrial practitioners, it will hinder them from taking some effective and prospective decision-making models. That is why this situation will, in turn, increase the industry-level volatility. The empirical analysis section has also proved that a significant association exists between the economic policy uncertainty index and industry-level risk of different industries. This research study has connected the industrial structural model of risk dynamics and the economic policy uncertainty index.

However, different or multiple sectors can influence industry-level risk and industry-level betas. That is why implementing or modeling only one explanatory variable of economic policy uncertainty might not be legitimate for a long time or complete association determination. In addition, this research study did not consider any endogeneity issues.

That is why there is a further research scope in this area by focusing on the association between economic policy uncertainty and firm-level risk or firm-level beta. In addition, the association between economic policy and certainty and industry beta can also be further studied in terms of cyclical and defensive industries to determine the dynamics of their risk with EPU.

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