Internet Appendix to
Measuring "State-level" Economic Policy Uncertainty

Contents

A. Comparison with Baker et al. (2022)

Similar to our paper, a subsequent study by Baker et al. (2022) (referred to as BDL2022, hereafter) utilizes state-level local newspapers to develop state-level Economic Policy Uncertainty (EPU) measures. As in our paper, they also document considerable cross-sectional variation in economic policy uncertainty, an increase in state-level EPU around gubernatorial elections, and decreases in state-level economic outputs following shocks to state-level EPU, which aligns with our findings. This appendix section aims to directly compare our SEPU indices with those developed by BDL2022. To do so, we replace our indices with the state component of their indices and conduct the same analyses as in our previous research. In a nutshell, throughout our analyses, our findings show that our indices mostly subsume the significance of BDL2022's indices, while their indices never subsume the significance of ours. These findings provide robust evidence that our indices contain meaningful additional information beyond BDL2022's indices for various economic outcome variables.

1. Natural Disasters

As evidenced by previous research (e.g., Henriet et al., 2012; Ludvigson et al., 2021a; Baker et al., 2023), natural disasters are a significant source of uncertainty. In particular, Ludvigson et al. (2021a) demonstrate that natural disaster shocks lead to increased economic uncertainty, financial uncertainty, and economic policy uncertainty using the index by Baker et al. (2016) at the national level. Given this finding, it is reasonable to assume that the same relationship would hold at the state level as well. That is, state-level economic policy uncertainty would also be positively associated with state-level natural disasters. To test this hypothesis, we analyze the correlation between our state-level economic policy uncertainty indices and natural disaster events in our main analysis. The results, as shown in Table IV, indicate a significant increase in our state-level economic policy uncertainty indices after exogenous local natural disaster events involving injuries and fatalities. This suggests that our indices well capture the heightened state-level economic policy uncertainty

that arises from state-level natural disaster events. This also demonstrates that the findings of Ludvigson et al. (2021a) hold at the state level.

In order to compare our indices with those of BDL2022, we repeat our previous analysis by using their indices and the same specifications as before. Results are presented in Table A8. Columns (1) and (2) indicate that the indices by Baker et al. (2022) are positively correlated with natural disaster-related dummy variables.[24] The positive signs of the coefficients in Columns (1) and (2) are consistent with our findings using our indices. However, the coefficients are not statistically significant at conventional levels. In addition, Columns (3) and (4) of Table A8 show that the indices by BDL2022 are negatively correlated with continuous disaster-related variables. This suggests that the more severe a natural disaster is, the lower their SEPU indices are. However, this relationship is not statistically reliable.

Overall, our analyses indicate that our SEPU indices are significantly elevated in response to a state-level natural disaster event. However, we do not find evidence that the indices by BDL2022 are positively associated with natural disaster events as well. This finding is inconsistent with Ludvigson et al. (2021a), which document a positive relationship between a disaster shock and economic policy uncertainty at the national level.

[Insert Table A8 Here]

[24] We use the following four disaster-related variables in our main analysis: *Top 1 injuries & fatalities duration* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the duration of the events that caused injuries and fatalities is in the top 1%. *Top 1 injuries & fatalities* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the number of injuries and fatalities per capita caused by the events is in the top 1%. *Injuries & fatalities duration* is the duration of natural disasters that caused injuries and fatalities in the previous 12 months. *Injuries & fatalities* is the number of injuries and fatalities per capita caused by natural disasters in the previous 12 months.

2. Realized volatility of industry equity portfolio returns and SEPU

Previous research by Pástor and Veronesi (2013) demonstrates a theoretical positive association between policy uncertainty and equity volatility. Empirical evidence by Baker et al. (2016) also supports this relationship. In light of this, we investigate whether industry-level equity volatility is associated with our industry-specific EPU indices, constructed based on industries' GDP exposure to each state and our SEPU indices. Our main analysis uncovers that our industry-specific EPUs are tightly linked to the realized volatility of industry equity portfolio returns, as shown in Table V.

In this section, we conduct a comparison between our indices and those of BDL2022 by examining the relationship between industry EPUs constructed using our SEPU indices and indices by BDL2022. To facilitate the comparison, we present the results in Panel A of Table A9 that are based on our SEPU indices, denoted as *Ind_EJS_EPU*$_{i,t}$. Our results show that industry EPUs constructed using our SEPU indices are significantly and positively associated with the realized volatility of industry equity portfolio returns across different specifications, consistent with prior studies.

Panel B of Table A9 presents the results using industry EPUs constructed based on SEPU indices by BDL2022, denoted as *Ind_BDL_EPU*$_{i,t}$ for the same sample period as in Panel A. We find that *Ind_BDL_EPU*$_{i,t}$ is less significantly associated with the realized volatility of industry equity portfolio returns than our indices, both economically and statistically. The estimated coefficients in Panel B are smaller than those in Panel A, ranging from 0.121 to 0.304, while our indices have coefficients ranging from 0.168 to 0.412. Furthermore, the coefficients for *Ind_BDL_EPU*$_{i,t}$ are significant at the 5% level only in Column (3), whereas our indices are significant at the 5% level across all specifications in Panel A.

To further compare our indices with those of BDL2022 in terms of their association with equity volatility, we perform a horse race regression by adding *Ind_EJS_EPU*$_{i,t}$ and *Ind_BDL_EPU*$_{i,t}$ together in the same regression equation, which is presented in Panel C of Table A9. Our results show that *Ind_EJS_EPU*$_{i,t}$, based on our indices, remains significant at conventional levels,

whereas *Ind_BDL_EPU*$_{i,t}$ is not significant at conventional levels, except for Column (3) where the coefficient is significant at the 10% level.

In summary, our findings indicate that while both our indices and those by BDL2022 exhibit a positive correlation with equity volatility, our indices demonstrate more significant relationships both statistically and economically than their indices. Furthermore, a horse race regression shows that our indices subsume the significance of the indices by BDL2022. Taken together, these results suggest that our indices provide more explanatory power than those developed by BDL2022 for equity volatility.

[Insert Table A9 Here]

3. Returns of industry equity portfolios and SEPU

Previous studies suggest a positive relationship between economic policy uncertainty and expected returns. In particular, Pástor and Veronesi (2013) theoretically demonstrate that policy uncertainty commands a risk premium. Moreover, Brogaard and Detzel (2015) find a significant positive link between future market equity returns and the EPU index by Baker et al. (2016). Thus, in this section, we compare our SEPU indices with those developed by BDL2022 by examining whether industry equity portfolio returns are positively associated with industry EPUs constructed using our SEPU indices and those by BDL2022. To perform this analysis, as done in our main analysis, we run pooled predictive panel regressions to study the link between industry returns and industry EPUs.

Table A10 reports the results. For ease of comparison, Panel A reports the results using our indices, the same as the results in Table VII. The findings demonstrate a positive and statistically significant association between our industry-specific EPUs and the returns of industry equity portfolios. Panel B shows that similar relationships between industry EPUs and equity returns are observed using SEPUs by BDL2022. Specifically, Column (1) shows that without any control, the estimated coefficient on *Ind_BDL_EPU*$_{i,t}$ is 0.0135 (t-statistic is 6.97), which is lower than 0.0195

(t-statistic is 8.01) observed in Panel A using our indices. Column (2) shows a similar result with a coefficient of 0.0142 (t-statistic is 4.11) versus 0.0195 (t-statistic is 5.55) in Panel A. Columns (3), (4), and (5) show that coefficients on $Ind\_BDL\_EPU_{i,t}$ are 0.0160, 0.0155, and 0.0155, respectively, that are similar to 0.0152, 0.0149, and 0.0150. in Panel A.

In Panel C, we perform a horse race regression to compare the performance of the two indices by adding the two indices in the same regressions. The results show that coefficients on both indices remain significant at the 5% level across all specifications. Specifically, in Columns (1) and (2), our indices are more significant both economically and statistically, while indices by BDL2022 are more significant in the remaining Columns. Therefore, for equity returns, both indices deliver similar results whether equity returns are regressed on the two indices together for a horse race or separately.

[Insert Table A10 Here]

4. Investment of industry and SEPU

Real option theories imply a negative relationship between economic uncertainty and investment rates when investment projects are irreversible, as firms become cautious (e.g., Bernanke, 1983; Bloom et al., 2007). Julio and Yook (2012) and Jens (2017) find consistent evidence of this relationship in the context of elections. Moreover, Gulen and Ion (2015) find that firms' investment rates decrease following a high level of the EPU index by Baker et al. (2016). In our main analysis, we demonstrate that with time-fixed effects, industry EPUs based on our SEPU indices are negatively associated with investment rates.

In this section, we compare our indices with those by BDL2022 by examining the relationship between industry EPUs constructed using SEPU indices and firms' investment rates. To this end, we use the same specification as in the main analysis reported in Table VI. Table A11 reports the results, where Columns (1), (3), and (5) use $Market\text{-}to\text{-}Book_{t-1}$ and age for control variables, and Columns (2), (4), and (6) use $Total\ Q_{t-1}$ which accounts for intangible capital from Peters

and Taylor (2017) and age for control variables. Columns (1) and (2) present the results in Table VI, showing the statistically significant negative relationships between industry EPUs based on our SEPU indices and net investment rates. Columns (3) and (4) show that industry EPUs based on SEPU indices by BDL2022 are also negatively associated with net investment rates in a statistically significant way, albeit smaller magnitudes of -0.0633 and -0.0567 than -0.0727 and -0.0772 from Columns (1) and (2), respectively. Columns (5) and (6) present the horse race regression results. Column (5) shows that both indices are insignificant in the horse race regression when *Market-to-Book*$_{t-1}$ is used as a control variable. However, Column (6) shows that when *Total* Q_{t-1} is used, only our industry EPUs are significant at the 5% level, while industry EPUs based on BDL2022 become insignificant due to the inclusion of our indices in the horse race regression.

In summary, the horse race regressions results provide evidence that our industry EPUs subsume the significance of industry EPUs by BDL2022 when *Total* Q_{t-1} is used as a control variable. This finding indicates that our indices capture information beyond that contained in the indices by BDL2022 for firms' investment behaviors.

[Insert Table A11 Here]

5. State-level Business Cycles and SEPUs

In our main analysis, we examine the dynamic relationships between economic output variables and our SEPU indices by estimating a Vector autoregression (VAR) model. Our findings suggest that shocks to our state-level EPU are strongly associated with contractions in all state-level economic output variables considered in this section (state-level GDP, employment, and income). This result is consistent with previous studies demonstrating a robust correlation between real economic activities and other indicators of uncertainty (e.g., Bloom, 2009; Jurado et al., 2015; Baker et al., 2016).

In this section, we compare our indices with those by BDL2022 by examining the dynamic relationships between SEPU indices and economic output variables. In doing so, we use the same

variables and same specifications as in our main analysis. We begin our analysis by estimating the following VAR model that includes our SEPU indices and BDL2022 separately.

$$\begin{pmatrix} \textit{Log(GDP)} \\ \textit{Log(Employment)} \\ \textit{Log(Income)} \\ \textit{SEPU}_i \\ \textit{Log(Government spending)} \\ \textit{Log(Minimum wage)} \end{pmatrix},$$

where $\textit{SEPU}_i$ is either our SEPU ($i = EJS$) or SEPU by BDL2022 ($i = BDL$). Panel A presents the results. For GDP, our indices exhibit a statistically significant relationship with GDP for up to 12 years in contrast to only 5 years using indices by BDL2022 where GDP quickly recovers in response to shocks to their indices. Moreover, the difference in the magnitude between the two indices is significant for a horizon starting from 13 years. For employment, both indices deliver very similar magnitudes, and the difference in the magnitude between the two indices is not statistically distinguishable. For income, while our indices are significant for up to 9 years, the dynamic impact of indices by BDL2022 for income is always insignificant.

In Panel B, a VAR model includes both SEPU indices together for a horse race as follows, where indices by BDL2022 are ordered before our indices.

$$\begin{pmatrix} Log(GDP) \\ Log(Employment) \\ Log(Income) \\ BDL\ SEPU \\ EJS\ SEPU \\ Log(Government\ spending) \\ Log(Minimum\ wage) \end{pmatrix}$$

This specification favors the impact of indices by BDL2022 by ordering them before our indices – This ordering implies that indices by BDL2022 have more immediate effects on economic output variables than our indices. Panel B shows that for GDP, even though indices by BDL2022 are favored, the same pattern is observed as above in the previous VAR estimation. Our indices exhibit a statistically significant relationship with GDP for up to 14 years in contrast to only 5 years using indices by BDL2022. Moreover, the difference in the magnitude between the two indices is significant for a horizon starting from 12 years. For employment, BDL indices are more significant than ours only for up to 6 years. After 6 years, the magnitudes of the two indices for employment are statistically indistinguishable from each other. For income, as before, indices by BDL2022 are always insignificant, whereas our indices are significant for up to 11 years.

In Panel C, we order our indices before indices by BDL2022 as follows.

$$\begin{pmatrix} Log(GDP) \\ Log(Employment) \\ Log(Income) \\ EJS\ SEPU \\ BDL\ SEPU \\ Log(Government\ spending) \\ Log(Minimum\ wage) \end{pmatrix}$$

The results show that for GDP, indices by BDL2022 are always insignificant, and the differences in the magnitude between the two indices are always significant, which suggests that the significance of our indices subsume the significance of their indices. For employment, our indices stronger impact on employment, but the magnitudes of the two indices for employment are statistically indistinguishable from each other. For income, their indices are always insignificant, and the differences in the economic magnitude between the two indices are always statistically significant.

In summary, for GDP, our indices always deliver a stronger magnitude than indices by BDL2022 regardless of specifications. This is the case even when the order of a VAR favors their indices. While shocks to their indices have short-lived effects, our indices have much longer-lasting effects. For employment, two indices deliver very similar magnitudes but only when their indices are favored, the difference in magnitude is significant for a short horizon. Finally, for income, our indices always deliver a stronger magnitude than indices by BDL2022. Moreover, their indices are always insignificant regardless of specifications.

Overall, these pieces of evidence suggest the considerable explanatory power of our indices that subsume the significance of BDL2022 for various economic activities. Our indices not only explain a large part of the variation in BDL2022 but also capture meaningful information beyond those developed by BDL2022.

[Insert Figure A7 Here]

TABLE A1

Natural Disasters and Election Votes

This table reports the panel regression of the difference between the incumbent governor's vote and the opponent's vote on variables related to State-level natural disasters, using the US gubernatorial elections from 1978 to 2018. *Top 1 injuries & fatalities duration* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the duration of the events that caused injuries and fatalities is in the top 1%. *Top 1 injuries & fatalities* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the number of injuries and fatalities per capita caused by the events is in the top 1%. *Injuries & fatalities duration* is the duration of natural disasters that caused injuries and fatalities in the previous 12 months. *Injuries & fatalities* is the number of injuries and fatalities per capita caused by natural disasters in the previous 12 months. *GDP growth rate*$_{s,t}$ is a yearly real per capita state GDP growth rate. *Income growth*$_{s,t}$ is a quarterly real per capita total income growth rate. *Unemployment rate*$_{s,t}$ is a state unemployment rate. The *t*-statistics based on standard errors clustered by year-month and state are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Top 1 injuries & fatalities duration	0.0372			
	(0.33)			
Top 1 injuries & fatalities		0.1955***		
		(3.07)		
Injuries & fatalities duration			-0.0031	
			(-0.36)	
Injuries and fatalities				15.0032
				(1.62)
GDP growth rate$_{s,t}$	0.7041	0.6889	0.7207	0.6977
	(1.64)	(1.69)	(1.70)	(1.70)
Income growth$_{s,t}$	-1.0294	-0.9105	-1.0453	-0.9272
	(-0.60)	(-0.52)	(-0.62)	(-0.53)
Unemployment rate$_{s,t}$	-1.3763	-1.2157	-1.3808	-1.3106
	(-1.16)	(-1.06)	(-1.16)	(-1.12)
Obs.	285	285	285	285
Adjusted R^2	0.0844	0.0984	0.0841	0.0903
Time FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Clustering	Time & State	Time & State	Time & State	Time & State

TABLE A2

Natural Disasters and Governors' Party Changes

This table reports the panel regression of governors' party changes as a result of a gubernatorial election on variables related to State-level natural disasters, using the US gubernatorial elections from 1978 to 2018. *Top 1 injuries & fatalities duration* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the duration of the events that caused injuries and fatalities is in the top 1%. *Top 1 injuries & fatalities* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the number of injuries and fatalities per capita caused by the events is in the top 1%. *Injuries & fatalities duration* is the duration of natural disasters that caused injuries and fatalities in the previous 12 months. *Injuries & fatalities* is the number of injuries and fatalities per capita caused by natural disasters in the previous 12 months. *GDP growth rate*$_{s,t}$ is a yearly real per capita state GDP growth rate. *Income growth*$_{s,t}$ is a quarterly real per capita total income growth rate. *Unemployment rate*$_{s,t}$ is a state unemployment rate. The *t*-statistics based on standard errors clustered by year-month and state are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Top 1 injuries & fatalities duration	0.3434***			
	(2.72)			
Top 1 injuries & fatalities		-0.2705***		
		(-3.02)		
Injuries & fatalities duration			0.0128	
			(1.00)	
Injuries and fatalities				-12.5686
				(-1.14)
GDP growth rate$_{s,t}$	-0.9655	-0.7983	-0.8944	-0.8266
	(-0.99)	(-0.83)	(-0.91)	(-0.85)
Income growth$_{s,t}$	0.5393	0.1662	0.4521	0.2008
	(0.17)	(0.05)	(0.14)	(0.07)
Unemployment rate$_{s,t}$	1.9828	1.8493	1.9052	1.9163
	(0.98)	(0.94)	(0.94)	(0.96)
Obs.	541	541	541	541
Adjusted R^2	0.0615	0.0545	0.0559	0.0529
Time FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Clustering	Time & State	Time & State	Time & State	Time & State

TABLE A3

Natural Disasters and Governor Changes

This table reports the panel regression of changes in governors, where the incumbent governor is not term-limited, as a result of a gubernatorial election on variables related to State-level natural disasters, using the US gubernatorial elections from 1978 to 2018. *Top 1 injuries & fatalities duration* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the duration of the events that caused injuries and fatalities is in the top 1%. *Top 1 injuries & fatalities* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the number of injuries and fatalities per capita caused by the events is in the top 1%. *Injuries & fatalities duration* is the duration of natural disasters that caused injuries and fatalities in the previous 12 months. *Injuries & fatalities* is the number of injuries and fatalities per capita caused by natural disasters in the previous 12 months. *GDP growth rate*$_{s,t}$ is a yearly real per capita state GDP growth rate. *Income growth*$_{s,t}$ is a quarterly real per capita total income growth rate. *Unemployment rate*$_{s,t}$ is a state unemployment rate. The *t*-statistics based on standard errors clustered by year-month and state are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Top 1 injuries & fatalities duration	0.3636*			
	(1.77)			
Top 1 injuries & fatalities		-0.1772		
		(-1.37)		
Injuries & fatalities duration			0.0229***	
			(3.48)	
Injuries and fatalities				-12.6876
				(-0.71)
GDP growth rate$_{s,t}$	-2.0747*	-1.9406*	-2.0449*	-1.9485*
	(-2.01)	(-1.90)	(-1.95)	(-1.90)
Income growth$_{s,t}$	3.6653	3.3106	3.8095*	3.3272
	(1.66)	(1.53)	(1.85)	(1.53)
Unemployment rate$_{s,t}$	5.1189*	5.0201	5.0766*	5.0720*
	(1.72)	(1.71)	(1.72)	(1.72)
Obs.	394	394	394	394
Adjusted R^2	0.0488	0.0416	0.0537	0.0410
Time FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Clustering	Time & State	Time & State	Time & State	Time & State

TABLE A4

Johansen's cointegration tests

This table reports Johansen's cointegration tests. Critical values are for the 1% significance level based on MacKinnon (1996).

Maximum rank	0	1	2	3	4	5
Panel A: Trace test						
Test statistics	982.72	542.70	368.47	232.98	124.39	42.40
Critical value (1%)	104.96	77.82	54.68	35.47	19.94	6.63
Panel B: Maximal Eigenvalue test						
Test statistics	440.03	174.23	135.49	108.59	81.99	42.40
Critical value (1%)	45.87	39.37	32.72	25.86	18.52	6.63

TABLE A5

Augmented Dickey–Fuller tests

This table reports Augmented Dickey–Fuller unit root tests on residuals from the VAR model with lag one in equation 3.

	SEPU	*Log(GDP)*	*Log(Employment)*	*Log(Income)*
Panel A: No constant and No trend				
Test statistics	-32.9212	-27.7810	-15.9219	-24.5029
p-values	0.001	0.001	0.001	0.001
Panel B: Constant and No trend				
Test statistics	-32.9042	-27.7667	-15.9137	-24.4903
p-values	0.001	0.001	0.001	0.001
Panel C: Constant and trend				
Test statistics	-32.8867	-27.7524	-15.9055	-24.4776
p-values	0.001	0.001	0.001	0.001

TABLE A6

Optimal Lag Selections

This table reports the values of SIC (Schwarz Information Criterion), AIC (Akaike information criterion), and HQC (Hannan–Quinn information criterion) with different lags in equation 3.

Lag	1	2	3	4
SIC	-1.6881	-0.8909	-0.7573	-0.5501
AIC	-1.8685	-1.2672	-1.3471	-1.3739
HQC	-1.7998	-1.1236	-1.1215	-1.0579

TABLE A7

P-values of Granger Causality tests

This table reports p-values of Granger Causality tests. The following six endogenous variables are used: *Log(GDP)*, *Log(Employment)*, *Log(Income)*, *SEPU*, *Log(Government spending)*, *Log(Minimum wage)*. The lag of one is optimally selected based on SIC. We control for both time and state-fixed effects. Yearly data from 1997 to 2018 is used. In Panel A, the null hypothesis is that *SEPU* does not Granger Cause an economic output variable. In Panel B, the null hypothesis is that an economic output variable does not Granger Cause *SEPU*.

Panel A: From *SEPU* to *Economic output*				
		To		
		Log(GDP)	*Log(Employment)*	*Log(Income)*
From	*SEPU*	0.003	0.000	0.013
Panel B: From *Economic output* to *SEPU*				
		From		
		Log(GDP)	*Log(Employment)*	*Log(Income)*
To	*SEPU*	0.028	0.804	0.202

TABLE A8

Natural Disasters and SEPU of Baker, Davis, and Levy (2022)

This table reports the monthly panel regression of the log of one plus SEPU of Baker et al. (2022) on variables related to State-level natural disasters. *Top 1 injuries & fatalities duration* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the duration of the events that caused injuries and fatalities is in the top 1%. *Top 1 injuries & fatalities* is a dummy variable that takes a value of one for a state that experienced natural disasters in the previous 12 months where the number of injuries and fatalities per capita caused by the events is in the top 1%. *Injuries & fatalities duration* is the duration of natural disasters that caused injuries and fatalities in the previous 12 months. *Injuries & fatalities* is the number of injuries and fatalities per capita caused by natural disasters in the previous 12 months. *GDP growth rate*$_{s,t}$ is a yearly real per capita state GDP growth rate. *Income growth*$_{s,t}$ is a quarterly real per capita total income growth rate. *Unemployment rate*$_{s,t}$ is a state unemployment rate. The *t*-statistics based on standard errors clustered by year-month and state are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively. The sample period is from January 1985 to December 2019.

	(1)	(2)	(3)	(4)
Top 1 injuries & fatalities duration	0.0074			
	(0.14)			
Top 1 injuries & fatalities		0.0974		
		(1.13)		
Injuries & fatalities duration			-0.0014	
			(-0.54)	
Injuries and fatalities				-17.4069
				(-0.69)
GDP growth rate$_{s,t}$	0.4747	0.4742	0.4763	0.4700
	(0.96)	(0.97)	(0.97)	(0.95)
Income growth$_{s,t}$	-0.6660	-0.6690	-0.6630	-0.6637
	(-0.80)	(-0.80)	(-0.79)	(-0.79)
Unemployment rate$_{s,t}$	7.2901***	7.2900***	7.2885***	7.2748***
	(4.42)	(4.43)	(4.41)	(4.38)
Obs.	16,445	16,445	16,445	16,445
Adjusted R^2	0.3045	0.3046	0.3045	0.3046
Time FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Clustering	Time & State	Time & State	Time & State	Time & State

TABLE A9

Realized volatility and Baker, Davis, and Levy (2022)

This table reports the monthly panel regression of log realized volatility of industry equity portfolio returns on industry-specific EPUs, computed based on our SEPU indices (denoted by 'EJS') or SEPU indices by Baker et al. (2022) (denoted by 'BDL'). Realized volatility is computed as the square root of the sum of squared daily returns on industry portfolios. Industry returns (*Industry returns*$_{i,t}$) are computed as a size-weighted average of log returns for each industry. The number of industries is 63 based on the North American Industry Classification System (NAICS). $Log(Ind\_EJS\_EPU_{i,t})$ is the log of an industry-specific EPU, computed as a weighted average of our SEPU for the 50 states with weights being the ratio of industry GDP in each state to total domestic industry GDP. $Log(Ind\_BDL\_EPU_{i,t})$ is computed in the same way by replacing our SEPU indices with SEPU indices by Baker et al. (2022). $Log(EPU_t)$ is the log of nationwide economic policy uncertainty measure by Baker et al. (2016). *t*-statistics based on standard errors clustered by year-month and industry are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
		Panel A: EJS		
$Log(Ind\_EJS\_EPU_{i,t-1})$	0.1726**	0.1684**	0.4122***	0.2554**
	(2.51)	(2.46)	(4.63)	(2.51)
$Log(EPU_{t-1})$				0.1999**
				(2.05)
Industry returns$_{i,t-1}$		-0.4347***	-1.6796***	-1.6427***
		(-4.93)	(-6.10)	(-6.12)
Obs.	13,953	13,953	13,953	13,953
Adjusted R^2	0.7130	0.7153	0.3225	0.3299
		Panel B: BDL		
$Log(Ind\_BDL\_EPU_{i,t-1})$	0.1223*	0.1213*	0.3044***	0.1859*
	(1.81)	(1.80)	(4.30)	(1.98)
$Log(EPU_{t-1})$				0.1814
				(1.65)
Industry returns$_{i,t-1}$		-0.4286***	-1.6829***	-1.6499***
		(-4.89)	(-6.15)	(-6.12)
Obs.	13,943	13,943	13,943	13,943
Adjusted R^2	0.7139	0.7161	0.3233	0.3279
		Panel C: EJS and BDL (Horse race)		
$Log(Ind\_EJS\_EPU_{i,t-1})$	0.1568**	0.1520*	0.2296**	0.1925
	(2.00)	(1.95)	(2.03)	(1.66)
$Log(Ind\_BDL\_EPU_{i,t-1})$	0.0881	0.0881	0.1770*	0.1031
	(1.17)	(1.17)	(1.92)	(0.99)
$Log(EPU_{t-1})$				0.1447
				(1.30)
Industry returns$_{i,t-1}$		-0.4299***	-1.6750***	-1.6508***
		(-4.93)	(-6.23)	(-6.21)
Obs.	13,921	13,921	13,921	13,921
Adjusted R^2	0.7143	0.7166	0.3288	0.3316
Time FE	Yes	Yes	No	No
Industry FE	Yes	Yes	Yes	Yes

TABLE A10

Industry equity portfolio returns and Baker, Davis, and Levy (2022)

This table reports the pooled panel regression of one-month-ahead excess returns of industry portfolios on industry-specific EPUs, computed based on our SEPU indices and those by Baker et al. (2022) and EPU. The number of industries is 63 based on the North American Industry Classification System (NAICS). $Log(Ind\_EJS\_EPU_{i,t})$ is the log of an industry-specific EPU, computed as a weighted average of our SEPU for the 50 states with weights being the ratio of industry GDP in each state to total domestic industry GDP. $Log(Ind\_BDL\_EPU_{i,t})$ is computed in the same way by replacing our SEPU indices with SEPU indices by Baker et al. (2022). $Log(EPU_t)$ is the log of nationwide economic policy uncertainty measure by Baker et al. (2016). $\beta_{i,t}^{MKT}$, $\beta_{i,t}^{SMB}$, $\beta_{i,t}^{HML}$, and $\beta_{i,t}^{MOM}$ denote 12-month rolling betas with respect to market factor (MKT_t), size (SMB_t), value (HML_t), and momentum (MOM_t) factors, respectively. The *t*-statistics based on standard errors clustered by industry are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
			Panel A: EJS		
$Log(Ind\_EJS\_EPU_{i,t-1})$	0.0195***	0.0195***	0.0152***	0.0149***	0.0150***
	(8.01)	(5.55)	(4.34)	(4.43)	(4.42)
$Log(EPU_{t-1})$		0.0000	0.0060**	0.0063**	0.0063**
		(0.01)	(2.17)	(2.34)	(2.34)
$\hat{\beta}_{i,t-2}^{MKT} MKT_{t-1}$			0.1696***	0.1817***	0.1827***
			(9.44)	(10.10)	(10.20)
$\hat{\beta}_{i,t-2}^{SMB} SMB_{t-1}$				-0.0028	-0.0035
				(-0.12)	(-0.15)
$\hat{\beta}_{i,t-2}^{HML} HML_{t-1}$				0.0950**	0.0993**
				(2.51)	(2.46)
$\hat{\beta}_{i,t-2}^{MOM} MOM_{t-1}$					0.0129
					(0.54)
Obs.	13,953	13,953	13,246	13,246	13,246
Adjusted R^2	0.004	0.004	0.021	0.023	0.023
			Panel B: BDL		
$Log(Ind\_BDL\_EPU_{i,t-1})$	0.0135***	0.0142***	0.0160***	0.0155***	0.0155***
	(6.97)	(4.11)	(4.67)	(4.70)	(4.69)
$Log(EPU_{t-1})$		-0.0012	0.0010	0.0016	0.0016
		(-0.35)	(0.29)	(0.48)	(0.48)
$\hat{\beta}_{i,t-2}^{MKT} MKT_{t-1}$			0.1691***	0.1809***	0.1817***
			(9.43)	(10.03)	(10.11)
$\hat{\beta}_{i,t-2}^{SMB} SMB_{t-1}$				-0.0051	-0.0057
				(-0.22)	(-0.24)
$\hat{\beta}_{i,t-2}^{HML} HML_{t-1}$				0.0927**	0.0963**
				(2.45)	(2.39)
$\hat{\beta}_{i,t-2}^{MOM} MOM_{t-1}$					0.0110
					(0.45)
Obs.	13,943	13,943	13,234	13,234	13,234
Adjusted R^2	0.004	0.004	0.021	0.024	0.024

Table A10. Industry equity portfolio returns and Baker, Davis, and Levy (2022) (Cont'd)

	(1)	(2)	(3)	(4)	(5)
	Panel C: EJS and BDL (Horse race)				
$Log(Ind\_EJS\_EPU_{i,t-1})$	0.0132***	0.0143***	0.0068**	0.0069**	0.0069**
	(4.84)	(4.77)	(2.29)	(2.33)	(2.33)
$Log(Ind\_BDL\_EPU_{i,t-1})$	0.0060**	0.0081**	0.0131***	0.0125***	0.0125***
	(2.61)	(2.46)	(4.00)	(3.91)	(3.90)
$Log(EPU_{t-1})$		-0.0041	-0.0005	0.0001	0.0001
		(-1.14)	(-0.12)	(0.03)	(0.03)
$\hat{\beta}^{MKT}_{i,t-2} MKT_{t-1}$			0.1702***	0.1821***	0.1830***
			(9.46)	(10.06)	(10.17)
$\hat{\beta}^{SMB}_{i,t-2} SMB_{t-1}$				-0.0056	-0.0063
				(-0.24)	(-0.26)
$\hat{\beta}^{HML}_{i,t-2} HML_{t-1}$				0.0932**	0.0975**
				(2.46)	(2.41)
$\hat{\beta}^{MOM}_{i,t-2} MOM_{t-1}$					0.0129
					(0.54)
Obs.	13,921	13,921	13,224	13,224	13,224
Adjusted R^2	0.005	0.005	0.022	0.024	0.024

TABLE A11

Industry-Level Investment and Baker, Davis, and Levy (2022)

This table reports the panel regression of firms' investment rates on industry-specific EPUs, computed based on our SEPU indices. Investment rates are net investment rates defined as capital expenditures scaled by the lagged total property, plant, and equipment (gross investment rates) minus depreciation scaled by the lagged total property, plant, and equipment. *Ind_EJS_EPU*$_{i,t}$ is an industry-specific EPU, computed as a weighted average of our SEPU for the 50 states with weights being the ratio of industry GDP in each state to total domestic industry GDP. *Ind_BDL_EPU*$_{i,t}$ is computed in the same way by replacing our SEPU indices with SEPU indices by Baker et al. (2022). *EPU*$_{t-1}$ is the nationwide economic policy uncertainty measure by Baker et al. (2016). *Market-to-Book*$_{t-1}$ is defined as the book value of total assets plus the market value of equity minus the book value of equity (computed as total assets minus total liabilities minus total preferred stocks) scaled by the book value of total assets. *Total* Q_{t-1} is Tobin's *q* proxy that accounts for intangible capital from Peters and Taylor (2017). *Firm Age*$_t$ is the number of years since the firm first appeared in Compustat. *Ind_EPU_Placebo*$_{i,t}$ is an industry-specific placebo EPU, computed as a weighted-average SEPU with weights being the re-scaled inverse of the ratio of industry GDP in each state to total domestic industry GDP. The *t*-statistics based on standard errors clustered by year and industry are in parentheses. ***, **, and * denote statistical significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Ind_EJS_EPU$_{i,t-1}$	-0.0727**	-0.0772**			-0.0551	-0.0634**
	(-2.32)	(-2.68)			(-1.69)	(-2.15)
Ind_BDL_EPU$_{i,t-1}$			-0.0633**	-0.0567**	-0.0453	-0.0360
			(-2.42)	(-2.12)	(-1.71)	(-1.42)
Market-to-Book$_{t-1}$	0.0239***		0.0239***		0.0239***	
	(4.66)		(4.66)		(4.66)	
Total Q_{t-1}		-0.0196		-0.0196		-0.0196
		(-1.68)		(-1.68)		(-1.68)
Firm Age$_{t-1}$	-0.0206	-0.0578**	-0.0203	-0.0575**	-0.0205	-0.0578**
	(-0.69)	(-2.44)	(-0.68)	(-2.42)	(-0.69)	(-2.44)
Obs.	71,220	70,270	71,023	70,073	71,023	70,073
Adjusted R^2	0.0026	0.0014	0.0026	0.0014	0.0026	0.0014
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Time & Industry	Time & Industry	Time & Industry	Time & Industry	Time & Industry	Time & Industry

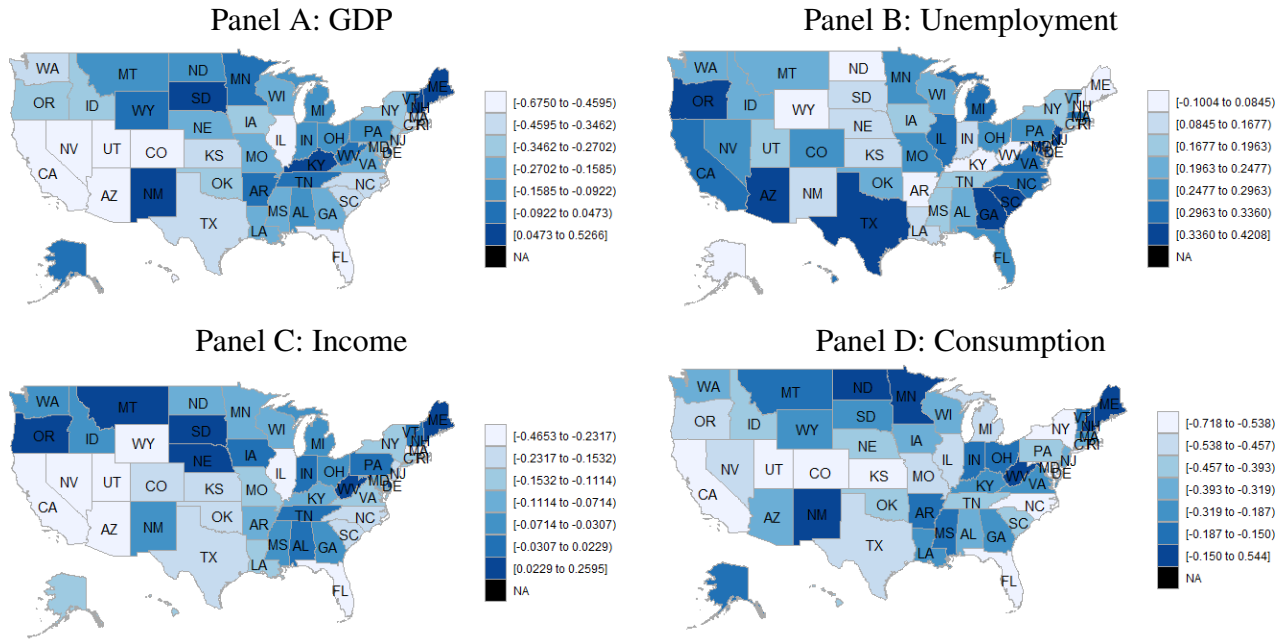
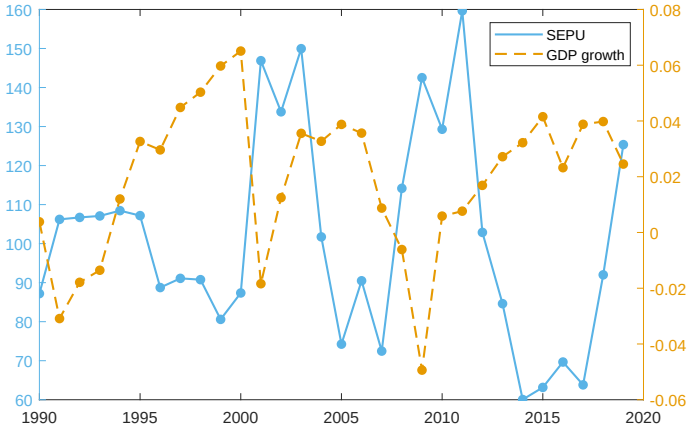


FIGURE A1

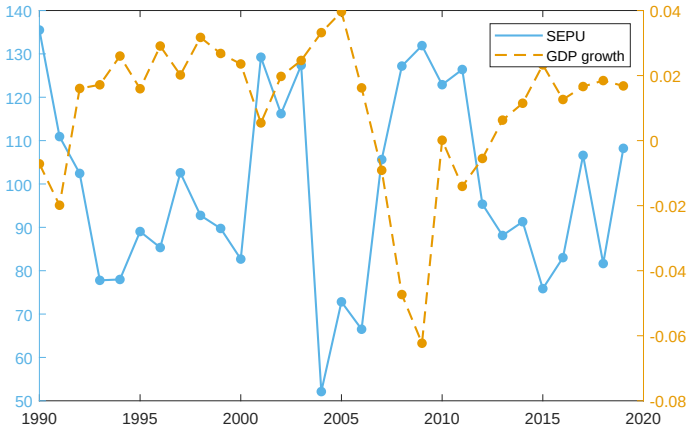
Correlations of SEPU with State-level economic variables for each state

These figures present the correlation between State-level Economic Policy Uncertainty and four economic variables for each state. The economic variables are (1) yearly real per capita GDP growth (GDP) from 1985 to 2019 in Panel A, (2) monthly unemployment rate from 1984:3 to 2019:12 in Panel B, (3) quarterly real per capita total income growth (Income) from 1984:Q2 to 2019:Q4 in Panel C, and (4) yearly consumption growth for each state from 1998 to 2019 in Panel D.

Panel A: California (corr = -0.5140)



Panel B: Florida (corr = -0.6433)



Panel C: Texas (corr = -0.4804)

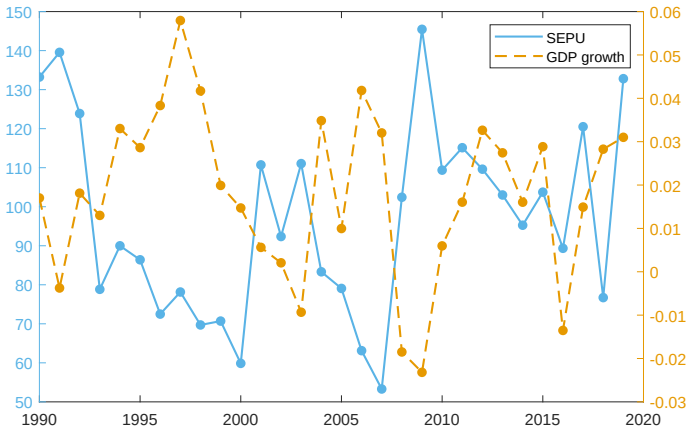


FIGURE A2

SEPU Indices and GDP

These figures present the annual SEPU Indices of California, Florida, and Texas with the GDP growth rate of each of the three states.

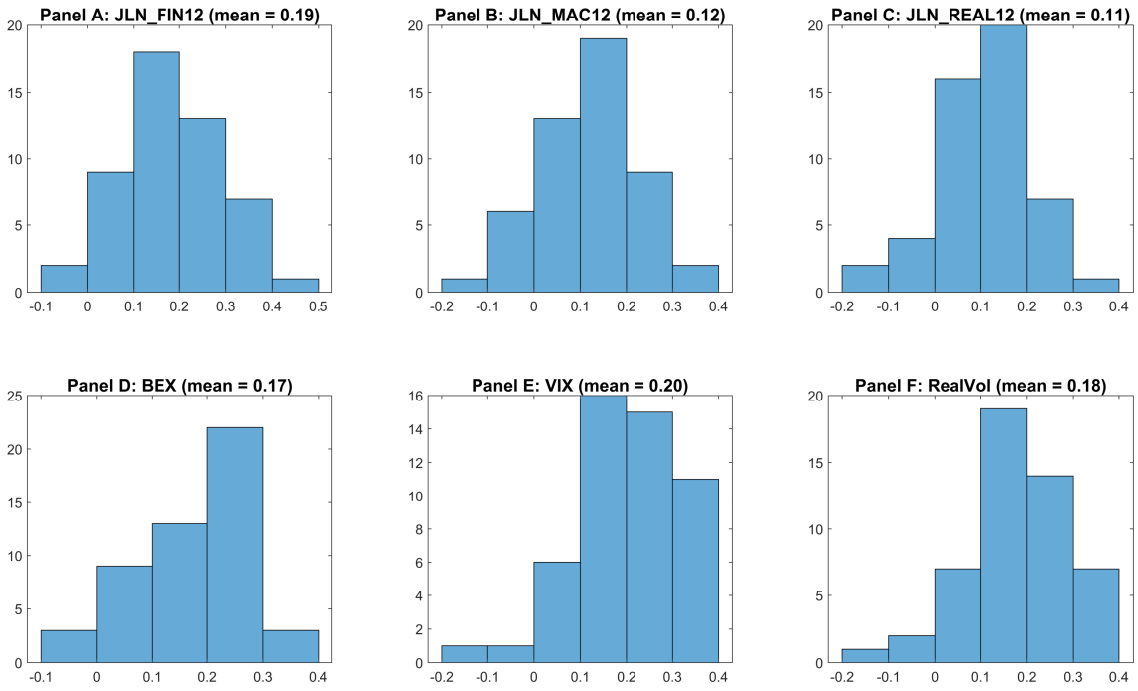


FIGURE A3

Distribution of correlation between SEPU and other uncertainty indices

This figure displays the distribution of correlation coefficients between SEPU indices and other major uncertainty indices. Panel A, B, and C are the results for financial, macro, and real uncertainty indices, respectively, by Jurado et al. (2015) with a 12-month horizon. Panel D is the result for the economic uncertainty index by Bekaert et al. (2022). Panel E is the result for the CBOE VIX index. Panel F is the result for realized volatility of S&P500 defined as the square root of the sum of squared daily returns over the month.

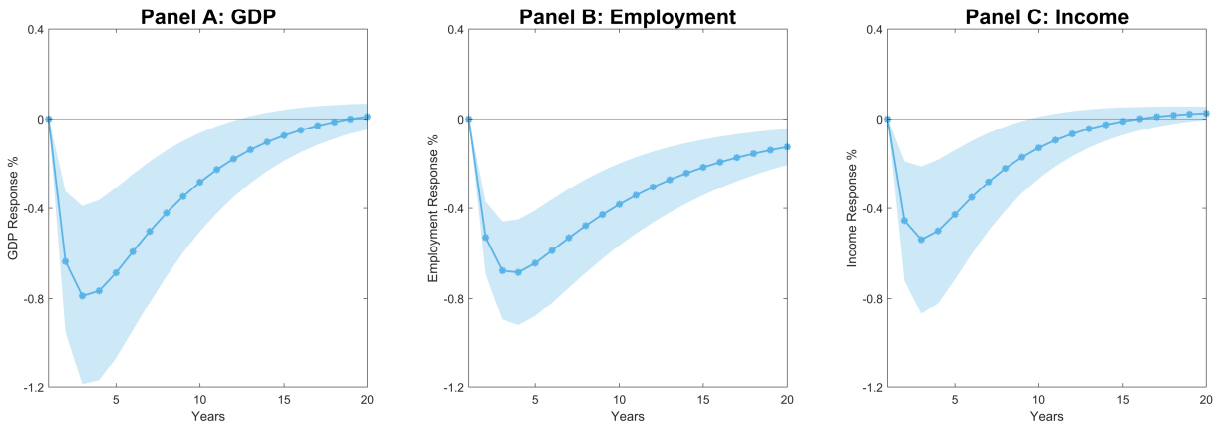


FIGURE A4

Responses of State-economic output to four standard deviations of SEPU Shock

This figure plots impulse response functions for GDP (left), employment (middle), and income (right) with respect to four standard deviation shocks to SEPU with the 95 percent confidence interval. For identification, the Cholesky decomposition with one lag is used and variables are ordered as follows: *Log(GDP)*, *Log(Employment)*, *Log(Income)*, *SEPU*, *Log(Government spending)*, *Log(Minimum wage)*. We control for both time- and state-fixed effects. Yearly data from 1997 to 2018 is used.

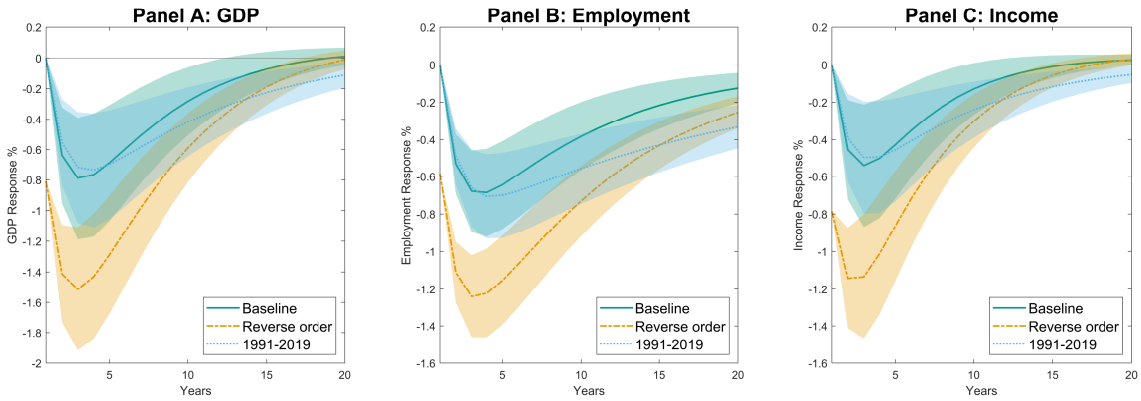


FIGURE A5

Responses to four standard deviations, Alternative Specifications

This figure plots impulse response functions for GDP (left), employment (middle), and income (right) with respect to four standard deviation shocks to SEPU with the 95 percent confidence interval. For identification, the Cholesky decomposition with one lag is used. The straight line is the result for the baseline specification ordered as follows: *Log(GDP)*, *Log(Employment)*, *Log(Income)*, *SEPU*, *Log(Government spending)*, and *Log(Minimum wage)*. The dashed-dotted line is the reverse order specification where the variables are in reverse order compared to the baseline specification. For both the baseline and the reverse order specifications, data from 1997 to 2018 are used. The dotted line is the specification with a longer sample (1991-2019) obtained by removing *Log(Government spending)* and *Log(Minimum wage)* with the order of endogenous variables the same as the baseline specification. We control for both time- and state-fixed effects.

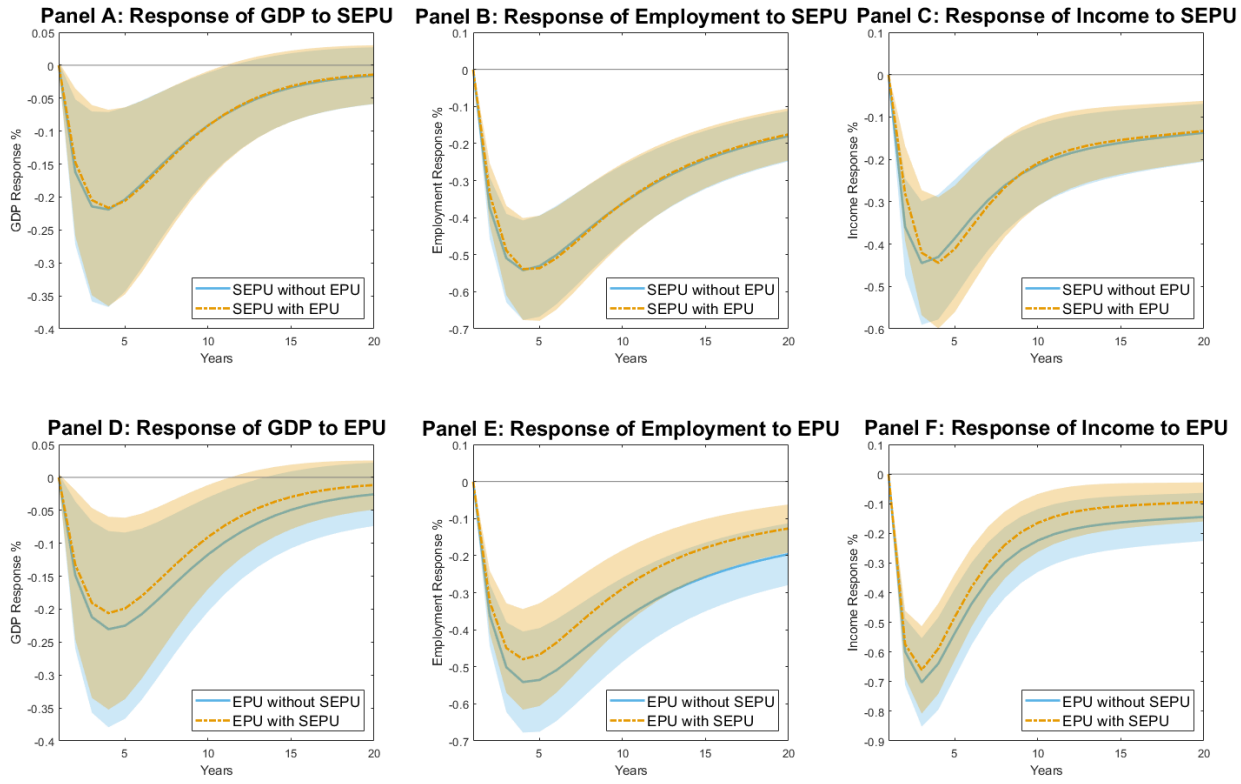
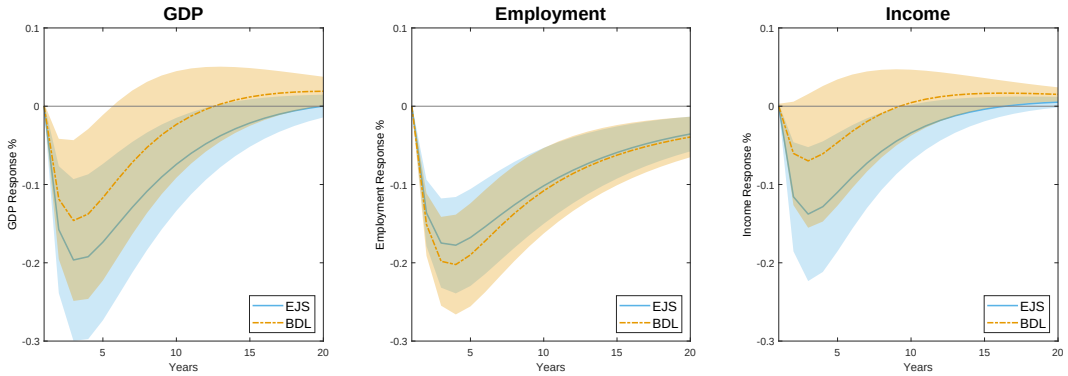


FIGURE A6

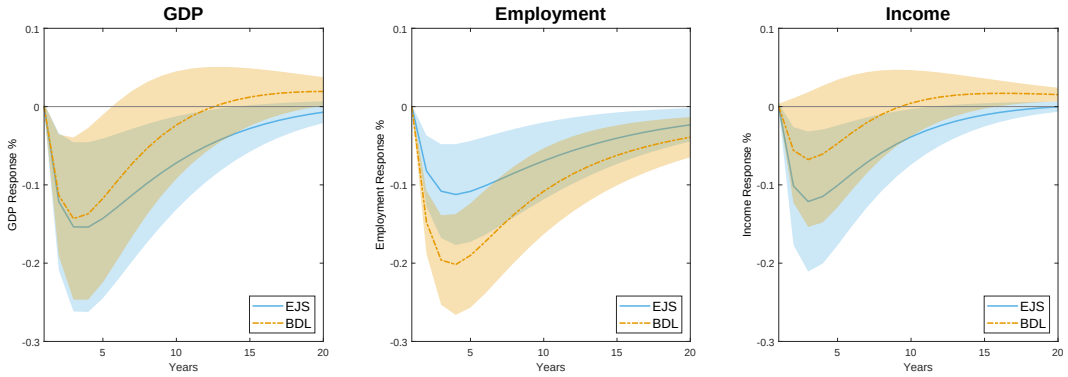
Responses of State-economic output to SEPU or EPU Shock

This figure plots impulse response functions for GDP (left), employment (middle), and income (right) with respect to a unit standard deviation shock to SEPU (blue straight) or EPU with the 95 percent confidence interval. For identification, the Cholesky decomposition with one lag is used. The straight line is the result for the specification where either SEPU or EPU is separately used. In this case, either SEPU or EPU is ordered after *Log(GDP)*, *Log(Employment)*, and *Log(Income)* and before *Log(Government spending)* and *Log(Minimum wage)*. The dash-dotted line is the result for the specification where both SEPU and EPU are jointly used. In doing so, for the upper panels (Panels A, B, and C), SEPU is ordered before EPU. For the lower panels (Panels D, E, and F), EPU is ordered before SEPU. Both SEPU and EPU are ordered after *Log(GDP)*, *Log(Employment)*, and *Log(Income)* and before *Log(Government spending)* and *Log(Minimum wage)*. For all specifications, we control for state-fixed effects, and data from 1997 to 2018 are used.

Panel A: EJS and BDL separately



Panel B: EJS and BDL together (horse race) BDL ordered before EJS



Panel C: EJS and BDL together (horse race) EJS ordered before BDL

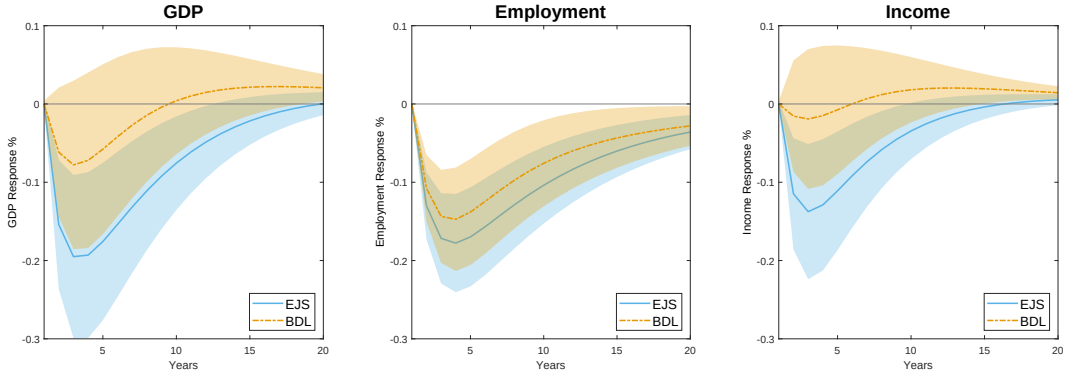


FIGURE A7

Responses to SEPU Shock with Baker, Davis, and Levy (2022)

These figures plot impulse response functions for GDP (left), employment (middle), and income (right) with respect to a unit standard deviation shock to our SEPU indices (blue straight line, denoted by EJS) or SEPU indices by Baker et al. (2022) (orange dash-dotted line, denoted by BDL) with the 95 percent confidence interval. For identification, the Cholesky decomposition with one lag is used. In Panel A, endogenous variables are ordered as *Log(GDP)*, *Log(Employment)*, *Log(Income)*, *SEPU*, *Log(Government spending)* and *Log(Minimum wage)*, where *SEPU* denotes indices either by our paper or Baker et al. (2022). In Panel B, our indices and those by Baker et al. (2022) are added together with the following order: *Log(GDP)*, *Log(Employment)*, *Log(Income)*, *BDL SEPU*, *EJS SEPU*, *Log(Government spending)* and *Log(Minimum wage)*. In Panel C, our indices and those by Baker et al. (2022) are added together with the following order: *Log(GDP)*, *Log(Employment)*, *Log(Income)*, *EJS SEPU*, *BDL SEPU*, *Log(Government spending)* and *Log(Minimum wage)*. For all specifications, we control for state-fixed effects, and data from 1997 to 2018 are used.