

Measuring Economic Policy Uncertainty

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Initial Impetus: Assess the Policy Uncertainty View

Two Claims

1. Uncertainty about economic policy in the United States is at historically high levels in recent years.
1. High levels of policy uncertainty caused businesses and households to cutback or defer spending, investment and hiring – slowing U.S. economic recovery from the Financial Crisis and Recession of 2007-09.

Some Broader Goals

1. Develop monthly time-series measures of economic policy uncertainty for many countries
 - Thus far: USA, Canada, UK, Germany, France, Italy, Spain, China, India
 - To come: Japan, South Korea, and many more (subject to resources)
2. Assess the effects of policy uncertainty on macroeconomic performance
3. Understand the economic, political and social forces that influence policy uncertainty

How Could Policy Uncertainty Hold Back the Economy?

Potential Mechanisms (Not an Exhaustive List)

1. More precautionary savings and deleveraging by households
2. When investment and hiring decisions are costly to reverse, greater uncertainty depresses and delays investment and hiring
3. More costly debt or equity finance (Gilchrist et al., Pastor and Veronesi)
4. Higher markups, intensifying monopoly distortions (Fernandez-Villaverde et al.)
5. Managerial risk aversion (Panousi and Panikolaou)
6. Intensification of agency problems, reducing the value of new and existing employment, business and financial relationships (Narita)

What Do We Want our Measures to Capture?

All of the following:

- Uncertainty about *who* will make economic policy decisions – e.g., who will win the next elections?
- Uncertainty about *what* economic policy actions decision makers will undertake, and *when*.
- Uncertainty about the economic *effects* of policy actions – past, present and future actions
- Economic uncertainty induced by policy inaction
- Economic uncertainty related to national security concerns and other policy matters that are not mainly economic in character

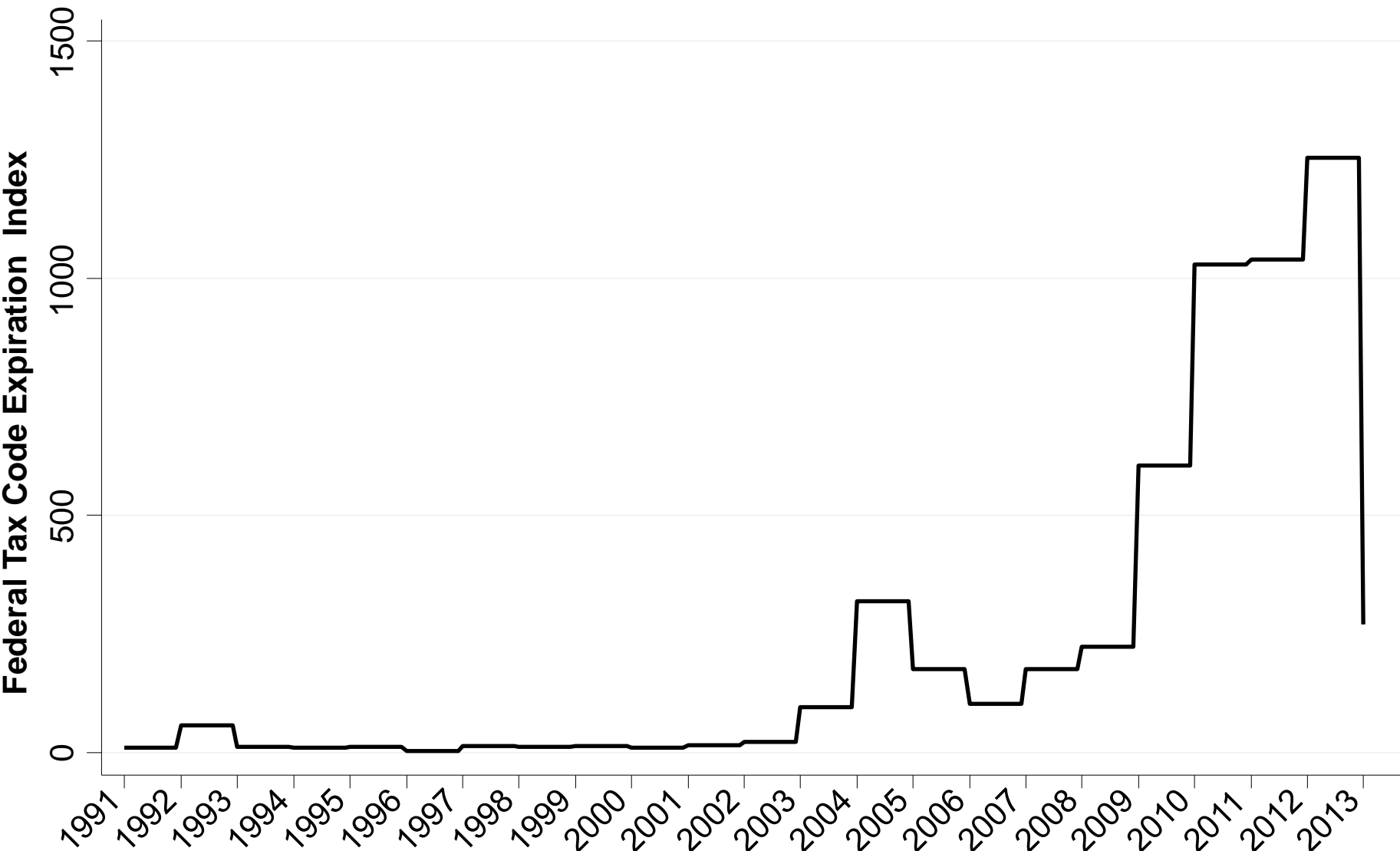
A New Index of Policy-Related Economic Uncertainty

Components of our U.S. EPU index:

- Scheduled tax code expirations (1/6)
- Forecaster disagreement about government purchases of goods and services (1/6)
- Forecaster disagreement about inflation (1/6)
- News-based index (1/2 weight)

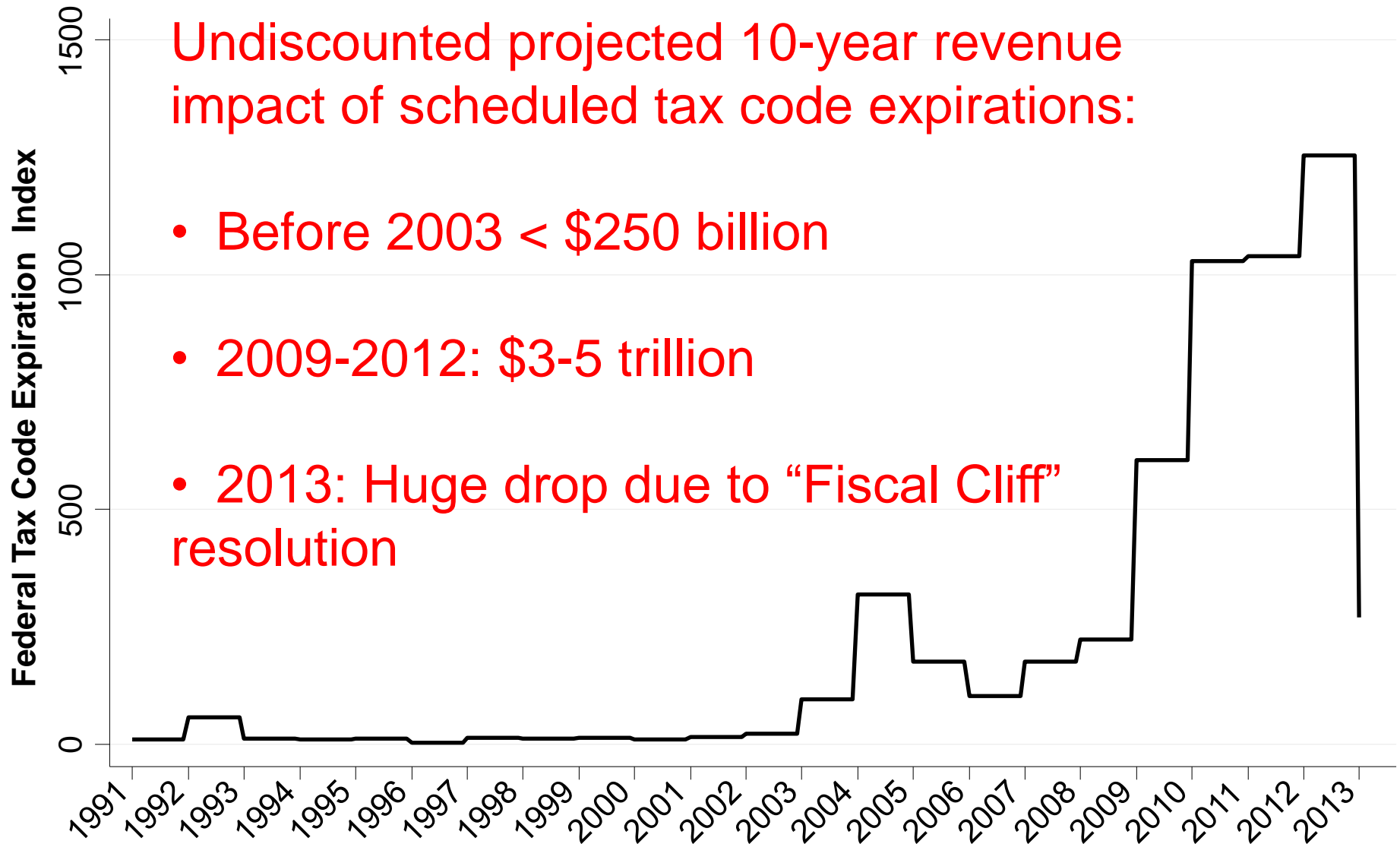
Normalize each component to have unit standard deviation, then compute weighted sum to get overall index.

Figure 3: Federal Tax Code Expirations Index, 1991-2013



Notes: Based on Congressional Budget Office data on projected revenue effects of federal tax code provisions set to expire in the current calendar year and next ten years. For a given year, the index value is calculated as the discounted sum of projected revenue effects associated with expiring tax code provisions, using a discount factor of 0.5^T applied to future revenue effects for $T=0,1,\dots,10$ years. Index normalized to a mean of 100 before 2010.

Figure 3: Federal Tax Code Expirations Index, 1991-2013

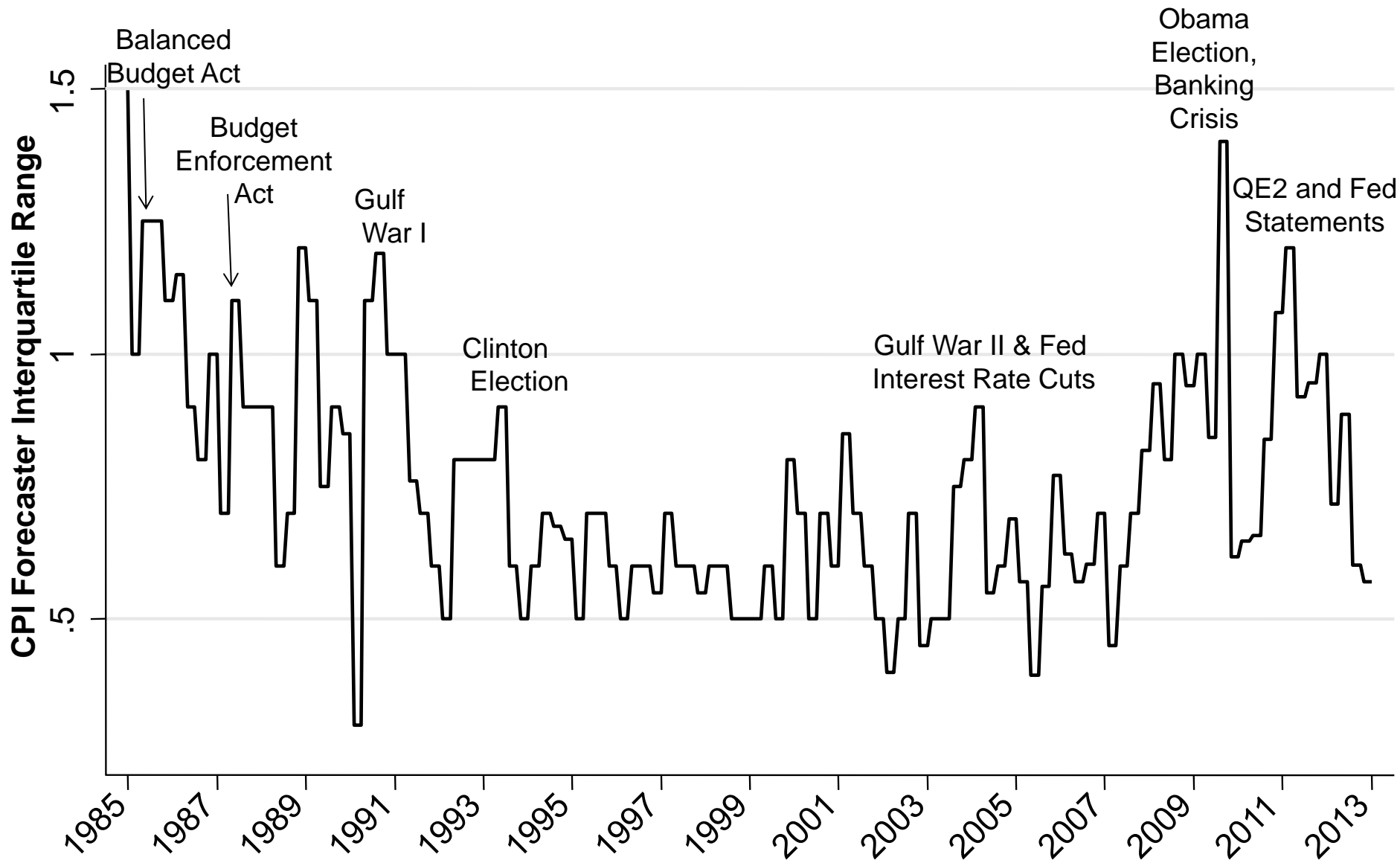


Undiscounted projected 10-year revenue impact of scheduled tax code expirations:

- Before 2003 < \$250 billion
- 2009-2012: \$3-5 trillion
- 2013: Huge drop due to “Fiscal Cliff” resolution

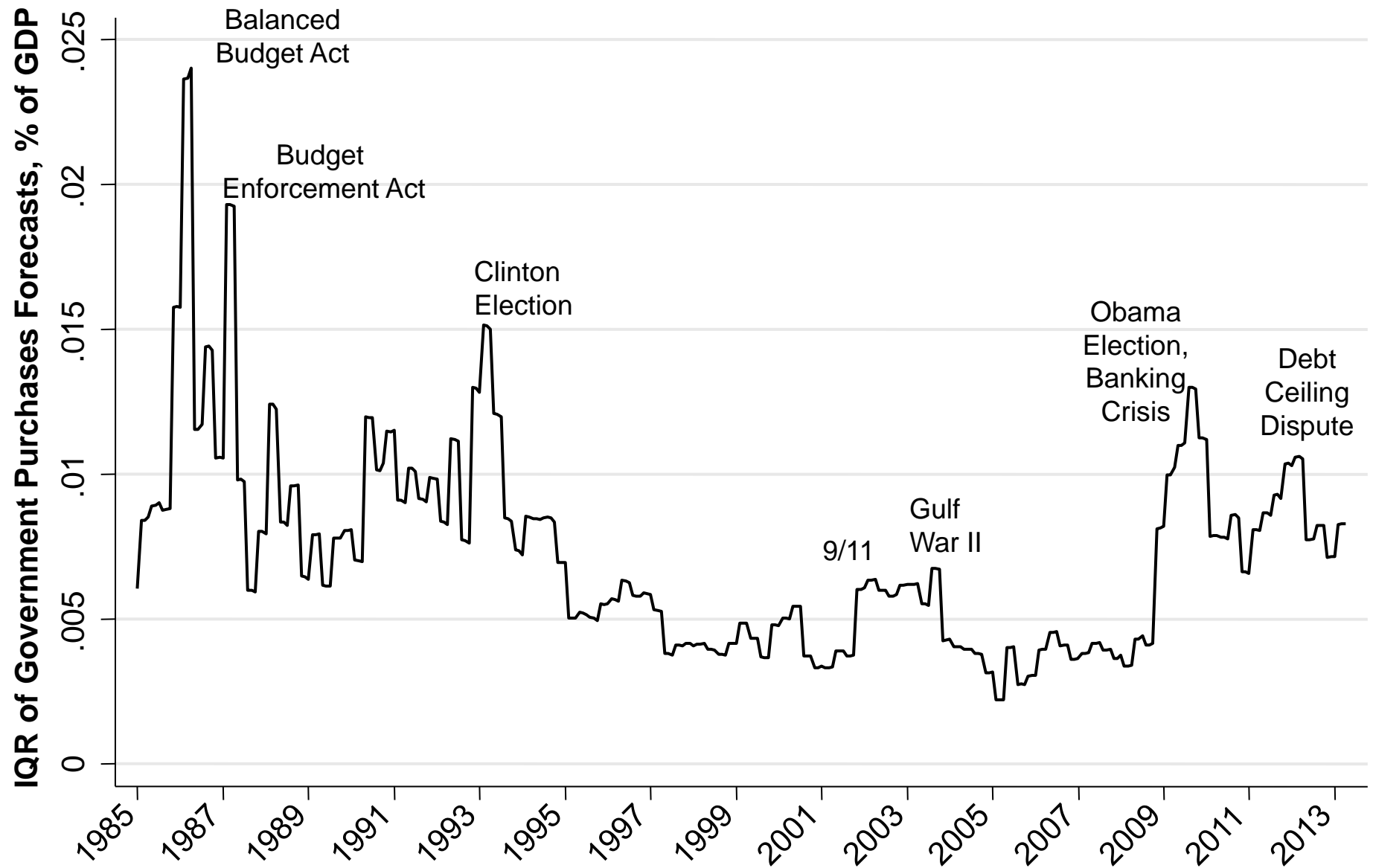
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Figure 4: CPI Forecaster Interquartile Range, Percentage-Point Spread (Q1 1985 – Q4 2012)



Notes: From the Federal Reserve Bank of Philadelphia Survey of Professional Forecasters (made every quarter; offset one month due to release dates such that Q4 covers Nov-Jan. Displays the Interquartile (IQ) range of the quarterly 1-year-ahead forecasts of CPI.

Figure 5: Interquartile Range of Government Purchases Forecasts, Q1 1985 – Q2 2013



Notes: Based on data from the Federal Reserve Bank of Philadelphia Survey of Professional Forecasters. We compute the interquartile range (IQR) of 1-year ahead forecasts of government purchases of goods and services and scale the IQR by the median forecast. We carry out these calculations separately for federal purchases and state & local purchases, then aggregate using the purchases share of nominal GDP for each level of government. See the main text for additional details.

Constructing News-Based Indexes of EU and EPU for the U.S.

- Search digital archives of 10 major newspapers for articles with terms related to EPU
- For each paper:
 - Get monthly article counts for EPU
 - Divide count for month t by count of all articles at the same newspaper in that month
 - Compute time-series SD of each ratio (1985-2010)
 - Divide each ratio by its SD to get normalized newspaper-level indexes of EPU
- Sum across the newspaper-level indexes by month to get the U.S. news-based indexes of EPU

Constructing News-Based Indexes of EU and EPU for the U.S.

Text String Search Criteria:

EU: {economic OR economy} AND
{uncertain OR uncertainty}

EPU: ... AND {regulation OR deficit OR “federal
reserve” OR congress OR legislation OR “white
house”}

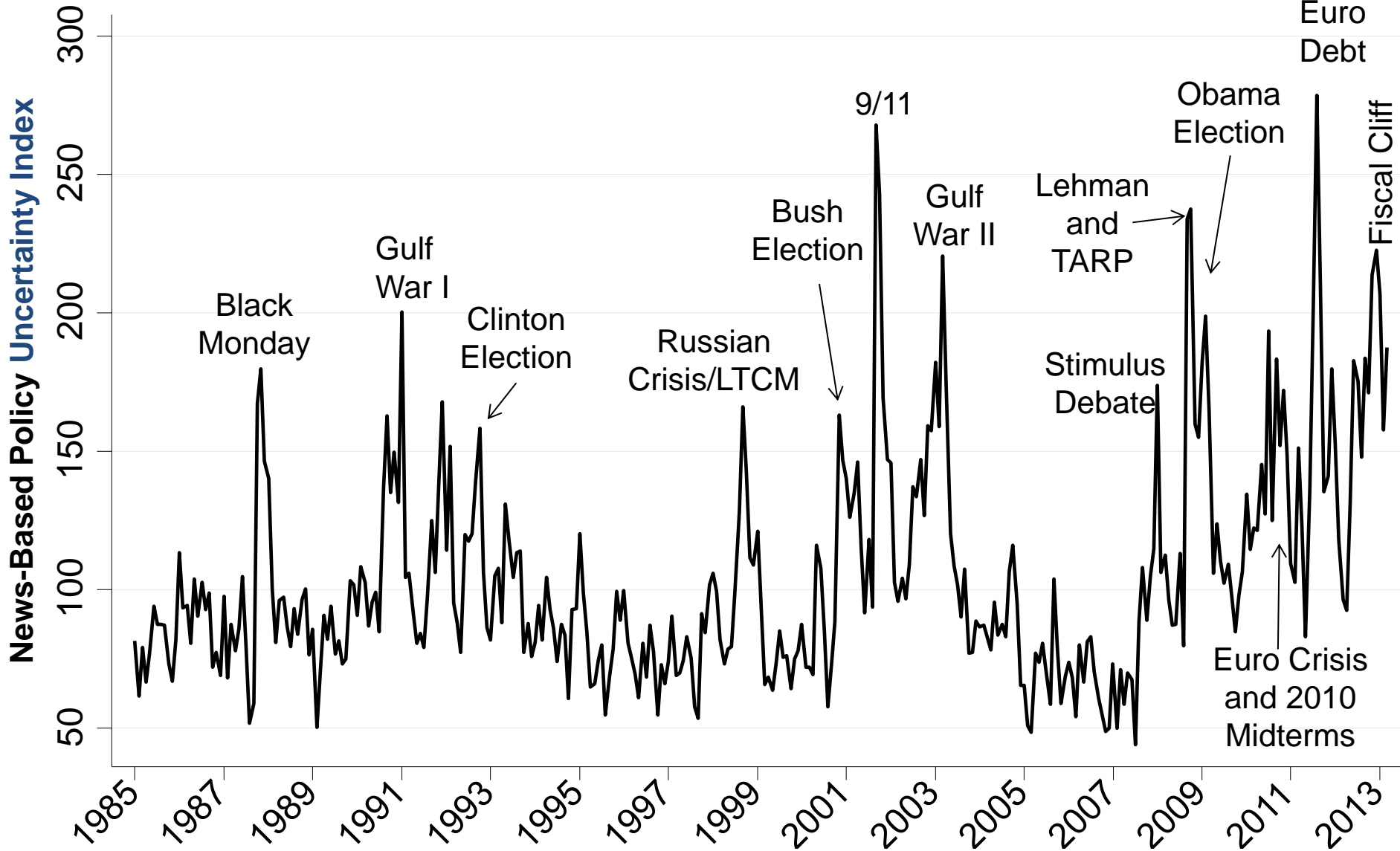
Constructing News-Based Indexes of EU and EPU for the U.S.

Newspapers:

- Boston Globe
- Chicago Tribune
- Dallas Morning News
- Los Angeles Times
- Miami Herald
- New York Times
- SF Chronicle
- USA Today
- Wall Street Journal
- Washington Post

Note: We use Access World News Newsbank Service when constructing a daily EPU Index, because the daily index requires a higher density of news sources.

Figure 2: News-Based Economic Policy Uncertainty Index (Jan 1985 – Mar 2013)



Debt Ceiling; Euro Debt

Notes: The news-based EPU Index reflects scaled monthly counts of articles containing 'uncertain' or 'uncertainty', 'economic' or 'economy', and one or more policy relevant terms: 'regulation', 'federal reserve', 'deficit', 'congress', 'legislation', and 'white house'. The series is normalized to mean 100 from 1985-2009 and based on queries run on 4 April 4 2013 for the following newspapers: USA Today, Miami Herald, Chicago Tribune, Washington Post, LA Times, Boston Globe, SF Chronicle, Dallas Morning News, NY Times, and the Wall Street Journal.

A New Index of Policy-Related Economic Uncertainty

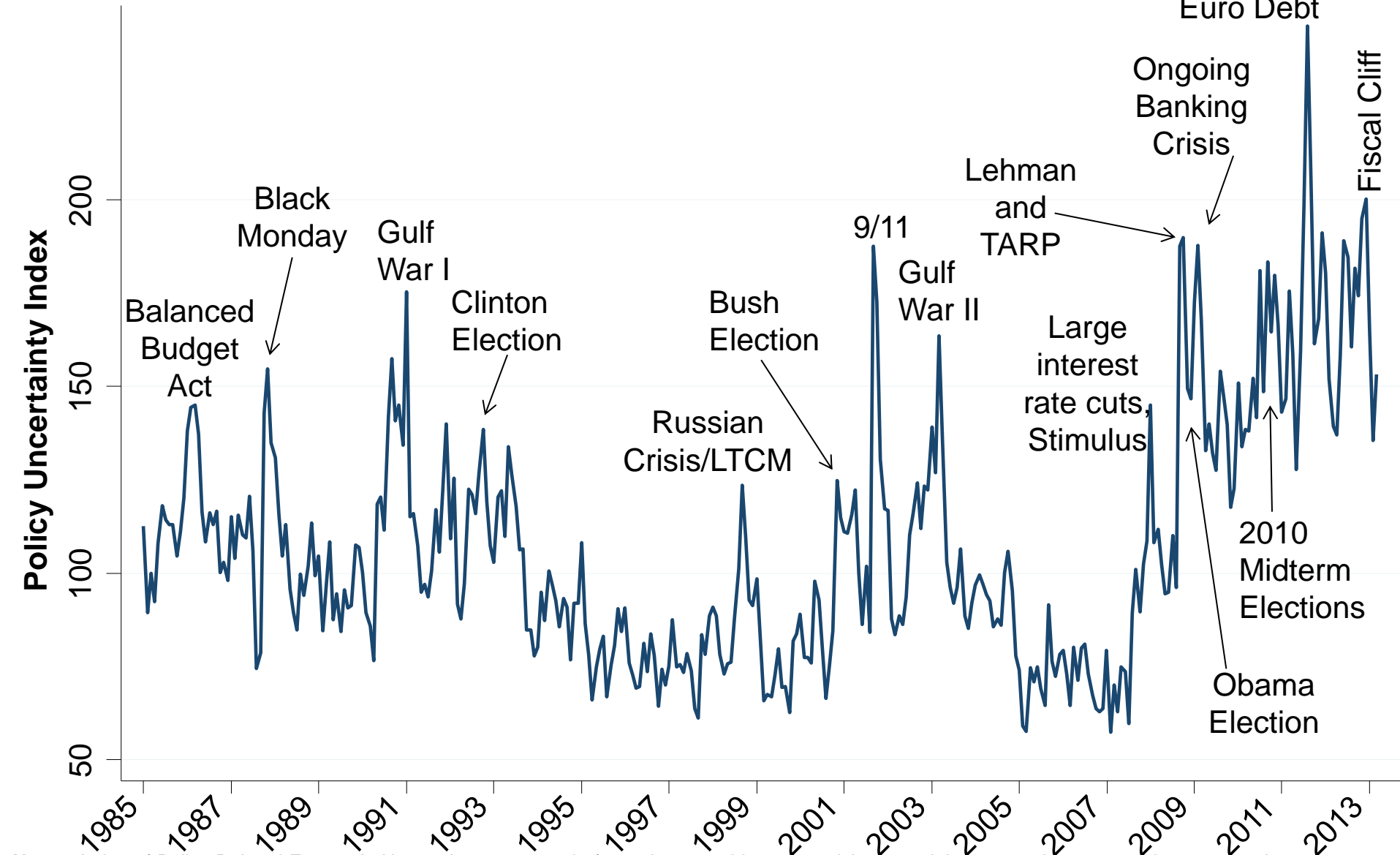
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Normalize each component to have unit standard deviation, then compute weighted sum to get overall index.

Figure 1: Index of Economic Policy Uncertainty

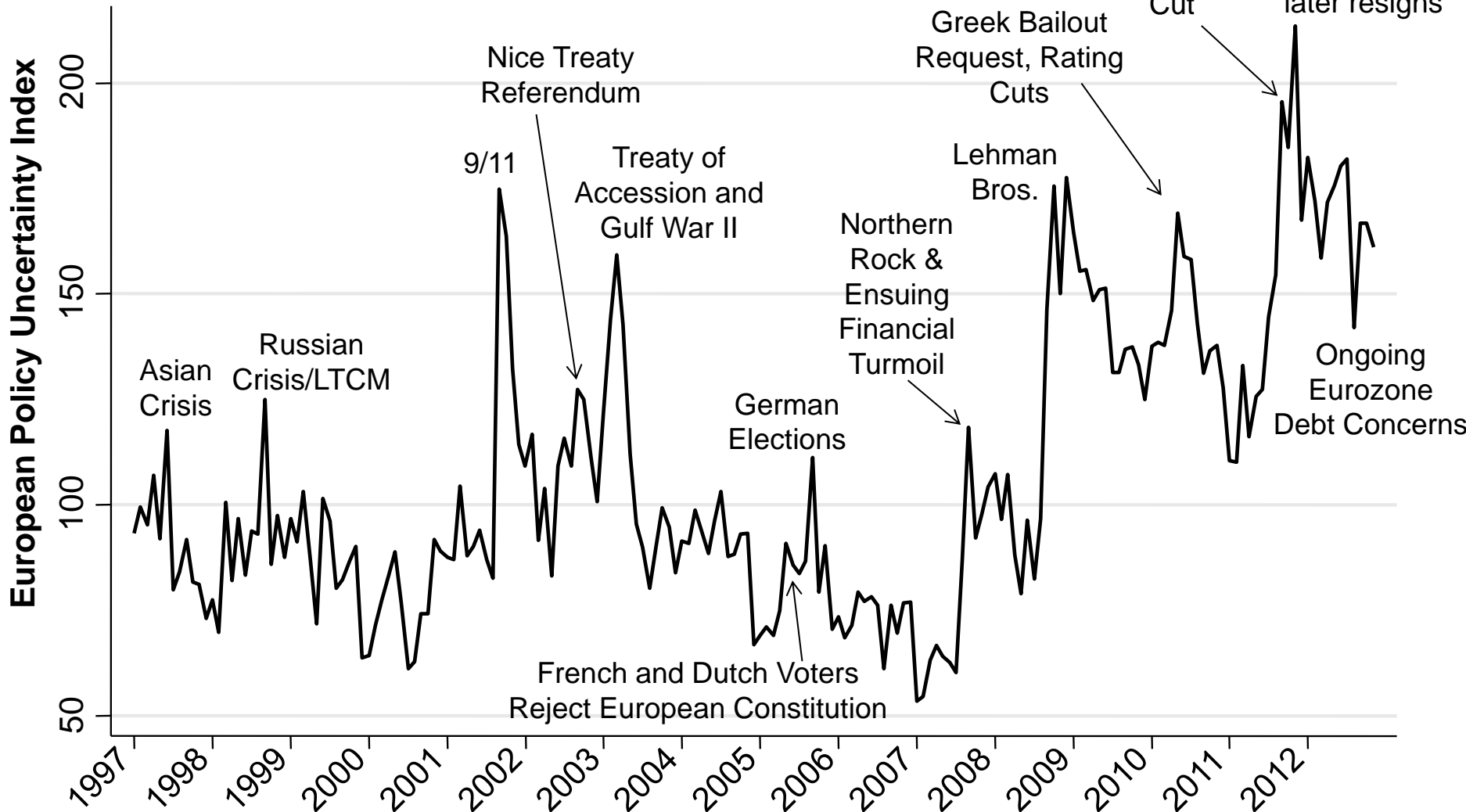
(Jan 1985 – Mar 2013)



Notes: Index of Policy-Related Economic Uncertainty composed of 4 series: monthly news articles containing uncertain or uncertainty, economic or economy, and policy relevant terms (scaled by the smoothed number of articles containing 'today'); the number of tax laws expiring in coming years, and a composite of IQ ranges for quarterly forecasts of federal, state, and local government expenditures and 1-year CPI from the Phil. Fed Survey of Forecasters. Weights: 1/2 News-based, 1/6 tax expirations, 1/6 CPI disagreement, 1/6 expenditures disagreement after each index normalized to have a standard-deviation of 1. Data from Jan 1985-Mar 2013. Index normalized mean 100 from 1985-2009. Data at www.policyuncertainty.com

Figure 6: European Policy Uncertainty Index

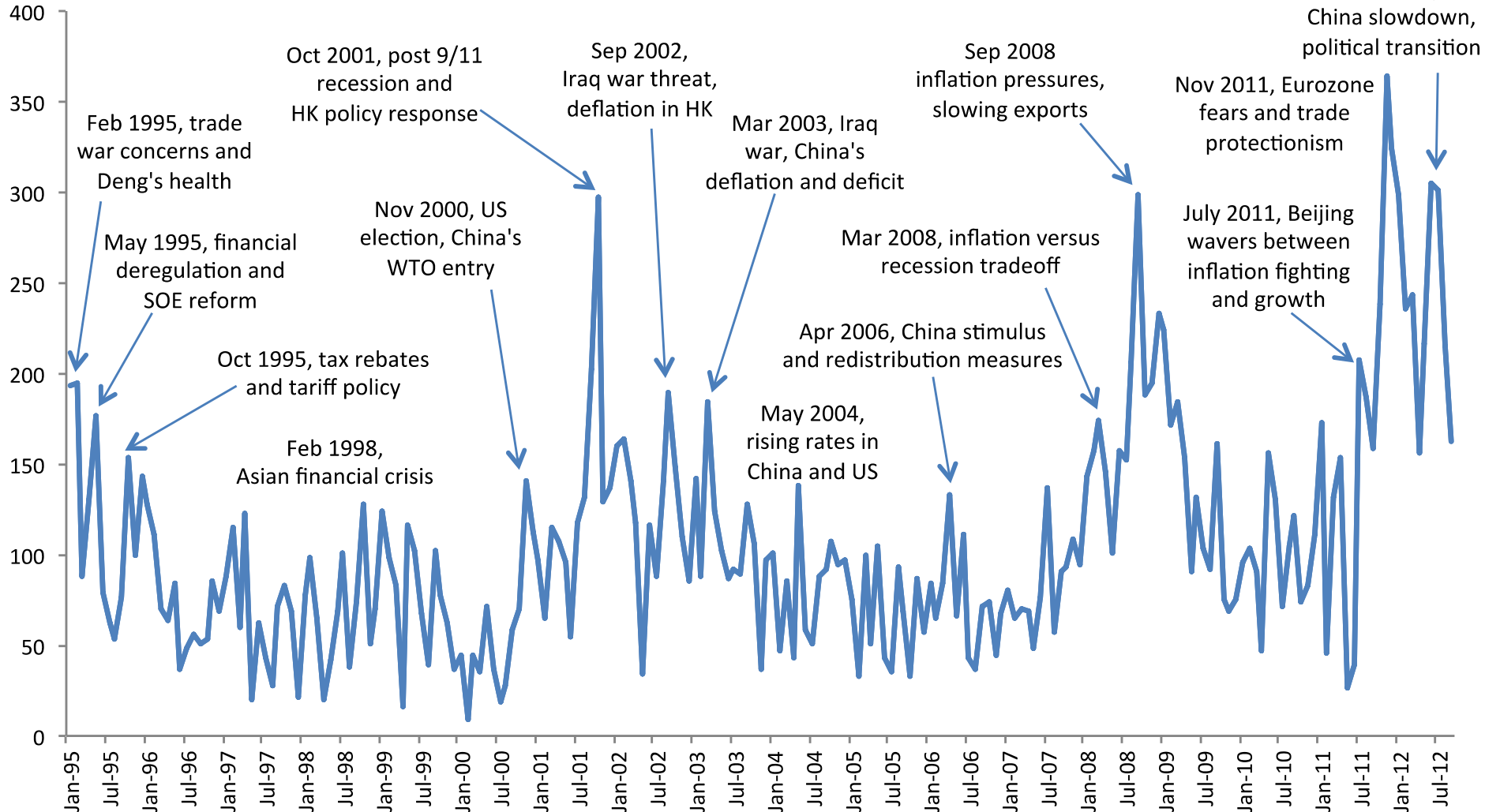
(Jan 1997 – Nov 2012)



Notes: Index composed of a News-Based Index (0.5 weight), and country-level components measuring forecaster disagreement about inflation rates and federal government budget balance (each 0.25 weight). News-Based component composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'central bank', 'budget', and 'deficit'. Series is normalized to mean 100 from 1997-2010. Index covers Jan 1997 – Nov 2012. Papers include El Pais, El Mundo, Corriere della Sera, La Repubblica, Le Monde, Le Figaro, Financial Times, The Times, Handelsblatt, FAZ. All searches done in the native language of the paper in question.

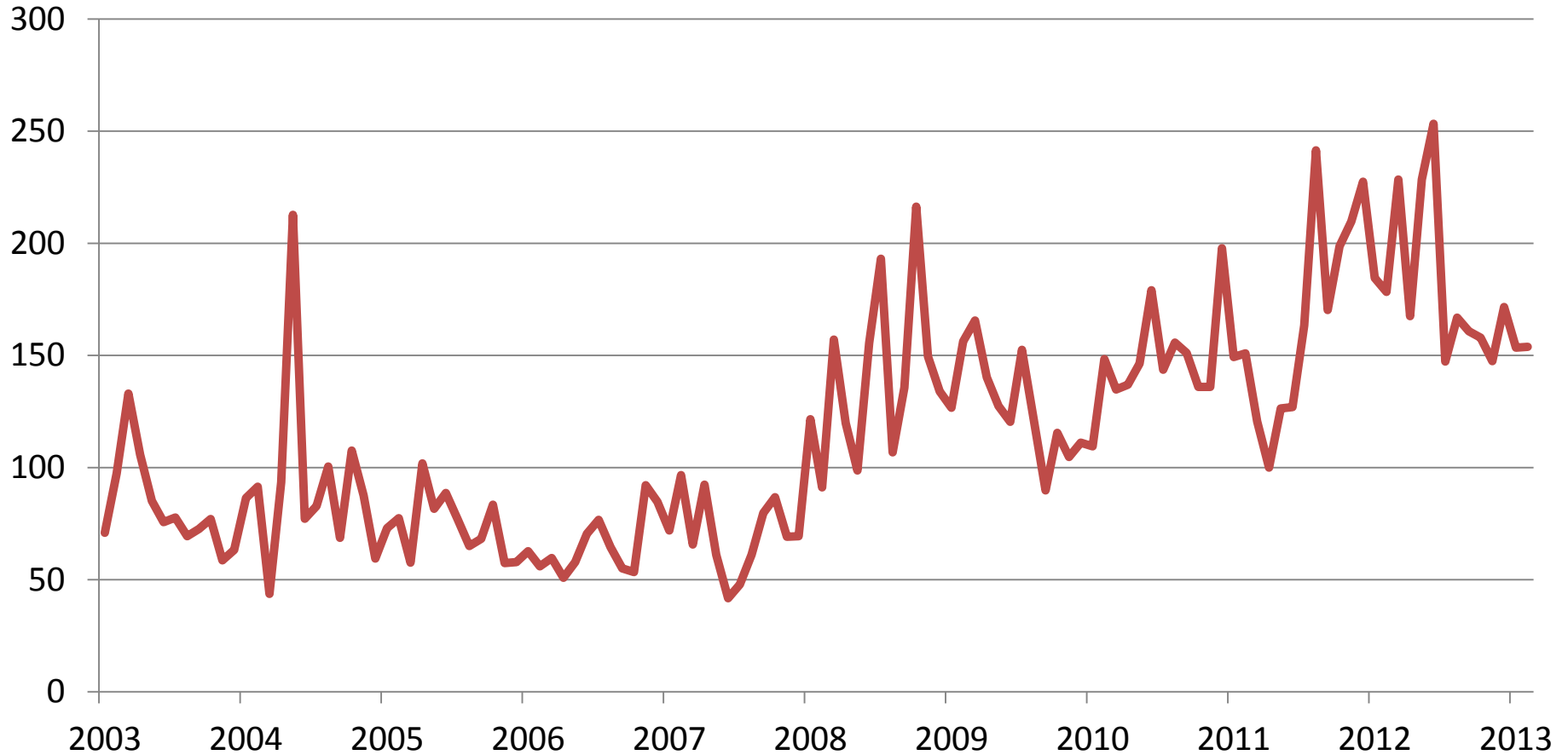
China Economic Policy Uncertainty Article Count, Jan 1995 to Sep 2012, South China Morning Post

Figure 2: SCMP China Economic Policy Uncertainty Index (Jan 1995 - Sep 2012)



India Policy Uncertainty Index

January 2003 to February 2013



Using a 50% weight on six major Indian newspapers and a 50% weight on forecaster disagreement measures. Constructed in collaboration with Sanjai Bhagat, Pulak Ghosh and Srivivasan Rangan. Downloaded from www.PolicyUncertainty.com on 18 May 2013

Assessing the News-Based Index: Does It Capture What We Want?



Two Measurement Concerns

Suitability: Whether an accurate count for news articles about a particular type of uncertainty provides a good indicator for that type of uncertainty.

Accuracy: Whether specific text-string search criteria accurately identify the set of articles that discuss a certain type of uncertainty, e.g., policy-related economic uncertainty.

Assessing Suitability Concern

Idea: Apply news-based approach to a concept of uncertainty for which we have external, market-based evidence.

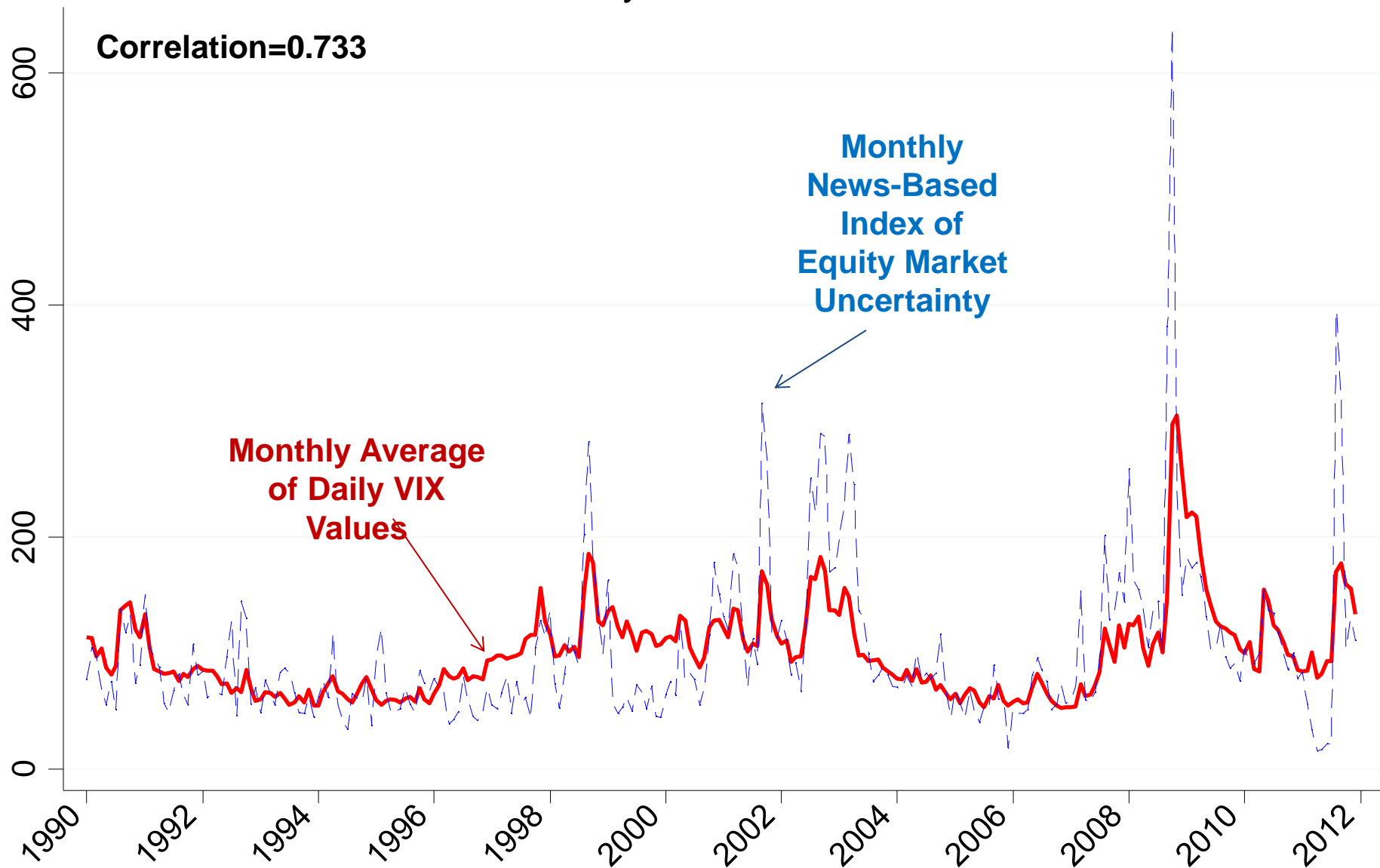
Implementation: Compare VIX measure of uncertainty about future equity returns to a news-based index of equity market uncertainty, with search terms as follows:

{economic OR economy} AND

{uncertain OR uncertainty} AND

{“stock price” OR “equity price” OR “stock market”}

Figure 7: News-based index of equity market uncertainty compared to market-based VIX, January 1990 to December 2012



Notes: The news-based index of equity market uncertainty is based on the count of articles that reference 'economy' or 'economic', and 'uncertain' or 'uncertainty' and one of 'stock price', 'equity price', or 'stock market' in 10 major U.S. newspapers, scaled by the number of articles in each month and paper. The news-based index and the VIX are normalized to a mean of 100 over the period.

Assessing Accuracy Concern

Six undergraduates read 4,300 newspaper articles, following a 50-page audit guide to code articles: “economic uncertainty”=0/1, “economic policy uncertainty”=0/1, and more ...

Economic Policy Uncertainty

Audit Methodology: Main Steps

1. Download all NY Times, LA Times, and SF Chronicle articles from 1985 to 2012 that pass our Economic

August 30 Sampling Details, 2

3. Assign 84 of the sampled articles for each paper to Kyle and 84 to Sophie. Call these subsamples Sub(Name,Paper), where
4. For each of the 172 subsamples, get reviewed by
5. In summary, per paper
6. Lastly, review

Auditing the Sampled Articles, 2

3. If yes to 2, then identify the policy category (checking all that apply):
 - Monetary policy
 - Fiscal policy
 - Taxes
 - Labor regulations
 - Legal Policy
 - Competition Policy
 - Government spending
 - Health care programs and regulations
 - National security and terrorism
 - Trade Policy
 - Energy & environmental regulation, natural resources and commodities
 - Entitlement programs, social safety net, welfare programs
 - Financial regulation (including banking and equity markets)
 - Political conflict and leadership changes
 - Sovereign debt, exchange rate policy, foreign reserves
 - Other policy matters (specify)
4. Code other aspects of policy uncertainty treated in the article: direction of change, nature of policy uncertainty (is it about who, actions, or effects?), and whether it discusses policy concerns in the United States or foreign countries.

FAQ

4. Given that the outcome of government policy is always uncertain, at some level, does any mention of a new or proposed policy constitute EPU=1?

No. An article mentioning the policy etc... F mention

True Positive 2

ATHENS — In the year since Greece received its first financial bailout, many things have changed. The country has reduced its budget deficit by 2 percent of gross domestic product. Workers have been hit by wage freezes and pension cuts, strengthening Greece's public policy. The state has revealed for the first time how many people it is referring to including a decisive wealth and

Code as EPU = 1, because the article discusses uncertainty as

False Positive 5

Our Love Affair With Malls Is on the Rocks

"There are days now when I make \$160 and think I had a good day," says Mark Classes, an owner of Just That Clothing, a store in the mall that sells, repairs other items, says that say "Mr. L."

Code as EPU = 0, because the article does not mention any aspects of uncertainty

False Negative 4

Canada Is Expected to Join U.S.-Mexico Trade Talks

By Robert D. Black, Special to The Wall Street Journal
Published: 08/27/12

After months of high-level talks, the United States, Mexico and Canada have reached agreement to include Canada in negotiations toward a continent-wide North American free-trade zone, diplomats and trade officials said today.

The agreement, which could be announced as early as this week, would make Canada a direct participant in talks that have been under discussion by the United States and Mexico since the middle of last year.

The negotiations envisioned in the agreement would seek to bind the three countries' economies in a common market that would include more than 350 million people and would be larger than the European Community. Such a large untolded market would encourage interests as diverse as the machine shops of northern Mexico, the financial district of New York and the farmsteads of western Canada.

"Everything is ready," one diplomat said, describing preparations for the three-way talks. "It's just a matter of making the formal announcement."

Speculation about the possibility of continent-wide free-trade negotiations has been strong since last year, when President Carlos Salinas de Gortari formally engaged free-trade talks with the United States.

Canada quickly expressed interest in having a role in the new talks, but its status was left unclear until uncertainty about how its inclusion might affect the United States-Mexico talks, which were considered a high priority by both countries.

President Salinas has sought to conclude a free-trade pact quickly to accelerate the economic growth that has become a hallmark and a crucial test of his administration. President Bush has also made an annual a neutral economic objective and has sought to complete it before it could become entangled in the politics of the 2002 Presidential election year.

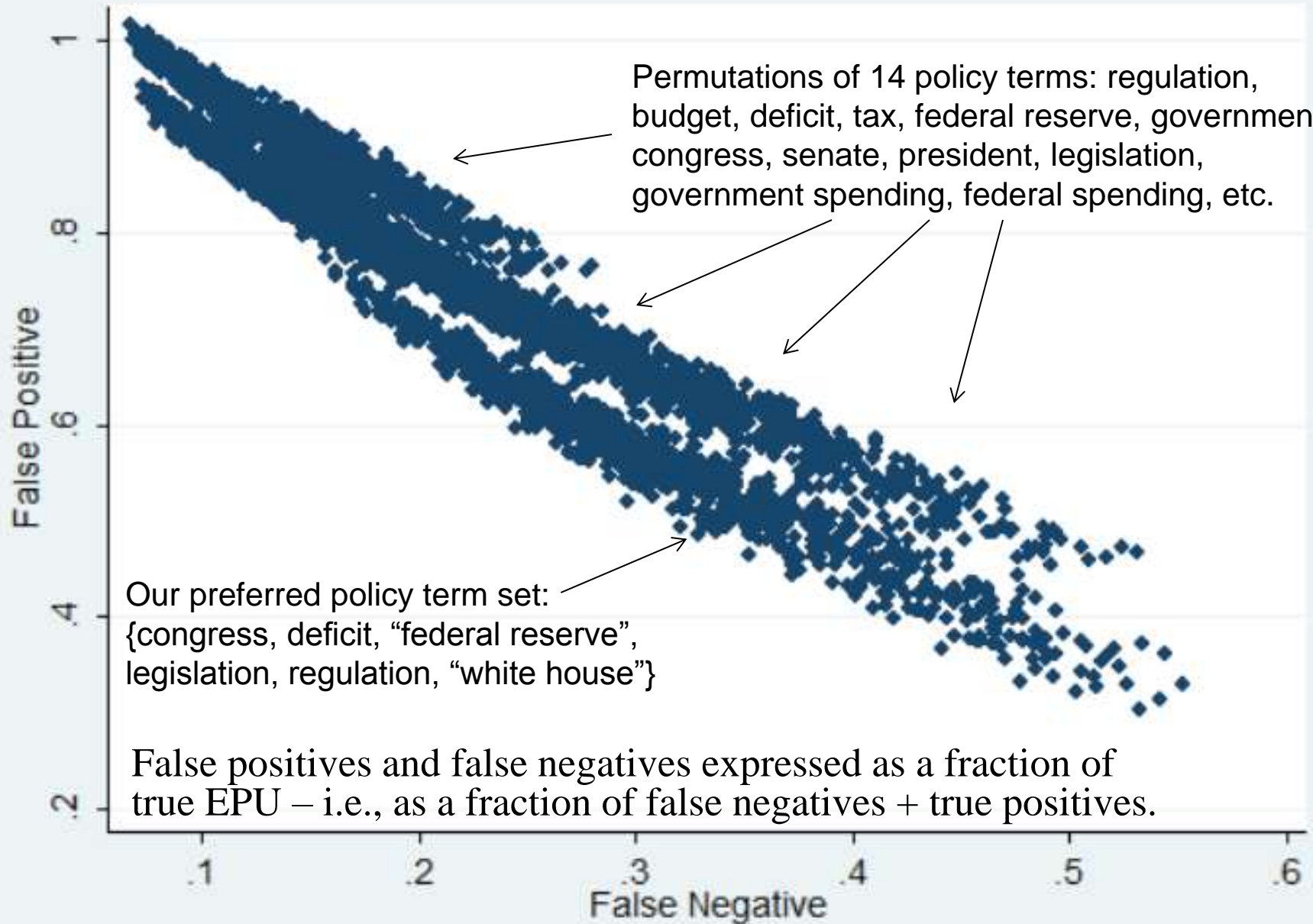
Running the Newspaper Article Audit

1. Design, evaluate, and refine audit template
2. Define the Audit Universe: All articles coded EU=1 by automated search
3. Sample Audit Universe and manually read articles
 - Randomly sample 3 articles per month for 5 of the newspapers; 45 articles per quarter
4. Code each article: EU, EPU, type of EPU, etc.
5. Compare manually read 'truth' to results from automated search with various permutations of policy terms

Selecting a Preferred Term Set

- Consider 16,000 permutations of 14 policy-relevant terms: regulation, budget, spending, policy, deficit, tax, ‘federal reserve’, ‘white house’, ‘house of representatives’, government, congress, senate, president, and legislation.
- + 14,000 combinations of terms that replace terms like policy and government with multi-word term sets like “government policy”
- Interpreting the human coding as truth, select the term set that minimizes the sum of false positive and false negative error rates

Error rates for 28,000 permutations of 14 policy terms in a human audit sample of 3,500 randomly selected articles

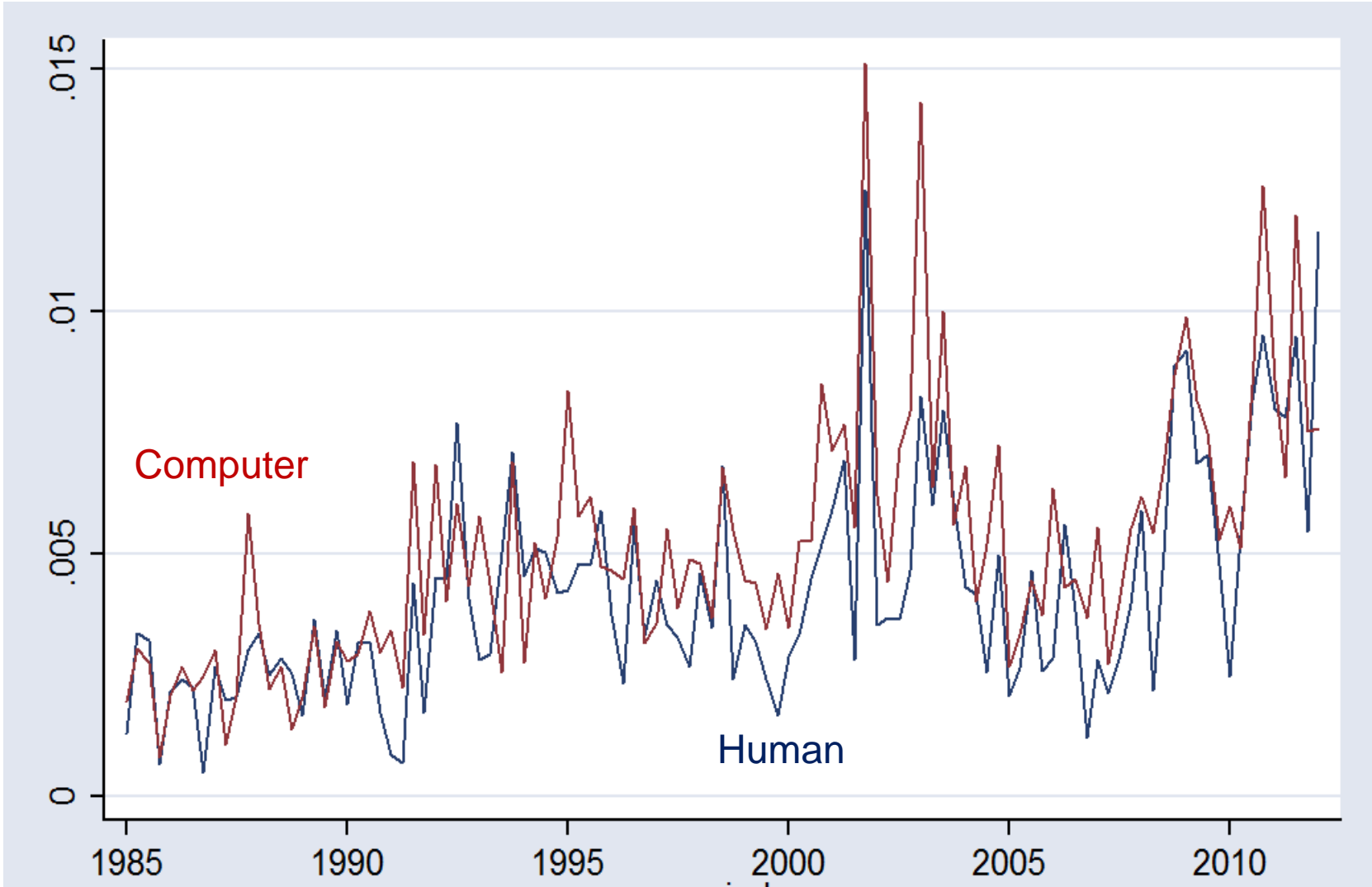


Permutations of 14 policy terms: regulation, budget, deficit, tax, federal reserve, government, congress, senate, president, legislation, government spending, federal spending, etc.

Our preferred policy term set: {congress, deficit, "federal reserve", legislation, regulation, "white house"}

False positives and false negatives expressed as a fraction of true EPU – i.e., as a fraction of false negatives + true positives.

Figure 8: Human Readings and Automated Computer Methods Yield Similar News-Based EPU Indexes, 1985Q1 to 2012Q2



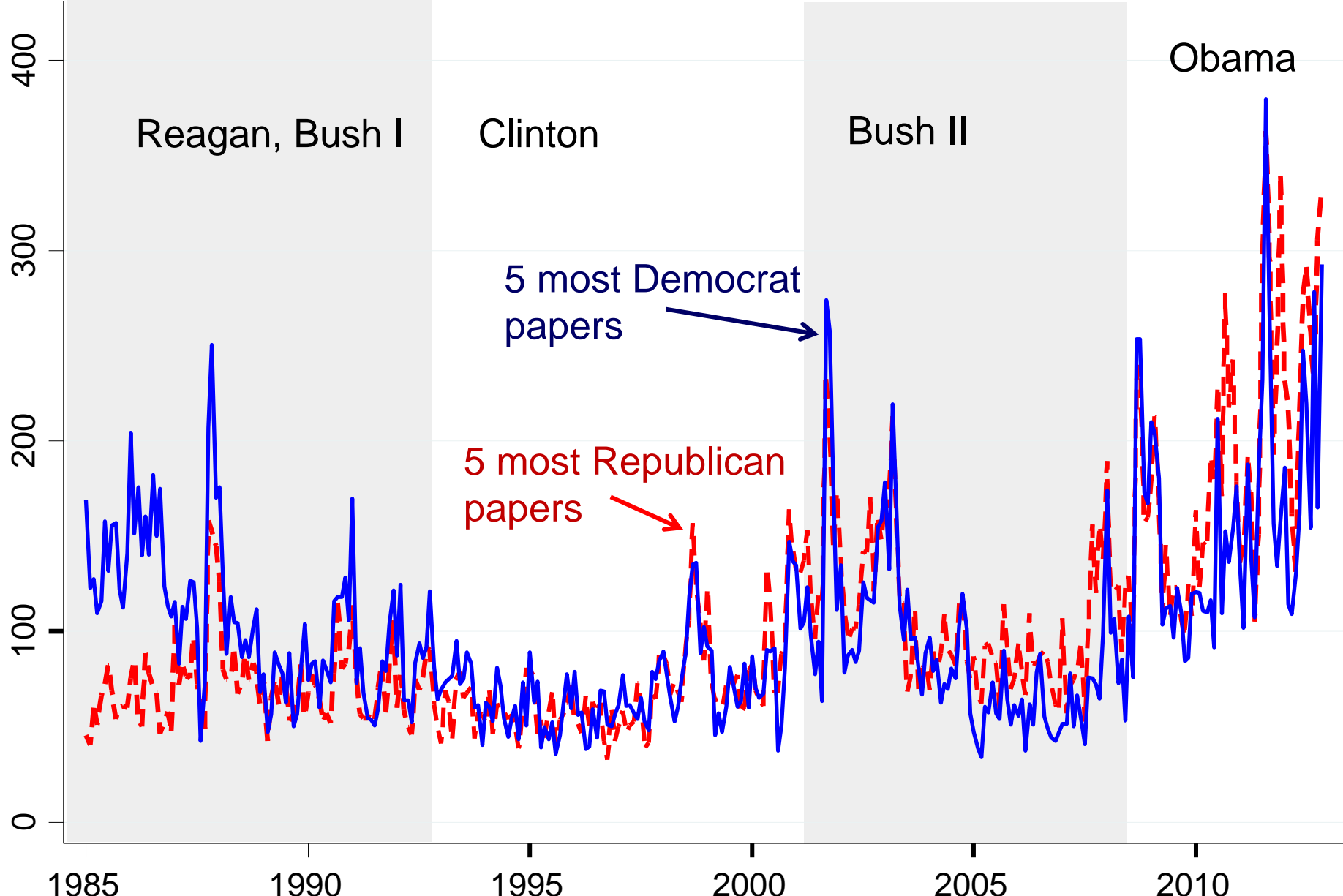
Note: Based on random samples of 45 articles per quarter (fewer prior to 1993) coded EU=1 by automated methods. For these articles, we calculate quarterly EPU rates based on human readings and based on automated computer methods. We multiply by The two lines show the share defined as being about economic policy uncertainty (EPU=1) by our human auditors and by the ratio (EU=1/Count of all articles) for each quarter to obtain the audit sample estimate of (EPU=1)/(Count of all articles).

Other Audit Results

- Correlation of news-based EPU error rate and real GDP growth rate = -0.02 (quarterly data)
- Correlation of news-based EPU error rate and “true” EPU = 0.004 (Audit Sample, quarterly data)
- Among EPU=1 articles in the Audit Sample:
 - Only 1.8% discuss low or declining uncertainty
 - 69% discuss uncertainty about *what* or *when*
 - 40% discuss uncertainty about *effects*
 - 21% discuss uncertainty about *who*
 - *Who* percentage nearly doubles in presidential election years

Political Slant in Newspaper Coverage of Economic Policy Uncertainty

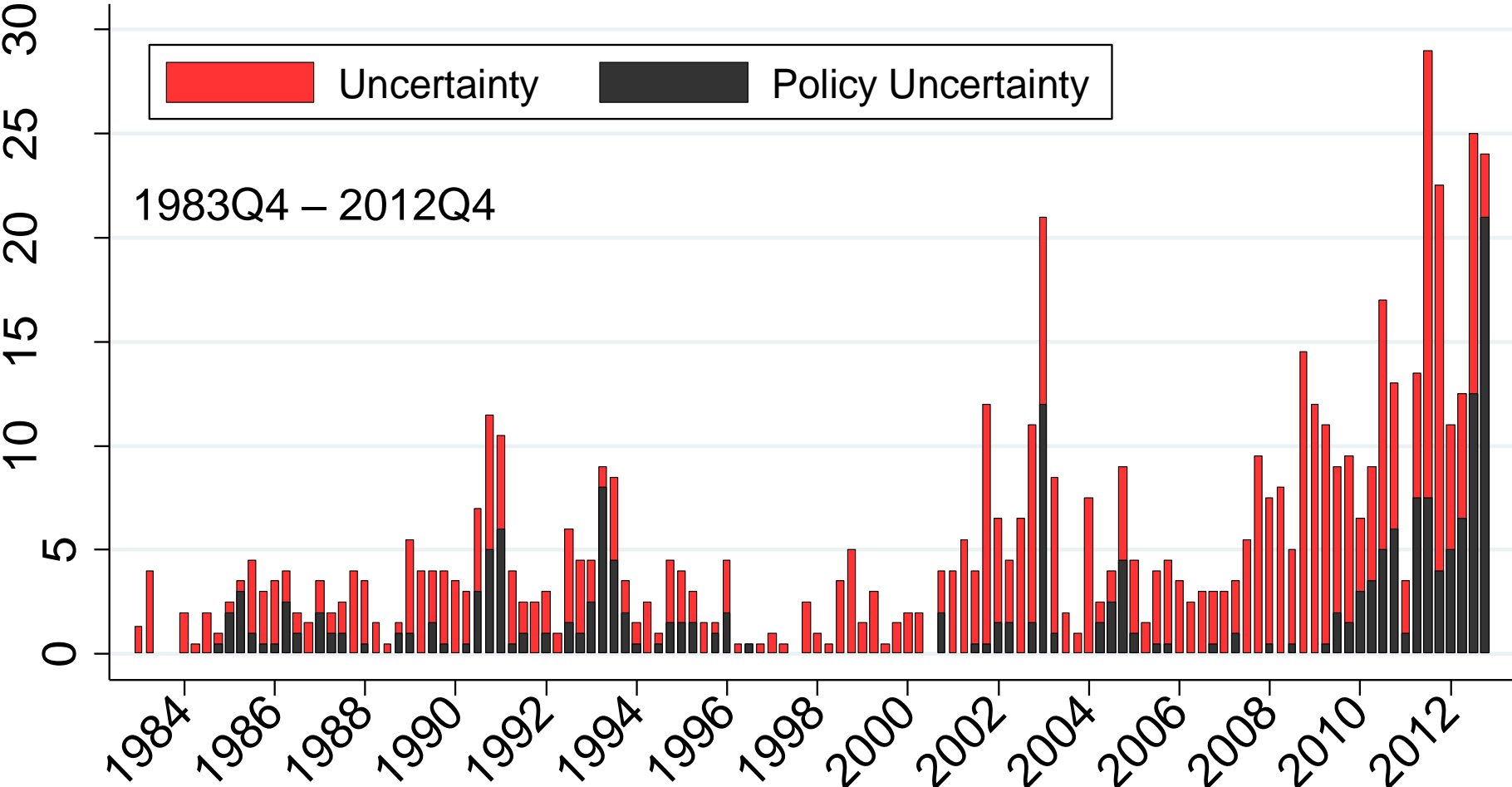
Figure 9: Political slant plays little role in our news-based EPU index



Source: Papers sorted into 5 most 'Republican' and 5 most 'Democratic' groups using the media slant measure from Gentzkow and Shapiro (2010).

A Different Text Source:
The “Beige Books” Produced
by the Federal Open Market
Committee

Figure 9: The frequency of “uncertainty” and policy-related “uncertainty” discussions in FOMC Beige Books rose sharply after 2008



Note: Plots the frequency of the word “uncertain” in each quarter of the Federal Open Market Committees’ (FOMC) Beige Book. The Beige Book is an overview of economic conditions of about 15,000 words in length prepared two weeks before each FOMC meeting. The count of “Policy Uncertainty” uses a human audit to attribute each mention of the word uncertain to a policy context (e.g. uncertainty about fiscal policy) or a non-policy context (e.g. uncertainty about GDP growth). See the paper for full details.

Drilling into Newspapers and Beige Books to Uncover Evidence about Sources of Policy Uncertainty

The Intensity and Composition of Policy-Related Economic Uncertainty over Time

Drilling into the news articles about EPU, we find:

- Big role for uncertainty related to national security issues around the time of Gulf War I and in the wake of 9-11.
- Uncertainty related to taxes and government spending policies are the biggest factors responsible for historically high levels of policy uncertainty in 2010-2012
- Although less pronounced, we also find elevated levels of uncertainty in 2010-2012 in several other policy categories: entitlement programs, healthcare, and regulation.
- Many of the same categories are elevated in 2008-09.

Fiscal policy matters and health care are the most important sources of policy uncertainty in 2010-2012, according to our news-based analysis.

	1985:1- 1990:6	1990:7- 1991:12	1992:1- 2001:8	2001:9- 2002:12	2003:1 2007:6	2007:7- 2008:8	2008:9- 2009:12	2010:1- 2012:10	Average
Economic Policy Uncertainty	109	141.2	87.7	127.8	71	83	131.5	127.8	100
Monetary policy	32.5	41.6	25.9	44.9	22.1	31.5	27.6	26.8	28.8
Taxes	39.7	48.1	31.7	50.9	30	31.3	56.6	67.9	39.7
Government spending	22.6	26.7	12.1	17.2	8.5	6.6	17	30.6	16.5
Health care	7	15.3	14.9	18.3	13.1	13.4	29.2	39.2	16.3
National security	24.9	53.4	17.9	54.5	25.3	15.8	21.2	19.3	24.4
Entitlement programs	7.2	12.5	11.4	18.6	8.8	8.2	15.2	23.4	11.8
Regulation	15.7	22.9	14.5	19.5	11.1	15.4	29.1	30.4	17.2
Trade policy	3.8	4	6.3	2.6	1.7	2	1.4	2.3	3.9
Sovereign debt, currency	1.4	0.6	2.3	0.5	0.4	0.3	0.4	4.5	1.7
Overall Economic Uncertainty	217.1	348	185	325.3	159	183.8	369	262.8	219.3

Note: This analysis uses Newsbank data to obtain a greater density of news articles.

Policy-Related Uncertainty Counts Per Beige Book, By Category and Time Period, 1983Q3 to 2013Q1

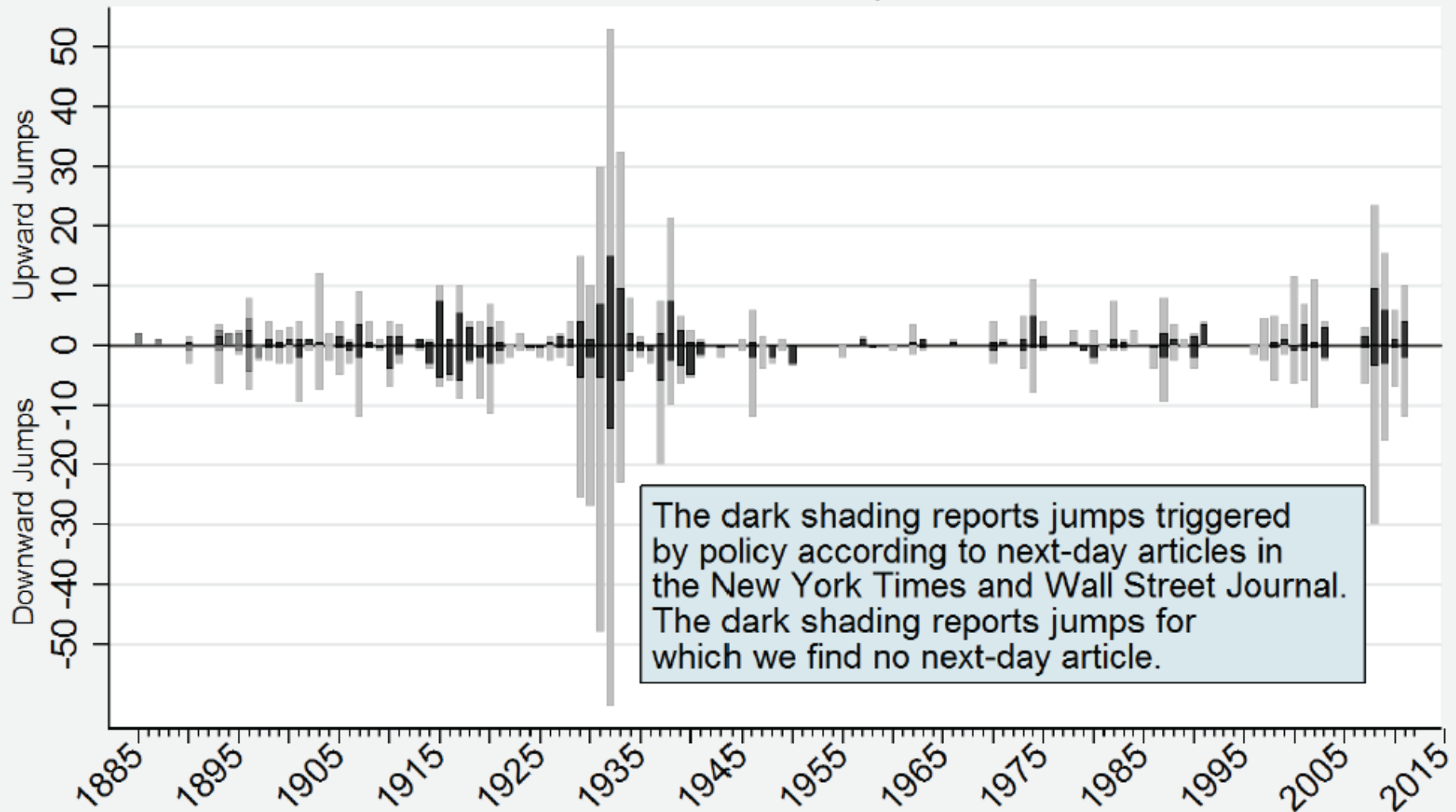
	1990 Q4 - 1991 Q1 Gulf War I	1993 Q2 - 1993 Q3 Clinton Tax Reforms	2001 Q4 - 2002 Q2 9/11 Attacks	2002 Q4 - 2003 Q2 Gulf War II	2004 Q2 - 2004 Q4 Bush/Kerry Election	2008 Q3 - 2009 Q4 Lehman's and recession	2010 Q1 - 2013 Q1 Debt-ceiling crisis	1983 Q3 - 2013 Q1 Overall Average
Overall Economic Uncertainty	11	8.8	7.7	13.5	5.2	10.2	15.8	5.53
Economic Policy Uncertainty	5.5	6.3	1.2	4.8	2.8	0.8	6.8	1.69
All Fiscal Matters	1	5.5	1.5	0	0	0.4	3.3	1.04
Taxes Only	0	3.3	0.2	0	0	0.3	1.4	0.38
Spending Only	0.5	1	1	0	0	0.2	1.2	0.32
Monetary Policy	0	0	0	0	0	0	0	0.00
Health Care	0	2	0	0	0	0.2	0.5	0.14
National Security and War	5.3	0.3	0	2	0	0	0.1	0.20
Financial Regulation	0	0	0	0	0	0.2	1.2	0.16
Sovereign debt, currency crisis	0	0	0	0	0	0	0.8	0.09
U.S. Elections and Leadership Changes	0	0	0	0.2	2.2	0	0.9	0.18
Other Specified Policy Matters	0	0.5	0.7	0	0.2	0	0.5	0.18
Politics, Unspecified	0.5	1	0	3	0.7	0	1.6	0.31
Sum of Policy & Politics Categories	6.8	9.3	2.2	5.2	3.0	0.8	10.0	2.50

Policy News and Stock Market Jumps



Yearly Count of Daily Stock Market Jumps

United States, 1885-2012, Jump Threshold = 2.5%



Reproduced from “What Triggers Equity Market Jumps?” by Baker, Bloom and Davis. Work in progress.

What Triggers Large Daily Stock Market Jumps?

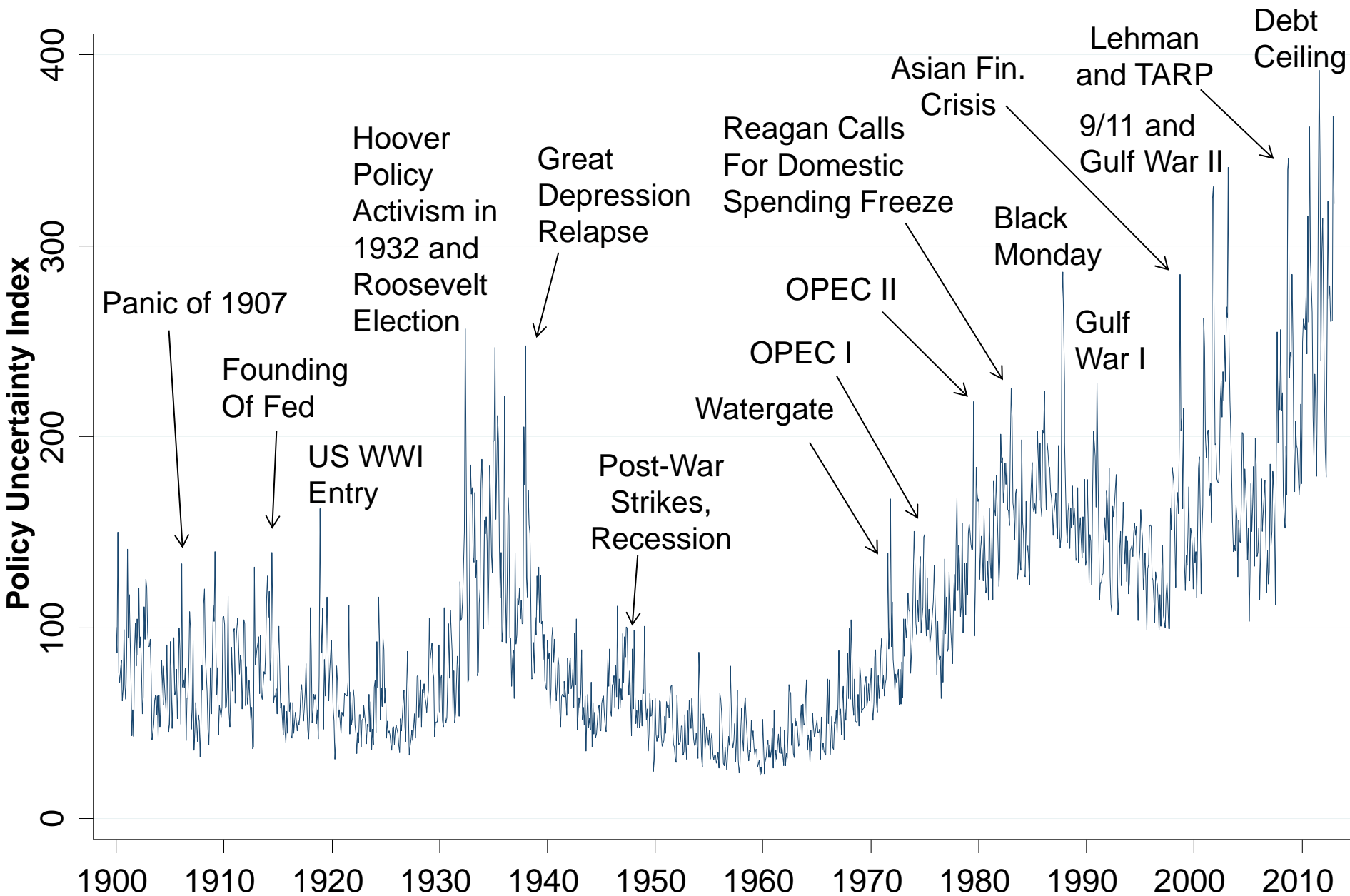
Event: Daily move in S&P 500 Index Bigger Than +/- 2.5%

Time Period	# of Events	Policy News	Interest Rates	Macro News	Earnings News	War/Terror	Other
1980-2007	170	14%	9%	31%	12%	11%	22%
2008-2011	120	39%	3%	35%	12%	0%	11%
<i>Other U.S. Recessions</i>							
1981-82	10	20%	10%	50%	0%	0%	10%
1990-91	11	0%	9%	9%	9%	73%	0%
2001	14	0%	14%	36%	21%	14%	14%

Based on the leading cause for the stock market move, as reported in the next day's *New York Times*.

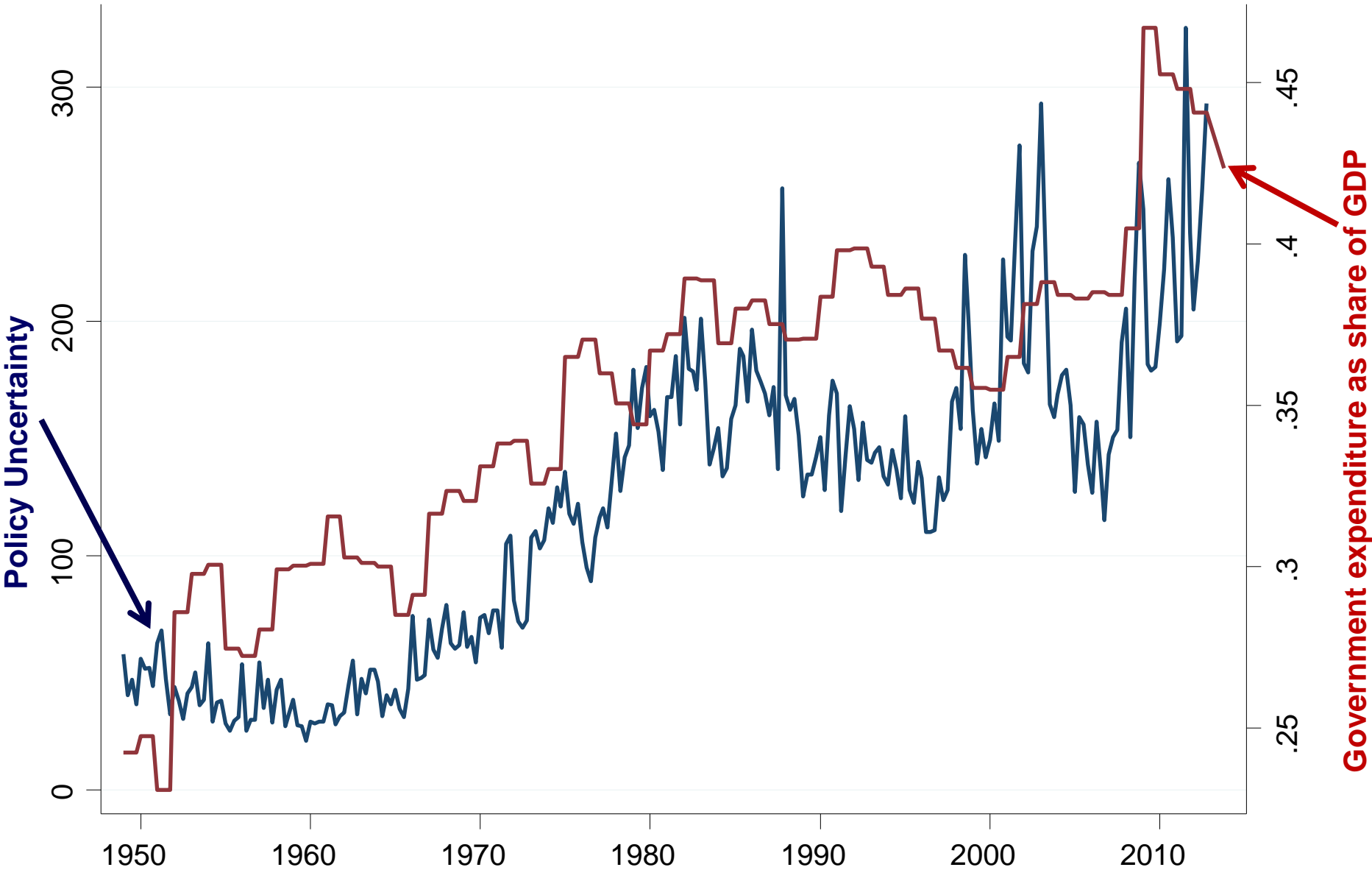
U.S. Economic Policy Uncertainty: A Longer Term Perspective

Figure 14: The policy uncertainty news index extended back to 1900



Notes: Index of Policy-Related Economic Uncertainty composed of quarterly news articles containing uncertain or uncertainty, economic or economy or business or commerce, and policy relevant terms (scaled by the smoothed total number of articles) in 6 newspapers (WP, BG, LAT, NYT, WSJ and CHT). Data normalized to 100 from 1900-2011.

Figure 15: Policy uncertainty and government expenditure share of GDP



Notes: Index of Policy-Related Economic Uncertainty composed of quarterly news articles containing uncertain or uncertainty, economic or economy, and policy relevant terms (scaled by the smoothed total number of articles) in 6 newspapers (WP, BG, LAT, NYT, WSJ and CHT). Data normalized to 100 from Jan 1900-Dec 2011. Government expenditure is total federal, state, and local expenditures over GDP, annually.

Two Approaches to Assessing the Economic Effects of EPU

1. Micro approach: Exploit industry differences in exposure to government contracting to estimate the effects of EPU on firm-level investment and hiring (working through one specific channel).
2. Macro approach: Include our EPU measure in an otherwise standard VAR model of macroeconomic outcomes; estimate the effects of EPU shocks on aggregate output, investment and employment.

Industries with High Government Contract Intensities, Average Values from 2000 to 2013

SIC Code	SIC Description	Contract Intensity
3760	Guided Missiles And Space Vehicles And Parts	0.767
3790	Miscellaneous Transportation Equipment	0.476
3812	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems	0.454
3480	Ordnance & Accessories, Ex. Vehicles, Missiles	0.405
2780	Blankbooks, Looseleaf Binders, And Bookbinding	0.388
8711	Engineering Services	0.235
1623	Water, Sewer, Pipeline, and Communications and Power Line Construction	0.197
1600	Heavy Construction Other Than Building Construction Contractors	0.161
3720	Aircraft And Parts	0.143
8050	Nursing And Personal Care Facilities	0.094
7373	Computer Integrated Systems Design	0.089
3714	Motor Vehicle Parts and Accessories	0.076
3844	X-Ray Apparatus and Tubes and Related Irradiation Apparatus	0.073

Table 5: Cross-Firm Effects of Policy Uncertainty

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Investment (I_t/K_{t-1})			Investment (I_t/K_{t-1})		$\Delta\text{Log}(\text{Emp})$	
$\Delta\text{Log}(\text{EPU}) \times \text{SIC Intensity}$	-0.0578*** (0.008)	-0.064*** (0.008)	-0.065*** (0.008)		-0.056*** (0.012)	-0.009 (0.008)	-0.019** (0.009)
$\Delta\text{Forecast Fed Exp/GDP} \times \text{SIC Intensity}$		2.103*** (0.607)	2.004*** (0.678)	2.394*** (0.633)	2.989*** (0.612)	1.208*** (0.362)	0.441 (0.423)
$\Delta\text{Federal Exp/GDP} \times \text{SIC Intensity}$			2.269 (3.639)	1.961 (3.270)	1.507 (3.344)		3.886*** (1.311)
$\Delta\text{VIX} \times \text{SIC Intensity}$				-0.034*** (0.004)	-0.011 (0.007)		
Periodicity	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Yearly	Yearly
Firm and Time Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	717,104	717,104	717,104	717,104	717,104	184,804	184,804
Number of Firms	22,638	22,638	22,638	22,638	22,638	21,667	21,667
Number of SIC codes	440	440	440	440	440	440	440

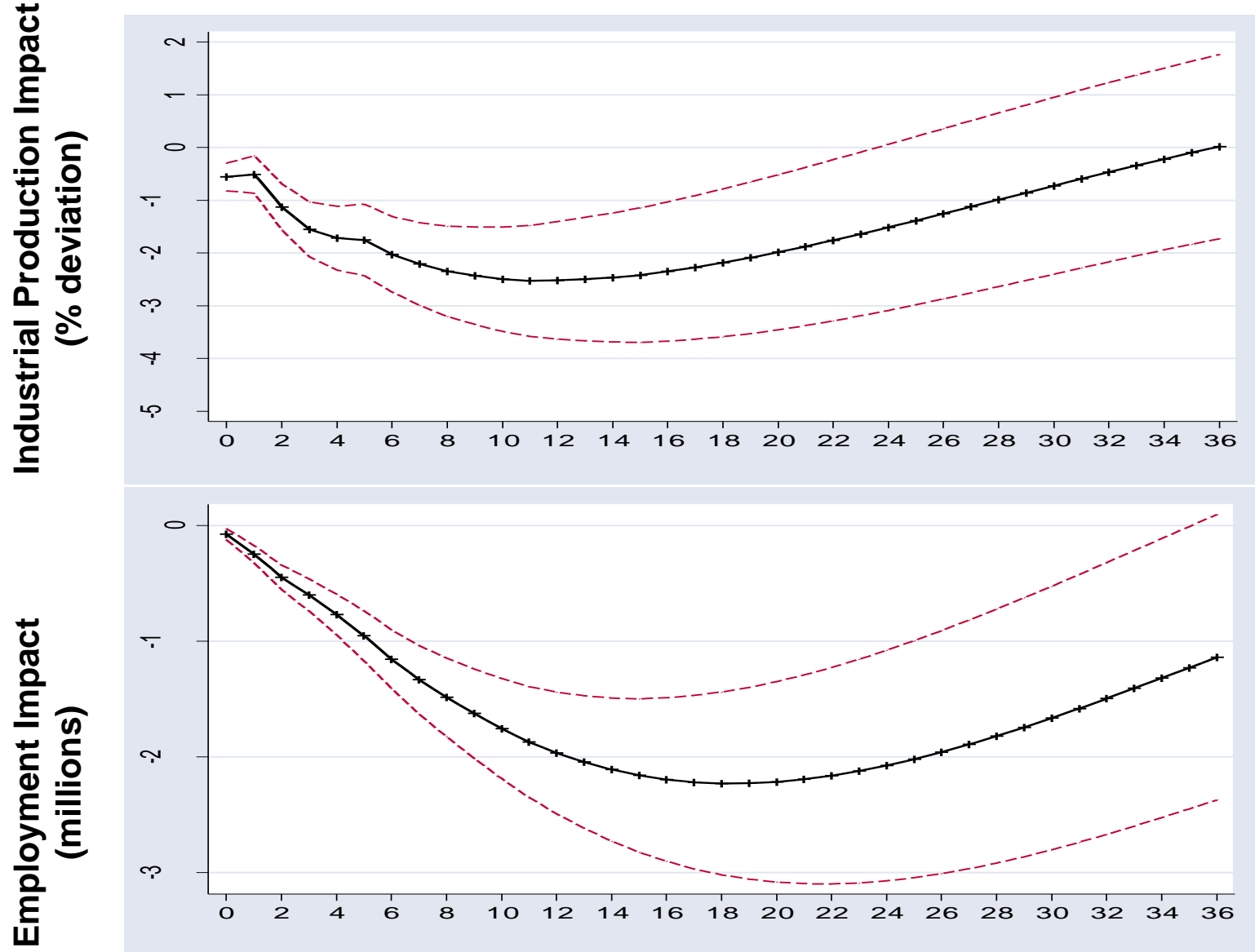
Notes: All columns include a full set of firm and time fixed effects (year by quarter in columns 1 to 5, and yearly in columns 6 and 7). For columns 1-5, independent variables are lagged by one quarter. Standard errors clustered at the 4-digit SIC code level.

Dependent Variable	(1)	(2)	(3)
	Investment (I_t/K_{t-1})		
$\Delta \text{Log(EPU)} \times \text{SIC Intensity}$	-0.0578*** (0.008)	-0.064*** (0.008)	-0.065*** (0.008)
$\Delta \text{Forecast Fed Exp/GDP} \times \text{SIC Intensity}$		2.103*** (0.607)	2.004*** (0.678)
$\Delta \text{Federal Exp/GDP} \times \text{SIC Intensity}$			2.269 (3.639)
$\Delta \text{VIX} \times \text{SIC Intensity}$			
Periodicity	Quarterly	Quarterly	Quarterly
Firm and Time Fixed-Effects	Yes	Yes	Yes
Observations	717,104	717,104	717,104
Number of Firms	22,638	22,638	22,638
Number of SIC codes	440	440	440

Magnitude of Firm-Level Effects

- Given an average investment rate of 10%-15% (median=10.4%, mean=16.7%) for firms in our sample, doubling EPU causes an estimated investment decline of only 0.078 percentage points for firm in industry with average contracting exposure (~1.2%).
- However, for firms in the 90th percentile of exposure rates, the impact is much larger, with predicted investment declines of 0.8-5.0 percentage points.

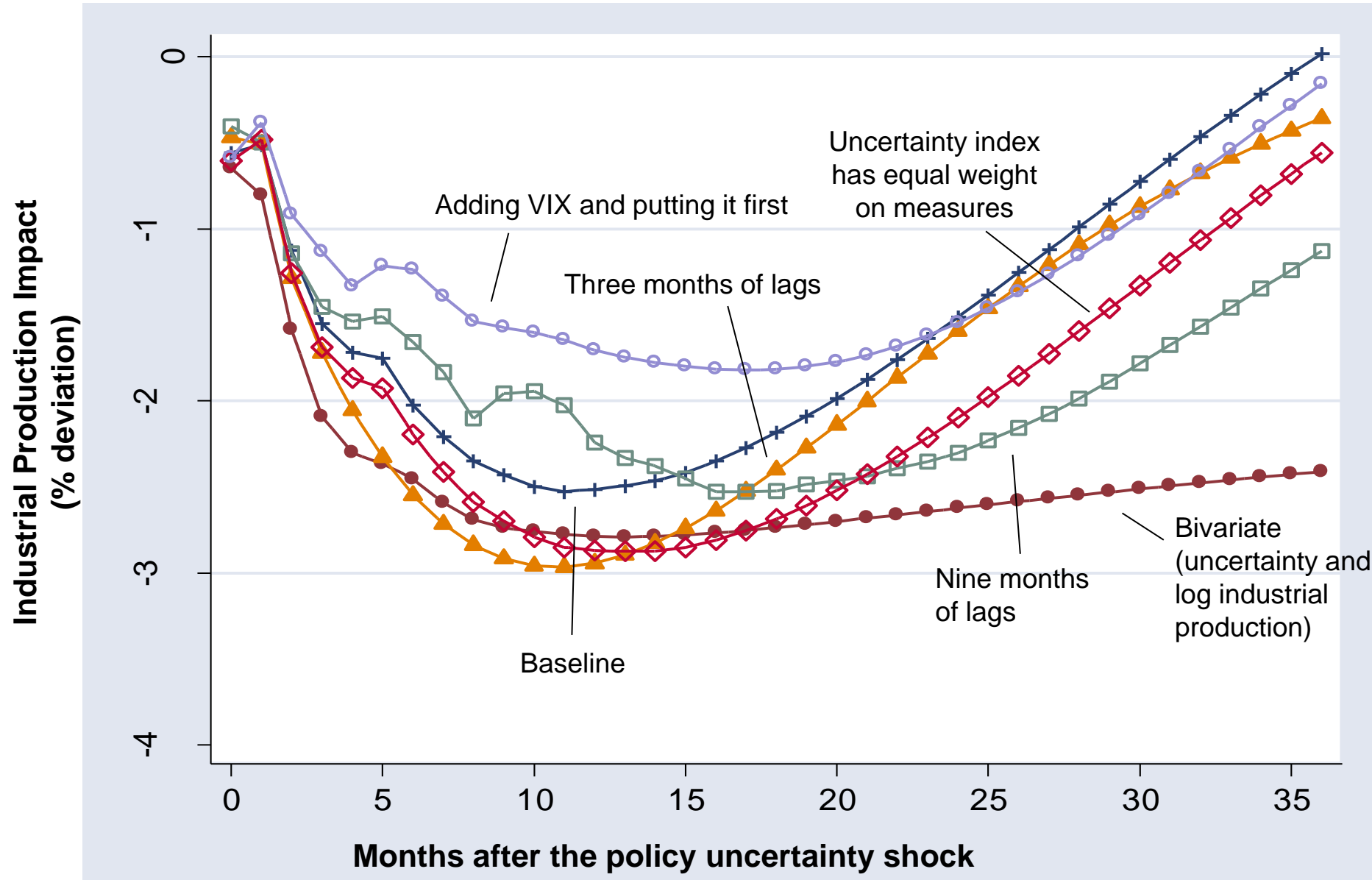
Figure 12: Estimated Industrial Production and Employment after a Policy Uncertainty Shock



Notes: This shows the impulse response function for Industrial Production and employment to an 102 unit increase in the policy-related uncertainty index, the increase from 2006 (the year before the current crisis) to 2011. The central (black) solid line is the mean estimate while the dashed (red) outer lines are the one-standard-error bands. Estimated using a monthly Cholesky Vector Auto Regression (VAR) on the EPU index, log(S&P 500 index), federal reserve funds rate, log employment, log industrial production and linear time trend. Fit to data from 1985 to 2011.

Months after the economics policy uncertainty shock

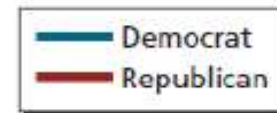
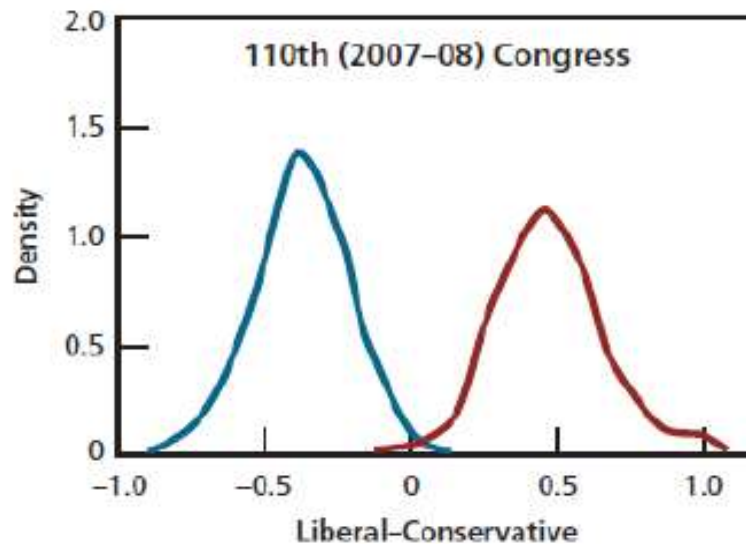
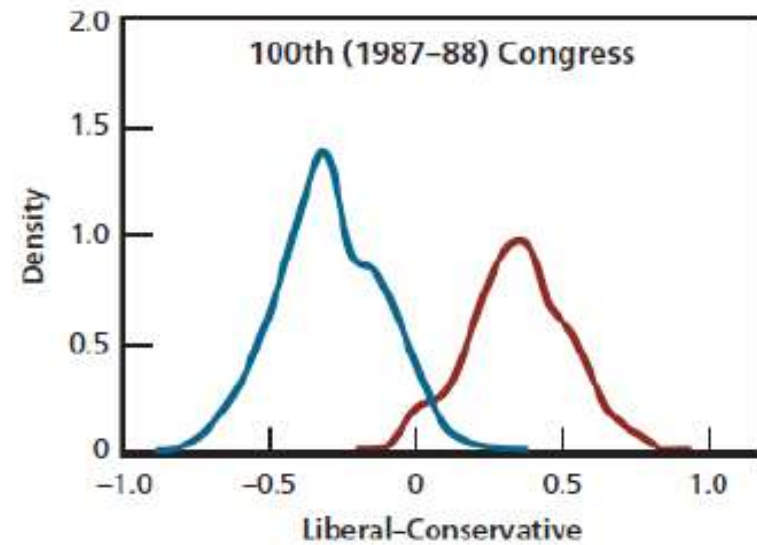
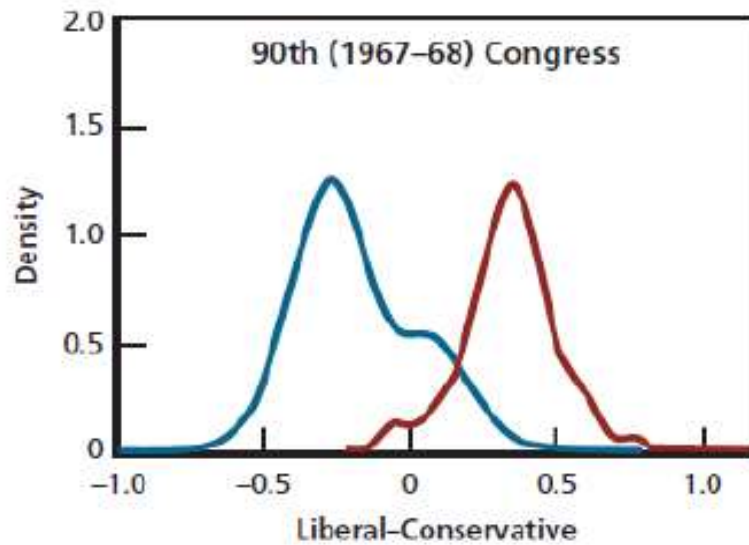
Figure 13: Robustness of Estimates to Different VAR Specifications



Notes: This shows the impulse response function for GDP and employment to an 102 unit increase in the policy-related uncertainty index. Estimated using a monthly Cholesky Vector Auto Regression (VAR) of the uncertainty index, log(S&P 500 index), federal reserve funds rate, log employment, log industrial production and time trend unless otherwise specified. Data from 1985 to 2011.

Political Polarization and Policy Gridlock

Political Polarization in the U.S. Congress Has Greatly Intensified in Recent Decades

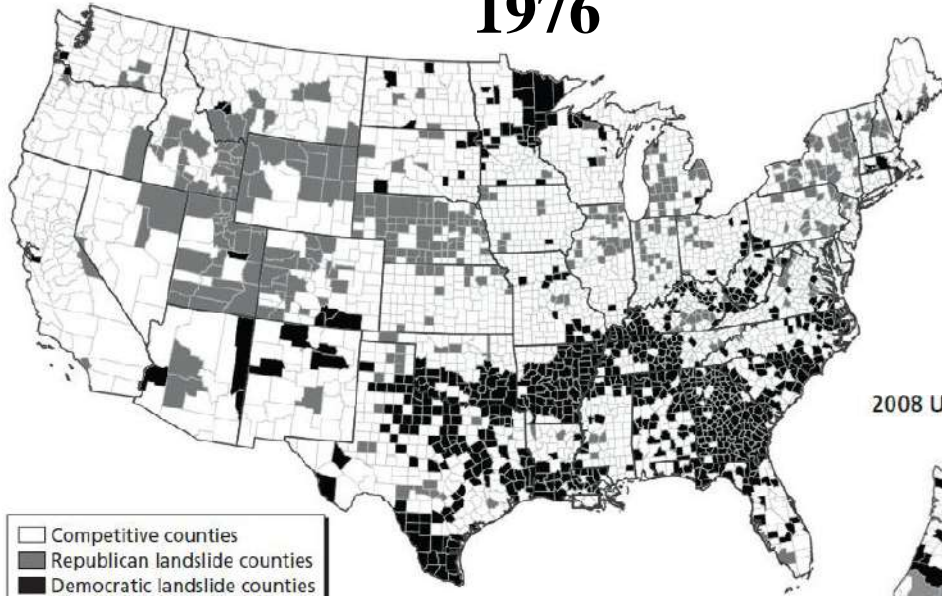


More (effective) gerrymandering might be part of the explanation, but ...

The U.S. Has Become More Politically Segregated With Respect to Where People Choose to Live

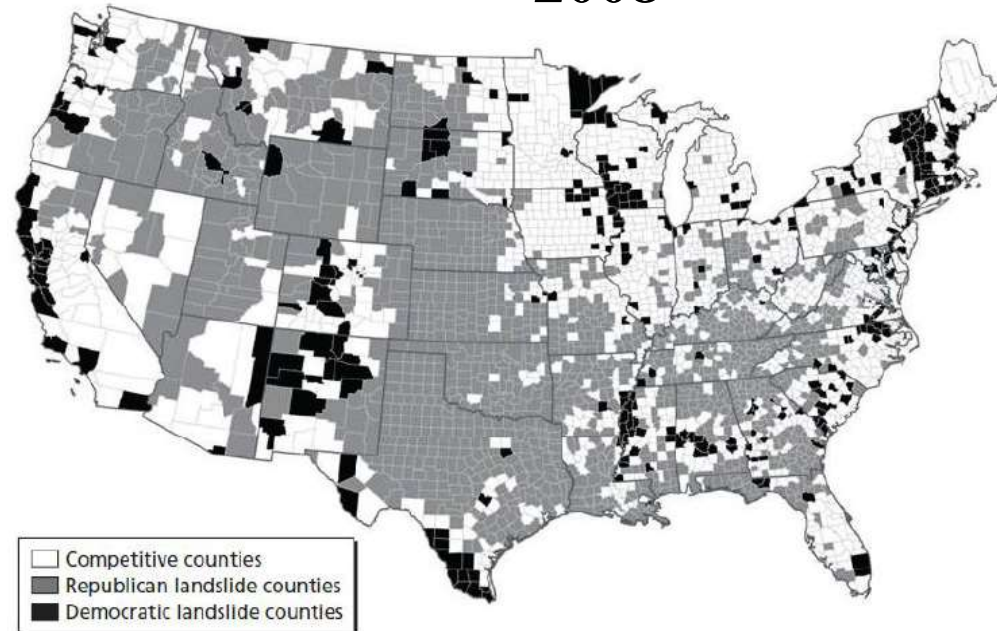
1976 U.S. Election, by County

1976



2008 U.S. Election, by County

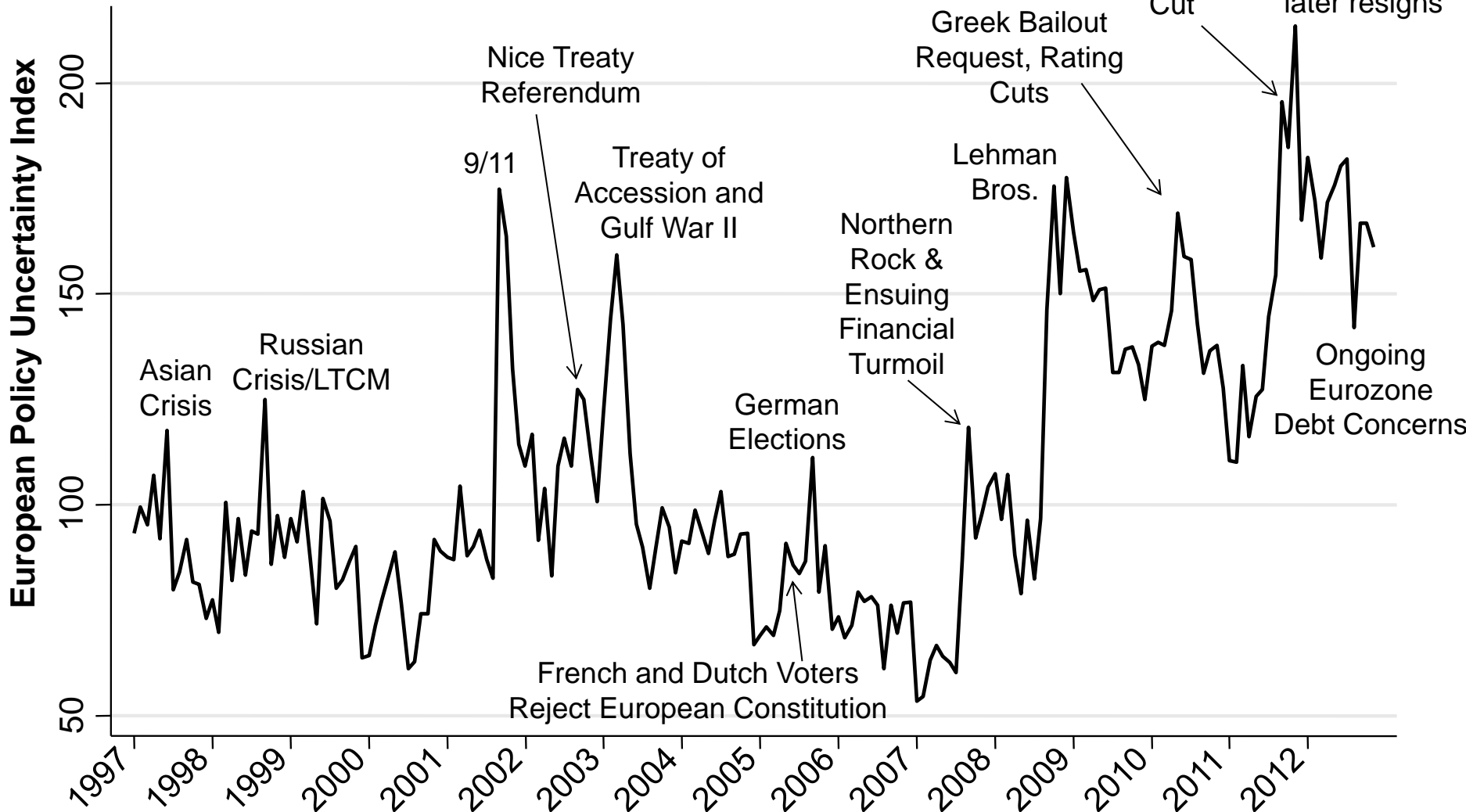
2008



More Economic Policy Uncertainty Indexes for Other Countries

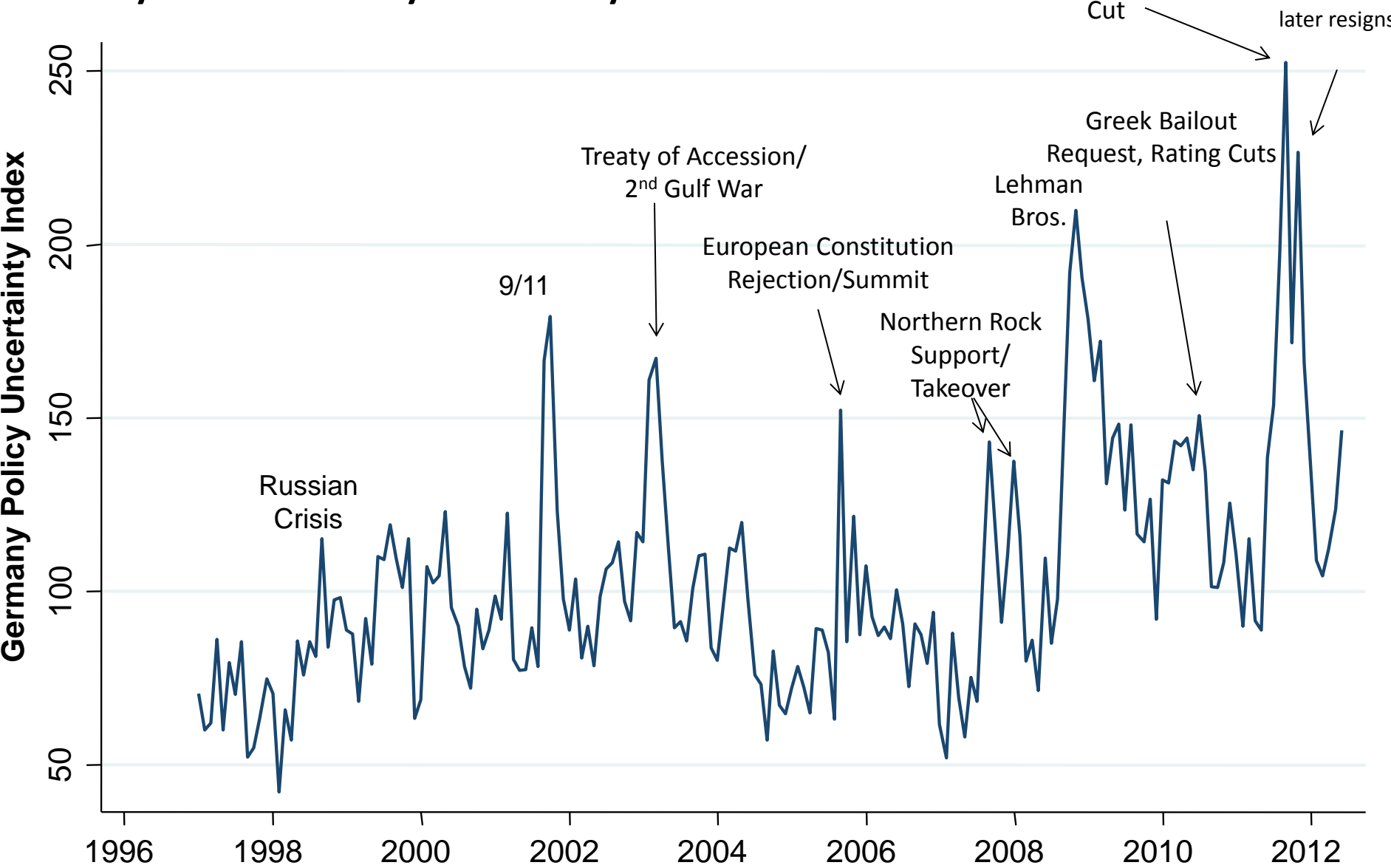
Figure 6: European Policy Uncertainty Index

(Jan 1997 – Nov 2012)



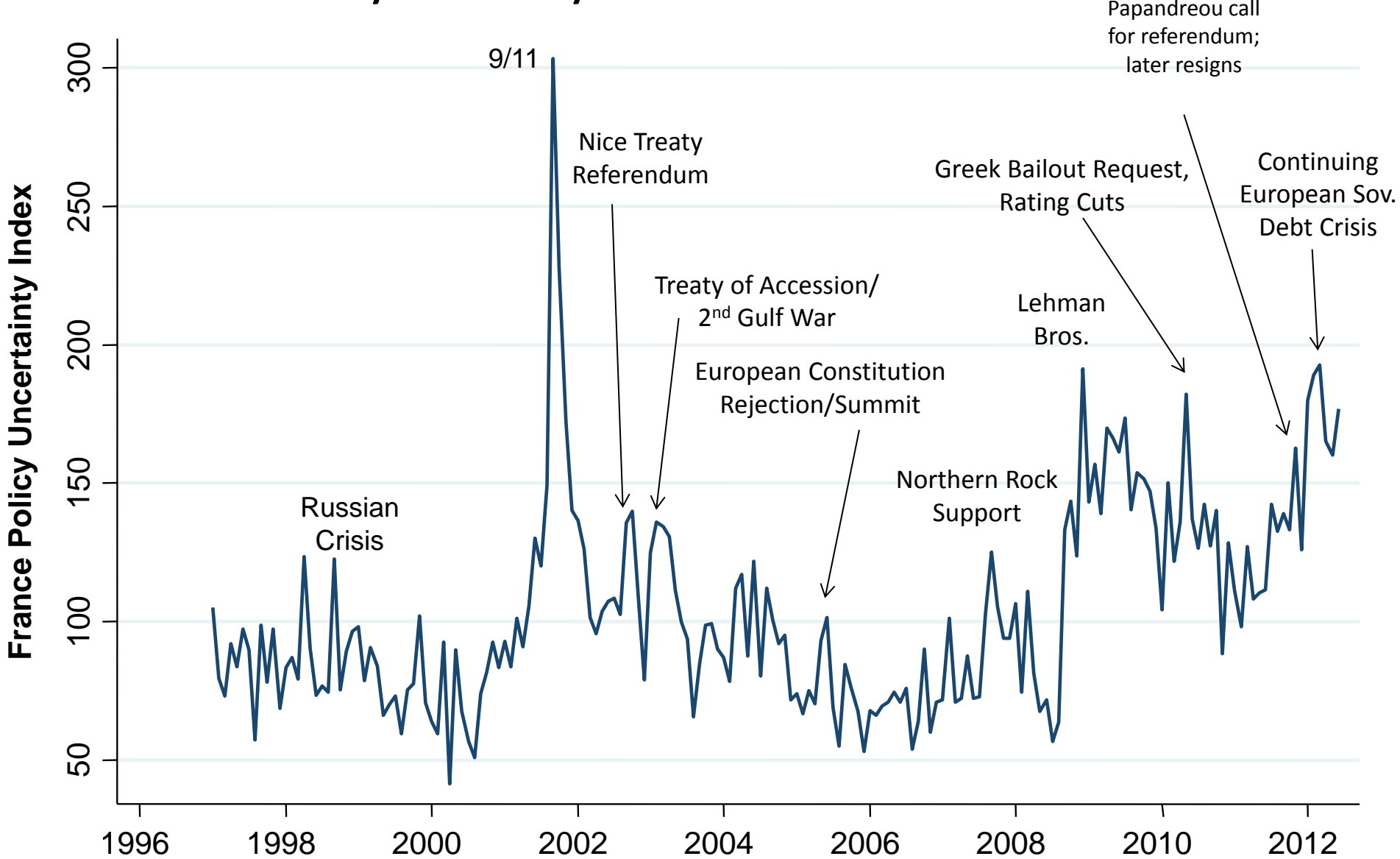
Notes: Index composed of a News-Based Index (0.5 weight), and country-level components measuring forecaster disagreement about inflation rates and federal government budget balance (each 0.25 weight). News-Based component composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'central bank', 'budget', and 'deficit'. Series is normalized to mean 100 from 1997-2010. Index covers Jan 1997 – Nov 2012. Papers include El Pais, El Mundo, Corriere della Sera, La Repubblica, Le Monde, Le Figaro, Financial Times, The Times, Handelsblatt, FAZ. All searches done in the native language of the paper in question.

Germany Economic Policy Uncertainty Index



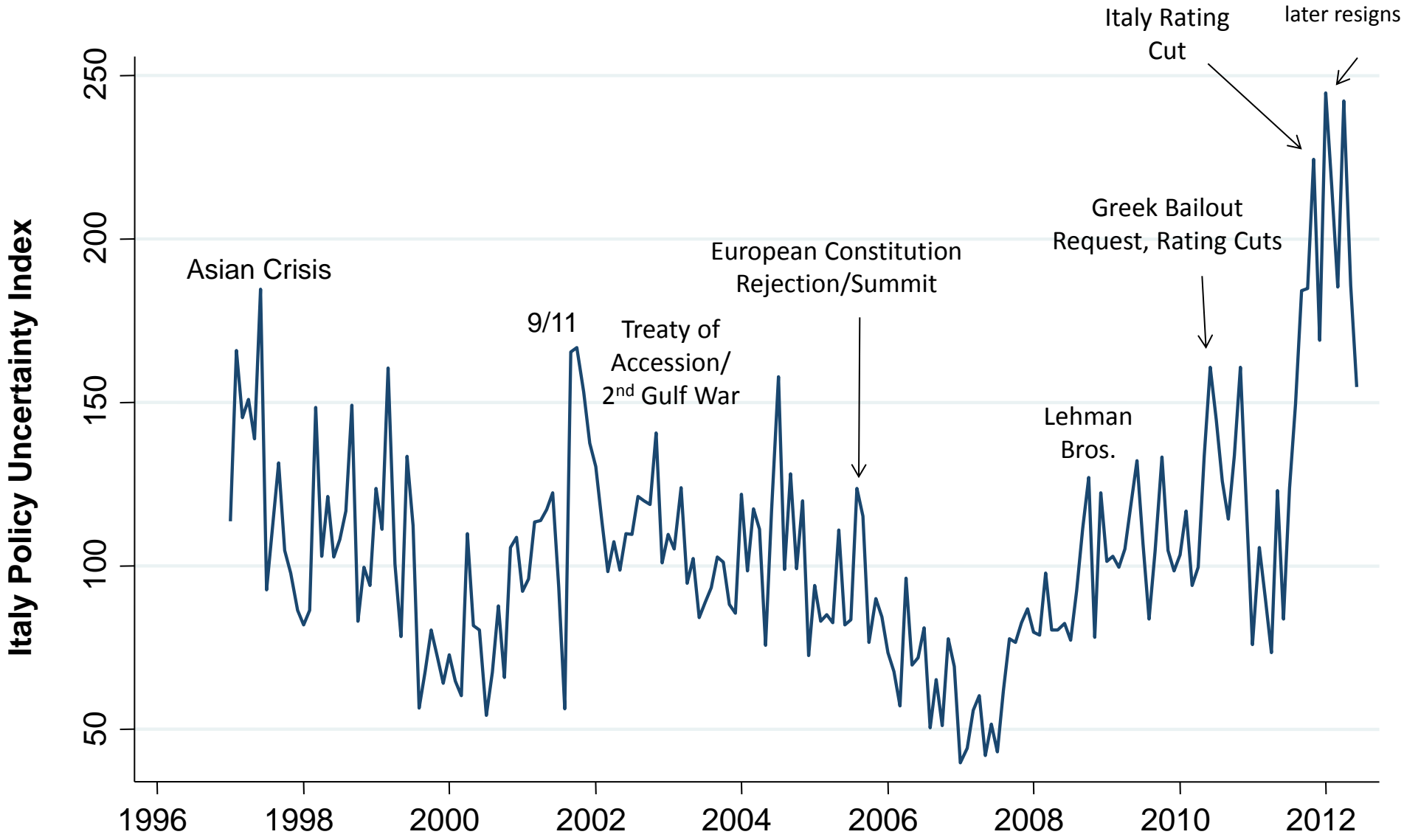
Notes: Germany Economic Policy Uncertainty Index composed of news component and dispersion measures regarding budget balance and consumer prices forecasts. News measure composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'central bank', 'budget', and 'deficit'. Index covers Jan 1997 – Jun 2012. Papers include the FAZ and Handelsblatt. Searches done in native language of country. Forecast dispersion component data from Consensus Economics forecasts.

France Economic Policy Uncertainty Index



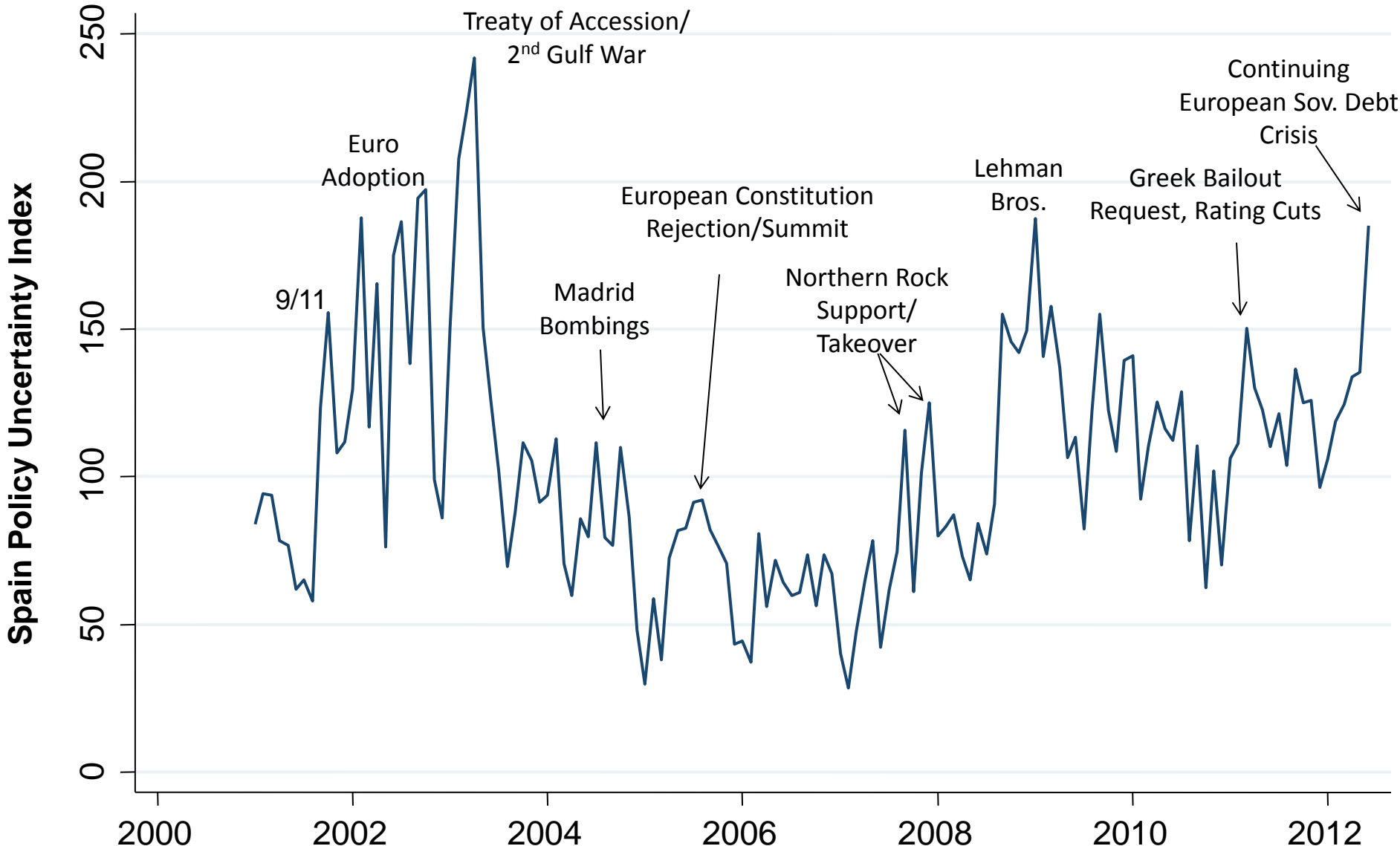
Notes: France Economic Policy Uncertainty Index composed of news component and dispersion measures regarding budget balance and consumer prices forecasts. News measure composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'central bank', 'budget', and 'deficit'. Index covers Jan 1997 – Jun 2012. Papers include the Le Monde and Le Figaro. Searches done in native language of country. Forecast dispersion component data from Consensus Economics forecasts.

Italy Economic Policy Uncertainty Index



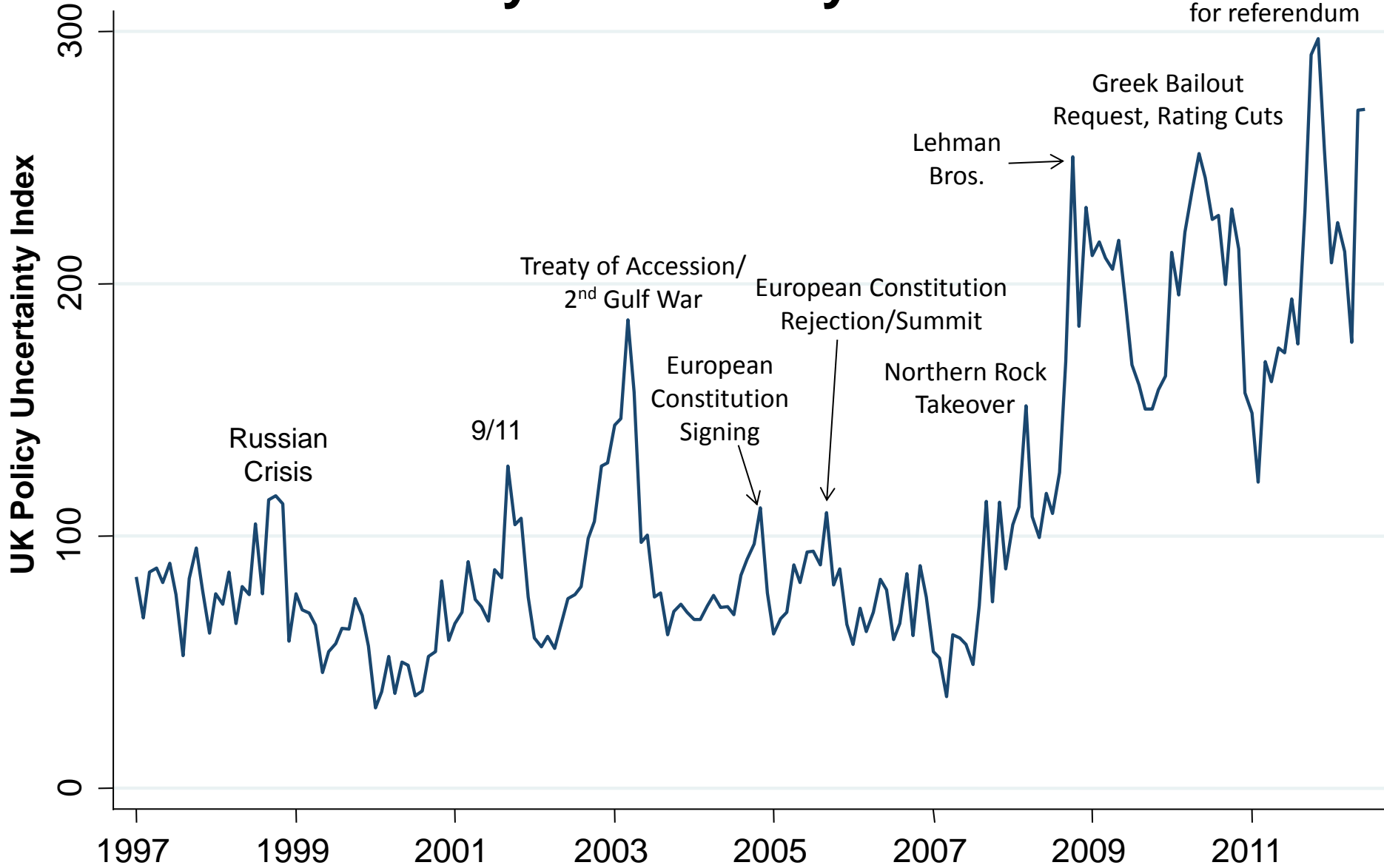
Notes: Italy Economic Policy Uncertainty Index composed of news component and dispersion measures regarding budget balance and consumer prices forecasts. News measure composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'central bank', 'budget', and 'deficit'. Index covers Jan 1997 – Jun 2012. Papers include the Corriere della Serra and La Repubblica. Searches done in native language of country. Forecast dispersion component data from Consensus Economics forecasts.

Spain Economic Policy Uncertainty Index



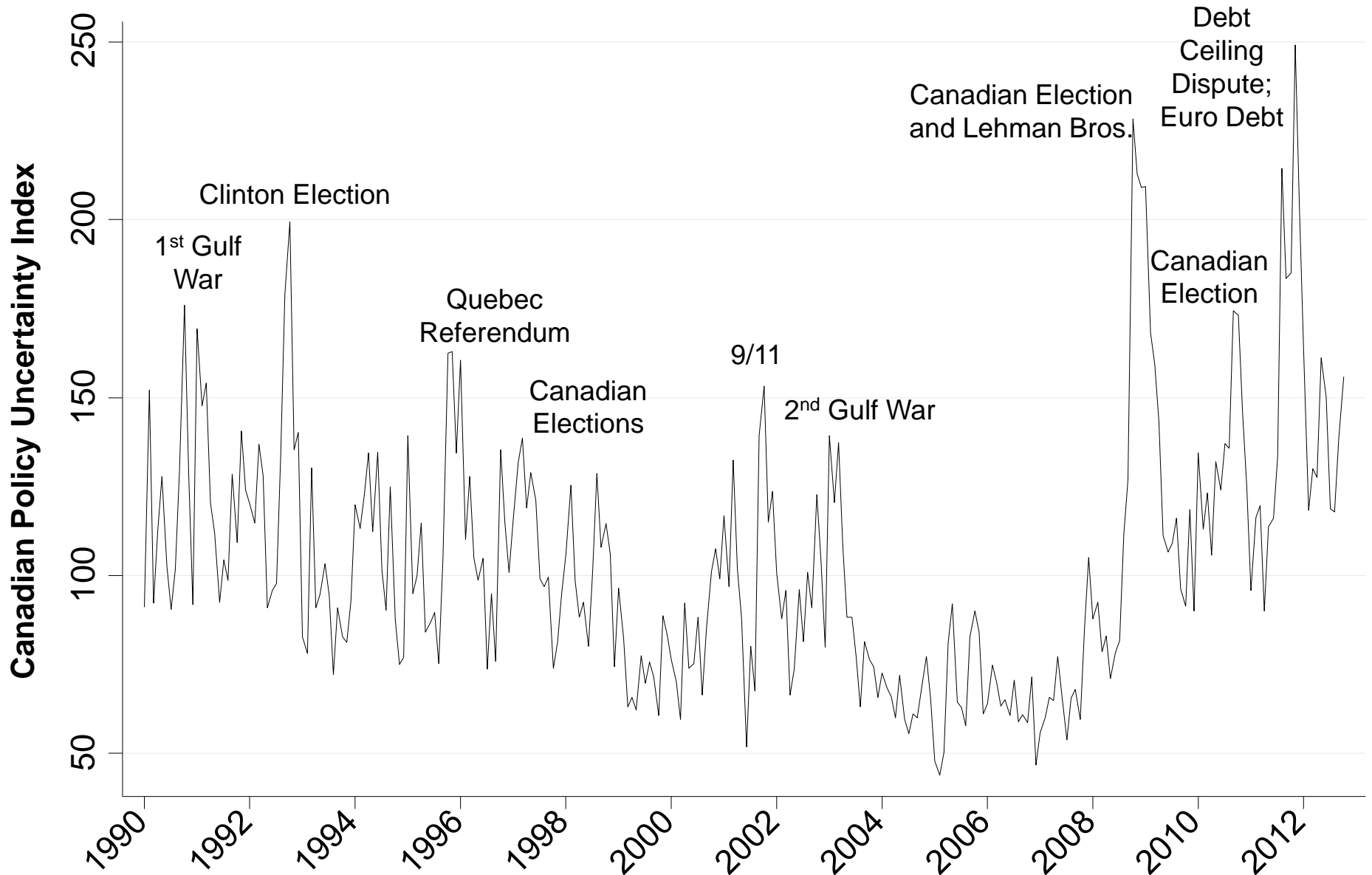
Notes: Spain Economic Policy Uncertainty Index composed of news component and dispersion measures regarding consumer prices forecasts. News measure composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'central bank', 'budget', and 'deficit'. Index covers Jan 2001 – Jun 2012. Papers include El Mundo and El Pais. Searches done in native language of country. Forecast dispersion component data from Consensus Economics forecasts.

UK Economic Policy Uncertainty Index



Notes: UK Policy Uncertainty Index composed of news component and dispersion measures regarding budget balance and consumer prices forecasts. News measure composed of the monthly number of news articles containing uncertain or uncertainty, economic or economy, as well as policy relevant terms (scaled by the smoothed number of articles containing 'today'). Policy relevant terms include: 'policy', 'tax', 'spending', 'regulation', 'Bank of England', 'budget', and 'deficit'. Index covers Jan 1997 – Jun 2012. Papers include the Financial Times and The Times. Forecast dispersion component data from Consensus Economics forecasts.

Canadian Economic Policy Uncertainty Index



Source: www.policyuncertainty.com. Created with help from Dorinda So from the Institute for Competitiveness & Prosperity www.competeprosper.ca

More from Us on Economic Policy Uncertainty

Go to www.PolicyUncertainty.com. Also, see

- “Measuring Economic Policy Uncertainty,” Scott R. Baker, Nicholas Bloom and Steven J. Davis, working paper, 2013 (MAIN RESEARCH PAPER)
- “Has Economic Policy Uncertainty Hampered the Recovery?” Scott R. Baker, Nicholas Bloom and Steven J. Davis, 2012. Hoover Institution Press volume edited by Lee O’hanian, John B. Taylor and Ian Wright.

Popular Articles

- “Uncertainty and the Slow Recovery,” Gary S. Becker, Steven J. Davis and Kevin M. Murphy, *Wall Street Journal*, 3 January 2010.
- “Policy Uncertainty Is Choking Recovery,” Scott R. Baker, Nicholas Bloom and Steven J. Davis, *Bloomberg View*, 5 October 2011
- “Policy Uncertainty and the Stalled Recovery,” Scott R. Baker, Nicholas Bloom and Steven J. Davis, 22 October 2011, *VOX*
- “Policy Uncertainty: A New Indicator,” Scott R. Baker, Nicholas Bloom and Steven J. Davis, *CentrePiece*, Winter 2011-12.
- “Falling Policy Uncertainty Is Igniting the Recovery,” Scott R. Baker and Nicholas Bloom, 7 Feb 2012, *VOX*.
- “The Rocky Balboa Recovery: Is Policy Uncertainty Holding It Back?” Scott R. Baker, Nicholas Bloom and Steven J. Davis, 20 June 2012, *VOX*.
- “Economic Recovery and Policy Uncertainty in the U.S.,” Scott R. Baker, Nicholas Bloom and Steven J. Davis, 29 October 2012, *VOX*.