Has Policy Uncertainty Slowed the Recovery?

Scott R. Baker (Stanford) Nick Bloom (Stanford & NBER, <u>nbloom@stanford.edu</u>) Steve Davis (Chicago Booth & NBER)

SF Fed, April 10th 2013



The University of Chicago Booth School of Business



Policy uncertainty has recently been argued to be a key factor in delaying the current recovery





"No significant improvements appear in the offing," the IMF said. The global economy grew 3.8% in 2011 and 5.1% in 2010.

The IMF noted the absence of a simple unified message for how to avert

More in Business

04:14

Are in Recession.

Markets Could Dr...

Safe Havens for

Investors

07:07

American Fills Jobs Shortage—in Outback

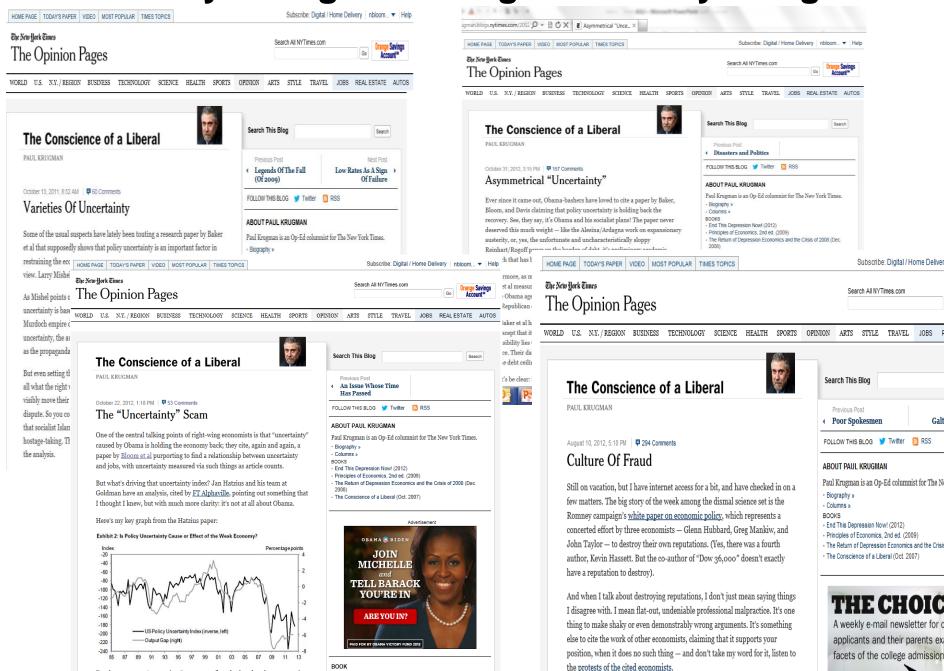
Upbeat CEO, Same Yahoo

Global Economy

04:26

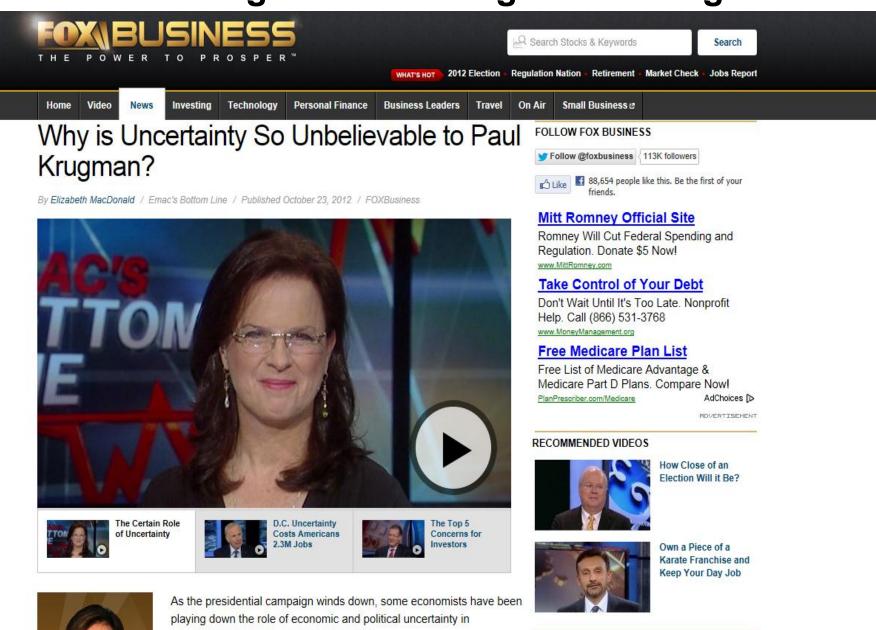
Will Take Decades...

But not everyone agrees: Krugman clearly disagrees



Galt

Of course Fox disagrees with Krugman's disagreement



hamstringing the U.S. economic recovery.

Now, the New York Times' liberal firebrand Paul Krugman is out with a

MORE STORIES



The paper tries to investigate this methodically

1) Measuring policy uncertainty

2) Evaluating our measure of policy uncertainty

3) Estimating the impact of policy uncertainty on the recovery

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Our US Economic Policy Uncertainty index has 4 components – how we make the data "sausage":

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

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



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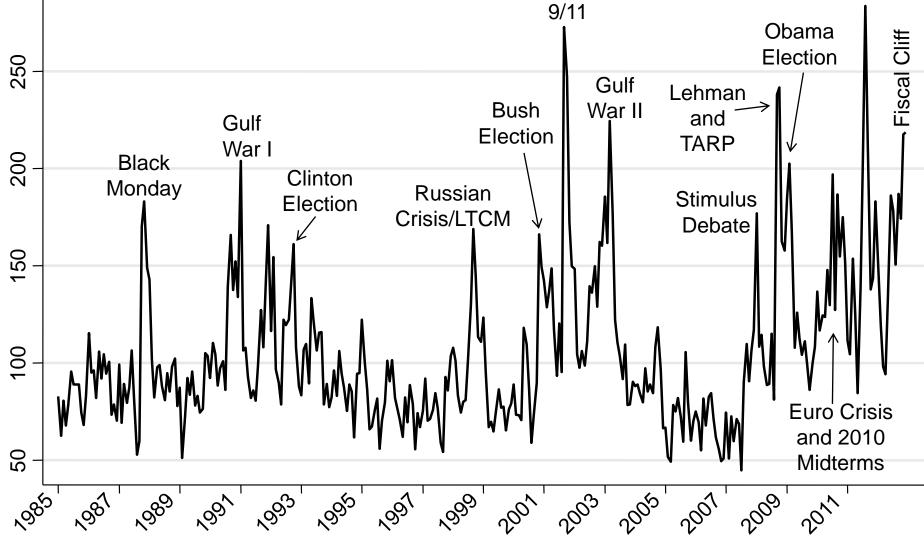


Constructing our US News-Based EPU Index

- For 10 major US papers get monthly counts of articles with: {economic or economy}, and {uncertain or uncertainty}, and {regulation or deficit or federal reserve or congress or legislation or white house}
- Divide the count for each month by the count of all articles
- Normalize each to SD=1, then sum all 10 papers to get the U.S monthly index



US News-based policy uncertainty index: Jan 1985-Dec 2012



Debt

Ceiling;

Euro Debt

Source: "Measuring Economic Policy Uncertainty" by Scott Baker, Nicholas Bloom and Steven J. Davis, all data at <u>www.policyuncertainty.com</u>. Data normalized to 100 prior to 2010.

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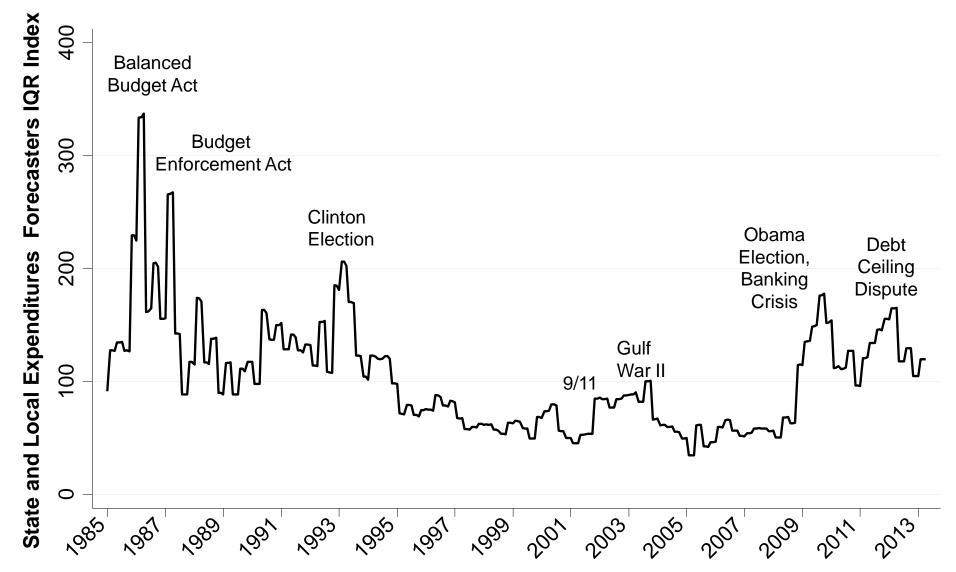
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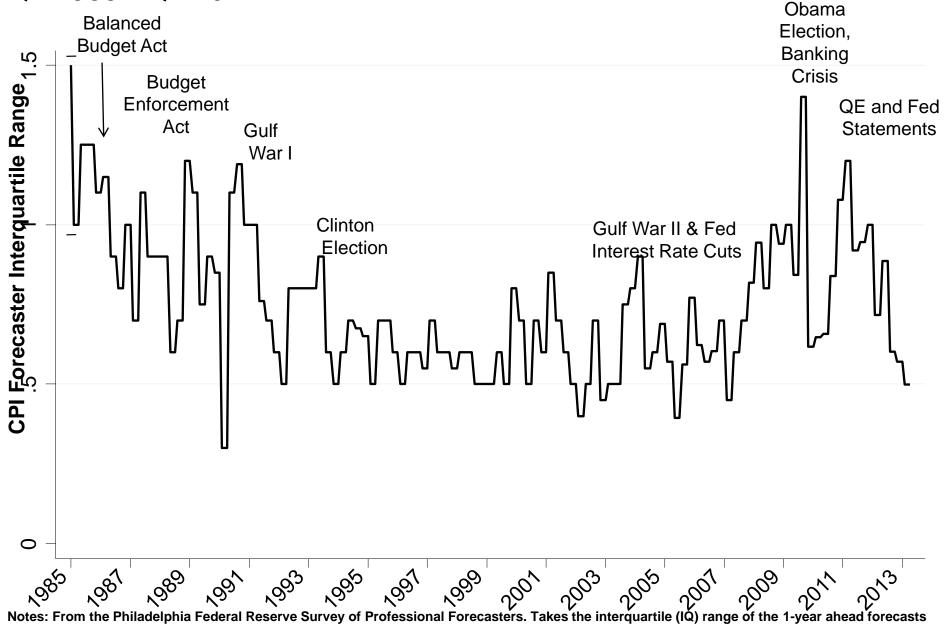


State and Local Govt Purchase Forecasts, IQ Range Q1 1985 - Q4 2012



Notes: From the Philadelphia Federal Reserve Survey of Professional Forecasters. Takes the interquartile (IQ) range of the 1-year ahead forecasts (made every quarter) of total state and local government purchases relative to five year backward moving average GDP. Normalized to a mean 100 from 1985-2009. Spans about 45 forecasters per year.

CPI forecasts, IQ range Q1 1985 - Q4 2012



(made every quarter) of consumer price level. Normalized to a mean 100 index prior 1985-2009. Spans about 45 forecasters per year.

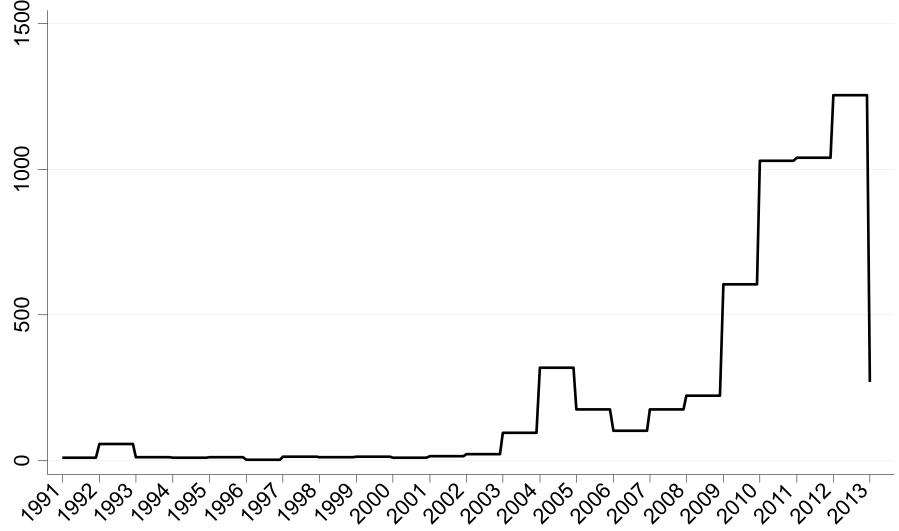
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Normalize each component to have unit standard deviation, then compute weighted sum to get overall index.



Combine the yearly CBO tax code expiration figures into an index by discounting by 50% per year the amount of tax code scheduled to expire in future years

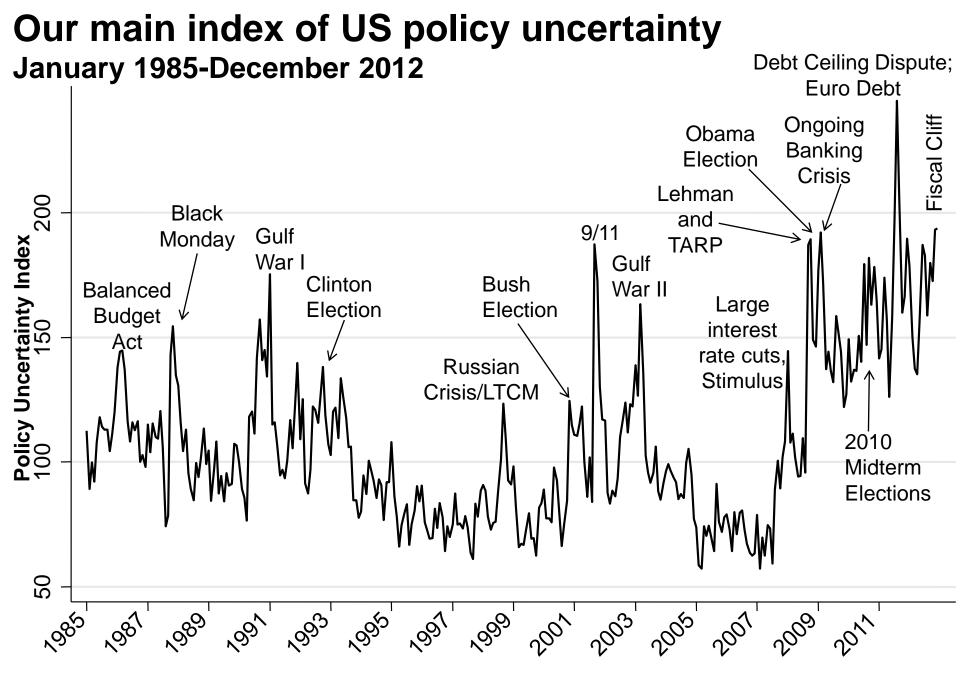


Source: Congressional Budget Office. Utilizes list of scheduled future tax code expirations and their estimated dollar value. Expirations are discounted by 50% per year

Our US Economic Policy Uncertainty index has 4 components – how we make the data "sausage":

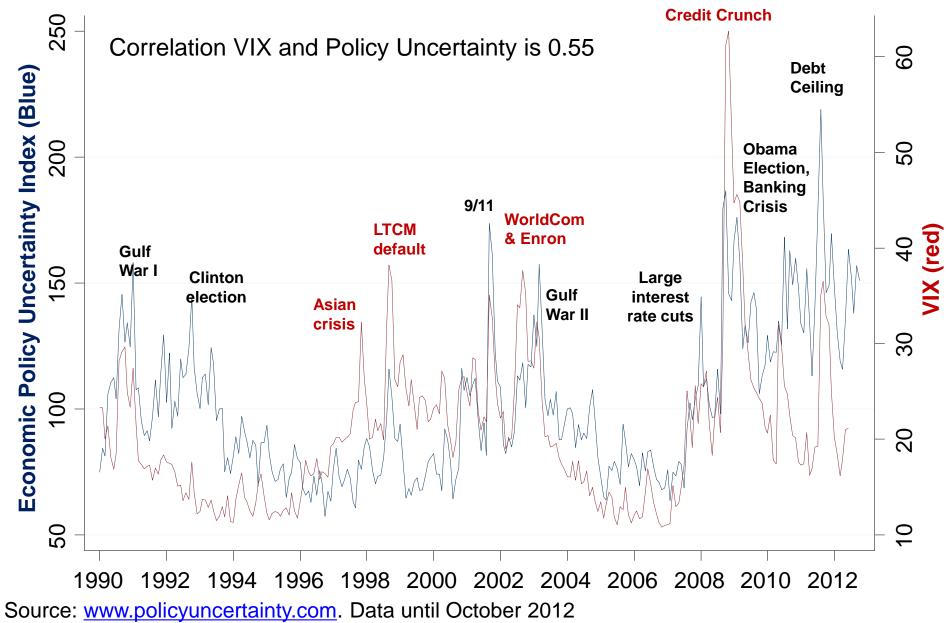
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Normalize each component to standard deviation=1, then compute weighted sum to get overall index.

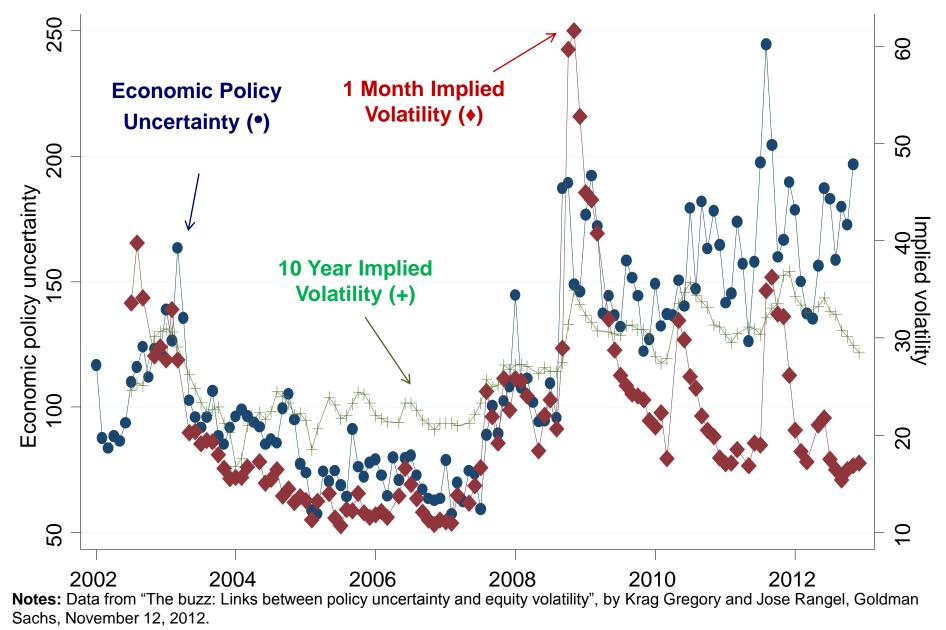


Source: Data at <u>www.policyuncertainty.com</u>. Data normalized to 100 prior to 2010.

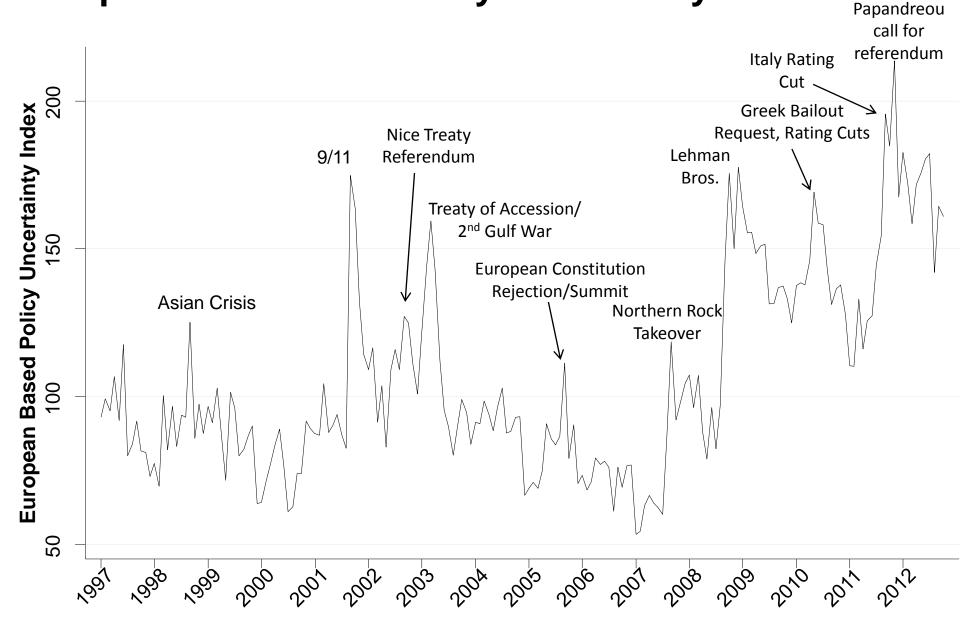
US index is similar to the VIX index of 1 month implied S&P500 stock market volatility, but not the same



US index is more similar to 10 year implied S&P500 stock market volatility (correlation 0.73)



European Economic Policy Uncertainty Index



Source: <u>www.policyuncertainty.com</u>. Data until October 2012

What seems to be driving <u>US</u> policy uncertainty? It seems to be mainly fiscal policy and health care

	1985:1- 1990:6	1990:7- 1991:12		2001:9- 2002:12		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: Analysis uses Newsbank coverage of around 1000 US national and local newspapers

The paper tries to investigate this methodically

1) Measuring economic policy uncertainty

2) Evaluating our policy uncertainty

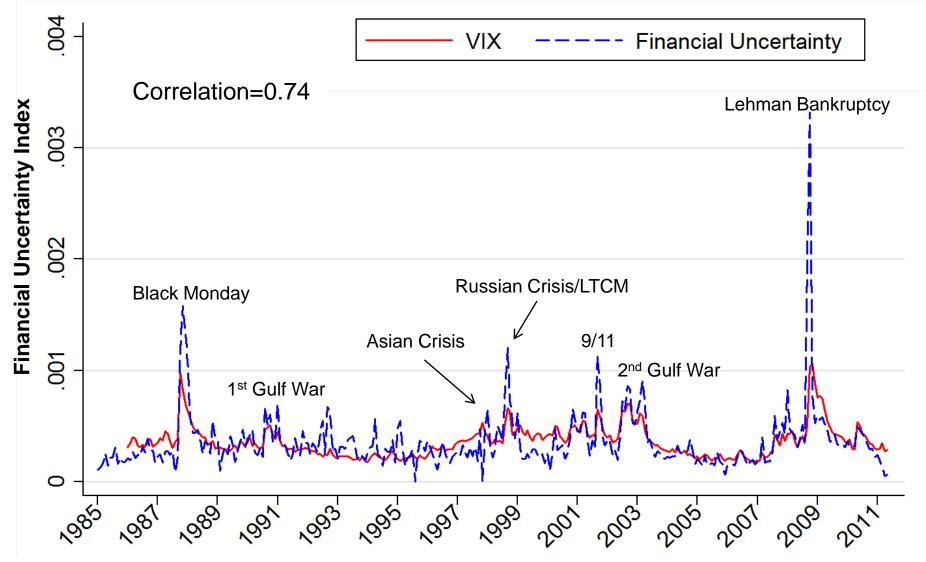
3) The impact of policy uncertainty on the recovery

Two Measurement Concerns with News Indices

Suitability: Does a count of news articles about uncertainty provide a good indicator for actual economic uncertainty?

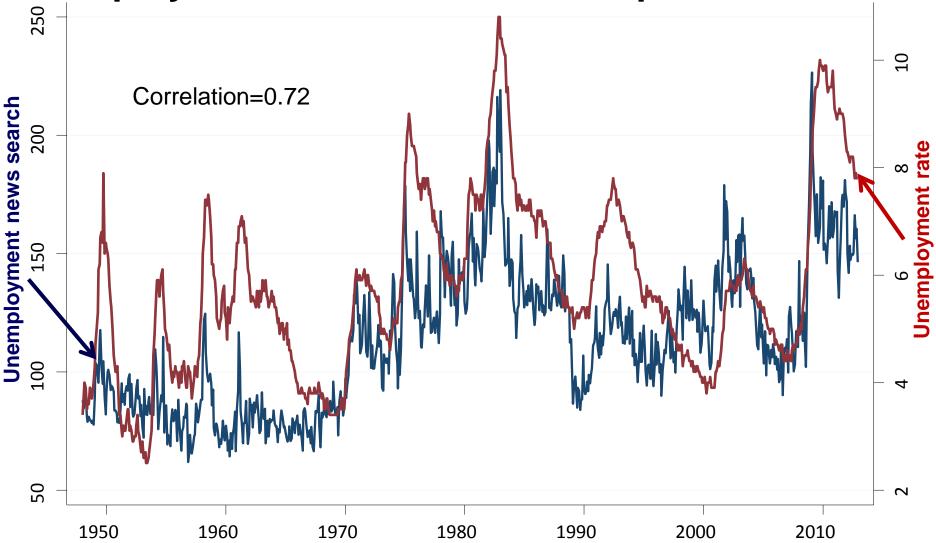
<u>Accuracy</u>: Do specific text-string searches accurately identify the set of articles that discuss economic policy uncertainty

Suitability test: news based indices for tracking equity market uncertainty seem to work quite well



Notes: News-Based Financial Uncertainty Index composed of monthly number of news articles containing uncertain or uncertainty, economic or economy, and 'stock prices', 'equity prices', or 'stock market'. Daily VXO data is scaled so both series have equal means. Data to October 2012

Suitability test: news based indices for tracking unemployment also seem to work quite well



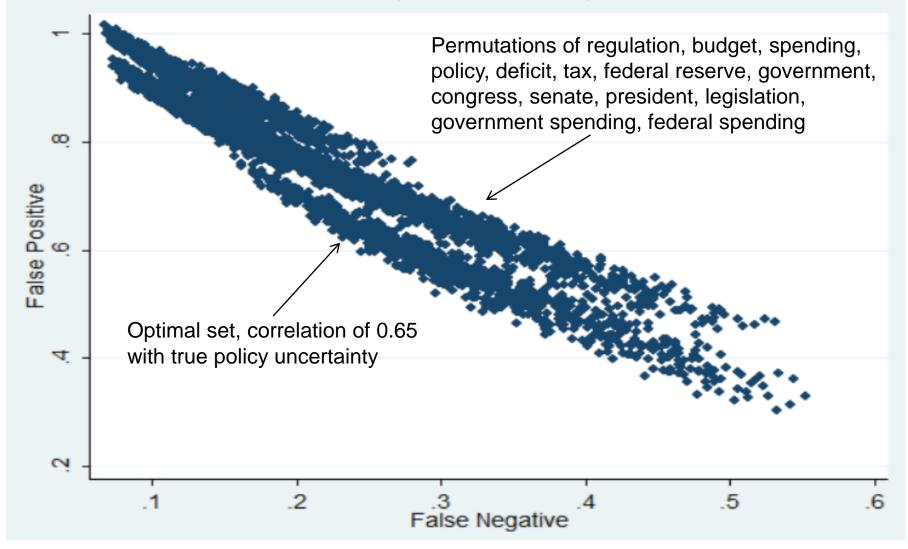
Notes: Index of Unemployment News composed of quarterly news articles containing terms like 'unemployment', 'layoffs', or 'job loss' (scaled by the smoothed total number of articles) in 5 newspapers (WP, BG, LAT, WSJ and CHT). Data normalized to 100 from Jan 1900-Dec 2011. Unemployment data is overall seasonally adjusted unemployment rate taken from the BLS.

Accuracy test: performing human audits

We had 6 undergraduates read 3,500 newspaper articles using a 29-page audit guide to code articles if they discuss "economic uncertainty"=0/1 and "economic policy uncertainty"=0/1

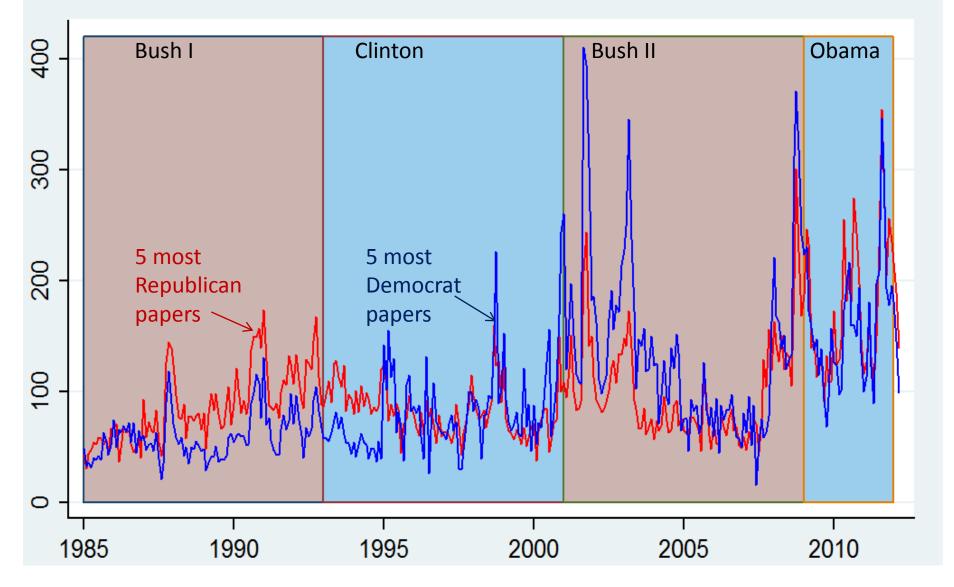
Economic Policy U	ncertainty	uncertain, at	the outcome of government policy is always t some level, does any mention of a new or plicy constitute EPU=1?
Augu articles from 198 Uncer (unce Augu – Th pa 3. Assig	bgy: Main Steps Times, LA Times, and SF Chronicle is to 2012 that pass our Economic st 30 Sampling Details, 2 In 84 of the sampled articles for each paper to Sophie. Call these subsamples Sub(Name,Pa	the poli etcF mentior er d Kyle and	"There are days now when I make \$160 and think I had a good day," says Mark Classen, does not mention any
2. Draw 84 to 3. Assign where - Ea 4. For e. - As 17 z v 4. Revie get remether method 5. In sur the ad 6. Lastly review	Auditing the Sampled Articles, 2 3. If yes to 2, then identify the policy cate that apply): Monetary policy Fiscal policy Taxes Labor regulations Legal Policy Competitio Government spending Health care National security and terrorism Trade Polic	gory (checking all n Policy programs and regulations y and commodities ams kets) s ty treated in the policy uncertainty and whether it	 Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, among other items, since Co-owner of Jur Dard Gargement a store in the mall that sells, away self store is gone. Co-owner of Jur Dard Gargement with constraint owner a continent wide for the store is gone. Co-owner of Jur Dard Gargement with the function of the agreement would seek to bind the three countries connections and the bin cover and market that would include nore than gon million people and would be larger than the European Community. Such a huge unhindered market would encompass interests as diverse as the makine shops of northern Mexico, the financial district of New York and the final day. The signal show the formal announcement. Co-owner of the terms in the "policy" part of our search filter. Co-owner of the policy is port of the policy is port of the store store in the store store in the store store is and the store store in the store store is and the store in the store store in the store store is a store that that were considered a high priority by both countries. Co and a quickly expressed interest in having a role in the new talls, but its status was left unclear and uncertaint about the tor store store is tore of the store inset of the

Evaluation results from the human audit helped refine our search, and confirmed our EPU measure is well correlated with true policy uncertainty



Note: Optimal set is 'regulation', 'federal reserve', 'white house', 'congress', 'legislation', and 'deficit'.

Finally, also checked for political bias – some, but quantitatively very small (explains <2% of movement)



Papers sorted politically using the media slant measure from Gentzkow and Shapiro (2010).

The paper tries to investigate this methodically

1) Measuring economic policy uncertainty

2) Evaluating our policy uncertainty

3) The impact of policy uncertainty on the recovery

Why might uncertainty impact the real economy?

Economics literature has mainly focused on three channels:

- "Real-options effects": Uncertainty can make firms cautious about investing and hiring
- "Financing costs": Uncertainty can increase risk-premia
- "Precautionary savings": Uncertainty can reduce consumption

The most important channel seems to be real options (caution) effects

Dave Cote, chairman and CEO of Honeywell, a Fortune 500 firm that employs 130,000 people worldwide stated "*Right now we're holding back on all but the most necessary external hiring. And on capital expenditures, if I can make the decision now or six months from now, I'll make the decision six months from now and see what develops"*.



November 5th 2012

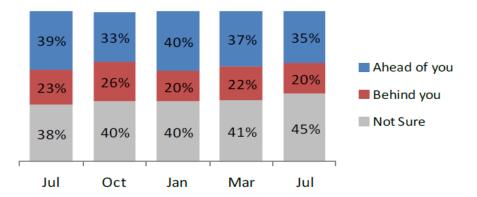
Lots of survey evidence pointing to uncertainty as a problem – Chamber of Commerce

REPOR United States Chamber of Commerce Q2 Small Business Study July 16, 2012 Survey Dates: July 2, 2012 – July 9, 2012

Flat Economic Growth and Uncertainty Continue to Limit Hiring

Eight-out-of-ten small businesses continue to think the national economy is off on the wrong track and morethan half (53%) of small businesses surveyed cite economic uncertainty as their top concern.Only 14% say thenational economy is on the right track.Business's Best Days Are...

Forty-five percent of small business owners surveyed are not sure if their business's best days are ahead of or behind them. In addition, only 34% of small business owners say the business climate over the next two years is likely to greatly or somewhat improve.



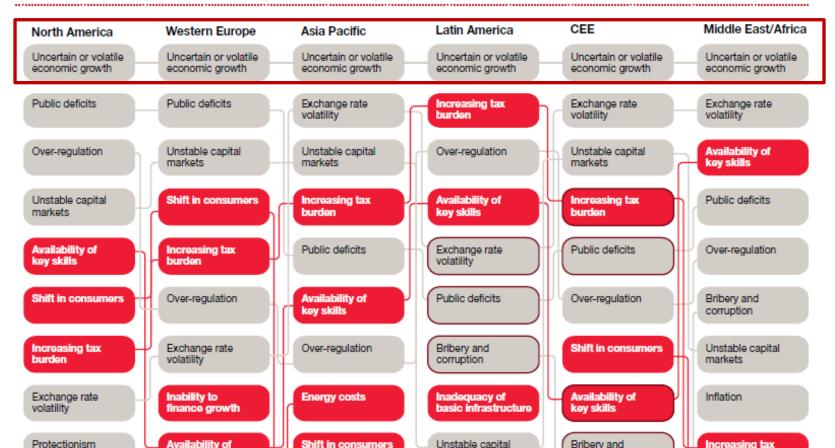
harris

Lots of survey evidence pointing to uncertainty as a problem – Global CEO survey

15th Annual Global CEO Survey 2012 Confidence disrupted ^{p5}/Balancing global and local ^{p9}/Risk resilience ^{p16}/ The talent challenge ^{p20}/What's next ^{p27}/CEO interviews ^{p30}

Figure 10: Global economic uncertainty remains the top threat to growth prospects

Q: How concerned are you about the following potential threats to your business growth prospects?



Lots of survey evidence pointing to uncertainty as a problem – National Association of Business Economists

NABE Policy Survey: Tighten Macroeconomic Policies Later Rather than Sooner

The National Association for Business Economics (NABE) recently surveyed its members on a number of policy issues. Results of the survey show that generally, there is not much support among the economists surveyed for policy tightening over the next 12 months. A majority of respondents would prefer that both monetary and fiscal policies become more stimulative or remain unchanged in 2013. Only one-third of the respondents feel that both monetary and fiscal policies should, respectively, become more restrictive next year. However, support among the panel rises for policy tightening in the longer run, with more than one-half of the business economists surveyed indicating that they feel fiscal policy should become more restrictive in 2014.

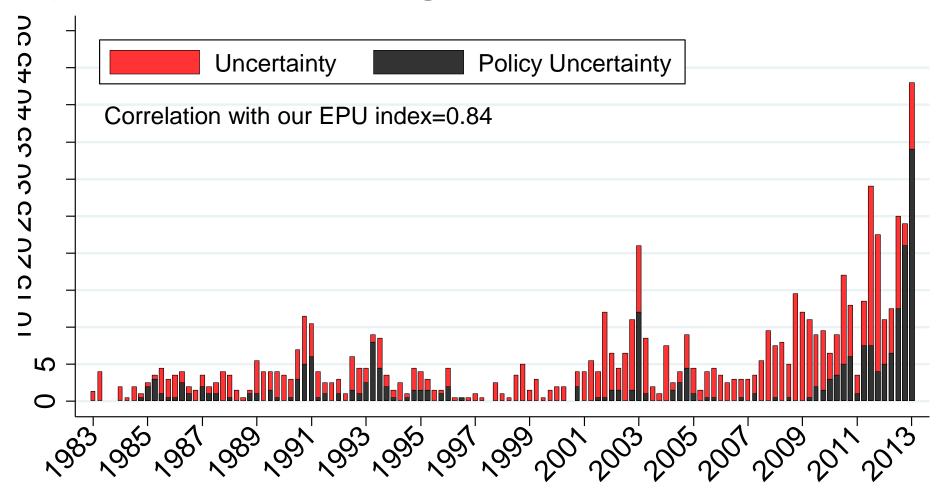
Consistent with findings of the March 2012 NABE Economic Policy Survey, there is overwhelming support among NABE members for a balanced approach to eventual fiscal tightening. Although respondents' views seem to tilt in the direction of favoring spending cuts, roughly 90 percent of panelists would prefer some combination of spending cuts and tax increases in order to reduce the federal government budget deficit. Only a small minority (less than 15 percent) of survey participants think that the payroll tax should be permanently extended at its current rate, but higher percentages—between 35 percent and 45 percent—favor permanent extension of current tax rates on income, dividends, and capital gains. The vast majority of panelists feels that uncertainty about fiscal policy is holding back the pace of economic recovery.

Most respondents consider current monetary policy to be "about right" and three-quarters of the respondents believe that short-term interest rates will remain unchanged over the next 12 months

Embargoed until: Monday, September 24, 2012, 12:01 AM ET

The NABE September 2012 Economic Policy Survey presents the consensus of a panel of 236 members of the National Association for Business Economics. The NABE Economic Policy Survey is conducted semiannually; the most recent survey was taken between August 2, 2012, and August 24, 2012. Portions of this survey may be reprinted in whole or in part with credit given to NABE. View the survey results. including complete

Lots of survey evidence pointing to uncertainty as a problem – FOMC Beige Book



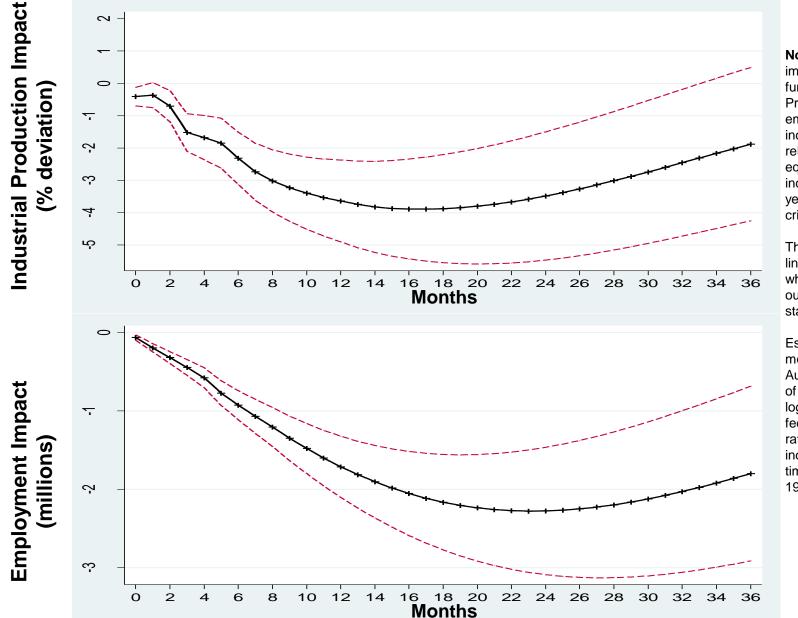
Note: Plots the frequency of the word "uncertain" in each quarter of the Federal Open Market Committees' (FOMC) Beige Book. Data from 1983Q4 (when the Beige book started) to 2013Q1. The Beige Book is an overview of economic conditions of about 15,000 words in length prepared two weeks before each FOMC 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.

The Beige Book Policy Uncertainty also focuses on tax, spending and regulation uncertainty 2010-12

PU Category	<u>2001 Q4 –</u> 2002 Q2	<u>2002 Q4 –</u> 2003 Q2	<u>2008 Q3 –</u> 2009 Q4	<u>2010 Q1 –</u> 2012 Q4	<u>Full Sample:</u> 1 <u>996 to 2012</u>
b) Fiscal Policy	0.3	0	0	1.6	0.3
c) Taxes	0.2	0	0.3	1.0	0.2
d) Government Spending	1.0	0	0.2	0.8	0.2
f) Health Regulation	0.0	0	0.2	0.5	0.1
g) Financial Regulation	0.0	0	0.2	1.3	0.3
h) Labor Regulation	0.0	0	0.0	0.3	0.1
i) Environmental Regulation	0.7	0	0.0	0.3	0.1
j) National Security	0.0	2	0.0	0.1	0.1
k) Sovereign Debt	0.0	0	0.0	0.8	0.1
o) Political Conflict/Leadership					
Change	0.0	3.2	0.0	2.3	0.8
Policy-Related Count	1.2	4.8	0.8	6.3	1.7
Policy-Related Count (Each					
category mention counted once)	2.2	5.2	0.8	9.0	2.3
Total Uncertainty Count	7.7	13.5	10.2	15.3	6.9

Source: Baker, Bloom and Davis analysis of FOMC Beige Books

VAR Estimated Industrial Production and Employment changes after a Policy Uncertainty Shock

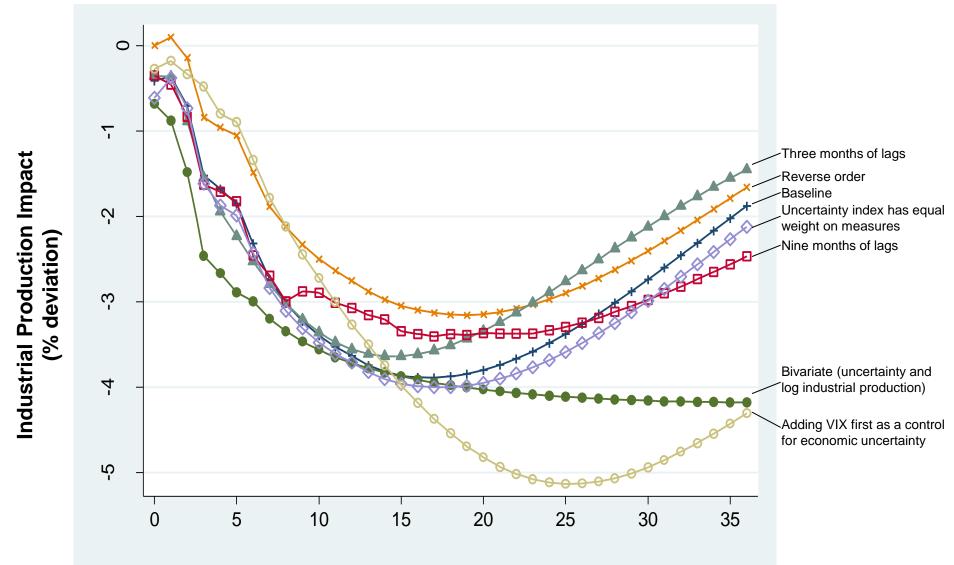


Notes: This shows the impulse response function for Industrial Production and employment to an increase in the policy-related uncertainty index, equal to the rise in the increase from 2006 (the year before the current crisis) until 2011.

The central (black) solid line is the mean estimate while the dashed (red) outer lines are the onestandard-error bands.

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. Data from 1985 to 2011.

Robustness to Different VAR Specifications



Months after the policy uncertainty shock

Notes: This shows the impulse response function for GDP and employment to an 124 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.

My view - based on data, surveys and business discussion - is that from 2008-2010 policy uncertainty was an effect of low growth, but from 2011 onwards is starting to cause low growth

October 19, 2012 Issue No: 12/42	Goldman Sachs
US Economics Analyst	
	Economics Research

Policy Uncertainty: Is Now the Time?

- A common explanation for the economy's disappointing performance in recent years is a rise in "policy uncertainty," a term popularized by Nicholas Bloom of Stanford University and his co-authors. They suggest that the increase in their "US policy uncertainty index" which is based on news searches, expiring tax provisions, and forecaster disagreement—has depressed real GDP by more than 3%.
- We do not doubt that uncertainty shocks depress economic activity, or that uncertainty has risen substantially since 2006. But we do not believe that the economy's poor performance has been caused by an exogenous increase in US policy uncertainty.
- First, the observation that most forecasters have been surprised by the economy's poor performance probably says more about the forecasters than about the economy. The historical record shows clearly that the bursting of a large asset price and debt bubble inflicts enormous and long-lasting damage on economic activity, and the

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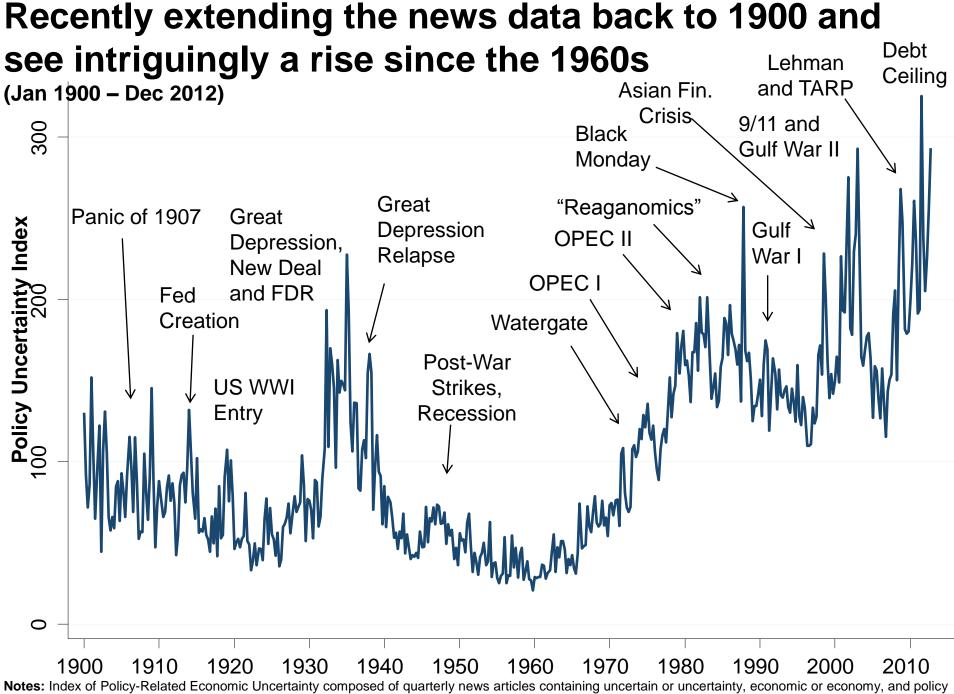
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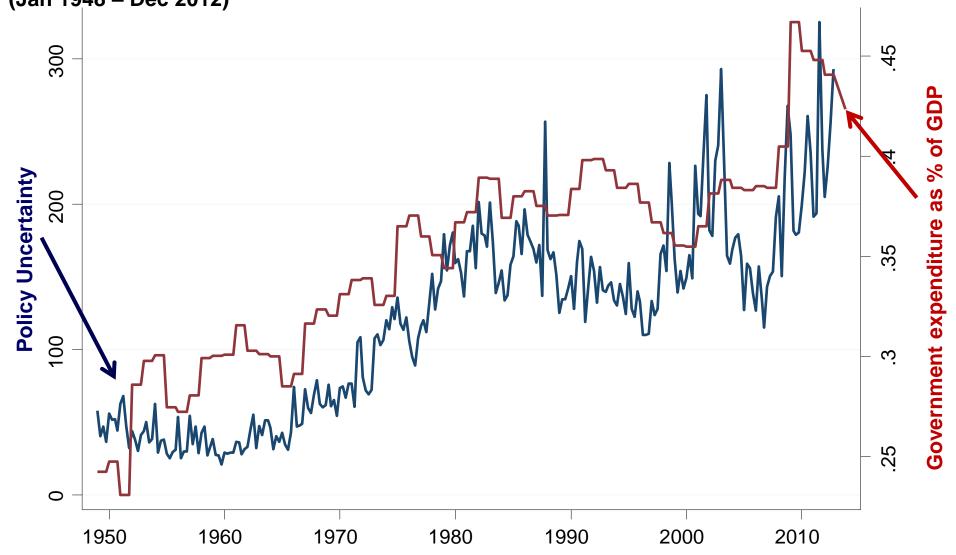
Shuyan Wu

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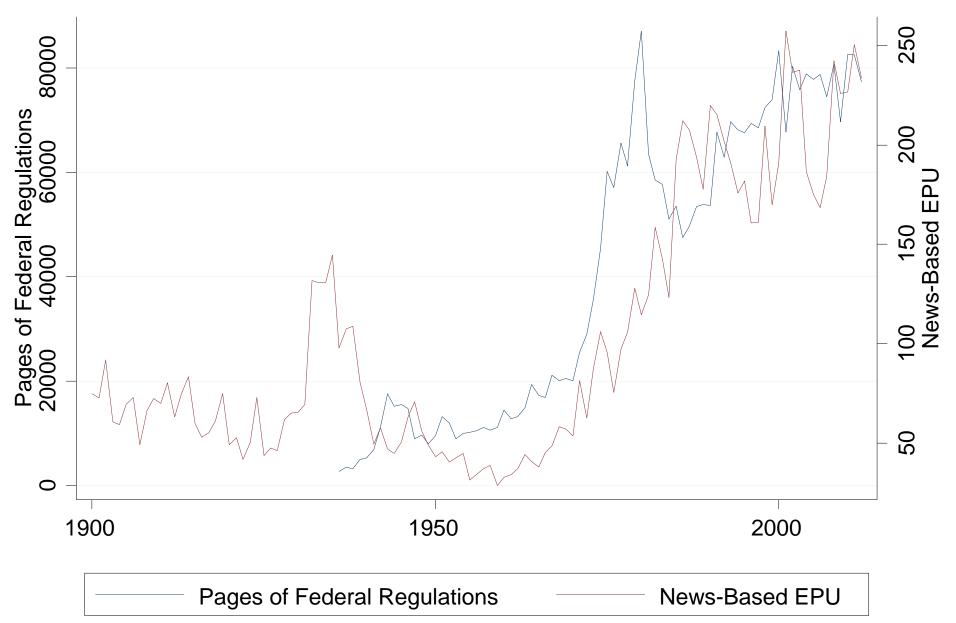
relevant terms (scaled by the smoothed total number of articles) in 5 newspapers (WP, BG, LAT, WSJ and CHT). Data normalized to 100 from 1900-2011.

One reason for rising policy uncertainty appears to be a rising Government share of the economy (Jan 1948 – Dec 2012)



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 5 newspapers (WP, BG, LAT, WSJ and CHT). Data normalized to 100 from Jan 1900-Dec 2011. Government expenditure is total federal, state, and local expenditures over GDP, annually.

Another reason for rising policy uncertainty might be rising Government regulation



Finally note that monthly & daily data is on-line

Data

US Monthly Index

US Daily Index

European Monthly Index

Canadian Monthly Index

Chinese Monthly Index

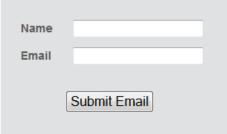
Equity Uncertainty Index

Writings

Academic Papers

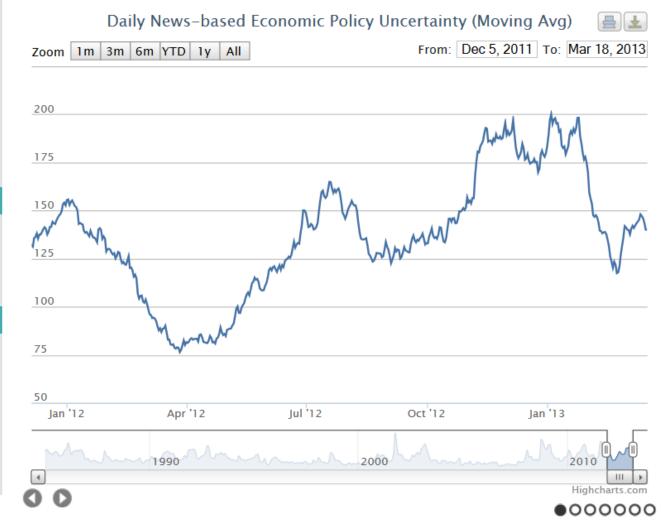
Short Pieces

Get Updates



Economic Policy Uncertainty Index

We measure policy uncertainty and test its relation with output, investment, and employment.



Data available at: <u>www.policyuncertainty.com</u>

Conclusion

- Appears policy uncertainty has risen since 2008
- Evidence suggests this may be holding-back the current recovery, although not definitive
- Also appears that policy uncertainty rising post 1960 alongside the expansion of government

Looking ahead I see policy uncertainty easing this year, but still well above pre-2008 levels given lack of long-term reform