Policy Uncertainty
And the Brexit Shock

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Today’s Remarks

1. Review of BBD approach to measuring Economic Policy Uncertainty (EPU)
2. Our newest EPU indices
3. A closer look at the Brexit uncertainty shock and its likely near-term effects
Our Economic Policy Uncertainty Indices rely on computer-automated newspaper searches

How it works for the United States:

• For 10 major US papers, get monthly counts of articles that contain at least one word from each of three term sets:
  - **E**: \{economic or economy\}
  - **P**: \{regulation or deficit or “federal reserve” or congress or legislation or “white house”\}
  - **U**: \{uncertain or or uncertainty\}

  Include “the Fed”, “regulatory” and other variants.

• Scale the EPU count for each paper and month by the count of all articles in the same paper and month.

• Standardize each paper’s scaled count to unit St. Dev., then sum over the 10 papers by month to get the U.S monthly index.
US Newspaper-Based EPU Index, 1985 to Aug. 2016

More Newspaper-Based EPU Indices

• U.S. category-specific EPU indices
• Monthly EPU indices for 15 countries
• Historical EPU indices back to 1900 for the US and the UK
• Daily EPU indices for the US and UK
• Daily Equity Market Uncertainty index
• Immigration Fear and Policy Uncertainty indices for the US, France, Germany, UK

Downloadable and regularly updated at http://www.policyuncertainty.com
Selected category-specific EPU Indices, Quarterly

- Healthcare Policy Uncertainty
- National Security Policy Uncertainty

Year


Index Value

Gulf War I

Gulf War II

Clinton healthcare reform effort

9/11

Affordable care act

Notes: Indices reflect scaled monthly counts of articles containing the same triple as in Figure 1 and one or more terms pertaining to national security (e.g., “war”, “terrorism”, or “department of defense”) and healthcare (e.g., “healthcare”, “hospital”, or “health insurance”), respectively, for the National Security and Healthcare indices. Each series is normalized to mean 100 from 1985-2009 and based on queries run Jan 18, 2015 on Access World News Newsbank newspaper archive, which covers about 1,500 US papers.
New EPU Statistical Products

• Australia, monthly
• Brazil, monthly
• Global, monthly
• United Kingdom, daily
Economic Policy Uncertainty Index for Australia, 1998 to April 2016

Global EPU Index, January 1997 to August 2016

Notes: Global EPU calculated as the GDP-weighted average of monthly EPU index values for the US, Canada, Brazil, UK, Germany, Italy, Spain, France, Netherlands, Russia, India, China, South Korea, Japan and Australia, using GDP data from the IMF’s World Economic Outlook Database. The country-level EPU index values are from www.PolicyUncertainty.com and "Measuring Economic Policy Uncertainty" by Baker, Bloom and Davis. Each country-level EPU Index is renormalized to a mean of 100 from 1997 to 2015 before calculating the Global EPU Index.
The Brexit Uncertainty Shock

• A surprise referendum outcome
• It triggered a huge spike in UK EPU
• Global EPU reverberations
• But concerns about Brexit-related uncertainty have abated rapidly, at least according to our indices
The Brexit Shock and Its Immediate Wake, Daily Data

A Big Surprise!!

The Brexit Shock and Its Immediate Wake, Daily Data

Massive Surge In UK EPU!!

A Big Surprise!!

The Brexit Shock and Its Immediate Wake, Daily Data

But EPU Surge Largely Reverses within 2 Weeks

The Brexit Shock and Its Immediate Wake, Daily Data

Fast Recovery in Equity Markets

Large Depreciation In Pound Persists

The Daily US EPU Index draws on hundreds of newspapers and is less noisy than the Daily UK EPU Index.

Smaller response for US EPU, but same pattern: Large impact effect of surprise referendum outcome, followed by rapid dissipation. No apparent EPU effect beyond the first three or four weeks.
Global index tells the same story: Large impact effect, rapid return to pre-Brexit level

Notes: Global EPU calculated as the GDP-weighted average of monthly EPU index values for the US, Canada, Brazil, UK, Germany, Italy, Spain, France, Netherlands, Russia, India, China, South Korea, Japan and Australia, using GDP data from the IMF’s World Economic Outlook Database. The country-level EPU index values are from www.PolicyUncertainty.com and "Measuring Economic Policy Uncertainty" by Baker, Bloom and Davis. Each country-level EPU Index is renormalized to a mean of 100 from 1997 to 2015 before calculating the Global EPU Index.
UK Monthly EPU Index, January 2005 to August 2016

UK Monthly Index:
Again, the same story.
BBD Time-Series Approach

• Include Monthly EPU Indices in Vector Autoregressive (VAR) statistical models of the sort that macroeconomists routinely use to characterize dynamic co-movements in aggregate data.

• Fit to monthly and quarterly data for the United States and to a dozen countries in a panel VAR.

• Examine Impulse Response Functions to EPU innovations implied by Cholesky orderings.

• Main Question: What do EPU innovations portend for future movements in output growth, investment rates, employment growth, etc.?
Figure 8: Industrial Production and Employment Responses to EPU Shock, VAR Fit to Monthly U.S. Data

Notes: VAR-estimated impulse response functions for industrial production and employment to an EPU innovation equal to the increase in the EPU index from its 2005-2006 to its 2011-2012 average value, with 90 percent confidence bands. Identification based on three lags and a Cholesky decomposition with the following ordering: EPU index, log(S&P 500 index), federal reserve funds rate, log employment, log industrial production. Fit to monthly data from 1985 to 2014.
Figure 9: U.S. Industrial Production Response to an EPU Shock, Alternative Samples, Specifications and Identification Assumptions

Notes: The baseline case involves the same sample period, VAR specification and identification as in Figure 8. The other cases depart from the baseline as indicated. We place EU and VIX after EPU in the ordering. For the “1920-1984” response function, we use monthly data from 1920 to 1984 on log industrial production and EPU in a bivariate VAR with EPU ordered first.
Figure 10: Responses to an EPU Shock in a Twelve-Country Panel VAR

Notes: Panel-VAR estimated impulse response functions for industrial production and unemployment to an EPU innovation equal to the increase in the average US EPU value from 2005-2006 to 2011-2012, with 90% confidence bands. Identification based on three lags and a Cholesky decomposition with the following ordering: EPU index, log(stock market index), unemployment rate, and log industrial production. We use own-country data and a full set of country fixed-effects in the panel VAR. Country-level data are weighted by the square root of the number of newspapers used in the EPU index. Fit to monthly data for Canada, China, France, Germany, India, Italy, Japan, Korea, Russia, Spain, UK and the US from January 1985 to December 2014, where available.
What size EPU innovation in the VAR model corresponds to the Brexit uncertainty shock? Unclear. If UK EPU settles down to about 250 for the rest of 2016, the average value in 2016 will be about 200 points higher than in 2015.

That’s about twice as large as the US EPU increase from 2005-06 to 2011-12, which is the size of the impulse we used to generate the response functions charted in the preceding slides.
(Really) Crude Quantitative Assessment

- Treat the Brexit uncertainty shock as being twice as large as the EPU innovation that BBD used to generate their IRFs.
- For industrial production, they found a peak negative effect of about 1 log point after 6-12 months.
- Doubling yields a peak negative effect of about 2 log points.
- The large pound depreciation triggered by the Brexit referendum outcome may mute this effect. (BBD did not account for the exchange rate channel.)
- GDP is typically less sensitive to shocks than IP, so it’s reasonable to anticipate a somewhat smaller GDP effect – perhaps with a peak effect in the range of -1 log point.
- This estimate seems high, perhaps because it does not fully reflect the aggressive BOE response to the referendum.
Summary

1. Brexit referendum outcome was a big surprise and a massive shock to UK EPU, with global reverberations.
2. But (concerns about) Brexit-related uncertainty dissipated very rapidly, according to our EPU indices.
3. The British Pound fell more than 10% against the US Dollar in wake of Brexit referendum, and it remains down.
4. Equity markets, however, rebounded within a few weeks.
5. Quantifying the likely near-term output effects of Brexit is really, really hard – at least for us.
6. For industrial production, our VAR models suggest a peak negative effect of Brexit uncertainty shock of about minus 2 log points 6-12 months later.
7. Best guess for peak GDP response is about -1 log point, after considering less volatile nature of GDP, muting effect of Pound depreciation and aggressive BOE response.
Our Data Are Online at www.PolicyUncertainty.com

- Monthly EPU indices for 15 countries, including all G10 economies, with more countries in the works. Regular updates in the first few days of each month.
- Historical EPU indices back to 1900 for the United States and United Kingdom
- Daily EPU indices for the US and UK, with daily updates
- Many category-specific EPU indices back to 1985 for the United States
- Special U.S. tabulations for “government shutdown” and “debt ceiling”
- Special U.K. tabulations for Brexit-related EPU.
- Daily newspaper-based index of equity market uncertainty back to 1985
- Migration-related Fear and Policy Uncertainty Indices for France, Germany, the U.K., and the U.S.
References


These papers and more available at http://www.policyuncertainty.com/research.html.
Additional Slides – Not for Prepared Remarks
Financial Regulation Uncertainty Index, 1985 to 2014, Quarterly

Notes: The index reflects the frequency of newspaper articles about economic policy uncertainty and financial regulatory matters, as indicated by terms like “bank(ing) supervision,” “Glass-Steagall,” and “Dodd-Frank.” Data are from Baker, Bloom and Davis (2015) and are available and updated monthly at www.PolicyUncertainty.com. Normalized to a mean of 100 from 1985 to 2009.
US VAR for Impact on GDP and Investment (quarterly)

Notes: VAR-estimated impulse response functions for GDP and Gross Fixed investment to an EPU innovation equal to the increase in the EPU index from its 2005-2006 to its 2011-2012 average value, with 90 percent confidence bands. Identification based on three lags and a Cholesky decomposition with the following ordering: EPU index, log(S&P 500 index), federal reserve funds rate, log gross investment, log gross domestic product). Fit to data from 195 to 2014.