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Are the effects of Bloom's uncertainty shocks robust?

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HIGHLIGHTS

- Bloom (2009) shows that uncertainty shocks have a real impact in the short run.
- Bloom (2009) explains this finding with the "wait-and-see" mechanism.
- This paper finds that the negative short-run effect disappeared after 1983.
- My finding implies a structural change in the transmission channel of uncertainty shocks.

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ABSTRACT

This paper shows that "wait-and-see" dynamics of uncertainty shocks in Bloom (2009) are not necessarily robust over time. Bloom (2009) shows that uncertainty shocks, identified by spikes in stock market volatility from 1962 to 2008, trigger immediate falls in output and employment followed by rapid rebounds after the resolution of uncertainty. This paper finds that if one splits the sample into two sub-samples these findings hold only for the period between 1962 and 1982. Stock market volatility shocks failed to produce "wait-and-see" dynamics after 1983.

1. Introduction

Bloom (2009) shows that major uncertainty events trigger immediate falls in output and employment followed by rapid rebounds after the resolution of uncertainty, which he calls a result of "wait-and-see" dynamics. This paper shows that the "wait-and-see" mechanism is identified mostly by shocks that occurred between 1962 and 1982 and that the post-1983 data do not display the same dynamics.

Using data from 1962 through 2008, Bloom (2009) finds that 17 uncertainty events, identified by spikes in stock market volatility (SMV) index, had a significant impact on employment and output in the U.S. economy in the short run. Bloom (2009) explains this empirical finding in the context of a production model where uncertainty increases the region of inaction in hiring and investment decisions of firms facing non-convex adjustment costs.

In this paper, I re-examine the effect of Stock Market Volatility (SMV) shocks studied in Bloom (2009) and check whether stylized "wait-and-see" dynamics in response to uncertainty shocks are robust over time. I divide the original sample period into two subsets (1962–1982 and 1983–2008) based on the generally accepted view[1] that 1983 is a breakpoint in the behavior of the U.S. economy. The period after 1983 is widely referred to as the Great Moderation.

Surprisingly, I find that the effects of SMV shocks on the U.S. economy are different during the Great Moderation than in the period from 1962 to 1982. The impact of SMV shocks in the first period is consistent with Bloom's (2009) baseline finding. During the Great Moderation, however, the effects of SMV shocks are inconsistent with theoretical "wait-and-see" dynamics.[2] Extending the data set to August 2012 does not alter this finding.

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[1] See Clarida et al. (2000), Lubik and Schorfheide (2004), and McConnell and Perez-Quiros (2000).

[2] Using German firm-level data, Bachmann and Bayer (2012) also suggest that time-varying firm level risk through "wait-and-see" dynamics is unlikely a major source of business cycle fluctuations.

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Table 1
Uncertainty events.

Event (1st sample)	Date of the event	Event (2nd sample)	Date of the event
Cuban missile crisis	Oct 1962	Black Monday	Nov 1987
Assassination of JFK	Nov 1963	Gulf War I	Oct 1990
Vietnam buildup	Aug 1966	Asian crisis	Nov 1997
Cambodia and Kent State	May 1970	Russian, LTCM default	Sep 1998
OPEC I, Arab–Israeli War	Dec 1973	9/11 terrorist attack	Sep 2001
Franklin National	Oct 1974	Worldcom and Enron	Sep 2002
OPEC II	Nov 1978	Gulf War II	Feb 2003
Afghanistan, Iran hostages	Mar 1980	Credit crunch	Oct 2008
Monetary cycle turning point	Oct 1982	Euro-zone crisis*	Sep 2011

* Indicates the event added by the author.

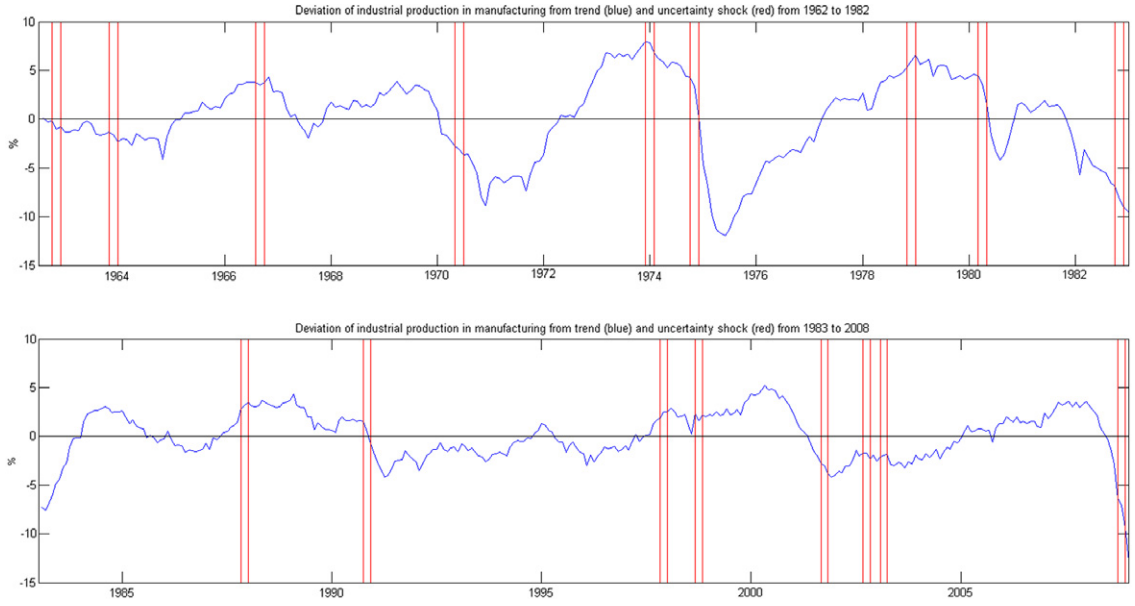

Fig. 1. % deviation of industrial production from trend and dates of the uncertainty events from Bloom (2009) (top panel: 1962–1982, bottom panel: 1983–2008).

2. Data and empirical methodology

In this Section I replicate Bloom's (2009) results using the same data set.[3] I use Hodrick–Prescott (HP) de-trended monthly variables of the log of the S&P 500 stock market index, a stock-market volatility indicator, the Federal Funds Rate, the log of average hourly earnings, the log of the consumer price index, the log of hours worked, the log of employment, and the log of industrial production of the period from 1962 to 2008. I divide the original sample into two periods (1962–1982 and 1983–2008) based on the widely reported finding that U.S. data display a structural break after 1983.

To check for the robustness of my finding in the later part of the paper, I extend Bloom's (2009) original data to August 2012 to fully evaluate the effects of the 2008 financial crisis on the U.S. economy. This episode is not studied in Bloom's (2009) original work. This extension of the data also allows me to analyze the effect of the recent stock market turmoil triggered by the Euro-zone crisis. Bloom (2009) constructs an indicator of large "exogenous" uncertainty shocks. This is a 0–1 variable that takes on a value of 1 if stock market volatility is more than 1.65 standard deviations above the HP de-trended series and 0 otherwise. Using Bloom's (2009) algorithm to directly compare my results with Bloom's (2009), I add one more event (the October 2011, Euro-zone crisis).[4] Table 1 shows the dates of uncertainty events for both periods.

I begin my analysis with a multi-variable VAR that includes 12 lags of the stock market index, uncertainty measured by stock market volatility, prices (wage and Consumer Price Index), interest rates, and real economic activity (output and employment). The ordering of the variables in the VAR follows Bloom (2009) to avoid any discrepancy that might arise from different identification methods.

3. Empirical findings

Fig. 1 summarizes my main results. This figure shows the percentage deviation of industrial production in manufacturing from its trend, together with the dates of the uncertainty events from Bloom (2009). In the first sample (1962–1982), 6 out of 9 uncertainty shocks were immediately followed by a sharp decrease in industrial production, while in the second sample (1983–2008) only 2 out of 8 uncertainty shocks were followed by falls in industrial production. Except for the First Gulf War shock and the 2008 financial crisis, uncertainty shocks did not trigger a downturn in real economic activity in the second sample period. The rest of the paper will focus on establishing this finding more rigorously and checking its robustness.

[3] See Bloom (2009) for a detailed discussion about data and Vector autoregression (VAR).

[4] In the later part of the paper, I use additional methods to check robustness of my results.