Does the liquidity trap exist?

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"A liquidity trap may be defined as a situation in which conventional monetary policies have become impotent, because nominal interest rates are at or near zero: injecting monetary base into the economy has no effect, because base and bonds are viewed by the private sector as perfect substitutes"

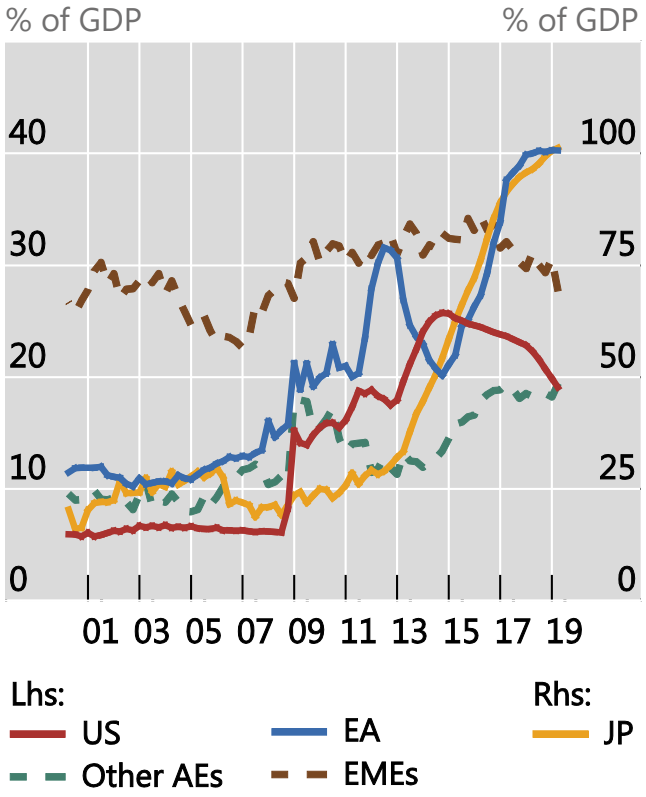
Paul Krugman (1998)

Outline

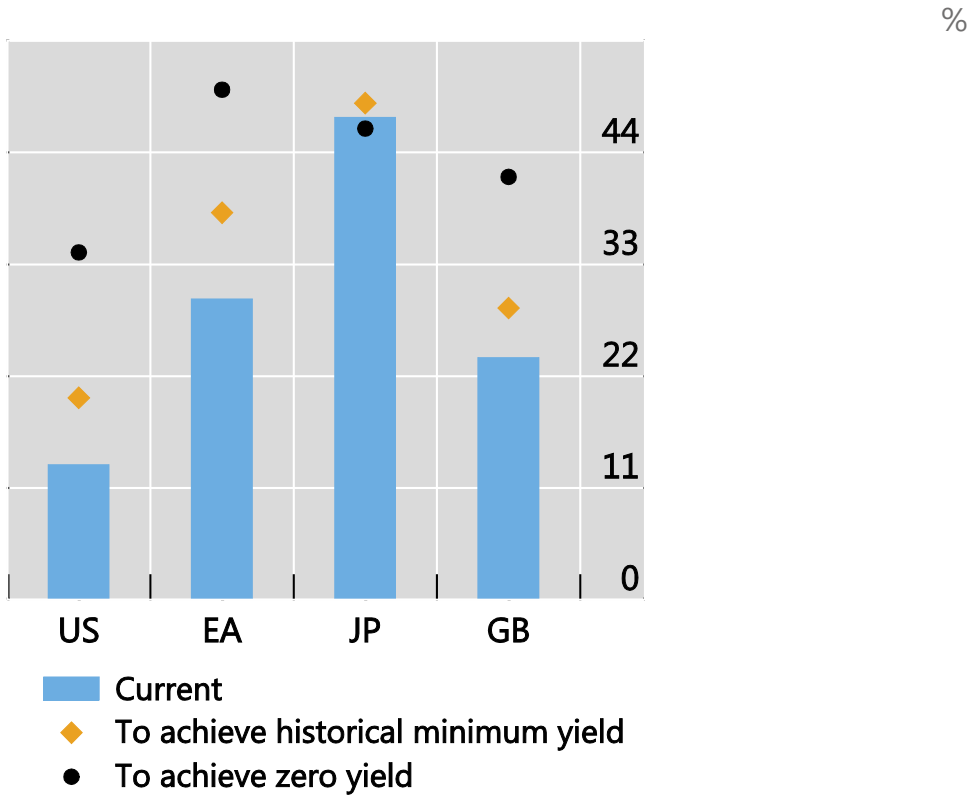
1. Motivation
2. Literature
3. Empirical analysis
4. Results
5. Discussion

1. Motivation: How low can long-term rates be?

Central bank balance sheets[1]



Share of government bonds held by central banks[2]



1. Motivation: Is there a lack of monetary policy space?

- Cutting down short rates and purchasing assets to cut long rates can go only so far and
- the lack of "interest rate" space is very critical in several advanced economies

- **However,** into the medium **we still need to assess whether and how much MP can do when short-term rates are near the ZLB/ELB**

Literature: The ZLB makes MP ineffective

- Japan
  - Krugman (1998) – Coenen and Wieland (2003)

    "John Hicks, in introducing both the IS-LM model and the liquidity trap, identified the assumption that monetary policy is ineffective, rather than the assumed downward inflexibility of prices, as the central difference between Mr. Keynes and the classics."
- US and EA, before the facts
  - Early Fed attemps: Furher and Madigan (97); Orphanides and Williams & Reifschneider and Williams (2000)
  - Eggertsson-Woodford (2003); Adam and Billi (2006-2007): Unstable dynamic systems. FG type solutions yet time inconsistency
- Post GFC/ ZLB quantitative evalutations on institutional models
  - US: Chung, Laforte, Reishneider, Williams (2013), Gust-Herbts-LopezSalido-Smith(2017)
    - The ZLB accounts for 30 percent drop in output during the 2008-09 recession
  - EA: Coenen, Montes-Galdon and Smets (2019)

Literature: The ZLB does not make MP ineffective
… because unconventional MP work

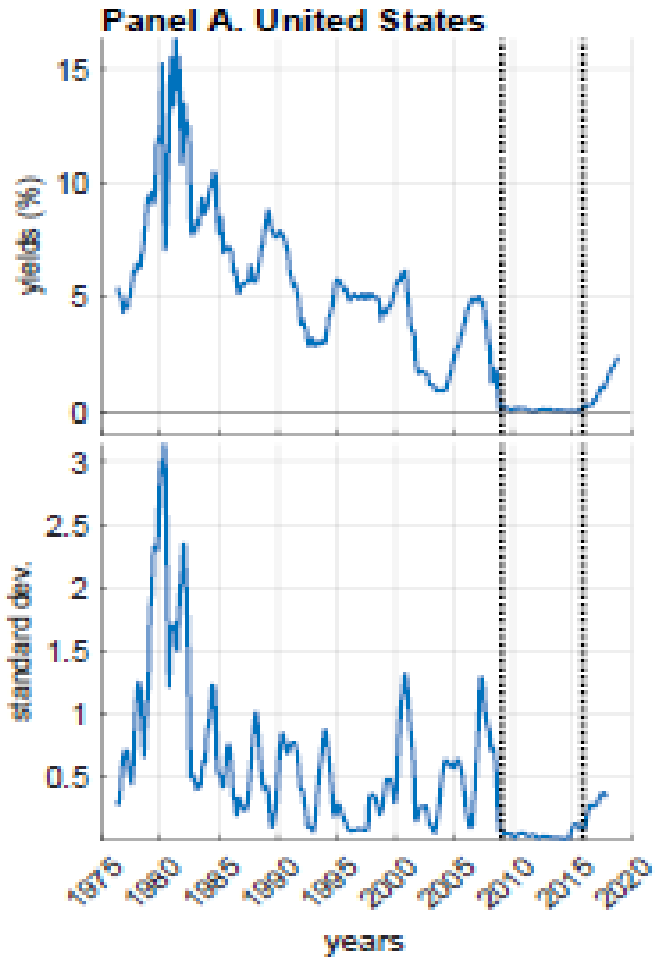
- Direct evidence on the effectiveness of non-conventional measures
  - Event studies: Panizza and Wyplosz (18); Altavila et al. ; Andrade et al.; Gilchrist and Zakrajsek (15)
  - VAR based: Gerlter and Karadi (15); Gambacorta, Hofmann and Peersman (14); Panizza and Wyplosz (18), Debortoli, Gali and Gambetti (18)
  - DSGE model based: "The Great Escape" Del Negro et al. (17)
  - And many others…

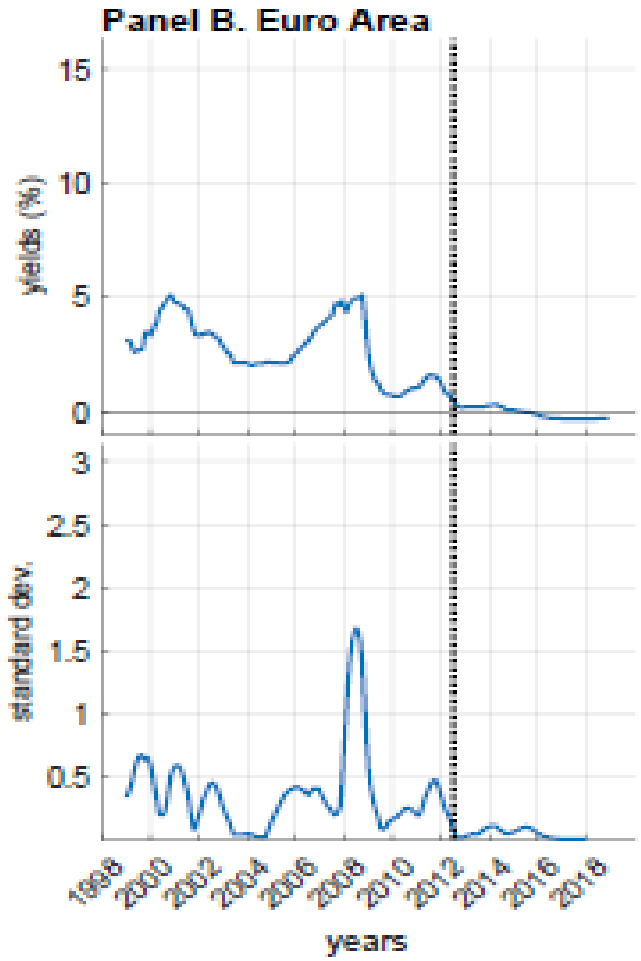
- Indirect evidence
  - Shadow rate literature: Krippner (13); Wu and Xia (16); Christensen and Rudebush and Mouabbi and Sahuc (2018)
  - Responsiveness of "other" asset prices: Swanson and Williams (14); Gilchrist and Mojon (18);
  - Time series properties: Debertoli et al (18)

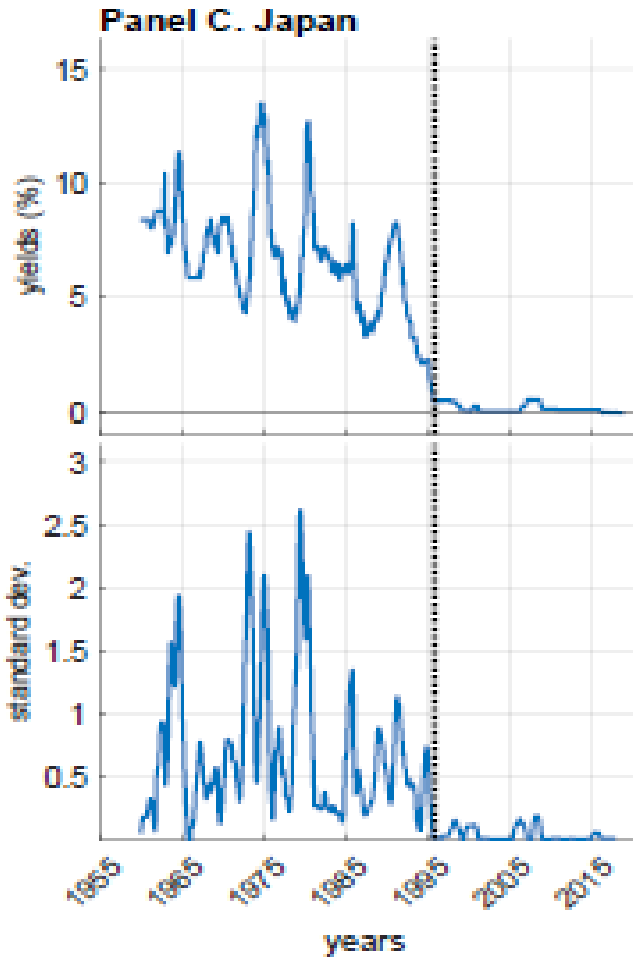
3. Empirical analysis and main results

- We take the simplest VAR based measures of the effects of MP and we compare "ZLB times" to "normal times" estimates
- We do it for the US, the EA and Japan
- We reject that MP has no effects at the ZLB

3.“ZLB periods” and “Normal times”







"ZLB periods" and "Normal times"

TABLE 1. Monetary regimes.

	Normal Times	ELB Times
United States	1990.M01—2008.M12	2009.M1—2015.M12
Euro Area	1999.M01—2012.M06	2012.M07—2018.M12
Japan	1980.M01—1995.M12	1996.M01—2018.M12

Note: ELB times are defined as periods where short-term interest rate reaches zero and its standard deviation is flat at its minimum.

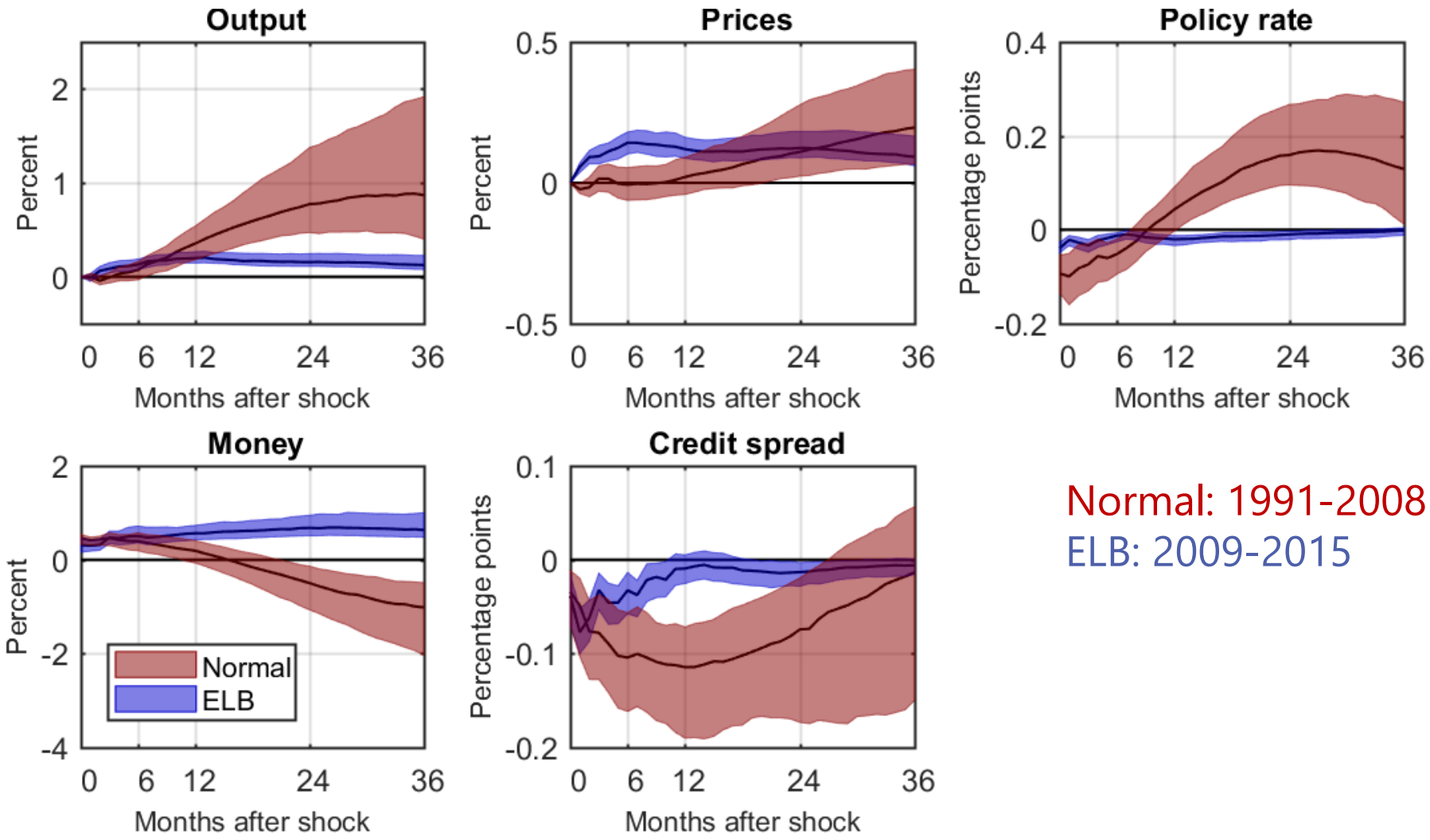
VAR model and identification of money supply shocks

- Variables in the VAR:
  - US: IP, CPI, M1, GZ spread, 2 year gov bond rate; FRED
  - EA: IP, HICP, M1, GM spread, 2 year OIS rate ECB SW + BdF WP by GM
  - JP: IP, CPI, M1, Stock Prices index, 2 year gov bond rate FRED and OECD

- Identification scheme of Arias, Caldara & Rubio-Ramirez JME-2019, with up to 5 months for the sign restrictions

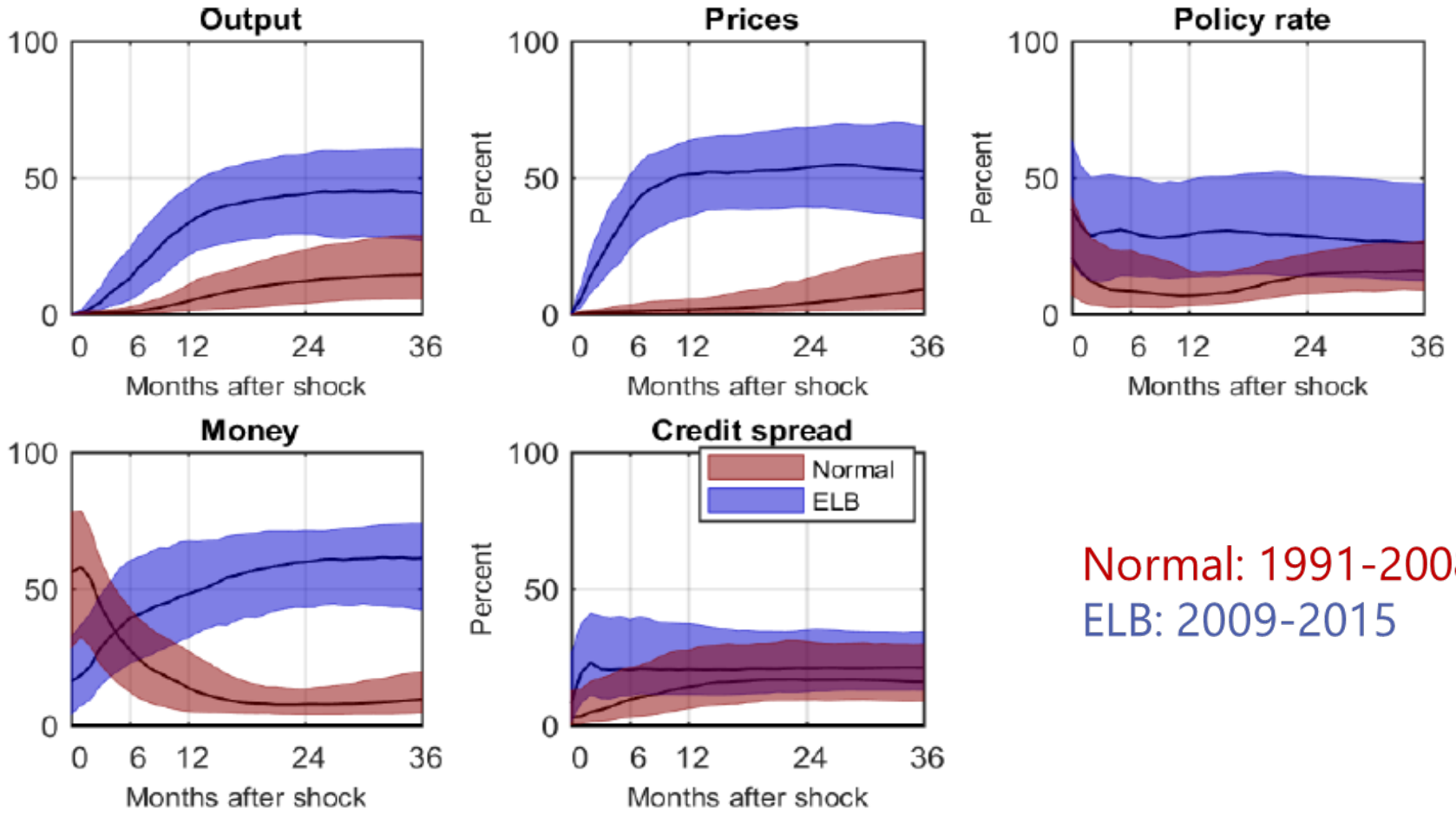
	(ip_t)	(p_t)	(r_t)	(m_t)	(sp_t)
Monetary policy shock	0	0	-	+	-

Results for the US: IRFs



Normal: 1991-2008
ELB: 2009-2015

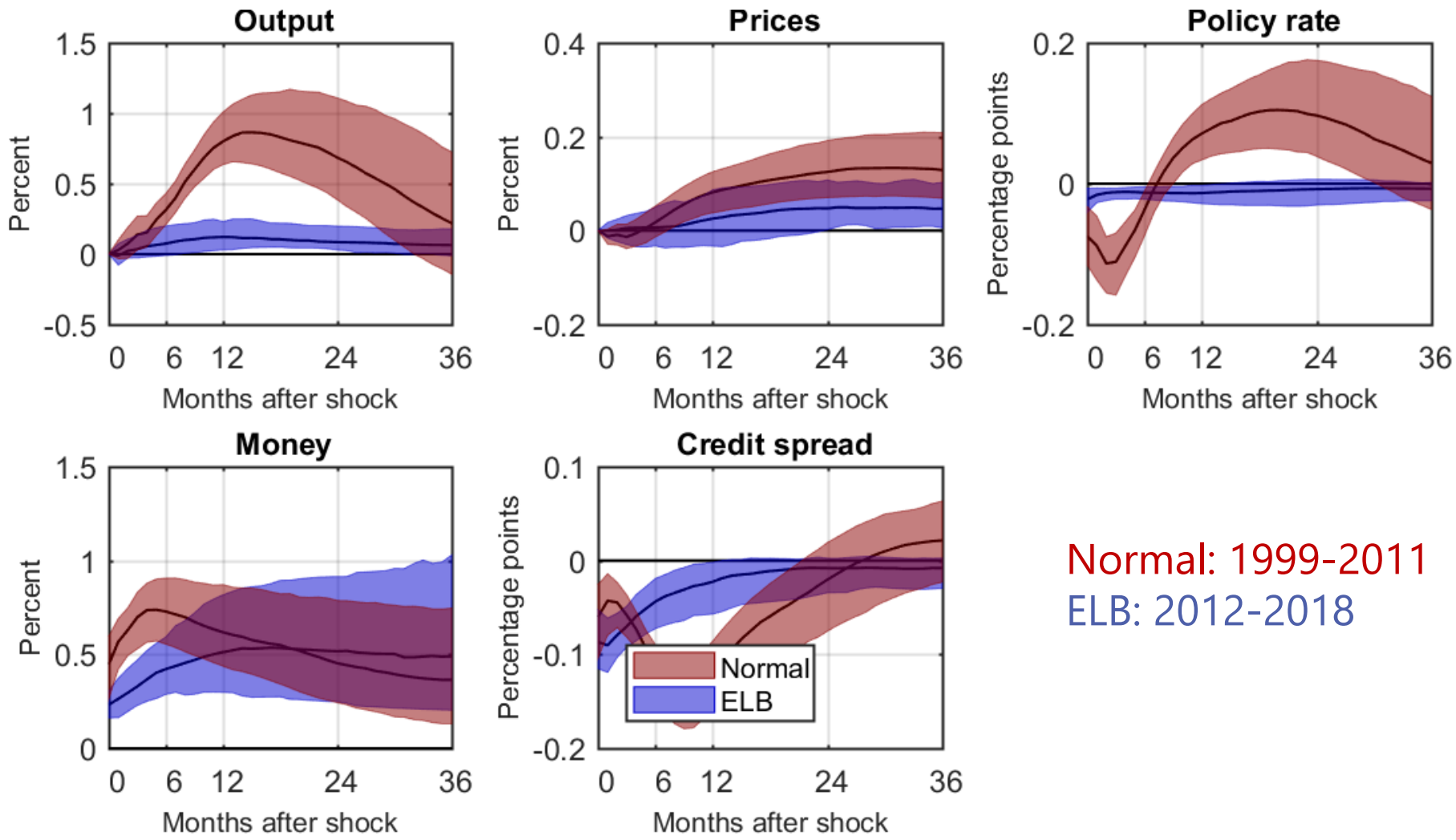
Results for the US: Variance decomposition



(b) VDs

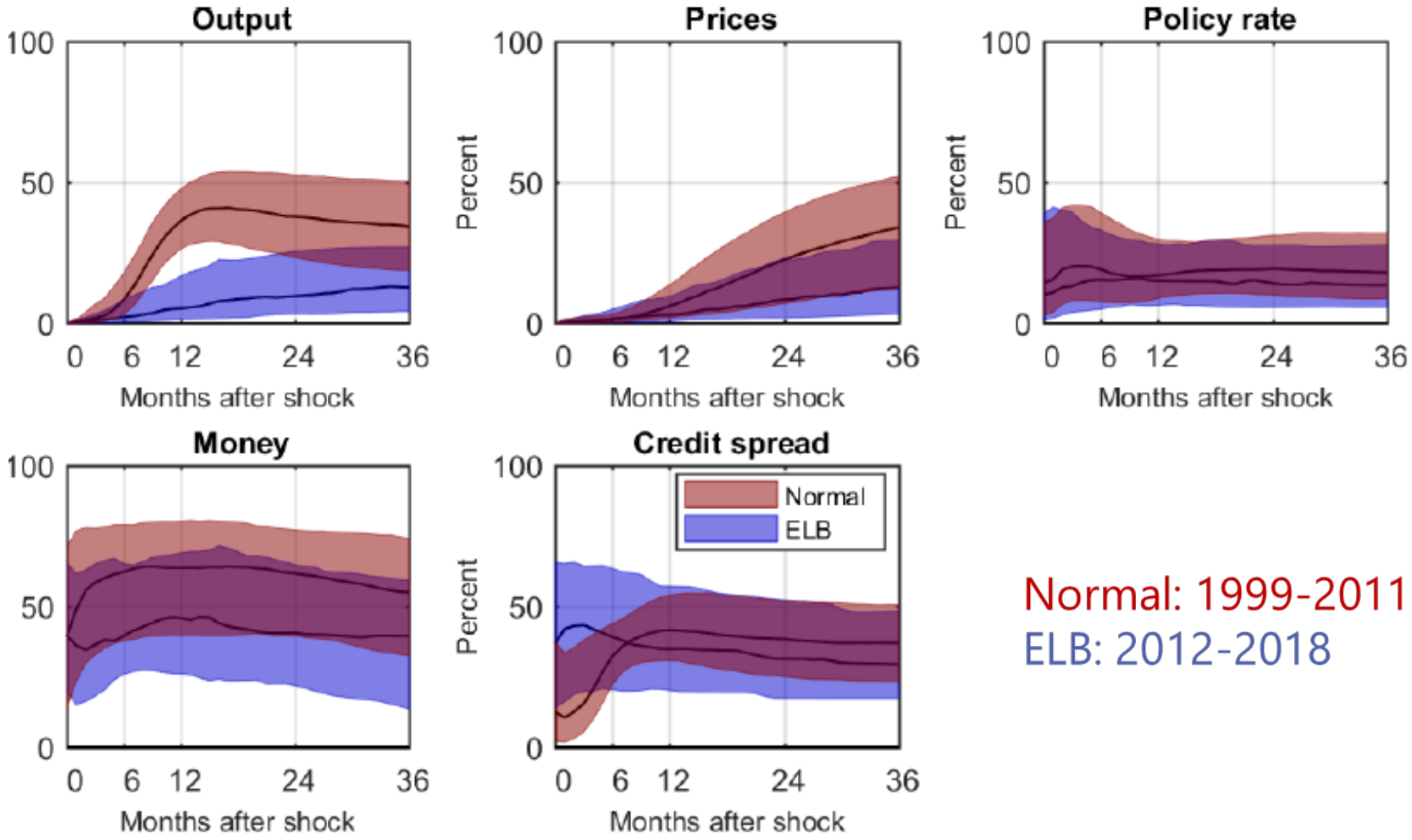
Normal: 1991-2008
ELB: 2009-2015

Results for the EA: IRFs



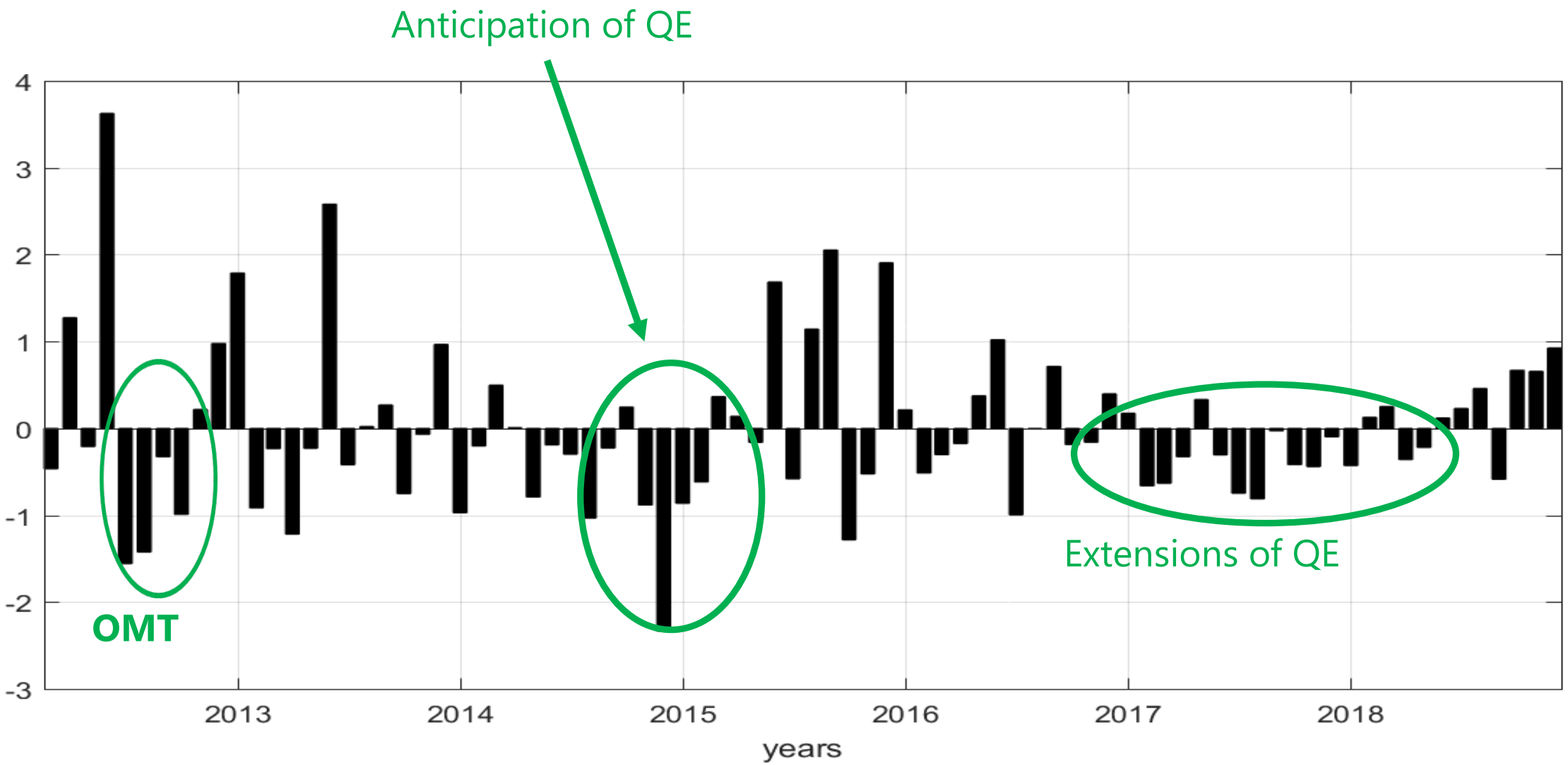
Normal: 1999-2011
ELB: 2012-2018

Results for the EA: Variance decomposition

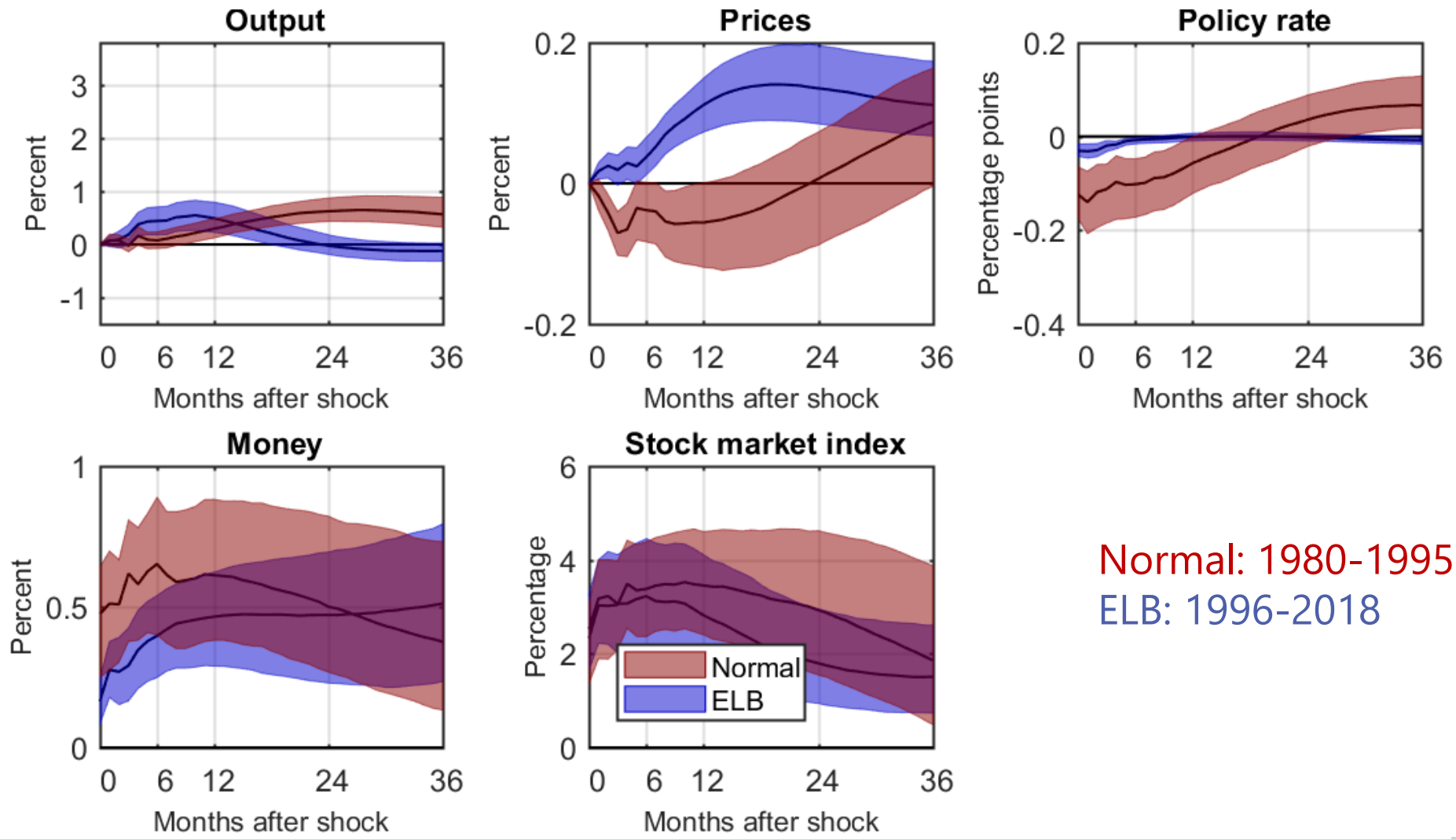


Normal: 1999-2011
ELB: 2012-2018

Results for the EA: estimated MP shocks at the ZLB

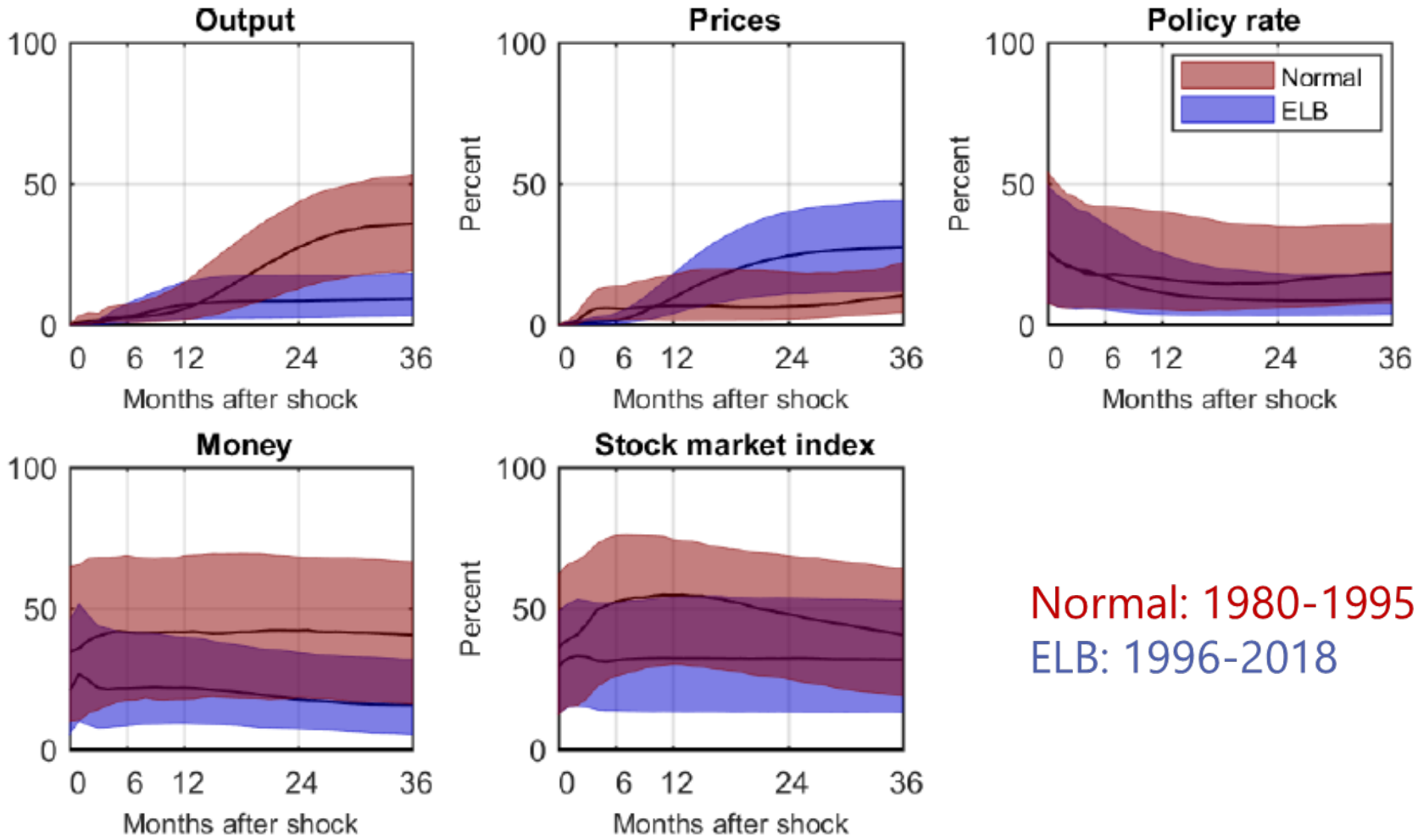


Results for Japan IRFs



Normal: 1980-1995
ELB: 1996-2018

Results for Japan: Variance decomposition



Normal: 1980-1995
ELB: 1996-2018

Main result

- We reject that at the ZLB/ELB monetary policy has become impotent

Discussion

- What does this tell us about the transmission of monetary policy?
- The short-term rate and other "prices" may not be the proper thermometer of the stance of monetary policy
- Money supply can stimulate demand, most likely through stimulating credit
- At the current juncture, we may still approach the "reversal" rate and then, but only then, increasing money supply would not stimulate demand