Comments on
"The Case for Implementing Effective Negative Interest Rate Policy"
by A. Lilley and K. Rogoff

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These remarks solely reflect the views of the discussant and should not be interpreted as reflecting the views of any other person or institution.

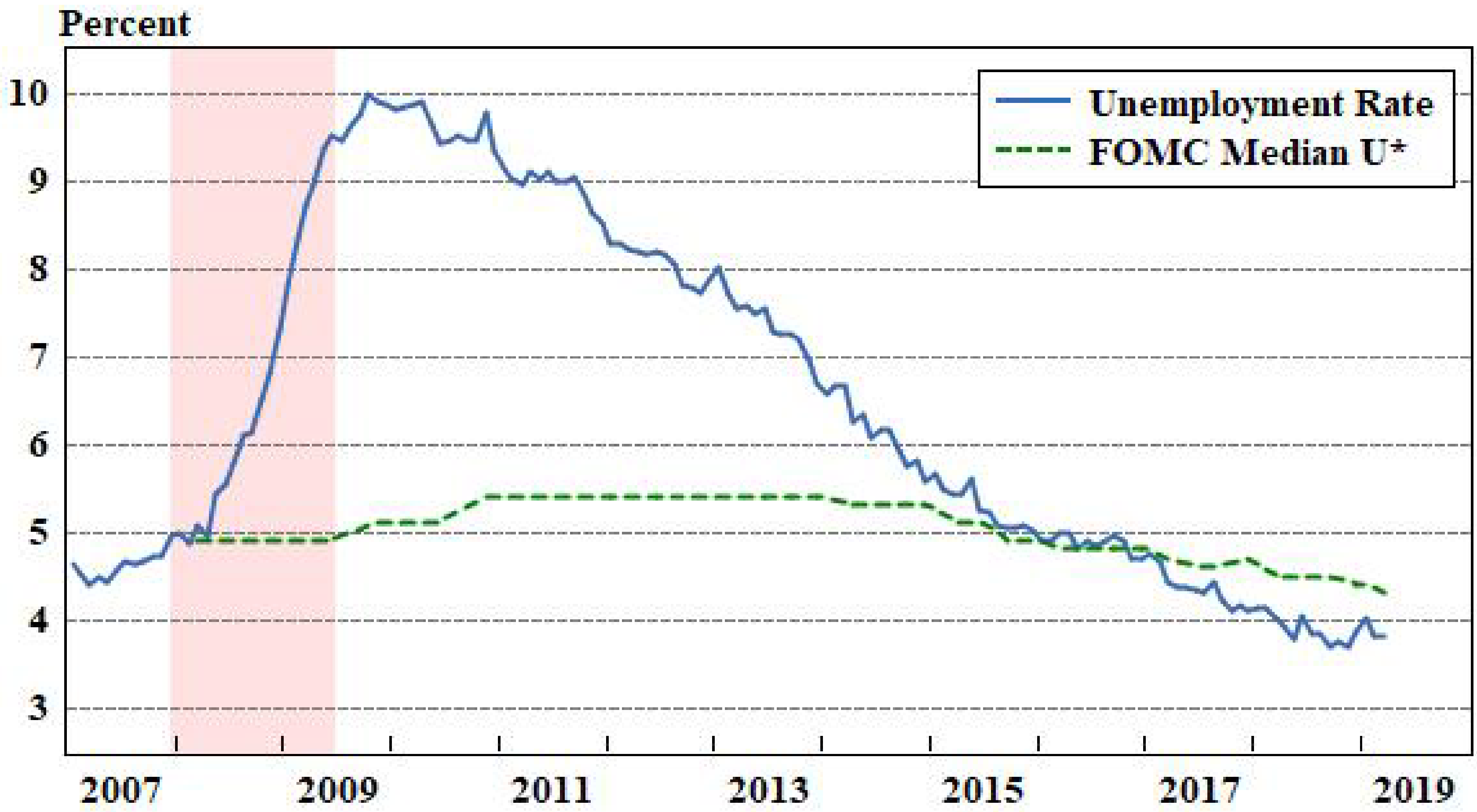
Three Key Questions

- **Will the FOMC's current toolbox be adequate to mitigate the next severe adverse shock?**
  - **NO**
- **Should the FOMC enhance its ability to cut the risk-free interest rate below zero?**
  - **YES**
- **How should the FOMC eliminate the ELB?**
  - ***Lilley & Rogoff*: establish floating exchange rate on the value of paper cash**
  - ***Bordo & Levin*: establish digital cash and impose fees on large transfers of paper cash**

Assessing the FOMC's Toolbox

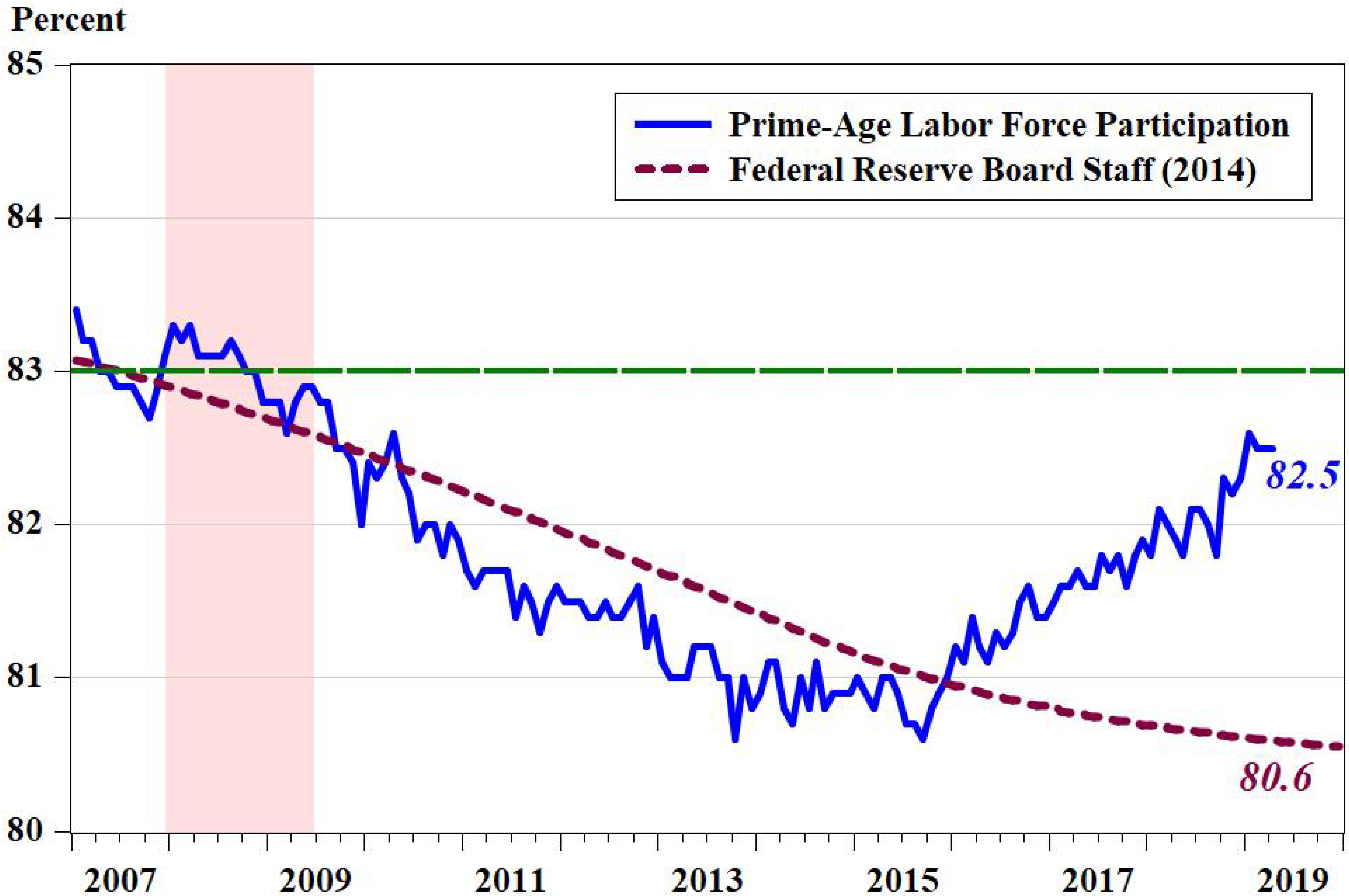
- **Was the FOMC's toolbox adequate in fostering the recovery from the last recession?**
  - **NO**
- **Has quantitative easing been effective in providing additional monetary stimulus?**
  - **NO**
- **Can the adoption of a "make-up" strategy ensure that the FOMC has sufficient capacity to mitigate severe adverse shocks?**
  - **NO**

How Long Did the Recovery Take?



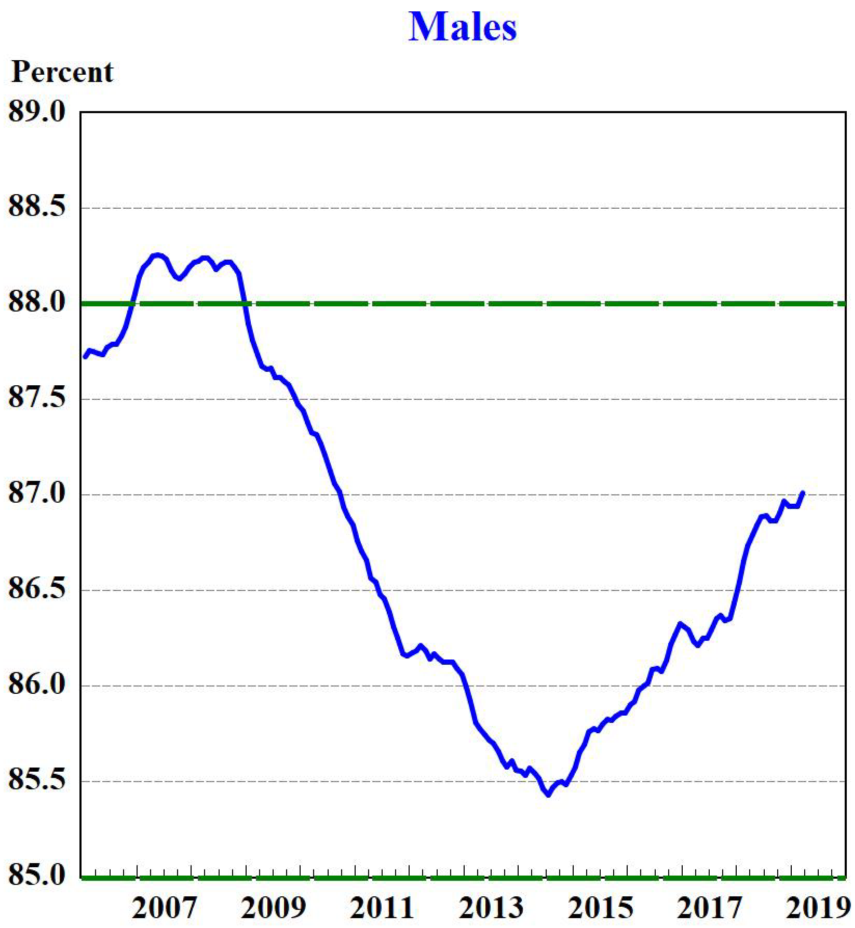
Sources: BLS, FOMC Summary of Economic Projections

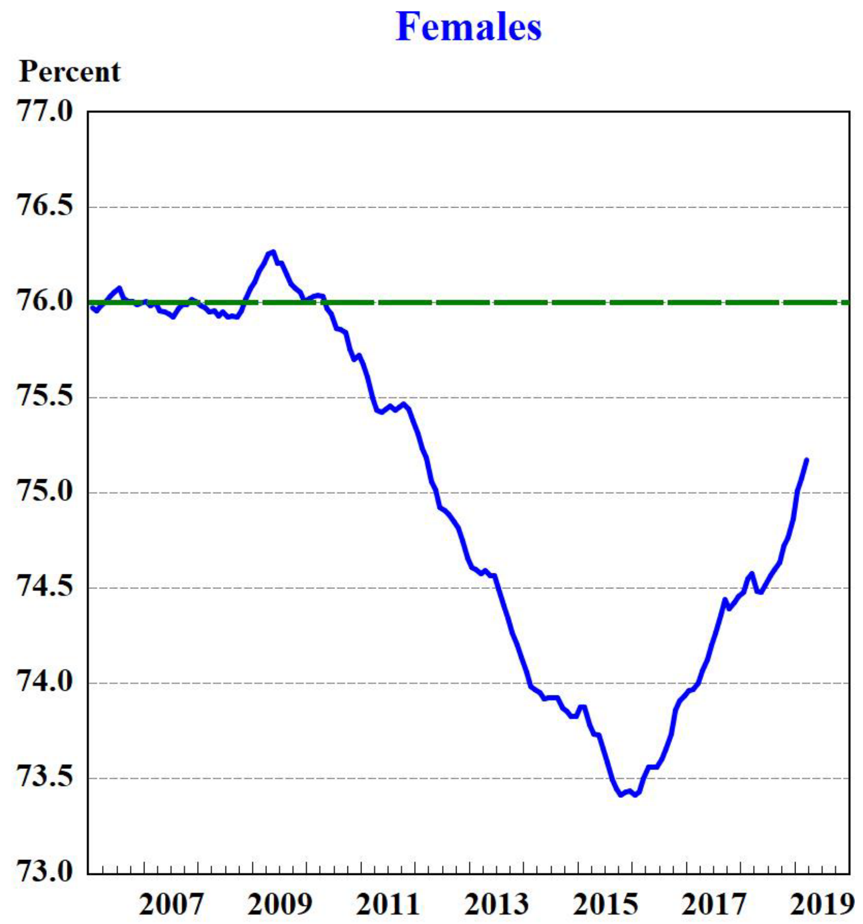
Have We Reached Full Employment Yet?



Sources: BLS; Aaronson et al. (BPEA, Fall 2014)

Labor Force Participation of Adults 45-54 Years





Source: Bureau of Labor Statistics

Implications for Framework Renewal

- **The FOMC should quantify its "maximum employment" objective in terms of *e**, not *u*** ***(see Levin 2014; Erceg & Levin 2014)*****.**
- **Fed staff analysis (including FRB/US model) should incorporate labor force participation.**
- **The recovery from the last recession has been painfully slow and protracted, reflecting the limitations of its "lower-for-longer" approach.**
- **The FOMC needs new monetary policy tools to foster a more rapid "V-shaped" recovery.**

Federal Reserve Analysis of QE

"A*sset purchases...*affect term premiums and thus longer-term interest rates primarily via their effect on private sector expectations of the future path of the stock of longer-term securities held by the Federal Reserve."

Board Staff Memo to FOMC, August 2012

"The balance sheet expansion lowers the path of the term premium on 10-year Treasury yields."

Board Staff Working Paper, January 2019

An Alternative Viewpoint on QE

- **In periods of elevated financial stress, the central bank can play a crucial role in serving as the lender-of-last resort *(Bagehot 1873)*.**
  - **During the 2008-09 financial crisis, the Fed's actions – including QE1 – were effective.**
- **By contrast, when financial strains have subsided, balance sheet actions are likely to have little or no impact on the macroeconomy *(Modigliani & Miller 1958, Woodford 2012)*.**
- **Indeed, an opaque QE program may even be counterproductive *(Levin & Loungani 2019)*.**

Key FOMC Communications about QE3

Event	*FRBNY Primary Dealer Surveys*	*Change in Expected Size of QE3*
FOMC Meeting ***(9/13/2012)***	*9/4/2012 & 9/19/2012*	+$500 billion
FOMC Minutes ***(10/4/2012)***	*9/19/2012 & 10/15/2012*	+$300 billion
FOMC Meeting ***(12/12/2012)***	*12/10/2012 & 12/17/2012*	+$90 billion
JEC Testimony ***(5/22/2013)***	*4/22/2013 & 6/10/2013*	+$60 billion
FOMC Meeting ***(6/19/2013)***	*6/10/2013 & 6/24/2013*	-$80 billion

Was QE3 Helpful or Counterproductive?

Event	Term Premium on 10-Year Treasury		
	Predicted Change (basis points)	Actual Change	
		FRBOG	NY Fed
FOMC Meeting *(Sept. 2012)*	-13	+6	+17
FOMC Minutes *(Oct. 2012)*	-8	+8	+15
FOMC Meeting *(Dec. 2012)*	-2	+7	+11
JEC Testimony *(May 2013)*	-1	+8	+11
FOMC Meeting *(June 2013)*	+1	+21	+14

Was QE3 Helpful or Counterproductive?

Source: Federal Reserve Board updates of Kim & Wright (2006) for term premium on 10-year constant-maturity Treasury note.

The Viewpoint of Market Participants

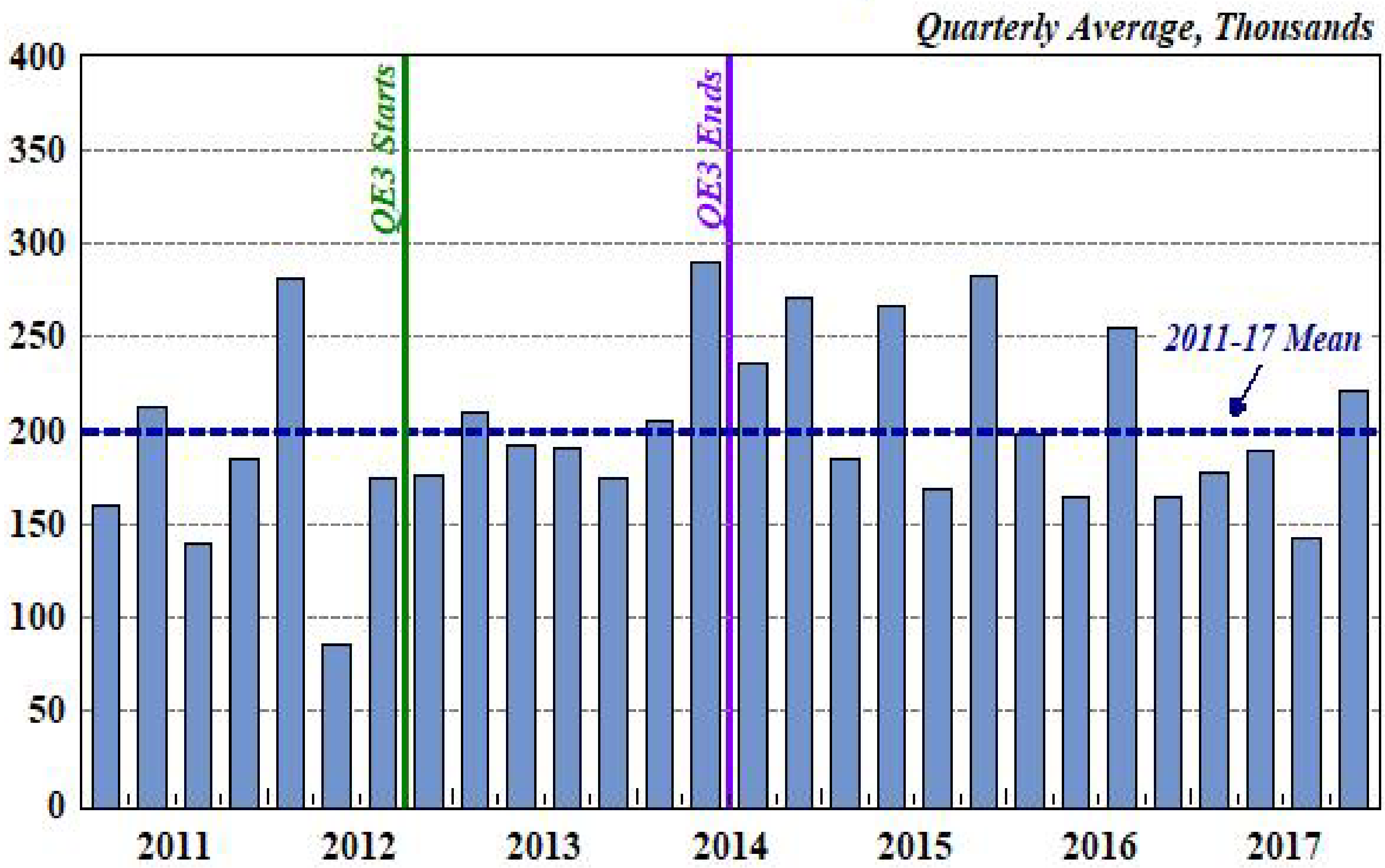
"Most primary dealers stated that
a change in perception of
or heightened uncertainty about
the FOMC's view of appropriate monetary policy
were key factors that generated
the rise in the 10-Treasury yield."

Federal Reserve Bank of New York
Survey of Primary Dealers
June 2013

Effects of QE3 on the Macroeconomy

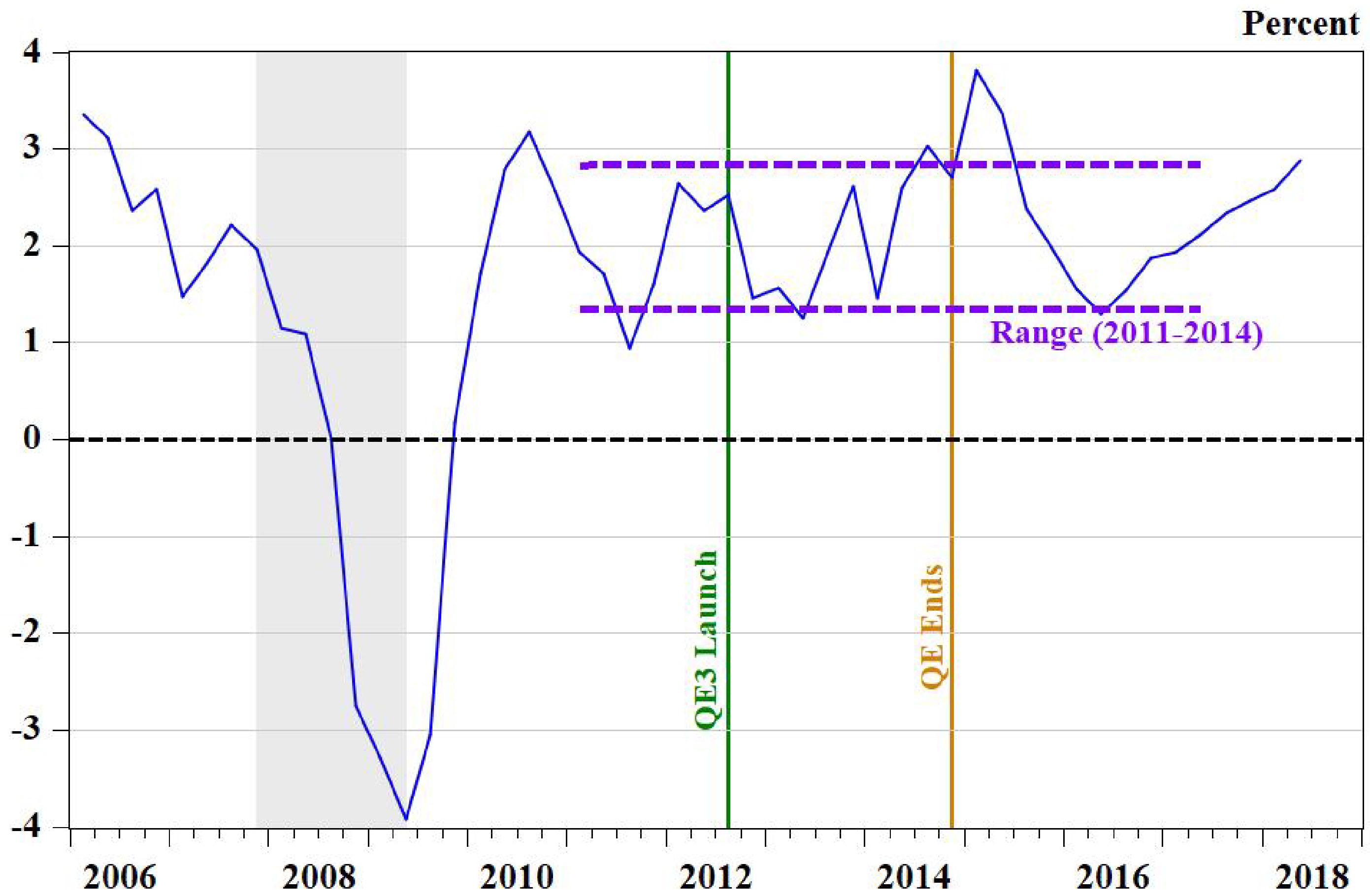
- A large empirical literature has found that conventional monetary stimulus affects output and jobs within a few quarters.
- By contrast, the launch of QE3 had only negligible effects on growth of U.S. real GDP and employment over subsequent quarters.
- Likewise, QE3 had no apparent impact on core inflation, which was actually lower in 2014-15 compared with its level in 2011-12.

Did QE3 Affect Nonfarm Payroll Growth?



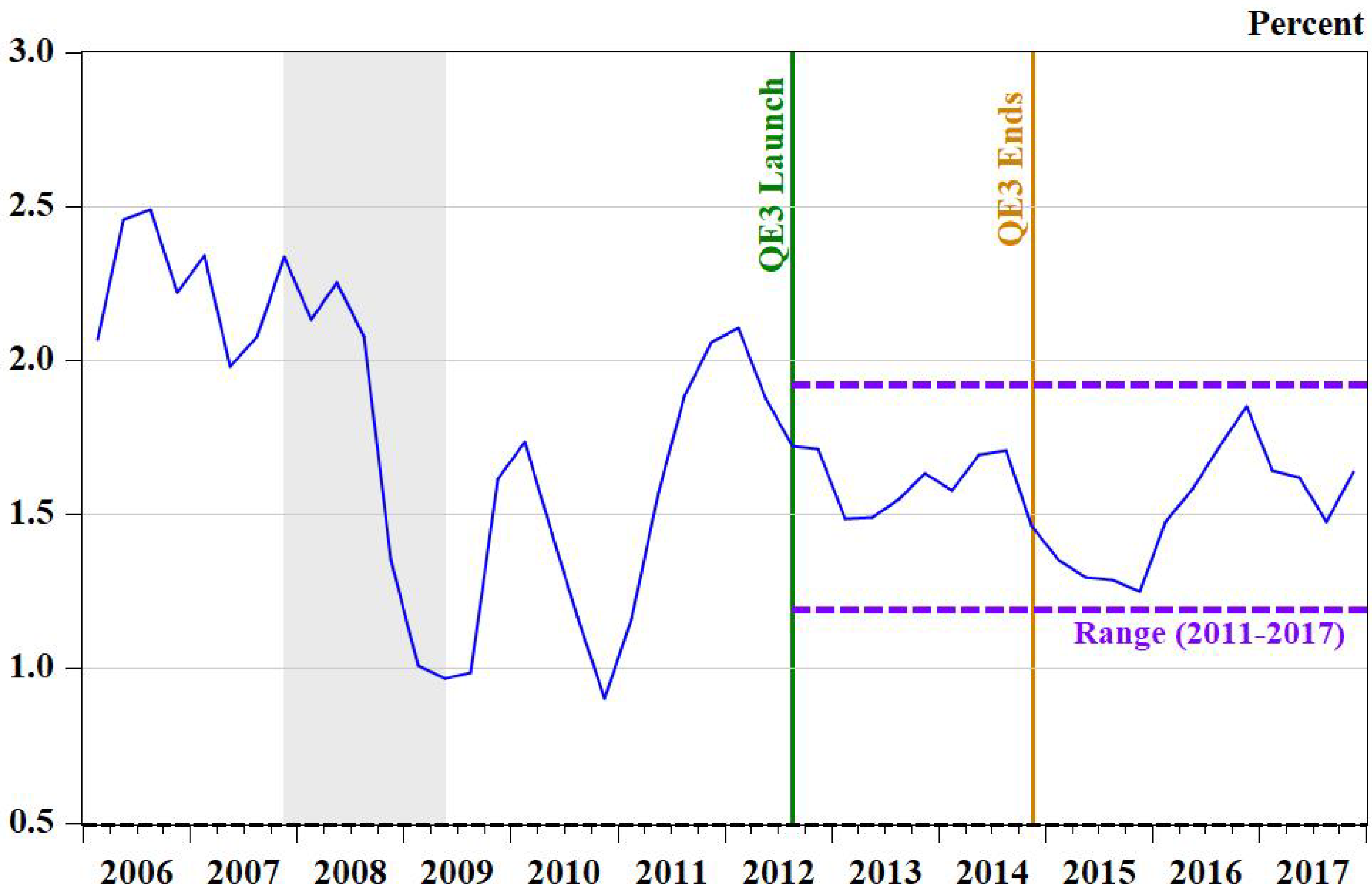
Source: U.S. Bureau of Labor Statistics

Did QE3 Affect Real GDP Growth?



Source: U.S. Bureau of Economic Analysis (4-quarter chg, %)

Did QE3 Affect Core PCE Inflation?



Source: U.S. Bureau of Economic Analysis (4-quarter chg, %)

How about a "Make-Up" Strategy?

- **Even a severe adverse shock may not induce rapid disinflation, leaving little to "make up."**
- **Bernanke, Kiley & Roberts (2019) analyze FRB/US model simulations and find that macro stability "...is not much improved by inclusion of the price level gap" and that flexible PLT can perform "very poorly" if inflation expectations fail to adjust to the policy regime.**
- **The limits of forward guidance are evident in other recent models *(McKay et al. AER 2016; Angeletos & Lian AER 2018; Gabaix 2018).***

The Fed's "Severely Adverse Scenario"

Date	*Unemployment*	*CPI Inflation*
2019:Q4	**8.4%**	**1.8%**
2020:Q4	**9.9%**	**2.0%**
2021:Q4	**9.9%**	**2.0%**

Source: "2019 Supervisory Scenarios for Annual Stress Tests Required under the Dodd-Frank Act", February 2019

Fundamental Goals of the Monetary System

- An efficient medium of exchange for economic & financial transactions.
- A secure store of value with essentially the same rate of return as other risk-free assets.
- A stable unit of account that facilitates the decisions & plans of households and firms.

➢ The monetary system should be particularly convenient and efficient for less-sophisticated families and small businesses.

The Lilley & Rogoff Proposal

(see also Agarwal & Kimball 2013, 2019)

- **Non-unitary exchange rate** between two forms of central bank liabilities: paper cash vs. bank reserves held at the central bank.
- The nominal value of paper cash would depreciate during periods of negative rates, thereby **mitigating arbitrage incentives**.
- However, such an arrangement would be **complex and opaque**, with an acute burden on ordinary consumers and small businesses.
- For practical purposes, this approach might be equivalent to simply **abolishing paper cash**.

The Bordo-Levin Proposal
(see 2018 Hoover e-book & 2019 NBER WP)

- **An account-based system of digital cash can provide an efficient medium of exchange.**
- **Public-private partnerships between the central bank and commercial banks will foster innovation, preserve privacy, and promote financial stability.**
- **The interest rate on digital cash can serve as the primary tool of monetary policy.**
- **The central bank can foster true price stability & more rapid economic recovery from shocks.**

Key Elements of Our Proposal

- **Individuals & businesses should remain free to use paper cash or private payments.**
- **Fees should be imposed on large transfers between digital cash and paper cash, thereby curtailing arbitrage and eliminating the ELB.**
- **Moderate amounts of digital cash balances should be exempt from negative interest rates.**
- **Thus, the central bank could respond to severe adverse shocks while ensuring that no implicit taxes or fees would be imposed on ordinary households and small businesses.**

Digital Cash and Financial Stability

- **In a financial crisis, cutting the digital cash interest rate below zero would prevent runs from other assets into digital cash.**
- **A temporary surge in risk spreads would be reflected in a lower risk-free rate, insulating the nonfinancial economy from the crisis.**
- **A relatively steep yield curve would foster bank lending and rapid recovery, in contrast to unconventional tools that flatten the yield curve and hence induce imprudent behavior in conjunction with a sluggish recovery.**

Near-Term Practical Steps

The Federal Reserve can take two key near-term steps towards implementing U.S. digital cash:

- **Establish a real-time payment system (RTPS), enabling consumers and businesses to make instantaneous and secure payments at practically zero cost**
- **Encourage narrow banks, which can offer safe and liquid accounts that accrue roughly the same interest rate as U.S. Treasury bills**

Synopsis / Score Card

	Current System	*Lilley & Rogoff Proposal*	*Bordo & Levin Proposal*
Provides Tools for Mitigating Severe Shocks	No	Yes	Yes
Works Well for Vulnerable Families & Small Businesses	No	No	Yes
Facilitates Clear & Systematic Monetary Policy	No	No	Yes