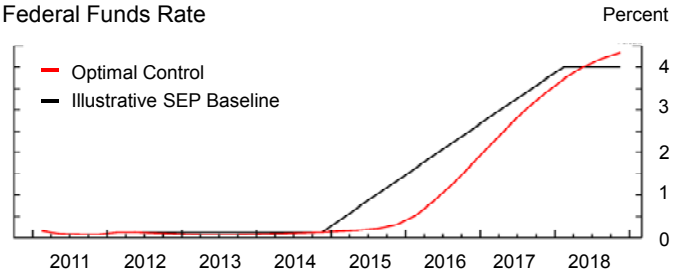
Evaluating the Stance of Policy

Assessing the Projected Liftoff Date: Optimal Control

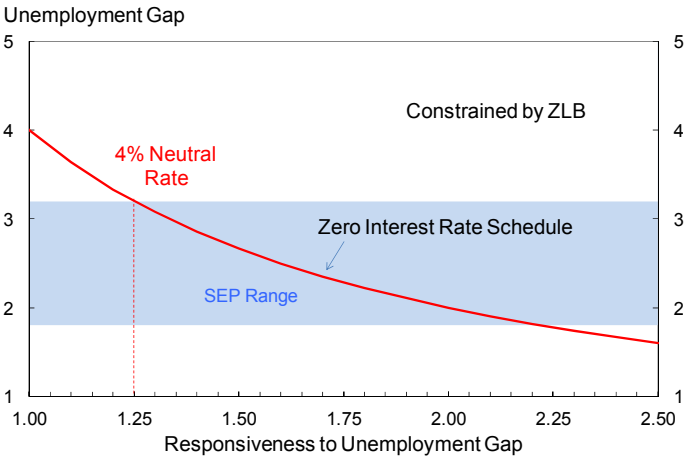


Source: Yellen (April 11, 2012)
www.federalreserve.gov/newsevents/speech/yellen20120411a.htm

FRBUS Simulations

- Lift-off under optimal commitment policy is much beyond 2014
- Caveats of optimal control exercises
  - Projections are for a specific model
    - specific loss function
    - model estimate of output gap
  - May not be robust to alternative models → use a simple rule

Sensitivity to Gap Estimates in 2012Q4



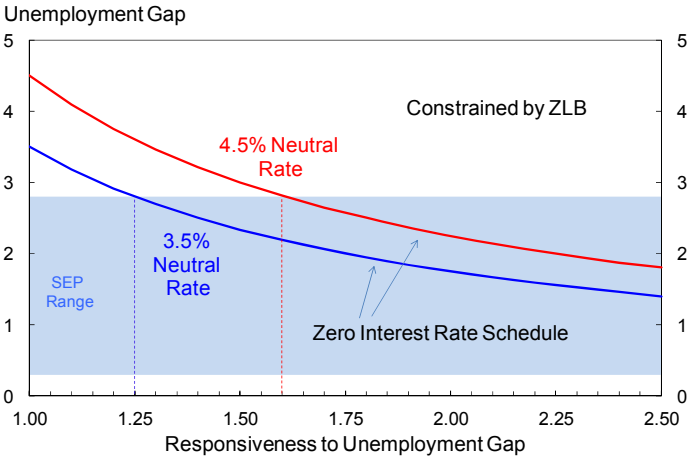
Source: Advance April FOMC SEP and FRBNY Staff Calculations

Simple Approach

FFR = neutral rate + response to π-gap + response to u-gap

- π-gap = 0; u-gap inferred from SEP range
  - 2012Q4: A response coefficient above 1.25 is consistent with zero interest rate given SEP estimates of gap
  - 2014Q4: A response coefficient above 1.45 is consistent with zero interest rate given SEP upper estimate of 2.8 for the gap

Sensitivity to Gap Estimates in 2014Q4



Source: Advance April FOMC SEP and FRBNY Staff Calculations

- Also, important to account for uncertainty about neutral rate
  - With a lower neutral rate a response coefficient above 1.25 is consistent with zero interest rate in 2014Q4 given SEP estimates of gap
- Estimates do not directly take into account unconventional measures
  - Additional easing estimated from LSAPs
    - See estimated effects on next page

Aggregate Impact of LSAP Programs

Financial Market Impact

Estimated Impact of LSAPs on the 10-Year Treasury Yield

Papers	Program Analyzed	Total Impact	Impact per $100 Bil
Hamilton and Wu (2010)	Simulated $400b T purchases at ZLB	-13 bp	-3 bp
Doh (2010)	LSAP1	-39 bp	-4 bp
D'Amico and King (2010)	LSAP1	-45 bp	-15 bp
Bomfim and Meyer (2010)	LSAP1	-60 bp	-3 bp
Gagnon et al. (2011)	LSAP1	-58 to -91 bp	-3 to -5 bp
Neely (2011)	LSAP1	-107 bp	-6 bp
Krishnamurthy and Vissing-Jorgensen (2011)	LSAP2	-33 bp	-5 bp
D'Amico et al. (2011)	LSAP2	-55 bp	-9 bp
Swanson (2011)	Twist/MEP	-15 bp	

Macroeconomic Impact

Estimated Impact of LSAPs on Various Macroeconomic Variables

Investigator	Variable of Interest	Assumptions (approx)	Total Effect
Macro Advisers [MA Model]	Real GDP (effect after 8 qtrs)	$600 Bil LSAP → -20 bp in 10Y Treasury	+ 0.4%
Boston Fed [BF Model]	Real GDP (effect after 8 qtrs)	N/A	+ 0.8%
" "	Unemployment (effect after 8 qtrs)	N/A	- 0.5%
SF Fed (Chung et al. 2011) [FRBUS]	Real GDP (effect after 8 qtrs)	$600 Bil LSAP → -20 bp in 10Y Treasury	+ 0.6%
Chen, Curdia and Ferrero [DSGE Model]	Real GDP (effect after 8 qtrs)	$600 Bil LSAP → -10 to -20 bp in 10Y Treasury	+ 0.1% to + 0.3%
" "	Inflation (effect after 8 qtrs)	" "	+ 0.02% to + 0.05%
Baumeister and Benati [SVAR]	Real GDP growth (effect after 1 qtr)	Shock of 60 bp to Treasury spread	≈ + 3.5%
" "	Inflation (effect after 1 qtr)	" "	≈ + 1.0%