

Discussion: “The Reanchoring Channel of QE – The
ECB’s Asset Purchase Programme and Long-Term
Inflation Expectations”

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- ▶ If so, what is the channel?
- ▶ This paper argues that an important channel acts through moving private sector inflation expectations and re-affirming the central bank's commitment to an inflation target.

- ▶ Recap of paper
- ▶ Comments
 - ▶ Important question
 - ▶ Intriguing and plausible channel
 - ▶ Nice combination of empirical evidence and modeling framework
 - ▶ Caution with quantitative interpretation
 - ▶ Why should private sector inflation expectations move with central bank asset purchases?

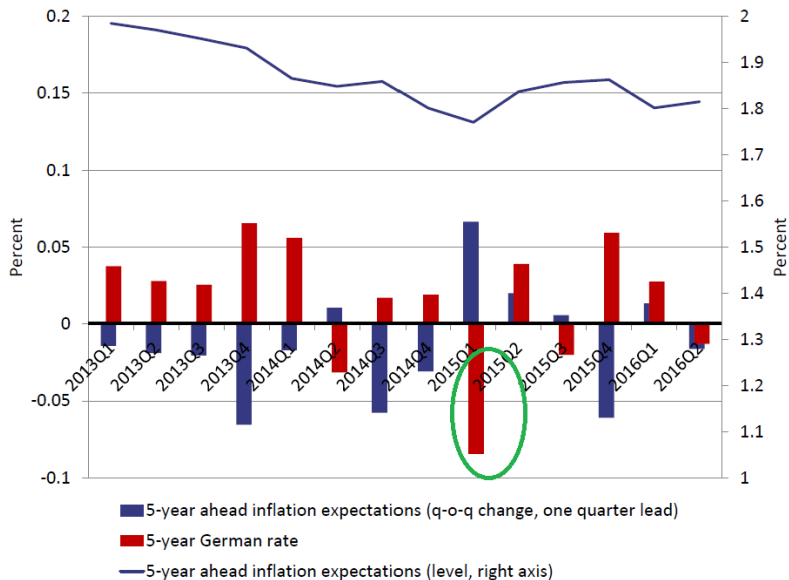
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- ▶ Relate change in 5-year inflation expectations to lagged 5-year German yield surprise

Key Policy Date: 2015q1



What Happened on 22/01/2015?

- ▶ ECB announced “expanded asset purchase programme”
- ▶ Committed to purchase EUR 60 bn per month of public and private securities purchases
- ▶ Program expected to last until September 2016 or until inflation reaches close to 2%

Results Driven by Post-2013 Period

	(1) Post 2013	(2) Pre 2013	(3) APP
	Change in 5-year-ahead inflation exp		
5-year German yield surprise	-0.599*** (-4.392)	0.0932 (1.551)	-0.583** (-3.151)
Sample	2013q1-2016q2	2001q1-2012q4	2014q2-2016q2
Observations	15	47	10
R-squared	0.523	0.051	0.457

Robust t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

- ▶ Adjust standard errors for serial correlation!

- ▶ Builds on Gertler and Karadi's (2011) model of central bank intermediation in a New Keynesian economy
- ▶ Key addition: Inflation expectations linked to central bank asset purchases

- ▶ Intermediate long-term loans to private sector – households cannot lend directly
- ▶ Hold long-term government bonds – households constrained in government bond holdings
- ▶ Take short-term deposits from households
- ▶ Banks can divert a greater fraction of private loans than of government bonds, generating risk-adjusted leverage constraint

$$Q_t s_t + \Delta q_t b_t \leq \phi_t n_t$$

- ▶ $0 \leq \Delta < 1$: risk-weight of government bonds

- ▶ Purchases private loans $S_{g,t}$ and long-term government bonds $B_{g,t}$
- ▶ Finances purchases by issuing risk-free debt D_t

$$Q_t S_{gt} + q_t B_{gt} = D_{gt}$$

- ▶ No leverage constraint, but less efficient at intermediating
- ▶ Government pays efficiency cost τ per unit of private loans or government bonds on balance sheet
 - ▶ Why does equal efficiency costs for private loans and government bonds make sense? Would private sector purchases look less attractive if they had a higher efficiency cost?

- ▶ Short-rate

$$i_t^* = i + \rho_i(i_{t-1} - i) + (1 - \rho_i) [\pi_t^* + \kappa_\pi(\pi_t - \pi_t^*) + \kappa_y y_t] \\ + \kappa_{\Delta\pi}(\pi_t - \pi_{t-1}) + \kappa_{\Delta y}(y_t - y_{t-1}) + \varepsilon_t$$

- ▶ Asset purchases at zero-lower-bound

$$S_{gt} = \phi_{st} S_t \\ B_{gt} = \phi_{bt} B_t$$

- ▶ Risk-adjusted sum of asset holdings relative to steady-state output

$$\Psi_t = \frac{Q_t S_{gt} + \Delta q_t B_{gt}}{4\bar{Y}}$$

Expectations Formation

- ▶ Private sector's perceived inflation target

$$\pi_{t+1}^* = \rho_{\pi^{*e}} \pi_t^{*e} - \bar{\zeta} \{s_t - s_t^e\}$$

$$s_t = i_t - \zeta \Psi_t - [(1 - \rho_i) \kappa_\pi + \kappa_{\Delta\pi}] \pi_t - [(1 - \rho_i) \kappa_y + \kappa_{\Delta y}] y_t$$

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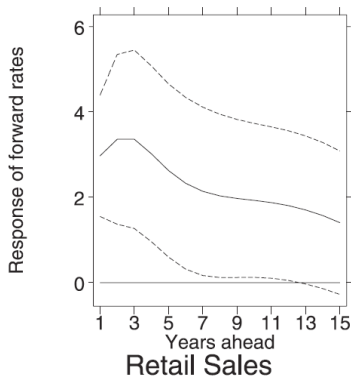
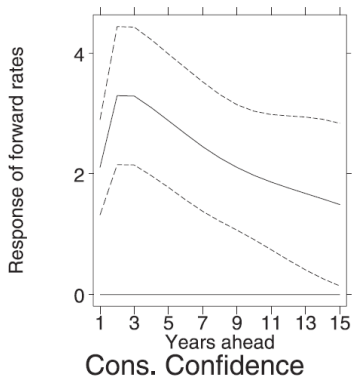
- ▶ Ψ_t : Risk-adjusted government asset purchases
- ▶ At zero-lower-bound without asset purchases \rightarrow private agents conclude that central bank is content with low inflation
- ▶ Central bank can use asset purchases to move perceived inflation target back up to true objective

Comments

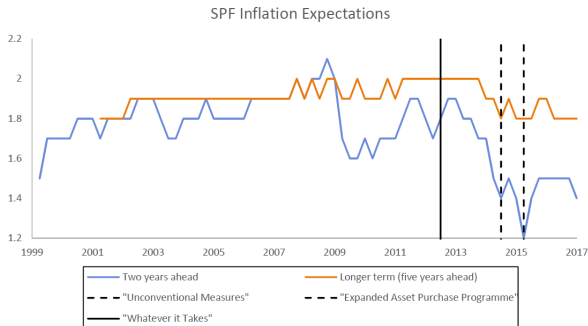
Why Time-Varying Inflation Target?

- ▶ The channel in this paper requires that the (perceived) long-run inflation target varies over time. Is this plausible?
- ▶ Long-term nominal bond yields move substantially on release dates of macroeconomic news (Gurkaynak, Sack and Swanson, 2005)
- ▶ New-Keynesian model with constant inflation target cannot generate plausible variation in long-term nominal interest rates
- ▶ Time-varying inflation target important for understanding risk properties of long-term bonds (Campbell, Pflueger, Viceira, 2015)

Nominal Bond Yield Responses to Macro Announcements (Gurkaynak, Sack, and Swanson, 2005)

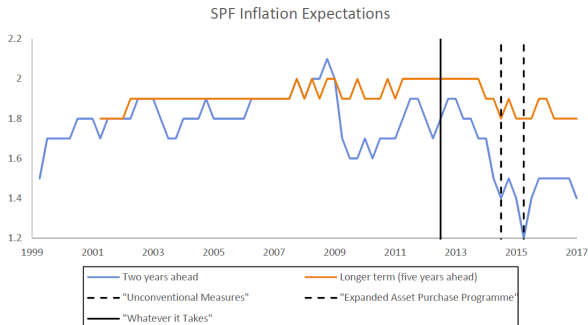


Long-Term SPF Inflation Forecast (ECB Website)



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- ▶ This is the most significant observation in the authors’ sample and precedes an increase in medium- and long-term inflation expectations

Maturity Structure of Inflation Expectations

- ▶ 2-year inflation expectations increased much more than longer-term inflation expectations after expanded asset purchase programme announcement
- ▶ A quick glance suggests that this is consistent with the model
- ▶ Use richer inflation expectations data to further pin down the model?

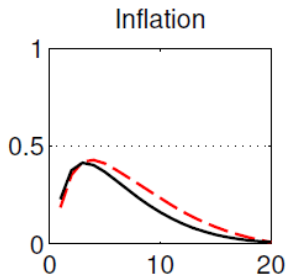
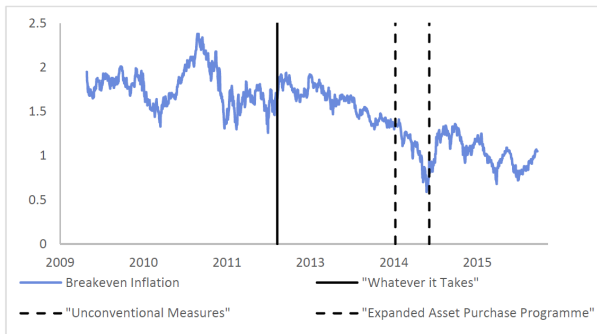


Figure 9: Baseline Policy Impact (Red Dashed) and Equivalent Monetary Policy Shock (Black Solid)

Do All Asset Purchases Drive Inflation Expectations?

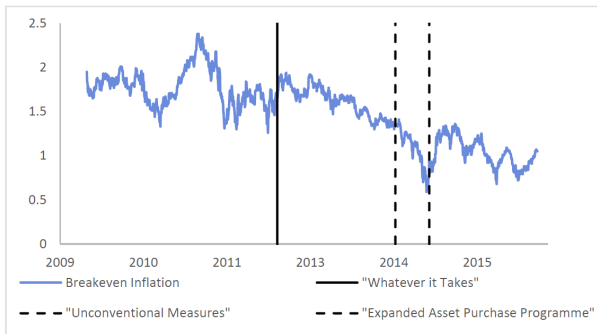
- ▶ On July 26, 2012 Mario Draghi introduced the Outright Monetary Transactions (OMT) programme, allowing the ECB to theoretically purchase unlimited amounts of government bonds in secondary markets
- ▶ “Whatever it takes to save the Euro...” is often cited as the most important unconventional monetary policy event in Europe (Acharya, Eisert, Eufinger, Hirsch, 2016)
- ▶ But inflation expectations remained constant
- ▶ Important open question: Why do some policies move long-term inflation expectations and other, apparently similar, policies do not?

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- ▶ Significant variation in long-term breakeven (std. 0.4%)
- ▶ Despite liquidity concerns in inflation-indexed bond markets, movements broadly consistent with survey expectations
 - ▶ No increase after "Whatever it takes..."
 - ▶ Substantial increase after extended asset purchase programme

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- ▶ But we also see a much larger sustained increase in breakeven that started slightly before policy announcement and continued well after
 - ▶ Breakeven trough: 0.59% on January 6, 2015
 - ▶ Breakeven peak: 1.36% on June 26, 2015

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- ▶ Is there a model counterpart for the substantial breakeven variation on non-monetary-policy dates?

The Perceived Inflation Target Rule

$$\pi_{t+1}^* = \rho_{\pi^*e} \pi_t^{*e} - \tilde{\zeta} \{s_t - s_t^e\}$$

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- ▶ The parameter ζ is hard to estimate and important for quantitative implications
- ▶ A rational expectations framework might provide guidance why some interventions affect inflation expectations but others do not
- ▶ Simple exercise: Plot impulse responses for perceived private sector inflation expectations against rational expectations. Are they similar?

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1. Shock to perceived inflation target
 2. Shock to government bond purchases w/o effect on inflation expectations
 3. Shock to private sector purchases w/o effect on inflation expectations

Conclusion

- ▶ Timely topic: We still need better understanding of inflation anchoring and perceived inflation target
- ▶ Channel is plausible: European long-term inflation expectations increased substantially after January 2015 policy announcement
- ▶ Given the novelty and difficulty in estimating required parameters, caution is warranted with quantitative interpretation
- ▶ Why do private sector inflation expectations (sometimes) move with large scale asset purchases?