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ECB policy consistency – loss of independence and the real estate bubble?

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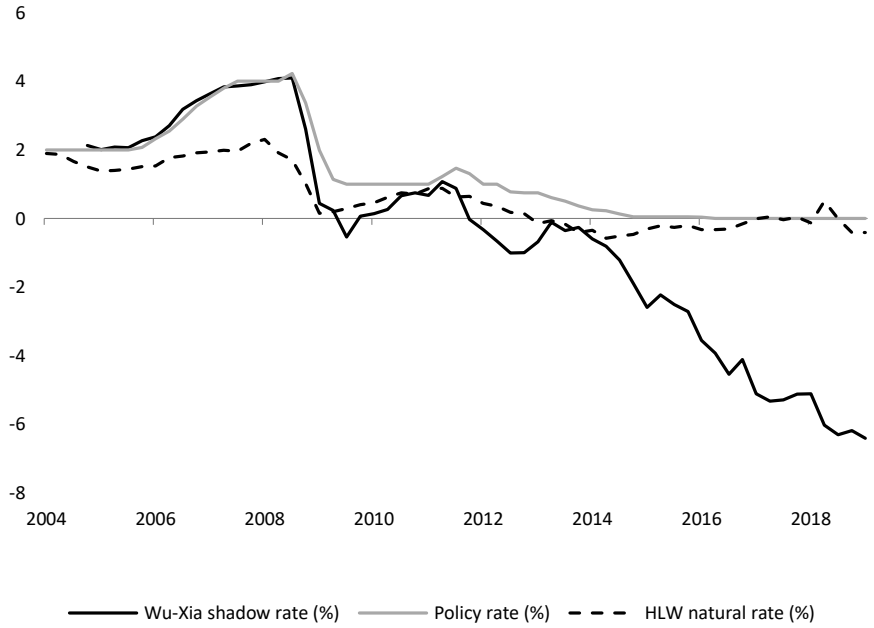
Recent trends in the real estate market 2019

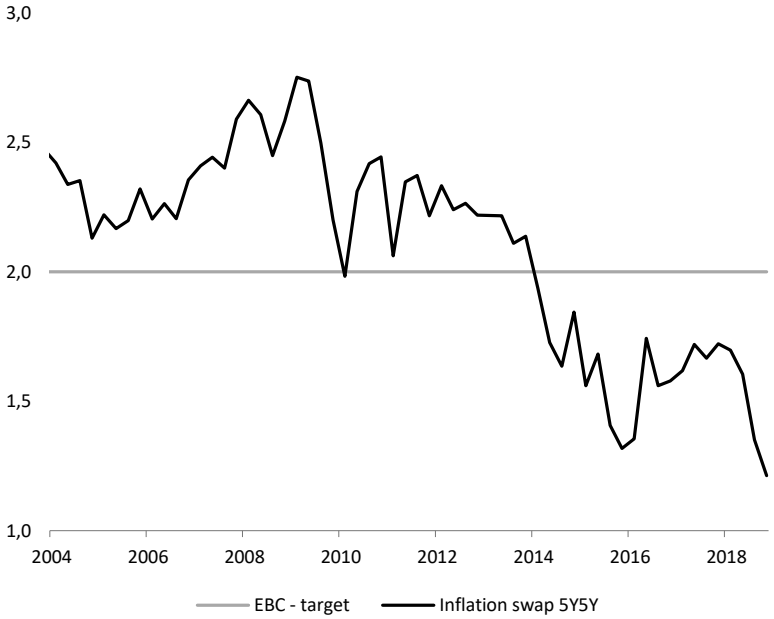
5 December 2019, Warsaw

Motivation: Is ECB Policy – consistent?



- Large scale asset purchases resulted in strong divergence from the natural rate.
- Forecasts explaining launch of PSPP in 2015 were not meaningfully different from the one, which concluded purchases.
- Divergence between European and US policy.

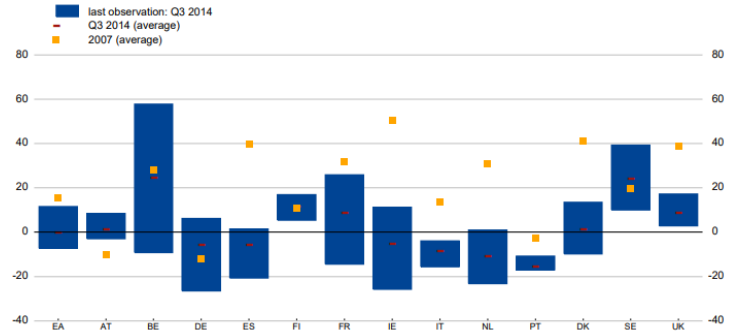
Motivation: Does this policies worked?



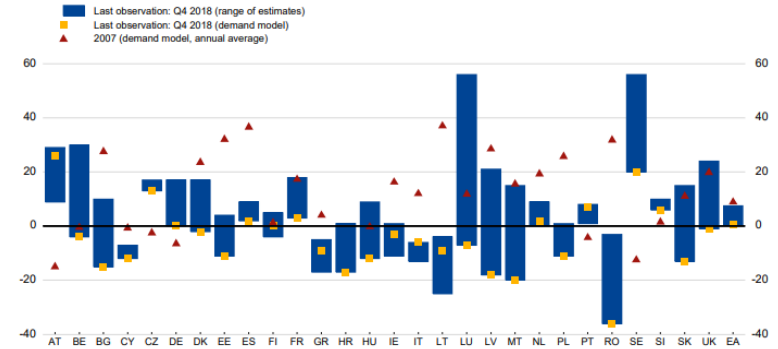
- Despite LSAP inflation expectations of market participants actually fell.
- Literature: Strong accommodation of monetary policy does not proportionately impact long-run expectations (Eusepi et al 2018).

Motivation: Adverse impact on housing?

ESRB assessment of housing prices in 1Q of 2015



And present (2Q 2019)



- In 2015 European Systemic Risk Board (ESRB) concluded that real estate markets (RE) in Eurozone countries are undervalued.
- Presently they are overvalued in nearly all countries.

- Monetary policy has distributional effects. Change in RE markets has social implications.

Hypothesis.

- Continuation of PSPP in 2015-2018, resulted in an increase of ECB discretionary dovish bias.

- This dovish, discretionary bias played a major role in deteriorating housing affordability in the major European cities, measured by an UBS real estate bubble.

Literature review.

- Disagreement about distributional effects of monetary policy:
  - Japan: LSAP policies increased inequality measured by Gini coefficient (Saiki & Frost 2014)
  - US: response of consumption and expenditures by high net-worth households on contractionary monetary shocks is larger than that of low net-worth households in the data (Coibion et al. 2017)
  - Eurozone: No single conclusion. Strong Heterogeneity between countries.
    - DSGE models suggest that wealth increase related to financial assets is mitigated by labor income increase (Selezneva et al. 2015, Hohberger et al. 2019).
    - Response depending on household saving structure and redistributable fiscal policies (Adam & Tzamourani 2016, Guerello 2018).
    - Italy: Reverse Robin Hood policy (Casiraghi et al 2018)

Step 1: Measuring discretionary bias.

- Discretionary bias = residual of extended Taylor rule. Standard formula:

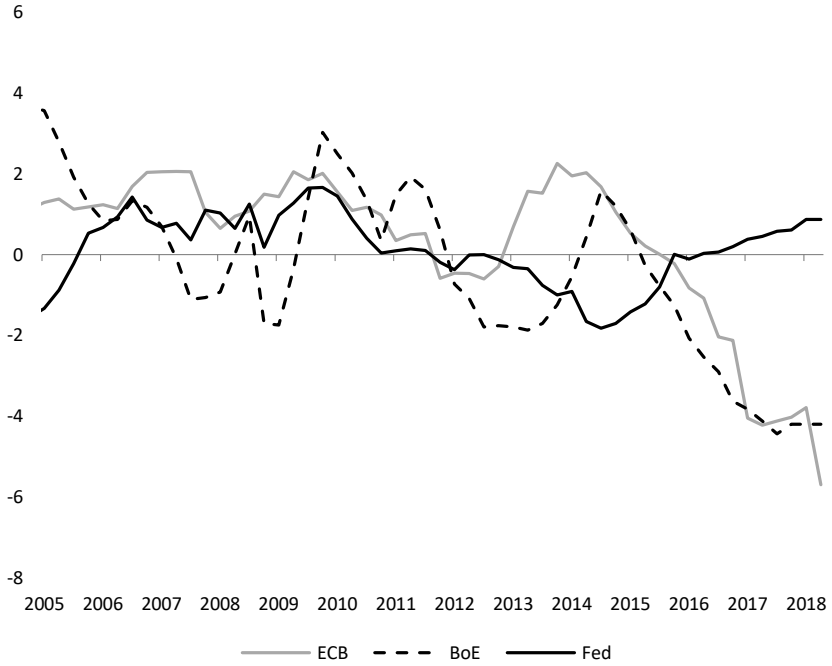
$$i_t = i_t^* + \beta_1 * (\pi_t - \overline{\pi_t}) + \beta_2 * (y_t - \bar{y}_t) + e_t$$

- Two modifications:
  - Application of Wu-Xia shadow rate (Wu-Xia 2016) to account for existence of zero lower bound ($WXSR_t$)
  - Time-varying natural rate estimates produced by HLW model (Holston et al. 2017) - $HLWNR_t^*$

- Final formula:

$$WXSR_t = HLWNR_t^* + \beta_0 + \beta_1 * (\pi_t - \overline{\pi_t}) + \beta_2 * (y_t - \bar{y}_t) + e_t$$

Step 1: Measuring discretionary bias.



- Residuals were smoothed by a Kalman filter.
- Results:
  - Strong divergence between policy in Europe and United States since introduction of PSPP by ECB.

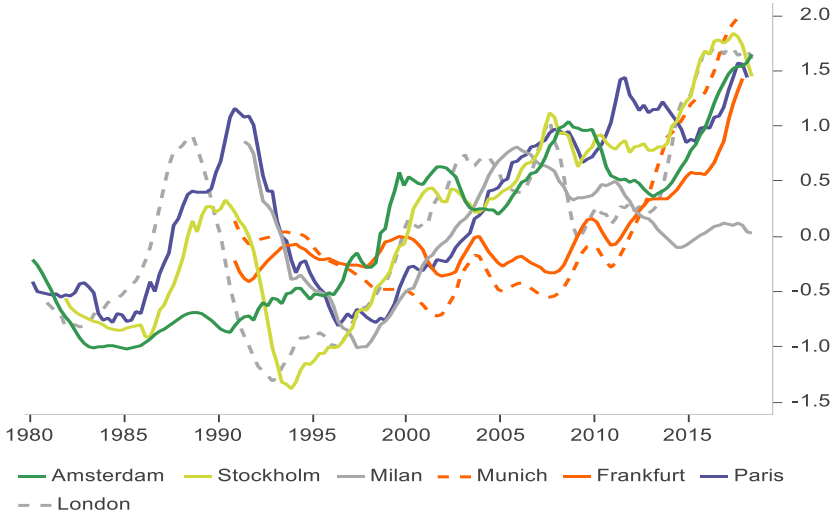
Step 2: Does discretionary bias inflated bubble?

- We propose a following VARX model

$$\begin{bmatrix} \Delta disc_t \\ \Delta bbl_t \end{bmatrix} = \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} + \begin{bmatrix} \alpha_{1,1} & \alpha_{1,2} \\ \alpha_{2,1} & \alpha_{2,2} \end{bmatrix} * \begin{bmatrix} \Delta disc_{t-1} \\ \Delta bbl_{t-1} \end{bmatrix} + \begin{bmatrix} \alpha_{1,3} \\ \alpha_{2,3} \end{bmatrix} * (y_t - \bar{y}_t) + \begin{bmatrix} e_{1,t} \\ e_{2,t} \end{bmatrix}$$

- Where
  - Δbbl_t denotes change of lagged UBS index value
  - $\Delta disc_t$ change of discretionary bias
  - $(y_t - \bar{y}_t)$ output gap

UBS Index – definition.



Values between 0.5 and 1.5 denotes significant overvaluation. Values above 1.5 high risk of bubble.

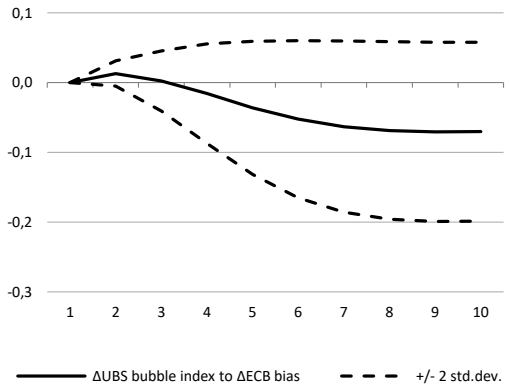
- An composite indicator describing:
  - Price to income ratio
  - Price to rent ration
  - Construction (%GDP)
  - Mortgage credit (%GDP)
  - Prices in the city vs. countryside
- Methodology:
  - Prices of dwelling with 60m2 are collected.

VARX – Model Estimations

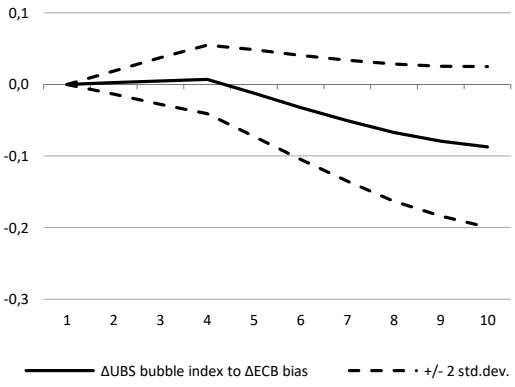
City:	Frankfurt		Munich		Amsterdam		Milan		Paris	
	ΔBbl Ind.	ΔECB bias	ΔBbl Ind.	ΔECB bias	ΔBbl Ind.	ΔECB bias	ΔBbl Ind.	ΔECB bias	ΔBbl Ind.	ΔECB bias
ΔBubble Ind. (-1)	1.16	-1.48	0.89	-0.89	0.57	-2.18	0.68	-0.14	0.34	0.41
	(0.14,8.07)	(2.61,-0.57)	(0.09, 9.81)	(1.68, -0.53)	(0.14, 4)	(2.13, -1.02)	(0.11, 6.45)	(2.06,-0.07)	(0.15, 2.18)	(1.1, 0.38)
ΔBubble Ind. (-2)	-0.46	1.01			0.46	-1.16			0.08	-0.07
	(0.14, -3.21)	(2.59, 0.39)			(0.15, 3.12)	(2.22, -0.52)			(0.16, 0.52)	(1.13, -0.06)
ΔBubble Ind. (-3)					-0.27	1.89			-0.31	0.47
					(0.14, -1.96)	(2.11,0.9)			(0.14, -2.21)	(1, 0.46)
ΔBubble Ind. (-4)			-0.15	-0.03						
			(0.07, -2.12)	(1.31, -0.02)						
ΔECB bias (-1)	0.01	0.08	0.00	0.14	0.00	0.03	0.00	0.06	-0.02	0.11
	(0.01, 1.43)	(0.16, 0.49)	(0.01, 0.29)	(0.15, 0.95)	(0.01, 0.17)	(0.17, 0.2)	(0.01, 0.28)	(0.16,0.39)	(0.02, -0.74)	(0.15, 0.74)
ΔECB bias (-2)	-0.03	0.20			0.02	0.16			-0.02	0.19
	(0.01, -2.98)	(0.16, 1.24)			(0.01, 1.55)	(0.16, 0.97)			(0.02, -0.96)	(0.15, 1.32)
ΔECB bias (-3)					0.01	0.07			0.00	0.07
					(0.01, 0.72)	(0.17, 0.43)			(0.02, 0.08)	(0.15, 0.48)
ΔECB bias (-4)			-0.02	0.01						
			(0.01, -2.23)	(0.17,-0.05)						
ΔOuput gap	-0.01	-0.15	0.00	-0.20	0.02	-0.18	-0.01	-0.32	0.07	-0.34
	(0.01, -0.75)	(0.16, -0.93)	(0.01, -0.17)	(0.15, -1.32)	(0.01, 1.16)	(0.2, -0.86)	(0.01, -0.65)	(0.17, -1.9)	(0.04, 1.66)	(0.29, -1.15)
Constant	0.01	-0.04	0.01	-0.03	0.01	-0.06	0.00	-0.13	0.01	-0.07
	(0, 1.98)	(0.08, -0.54)	(0.01, 1.88)	(0.11, -0.3)	(0.01, 1.8)	(0.08, -0.7)	(0, -1.12)	(0.08, -1.6)	(0.01, 1.22)	(0.08, -0.95)
R-squared	0.77	0.11	0.77	0.07	0.66	0.13	0.47	0.09	0.34	0.12
Adj. R-squared	0.75	0.01	0.75	-0.03	0.60	0.00	0.44	0.03	0.24	-0.01

VARX – Cumulative responses

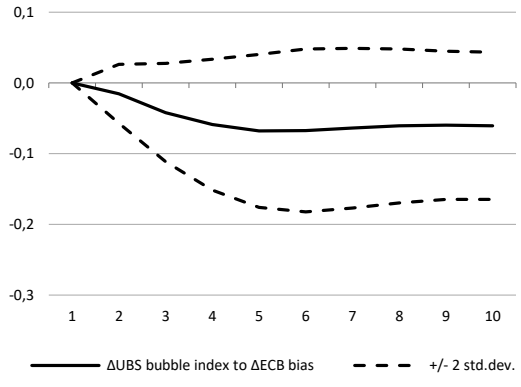
Model 1: Accumulated Response to One Unit Innovations for Frankfurt



Model 2: Accumulated Response to One Unit Innovations for Munich



Model 3: Accumulated Response to One Unit Innovations for Paris

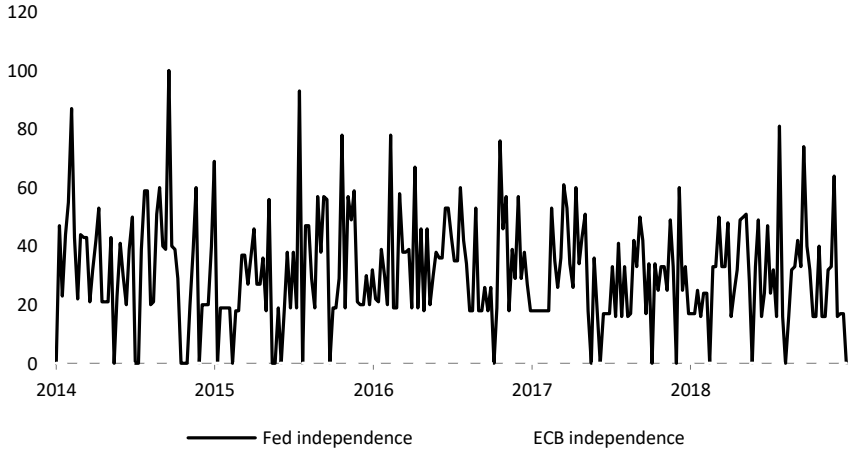


Conclusions

- Strong dovish discretionary bias
- Impact of monetary policy on housing affordability ambiguous – negative consequences in the major economies, Netherlands an exception.
- Problem: Perception of ECB policy as focused on Eurozone elites

Policy Implications

Google trend web search for central banks' policy independence



Higher number denotes greater number of searches.

- Article: Governor Rajan (2019) - Central Banks Are the Fall Guys:
  - Adverse impact of living conditions, perception of policy for elites only result in rise of populist movements. This happens.
  - Good communication required. Meanwhile ECB forfeited forward guidance two weeks after its introduction (July 2019).
- Preference of dovish candidates in the Eurozone?
  - Risk of another extreme events like Brexit.

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