Discussion of "Yield-oriented investment behaviour in debt securities markets"

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This paper in a nutshell

Research question: *"How do yield-oriented fixed income investors allocate assets when market yields are expected to be low for long?"* → Can we find evidence for search-for-yield when government bond yields decrease and what are the implications in terms of risk exposure and financial stability ?

- German securities holdings database (2005-2016)
- Focus on 4 portfolios, corresponding to 4 types of investors: banks, investment funds, insurance companies and pensions funds (ICPF), households
- Allocation in 474 groups of debt securities (rating/maturity/issuer/currency) in response to changes in the level of 10y Bund yield
- Exposure to tail risk: VaR of each portfolio
- Response to a large market shock (Bund tantrum)

Main results

- Mostly intuitive results: confirm search-for-yield for investment funds, ICPF and households, but not for banks

Table 1: Change in portfolio risk exposure across investor types, following a decrease in 10y Bund yield

	Banks	Invest Funds	ICPF	Households
		Relative to banks		
Maturity risk	↘	↗	↗	↗
Credit risk (ratings)	↘	↗	↗	↗
Corporate risk	↘	↗	↗	↗
Currency risk	NS	↘	NS	↗

- Over 10 years VaR increased for the three sectors (almost tripled for HH!), but not for banks
- Following a large yield shock *"yields of bonds held by HH, ICPF and Investment funds increase more during the Bund tantrum than bond held by the banking sector"*, with longer-term maturity debt, lower rated and corporate debt offloaded first

Challenges

- Portfolio allocation could reflect the evolution of relative asset supply (market clearing: someone has to hold what is issued) and the response of the issuer side
  → Panel regression with fixed effects at the security-time level
- Endogeneity bias: investors invest in bonds depending on their yields, but it could be the other way round ie. yield fall to accommodate an increased demand from investors
  → assume yield shock is exogenous
- What's the correct measure for search-for-yield ?
  → Holdings in different asset classes, depending on their rating/maturity/issuer/currency
- What's the correct measure for low-for-long environment ?
  → 10y Bund level

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Three main empirical tests

Portfolio allocation

$$Portfolio\ weight_{i,s,t} = \beta_i * i_{t-1}^{10YBund} * Investor\ dummy_i * Security\ dummy_s ... + FE_{i,t} + FE_{i,s} + FE_{s,t} + \epsilon_{i,s,t} \quad (1)$$

Concentration of holdings

$$Market\ share_{i,s,t} = \beta_i * i_{t-1}^{10YBund} * Investor\ dummy_i * Security\ dummy_s ... + FE_{i,t} + FE_{i,s} + FE_{s,t} + \epsilon_{i,s,t} \quad (2)$$

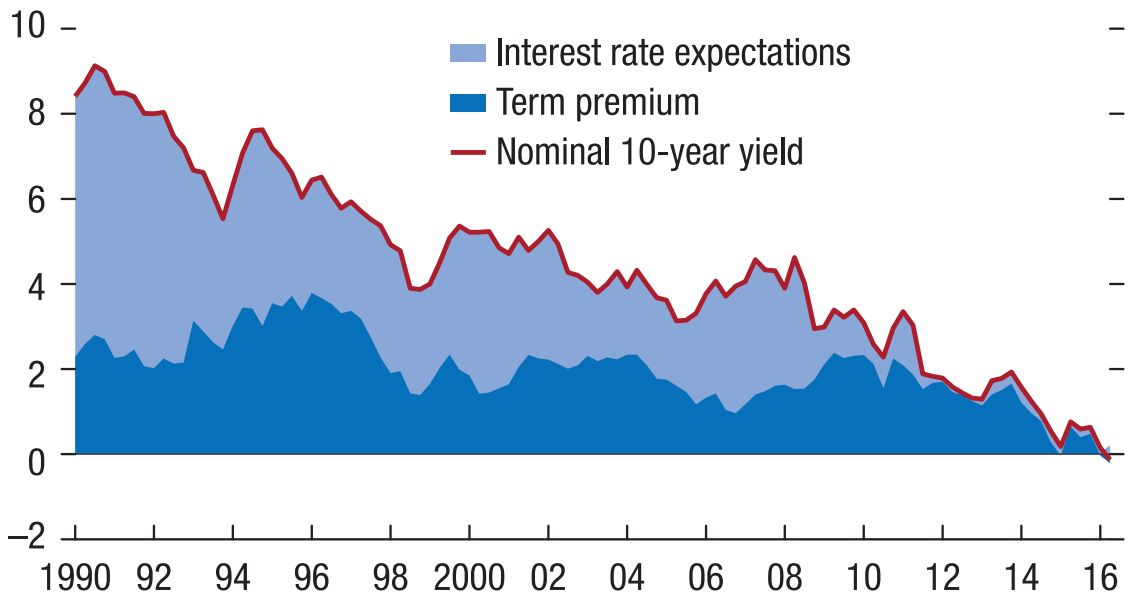
Response to a large shock in yields (security level, -/+ 7month around Bund tantrum)

$$Log(net\ sells)_{i,j,t} = \beta_i * Bund\ tantrum\ dummy_t * Investor\ dummy_i * Security\ dummy_s .. + FE_{i,t} + FE_{i,j} + FE_{j,t} + \epsilon_{i,s,t} \quad (3)$$

Is the paper really about low-for-long yield environment ?

"the 10-year Bund yield captures the long-term expectations vis--vis future short-term nominal interest rates such that a low 10-year Bund yield suggests that interest rates are (expected to be) low for long" (p13)

Figure 1: German 10y Bund yield decomposition

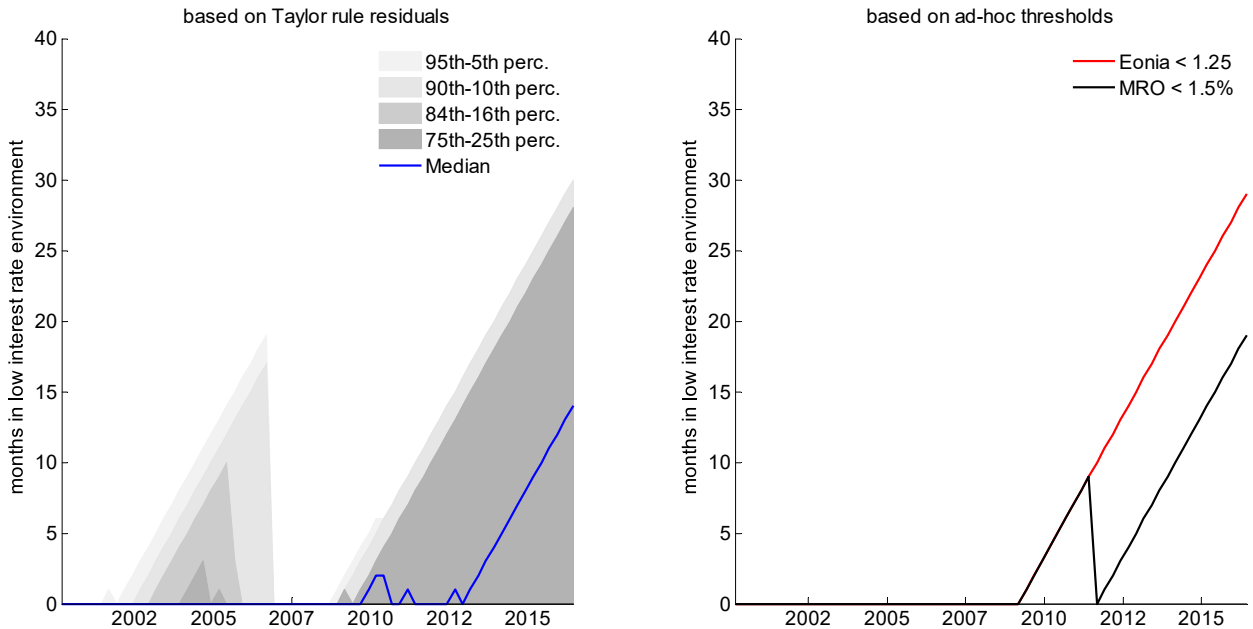


Source: IMF GFSR Oct 2016, decomposition based on Wright (2011)

Is the paper really about low-for-long environment ?

- Forward OIS ?
- Implied duration of (abnormally) low rates ?

Figure A1.4: Measures of low for long



Note: the chart shows the measures of low-for-long used in Table 3. The left panel illustrated the distribution of the low-for-long measure obtained by counting the number of consecutive quarters in which residuals of a forward-looking Taylor rule are negative. The right panel reports two alternative measures of low-for-long obtained by counting the number of consecutive quarters in which the MRO and EONIA rates are below 1.5% and 1.25%, respectively.

Source: Altavilla et al. (2017)

Are ICPF, HH and IF yield-oriented investors ?

In KKNY (2018), using SHS data for the EA as a whole (2013-2017): Foreign investors, Investment funds found as the most yield-sensitive investors

	(1) ICPF	(2) Bank	(3) MutFunds	(4) Other	(5) HH	(6) Foreign
Yield (pp)	0.907**	1.344**	1.364**	2.991***	0.155	4.215***
	(0.362)	(0.602)	(0.531)	(0.955)	(0.923)	(1.089)
log(GDP_n)	0.853***	1.109***	1.055***	1.095***	0.625***	1.591***
	(0.0240)	(0.0344)	(0.0368)	(0.0630)	(0.0646)	(0.0779)
PD_n	-37.69***	-23.18	-20.28	-79.11***	3.673	-118.7***
	(10.41)	(16.63)	(15.11)	(26.34)	(24.51)	(31.64)
Home_nh	3.971***	5.149***	3.381***	5.012***	5.450***	
	(0.122)	(0.116)	(0.146)	(0.141)	(0.120)	
Maturity	0.168***	0.0720	0.0452	0.0936	-0.129*	0.0342
	(0.0325)	(0.0448)	(0.0453)	(0.0733)	(0.0681)	(0.108)
Constant	-4.845***	-3.140***	-5.317***	-8.312***	-6.976***	-0.853
	(0.516)	(0.732)	(0.775)	(0.712)	(0.749)	(0.986)
Quarter	No	No	No	No	No	Yes
Holder country - Quarter	Yes	Yes	Yes	Yes	Yes	No

Note: The dependent variable $log(r_d)$ is the log ratio of holdings of government bonds (categories 1 and 2) by investors to holdings of the outside asset. The outside asset is non-government securities for euro area investors (categories 3 to 7). For foreign investors we use holdings of non-euro denominated bonds as the outside asset (source: IMF). Specifications (1) to (6) are respectively for ICPF, banks, Mutual Funds, Other, the Household sector and Foreign investors. The explanatory variable is the (face value) weighted average yield of government debt from country n in percentage points. GDP is the GDP of country n in 2014 in EUR trillion. PD is the probability of default of country n as of 2014q4. Maturity is the face value weighted average maturity of debt from country n in quarter t. Debt from Estonia, Greece, Cyprus and Luxembourg are excluded. Source: Koijen et al. (2018) Inspecting the Mechanism of Quantitative Easing in the Euro Area

Suggestions

- Yield or period return ? (with period return, Timmer (2018) finds quite different results)
- Study of the Bund tantrum is highly topical, could be reinforced by showing similar patterns during other large sell offs
- Evidence of a shift in tail risk exposure, increase in VaR
  - Have these institutions increased their capital?
  - Derivative positions, if available would provide a broader picture
- Value at risk measure is an important contribution, could be even extended to other asset classes (eg. stocks holdings, etc.)
- Promising section for extensions

Conclusion

- Very interesting paper, a lot of results relevant for financial stability
- Documenting the tail risk evolution over 10y is a key contribution, the paper could even focus and elaborate further on this
- Some quibbles on identification but overall careful econometric setup
- Looking forward to read the next version and other works based on this dataset!