



Limits to arbitrage: Empirical evidence from euro area sovereign bond markets

Discussion by
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Objectives

- Document the basis between US and EUR-denominated bonds for some Euro – area countries
- Explain the pricing anomalies:
 - ECB Haircuts
 - ECB liquidity facility
 - SMP
 - => monetary funding premium



Data and methodology

- Bloomberg bond prices
- ECB proprietary data
- Data Explorer
- Datastream

- Panel estimation and event study approach

Results

- The basis is quite large
- The price anomaly is:
 - due to the different haircuts
 - related to:
 - EUR-denominated bond pledge in exchange for liquidity
 - when the CDS is high
 - when LTRO has been implemented
 - SMP/ECB purchase of EUR-denominated bonds

Comments

- Very nice and interesting paper!
- It is addressing a challenging and difficult topic!
-advantages of proprietary data from ECB

Comments

- What is the ECB funding premium?
- What are the hypothesis that you need to make
 - in order to have a funding premium
 - so that arbitrageurs are not eliminating it?

Comments

- What is the economic impact of each drivers:
 - Bond characteristics
 - Risk factors
 - ECB funding premium:
 - Haircut levels
 - LTRO
 - SMP
 - CDS high

Comments

- What is the difference in terms of the persistence of the impact on the basis between:
 - LTRO
 - SMP
- Several works indicate that SMP is having only a short term effect, is it the same on US-EU bond basis?

Comments

	(1) Panel Analysis	(2) Event Study 8 December 2011
Sov. Collateral to Tot. Sov. Debt _{<i>j,t</i>}	17.294 (74.930)	
Sov. Collateral to Tot. Sov. Debt _{<i>j,t</i>} x D. High CDS _{<i>j,t</i>}	461.256*** (136.834)	
Sov. Collateral to Tot. Sov. Debt _{<i>j,t</i>} x D. 3y-LTROs _{<i>j,t</i>}	325.812** (146.123)	
D. 3y-LTROs _{<i>j,t</i>}	0.753 (5.621)	
D. High CDS _{<i>j,t</i>}	-44.384*** (7.113)	
D. After 1w-2w _{<i>t</i>}		20.475*** (5.825)
D. After 3w-4w _{<i>t</i>}		40.280*** (6.567)
D. After 5w-6w _{<i>t</i>}		26.040*** (6.637)
D. After 7w-8w _{<i>t</i>}		34.271*** (7.071)
Constant	6.489 (11.202)	55.348*** (5.327)
Other Control Variables	Yes	No
Country FE	Yes	Yes
Pair FE	No	Yes
<i>/rho</i>	0.837	0.789
Num. Obs.	3271	1077
<i>R</i> ²	0.098	0.439

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Comments

- The pattern of the basis is quite country specific.
- How much the results are country driven?
 - If you perform the same analysis country by country do you have similar results?



Comments

- Limited number of sample bonds (19 different pairs) which meet the principle of comparison.
 - How representative is this sample with respect to the universe of European bonds?
- The amount of outstanding: USD-denominated bond are much smaller than EUR-denominated bonds.
 - This affects yield as well as liquidity.
 - Do you control for this?

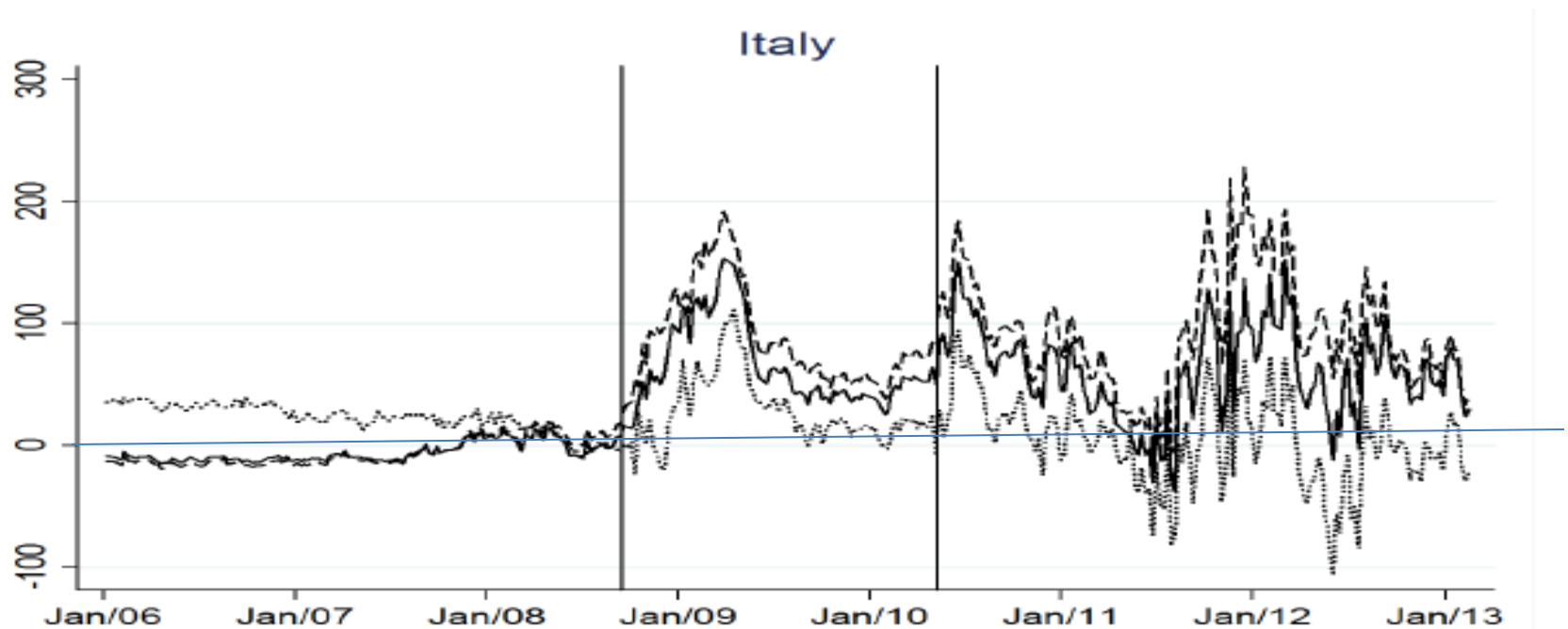


Comments

- “we account for the transaction cost based on the bid-ask spread”
 - Is this average Bid-ask spread for the day or at the end of day?
 - How about depth? An arbitrage opportunity is large enough to implement when you observe large, positive basis. Depth of executing side and opposite side might be different quantity.
 - Did you check the level of arbitrage activity by other measures?

Comments

The basis is quite different conditional on the way it has been calculated (see appendix B)



Comments

- The basis is quite different conditional on the way it has been calculated (see appendix B)
 - When calculated with fw contracts is almost zero... if you will include transaction costs it would be zero....
 - How do you consider transaction costs for the currency swap?
 - Why Spain data stop in January 2012?



Comments

- Cost of capital between the Euro bond and the syntetic Euro bond is different
- cc-swap is very expensive given the impact on the leverage ratio and potentially on the RWA
- In terms of funding the volatility related to collateral requirement for the cc swap can be very large and generate large cost of funding (mostly relevant for German banks)
 - All of this have an impact mostly on the tail risk of the transaction

Comments

- The EU-bond and the US-bond synthetic have different:
 - accounting rules and therefore a different impact on earning volatility
 - client base: not everybody could use cc-swap, and others face operational costs or accounting volatility very high.



To Sum up

- Very interesting paper!
- Enjoy reading it!