"The end of QE in the euro area: A game changer?"

Daniel Gros

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Bernanke: "*the problem with QE is it works in practice, but it doesn't work in theory*."

Take Bernanke seriously:

Did 'it' work in practice? Requires a digression on the US and a distinction between LSAP and QE.

Should it work in theory? Requires a digression on Portfolio balance

Main topic: experience/specificities of euro area

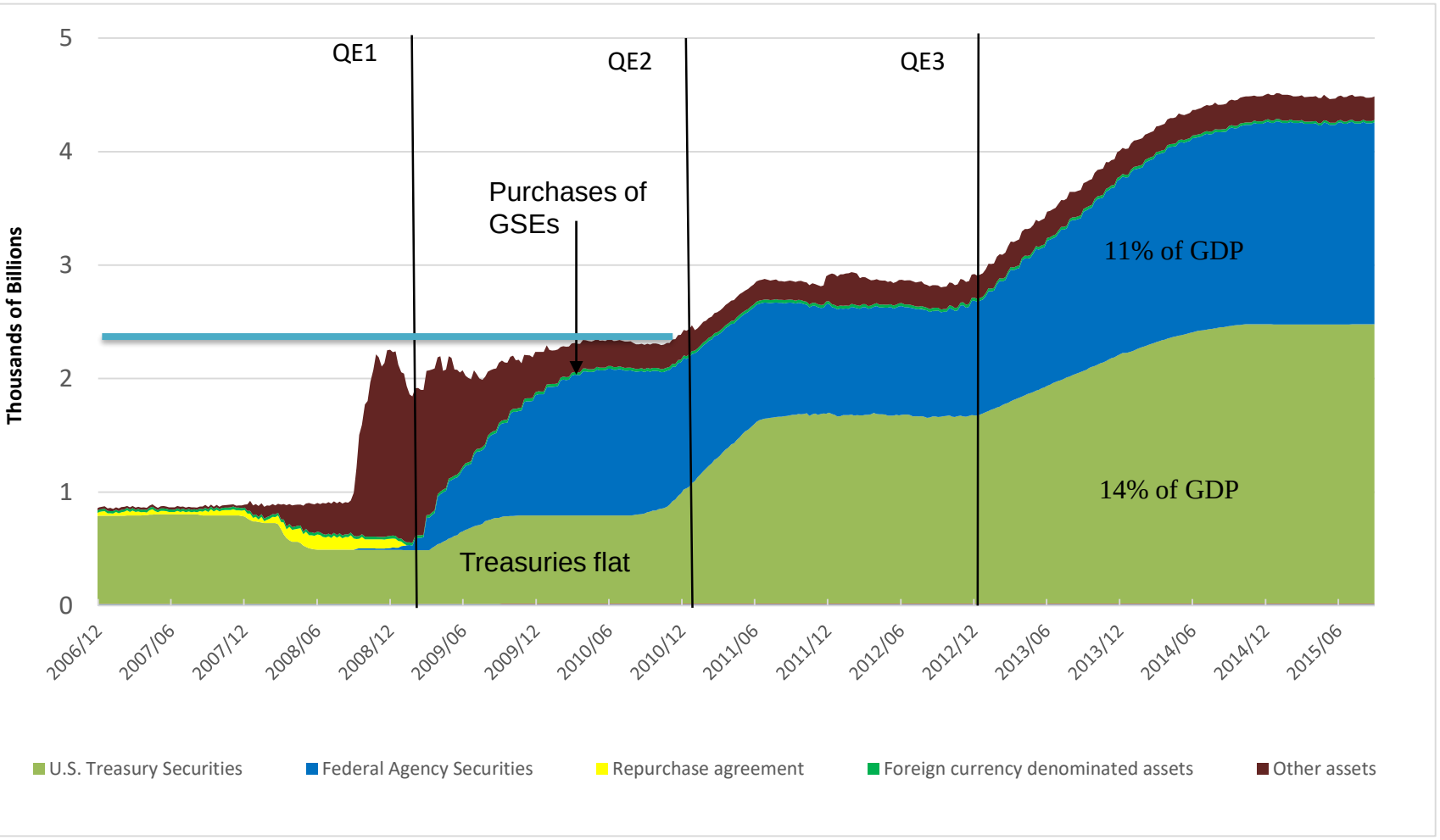
1. QE euro: A debt management perspective (+ fiscal aspects).
2. Measuring the impact of major ECB decisions
3. Event studies and the random walk hypothesis.
4. Conclusion on fiscal and monetary aspects.

Facts about LSAPS (in US)

- QE1 was preceded by ‘LSAS(ales)’ 2007/8
- QE1 did not increase balance sheet (was not supposed to, and was not targeted at Treasury securities).
- QE3 was by far the largest LSAP, but seemingly had smallest effect.

=> All difficult to reconcile with portfolio balance view.

The Fed's balance sheet and LSAPs

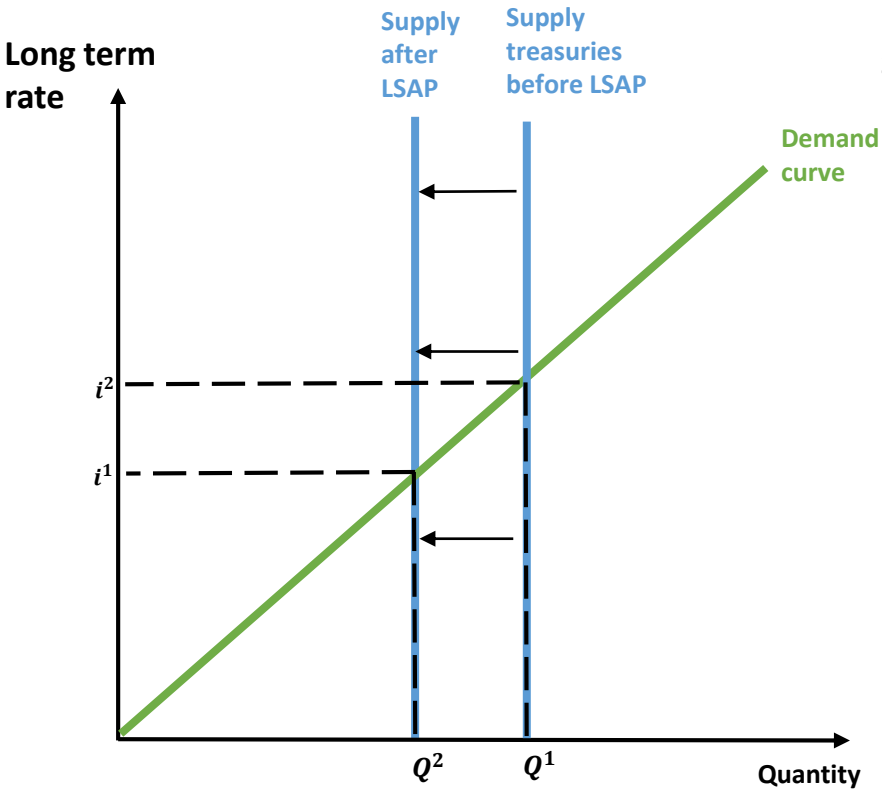


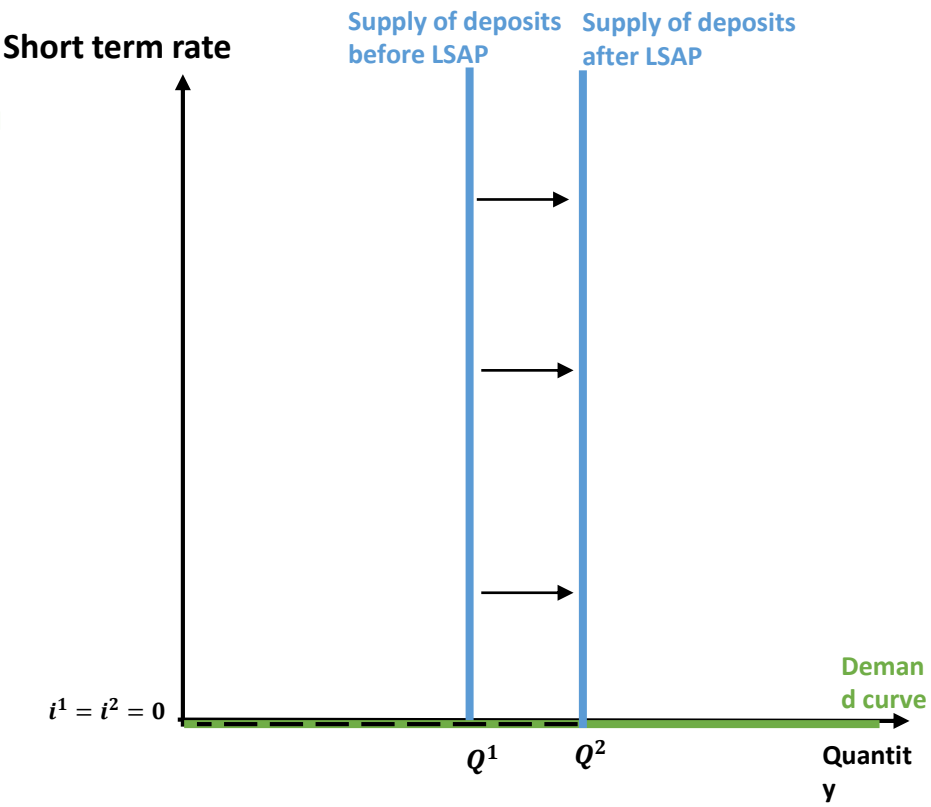
Portfolio balance effects

- Two conditions:

1. Must have ‘preferred habitat’ investors.
2. Must have **asymmetry,** short- versus long-term securities. (Otherwise some rates go up and others go down, with uncertain effect on demand – a basic point, often overlooked.)
3. (Logical corollary of portfolio balance: higher government debt means higher rates!)

Portfolio balance effect requires **asymmetry**





Quantitative Easing
Central bank balance sheets and
A debt management perspective

QE defined here as central bank purchases of government debt (narrower than ‘LSAP’)

QE on the balance sheet of the (consolidated) government (% GDP)

Assets

- Few real assets 10
- (Negative equity) 120

Central bank

- Government bonds……20

Total: 150

Liabilities

- Debt held by the public ..110
- Debt held by the Central Bank …….20

- Liabilities of central bank towards commercial banks (excess reserves) ….20

Total: 150

QE on the balance sheet of the (consolidated) government (% GDP)

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Total: 130

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Total: 130

QE = Monetary policy?
Or rather debt management?

- With own currency can consolidate central bank and treasury.
- QE = exchange of long term bonds against short term central banks deposits.
- **=> QE lowers average maturity of public debt.**
- QE could be undone by more long term issuance by national treasuries; (Greenwood et al. (2016)) ……. also by higher deficits(!)

PSPP = Monetary policy?
Or rather national debt management?

- Euro area QE (= PSPP) not considered 'normal' monetary policy operation: normal risk sharing rules do not apply to 80 % of purchases.
- All government bonds bought by 'home' NCB on own account. ('~~ECB buys Italian bonds~~')
- Different implementation across countries, maturities differ substantially.

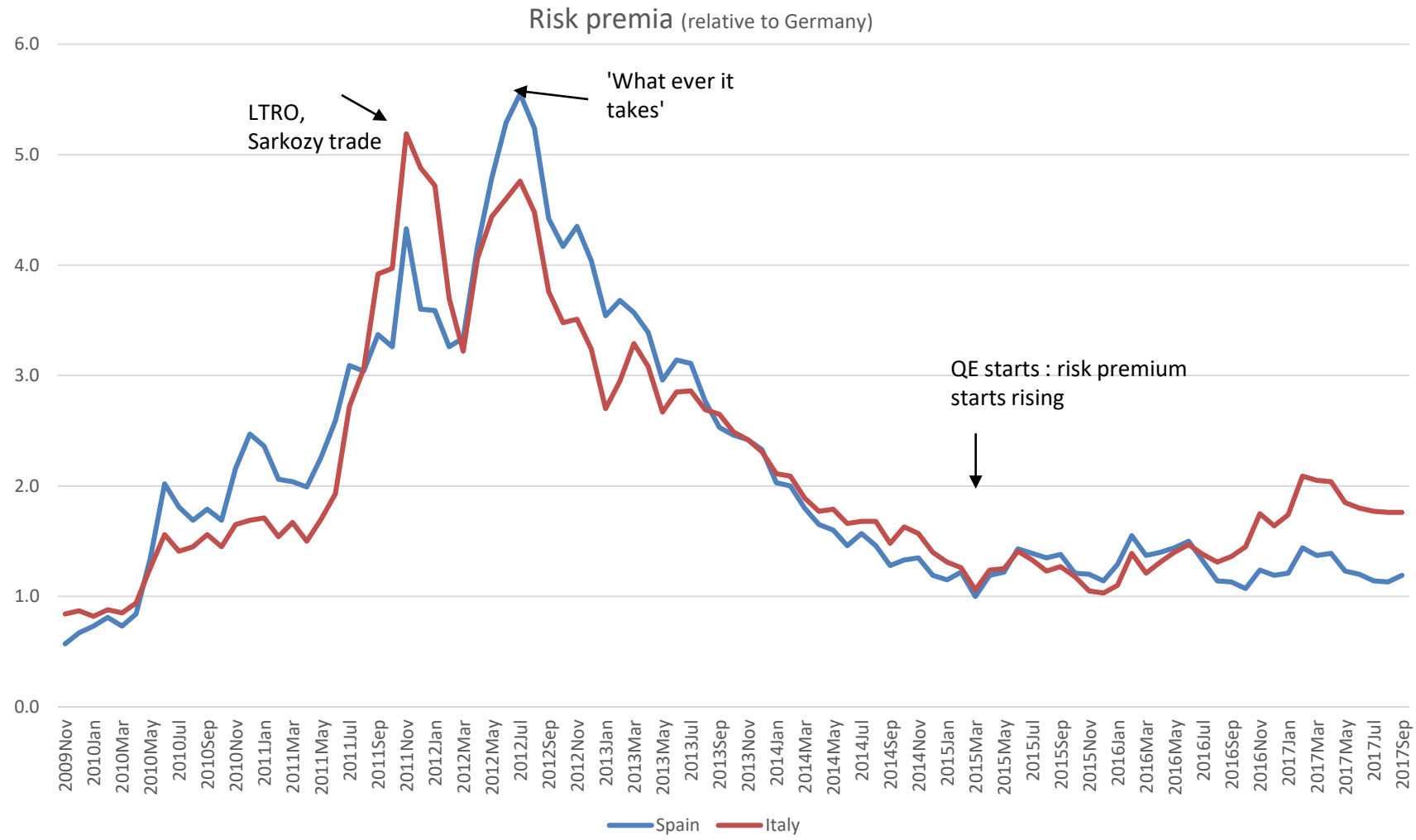
=> Monetary policy no longer 'single'.

Estimating the impact of the PSPP (1) comparative approach

Compare three major moves and how judged today

1. LTRO (Sarko trade), large immediate impact, but crisis resumed after few months = failure?
2. OMT, generally perceived as having large and permanent impact.
3. QE (PSPP)?

For LTRO and OMT evidence is fall in risk premia months after announcement and implementation. Apply same metric to PSPP?


Risk premia (relative to Germany)
6.0
5.0
4.0
3.0
2.0
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0.0
LTRO,
Sarkozy trade
'What ever it
takes'
QE starts : risk premium
starts rising
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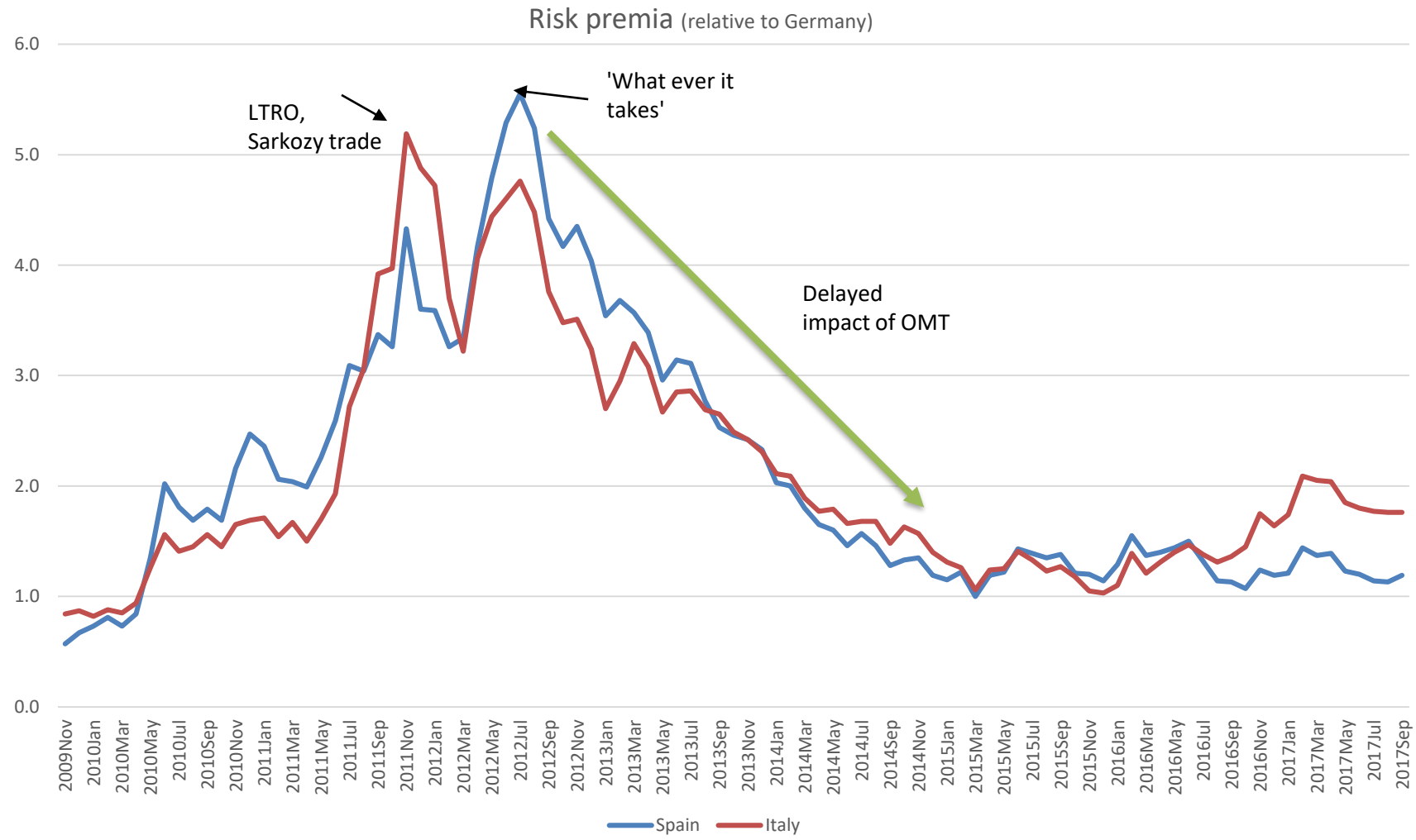
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LTRO,
Sarkozy trade
'What ever it
takes'
Delayed
impact of OMT
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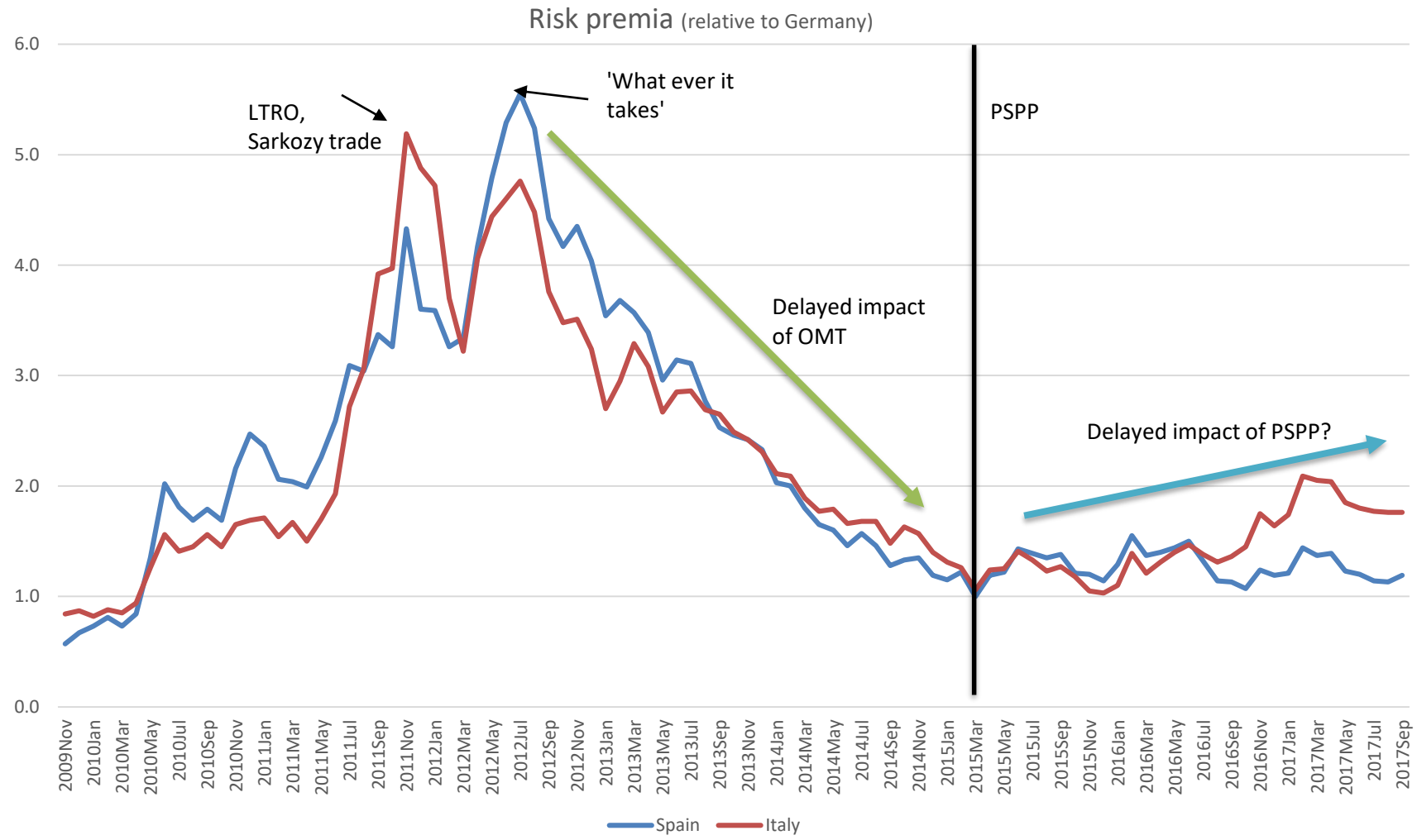
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1.0
0.0
LTRO,
Sarkozy trade
'What ever it
takes'
PSPP
Delayed impact
of OMT
Delayed impact of PSPP?
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Italy

Estimating the impact of the PSPP
Applying same metric as to LTRO and OMT

1. Rates fall before and at PSPP announcement = success?
2. Rates rise steeply after implementation starts (like LTRO) = failure?
3. Usual argument: PSPP fully priced in after announcement, rates after implementation not relevant for judgment.

(Same reasoning should apply to OMT, in this case estimated impact would be much smaller.)

Why should QE reduce risk spreads?

- Since all government bonds purchased by 'home' NCB no cross country risk sharing.
- Assume risk premium = PD*LGD
- LGD: goes up since liabilities of the NCBs cannot be restructured and fewer bonds held by public.
- PD: goes down: liabilities of NCBs (deposits or Target2 balances) not 'runnable'!

$\Rightarrow$QE reduces risk of 'speculative attack' on national government debt market but increases LGD.

$\Rightarrow$Impact of PSPP on risk premium uncertain

Measuring the impact of QEuro

- Event studies suggest:
- announcements led to lower rates and falls in risk premia of 50-100 bps (e.g. Altavilla et al.).
- But interest rates only intermediate targets: aim is to increase inflation: only modest increases in short term expected inflation and fall in 5/5 year forwards!

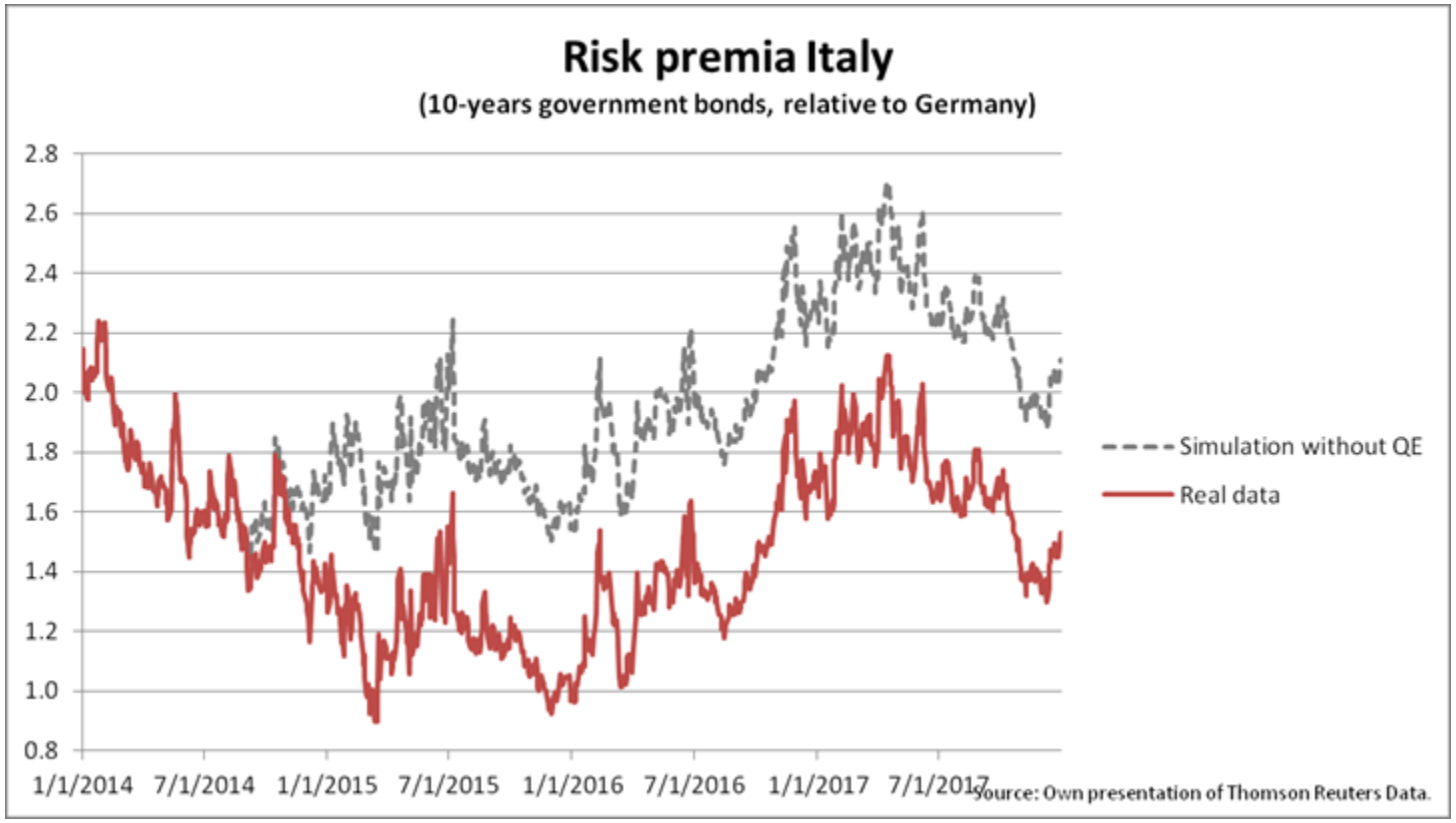
Announcement effect on inflation?

Results from Altavilla et al. (2015), table 6, changes:	Euro Stoxx (in %)	Inflation swap rates (in basis points)				
		1-year	2-year	5-year	10-year	5/5 year forward
Controlled event study						
1-day	2	14	8	15	6	-3
2-day	1	33	25	24	4	-16
Standard event study						
1-day	3	9	7	15	6	-3
2-day	5	5	7	14	-3	-20

Measuring the impact of QEuro

- Event studies can only measure ‘impact’ on event day. But is it permanent?
- Usual assumption: bond returns are random walk => permanent effect.

Illustration of implicit reasoning of event studies



Measuring the impact of QEuro

- Random walk hypothesis essential to establish permanent effect.
- Can be tested ….. And rejected for many variables, especially spreads and inflation expectations.
- Many bond returns and inflation expectations at all horizons show (very significant) negative autocorrelation
- => announcement effects transitory!

Results of ADF tests for spreads

Null Hypothesis: SPREAD has a unit root				
			t-Statistic	Prob.[a]
Italy			-3.072720	0.029
Spain			-3.618432	0.0056

[a]Critical values: 5 % -2.86, 1 % -3.44

Augmented Dickey-Fuller test statistic , Exogenous: Constant, Lag Length: 0 (Automatic - based on SIC, maxlag=22), Sample: 9/02/2013 1/15/2018, 1141 observations

Results of ADF tests for spreads

Augmented Dickey-Fuller Test Equation		
Dependent Variable: D(SPREAD,2), Sample: 9/02/2013 1/15/2018, 1141 observations		
	Lag 1	**Lag 2**
Italy	**-0.11******	**0.09*****
Spain	**-0.12******	**0.10******

Source: own calculations based on Datastream, Thomson Reutres data. Stars denote probability levels of ** 0.1 %, *** 1 %, ** 5%.**

Overall conclusion

QE (in euro area) =

Monetary placebo plus fiscal Aspirin

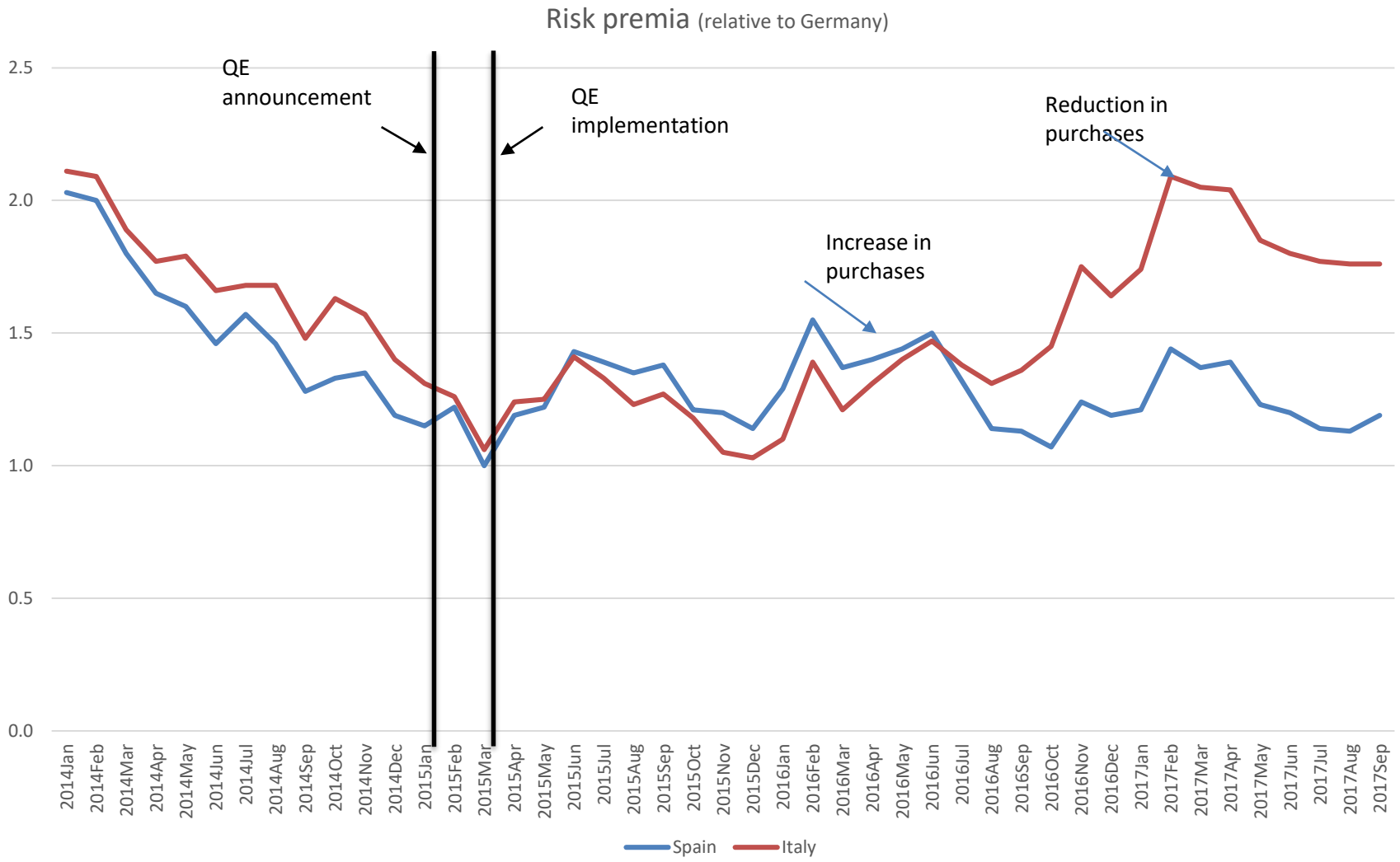
$\Rightarrow$exit should have no adverse impact on inflation, could start now since

$\Rightarrow$recovery is ‘self-sustaining.

Purpose of QE depends on state of financial markets

Need to distinguish clearly different periods:

- US QE1: financial market instability acute.
- EA: no instability, aim to get inflation up.


Risk premia (relative to Germany)
QE announcement
QE implementation
Increase in purchases
Reduction in purchases
2.5
2.0
1.5
1.0
0.5
0.0
2014Jan
2014Feb
2014Mar
2014Apr
2014May
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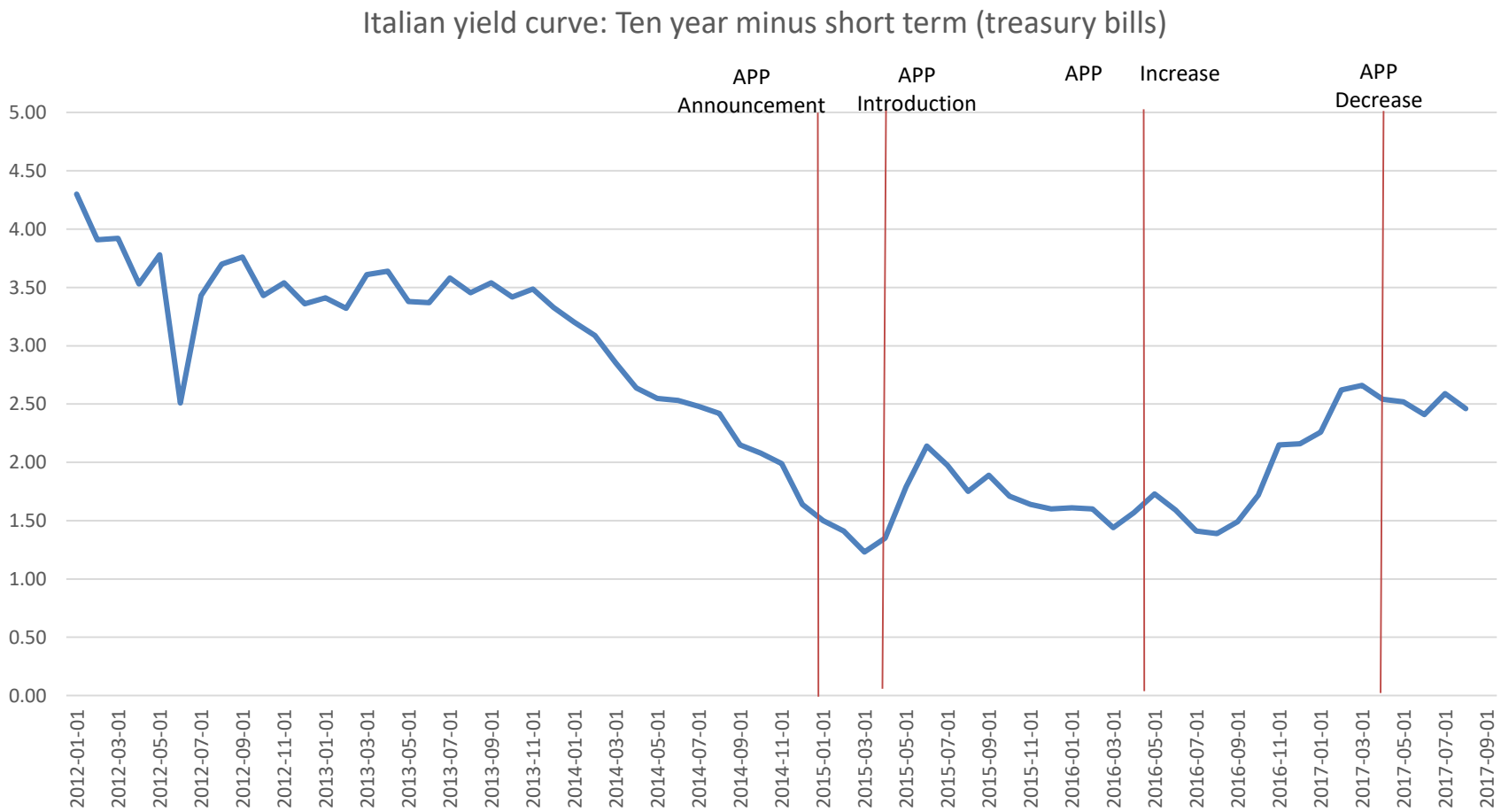
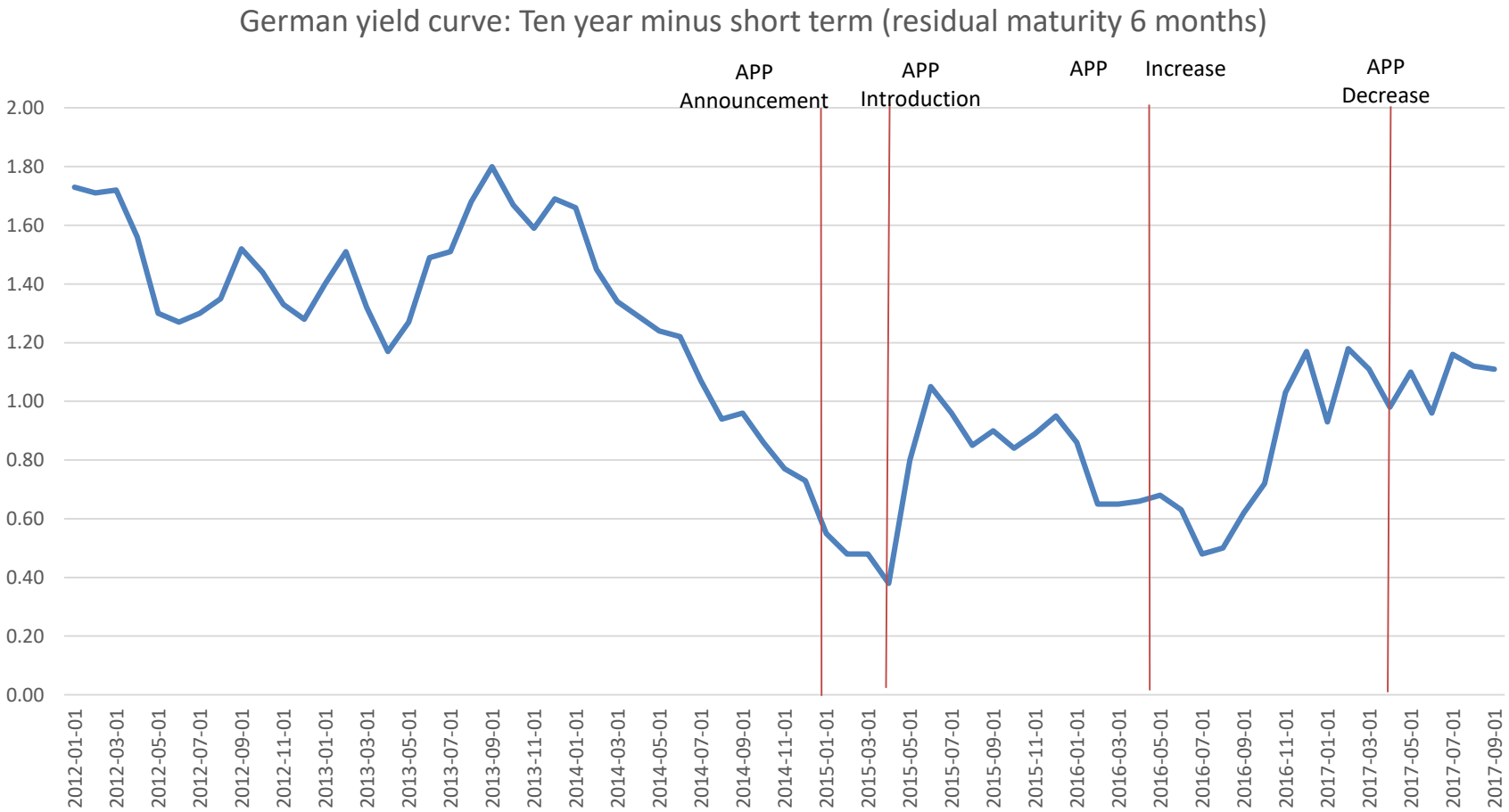
Italy

Banca d'Italia buys BTP: impact on yield curve?



Bundesbank bond buying and the German yield curve



Fiscal implications (debt service cost)

- Fiscal gain: lower debt service as long term rates > short term (cost of NCB liabilities zero or negative).
- Fiscal gain low (negligible) for Germany:
- E.g. ten year Bunds at 0.4 %, deposits at minus 0.4 % => total gain 0.8 percentage points on 20 % of GDP: **savings = 0.16 %** GDP – lower in reality since average maturity < 10 years and until five years negative yield
- More substantial for periphery: IT: 2 % on BTPs versus 0 cost of Target2 balances on 20 % of GDP => **savings = 0.4 % of GDP**.

$\Rightarrow$Debt service savings in some cases non-negligible (even with zero impact on Bunds and risk premia)

The only real 'Euro' QE:

- ECB buys supra-nationals (200 billion).
- ECB holds 40 % of all EFSF/ESM bonds, rising towards 50 % (much more than for DE, others).
- Both ECB and ESM are owned by euro area countries. The ECB finances itself with Target balances vis-à-vis the NCBs and thus ultimately with excess reserves.
- Did this asset exchange have any impact on spreads?

Why should QE reduce risk spreads?

Reduction in re-financing needs material? If central banks buy mainly the long end little impact since only fraction of long bonds needs to be refinanced annually. With average maturity under PSPP (Italy), reduction in refinancing needs only 1/8th of total bond buying (which is 20 % of GDP).

$\Rightarrow$Reduction of risk of 'speculative attack' on national government debt market low (negligible?)