

Systemic Risks: Looking Forward

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CSRA Meeting

June 2013

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Systemic Risk

- “Any set of circumstances that threatens the stability of or public confidence in the financial system,” in Billio et al. (2011).
- A risk of financial instability “so widespread that it impairs the functioning of a financial system to the point where economic growth and welfare suffer materially,” Hollo, Kremer, and Lo Duca (2012).

Billio, M., M. Getmansky, A. Lo, and L. Pelizzon, 2011, “Econometric Measures of Systemic Risk in the Finance and Insurance Sectors,” working paper.

Hollo, D., M. Kremer, and M. Lo Duca, 2012, “CISS – A Composite Indicator of Stress in the Financial System,” working paper, ECB.

Potential Future Systemic Risks

- QE Withdrawal
- Risky asset tail returns
- Build-up of leverage
- Europe and feedback loops

Bad news is good news for equities

- Global equity markets remain well supported, underpinned by positive reports on corporate earnings and the US housing market, and speculation of ECB monetary easing. However, the relatively strong performance of equities is in stark contrast to increasing signs that the global real economy has slowed. According to our

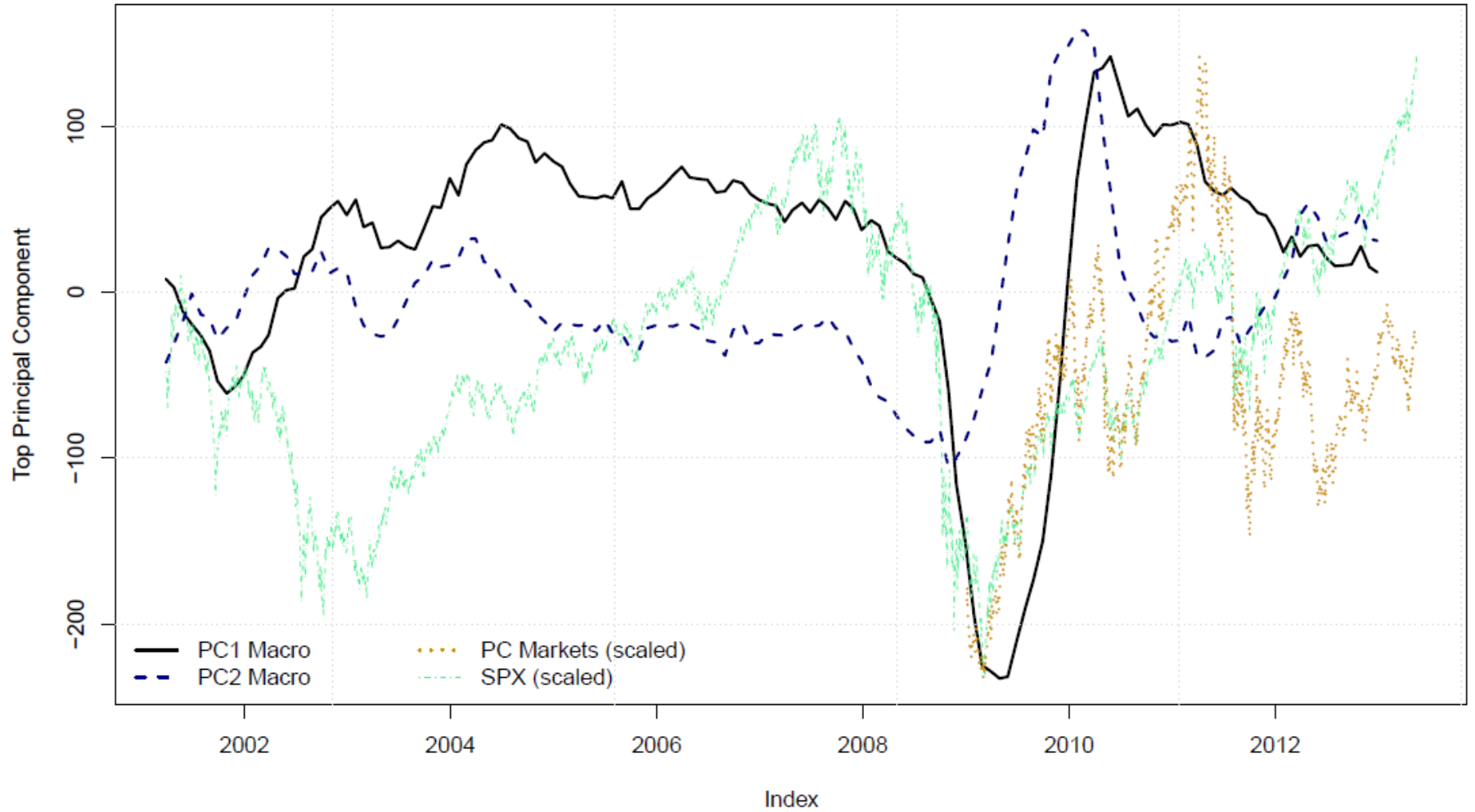
QE Efforts

- Central banks around the world took unprecedented policy measures starting in late-2008 and early-2009

Central Bank	Approximate Increase in Balance Sheet (in USD, blns)
Fed	2,250
ECB	1,625
Bank of England	300
Bank of Japan	700
Total	4,875
Market Cap of S&P	14,000

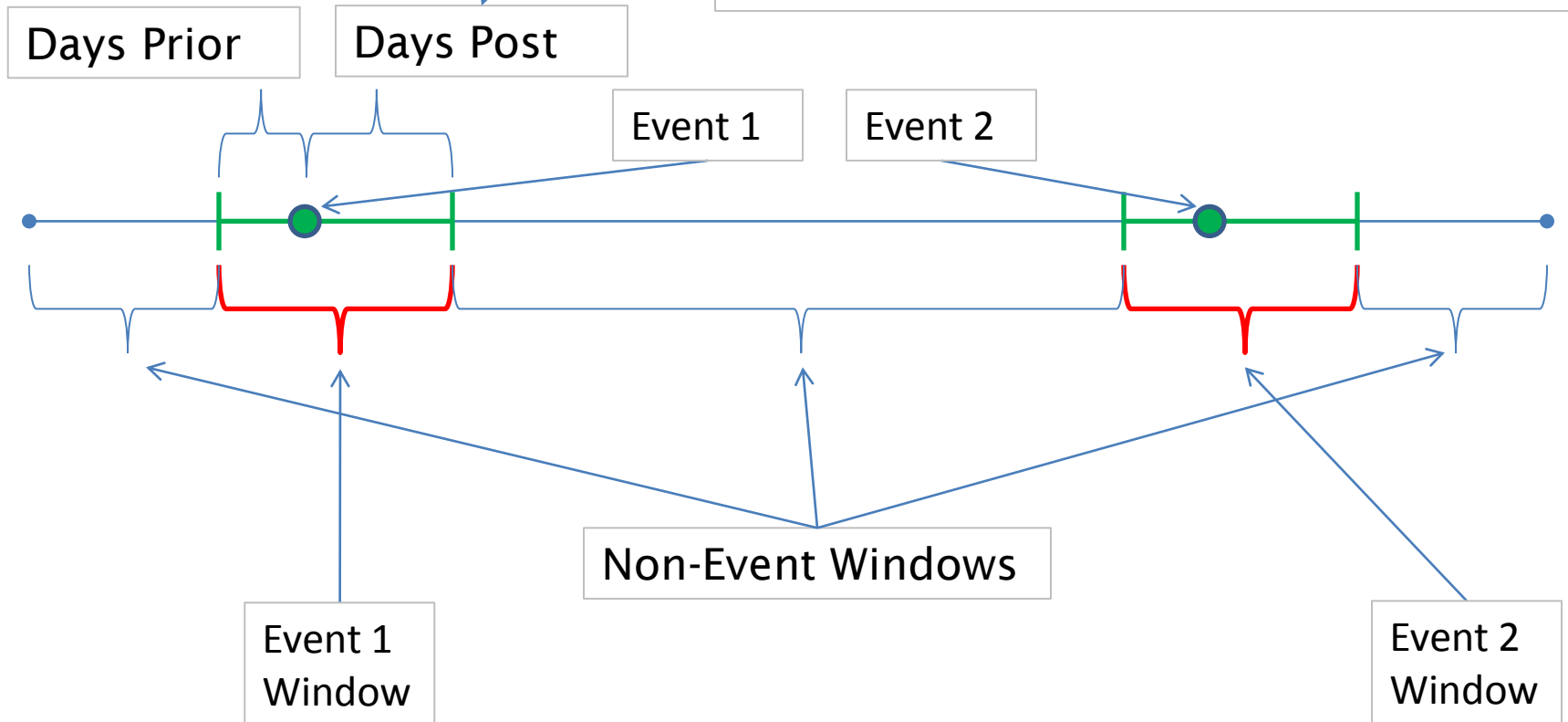
- These efforts are continuing
 - 85 bln per month at the Fed
 - 70 bln per month at BOJ

Top Principal Components: Markets and Macro 2013-05-20

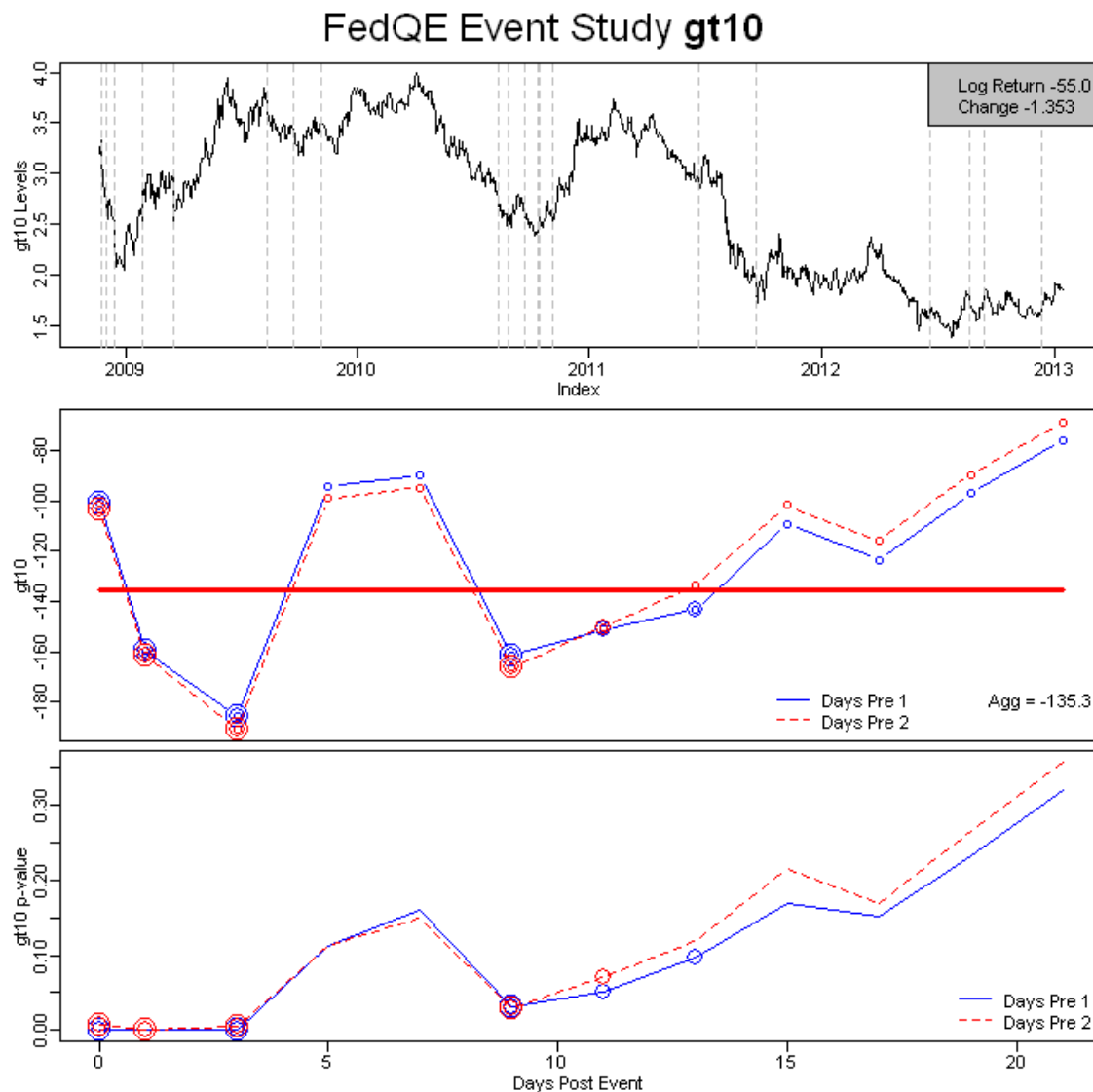


Event Windows around QE

We will later ask how many *days post* the event need to pass for the effect on a given security to be the most significant.

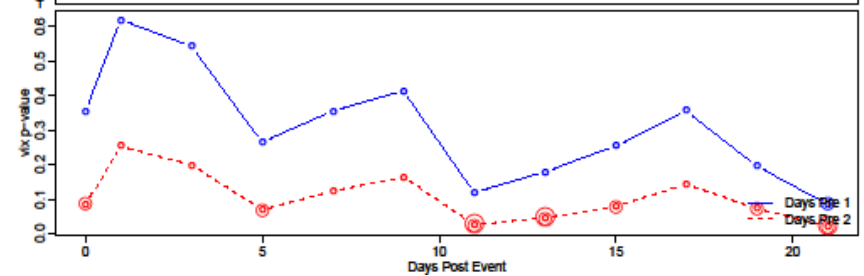
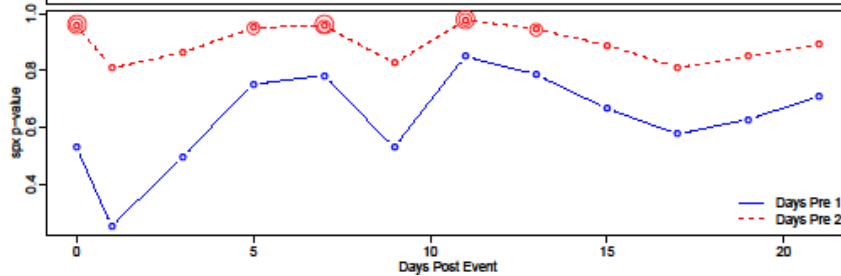
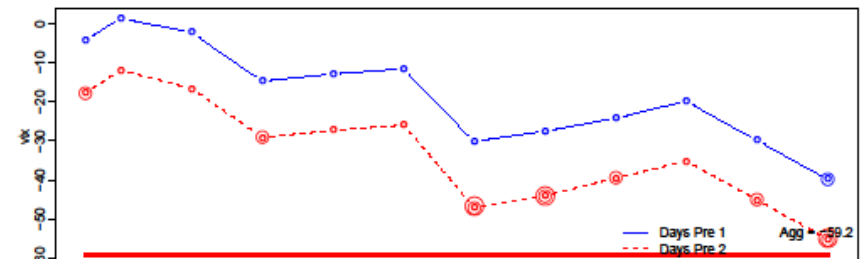
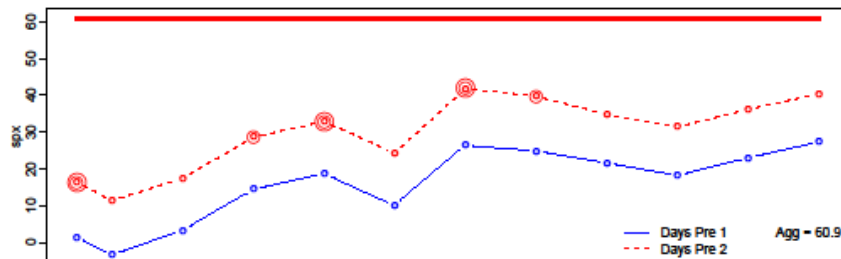
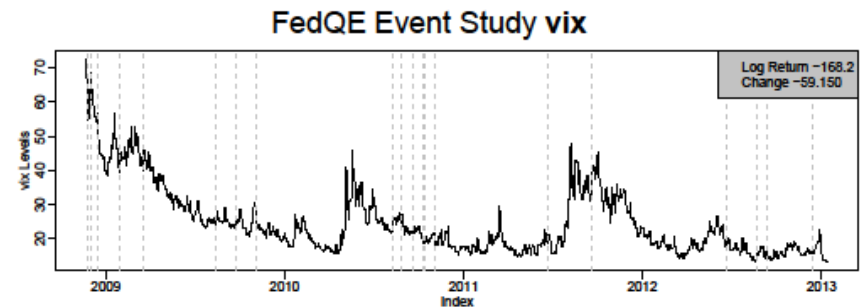
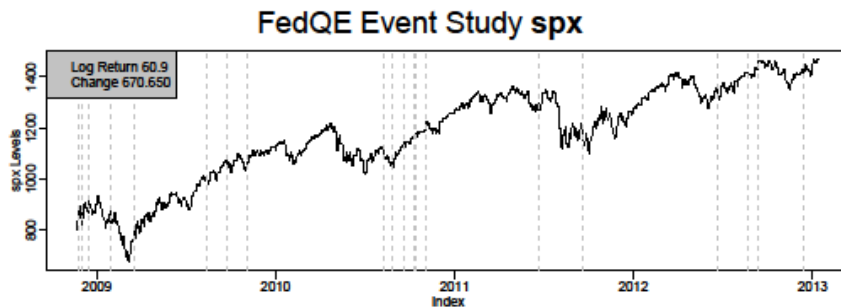


10 Year Treasury Response



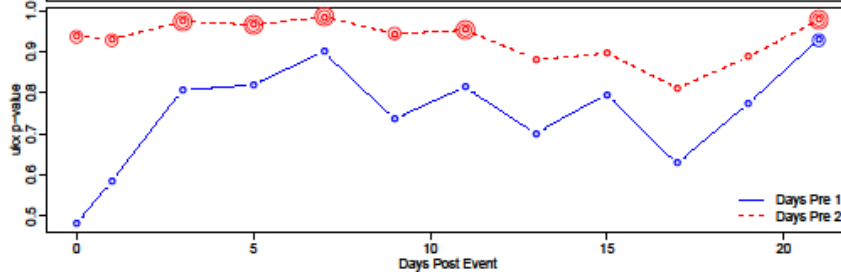
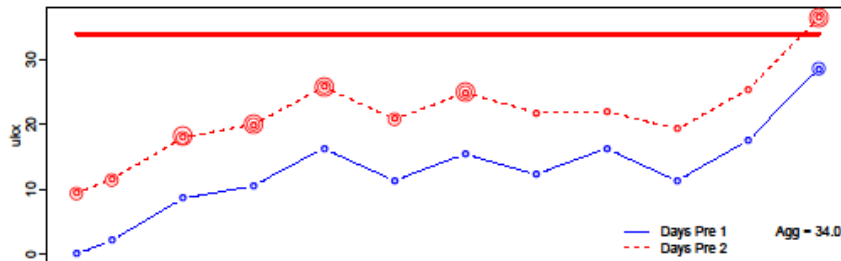
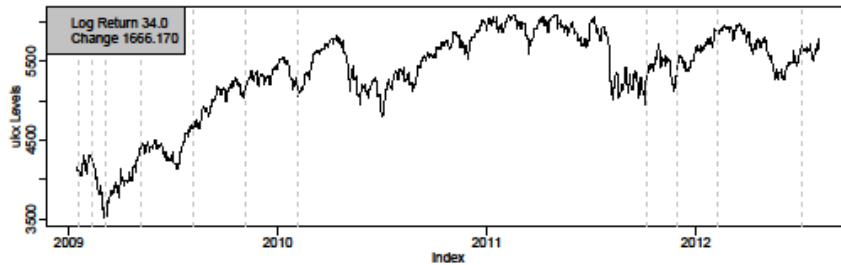
Source: Bloomberg, QE dates Fawley and Neely (2013)

S&P500 and VIX Responses

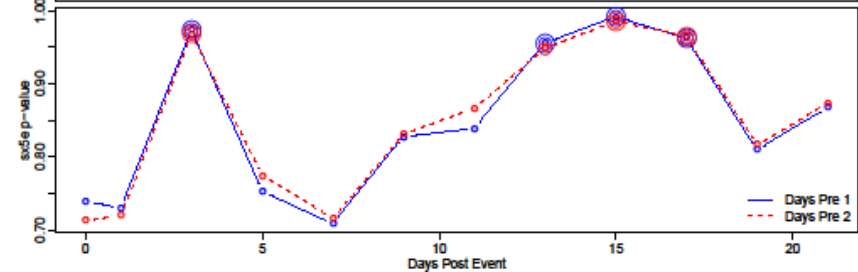
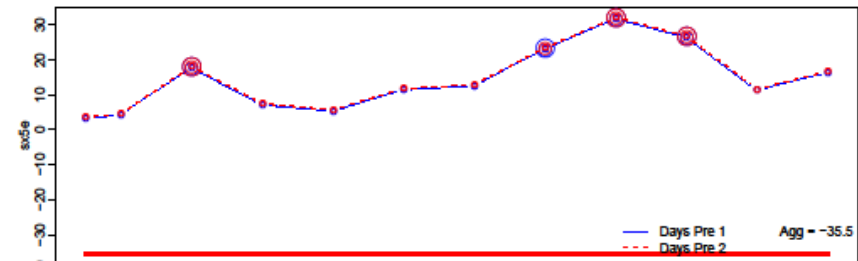


FTSE and SX5E Responses

BoE QE Event Study ukx



ECB QE Event Study sx5e

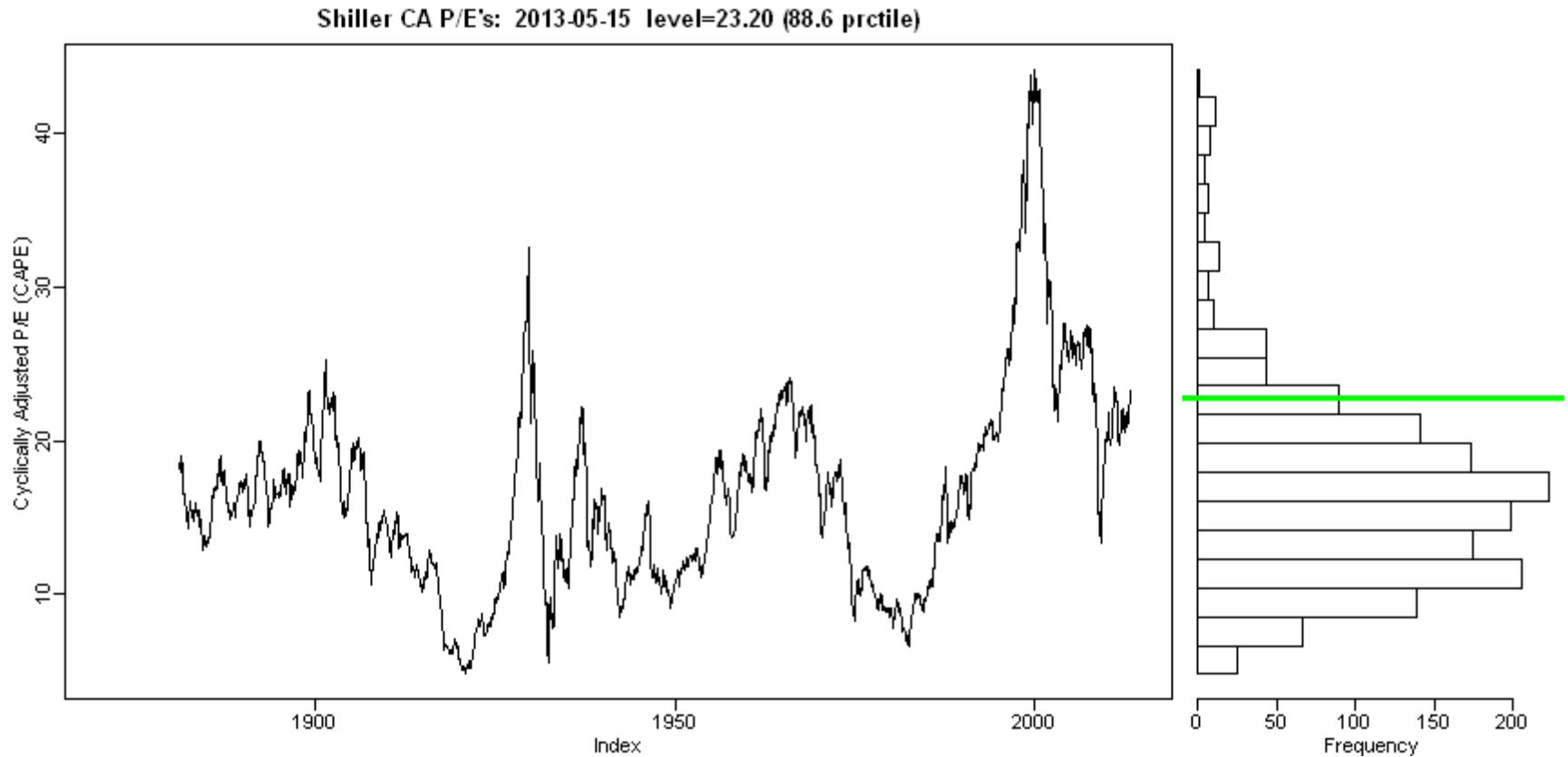


Maximally Significant Responses

Names	Days Prior to Event = 1			Days Prior to Event = 2			aggResponse
	Npost	pVal	response	Npost	pVal	response	
days	0	1.000	20.00	0	1.000	40.00	1038.00
spx	11	0.849	26.38	11	0.978	41.85	60.88
xlfx	0	0.918	16.19	0	0.992	41.33	56.67
vix	21	0.086	-39.77	21	0.020	-55.09	-59.15
ussv0310	9	0.869	6.36	1	0.110	-6.76	-9.79
gld	3	0.046	-11.90	17	0.926	46.34	74.59
oil	3	0.000	-75.49	3	0.003	-64.22	63.42
tbill3mo	9	0.893	16.49	0	0.979	16.26	5.58
gt5	1	0.000	-131.20	1	0.004	-127.90	-126.70
gt10	1	0.000	-159.70	1	0.002	-161.80	-135.30
gt30	1	0.022	-90.40	9	0.024	-163.00	-66.20
usggbe10	1	0.986	71.36	1	0.992	103.78	238.96
usggbe30	0	0.976	39.12	1	0.971	71.55	163.03
mtgSpr30y	0	0.989	68.10	0	0.932	48.20	-116.70
dxy	0	0.001	-8.18	0	0.000	-16.60	-10.39
ig	0	0.002	-57.63	0	0.016	-66.38	-181.78
hy	7	0.178	-416.46	0	0.051	-291.15	-1118.03

Table 8: For 1- and 2-day periods prior to the event, table shows the number of days after the event which leads to the most extreme p-value of the response of a given security. Events are all Fed QE announcements. 2500 bootstrap runs were used to compute p-values.

Cyclically-Adjusted P/E



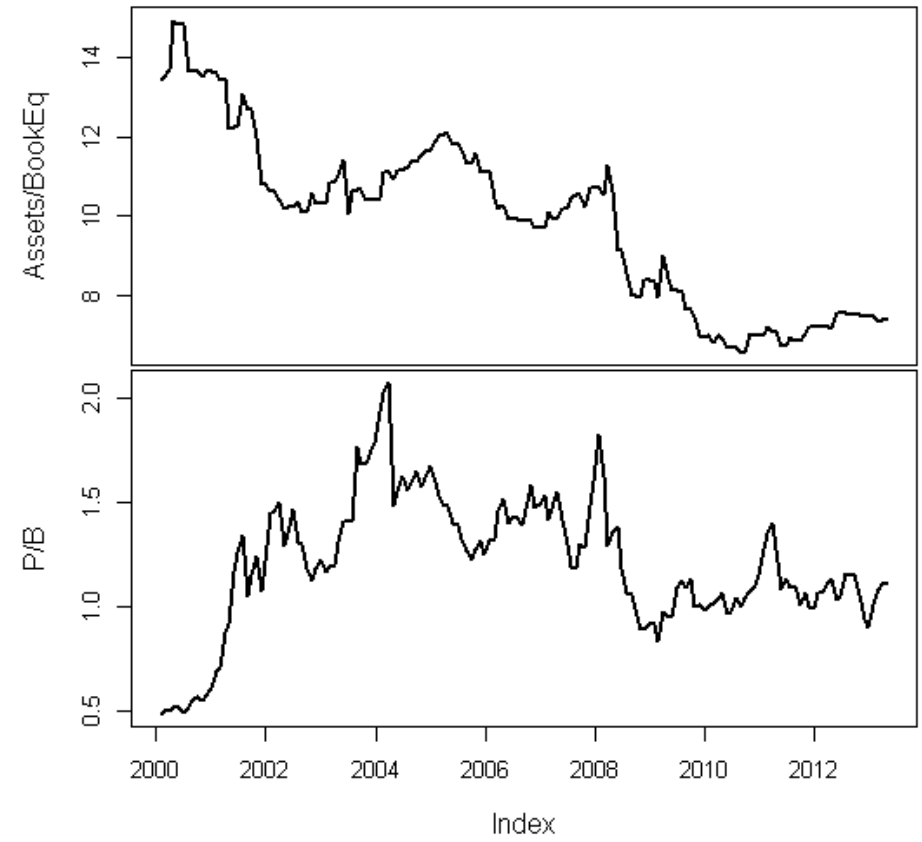
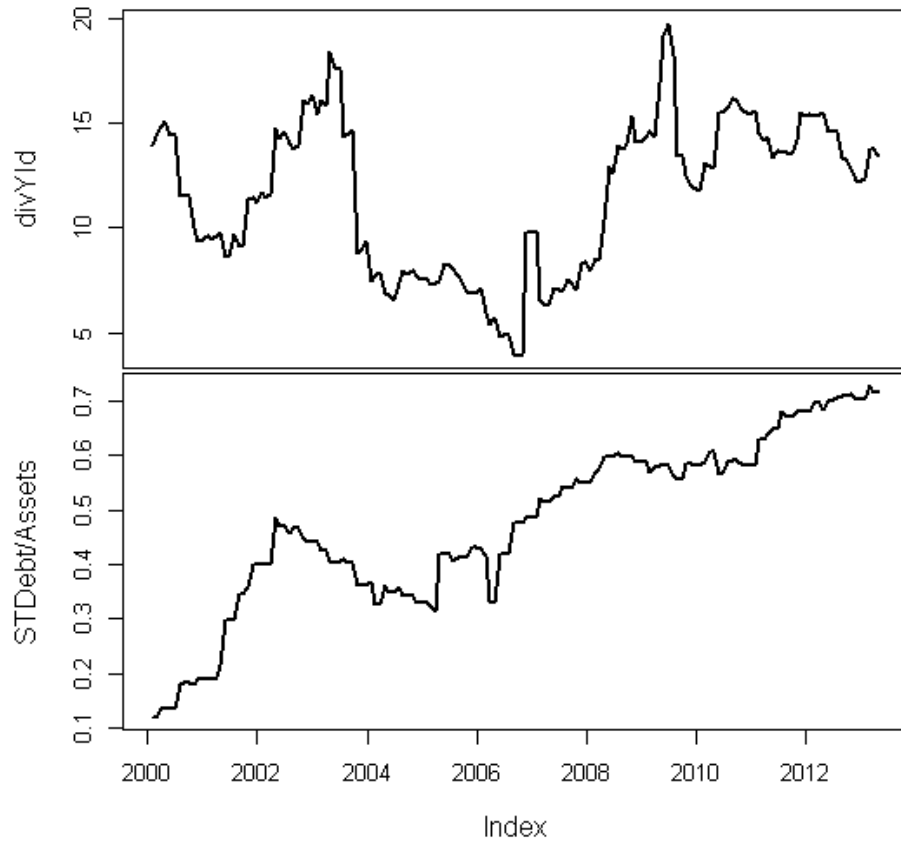
Conditional Returns

Prctile1	Prctile2	CAPE1	CAPE2	Mean	SD	5% Ret	95% Ret
0.0	16.7	4.78	10.45	12.82	22.02	-18.70	44.99
16.7	33.3	10.45	13.13	10.78	17.12	-13.77	39.82
33.3	50.0	13.13	15.82	6.75	19.47	-17.94	36.90
50.0	66.7	15.82	18.13	2.63	16.72	-21.69	30.81
66.7	83.3	18.13	21.64	1.61	17.75	-30.43	29.53
83.3	100.0	21.64	44.20	-0.10	18.24	-34.36	25.70

Table 1: One year ahead total returns (including dividends) in excess of 10 year yields grouped by cyclically-adjusted P/E ratios. Year ahead returns are computed monthly, using overlapping annual windows.

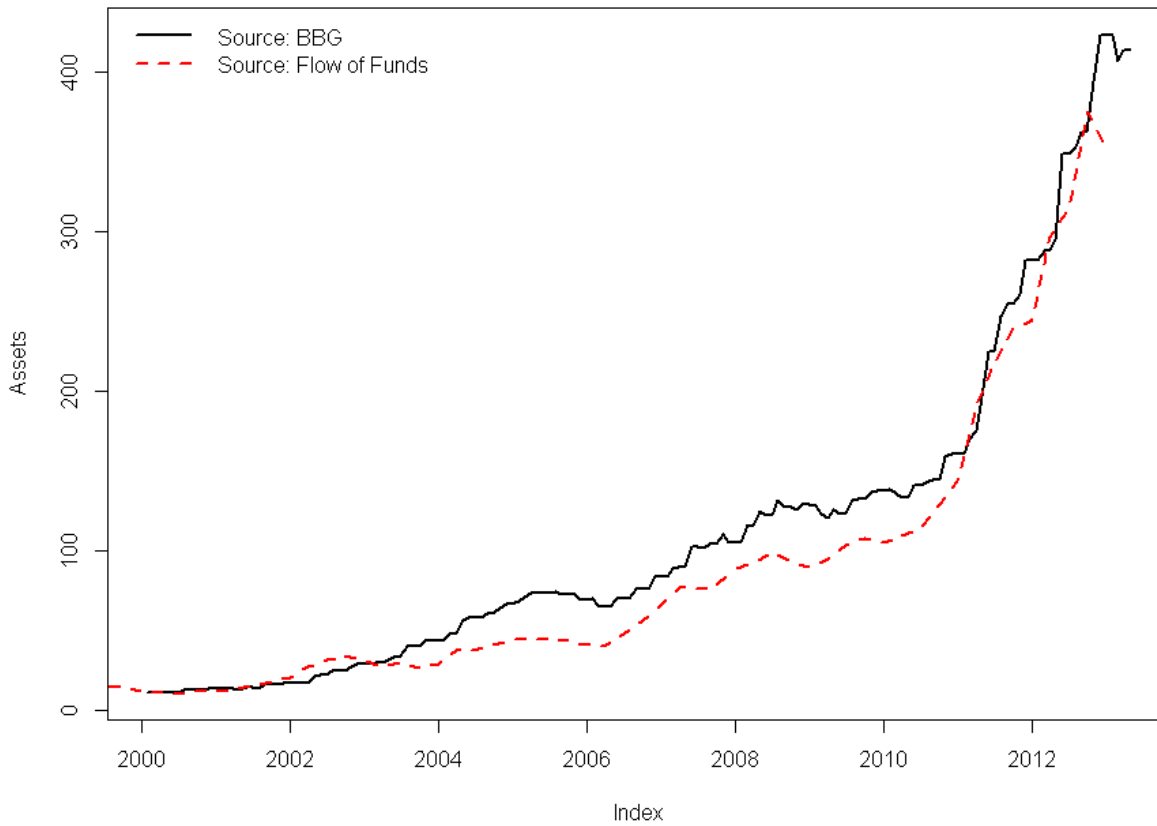
Agency REITs

Agency REITs 2013-05-14



Assets Under Management

Agency REITs 2013-05-14



- Low yields are causing leverage to build up in the system
- Even though each REIT is relatively small (largest mkt cap is 14bln), the commonality of strategy across the sector poses a potential for systemic risk

ECB LTRO's

- Long-term refinancing operations: provide liquidity support to European banks
- Until early 2008, longest LTRO was 3 months

Date	LTRO Announcement
3/28/2008	6-month LTROs
5/7/2009	12-month LTROs
12/8/2011	36-month LTROs announced; eligible collateral expanded

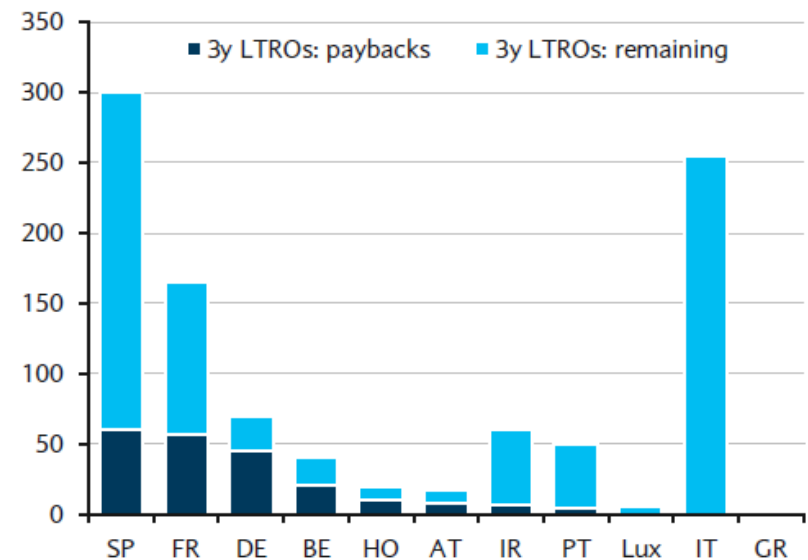
- Main refinancing rate lowered to 1%

LTRO's

“A large portion of the financing provided to eurozone banks through the LTRO was used to buy periphery sovereign debt. This became known as the 'Sarko trade' after Nicolas Sarkozy suggested that the LTRO meant that the Italian and Spanish governments could depend on their countries' banks to buy their bonds. The ECB is not allowed to provide direct support to Eurozone governments.”

Source: Financial Times

3y LTROs: what has been paid... and what remains (€ bn)

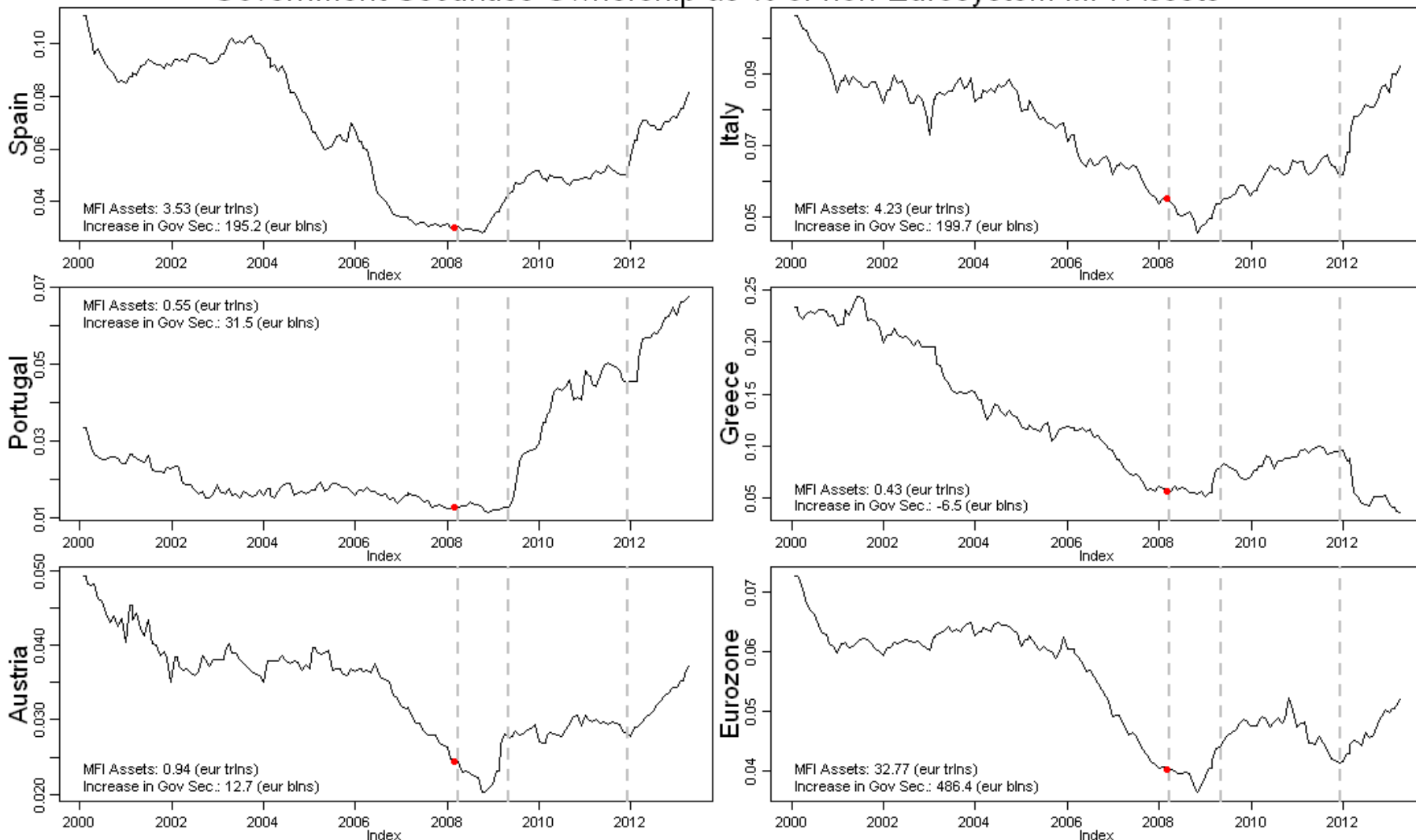


Note: Data are estimated, starting from the difference between end-Feb vs end-Dec LTROs borrowing. Therefore, the changes in borrowing at LTROs shorter than 3y (which have been very small so far) were also considered. Source: NBCs, Barclays Research

Source: Barclays April 9, 2013

European MFI Ownership of Sovereign Debt

Government Securities Ownership as % of non-Eurosystem MFI Assets



European MFI Loans to Governments

Government Loans Ownership as % of non-Eurosystem MFI Assets

