PRUDENTIAL FILTERS, PORTFOLIO COMPOSITION AND CAPITAL RATIOS IN EUROPEAN BANKS

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PRUDENTIAL FILTERS: UNREALISED GAINS AND LOSSES

Under Basel II, it was possible to remove from banks' regulatory capital unrealised gains or losses from assets recognised on the balance sheet

- maintain the desired characteristics of regulatory capital, especially in terms of magnitude, quality, and stability, for prudential purposes

The proposal in Basel III and its translation into European legislation states that institutions shall not make adjustments to remove from their own funds unrealised gains or losses on their assets or liabilities measured at fair value.

- exclusion of unrealised gains and losses in regulatory capital lead too late recognition of losses in a downturn

  Losses can be hidden so that computed solvency ratios may be misleading

  More risk adopted

UNREALISED GAINS AND LOSSES

From investors' perspective

Potential effects of including unrealised gains and losses in regulatory capital :

Increase capital volatility: excessive volatility as it is not necessarily responding to fundamentals, so that:

Disincentive to hold assets giving rise to such effects

Increase in capital buffers

OBJECTIVE OF RESEARCH

Objective of research:

to assess the impact of such removal on

- *capital volatility*
- *the level and composition of the asset side of the balance sheet and*
- *regulatory capital*

RELATED LITERATURE

Existing empirical literature gathers evidence that:

- **Banks smooth earnings using security gain realisations (Beatty et al 2002)**
- **There is regulatory capital arbitrage arising from reclassifications of instruments in and out of fair value (Beatty (1995), Hodder et al.(2002) with US data, and Birschof et al (2011) with inf on 39 countries.**
- **Chircop, Novotny-Farkas (2014) with US data found: increased capital volatility, negative market reaction to filter removal, affected banks reduce maturity and size of AFS securities.**
- **EU data: Fietcher et al (2011) Banks that reclassify report higher ROA, ROE and regulatory capital.**

- **Our contribution:**
  - European focus
  - Effects of different prudential filters (no reclassifications)
  - Effects of neutralisation on capital and portfolio composition
  - Effects of asymmetrically filtering on capital and portfolio composition

MAIN FINDINGS

Removal of filters increases capital volatility

the exclusion of unrealised gains and losses from AFS debt results in higher proportion of AFS debt assets, but does not affect capital ratios.

If unrealised losses are always included, regulatory capital is affected by the inclusion of gains

The lower the debt or equity gains included the lower the amount of regulatory capital.

Proportion of AFS assets is not affected by the specific proportion of unrealised gains allowed to be included

CONTENTS OF PRESENTATION

Description of actual filters in EU countries

Analytical framework

Empirical strategy

Results:

- Capital volatility
- Neutralisation
- Assymetric filter

Conclusions

AOCI FILTER IN EU COUNTRIES

TABLE 1. PRUDENTIAL FILTERS IN EU COUNTRIES OF UNREALISED GAINS AND LOSSES FROM AFS ASSETS

INCLUSION IN REGULATORY CAPITAL

FILTER	unrealised losses	unrealised gains
	debt	
neutralisation	**NO**	**NO**
	debt/equity	
asymmetric	**YES**	**NO/ONLY PARTIALLY**
Basel III proposal: without	**YES**	**YES**

TABLE 2. PRUDENTIAL FILTERS IN EU COUNTRIES. 2007
(% of gains admitted in regulatory capital)

	equity	debt	neutralization of debt instruments
AUSTRIA	30	30	NO
BELGIUM	10	0	YES
CYPRUS	0	0	NO
FINLAND	0	0	NO
FRANCE	31.4	0	YES
GERMANY	26.59	30	NO
IRELAND	0	0	NO
ITALY	50	50	NO
LUXEMBOURG	0	0	NO
MALTA	0	0	NO
NETHERLAND	0	0	YES
NORWAY	37.5	0	YES
PORTUGAL	38.78	40	NO
SLOVAKIA	0	0	YES
SLOVENIA	20	0	YES
SPAIN	33.33	48.15	NO
UNITED KINGDOM	0	0	YES
MEAN	26.88	24.66	

*choice of treatment, subject to consistent application

ANALYTICAL FRAMEWORK

We assume:

Objective of banks: minimize risk of non complying with regulatory capital

Consequences of the removal of the filters:

increased volatility in regulatory capital (increase in uncertainty)

Therefore, the removal of filters, by increasing uncertainty would lead to:

larger buffers

Changes in portfolio characteristics to stabilise regulatory capital:

- Composition (less AFS)

FIGURE 1.A.EXPECTED CAPITAL RATIOS UNDER UNFILTERED FRAMEWORKS AND CAPITAL RESPONSE

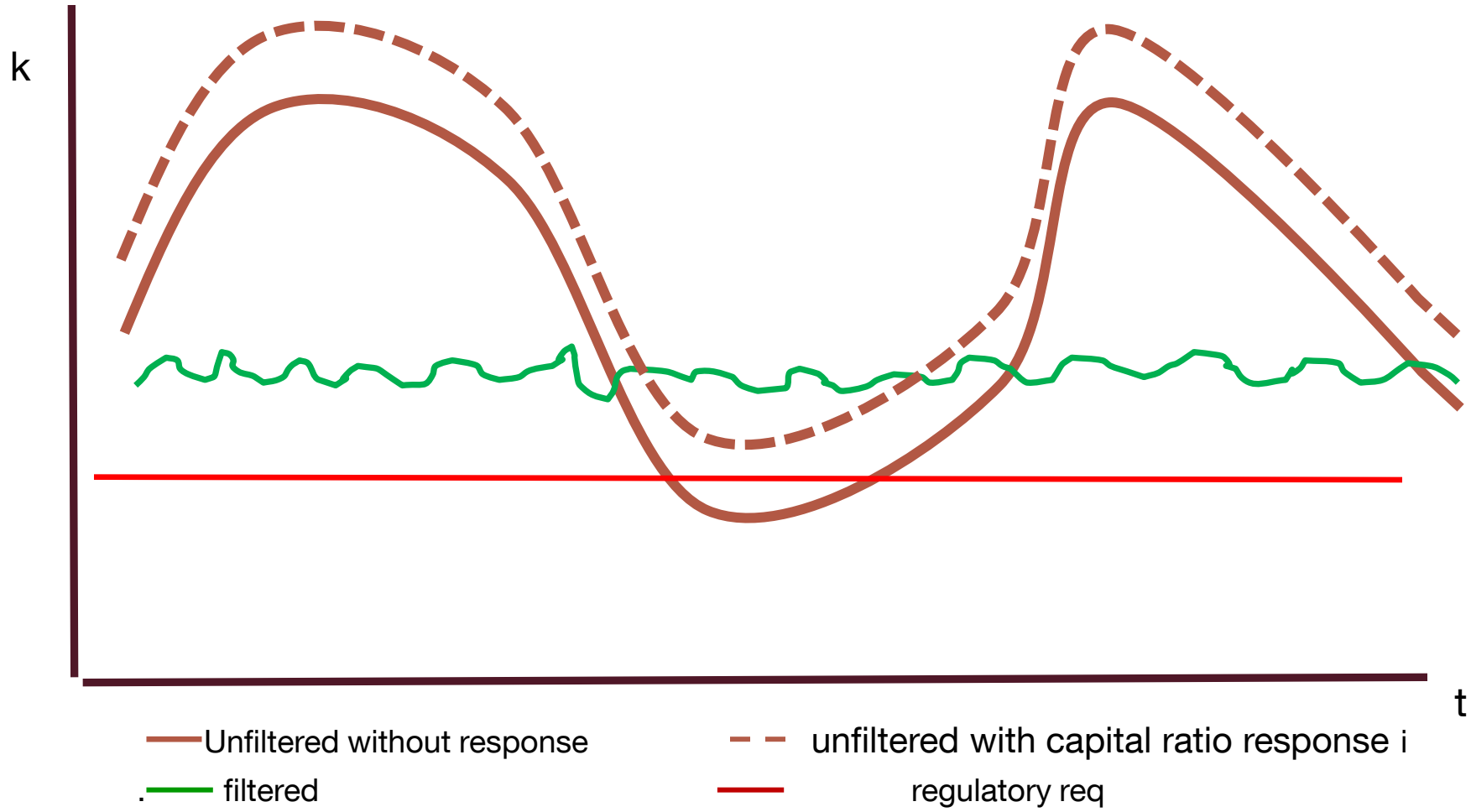
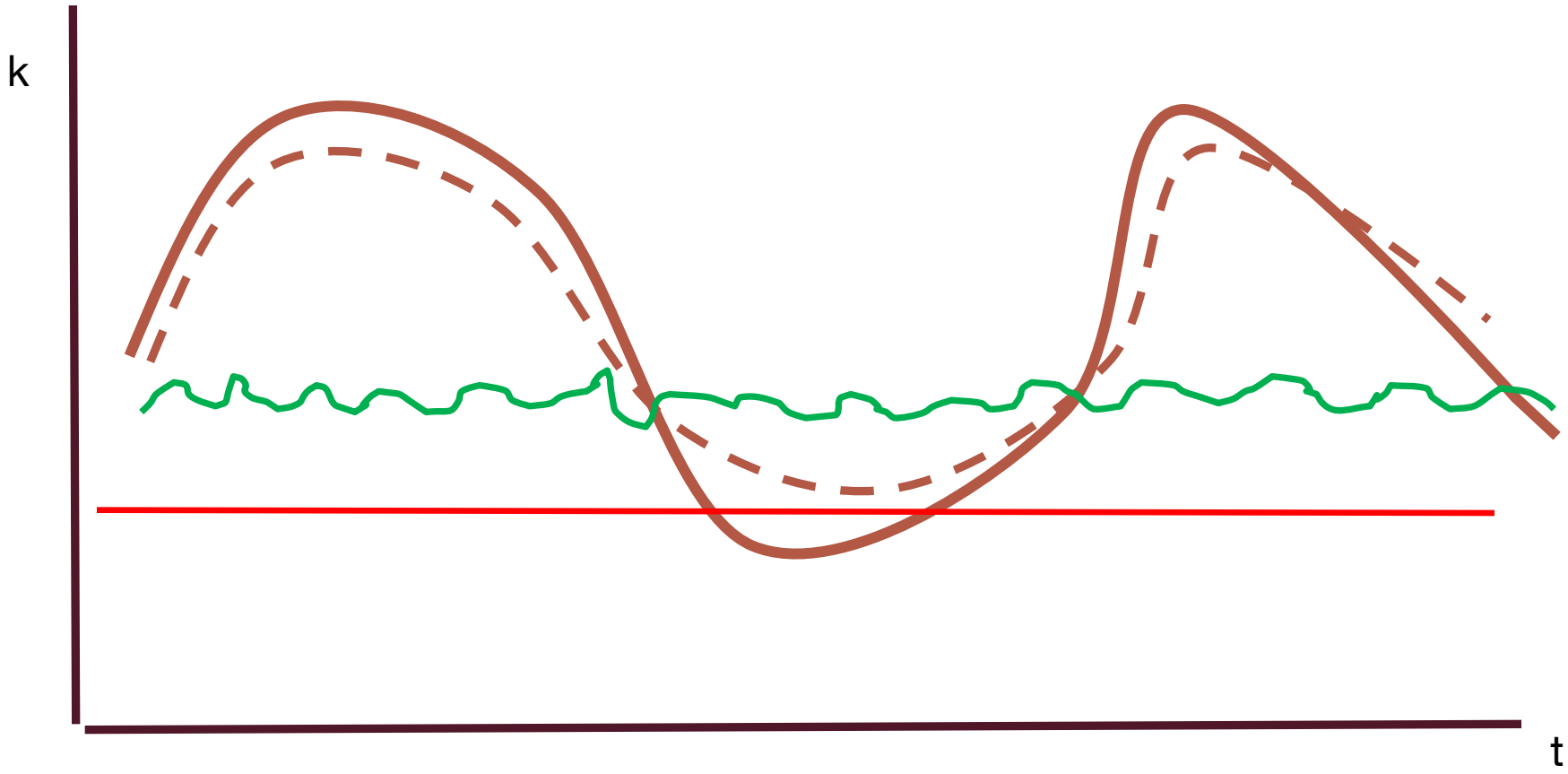


FIGURE 1.B. EXPECTED CAPITAL RATIOS UNDER FILTERED FRAMEWORKS AND PORTFOLIO RESPONSE



EMPIRICAL STRATEGY: PORTFOLIO COMPOSITION AND CAPITAL

We test whether:

✓ bank's trading activity is affected by prudential filters on unrealised gains and losses.

(1) $y_{ikt} = \alpha_{0\,i} + \alpha_1$ *AFS Prudential Filter*$_{ikt} + \Sigma\, \alpha_j$ *Controls*$_{ikt-1} + t_{ik} + \varepsilon_{ikt}$

Where y_j *is % of AFS equity/debt over assets that generate unrealised gains and losses.*

✓bank's capital ratio is affected by prudential filters on unrealised gains and losses

(2) $k_{ikt} = \beta_{0i} + \beta 1$ *AFS Prudential Filter*$_{ikt} + \Sigma\, \beta j$ *Controls*$_{ikt-1} + t_{ik} + \varepsilon_{ikt}$

We first compare neutralisation of debt instruments to asymmetric treatment and afterwards, the effect of the size of asymmetric filtering

Estimation in first difference to control for non-observable time invariant banks' characteristics

DATA

Data on prudential filters by jurisdiction from a report by CEBS (2007) updated in 2009: three point in time values for filters 2005, 2007 and 2009.

Source of time variation arising also from taxes and adoption of neutralisation.

Individual bank data for around 152 credit institutions operating in the EU during 2005-2013, from SNL

CAPITAL VOLATILITY

TABLE 4. VOLATILITY OF CAPITAL RATIOS. EUROPEAN BANKS (2005-2013)

	Mean capital ratio volatility (1)		
TOTAL	**Observed**	**Adjusted**	**t ratio**
by bank	**2.41**	**2.70**	**6.32**
by country	**3.86**	**4.16**	**4.87**
by year	**4.75**	**5.00**	**3.34**
Tier 1			
by bank	**2.22**	**2.52**	**6.54**
by country	**3.70**	**4.00**	**2.17**
by year	**4.34**	**4.55**	**1.98**

(1) Proxied as standard deviation. t-ratio of the null hypothesis that the adjusted and undjusted volatilities are equal

NEUTRALISATION FILTER

	Δtafsdebt (t)	Δtafsdebt(t) when debt gains not admitted	Expected
	(1)	(2)	
Δneutral filter(t)	5.25	5.313	+
	*(3.07)***	*(3.26)***	
Δrisk (t)	0.255	0.076	+
	*(2.24)***	*(0.51)*	
Δsize(t)	14.639	8.119	+
	*(9.72)***	*(1.4)*	
Δgdp(t)	-0.049	0.527	+/ ?
	(-0.17)	*(1.18)*	
Δuncertainty(t)	-0.136	-0.171	-
	*(-2.38)***	*(-2.38)***	
neutral*gdp(t)	0.263	-0.287	-/?
	(0.91)	*(-0.74)*	
Observations	615	389	
Banks	107	96	
	Tests for the model		
R2	0.104	0.055	

	Δkratio(t)	Δkratio(t) when debt gains not admitted	Expected
	(1)	(2)	
Δneutral filter(t)	-0.12	-0.199	-
	(-0.48)	*(-0.74)*	
Δroaa(t)	0.793	0.824	+
	*(3.58)***	*(4.36)***	
Δsize(t)	-3.031	-3.176	-
	*(-7.42)***	*(-1.61)**	
Δgdp(t)	-0.044	-0.023	-
	*(-1.81)**	*(-0.80)*	
Δnet loans(t)	0.068	0.065	+
	*(1.87)**	*(1.39)*	
Δliquidity(t)	0.142	0.158	+
	*(3.32)***	*(3.35)***	
Observations	465	302	
Banks	81	76	
	Tests for the model		
R2	0.329	0.227	

ASYMMETRIC FILTER

	Δtafsdebt(t) when neutral filter=0	Δtafsequity(t)	Expected
	(1)	(5)	
Δdebt filter(t)	-0.144		-
	(-0.25)		
Δequity filter(t)		-0.137	-
		(-0.59)	
Δrisk(t)	0.407	0. 099	+
	*(2.60)**	*(0.86)*	
Δsize(t)	14.77	-2.495	?
	*(11.94)***	*(-0.57)*	
Δgdp(t)	-0.198	0.203	+/?
	(-0.54)	*(1.05)*	
Δuncertainty(t)	-0.12	-0.2	-
	(-1.27)	*(-4.11)***	
Observations	301	864	
Banks	91	152	
	Tests for the model		
R2	0.132	0.026	

	Δkratio(t) when neutral filter=0	Δkratio(t)	Expected
	(1)	(3)	
Δdebt filter(t)	0.219		+
	*(1.72)**		
Δequity filter(t)		0.131	+
		*(1.69)**	
Δroaa(t)	0.676	0.733	+
	*(1.97)**	*(3.66)***	
Δsize(t)	-3.17	-2.611	-
	*(-8.45)***	*(-5.85)***	
Δgdp(t)	-0.065	-0.053	-
	*(-1.92)**	*(-2.43)***	
Δnet loans(t)	0.038	0.048	+
	-0.8	*-1.33*	
Δliquidity(t)	0.111	0.136	+
	*(2.43)***	*(3.86)***	
Observations	232	664	
Banks	68	118	
	Tests for the model		
R2	0.441	0.246	

SUMMARY AND CONCLUSIONS

We find that

adjusting banks' capital ratios with actual unrealised gains and losses results in more volatility, *ceteris paribus*,

so that we can expect that the removal of these filters could be accompanied by higher volatility in capital ratios

If unrealised gains and losses from AFS debt are not included, banks tend to hold a higher proportion of AFS debt assets.

so that we can expect that the removal of the neutralisation filter on debt could be accompanied by a decline in AFS debt.

Large proportion of them are sovereign bonds. Contraction of trading in these markets. Impaired liquidity if more assets classified as HTM. May affect bank's ability to lend.

No effect on capital ratios

CONCLUSIONS

If unrealised losses are always included, regulatory capital is affected by the size of the partial inclusion of gains

- The lower the debt or equity gains included, the lower the amount of regulatory capital.
- The composition of investment (between HFT and AFS) is not affected

We can expect that the removal of the filters on debt and on equity will result in higher capital ratios

- Higher financing costs. May affect bank's ability to lend

CONCLUSIONS

Such undesired results need to be weighted against

- increased risk sensitivity
- disincentive to accumulation of assets that carry unrecognised losses: buffer against liquidity shock

Further analysis:

- Impact on risk management
- Effects on lending

THANK YOU

BANCO DE ESPAÑA
Eurosistema

NOMBRE DEL DEPARTAMENTO