



Belgium's government debt management
in times of financial stress:
A modern approach

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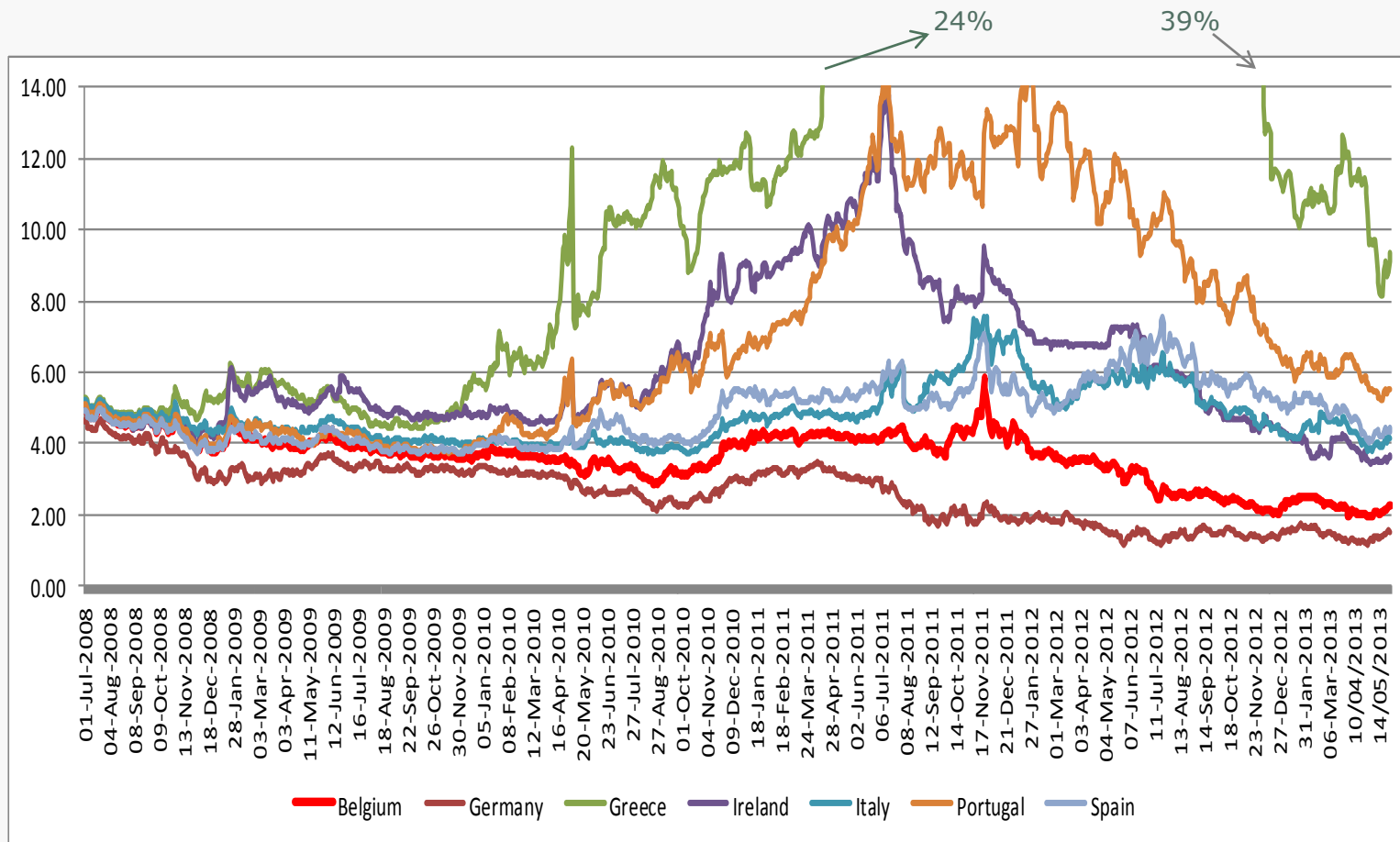
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10-yr yields of main countries having experienced stress (+ Germany)



- In the Euro sovereign debt market, investors are cherry-picking
- Investors sometimes rush for the exit, and volatility can remain extremely high for prolonged periods

From Mid 2008 until early 2012, **divergence** in euro area bond yields increased dramatically.

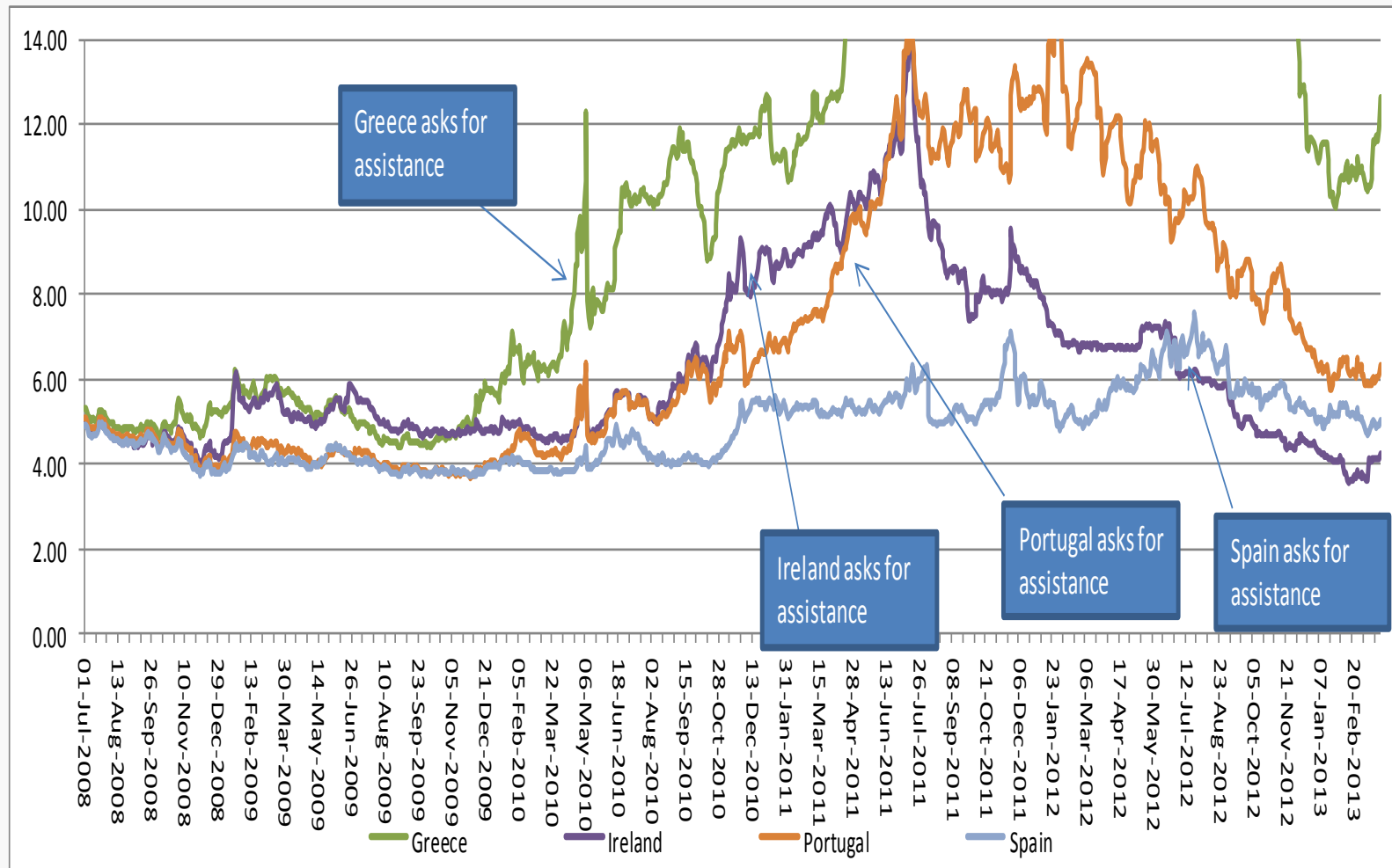
While for some countries yields reached levels that are seen for emerging market economies, yields of countries perceived as 'safe' **decreased** towards levels that were no more justified by macro-economic models.

Peaks in yields sometimes happened **simultaneously** in a number of countries.

Since Mid 2012, yields definitely **converged** again.



10-yr yields of main countries having experienced stress (2)



Most Euro Area countries officially asked for assistance when 10-year yields were above 8.0%.



Lessons

- In normal times, sovereign debt management should prepare for future stressed situations

- What could/should debt managers do?
 - Create a sufficiently long and regular maturity schedule

 - Diversify products

 - Diversify customers (national/international/retail)

 - Enhance communication with investors



Lessons (2)

- Academic work focuses on 'Tax Smoothing'
- In the fiscal insurance theory of debt management, debt plays a role in tax smoothing
 - Focus on market value of debt / discounted value of future tax revenues
- Yet difficult to put into practice
 - The IMF/World Bank's Medium Term Debt Management Strategy Tool does not use such concepts

The practice is sometimes quite different from the theory!



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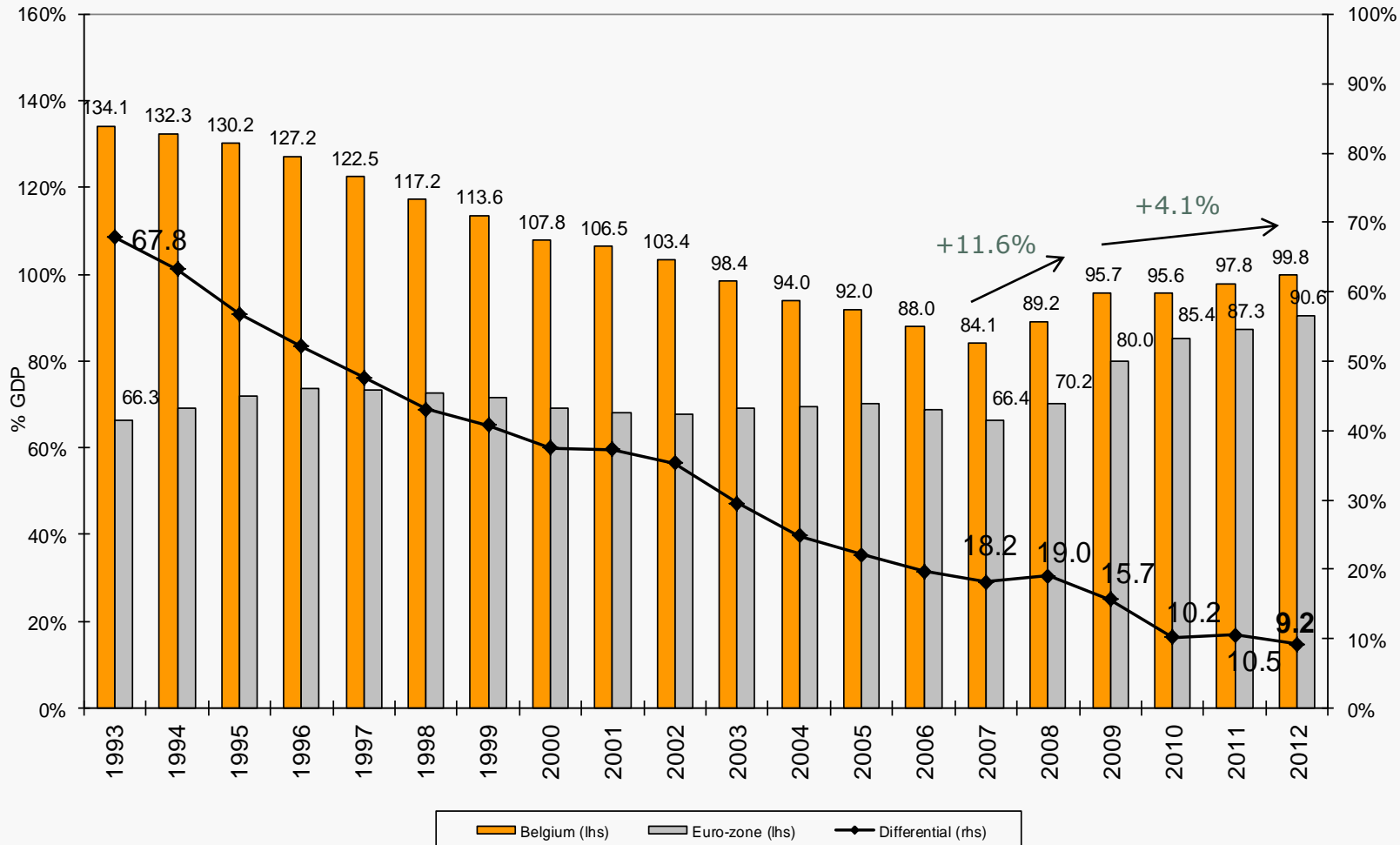
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In 2012, Belgium's debt-to-GDP ratio increased by 2.0%. In three years time, its debt ratio has gone up by 4.1%.



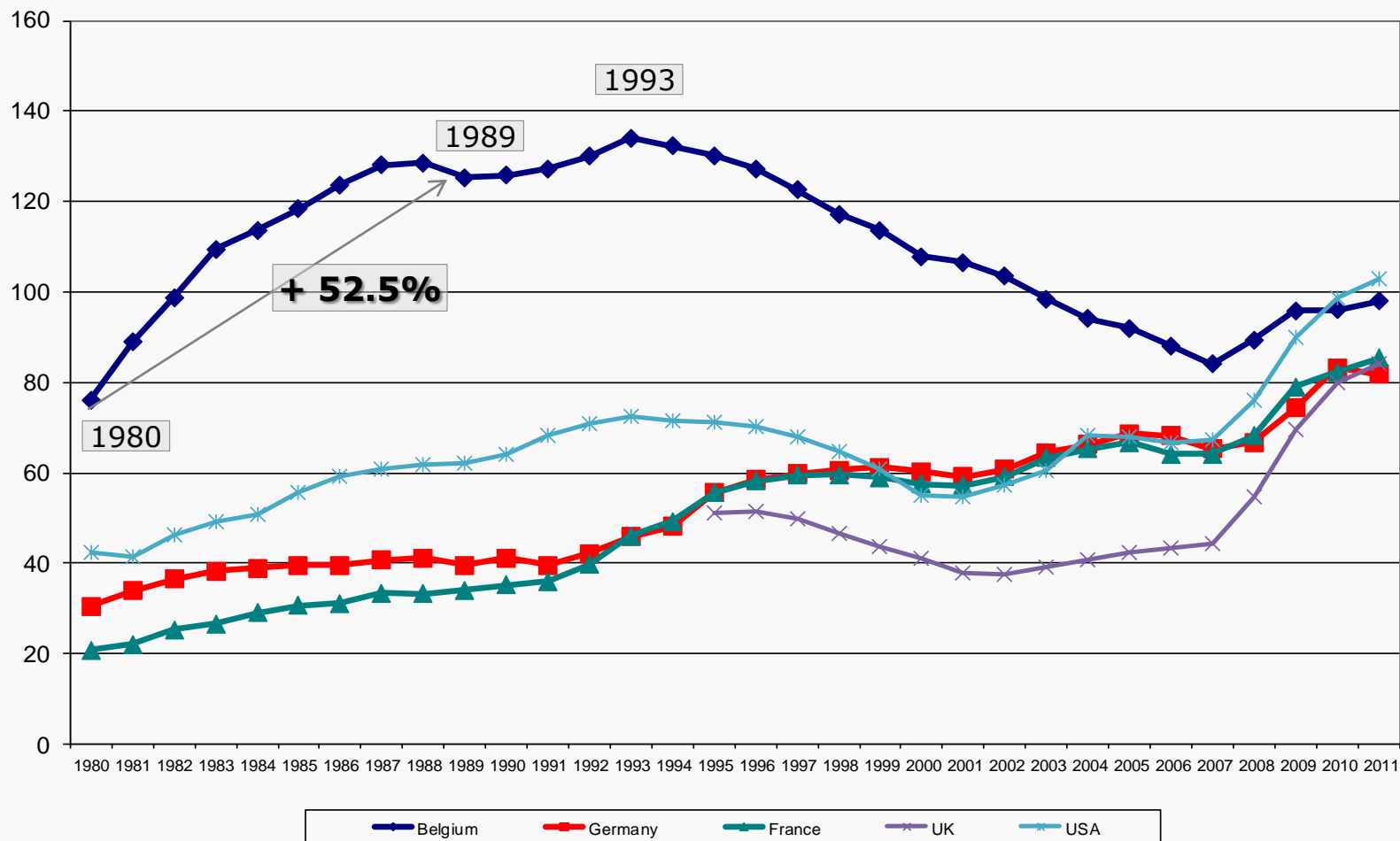
Source: National Bank of Belgium (B), Eurostat (Europe)

!: Financial assets, such as the Kingdom's stakes in its financial institutions, are **not** deducted from its gross debt.



Belgium's debt is a historical problem that originated in the 80s

General government debt of Belgium, Germany, France, UK and USA



Source: until 2010 - Germany : Bundesbank /// France : INSEE /// Belgium : NBB /// UK : Eurostat
 2011 : Eurostat
 USA : IMF

Belgium's high government debt is the consequence of a rapid build-up of debt in the late 70s and especially in the 80s.

This chart shows that Belgium's debt ratio converged to the one of AAA-countries.

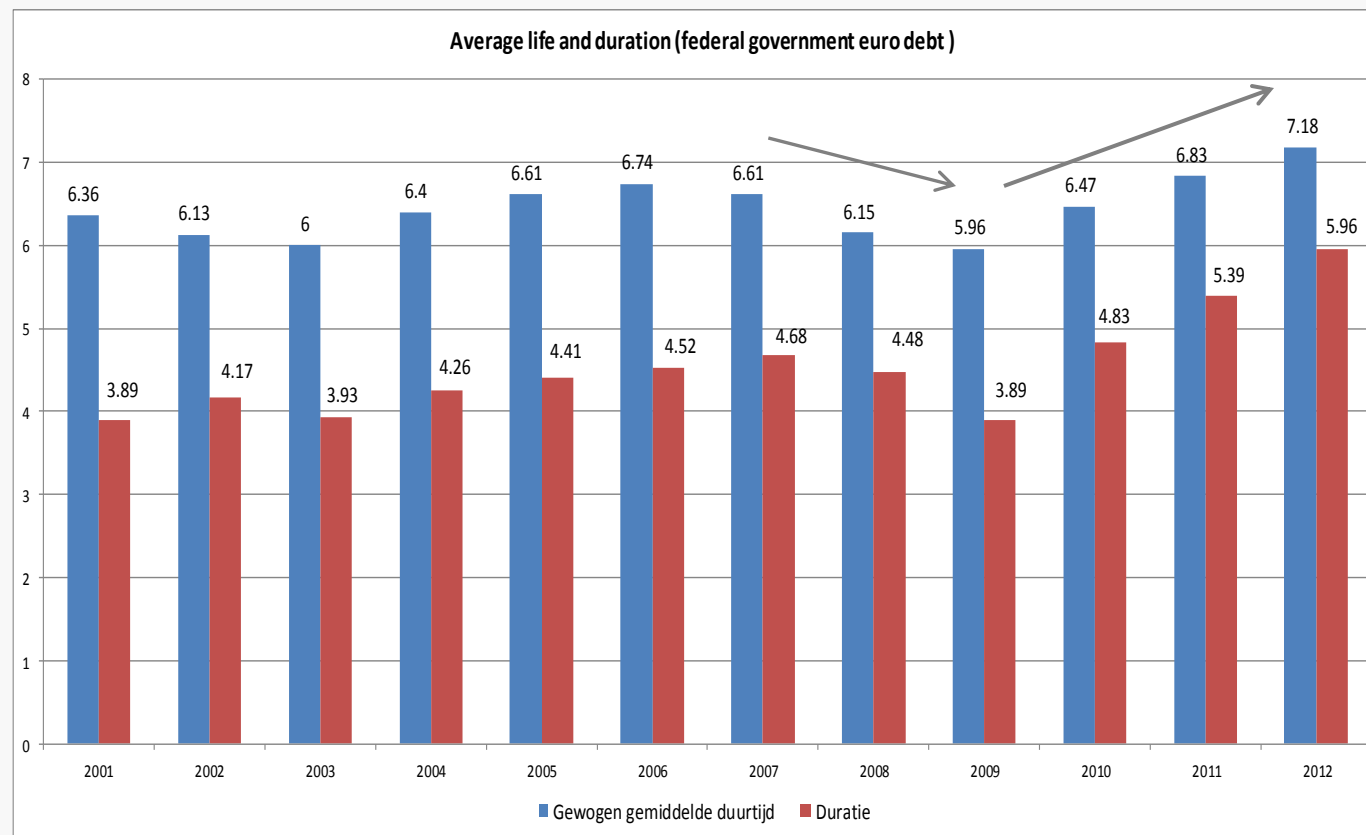


Belgium: Average maturity diminished initially, but is now moving upwards

One way of looking at the risks associated with the debt is to analyse the **average time to reimbursement** (possibly including coupons).

Most of the long-term debt has a **fixed coupon**, so a long maturity schedule diminishes the refinancing needs and provides for certain and known expenses.

The duration measure follows the same pattern but it is also influenced by the general level of interest rates in the market.



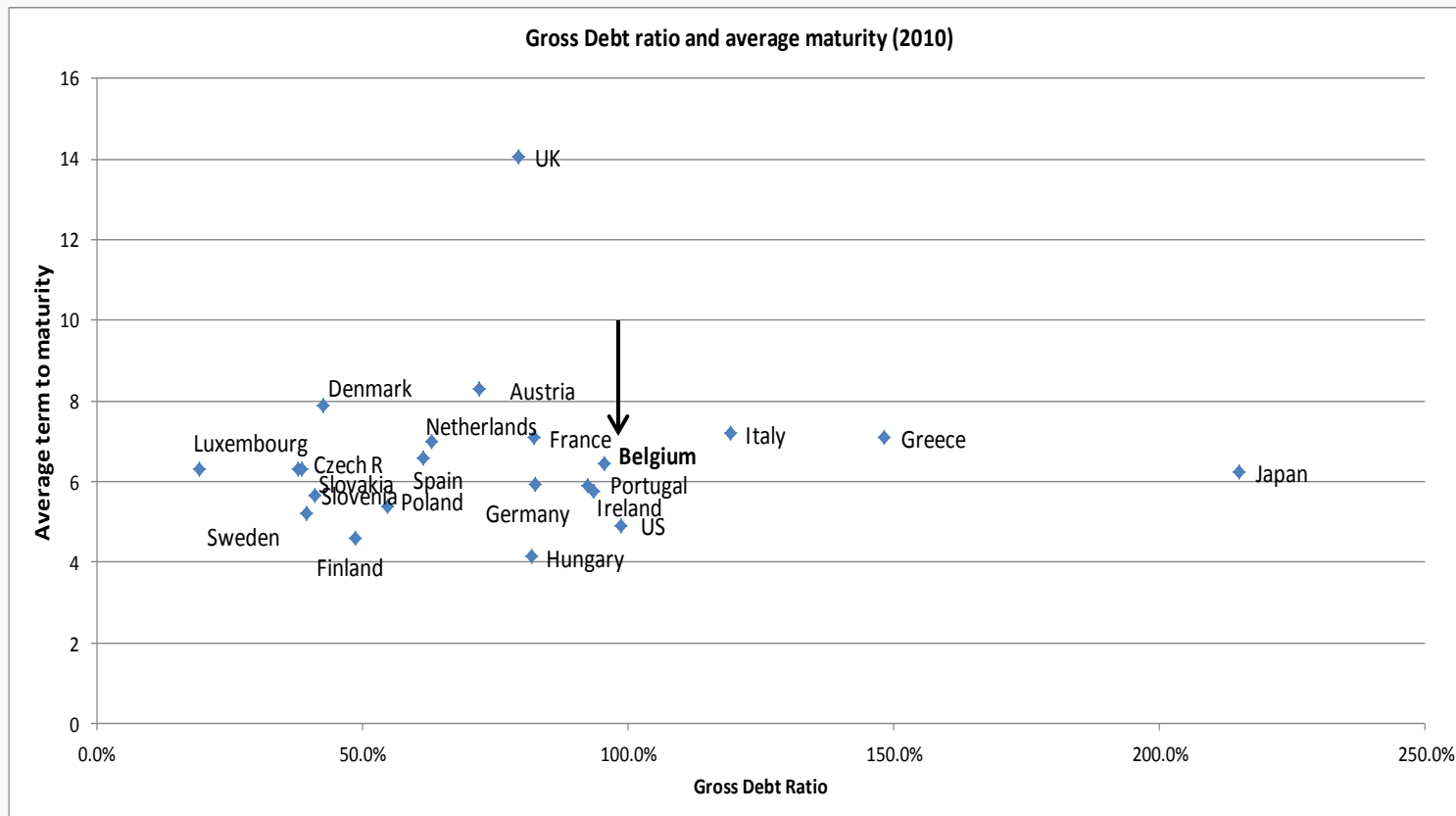
- ▶ In 2008/2009: large financing needs were covered through short-term debt
- ▶ Also: difficult to issue very long term bonds at that time



Comparison with other countries: The correlation between debt ratios and average maturities is weak or even not existent

There **doesn't appear to be a strong correlation** between average maturities and debt ratios. However, no average maturities below 6 years are observed for countries with debt ratios higher than 100%.

It is also possible that high debt ratios precisely **limit** a country's **ability** to borrow in the long or very long term.



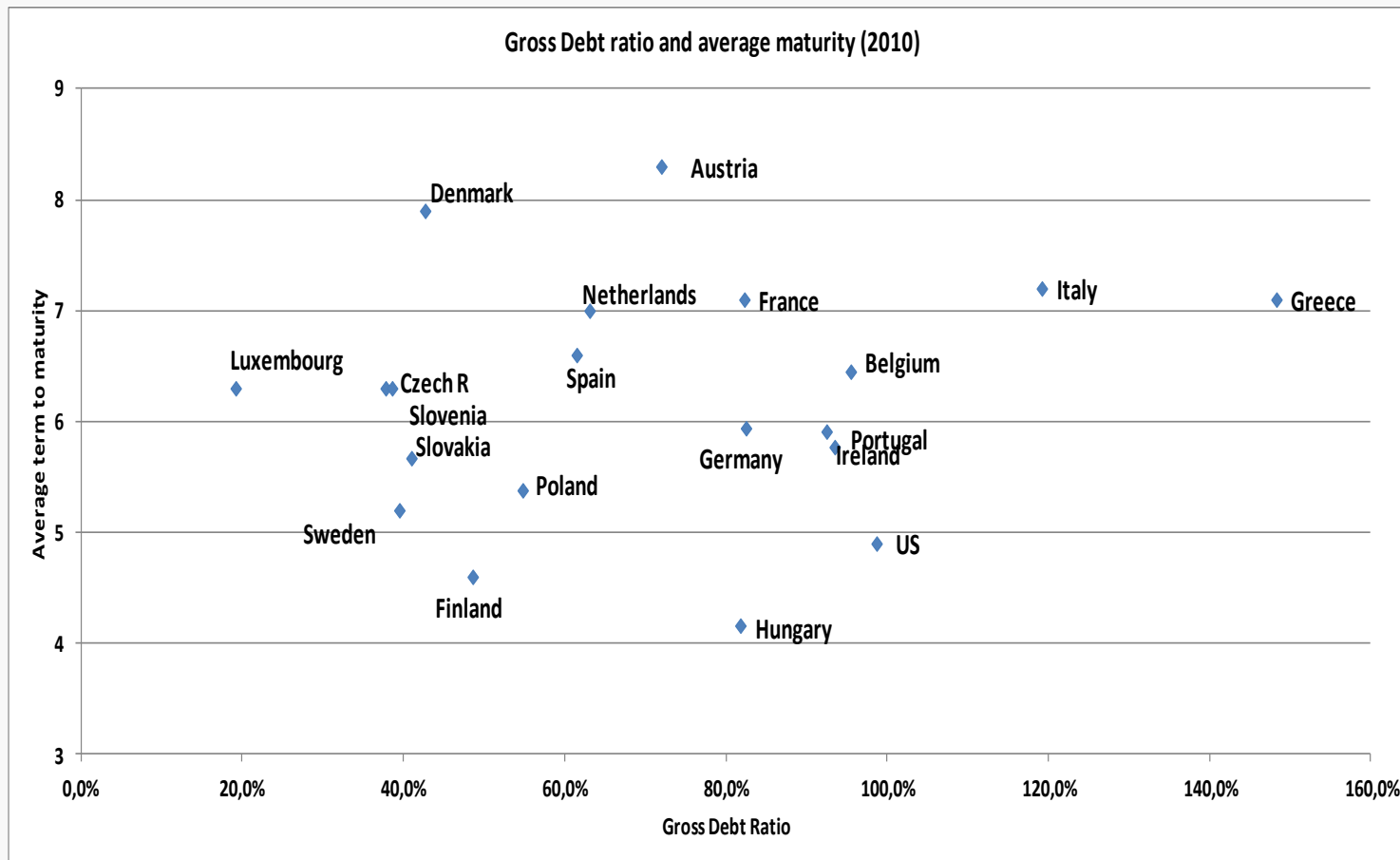
- ▶ Belgium's debt maturity currently stands at 7.33 years, making it one of the longer debt portfolios

Remark: average term to maturity applies to central government debt only

Source: OECD (average term to maturity), Eurostat (debt ratios)



Without the outliers (Japan/UK) there is still no strong correlation

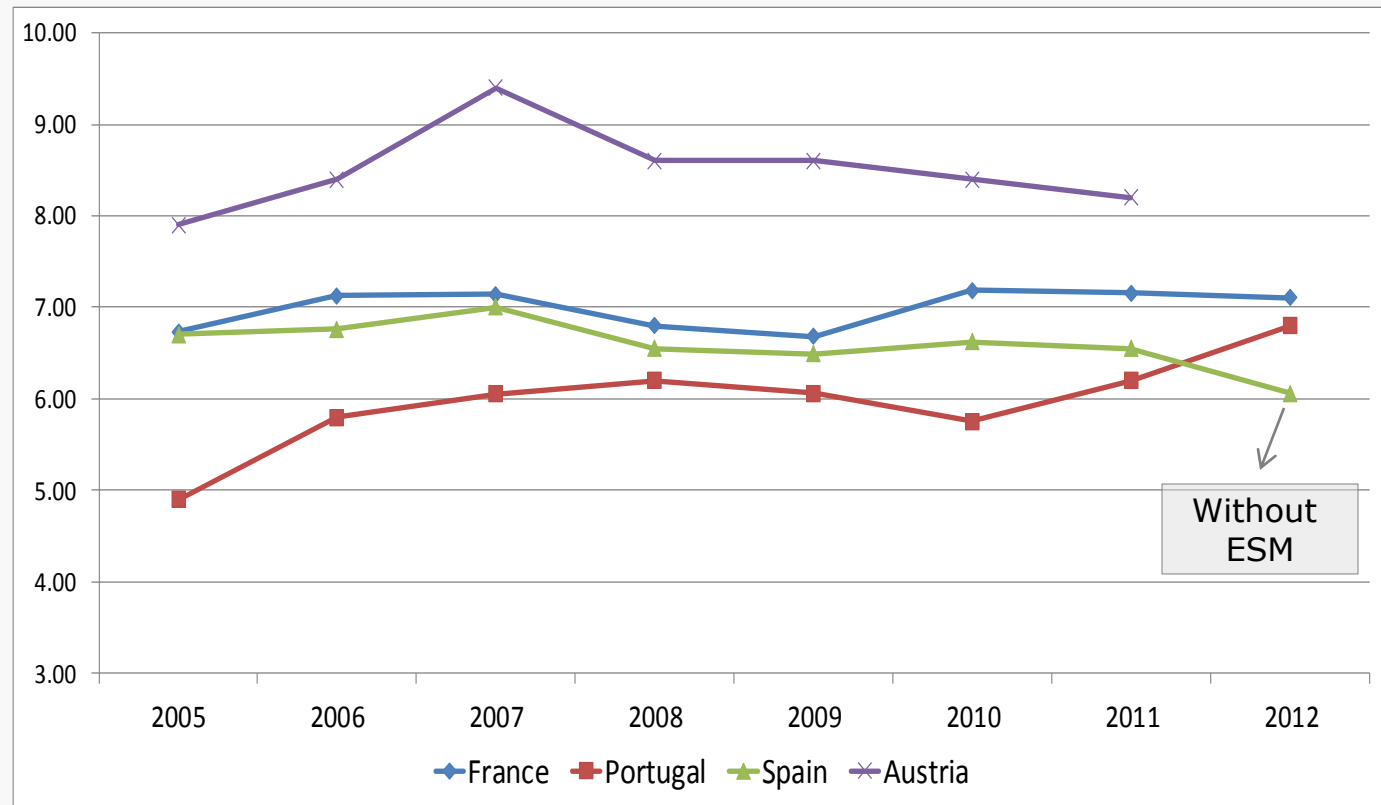


► R square = 0.017 which is very weak

Source: OECD (average term to maturity), Eurostat (debt ratios)



There is no general trend of achieving higher average maturities



Sources: Investor presentations on the DMO's website

- ▶ Those with high average residual terms tend to stabilize
- ▶ Residual term of program countries increased with EFSS/ESM loans (Portugal)

Portugal states that the average maturity of its debt has increased as a result of the EFSF-loans.

Spain's debt average residual term would actually have decreased if the ESM loan is not taken into account.



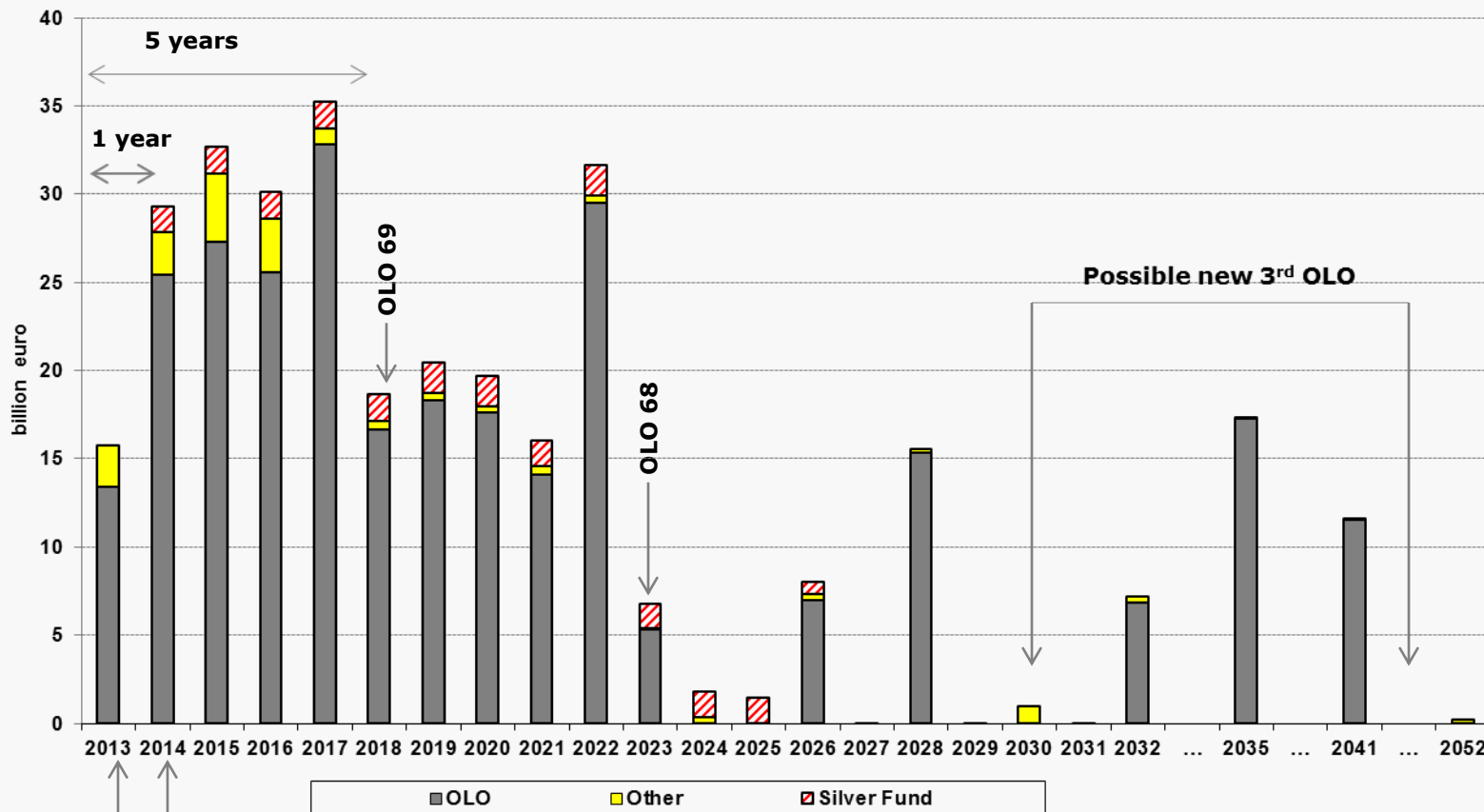
The Belgian Debt Agency however manages its refinancing risk in a more elaborate way, based on the maturity schedule

Many different maturity schedules result in the same value for average life. A high residual term does not mean anything in terms of regularity.

Belgium tries to achieve more or less equivalent redemptions over the next 5 years.

Remark: It should be noted that the redemptions of instruments used to fund the Silver Fund do not represent refinancing risk.

Maturity schedule for long-term euro debt (as at 30 April 2013)

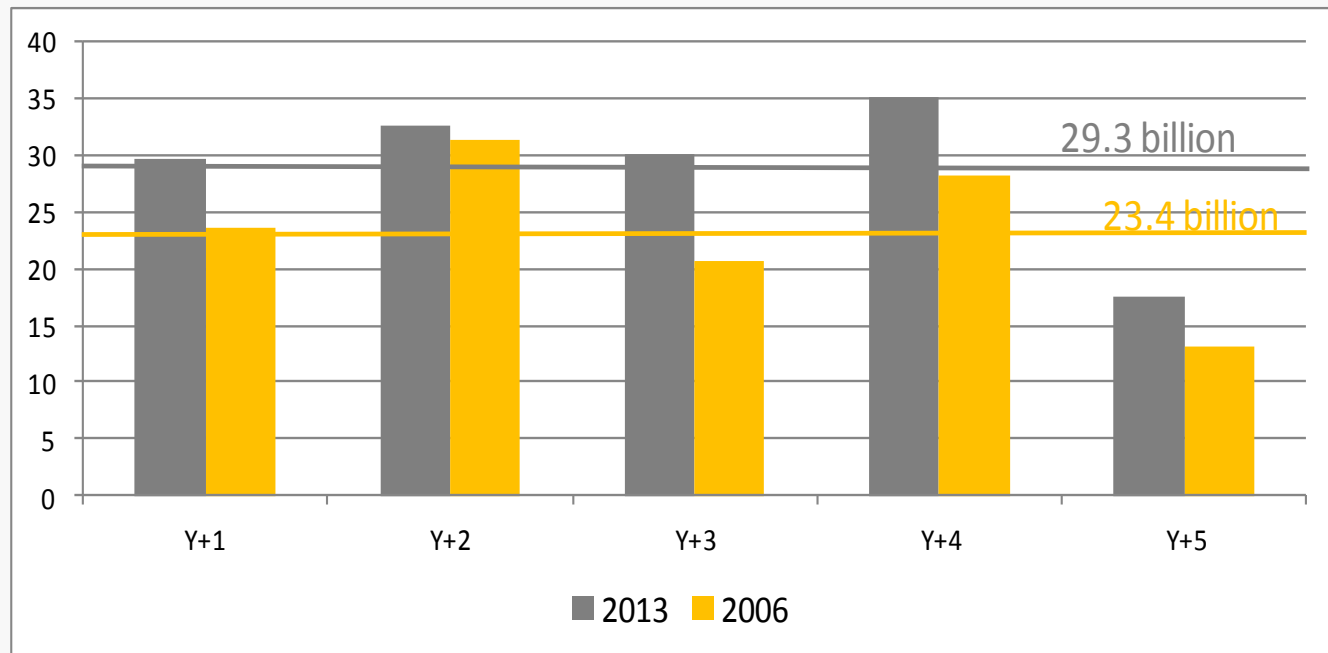


+ EUR 39.6 billion net short term debt



In the past, the medium-term maturity schedule did include a safety margin

Maturity schedule for long-term euro debt (first 5 years): 2013 compared to 2006

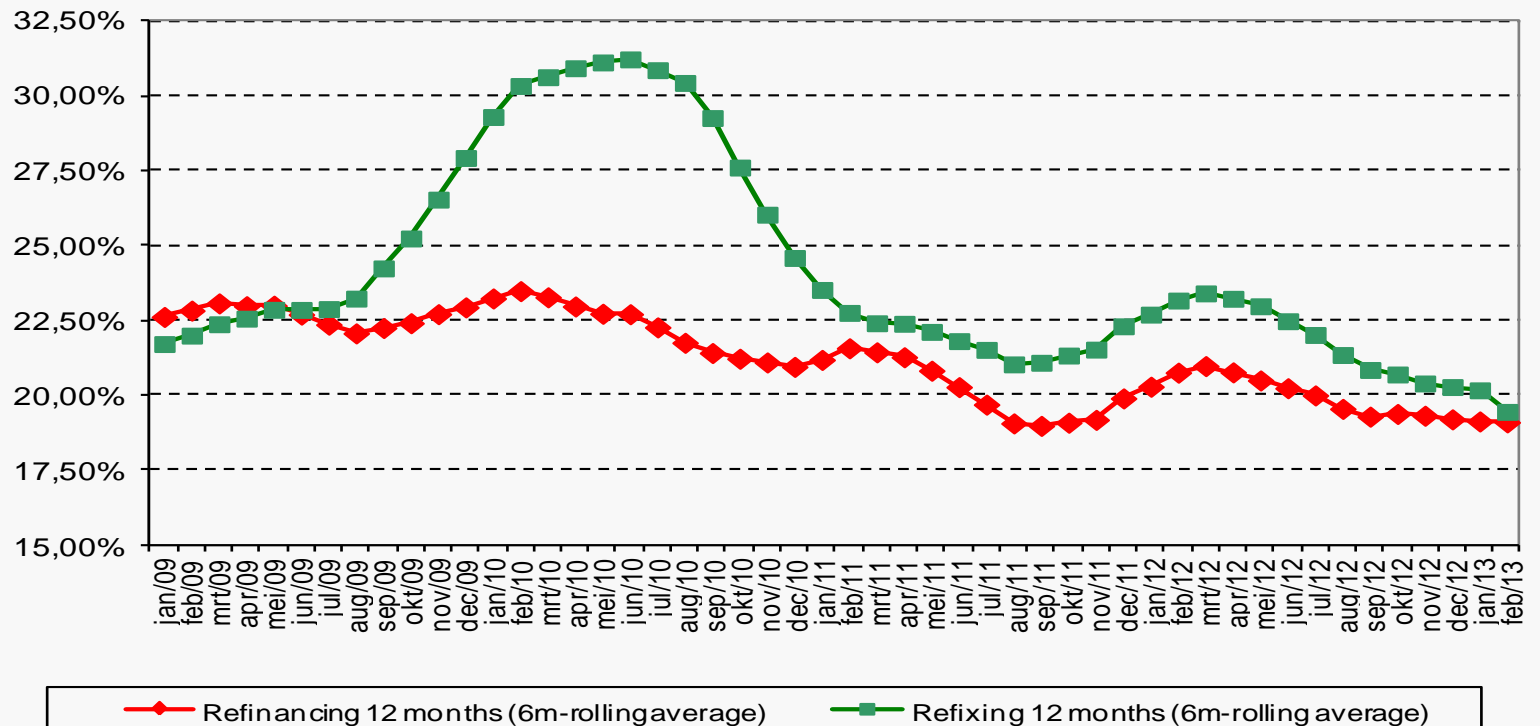


- ▶ In the past, the Belgian Debt Agency wanted to limit yearly redemptions to EUR 25.0 billion maximum
- ▶ It was thought that EUR 30.0 billion of redemptions would still be feasible



In practice, the Belgian Debt Agency controls 'refinancing risk' and 'refixing risk'

12-month refinancing and refixing risks

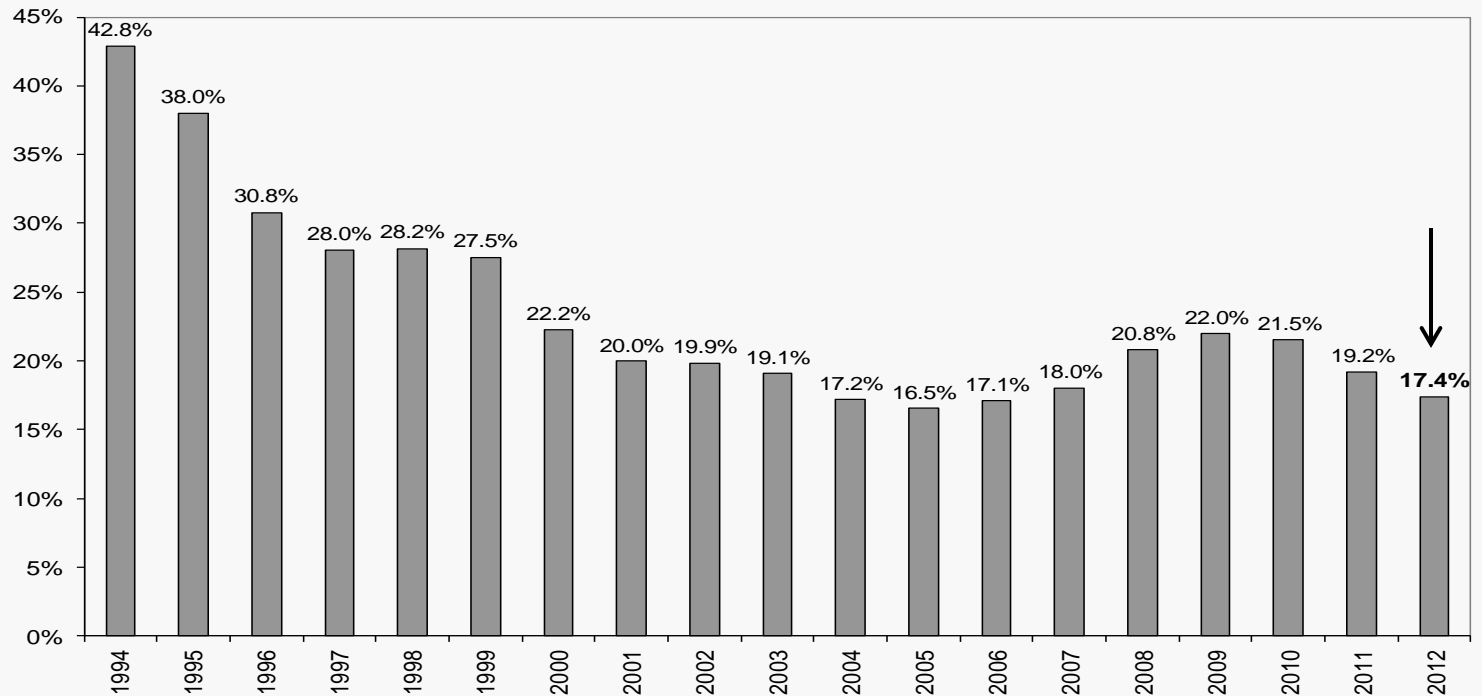


- ▶ 12-month refinancing risk: $\text{Redemptions within 12 months} / \text{net debt}$
- ▶ 12-month refixing risk: $\text{Refinancing risk} + (\text{Floating-rate debt} + \text{net receiver swap position}) / \text{net debt}$



The 12-month refinancing needs can also be expressed as a % of GDP

12-month refinancing risk in terms of nominal GDP ('rollover risk')



► In terms of GDP, it decreased significantly since 2009

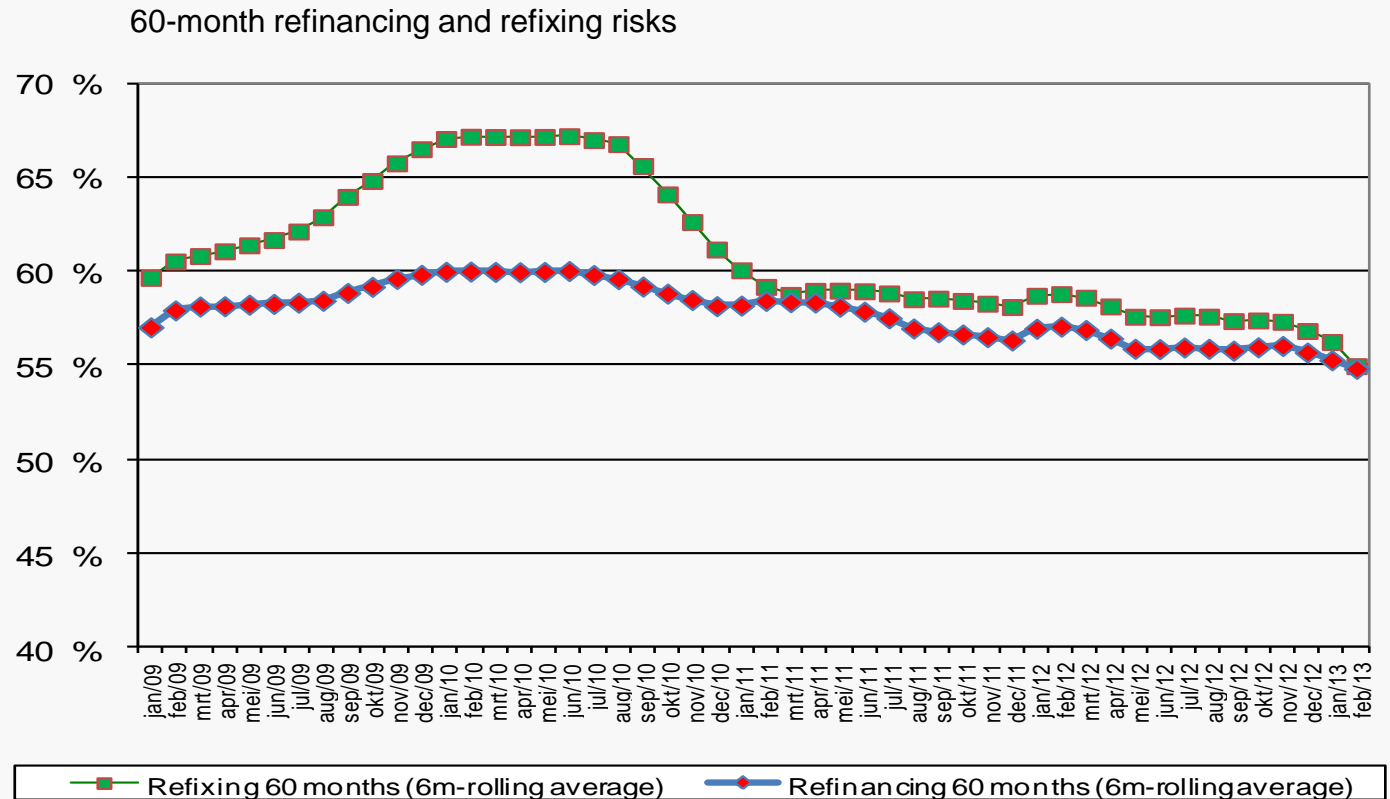
Rating Agencies are especially looking at the refinancing risk in this way.



These risks are also monitored over the medium term

Medium-term risks are also declining.

In 2013, the 60-month refinancing risk is limited to **55.0%** as from July 1 onwards, and 60-month refixing risk is limited to **60.0%**.

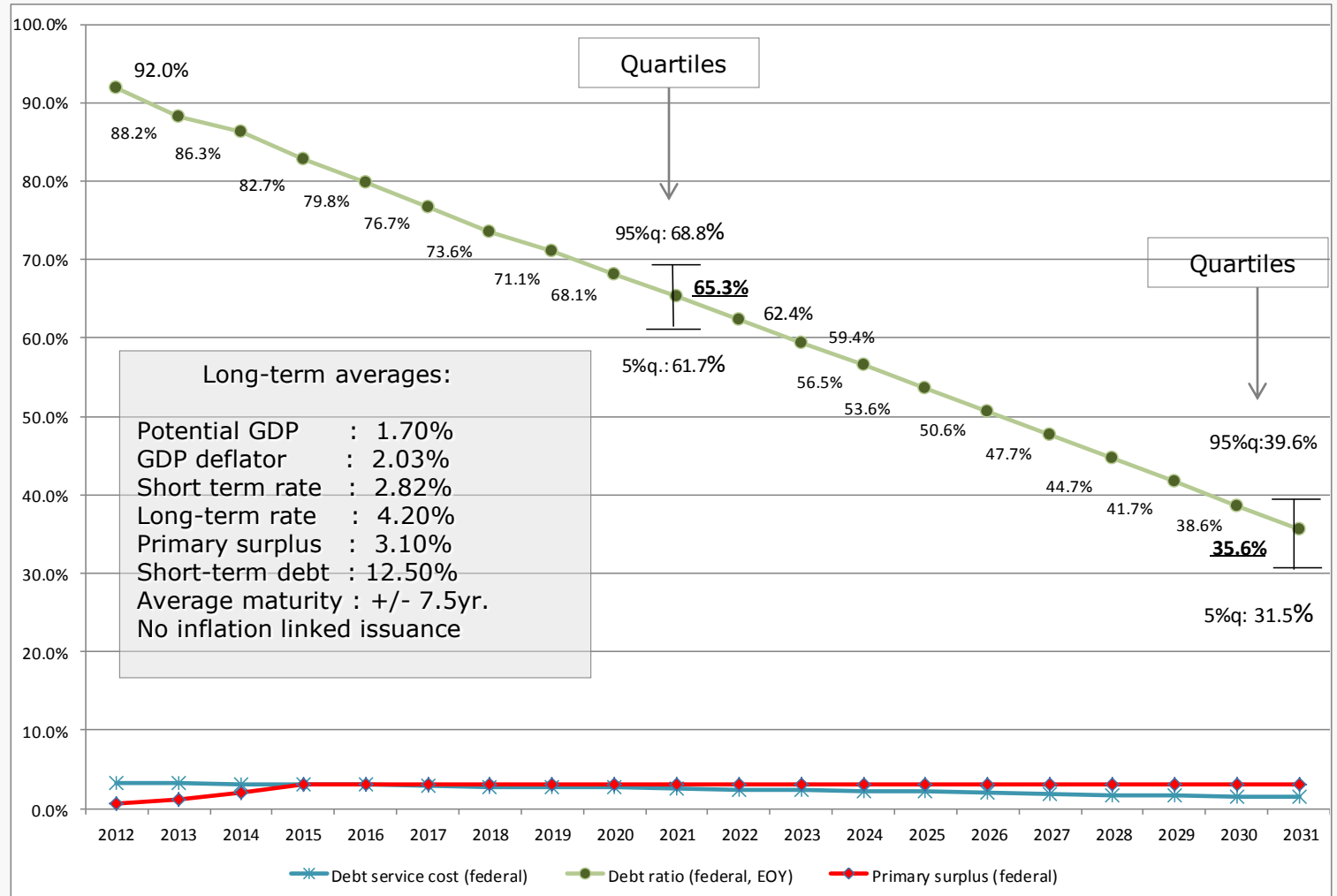


- ▶ 60-month refinancing risk: $\text{Redemptions within 60 months} / \text{net debt}$
- ▶ 60-month refixing risk: $\text{Refinancing risk} + (\text{Floating-rate debt} + \text{net receiver swap position}) / \text{net debt}$



The new methodology looks at future debt-to-GDP ratios

Federal debt ratio projections according to regime switching model for GDP



Using a model that simulates real GDP (in regime-switching), HICP-inflation, GDP-deflator, and several interest rates, debt management strategies can be evaluated **according to the federal debt-to-GDP ratio achieved over the long term**, given pre-determined primary surpluses.

This simulation run shows that the federal debt-to-GDP would amount to **65.3%** in **10 years**, with the **5%**-percentile at **61.7%** and the **95%**-percentile at **68.8%**.



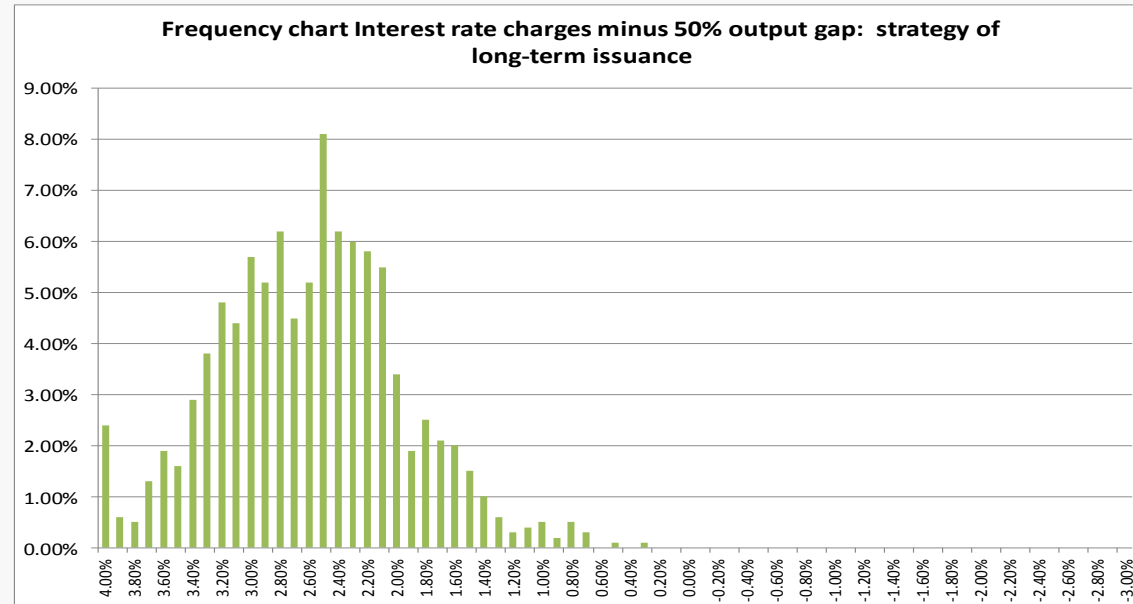
What is the cost of issuing long-term debt?

- Historical average spread 3M – 10y \approx 1.40%
 - Thus an immediate increase of short term debt by 10% of GDP...
 - ... results in 3% lower debt ratio in 20 years time
 - ... but risks are substantially higher!

Anyway, there are limits to the proportion of short-term debt that can be beared by a government.



And are the costs of short-term debt better in line with the government's primary surpluses?

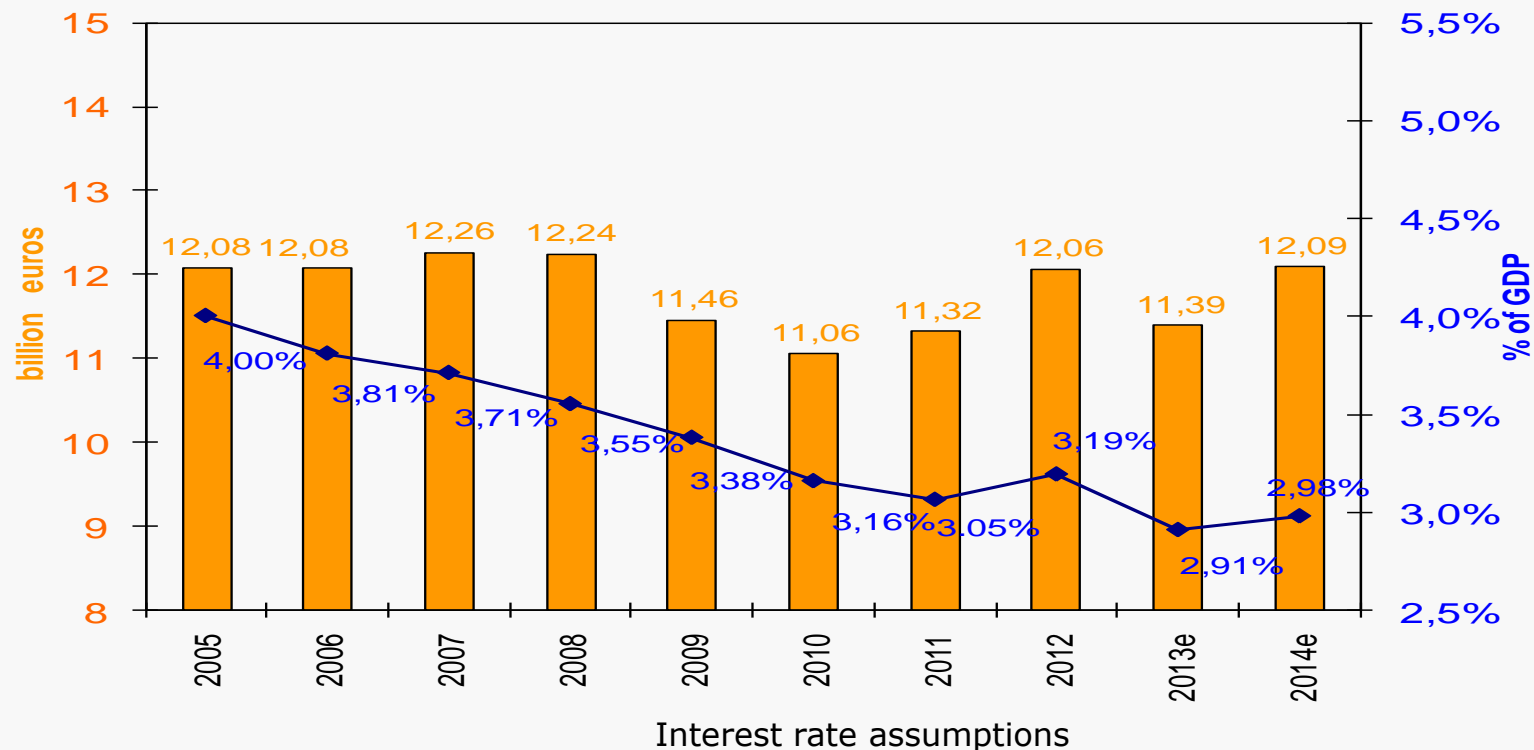


- Calculate probability distribution of debt servicing costs as a % of GDP diminished by 50% of the output gap
- Strategy of issuing heavily long-term debt (average portfolio maturity 8.3 years): Costs 2.59% of GDP ; annual Standard Deviation 0.64% .
- Strategy of issuing less long-term debt (average portfolio maturity 5.9 years): Costs 2.49% ; annual Standard Deviation 0.60% .



Results of the strategy in terms of debt servicing costs

Interest costs (federal debt) (*): realizations and budget



Year	2013	2014
3mth-rate	0.24%	1.29%
10-yr rate	2.81%	3.53%

(*): excluding interest payments to the Silver Fund

Federal debt servicing costs have **structurally decreased** in terms of GDP, despite the increased debt ratio and the higher average maturity of the debt.

In 2012, they reached 3.19% of GDP, and in **2013** they would decline to **2.91% of GDP**.

This estimate is based on interest rates that are substantially higher than the current ones.



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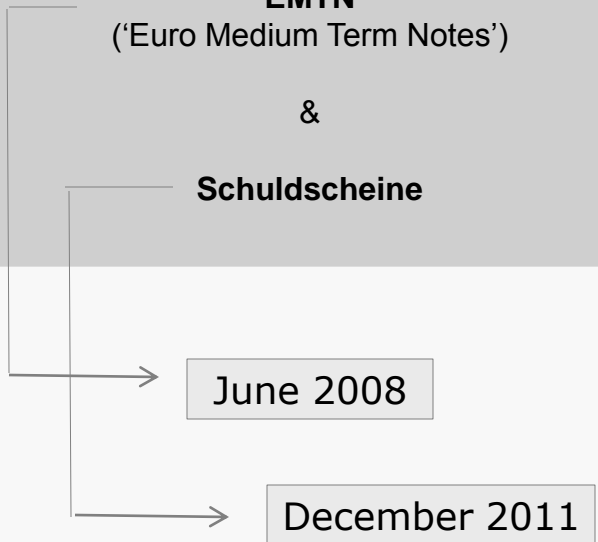
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The Belgian Treasury extended its product range

	Medium and Long-term	Short-term
Standardized (Euro only)	<p>OLO (‘Obligations lineaires / Lineaire obligaties’)</p> <p>&</p> <p>State Notes (exclusively retail primary market)</p>	<p>TC (‘Treasury Certificates’)</p>
Flexible (OECD currencies)	<p>EMTN (‘Euro Medium Term Notes’)</p> <p>&</p> <p>Schuldscheine</p>	<p>BTB (‘Belgian Treasury Bills’)</p>



The standardized and plain vanilla products are complemented by flexible products.

Belgium is one of the **most diversified** sovereign issuers.

Still, inflation-linked bonds are lacking (until now).



Relative importance of the long-term products in the 2013 funding plan

Funding in 2013	
<u>Medium & Long term</u>	<u>40.50</u>
OLO issuance	37.00
EMTN/Schuldscheine issuance	3.00
State Notes (retail)	0.50
<u>Short term</u>	
Change in Treasury Certificate Stock	-1.00
Change other Short-Term debt/deposits	-1.02

← Yet EUR 6.03 billion in 2011

← Currently EUR 35.09 billion outstanding

- ▶ An OLO Floating Rate Note has been issued in 2013 (EUR 2.5 billion)
- ▶ The bigger issue: Inflation-linked debt?

The 'plain vanilla' OLO bonds remain however the most important funding instrument, representing **77.40%** of the overall outstanding federal debt.



The case for inflation-linked debt

- Issuers:

- France (12.9% of all debt), Germany
- Italy, Greece

- Analysis:

- Need to be able to support market (size)
- Certainly a diversification
- Cost effectiveness depends on 'breakeven inflation': it takes a long time before one can assess this
- Evidence of a liquidity premium
- Not much debt ratio stabilisation expected

The primary advantage of inflation-linked bonds is the **diversification**. In addition, not all sovereign issuers are active in this market.



Euro Medium Term Notes (EMTN) program

Overview EMTN-deals (amount issued and number of deals): 35 deals so far since 2008

	Plain Vanilla Public (fixed or FRN)	Plain Vanilla Private (fixed or FRN)	Structured
EUR		€ 2.54 billion (#16)	€ 1.29 billion (#7)
USD	\$ 6.25 billion (#6)	\$ 3.35 billion (#4)	-
CHF	-	CHF 100 million (#1)	-
JPY		JPY 10.0 billion (#1)	

Total issuance since 2008: EUR 11.665 billion (2012: EUR 2.365 billion)



Belgium's product for the private investor performed extremely well in December 2011

In December 2011, the Belgian private investor demonstrated that he/she was **willing to finance** the State when he/she feels that the offer is reasonable.

The investors also didn't mind that the OLO yields were (much) higher at that time.

And, on top of the **EUR 5.73 billion** invested in the State Notes (300,000 subscriptions), the Belgians bought some **EUR 265 million** OLOs.

Issuance results of the State Notes (3, 5 and 8 years) compared with the 5y-coupon (1996-2012)

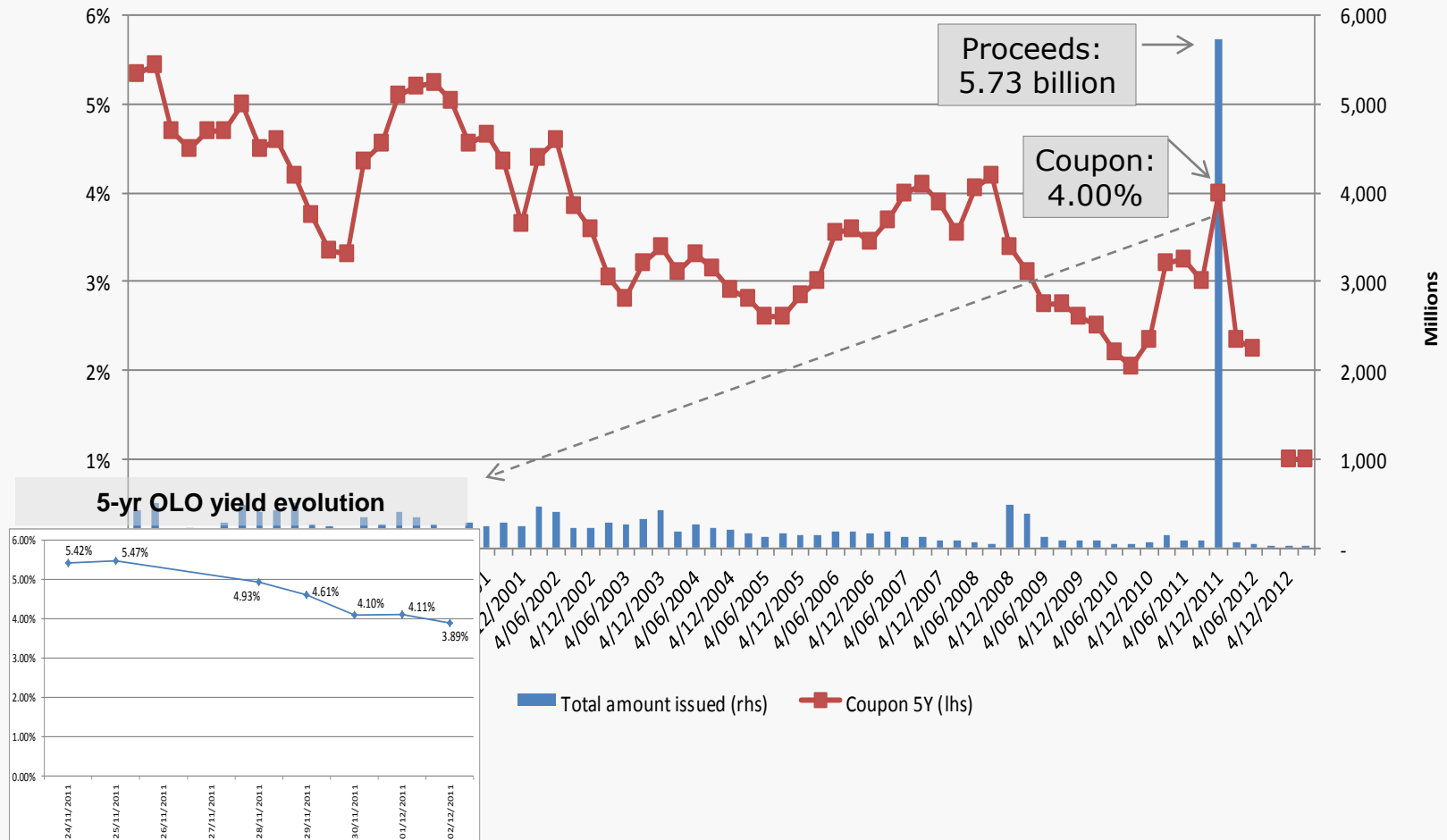




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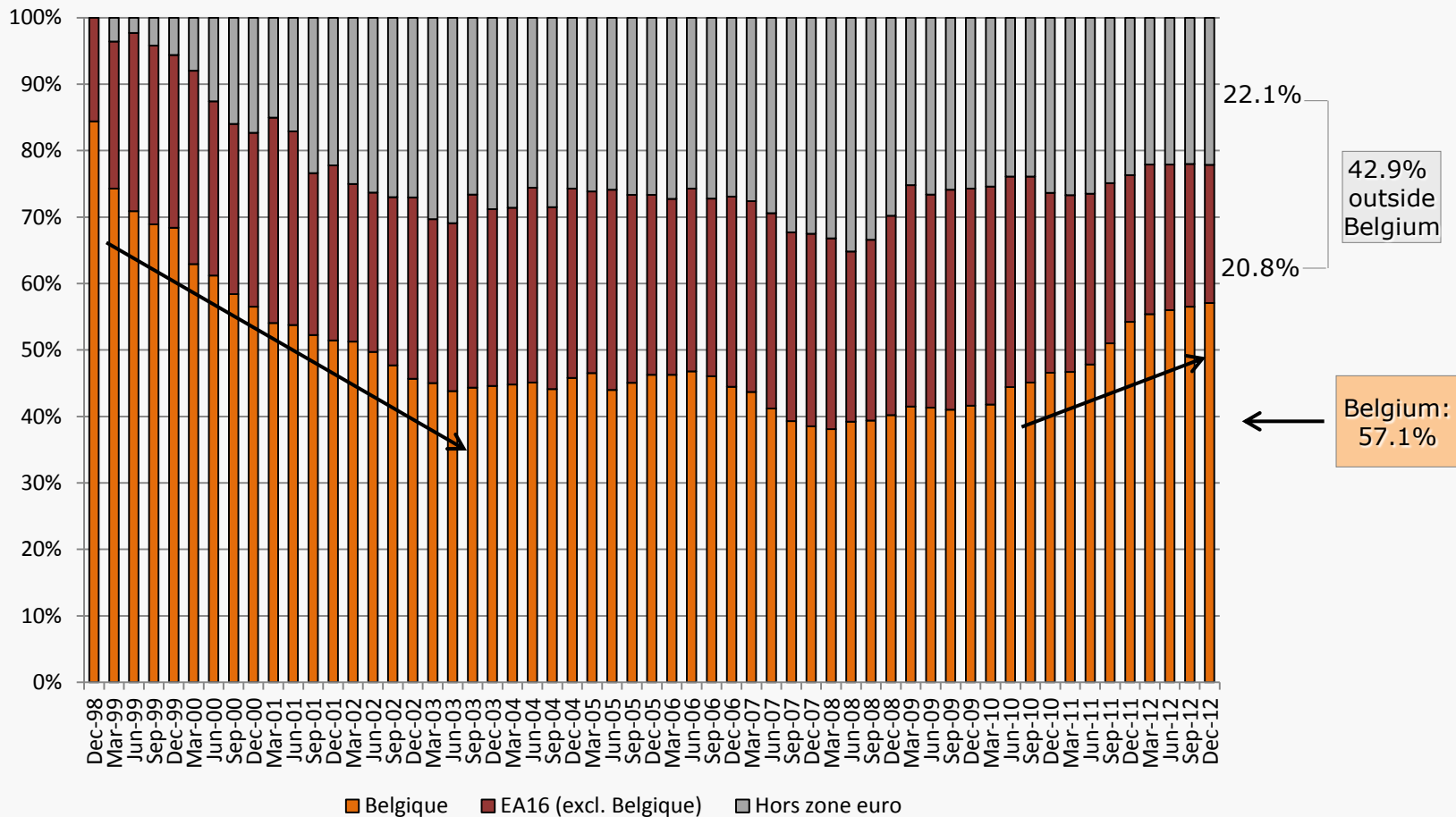
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Issuing in a reserve currency allowed for geographical diversification (Graph: OLOs)

Foreign bond holdings are sometimes seen as a risk. But they allow for a much more liquid market, and hence cheaper funding.

In addition, Belgium has enough domestic savings.



Source: National Bank of Belgium



In times of stress, domestic investors take the lead

Non-euro (Japanese/US) investors have been buying significant amounts of OLOs since June 2012.

We believe this caused the Belgian interest rates to decline further during the summer of 2012.

Belgium's household net financial assets amount to **213% of GDP** resulting in a high potential domestic participation for the government bond market.

OLO - Net Sales per Region (Primary Dealer secondary market reporting)

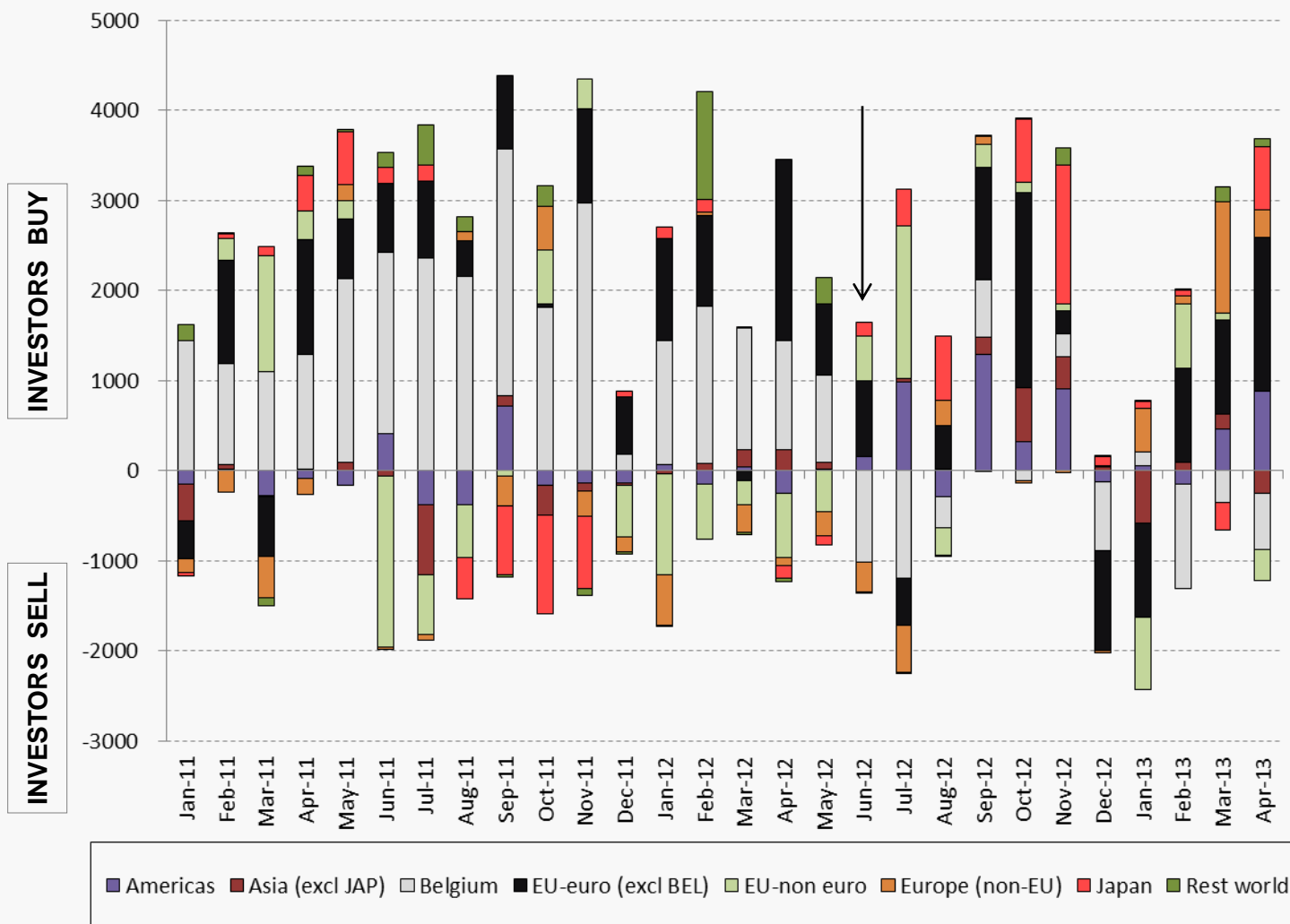




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Before the crisis, the issuance pattern was strict and simple

- Syndications:
 - Two per year

- Auctions:
 - One every two months
 - Maximum three lines, sometimes two
 - Almost never 'off the runs' offered

Being 'boring' is indeed considered as an advantage in the government bond market!



Nowadays...

- Syndications:
 - Three per year

- Auctions:
 - One each month
 - Up to 4 lines
 - Likely to have 'off the runs'
 - In addition: optional reverse inquiry (mid-month) ¹
 - 'Syndicated taps' are also possible

- + private issuance EMTN, floaters

¹: used twice so far

The Belgian Treasury had to become a little bit less predictable and somewhat more opportunistic.



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Enhanced Communication by Sovereigns/DMOs

- EURO sovereign investors largely unprepared to what happened
 - In-house knowledge of sovereigns needed to grow

- Now:
 - Much more attention to country analysis: current account, economy, political risks
 - Yet still 'headline driven' / perception remains important
 - Frequent visits to investors (also reverse road shows)
 - Two way communication