La gestion de la dette fédérale
après la crise des dettes souveraines

Jean Deboutte

20 Janvier, 2016
Kingdom of Belgium - Federal Public Service FINANCE - Treasury - Debt Agency

STRATEGIC COMMITTEE OF THE DEBT

THE BELGIAN DEBT AGENCY (35 FTE)

FRONT OFFICE (8 FTE)
Dir.: Anne Leclercq
- Funding operations
- Cash Management Operations
- Operations with Derivatives
- Account Management public clients
- Relationship with dealers
- Monitoring of Fin. Markets

MIDDLE OFFICE (10 FTE)
Dir.: Jean Deboutte
- Strategy
- Risk Management
- Budget & Reporting
- Product Development
- Investor Relations
- Communication
- Reports on flows and inter-dealer platforms
- Guarantees financial institutions
- Rating Agencies

BACK OFFICE (15 FTE)
Dir.: [..]
- Validation and Confirmation of Operations
- Payments, in relationship with National Bank
- Management of the ‘Grand-Livre’
- I.T. and Systems

+ (in staff): 1 auditor, 1 Secretary

www.debtagency.be
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What is Government Debt? How is it measured?

- **Definition:** Debt of the **general government sector** (S.13) as defined in ESA 2010 (European System of Accounts)

- **Excessive Deficit Procedure:** *measurement* of government debt
  1) measured at **face** (nominal) **value** (not at market value)
  2) **only** loans and debt securities
  3) **not** included: derivatives, accounts payable, guaranteed debt
  4) measured in **gross** terms (no netting of assets)
  5) **consolidated** across the government sector
It is the government debt ratio which is used

- Gross Domestic Product (at market prices) is the denominator for tax income, consumption, investment, … and for government debt (expressed in euros, government debt is not very relevant)

- The debt ratio thus decreases with inflation and economic growth

- Example: Belgium (2014 GDP: 400.64 billion euro)

<table>
<thead>
<tr>
<th>31/12/2014</th>
<th>In EUR (billion)</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal debt</td>
<td>359.82</td>
<td>89.8%</td>
</tr>
<tr>
<td>Regions &amp; Comm.</td>
<td>50.17</td>
<td>12.5%</td>
</tr>
<tr>
<td>Municipalities</td>
<td>24.36</td>
<td>6.1%</td>
</tr>
<tr>
<td>Social Security</td>
<td>7.82</td>
<td>2.0%</td>
</tr>
<tr>
<td>Consolidation effect</td>
<td>-14.86</td>
<td>-3.7%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>427.31</strong></td>
<td><strong>106.7%</strong></td>
</tr>
</tbody>
</table>
In general, government debt ratios have been rising over the last 35 years. Yet Belgium’s debt path was quite particular.

**Source:** IMF (USA: no data before 2001; Germany: no data before 1991).
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From mid-2010 until mid-2012, divergence in euro area bond yields was dramatically high.

Peaks in yields sometimes happened simultaneously in a number of euro area countries.

Since mid-2012, yields converged again.

1) EA countries do not control their currency unlike other countries
2) In the Euro sovereign debt market, investors can ‘cherry-pick’; they may also rush for the exit
3) Volatility can remain high for a prolonged time
Yet euro area debt ratios haven’t been rising that much any more since 2010.

This happened in an environment of significantly higher debt ratios due to the financial and economic crisis of 2008-2009.
It should however be taken into account that Belgium owns more assets than in 2007. And in addition, it supported other Euro Area countries.

<table>
<thead>
<tr>
<th>New assets since 2007</th>
<th>Value (€ billion)</th>
<th>% of 2015 GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shares BNP Paribas(*)</td>
<td>5.56</td>
<td>1.4%</td>
</tr>
<tr>
<td>Claim KBC (***)</td>
<td>3.00</td>
<td>0.7%</td>
</tr>
<tr>
<td>Belfius (**)</td>
<td>4.00</td>
<td>1.0%</td>
</tr>
<tr>
<td>Vitrufin (ex-Ethias) (***)</td>
<td>1.50</td>
<td>0.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14.06</strong></td>
<td><strong>3.5%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support other countries</th>
<th>Value (€ billion)</th>
<th>% of 2015 GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFSF-guarantees and loans to Greece</td>
<td>8.44</td>
<td>2.1%</td>
</tr>
<tr>
<td>Share of ESM capital</td>
<td>2.78</td>
<td>0.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11.22</strong></td>
<td><strong>2.8%</strong></td>
</tr>
</tbody>
</table>

(*): Market value (Share price 18 January 2016: EUR 44.8)
(**): Purchase price
(***): Reimbursed in December 2015

6.3% of GDP
Europe’s responses to the sovereign debt (and economic) crisis

- Intergovernmental Lending (Greece) → European Financial Stability Fund (EFSF) → European Stabilisation Mechanism (ESM)


- ECB:
  - Long-term Refinancing Operations (LTRO)
  - (Very) low refinancing and deposit rates
  - ‘Do whatever it takes (26 July 2012) to save the euro’
  - Quantitative easing (including now the purchase of government bonds)
From March 2015 onwards, the ECB buys some **60 billion euro** of assets, including primarily government bonds of the EA.

As such, each month the ECB buys some **1.2 billion euro** of OLOs.

The 22 January 2015 decision was largely anticipated, yet yields continued to decline afterwards, only to come back to previous levels in April 2015.

Yields on short-term instruments were influenced by the refinancing and deposit rate decrease.
The 10-year yield is now lower than both current and past nominal GDP-growth.
Some recent headlines about sovereign funding

- ‘Belgium blow-out underscores sovereign market health’  
  *(Global Capital, 13 January 2016, on the €5bn 10-year 1.0% OLO77)*

- ‘Spain hits hat trick of bumper openers with €9bn deal’  
  *(Global Capital, 12 January 2016, on the €9bn 10-year 1.95% Obligacion)*

  but also:

  - ‘Sub-sovereigns are suffering because of Draghi’s dithering’  
    *(Global Capital, 12 January 2016)*

  - ‘Surprise downgrade prompts 40bp sell-off and fury’  
    *(Global Capital, 18 January 2016, on the S&P’s Poland downgrade)*
The OECD has projected the Belgian Debt Ratio until 2040

General government gross debt as a percentage of GDP

Consolidation and pension reform scenario:

- GDP growth in the period 2017-40 averaging 1.6% in real terms and 3.6% in nominal terms.
- achieving budget balance in 2018 and a structural surplus of 0.75% of potential GDP in 2019-40.

Source: OECD Belgium Survey 2015
So what should government debt managers now do?

- In ‘good times’, sovereign debt management should prepare for future situations that might be stressful:
  - Create a sufficiently long and regular maturity schedule
  - Diversify products & customers (national/international/retail)
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Almost all long-term debt has been issued in the form of loans that have no intermediate redemptions. The maturity schedule indicates which is the **refinancing risk** of the Kingdom in the years to come. To be complete, the redemptions of the short-term debt should be added to the schedule.
One way of looking at the risks associated with the debt is to analyse the average time to reimbursement. 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 had to be covered through short-term debt issuance...

... and it was difficult to issue very long term bonds at that time.
The amount of long-term debt issued has indeed increased, and the average maturity of new issuance has reached record highs.


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</thead>
<tbody>
<tr>
<td>Long-term</td>
<td>33.79</td>
<td>38.28</td>
<td>43.73</td>
<td>47.97</td>
<td>46.16</td>
<td>45.21</td>
<td>34.11</td>
<td>39.09</td>
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<tr>
<td>funding (€ billion)</td>
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<tr>
<td>Average</td>
<td>7.17 yr</td>
<td>6.52 yr</td>
<td>11.23 yr</td>
<td>11.46 yr</td>
<td>11.31 yr</td>
<td>11.81 yr</td>
<td>14.01 yr</td>
<td>13.57 yr</td>
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<tr>
<td>maturity</td>
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<td>long-term</td>
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Part of the high long-term debt issuance was the result of higher budget deficits, but it allowed also the short-term debt portfolio to decrease.

This allowed for a significant decrease of the short-term debt portfolio

Outstanding amount of Belgium’s ‘T-Bills’

April 2009: €54.0 billion

December 2015: €25.3 billion
There doesn't appear to be a strong correlation between average maturities and debt ratios.

On the other hand, no average maturities below 6 years are observed for countries with debt ratios higher than 100%.

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

Belgium already had one of the longer debt portfolios in 2013.

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

*Source*: OECD (average term to maturity), Eurostat (debt ratios)
Yet a more precise calculation of the refinancing risk in the immediate future is welcome

Maturity schedule for long-term euro debt (as at 31 December 2015)

Lengthening the Debt Structure

The short-term debt portfolio is also taken into account.
In 2016, 12-month refinancing risk is limited to 20.00%. Refixing risk also must be lower than 20.00%.

The higher refixing risks of 2010 were the consequence of swap positions which have now been unwound.

This framework enables a separate management of refinancing and refixing risk.

Calculated according to this methodology, the ‘refinancing’ and ‘refixing’ risks have declined since 2009.

12-month refinancing and refixing risks

- **12-month refinancing risk:** Redemptions within 12 months/net debt
- **12-month refixing risk:** Refinancing risk + (Floating-rate debt + net receiver swap position) / net debt
Rating Agencies are especially looking at the refinancing risk in this way.

Refinancing risk can also be expressed as a % of GDP

In terms of GDP, it decreased significantly since 2009
Despite the longer maturities issued, their average cost has gone down


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<td>(€ billion)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Average maturity</td>
<td>7.17</td>
<td>6.52</td>
<td>11.23</td>
<td>11.46</td>
<td>11.31</td>
<td>11.81</td>
<td>14.01</td>
<td>13.57</td>
</tr>
<tr>
<td>long-term issuance</td>
<td>yr</td>
<td>yr</td>
<td>yr</td>
<td>yr</td>
<td>yr</td>
<td>yr</td>
<td>yr</td>
<td>yr</td>
</tr>
<tr>
<td>Average weighted</td>
<td>4.21%</td>
<td>3.19%</td>
<td>3.18%</td>
<td>4.16%</td>
<td>2.92%</td>
<td>2.23%</td>
<td>2.15%</td>
<td>0.94%</td>
</tr>
<tr>
<td>yield</td>
<td></td>
<td></td>
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</table>
As such, despite 1) higher government debt and 2) more funding in the long to very long term, interest costs have decreased in terms of GDP. They would continue to do so.

Interest costs (federal debt): realizations and projections

![Graph showing interest costs (federal debt): realizations and projections. The graph displays data from 2010 to 2017, with columns representing debt servicing costs and lines representing debt costs/GDP. The graph illustrates a decrease in interest costs over time.]
Debt management strategies are tested with regards to future debt-to-GDP ratios

Federal debt ratio projections according to regime switching model for GDP (example)

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

Simulations showed that the 90% confidence interval for the federal debt-to-GDP ratio is:

- 62.1%-67.8% in 2022 and 32.4%-40.8% in 2032, given an intermediate strategy.

<table>
<thead>
<tr>
<th>Averages</th>
<th>GDP growth</th>
<th>Inflation</th>
<th>Short-term rate</th>
<th>10-yr rate</th>
</tr>
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<tr>
<td>2013-2016</td>
<td>0.75%</td>
<td>1.50%</td>
<td>0.25%</td>
<td>3.00%</td>
</tr>
<tr>
<td>&gt; 2016</td>
<td>1.65%</td>
<td>2.00%</td>
<td>2.87%</td>
<td>4.20%</td>
</tr>
</tbody>
</table>
What is the extra cost of issuing long-term debt?

- Historical average of the spread 3M – 10y \( \approx 1.40\% \)
  - Thus an immediate *increase* of short term debt by 10% of GDP…
  - results in a debt ratio which will be 2.8% *lower* in 20 years time from now
  - At the expense of *substantially higher* refinancing risks
The ‘residual’ of debt servicing costs (debt servicing costs minus the cyclical component of the budget) becomes less volatile when one adds short-term debt.

Yet the effect is rather small.

But maybe the annual costs of short-term debt are better in line with the government’s (cyclical) primary surpluses?

Calculate probability distribution of debt servicing costs diminished by 50% of the output gap

<table>
<thead>
<tr>
<th>Average maturity</th>
<th>Average debt servicing cost</th>
<th>Standard deviation debt servicing cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3 years</td>
<td>2.59% of GDP</td>
<td>0.64%</td>
</tr>
<tr>
<td>5.9 years</td>
<td>2.49% of GDP</td>
<td>0.60%</td>
</tr>
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The standardized and plain vanilla products are complemented by flexible products.

Belgium is one of the most diversified sovereign issuers.

In addition, from 2014 onwards, inflation-linked bonds can be added to the product range.

<table>
<thead>
<tr>
<th>Standardized (Euro only)</th>
<th>Medium and Long-term</th>
<th>Short-term</th>
</tr>
</thead>
<tbody>
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<td>OLO ('Obligations lineaires / Lineaire obligaties') &amp; State Notes (exclusively retail primary market)</td>
<td>TC ('Treasury Certificates')</td>
<td></td>
</tr>
</tbody>
</table>

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<tr>
<th>Flexible (OECD currencies)</th>
<th>EMTN ('Euro Medium Term Notes') &amp; Schuldscheine</th>
<th>Belgian Commercial Paper (ECP)</th>
</tr>
</thead>
</table>

**Product & Investor Diversification**

June 2008

- **Belgium**
- **Debt Agency**
- **Product range**
- **Medium and Long-term**
- **Short-term**
- **Standardized (Euro only)**
- **OLO** ('Obligations lineaires / Lineaire obligaties')
- **State Notes** (exclusively retail primary market)
- **Flexible (OECD currencies)**
- **EMTN** ('Euro Medium Term Notes')
- **Schuldscheine**
- **TC** ('Treasury Certificates')
- **Belgian Commercial Paper (ECP)**

**Dates**

- **June 2008**
- **December 2011**
The Euro Medium Term Note program was established in 2008 to achieve more cost efficiency, and to target a new investor base.

Transactions can be both public and private, in euro or in foreign currencies for which the ECB publishes foreign exchange reference rates, and may possibly be - and remain - structured.

A minimum size of €50 million applies.

In 2016, the combined issuance target for EMTN and Schuldscheine is €4.0 billion.

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### Euro Medium Term Notes (EMTN) program

Overview EMTN-deals (amount issued and number of deals): 57 deals so far since 2008

<table>
<thead>
<tr>
<th>Currency</th>
<th>Plain Vanilla Public (fixed or FRN)</th>
<th>Plain Vanilla Private (fixed or FRN)</th>
<th>Structured</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUR</td>
<td>€ 950 million (4)</td>
<td>€ 3.44 billion (20)</td>
<td>€ 1.44 billion (10)</td>
</tr>
<tr>
<td>USD</td>
<td>$ 9.25 billion (8)</td>
<td>$ 3.45 billion (5)</td>
<td>-</td>
</tr>
<tr>
<td>GBP</td>
<td>GBP 600 million (2)</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>CHF</td>
<td></td>
<td>CHF 100 million (1)</td>
<td>-</td>
</tr>
<tr>
<td>JPY</td>
<td></td>
<td>JPY 24.0 billion (3)</td>
<td></td>
</tr>
<tr>
<td>NOK</td>
<td>NOK 4.3 billion (4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total issuance since 2008: EUR 16.98 billion (2015: EUR 3.28 billion)
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.

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### Issue Results of the State Notes (3, 5 and 8 years) compared with the 5y-coupon (1996-2012)

<table>
<thead>
<tr>
<th>Coupon (%)</th>
<th>Issued in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>1,000</td>
</tr>
<tr>
<td>1%</td>
<td>2,000</td>
</tr>
<tr>
<td>2%</td>
<td>3,000</td>
</tr>
<tr>
<td>3%</td>
<td>4,000</td>
</tr>
<tr>
<td>4%</td>
<td>5,000</td>
</tr>
<tr>
<td>5%</td>
<td>6,000</td>
</tr>
</tbody>
</table>

**Proceeds:** 5.73 billion  
**Coupon:** 4.00%
The case for inflation-linked debt

- Issuers in the EA18:
  - France (12.9% of all debt), Germany
  - Italy, Greece, Spain

- 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
  - Limited debt ratio stabilisation expected
From a low point of 38.1% in March 2008, Belgian investors increased their OLO holdings to 57.0% in December 2012.

Yet, domestic holdings decreased to 41.4%.

Of these, (only) 13.3% are held by Credit Institutions.

Other types of investors such as insurers have increased their domestic bond holdings to a much larger extent.

Source: National Bank of Belgium
Key Figures of the debt portfolio (31 December 2015)

Rating :  S&P:AA/A-1+, Moody’s: Aa3/P-1, Fitch: AA/F1+

Federal Government Debt (gross) :  € 389.58 billion

Main Marketable Debt Instruments
- Linear Bonds (OLOs) :  € 315.05 billion
- Treasury Certificates :  € 26.31 billion
- EMTN-issuance + SSD:  € 12.04 billion
- Belgian Treasury Bills (in EUR)  € 0.00 billion

Breakdown
- Euro-denominated : 100.00 %
- Foreign currencies (after swaps) : 0.00 %

Duration, average life (euro debt), average time to next fixing (total debt), weighted average yield
- Duration : 7.22 yr
- Average life : 7.96 yr
- Average time to next fixing : 8.29 yr
- Weighted average yield: 2.86 %