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An Analysis of Euro Area Bond Maturities and Simulation of the Introduction of New CACs

Frederik Eidam
(University of Mannheim)

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AN ANALYSIS OF EURO AREA BOND MATURITIES AND SIMULATION OF THE INTRODUCTION OF NEW CACS

This paper studies the maturity structure of sovereign debt in the euro area and the penetration of the sovereign debt stock with a new type of collective action clauses (CACs), labeled Creditor Participation Clauses (CPCs). The first section describes the data. The simulation assumptions for the penetration of the sovereign debt stock with newly issued CPC bonds are described in section two. Section three presents the simulation results.

I. DATA

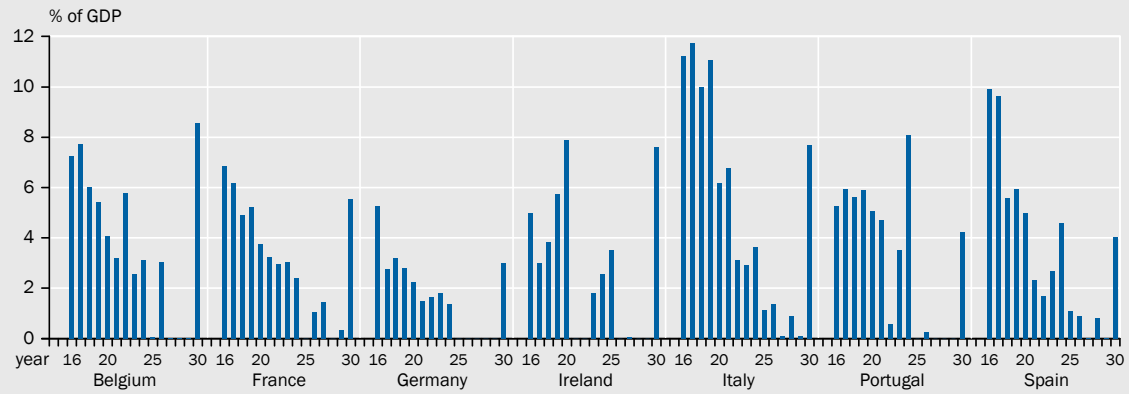
1. Detailed data about the maturity structure of sovereigns are drawn from Bloomberg. Bloomberg provides data on marketable sovereign bond securities for a wide range of sovereigns. Usually, government debt management agencies directly provide Bloomberg with data about new primary market sovereign debt issuances.

2. To ensure cross-country comparability of total outstanding debt, the data sample is restricted to central government debt. I collect 4,419 sovereign debt instruments for seven euro area sovereigns (Belgium, France, Germany, Ireland, Italy, Portugal, and Spain), which have been issued between January 1, 1999 and July 31, 2015. To determine the maturity structure of sovereigns, I use the individual debt instrument's contractual maturity (also called the principal repayment date) as the maturity measure for individual bonds.

3. Overall, data coverage on the total outstanding debt across countries is high in general. Deviations primarily result from some countries – notably Germany – having a large portion of public debt issued by entities other than the central government. In addition, Ireland and Portugal owe significant debt to the EFSF/ESM, which is not included in the database. The maturity structure of total outstanding central government debt closely reflects the average residual maturity of total government debt securities reported by the ECB. The country-specific maturity structures of all outstanding central government debt securities as of year-end 2014 are shown in ↘ FIGURE 1. The current maturity profile of total outstanding central government debt indicates refinancing needs of 5 to 11% of GDP in the near term and reductions across time. On average, a quarter of total outstanding central government debt already includes 2013 CACs. The share of foreign currency bonds is small across all countries. Three countries only have domestic currency bonds outstanding, whereas the remaining four countries on average have less than 10% debt in foreign currency. The share of bonds under foreign legislation is small (Chamon et al., 2015).

↘ FIGURE 1

Maturing long term sovereign bonds[1]



1 – Sample of long term sovereign bonds issued by central governments since 1999 as of end-2014. Figure for year 2030 includes all amounts maturing in 2030 or later in % of 2030 GDP.

Source: Author

II. SIMULATION ASSUMPTIONS

4. To demonstrate the penetration of the debt stock with new CPC-bonds, a set of simulation assumptions have to be set. I consider the possibility that regulation postulating the use of CPCs becomes effective in 2017. The maturity structure of new debt issuances is assumed to be country-specific and identical to maturity structured issued in 2014. Simulation start based on the total outstanding debt as of year-end 2014. Public debt other than central government debt as a share of GDP is assumed to stay constant over time.

5. In order to analyze the sensitivity of the transition phase following the introduction of CPC bonds, different simulation assumptions are varied. First, the effective start year of introducing CPC is varied (2017, 2020, and 2025). Second, the maturity structure of newly issued debt is varied to issuances of 10-year maturity bonds only (instead of country-specific maturity profiles as of 2014). Third, the treatment of non-central government debt not included in the database is varied. The baseline specification assumes that public debt other than central government bonds remain constant as share of GDP over time. A second set of computations assumes that all debt has a maturity structure that is similar to the one in the dataset.

6. Consistent to existing 2013 CAC bonds, CPC bonds are only introduced for debt securities with at least one year of maturity. Two scopes of eligible debt for introducing CPCs are simulated: (i) all debt being refinanced with new CPC bonds; and (ii) only new deficits are refinanced with CPC bonds, implying that existing debt always remains unaffected by the new CPC rules. Future deficits until 2026 are based on European Commission (2015), and are converging towards 0.5% of GDP at a speed of 0.5 percentage points annually afterwards. Maturing bonds with CPCs are rolled over into CPC bonds under both specifications.

III. SIMULATION RESULTS

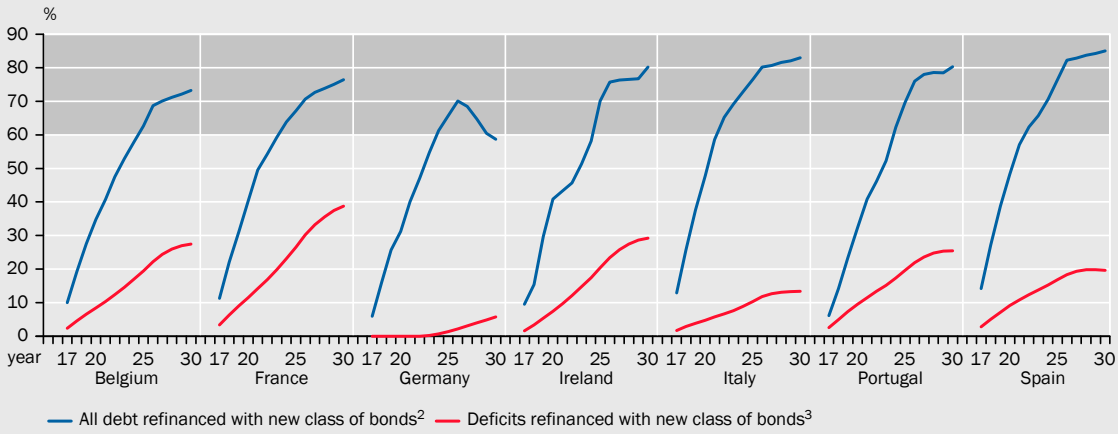
7. The objective of simulating the phase-in of CPC debt securities into the total outstanding debt stock is to understand the penetration speed and highlight possible cross-country variations. In particular, the point in time of reaching a debt ratio of 60% and 90% of eligible debt relative to GDP is of interest as motivated in the proposal for introducing CPCs by Andritzky et al (2016).

8. ↘ FIGURE 2 highlights the penetration of the debt stock with CPC-bonds in relation to GDP over time in the baseline specification. Specifically, it assumes an introduction of the new rules in 2017, debt issuances consistent to country-specific maturity profiles as of 2014, and a constant non-central government share of debt over time. The penetration is computed for two specifications: (i) based on all debt refinancing needs, and (ii) only based on new deficit debt issuances.

9. These simulations demonstrate that applying new CPC rules to all debt refinancing needs ensures that the lower 60% of GDP threshold is reached for all countries - but never reaches the upper 90% of GDP threshold. Contrary, applying new CPC rules only to new debt deficits never reaches the lower 60% of GDP threshold.

↘ FIGURE 2

Penetration of debt stock with bonds including Creditor Participation Clauses (CPCs) issued from 2017[1]



1 – Assumes bonds are issued with new clauses starting in 2017 based on maturity profile for bonds as of end-2014, with (i) maturity of newly issued bonds similar to 2014 and (ii) nominal debt following European Commission (2015) and extrapolated from 2027. 2 – Assumes that shares of other debt relative to GDP remains constant. 3 – Deficits until 2026 based on European Commission (2015), and converging towards 0.5% of GDP at a speed of 0.5 percentage points afterwards. Bonds with CPCs falling due are rolled into similar bonds.

Source: Author

10. In general, following the inception of introducing the new CPC rules, the share of CPC bonds gradually increases over time for all countries. In general, higher amounts of maturing debt (government deficits) following the inception date increases the penetration speed. In the short run, low near and medium term deficit projections for Germany result in a near-zero penetration of CPC bonds in Germany, for the specification when the rules are applied to deficit refinancing only. In the long run, a stark decline in German federal debt (in conjunction with

the assumption of a fixed non-central government debt share in percent of GDP) results in a drop in CPC penetration for the specification of CPCs being applied to all debt refinancing. The penetration of the debt stock with CPC bonds is delayed for Ireland and Portugal resulting from a significant share of debt is owed to the EFSF/ESM (and assumed to stay unchanged, and without CPC over time).

↘ TABLE 1

Sensitivity analysis

Country	Start year	Conversion of marketable central gov. debt[1]		Conversion of all public debt over time[2]		Ad memorandum: debt ratio
		Maturity profile of new issuance				
		as in 2014	10 year	as in 2014	10 year	year of column (3)
		(1)	(2)	(3)	(4)	(5)
Belgium	2017	2028	2025	2025	2025	100
	2020	2038	2027	2029	2026	97
	2025	2047	2032	2038	2030	92
France	2017	2030	2025	2024	2024	100
	2020	2032	2027	2027	2026	101
	2025	2036	2031	2032	2029	104
Germany	2017	a				
	2020					
	2025					
Ireland	2017	b		2025	2025	86
	2020			2032	2029	76
	2025			N/A	2033	
Italy	2017	2021	2025	2021	2023	121
	2020	2025	2027	2024	2026	115
	2025	2032	2030	2029	2029	105
Portugal	2017	b		2023	2023	116
	2020			2026	2025	112
	2025			2032	2029	104
Spain	2017	2024	2025	2022	2025	97
	2020	2026	2027	2026	2026	92
	2025	2031	2030	2030	2029	89

1 – The nominal amount of non-marketable or non-central government debt as of 2014 remains constant. 2 – All public debt is assumed to have a maturity structure as marketable central government debt and is replaced with debt including CPCs. a – Threshold is never reached. b – Not meaningful as IMF/EFSF/ESM official debt will have to be replaced.

Source: Author

11. ↘ TABLE 3 shows the sensitivity results of the phase-in under different assumptions in the specification of applying the new rules to all debt financing needs. The results clearly highlight that a longer existing maturity structure delays the penetration with CPC bonds. This is well highlighted by the country-pair Belgium and Spain, which have similar debt ratios (106% versus 101% of GDP in 2015), but

different maturity structures (7.8 versus 5.4 years in the sample in 2014). Due to the longer maturity structure, Belgium reaches the lower threshold of 60% of eligible debt relative to GDP much later than Spain. Further, the results suggest that delaying the start year of the introduction of the new CPC rules delays the countries reaching the 60% threshold mostly in a proportional span of time. However, as debt levels are projected to decline over time (see last column in the table), debt exceeding the threshold is likely to be smaller. Increasing the penetration speed by broadening the base of applying the new CPC rules becomes most striking for Belgium, which has a large share of non-central government debt.

12. Note that assuming a similar maturity structure for debt outside the dataset for the former programme countries Ireland and Portugal as well as Spain likely results in a too fast penetration given the long maturities of official assistance debt.

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