

# Official Lending, Debt Sustainability and Market Access<sup>1</sup>

Aitor Erce  
European Stability Mechanism

Workshop on Debt Sustainability:  
Current practice and future perspectives

11-12 December 2018

---

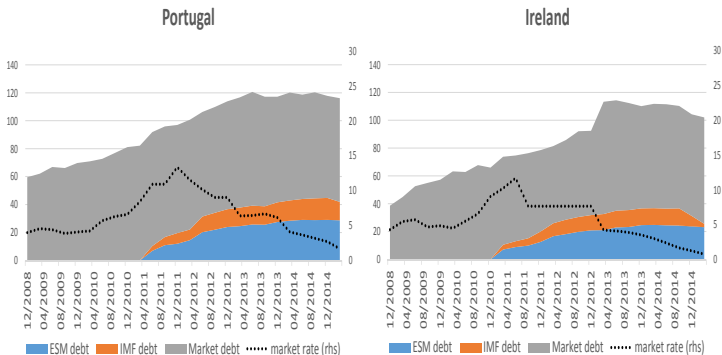
<sup>1</sup>This talk draws on joint work with Giancarlo Corsetti and Tim Uy.

## Key motivating facts

- During the recent debt crisis, euro area governments received funding from both the International Monetary Fund and the euro area official lenders
- Originally designed following the IMF approach
- In reaction to various set-backs, the type and terms of euro area official lending evolved significantly
  - Beyond BoP
  - Engagement is larger
  - Longer maturities and lower rates

## Debt Composition and Market Spreads

ESM debt includes EFSM loans (for Ireland, also bilateral loans from DK and UK)



## Official Lending Terms in the euro area

### Maturities and marginal lending rate

			Dec-10	Dec-11	Dec-12	Dec-13	Dec-14
Ireland	EFSF/ESM	Maturity	7.5 years	15 years	15 years	22 years	22 years
		Interest rate	525 bps	272 bps	255 bps	226 bps	226 bps
	IMF	Maturity	7 years	7 years	7 years	7 years	7 years
		Interest rate	337 bps	321 bps	307 bps	309 bps	404 bps
Portugal	EFSF/ESM	Maturity	-	15 years	15 years	22 years	22 years
		Interest rate	-	277 bps	233 bps	210 bps	210 bps
	IMF	Maturity	-	7 years	7 years	7 years	7 years
		Interest rate	-	321 bps	307 bps	309 bps	404 bps

Sources: International Monetary Fund, European Commission, European Financial Stability Facility, European Stability Mechanism and Bloomberg.

## Analytical Issues

- The terms of official loans affect governments' incentives to issue, repay, or default on debt, just like tax capacity, spending and inflation
- Debt sustainability and market access cannot be assessed independently of the official lending regime
  - What are the trade-offs in varying them?
  - How does setting different terms of official lending affect debt sustainability? (including through savings)
  - What effect on market access? (catalysis)

## Policy Issues

- In the euro area, official lending shifted from irregular issuers in international capital markets to:
  - regular issuers in deep and liquid domestic markets
  - heavily financialized and interconnected
  - with structural imbalances requiring a significant adjustment

The traditional approach to official lending was put to the test:

- Spillover and contagion (exceptional access policy)
- Revamp debt sustainability frameworks (DSA)

## This presentation

- Summarize Corsetti et al. (2018): theoretical mechanisms by which official loans differing in maturities and prices can restore debt sustainability
  - Provide insights on how bailouts can efficiently restore sustainability in the face of fundamental and/or roll-over risks
  - Analyse the effects of long- vs short-term loans, at different rates, on a sovereign's optimal decision to default
- Provide evidence on the link between market access conditions and the terms of official loans (in Ireland and Portugal)
- Discuss policy implications

## Model

- Corsetti et al. (2018) specify a quantitative model building on Cole-Kehoe (2002) and Conesa-Kehoe (2015), augmenting it with different types of bailout agencies
- Agents: risk-averse sovereign and consumers, risk-neutral international investors, and (two types of) official lenders
- Government taxes output, borrows from other agents, and chooses whether to repay or default and suffers output losses
- Roll-over and output risks
  - In a roll-over crisis, incentive to run down debt (exit crisis)
  - In a recession, incentive to run debt up (smooth consumption)



## Model

- International investors lend in short maturities at market rate
- One official creditor lends using short maturities
- The other official lender offers long maturity loans
- No seniority for official lenders
- No moral hazard

## Main findings

- The availability of official loans can raise the debt levels at which default is not optimal—it can widen the “safe region”.
- The safe zone is even wider with long term official debt
- Strategy: turn default costs into collateral against which to lend
  - The required official lending rate may be above or below the lender financing costs.
- Key trade-off: If a larger safe region translates into higher debt during roll-over crises, official loans lower the debt threshold beyond which default occurs for fundamental reasons
  - Loans can be structured to ensure early exit from crisis zone
  - Official lenders may need to impose caps on the country's debt

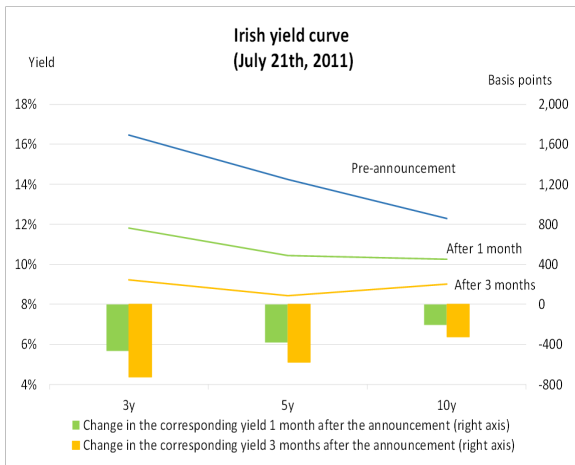
## Quantitative Exercises: Sustainable Debt

- Calibration to Portugal
- Two sets of quantitative counterfactuals:
  - modify the amount of ESM and IMF loans received by Portugal
  - consider different maturities and different interest rates
- In our exercises, sustainable debt ranges from 80% GDP to 180% GDP levels, depending on:
  - the state of the economy (output and market access) and
  - Availability and size (debt composition), spreads and maturities of official loans
- Maturities are more effective in affecting sustainable debt levels than spreads

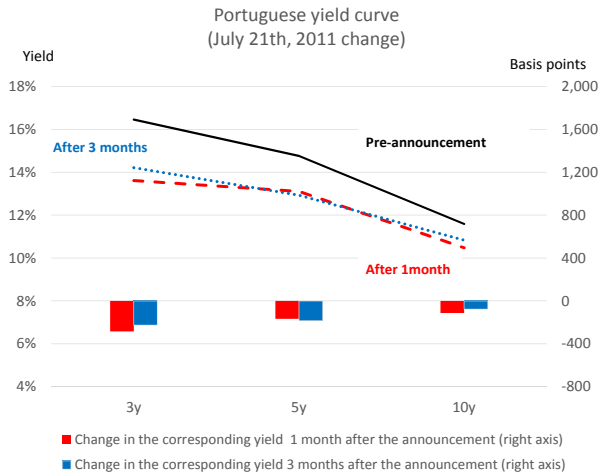
## Understanding the effect of official lending terms on market access: An event analysis

- In 2011, authorities modified Portuguese and Irish loans
  - 7-year maturity extension & 200+ spread reduction
- Use these “experiments” to study the relation between the terms of official financing and the conditions of market access
- Our event analysis plots yield curves and changes in bid-ask spreads before and after the contract amendments:
  - Yield curves shifted down and flattened out
  - Market liquidity improved
  - Heterogeneous effects along the yield curve

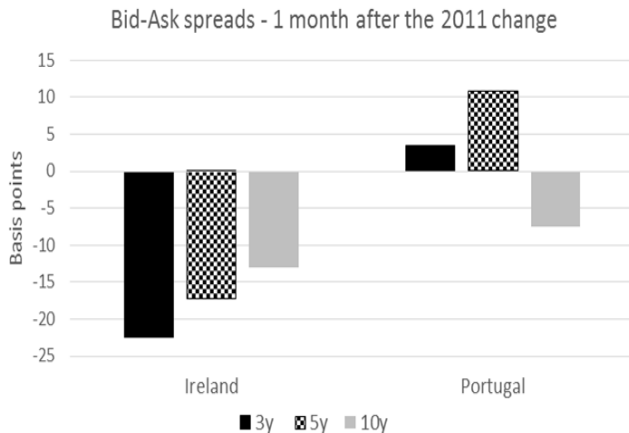
## Terms of Official Lending and Market Access: Irish Yield Curve



# Terms of Official Lending and Market Access: Portuguese Yield Curve



## Terms of Official Lending and Market Access: Liquidity



## Regression-based event analysis. Benchmark Instruments

- Study the daily dynamics of benchmark bonds one week around the date of the announcements
- Focus on 3-year, 5-year and 10-year benchmark yields
- Following Foley-Fisher et al. (RFE, 2016), we estimate:

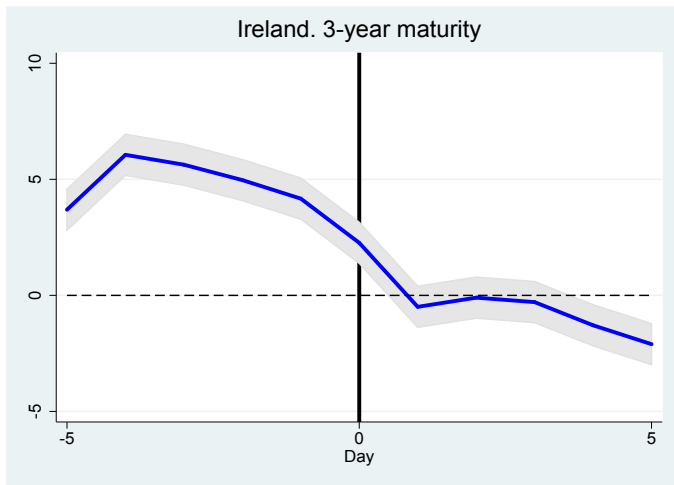
$$y_{c,t} = \alpha + \sum_{i=-5}^{i=5} \beta_{A,i} \cdot D_{c,t+i}^A + \sum_{i=-5}^{i=5} \beta_{F,i} \cdot D_{c,t+i}^F + \sum_{i=-5}^{i=5} \beta_{D,i} \cdot D_{c,t+i}^S + \beta_4 \cdot Controls_{c,t+i} + \delta_m + \varepsilon_{c,t} \quad (1)$$

$y$  stands for the yield of bond with maturity  $c$ .  $D_{c,t+i}^A$ ,  $D_{c,t+i}^F$ , and  $D_{c,t+i}^S$  are dummies collecting the announcements dates. We control for ECB actions, Home & US stock markets, VIX and oil price, and include month fixed-effects ( $\delta_m$ ).

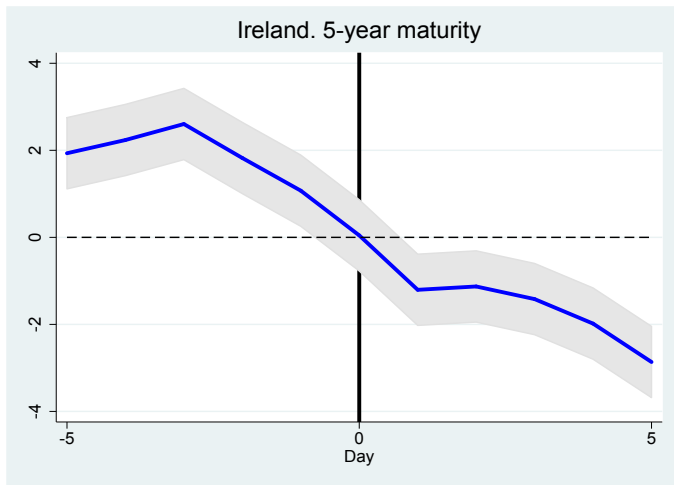
In this setting,  $\beta_{e,i}$  is the deviation of  $y$  from normal times  $i$  days away of the announcement  $e$ .



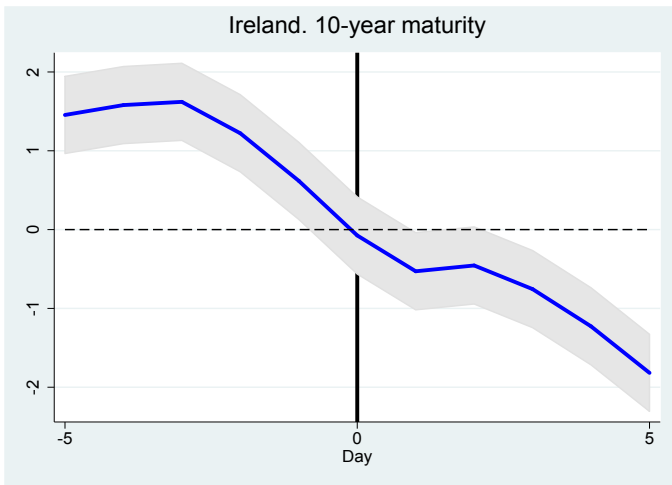
## Regression-based event analysis: Results



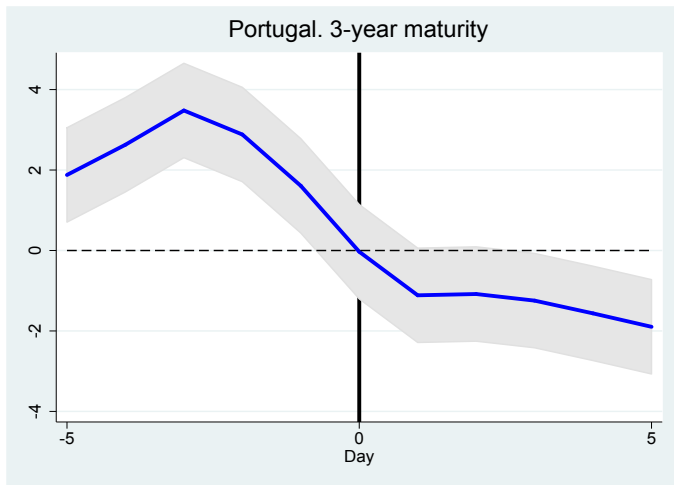
## Regression-based event analysis: Results



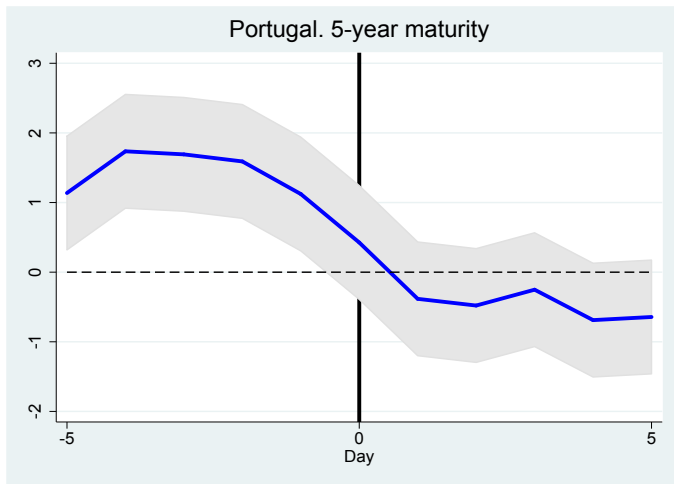
## Regression-based event analysis: Results



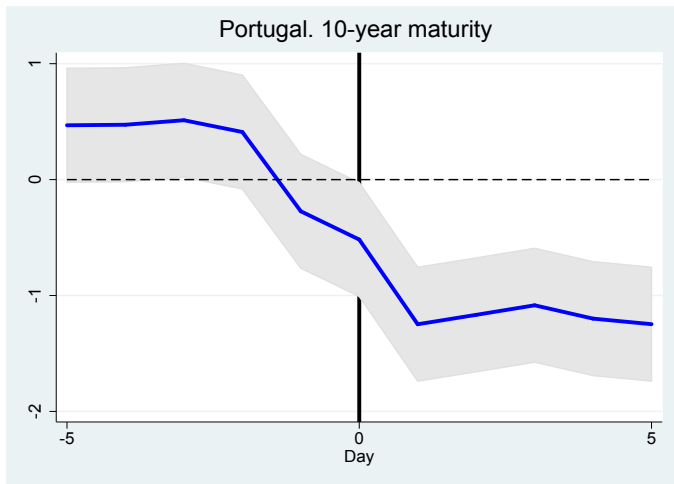
## Regression-based event analysis: Results



## Regression-based event analysis: Results



## Regression-based event analysis: Results



## Terms of lending and market access: All available bonds. Panel OLS

- Use data for all Portuguese and Irish bonds available in the period 2006-2016
- Over 130 bonds
- Use the following model:

$$y_{c,t} = \alpha + \gamma \cdot y_{c,t} + \beta_M \cdot \text{Program\_Maturity}_{c,t} \quad (2)$$

$$+ \beta_S \cdot \text{Program\_Spread}_{c,t} + \beta_C \cdot \text{Controls}_{c,t+i} + \delta_m + \varepsilon_{c,t} \quad (3)$$

where  $\text{Program\_Maturity}_{c,t}$  and  $\text{Program\_Spread}_{c,t}$  stand for the maturity and spread of euro area official loans at time  $t$

The set of controls is identical to those used on the regression-based event analysis

## Terms of lending and market access: All available bonds. Panel OLS. Results

	(1) price	(2) price	(3) price	(4) price	(5) price
OL Maturity	-0.00139*** (-4.44)	-0.000469 (-1.18)	-0.00207*** (-4.56)	-0.00140** (-2.06)	-0.00264*** (-6.58)
OL Spread	0.0531*** (8.25)	0.0435*** (11.47)	0.0604*** (6.43)	0.0446*** (5.76)	0.0747*** (7.46)
OL maturity change				0.000135 (0.20)	
OL spread change				0.0428*** (2.68)	
OL maturity × bond maturity					0.000000395** (2.56)
<i>N</i>	54205	23999	30206	54205	54205

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## Policy Implications

- Moral hazard and conditionality design: Official lending terms affect incentives but, in the presence of large structural imbalances, unclear on what direction (Muller et al. JEEA 2015)
- Measurement of debt sustainability: Official lending terms affect critical indicators within DSA (Gabriele et al. ESM WP 2017)
- Debt restructuring: debt relief is a function of official lending (IMF 2013, 2014)
- Coordination within the global safety net: avoid Greece in summer 2015 - style situations
- Official lending, solvency and spillovers: should the euro area retain the ability to lend into unclear solvency if contagion costs are large? (Tirole, AER 2015)

## Conclusions

- The terms of official lending matter greatly for assessing debt sustainability
  - Our quantitative analysis show that combinations of long maturity and low spread are most effective in raising debt thresholds
  - Compositional effects of official lending can actually explain cases like Portugal, where the spread fell even as debt as a fraction of GDP rose
  - Counterfactuals suggest that sustainability is more sensitive to maturity than spread in official lending

## Conclusions

- Market access conditions by sovereigns depend critically on the financing terms offered by the official sector
  - Spreads on official loans affect secondary market yields
  - Larger maturities of official loans improve sovereign market access
  - Stronger effect on shorter maturities
  - evidence of repayment flow management being succesful?
- These finding have implications for both program design and debt sustainability analysis