Do fundamentals explain differences between EA sovereign interest rates?

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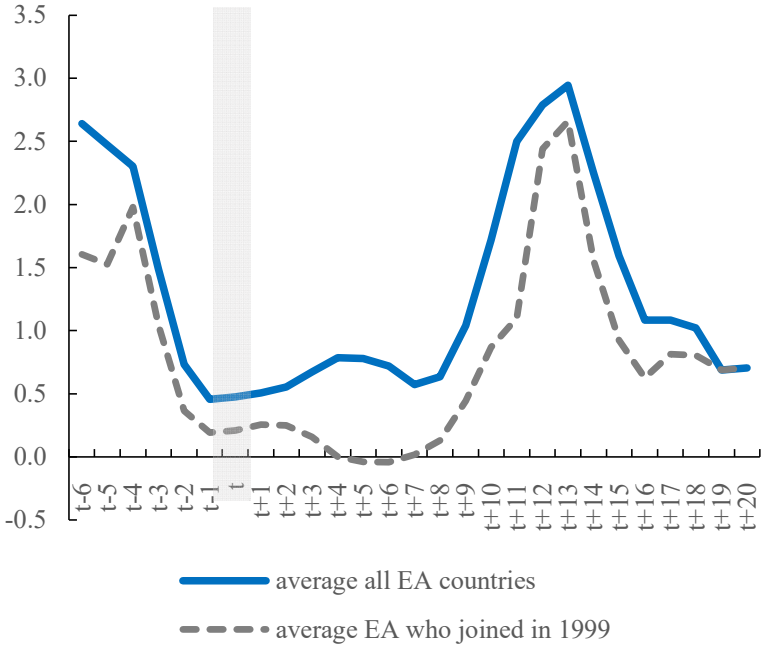
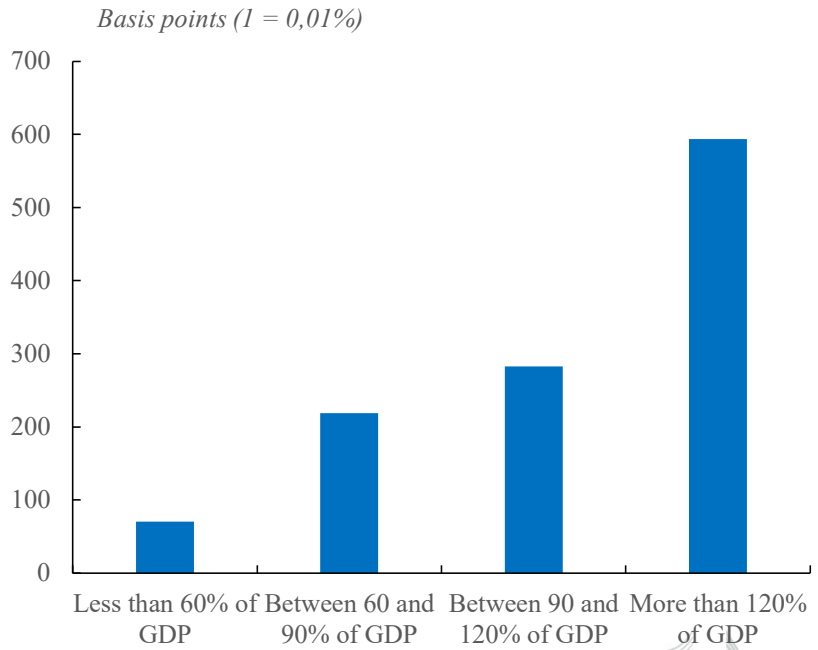
Despite the LIRE, spreads persist in the euro area and can be related to public debt levels

Government long-term interest rates' spreads – average before / after the euro introduction (pps.)



Government long-term interest rates' spreads and government debt level (2000-19)



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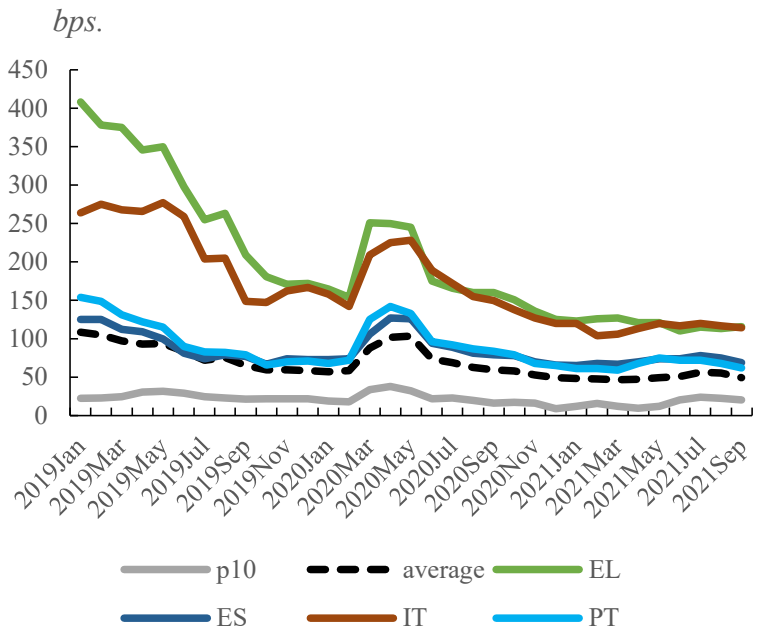
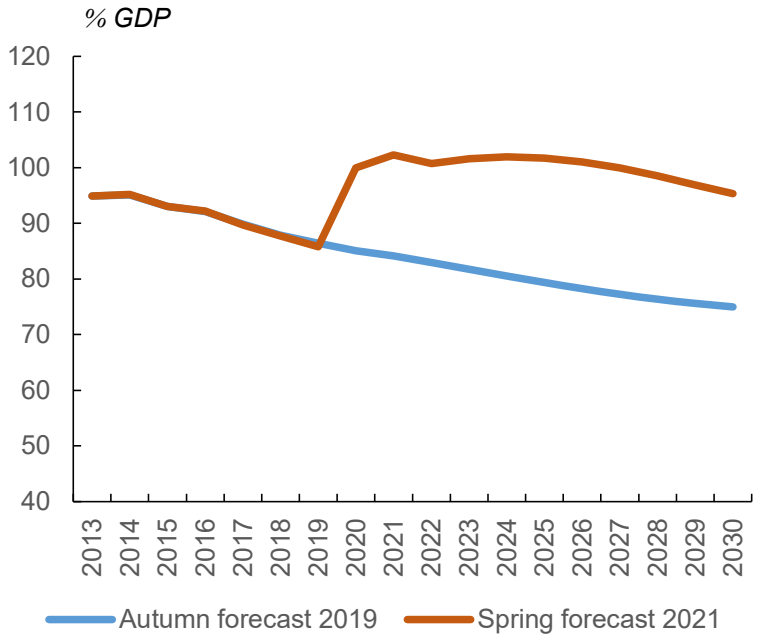
Spreads have remained contained since the COVID-19 crisis though vulnerabilities have increased

Spreads on 10-year government bonds, euro area



Source: ECB

Government debt ratio projections, euro area



Source: Commission services

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Paper's objectives

- (Re)visit the relationship between sovereign spreads and structural factors ('fundamentals') in the euro area, with a focus on (debt) non linearities
- Identify key aggravating / mitigating factors relevant for debt sustainability analysis and fiscal surveillance
- Build on the existing literature (e.g. Capelle-Blancard et al., 2019; Monteiro and Vasicek, 2019; De Gabriele et al., 2017; Ben Salem and Castelletti-Font, 2016); Afonso et al., 2015); De Haan et al., 2014; D'Agostino and Ehrmann, 2014; Grauwe and Ji, 2013)

Empirical strategy

- Analyse the role of fundamentals using data from the inception of the euro until 2019 included, which makes for a longer sample than earlier studies and includes the interesting ‘post-financial crisis’ period (but pre-COVID-19)
- Three kinds of fundamentals considered: fiscal, macroeconomic (including external), and institutional => examine the variety of ways through which fundamentals can affect spreads
- Controlling for ‘context’ variables, namely financial market conditions and monetary policy
- Gradual empirical strategy, paying attention to pitfalls in estimations (e.g. De Haan et al., 2014)

Benchmark regression

- Benchmark regression (nominal spreads on 10-year government bonds vis-à-vis German government bonds, spr_{it}):

$$spr_{it} = \alpha + \beta.NIIP_{it} + \gamma.GDPp_{it} + \delta.geff_{it} + \varepsilon.D_{it} + \theta.size_{it} + \mu.vix_t + \rho.PSPP_t + \alpha_i + u_{it}$$

  - *Fundamentals*: general government gross debt to GDP ratio (D_{it}), net international investment position to GDP ratio ($NIIP_{it}$), potential real GDP growth ($GDPp_{it}$), government effectiveness index ($geff_{it}$)
  - Context variables: international risk aversion (vix_t), liquidity ($size_{it}$) and Eurosystem asset purchases' programmes ($PSPP_t$)
  - Panel data: EA (EU) countries, 2000-2019
  - Estimation method: Generalised Two-stage Least Squares (G2SLS), random effects' model (RE)

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Testing for non-linearities

- Depending on the debt level (quadratic form, debt spline), dynamic (change in debt) and the structure (maturity)
- Depending on interactions between variables:

$$spr_{it} = \alpha + \beta.NIIP_{it} + \gamma.GDPp_{it} + \delta.geff_{it} + \varepsilon_1.D_{it} + \varepsilon_2.\boxed{D_{it}.X_{(i)t}} + \theta.size_{it} + \mu.vix_t + \rho.PSPP_t + \alpha_i + u_{it}$$

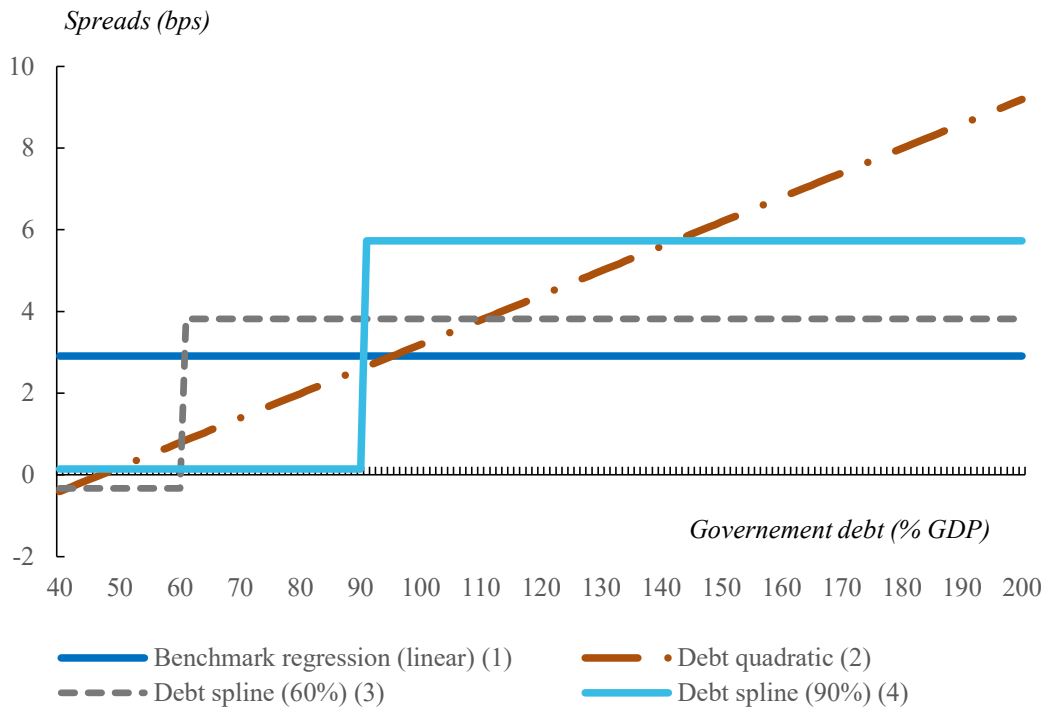
where $X_{(i)t} = NIIP_{it}$ or $GDPp_{it}$ or $geff_{it}$ or $size_{it}$ or vix_t or $PSPP_t$

- Additional robustness checks: time-varying debt effects; inclusion of time or country fixed effects (FE), geographical sample selection, and dynamic form (via an error-correction model)

Clear evidence that euro area spreads respond to fundamentals, especially the level of government debt

- Higher government debt significantly contributes to higher spreads, with strong indications that this effect is non-linear:
  - In a linear regression, an additional one percent of GDP of debt increases the spread by around 3 basis points
  - However, once non-linearity is taken into account, the marginal impact of additional debt can be twice that at higher debt levels

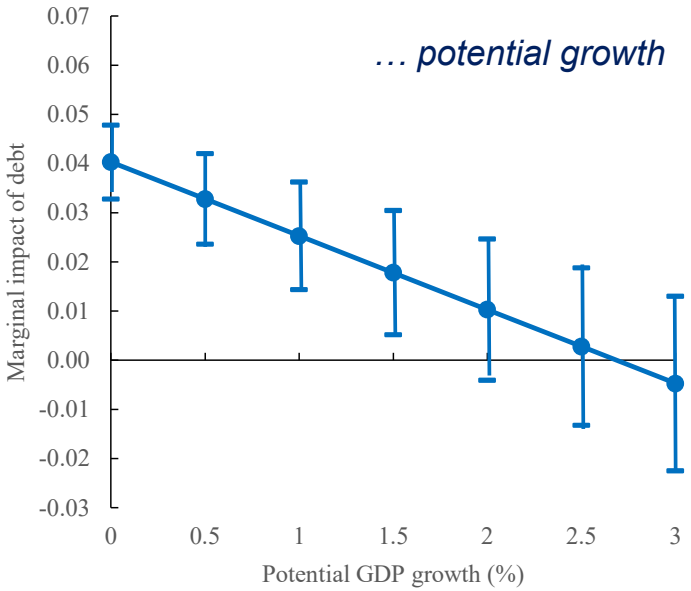
Marginal impact of government debt on spreads (bps.)

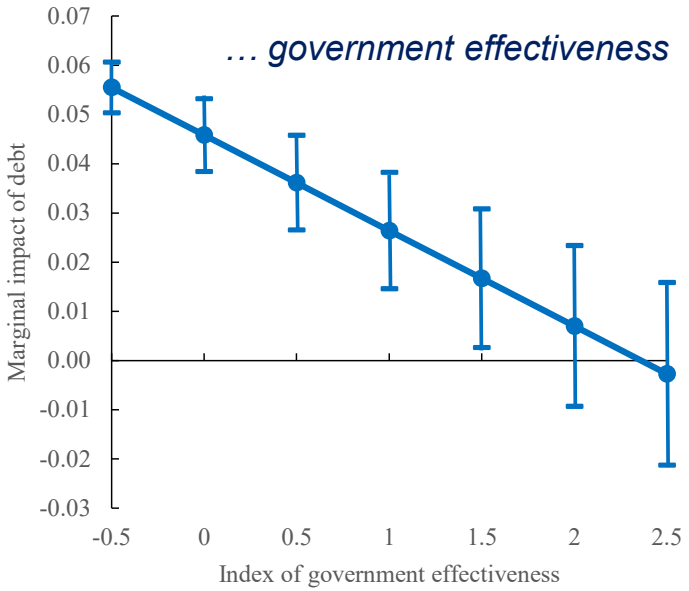


Though other structural factors can mitigate the sensitivity of spreads to debt

- The incidence of fiscal fundamentals may be importantly mitigated or aggravated by other macroeconomic or institutional factors

Marginal impact of government debt on spreads, depending on…





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The debt dynamic is also found to be an important driver of spreads

- The combination of a high stock (debt) and flow (change in debt) compounds to adversely affect spreads:
  - Debt dynamics has a strong bearing on spreads
  - Interaction between the level and the change in the debt ratio is also significant => when the stock of debt is already high, spreads are more sensitive to a further deterioration of public finances
  - Model based on gross financing needs, is not found to improve the overall explanatory power of the regression

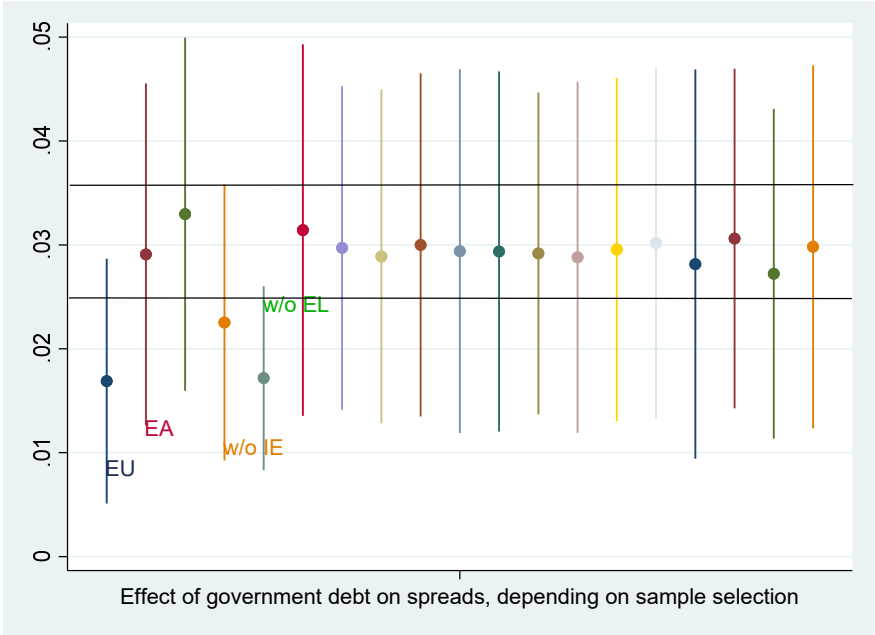
VARIABLES (expected sign)	(1) Benchmark	(2) Debt & PB	(3) Debt & ΔDebt	(4) Debt & GFN
niip_gdp (-)	**-0.00602****	**-0.00553***	**-0.00677*****	**-0.00929*****
	(0.00276)	(0.00286)	(0.00215)	(0.00326)
GDPgp (-)	**-0.207****	**-0.158**	**-0.127**	**-0.248**
	(0.104)	(0.116)	(0.117)	(0.156)
gee (-)	**-0.613***	**-0.745*****	**-0.619****	**-0.570**
	(0.314)	(0.227)	(0.252)	(0.395)
relative_size (-)	**-0.151*****	**-0.106*****	**-0.103*****	**-0.136****
	(0.0529)	(0.0236)	(0.0329)	(0.0551)
vix (+)	**0.0154*****	**0.0186*****	**0.0201****	**0.0204*****
	(0.00504)	(0.00632)	(0.00796)	(0.00712)
pspp_gdp (-)	**-0.0255***	**0.00317**	**-0.00602**	**-0.0279**
	(0.0136)	(0.0124)	(0.0158)	(0.0234)
gdebt_gdp (+, linear)	**0.0291*****	**0.0260*****	**0.0162*****	**0.00217**
	(0.00840)	(0.00413)	(0.00395)	(0.00679)
pb_gdp		**0.467*****		
		(0.124)		
debt_pb (-)		**-0.00687*****		
		(0.000956)		
Δgdebt_gdp			**-0.111****	
			(0.0555)	
debt_Δgdebt (+)			**0.00222*****	
			(0.000418)	
gfn_gdp				**-0.139**
				(0.0949)
debt_gfn (+)				**0.00180*****
				(0.000605)
crisis (+)	**2.289*****	**2.386****	**1.938*****	**2.122*****
	(0.825)	(0.932)	(0.570)	(0.687)
Constant	**0.307**	**0.109**	**0.608**	**1.878***
	(0.594)	(0.602)	(0.683)	(1.037)
Observations	261	261	261	233
Number of cty_num	17	17	17	17
Country RE	YES	YES	YES	YES
R2	0.572	0.600	0.678	0.604
RMSE	1.294	1.344	1.172	1.294

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Additional robustness checks

- Results suggest that the relationship between spreads and debt has not been stable over time, pointing to several ‘regimes’ in the euro area with specific incidences of fundamentals on spreads
- Results appear relatively robust to changes in the sample selection

Estimated response of spreads to government debt (Benchmark model), depending on the sample selection



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Main conclusions and insight on policy challenges

- Even in an environment of persistently low rates, governments with less solid fundamentals (including higher debt) pay more than other to borrow and are exposed to higher risks
- Governments with more moderate debt levels have more leeway (or more fiscal space) to use fiscal policy, without fearing an increase of spreads
- Policies aimed at reinforcing potential growth and government effectiveness can be expected to improve investors' perception of sovereign risk and their forbearance of higher debt

Developments since the COVID-19 crisis

- Institutional reforms since the global financial crisis and decisive (monetary) policy response to the COVID-19 crisis have enabled avoiding new spikes in spreads in the euro area
- Though specificities of the euro area remain:
  - Single monetary policy, national fiscal policies
- Going forward, withdrawal of policy support (PEPP, general escape clause of the SGP to be lifted)
- Public finances took a serious hit and correction of macroeconomic imbalances encountered a setback
- Setting credible medium-term fiscal plans and implementing investments and reforms (notably under NGEU) will be essential

Thank you

Do Fundamentals Explain Differences between Euro Area Sovereign Interest Rates? (europa.eu)

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