

Determinants of banks' exposure to sovereign debt in the CEE region

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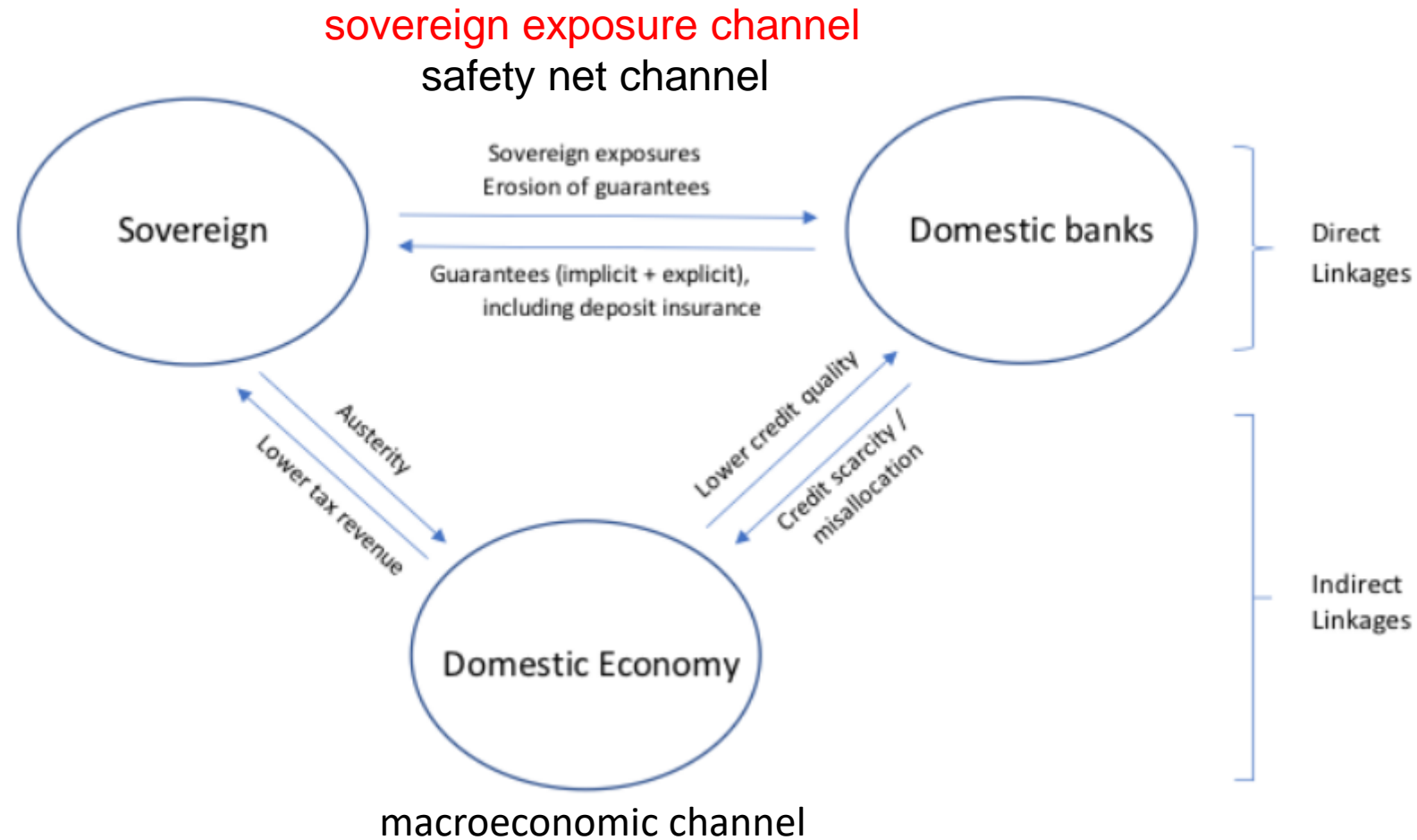
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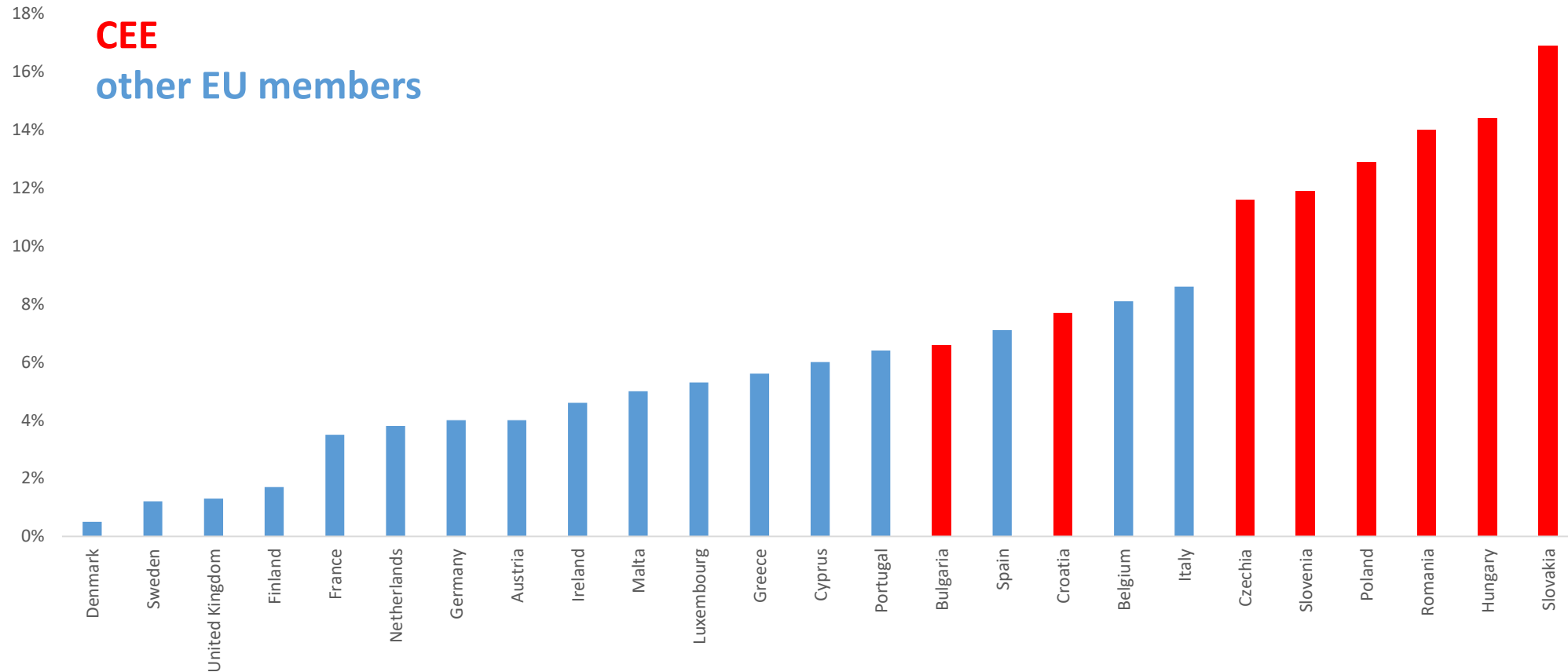
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Bank-sovereign nexus



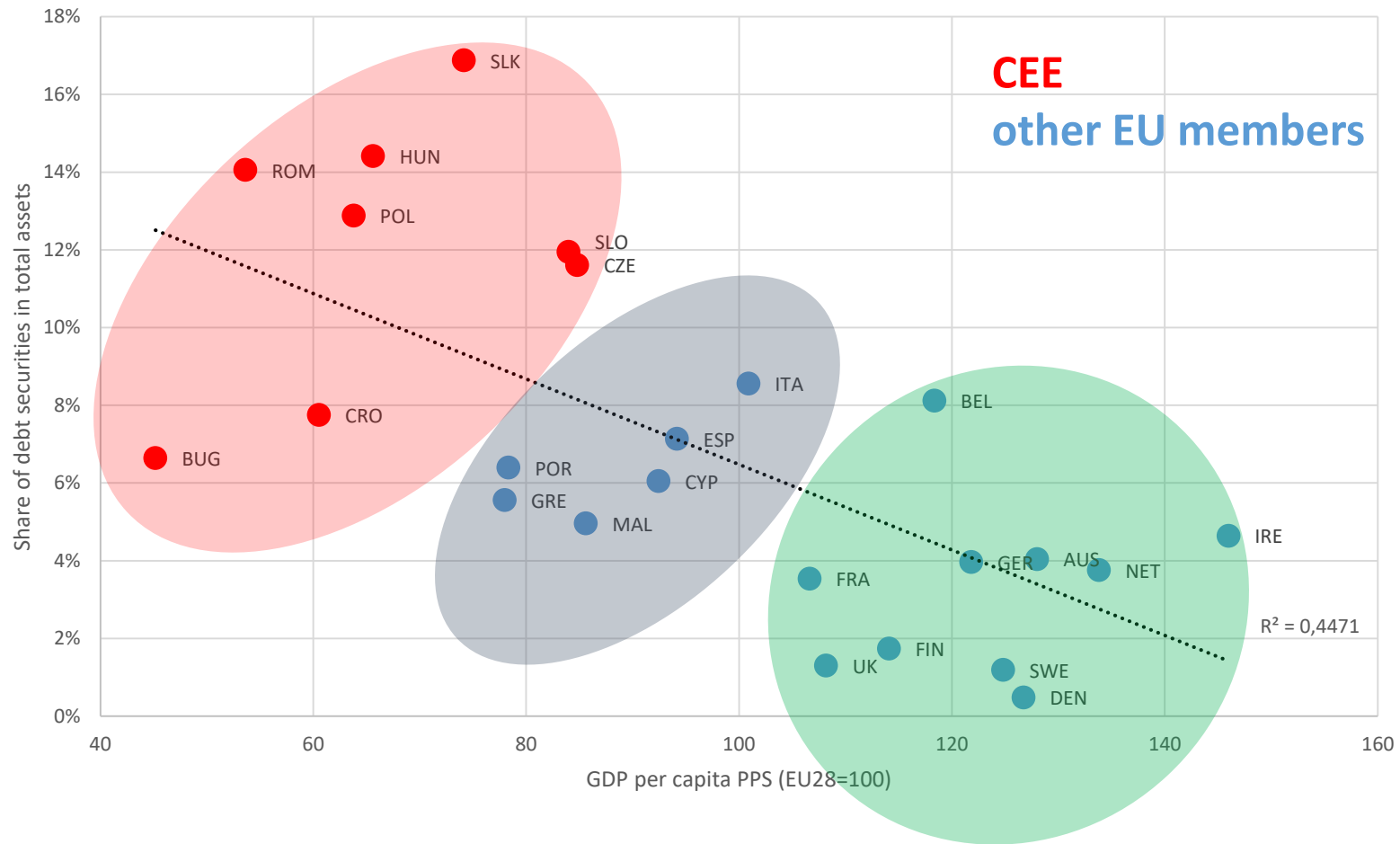
Source: Schnabel and Veron, 2018

Why CEE?



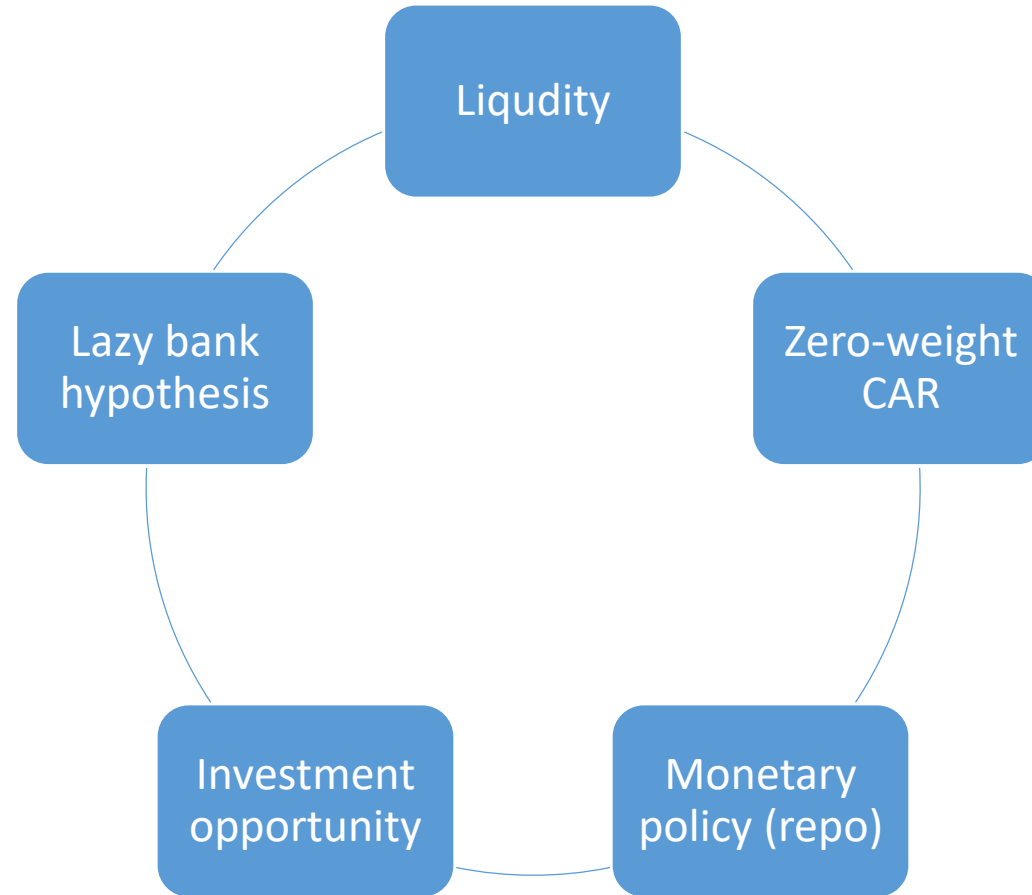
Source: ECB Data Warehouse

Level of development – important factor



Source: ECB Data Warehouse; Eurostat

Why would banks hold government debt?



Methodology

- panel regressions with fixed country and time effects

$$y_{i,t} = \alpha_i + \beta X_{i,t} + \delta Z_{i,t} + \gamma_t + \epsilon_{i,t}$$

$y_{i,t}$ - share of debt securities in total assets

$X_{i,t}$ - fiscal balance, VIX, monetary policy regime, QE, CAR, share of corporate loans in total assets

$Z_{i,t}$ - GDP growth rate, interest rates on domestic bonds, share of deposits in total liabilities

Data (I)

Category	Variable	Unit	Source	Expected effect	Mechanism
Main explanatory variables	Budget balance	% of GDP	Eurostat	-	Improved fiscal balance reduces financing needs of the government, which leads to lower supply of government bonds
	International risk (VIX)	Bps	Bloomberg	+	Due to increased jitters on international bond markets governments turn to local funding sources
	Monetary policy framework	dummy	authors	+	Banks in countries which operate under inflation targeting regime tend to hold more sovereign securities as these financial instruments serve as collaterals in monetary operations
	Capital adequacy ratio (CAR)	%	IMF Financial Soundness Indicators	+	Banks are motivated to hold debt securities to improve their CAR as current regulatory framework treats local sovereign debt securities as non-risky assets
	Private sector loans	% of total assets	ECB Data Warehouse	-	Rising share of corporate loans indicates that banks see investment opportunities in private sector
	Asset purchase program (APP)	dummy	authors	-	Banks in euro area member countries are motivated to sell debt securities as instruments used in APP liquidity-providing schemes

Data (II)









Category	Variable	Unit	Source	Expected effect	Mechanism
Control variables	GDP	growth rate %	Eurostat	-	Stronger GDP growth has positive effect on demand for loans from private sector
	Deposits	% of total liabilities	ECB Data Warehouse	+	Increased sources of financing generally make room for more placements
	Interest rates	%	Eurostat	+	Higher interest rates on local government bonds make them more attractive for banks

Results

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sovereign debt securities							
Deposits	13.88*** (4.519)	13.59*** (4.528)	13.59*** (4.528)	16.80*** (4.471)	17.61*** (4.766)	15.24*** (4.632)	32.68*** (4.539)
GDP growth	-0.0137 (0.0333)	-0.0113 (0.0328)	-0.0113 (0.0328)	-0.0231 (0.0403)	-0.0113 (0.0328)	-0.00970 (0.0340)	-0.0437 (0.0551)
Interest rates	-0.0687 (0.130)	-0.0578 (0.129)	-0.0578 (0.129)	-0.148 (0.133)	-0.0612 (0.128)	-0.0653 (0.133)	-0.201 (0.157)
Budget balance	-0.0961* (0.0496)						-0.144*** (0.0540)
VIX		0.0963*** (0.00692)					0.150*** (0.0331)
Monetary policy framework			5.610*** (1.474)				14.34*** (0.789)
CAR				0.279*** (0.0998)			0.143 (0.119)
Corporate sector loans					-10.66** (4.893)		-44.03*** (5.271)
QE						-0.513 (0.744)	-1.042* (0.597)
Time FE	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES
_cons	-2.940 (2.717)	-4.301 (2.780)	-2.891 (2.723)	-8.997*** (2.974)	0.631 (3.121)	-3.925 (2.762)	4.224 (4.488)
<i>N</i>	368	368	368	277	368	368	277
<i>R</i> ²	0.472	0.454	0.454	0.610	0.474	0.485	0.741

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Variable	Summary
Budget balance	
VIX	
Monetary policy framework	
CAR	 
Lazy bank	
QE	 

Conclusions

- results supportive for our hypotheses
- increased stock of sovereign debt in bank balance sheets increased the risk of a negative "doom loop" in next crises, which brings some new challenges for regulators in CEE countries
- regulatory changes (zero weight) – discussions
- prudent fiscal policy – important tool
- exposure even higher – loans + SOEs + pension funds → future research

Thank you!