



Central Bank Independence and Fiscal Stance: The Role of Institutions in Supporting Fiscal Sustainability

Ryszard Kokoszcyński and Joanna Mackiewicz-Łyziak
University of Warsaw

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Motivation and Goals

- Motivation:
 - Most empirical studies on central bank independence (CBI) focus on the effects of CBI on inflation
 - Fiscal deficits are inflationary
- Goals:
 - Does CBI play any role in the fiscal policy stance – is there an additional channel of CBI impact on inflation?
 - The role of institutions in supporting fiscal sustainability
 - Are interactions of other institutions with CBI important for fiscal sustainability?

Related literature

- No convincing evidence in the literature about the relationship between CBI and fiscal deficits (Burdekin and Leroy 1988, 2016; Grilli et al. 1991, de Haan and Sturm 1992, Sikken and de Haan 1998)
- Many studies link the effectiveness of CBI to the presence of strong democratic institutions (Agoba 2021, Agoba et al. 2020a and 2020b, Agoba et al. 2019, Bodea 2013, Bodea and Higashijima 2017, Broz 2002, Keefer and Stasavage 2003, Kusi et al. 2019).
- Most important inspiration for our study:
 - Bodea and Higashijima 2017: “legal central bank independence deters fiscal deficits predominantly in countries with rule of law, impartial contract enforcement, a free press and constraints on executive power”.
 - Combes et al. 2018: IT is associated with a higher fiscal balance and that this effect is stronger when IT is combined with existence of a fiscal rule.

Data

- Annual data, 1996-2012
- 98 advanced, emerging and developing economies
- Source: mostly IMF WEO database, CBI index – Garriga 2016 database
- Variables: primary balance (pb), public debt (d), CBI index, Polity IV index, macroeconomic controls (X)

Methodology

- Estimation of fiscal reaction function (Bohn, 1998): a positive response of primary balance to debt indicates sustainable fiscal policy
- We verify whether CBI improves fiscal sustainability
- Panel regression

$$pb_{i,t} = \alpha_1 + \alpha_2 pb_{i,t-1} + \alpha_3 d_{i,t-1} + \alpha_4 CBI_{i,t-1} + \alpha_5 Polity_{i,t-1} + \alpha_6 CBI_{i,t-1} d_{i,t-1} + \alpha_7 CBI_{i,t-1} Polity_{i,t-1} + \beta X_{i,t|t-1} + \varepsilon_{i,t}$$

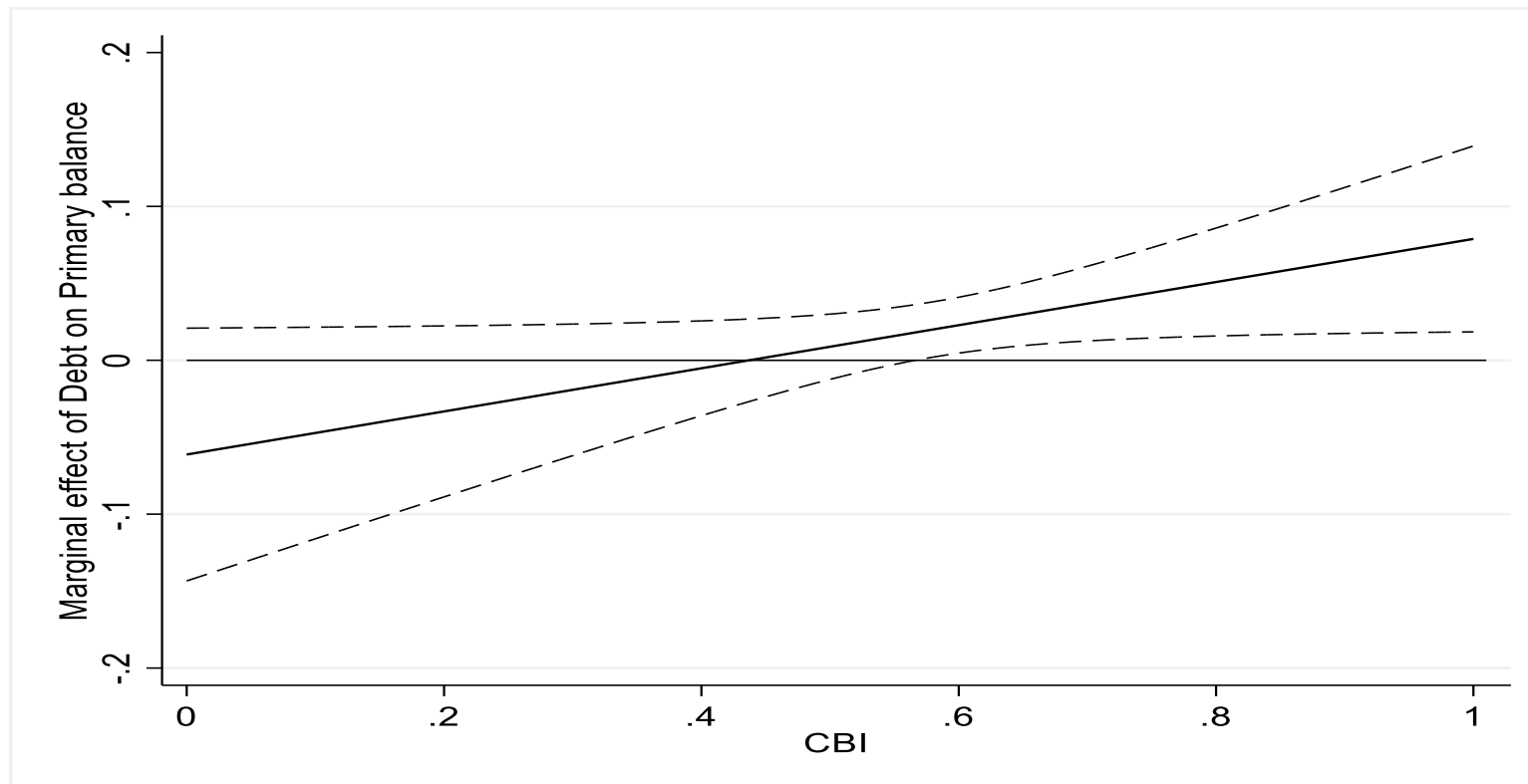
- Basic estimation method: the system GMM with robust standard errors
- Robustness checks: FE, CRE, difference GMM; different set of controls

Results for the basic version I

	Sys. GMM (1)	Sys. GMM (2)	Sys. GMM (3)	FE (4)	CRE (5)	Diff. GMM (6)
Primary balance (-1)	0.305*** (0.064)	0.230*** (0.062)	0.200*** (0.054)	0.315*** (0.058)	0.315*** (0.024)	0.017 (0.105)
Debt (-1)	-0.050 (0.409)	-0.045 (0.035)	-0.061 (0.050)	-0.022 (0.014)	-0.012 (0.009)	-0.043 (0.048)
CBI(-1)	-12.836*** (4.838)	-13.162** (4.869)	-10.628* (5.842)	-3.597** (1.446)	-1.143 (0.984)	-7.002* (4.205)
Polity IV (-1)	-0.198 (0.156)	-0.157 (0.150)	-0.099 (0.159)	0.102 (0.087)	0.029 (0.040)	0.036 (0.130)
CBI(-1) x Debt(-1)	0.164** (0.074)	0.146** (0.067)	0.140* (0.084)	0.041* (0.022)	0.021 (0.013)	0.124* (0.073)
CBI(-1) x Polity IV(-1)	-0.129 (0.281)	-0.226 (0.277)	-0.098 (0.306)	-0.089 (0.143)	-0.045 (0.073)	0.102 (0.211)
Controls	No	No	Yes	Yes	Yes	Yes
Time dummies	No	Yes	Yes	Yes	Yes	Yes
No. of observations	1 513	1 513	1 509	1 509	1 509	1 409

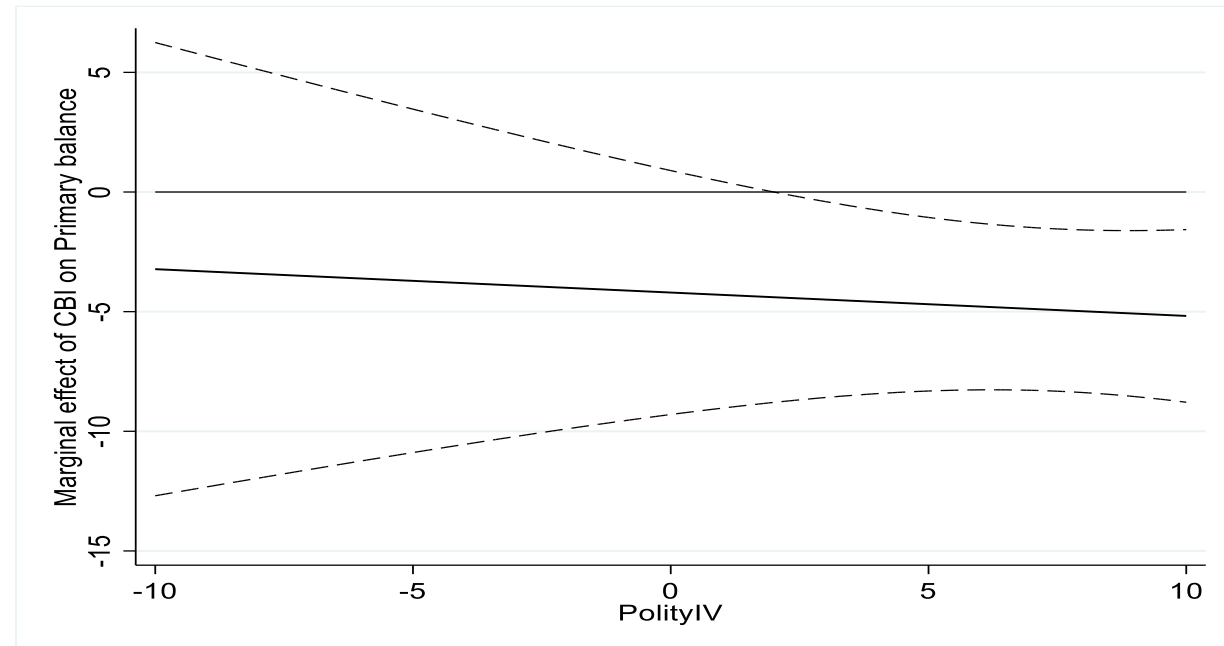
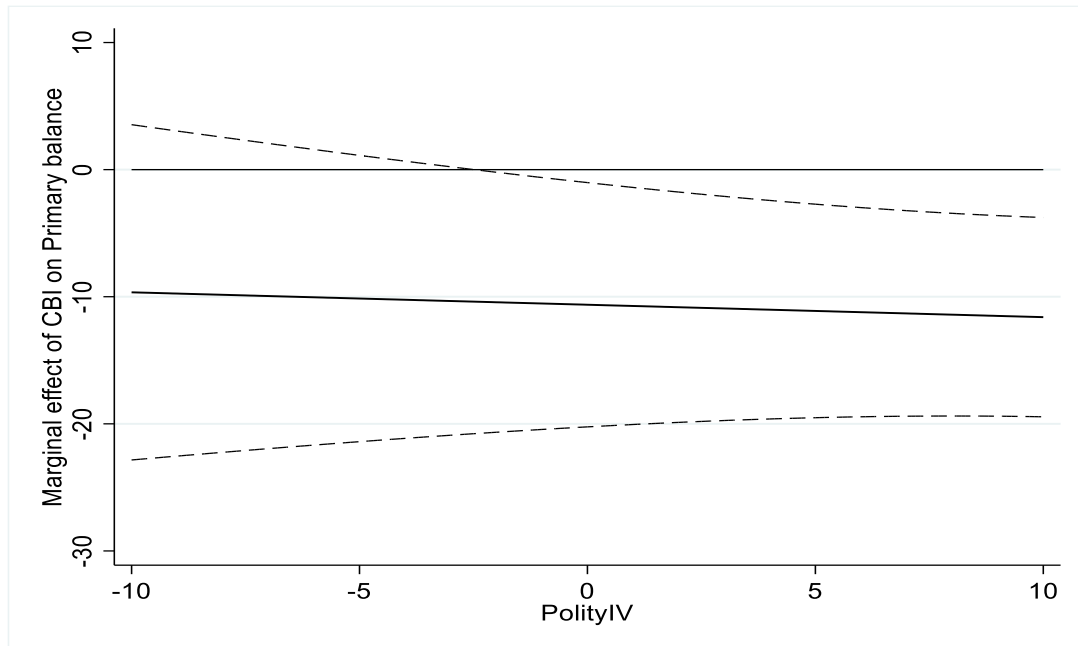
Results for the basic version II

- CBI makes the fiscal policy more disciplined: higher CBI increases the reaction of primary balance to debt which indicates improved fiscal sustainability.



Results for the basic version III

- The marginal effects of CBI on primary balance is significantly and negatively influenced by higher value of Polity IV scores for the cases of no debt (left panel) and median debt (right panel).
- For high values of debt (90th percentile) this effect is statistically not significant.



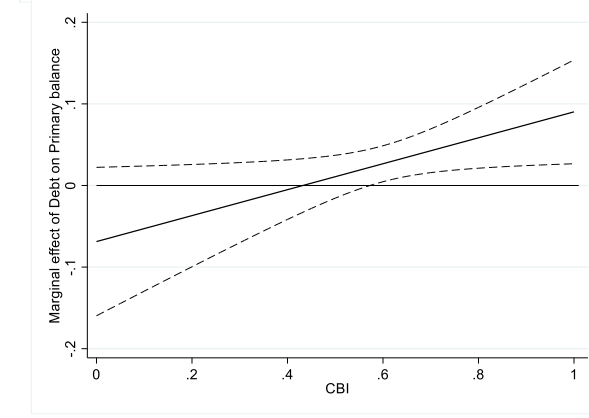
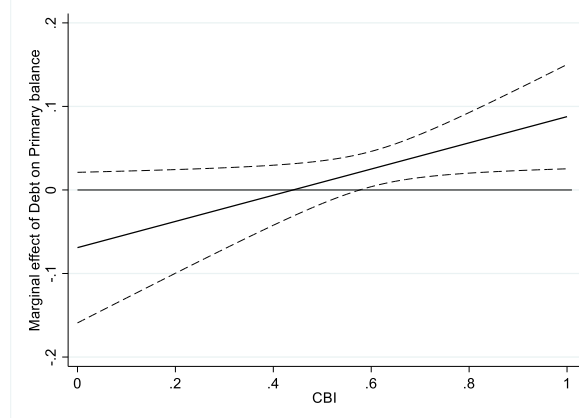
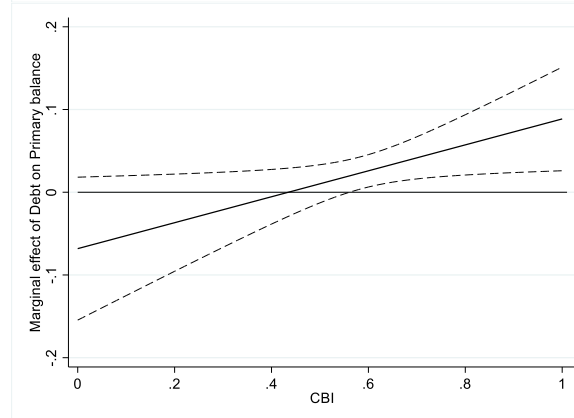
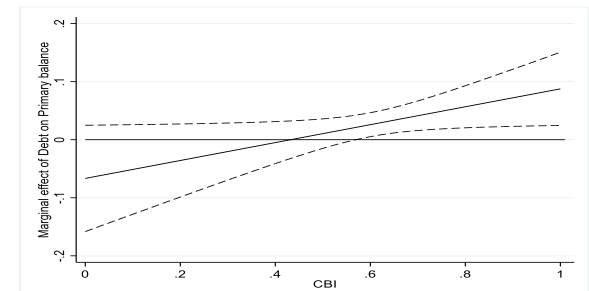
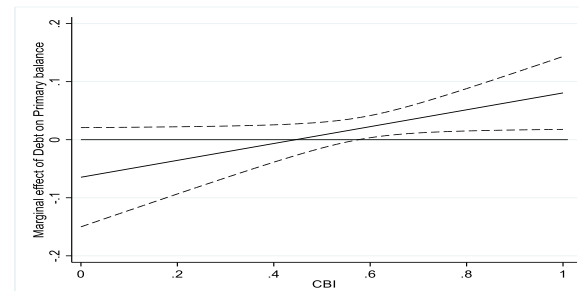
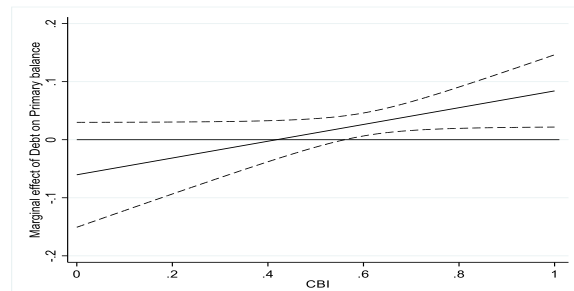
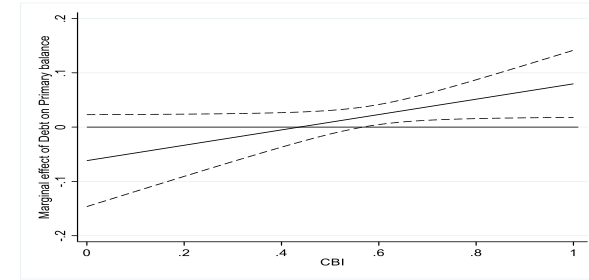
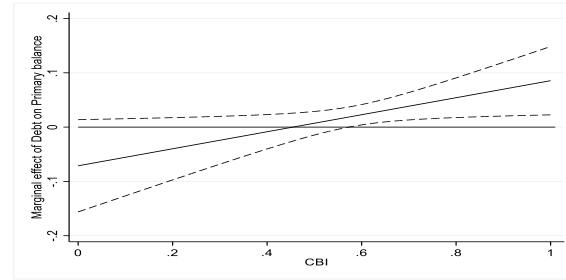
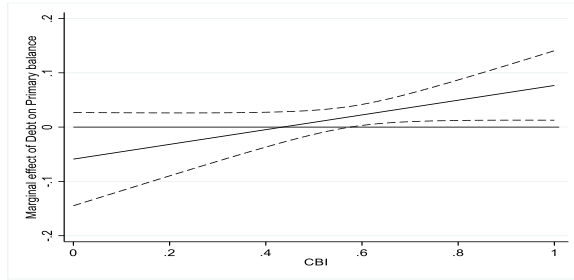
Robustness checks

- Estimation methods
- Various specifications
- Different measures of institutional quality
- Different samples

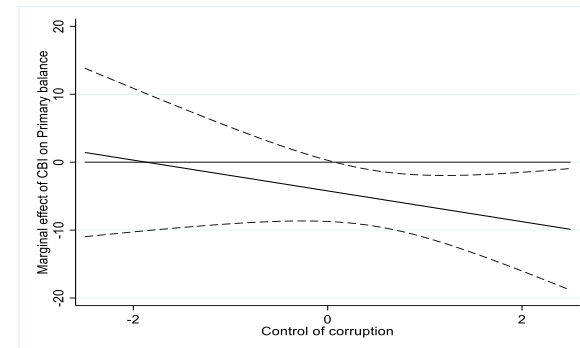
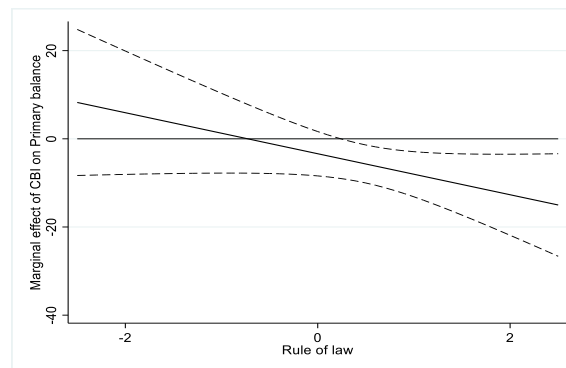
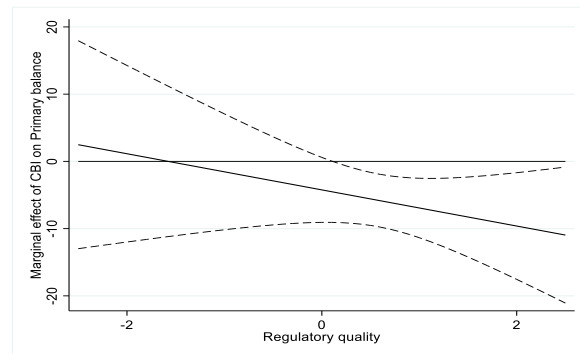
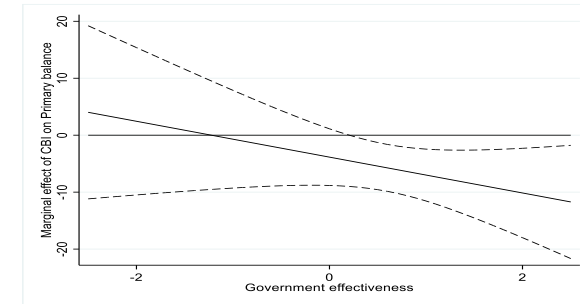
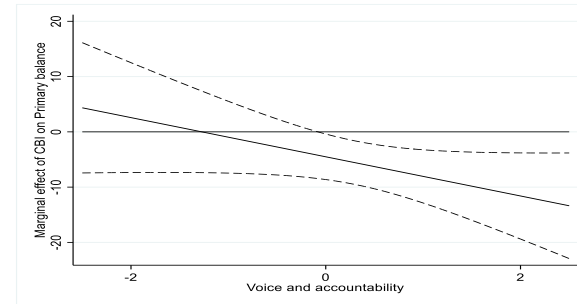
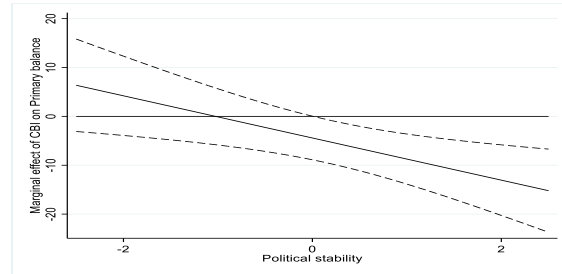
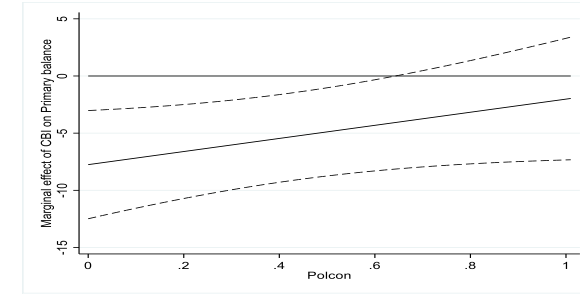
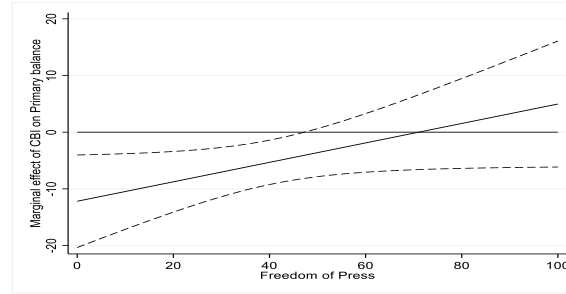
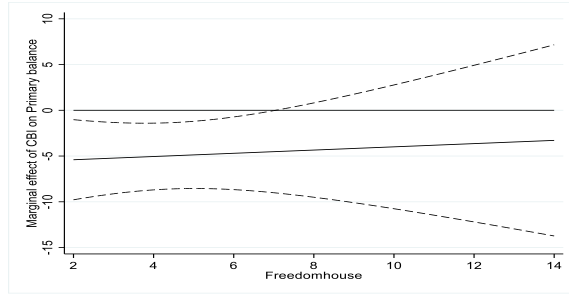
Results for other versions of the model

- **Estimation methods:** system GMM, fixed effects, CRE, difference GMM – similar results (with the exception of the difference GMM estimators, where lagged debt and lagged primary balance are not significant)
- **Various specifications:** adding controls or time dummies without important changes in parameter estimates
- **Different measures of institutional quality:** Freedom House data, Worldwide Governance Indicators, political constraints on executive – major results for the CBI effects hold
- **Different samples:** all countries, advanced economies, emerging and developing economies - most results hold
- **Different samples:** election years vs. non-election years - no significant difference

Different measures of institutional quality I



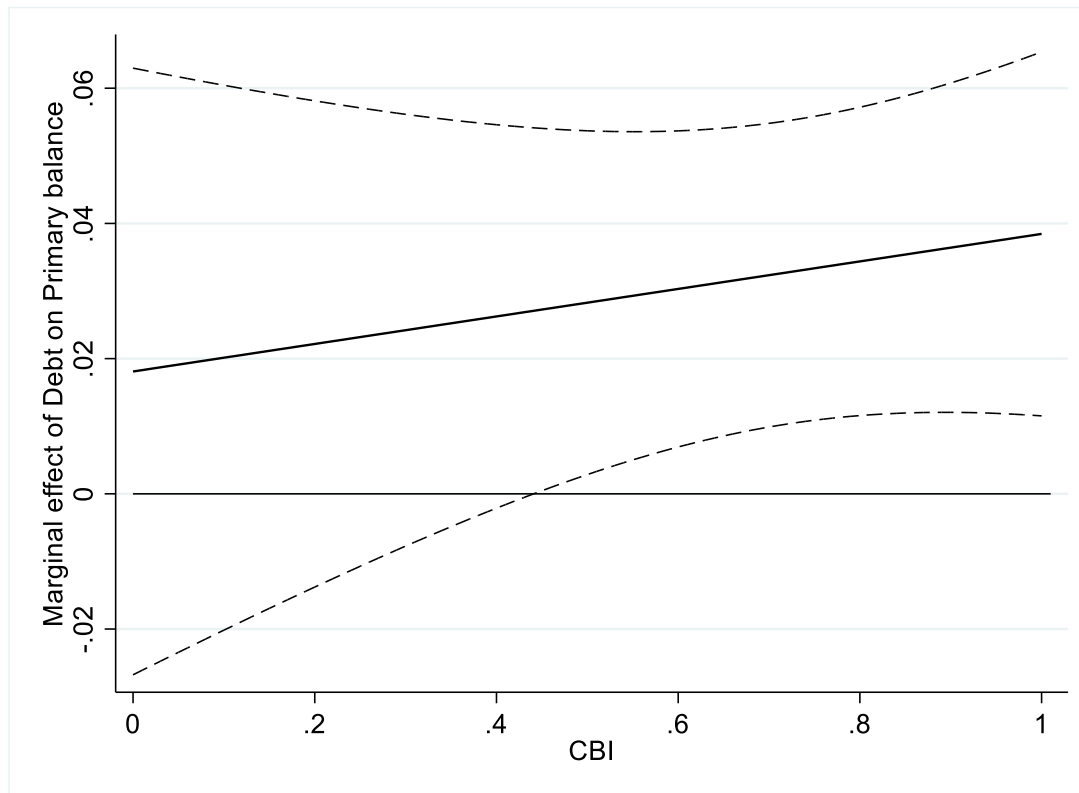
Different measures of institutional quality II



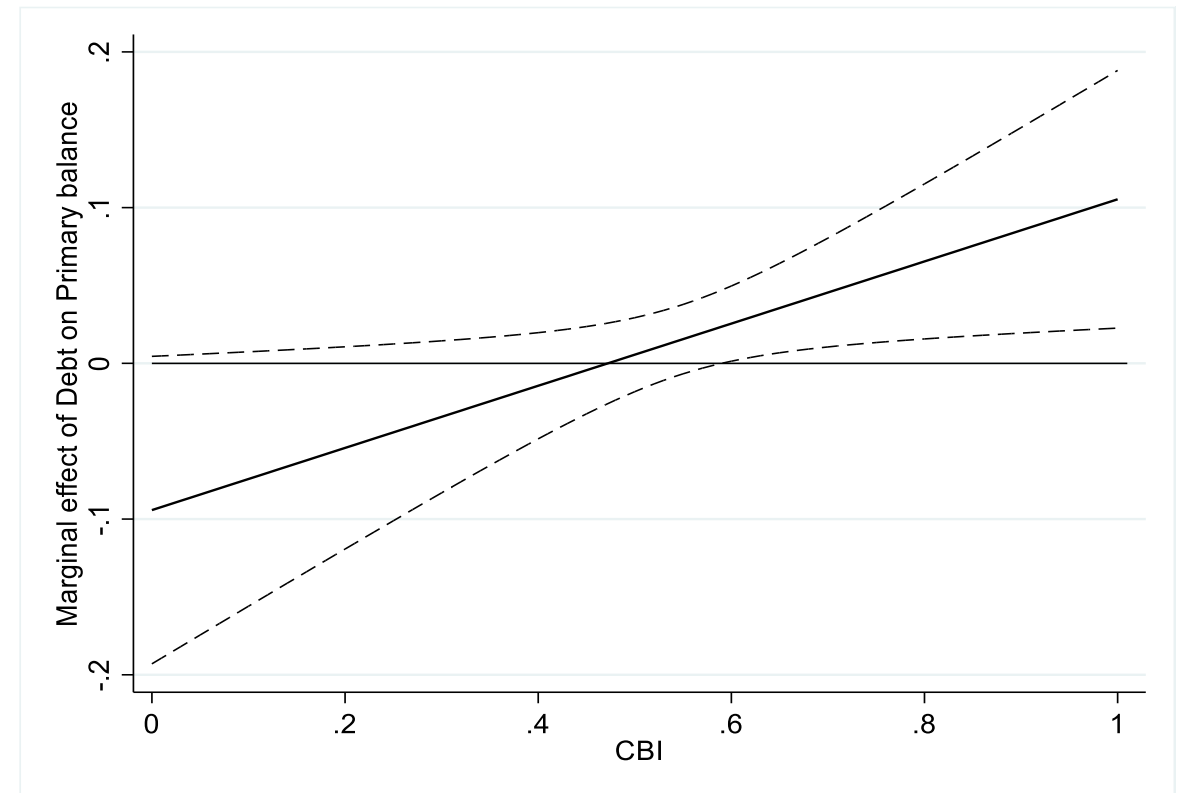
Different samples: advanced economies vs. emerging and developing economies I

Marginal effect of debt on the primary balance

Advanced economies



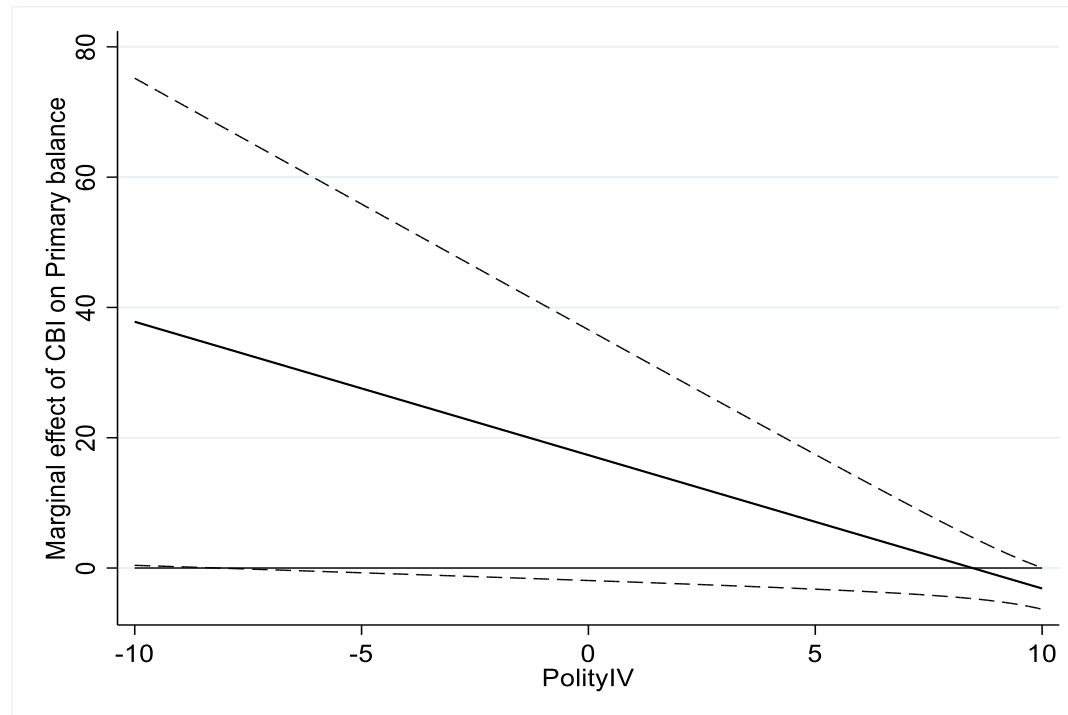
Emerging and developing economies



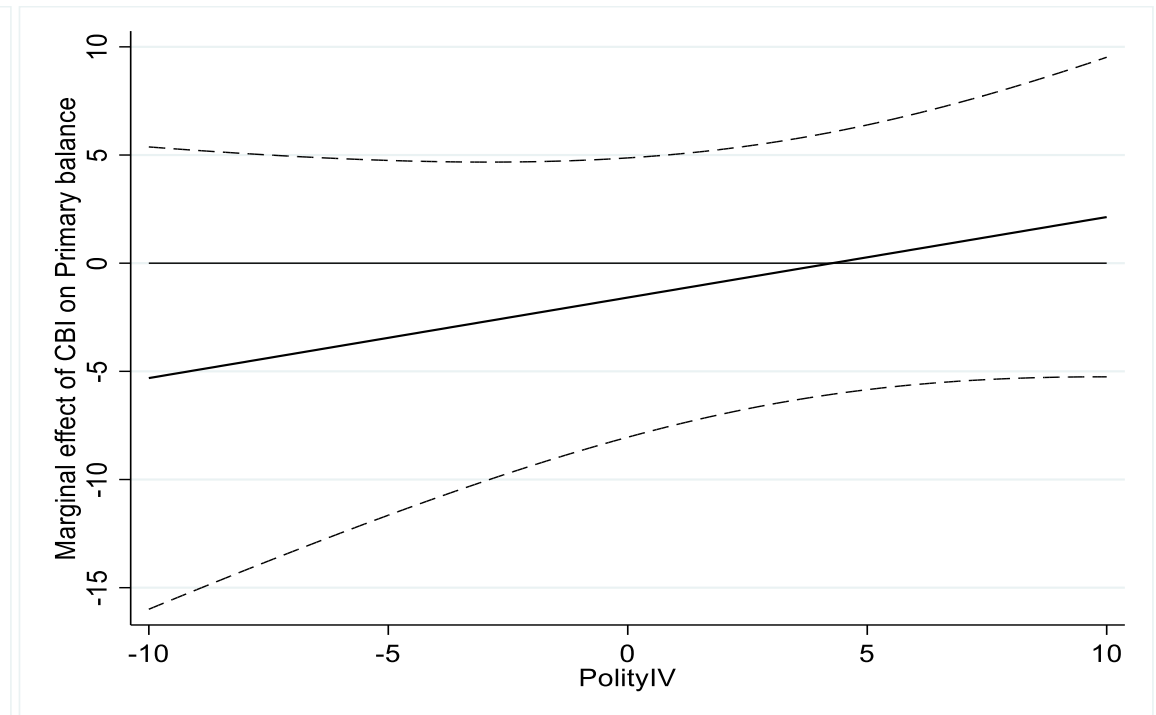
Different samples: advanced economies vs. emerging and developing economies II

Marginal effect of CBI on the primary balance (for the median debt)

Advanced economies

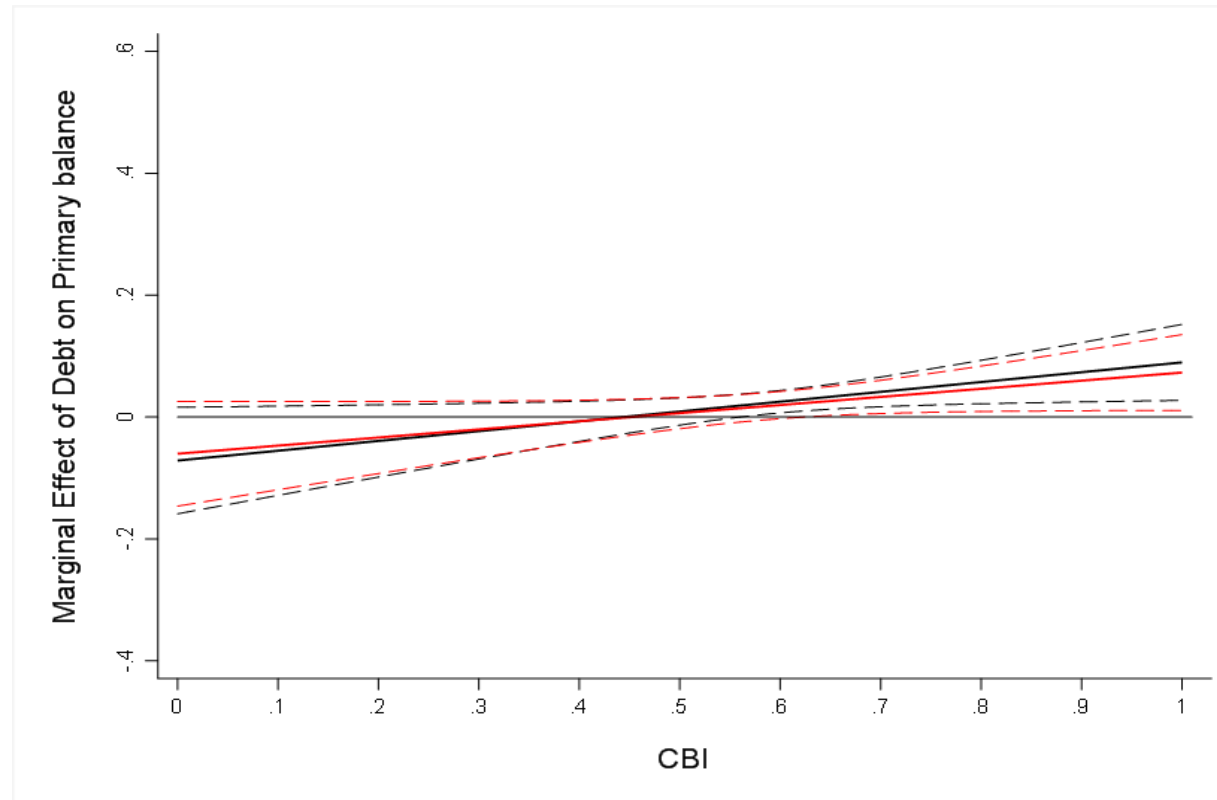


Emerging and developing economies



Different samples: election years vs. non-election years

- Fiscal situation may worsen in election years (Bodea and Higashijima 2017, Kallal and Guetat 2020, Murtinu et al. 2022).
- We verify whether CBI may prevent or mitigate loosening of fiscal policy for political gains.
- We do not find significant difference in the reaction of the primary balance to public debt between election years (red lines) and non-election years (black lines)



Conclusions

- Robustness checks confirm results for the basic version, i.e.:
 - CBI makes the fiscal policy more disciplined: higher CBI increases the reaction of primary balance to debt which indicates improved fiscal sustainability.
 - The marginal effects of CBI on primary balance is significantly and negatively influenced by higher value of indicators of institutional quality for the cases of no debt (left panel) and median debt (right panel).
- The latter result suggest some substitution between CBI and other institutions, but not for advanced economies and not for emerging and developing countries with large debt
- Election years do not significantly differ from non-election years