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Impact of public debt (un)sustainability on fiscal policy effectiveness in Croatia*

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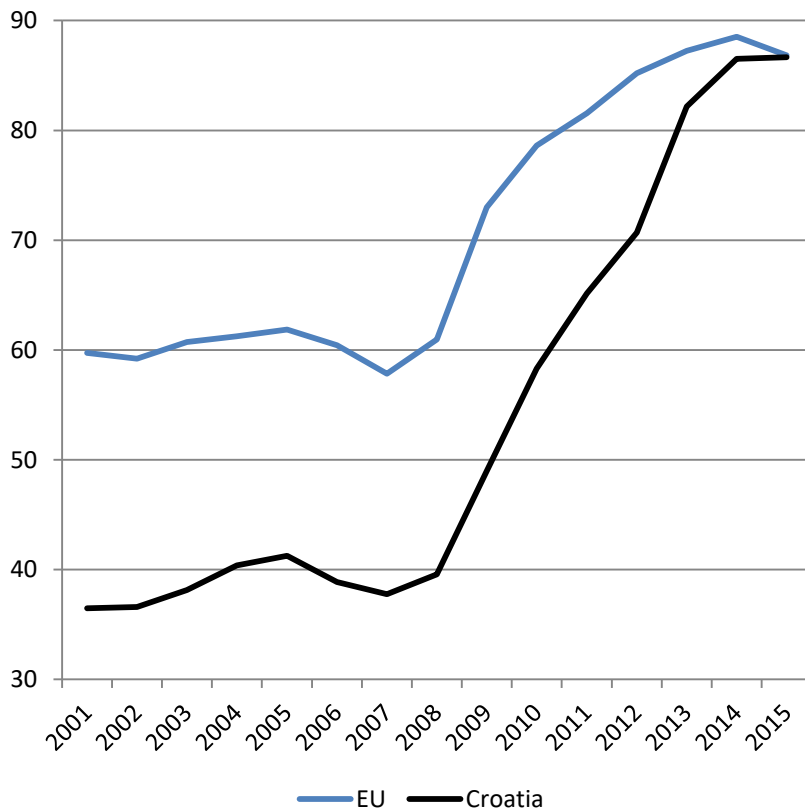
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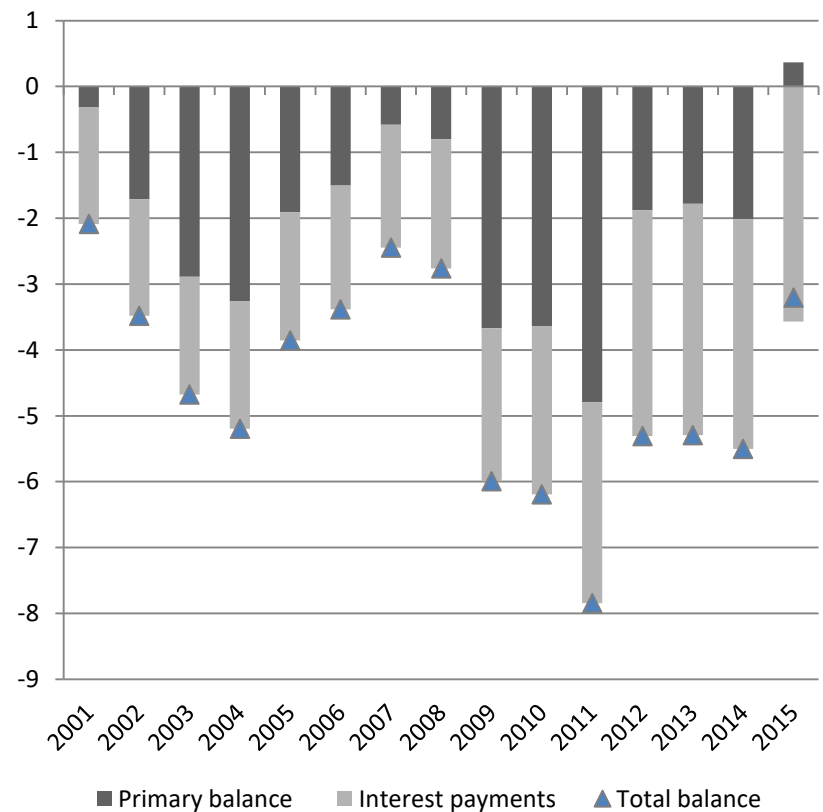


Public debt and fiscal balance dynamics

Public debt in Croatia and EU (% of GDP)



Total balance, primary balance and interest payments (% of GDP)

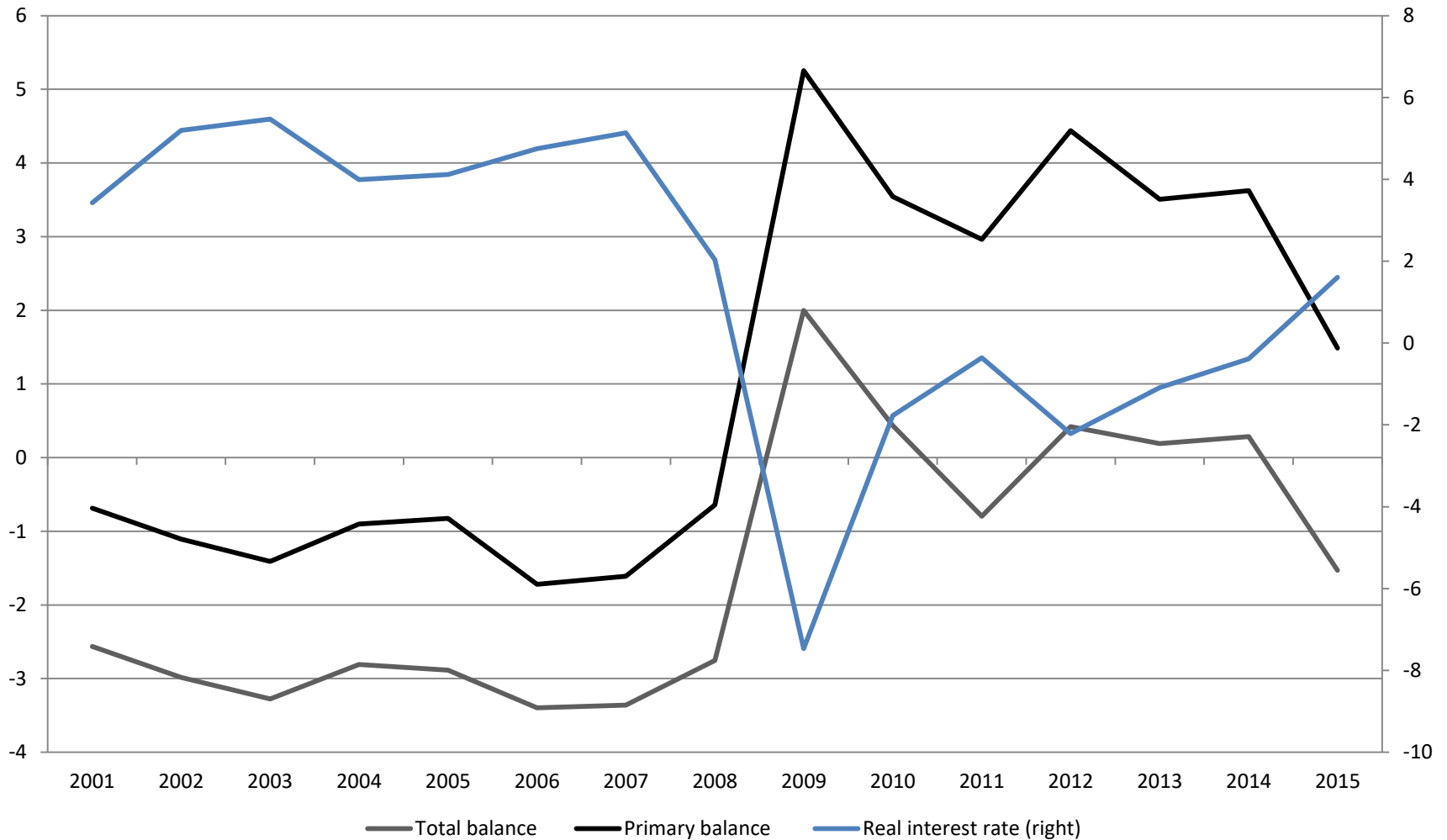


Stability indicators and regime changes in the public debt trajectory

- ▶ **Stability indicators needed to stabilize the public debt:**
 - ▶ total balance,
 - ▶ primary balance and
 - ▶ interest rate
 - ▶ fiscal effort
 - ▶ real interest rate gap
- ▶ last quarter of 2008 as the formal breakpoint in the public debt trajectory (Quandt-Andrews and Bai-Perron test)

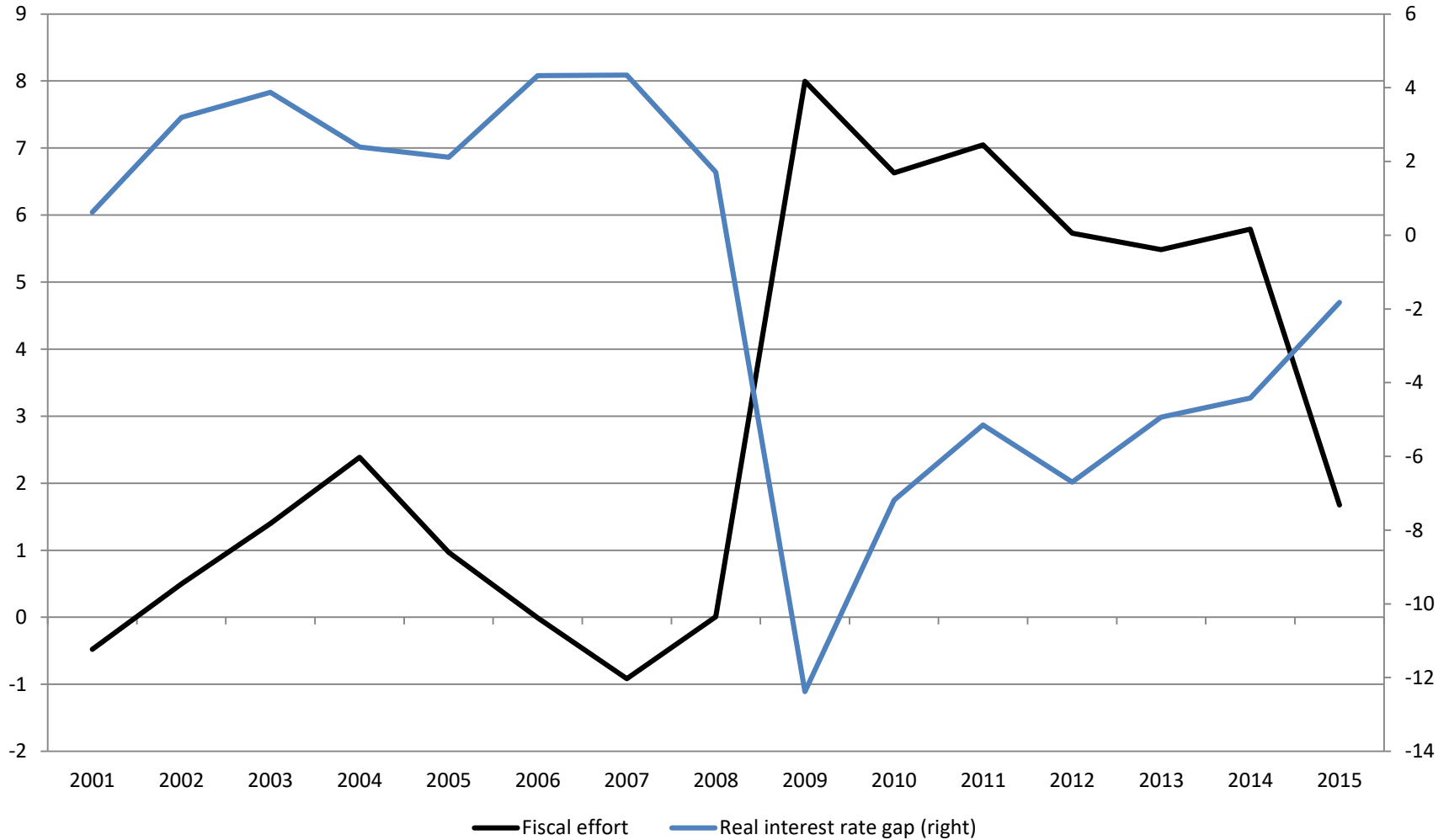


Stability indicators needed to stabilize the public debt



Source: author's calculations

Fiscal effort (in % of GDP) and real interest rate gap (in pp)



Source: author's calculations

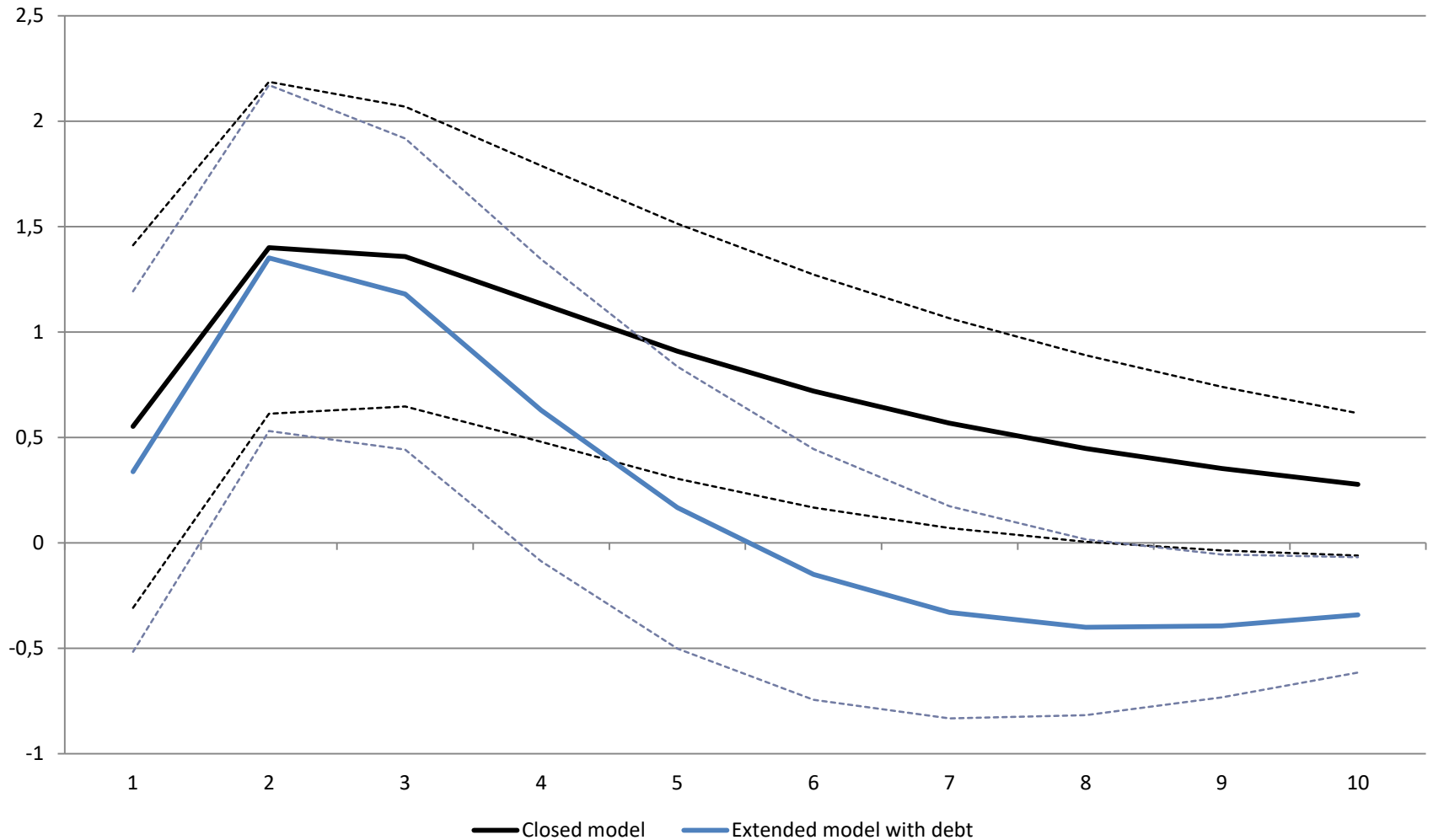
Regime analysis (regime switching model)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Regime 1				
C	0.002331	0.015496	0.150424	0.8804
G	-0.014609	0.259704	-0.441305	0.6590
F	1.741589	0.443133	3.930174	0.0001
GDEBT	-0.212218	0.108420	-1.957361	0.0503
AR(1)	0.353556	0.203918	1.733813	0.0830
Regime 2				
C	0.011061	0.014346	0.771047	0.4407
G	1.085977	0.258152	4.206726	0.0000
F	1.183918	0.491312	2.409708	0.0160
GDEBT	-0.357553	0.110556	-3.234143	0.0012
AR(1)	0.904157	0.240194	3.764281	0.0002

- ▶ model recognizes two regimes between 2001-2008 and 2009-2015.
- ▶ 2001-2008:
 - ▶ G effect on economic growth was marginally negative but statistically insignificant.
 - ▶ changes in the debt indicator had a negative and statistically significant effect on the growth figure.
- ▶ 2009-2015:
 - ▶ G became an important growth determinant, with statistically significant coefficient above 1 (approximation of the multiplier),
 - ▶ Change in debt ratio remained statistically significant but its negative effect strengthened with the rise of instability.



Fiscal multiplier analysis (Impulse responses)



Source: author's calculations

Multiplier effects of structural fiscal spending shock on domestic demand

	Closed model	Extended model with public debt
4th quarter	1.14	0.63
8th quarter	0.45	-0.40

- ▶ **Closed model**
 - ▶ 3 variables: government spending, net taxes and real
 - ▶ Blanchard & Perotti (1999)
- ▶ **Extended model**
 - ▶ closed model is extended by including the fourth endogenous variable (public debt) in model
- ▶ public debt posts limitations to the effectiveness of fiscal spending in Croatia



Conclusion

- ▶ 2001-2015 changes in regimes regarding the public debt level and the fiscal policy influence
 - ▶ progressing from 2009, i.e. 2008q4
 - ▶ 86.7% of GDP in 2015
- ▶ Fiscal (un)sustainability
 - ▶ Stability indicators still too high
 - ▶ fiscal efforts required
 - ▶ Vulnerability (liquidity risk and high interest dues, currency risk etc.)
- ▶ Empirical results
 - ▶ public debt level significantly affects and reduces the effectiveness of fiscal policy
 - ▶ importance of public debt in both regimes
 - ▶ public debt is reducing impact on the size of fiscal multipliers

