

On-line Appendix on “Understanding the Gains from Wage Flexibility in a Currency Union: The Fiscal-Policy Connection”

OKANO, Eiji Kazuyuki Inagaki
Nagoya City University Nanzan University

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1 Estimation for the Bohn Rule

We estimated the Bohn rule using panel data from Europe. Following von Hagen and Bruckner (2002), we choose 11 countries that joined the European Monetary Union (EMU): Cyprus, Estonia, Finland, Greece, Latvia, Lithuania, Luxembourg, Malta, Portugal, Slovakia, and Slovenia.¹ (Croatia introduced the euro in 2023 and was excluded due to a lack of data). The sample period is 2007, when the Eurozone began to expand, to 2022. Although the sample period includes the Covid-19 pandemic, we control for specific shocks in 2020, 2021, and 2022 by including period-specific fixed effects in our regression model. This technique is also adopted by Mahdavi (2014).

Data on total government revenue, total government expenditure, net interest payments, government debt, and gross domestic product (GDP) were obtained from Eurostat. The primary balance is calculated using data on total government revenue, total government expenditure, and net interest payments. Here, the GDP trend calculated from the HP filter was regarded as steady state (the smoothing parameter was set to 100). We adopt panel OLS to estimate the model, as in Bohn (1998) and Mahdavi (2014). Our results are shown in Table 1.

Table 1: Estimation Results

Explanatory Variables	Model 1	Model 2
Ratio of Nominal Government Debt to nominal GDP with one year lag	0.065 ** (0.011)	0.068 ** (0.022)
Percentage Deviation of Nominal GDP from Its Steady State	NA	0.027 (0.075)

¹von Hagen and Bruckner (2002) regard countries whose GDP ratio to total EU GDP is less than 2% as small open economies in Europe.

In Table 1, “***” denotes significance at the 1% level and values within “()” are two-way cluster-robust standard deviations. The models include not only period-specific fixed effects but also (fixed) country-specific effects.

As $\phi_B = \phi_b \left(\frac{1-\beta}{\beta} \right)$, ϕ_b is 6.435 and 6.732, respectively.

References (Not cited in text)

von Hagen Jorgen and Bruckner, Matthias (2002), “Monetary and Fiscal Policy in the European Monetary Union,” *Monetary and Economic Studies*, Institute for Monetary and Economic Studies, Bank of Japan, vol. 20(S1), pp.123.154, December.