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Research article

Dominance score in the fiscal-monetary interaction

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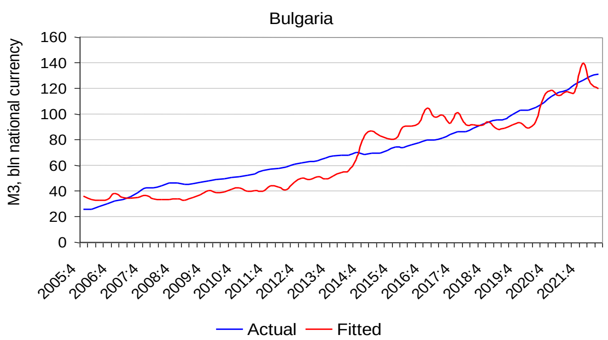
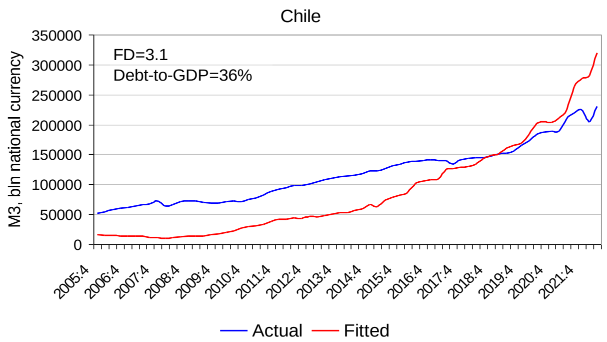
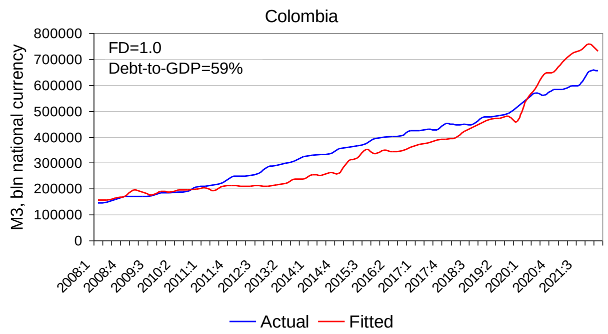
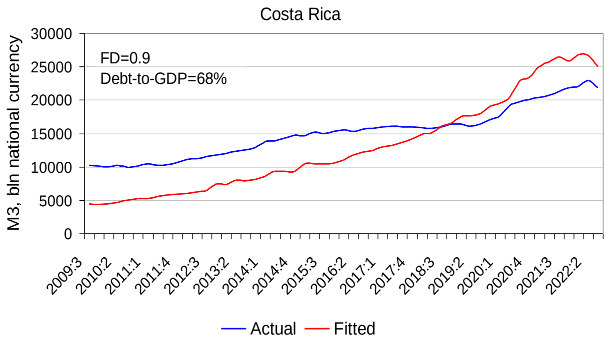
Supplementary

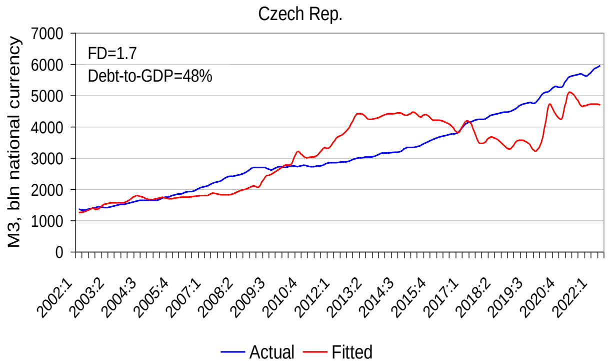
Appendix A







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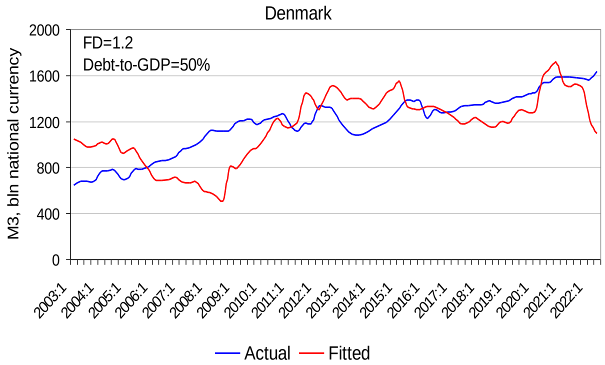
FD=1.7
Debt-to-GDP=48%
M3, bln national currency
Actual
Fitted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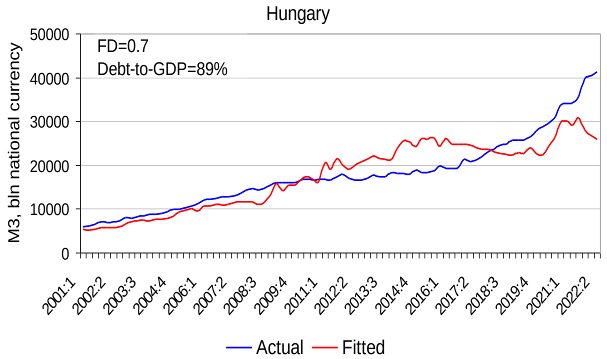
Debt-to-GDP=50%
M3, bln national currency
Actual
Fitted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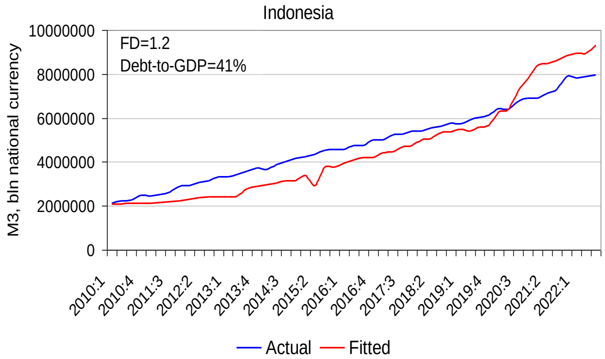
Debt-to-GDP=89%
M3, bln national currency
Actual
Fitted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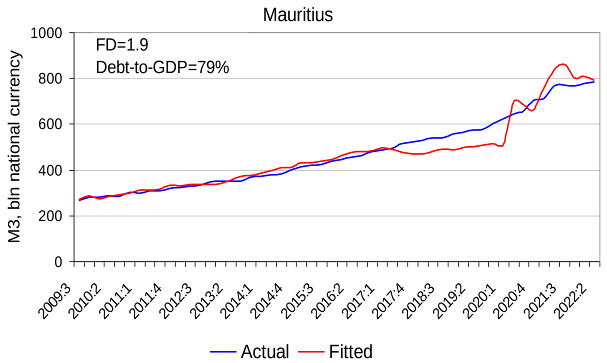
Debt-to-GDP=41%
M3, bln national currency
Actual
Fitted


Mauritius
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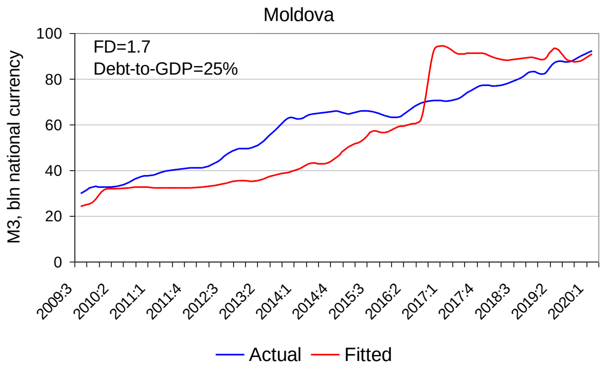
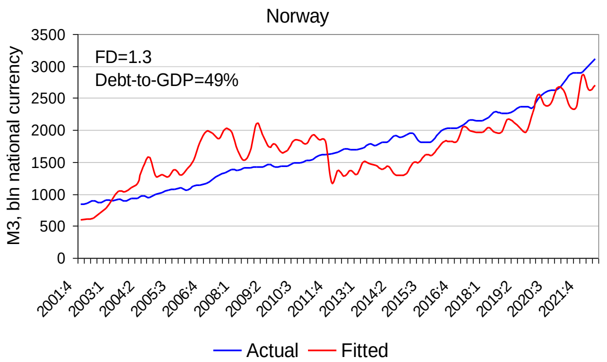
Debt-to-GDP=79%
M3, bln national currency
Actual
Fitted


Moldova
FD=1.7
Debt-to-GDP=25%
M3, bln national currency
Actual
Fitted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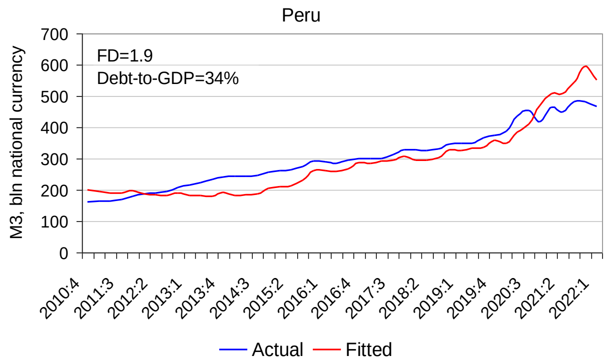
Debt-to-GDP=49%
M3, bln national currency
Actual
Fitted


Peru
FD=1.9
Debt-to-GDP=34%
M3, bln national currency
Actual
Fitted

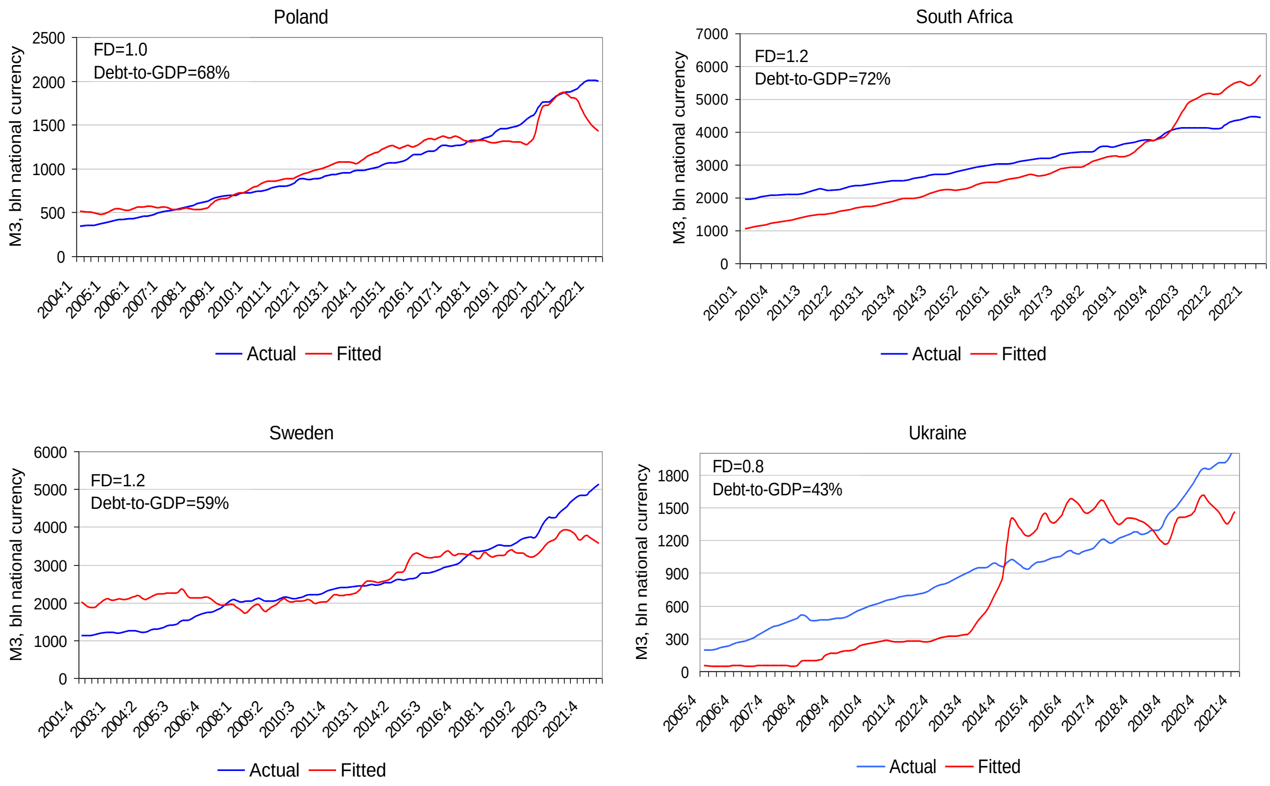


Fig. A.1. Summary report on the correlation between broad money supply and public debt in the selected countries. Source: IMF International Financial Statistics, World Bank Quarterly Public Debt DataBank.

Appendix B

The expanded supplementary stuff discloses some mathematics concerning micro-conceptions in detail.

The intertemporal consumer maximizes (8) by choosing the sequence $\left\{C_t^R, K_t^P, L_t, \frac{M_t}{P_t}, \frac{B_t}{P_t}, \frac{B_t^*}{P_t}\right\}_{t=0}^{\infty}$ subject to (9) and (10). Applying FOC and eliminating the multiplier, obtains: the consumption Euler equation of Ricardian household:

$$\frac{1}{C_t^R - hC_{t-1}^R + \phi C_t^G} = \beta h E_t \frac{1}{C_{t+1}^R - hC_t^R + \phi C_{t+1}^g} + \frac{\chi_L L_t^{R\phi}}{W_t/P_t} \tag{B.1}$$

The supply of labor:

$$L_t{}^{\phi} = \left(\frac{i_t + 1}{i_t}\right) \frac{\chi_M W_t}{\chi_L M_t} \tag{B.2}$$

The investment-capital trade-off:

$$i_t + 1 = E_t \pi_{t+1}(r_{t+1} - \delta + 1) \tag{B.3}$$

The uncovered interest parity:

$$E_t \frac{s_{t+1}}{s_t} = \frac{1+i_t}{1+i_t^*} \tag{B.4}$$

In the case of non-Ricardian consumption, applying FOC for (8) and (11) has:

$$C_t^{NR} + \varphi C_t^g = \frac{W_t/P_t}{\chi_L {L_t^{NR}}^{\phi}} \tag{B.5}$$

Following the assumption that households are given a market power as price-setters, the wages can be changed after receiving some random signal. The households supply differentiated labor services to the intermediate firms that operate as monopolistically competitive market units. Each service is sold to the representative firm, which aggregates these different types of labor ($l_{j,t}$) into a single labor input (L_t). The labor aggregator combines as much household labor as demanded by the labor-aggregating firm that uses *Dixit–Stiglitz* technology:

$$L_t = \left[\int_0^1 {l_{j,t}}^{\frac{\omega^w - 1}{\omega^w}} dj\right]^{\frac{\omega^w}{\omega^w - 1}} \tag{B.6}$$

where ω^W is the elasticity of substitution between differentiated labor; $l_{j,t}$ is the amount of differentiated labor supplied by household *j*.

The representative labor aggregator takes each household's wage, w_j, as given and minimizes the cost of producing a given amount of the aggregate labor index. The units of labor index are then sold at their unit cost, W_t, to the representative firms with no profit:

$$W_t = \left[\int_0^1 {w_{j,t}}^{1-\omega^w} dj\right]^{\frac{1}{1-\omega^w}} \tag{B.7}$$

The demand equation for the differentiated labor, $l_{j,t}$ takes the form:

$$l_{j,t} \equiv \left[\frac{w_{j,t}}{W_t}\right]^{-\omega^w} L_t \tag{B.8}$$

Independently and randomly chosen, one household fraction ($1-\theta^W$) defines the optimal nominal wages, while the other fraction (θ^W) keeps the same wage levels as in the previous period. The optimal (highest) wage level for the Ricardian and non-Ricardian households of fraction ($1-\theta^w$) are, respectively:

$$w_{j,t}^{\circ} = \chi_l \left(\frac{\omega^w}{\omega^w - 1}\right) E_t$$

$$\sum_{i=0}^{\infty}\left[(\beta\theta^w)^i \left(\frac{\left(C_{j,t+i}^R - \hbar C_{j,t-1+i}^R + \varphi C_{j,t+i}^g\right)\left(C_{j,t+1+i}^R - \hbar C_{j,t+i}^R + \varphi C_{j,t+1+i}^g\right)}{C_{j,t+1+i}^R - \hbar C_{j,t+i}^R + \varphi C_{j,t+1+i}^g - \beta\hbar\left(C_{j,t+i}^R - \hbar C_{j,t-1+i}^R + \varphi C_{j,t+i}^g\right)}\right) {L_{j,t+i}^R}^{\phi} P_{t+i}\right] \tag{B.9}$$

$$w_{j,t}^{\circ} = \chi_L \left(\frac{\omega^w}{\omega^w - 1}\right) E_t \sum_{i=0}^{\infty} \left[(\beta\theta^w)^i \left(C_{j,t+i}^{NR} + \varphi C_{j,t+i}^{G}\right) L_{j,t+i}^{NR\phi} P_{t+i}\right] \tag{B.10}$$

The retailers, which are entirely identical, sell their products in the market, which is a perfectly competitive one. The retailer buys a large variety of wholesale goods, y_j, for j $\in$[0,1], and transforms them, according to the *Dixit-Stiglitz* aggregator with the elasticity of substitution between wholesale goods, ω>1, into a bundle of goods:

$$Y_t \equiv \left[\int_0^1 y_{j,t}^{\frac{\omega-1}{\omega}} dj\right]^{\frac{\omega}{\omega-1}} \tag{B.11}$$

The downward-sloping demand functions of the goods produced in the domestic market:

$$y_{j,t} = \left[\frac{p_{j,t}}{P_t}\right]^{-\omega} Y_t \tag{B.12}$$

The profit-maximizing price chosen by the retail firms:

$$P_t = \left[\int_0^1 p_{j,t}^{1-\omega} dj\right]^{\frac{1}{1-\omega}} \tag{B.13}$$

The labor/capital trade-off:

$$\left(\frac{1-\alpha_k}{\alpha_k}\right) r_t K_{t-1}^{p} = \frac{W_t}{P_t} L_t \tag{B.14}$$

The marginal consumption:

$$MC_t = \frac{1}{K_{t-1}^{g\ \alpha_g}} \left(\frac{W_t/P_t}{1-\alpha_k}\right)^{1-\alpha_k} \left(\frac{r_t}{\alpha_k}\right)^{\alpha_k} \tag{B.15}$$

The optimal price level for the (*1-θ*) wholesale firms:

$$P_t^{\circ} = \left(\frac{\omega}{\omega-1}\right) E_t \sum_{n=0}^{\infty} (\beta\theta)^n MC_{t+n} \tag{B.16}$$