Exchange Rate Controls

As A Fiscal Instrument

S. Schmitt-Grohé and M. Uribe

Columbia University and NBER

March 27, 2024

Motivation

• About 20 percent of all countries have in place dual, multiple, or parallel exchange rates (Ilzetzki, Reinhart, and Rogoff, 2019).

• Exchange-rate controls are more common in high inflation countries (e.g., Argentina, Nigeria, Venezuela).

• This paper focuses on the role of exchange-rate controls as a means to generate fiscal revenue in an environment in which they compete with seignorage to finance the fiscal deficit.

Monetary Distortion

A demand for real money balances, m_t, is motivated by a transaction cost $s(v_t)$ that is proportional to consumption, c_t, and increasing in money velocity, v_t. This gives rise to a demand for money:

$$v_t = \frac{c_t}{m_t} = \underset{+}{V(i_t)}$$

- Inflation creates a resource loss equal to $s(v_t)c_t$.
- Inflation discourages consumption and labor

$$-\frac{U_2(c_t, h_t)}{U_1(c_t, h_t)} = \frac{w_t}{1 + s(v_t) + v_t s'(v_t)}$$

In this presentation, I will focus on steady-state equilibria, so inflation is directly linked to the nominal interest rate

$$1 + i_t = \frac{1 + \pi_{t+1}}{\beta}$$

Notation: i_t =nominal interest rate; π_t =inflation; w_t = real wage.

The exchange-rate gap

$$\gamma_t = \frac{\mathcal{E}_t - \mathcal{E}_t^o}{\mathcal{E}_t^o}$$

The market real exchange rate

$$e_t = \frac{\mathcal{E}_t}{P_t}$$

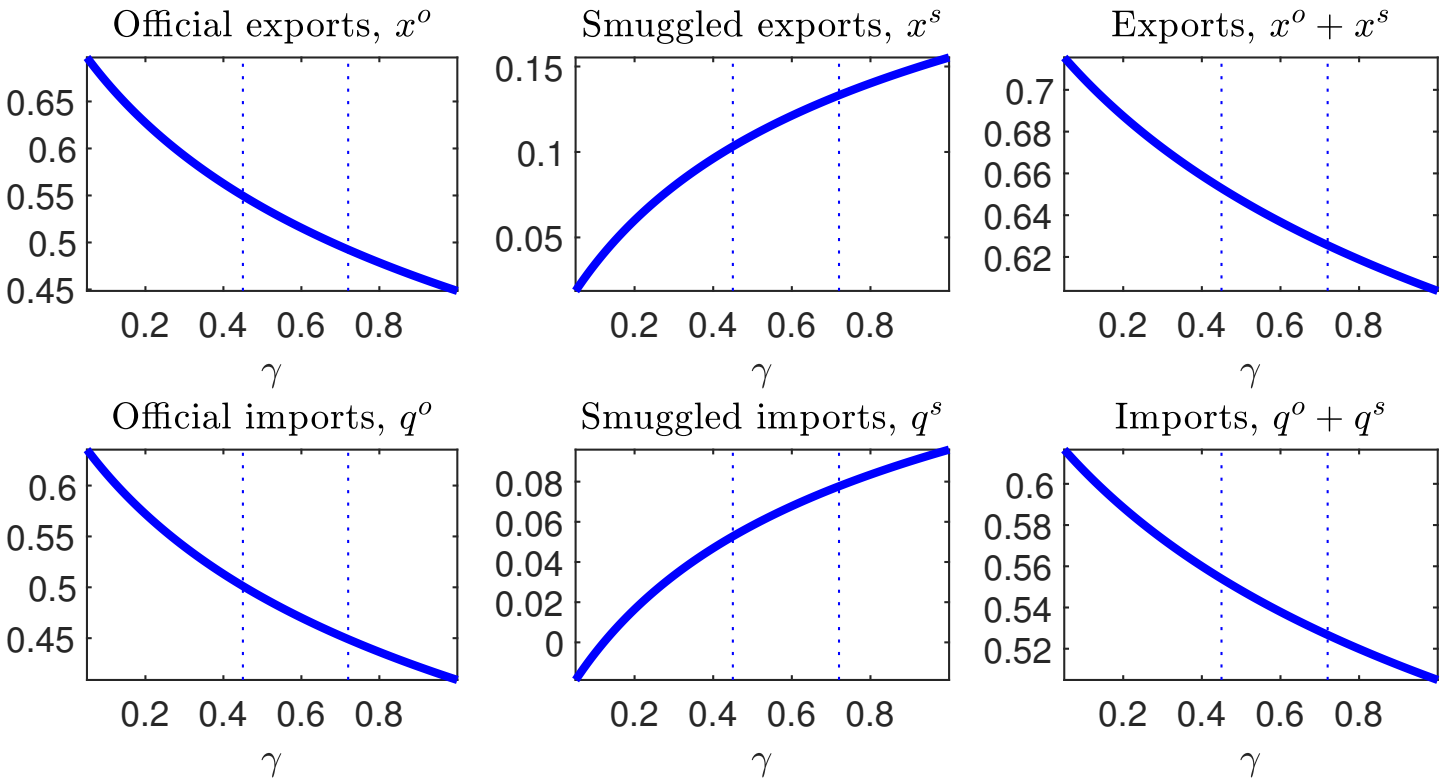
Notation:
$\mathcal{E}_t =$ market exchange rate (pesos per dollar)
$\mathcal{E}_t^o =$ official exchange rate
$P_t =$ nominal price of the consumption good

Firms

$$\max \; F(h_t, q_t^n) + \frac{e_t}{1+\gamma_t}(x_t^o - q_t^o) + e_t(x_t^s - q_t^s) - w_t h_t - C(q_t^s, \kappa) - C(x_t^s, \kappa)$$

Notation:
x_t^o, x_t^s = official and smuggled exports;
q_t^o, q_t^s = official and smuggled imports;
$\bar{q}_t^o$ = import restrictions imposed by the government;
$C(\cdot, \kappa)$ = cost of smuggling.

Exports, Imports, and the Exchange Rate Gap



The Government's Budget Constraint

$$a_t + \frac{i_t}{1+i_t} m_t + \frac{\gamma_t}{1+\gamma_t} e_t (x_t^o - q_t^o) = \tau_t + e_t \frac{i^* B^*}{1+i^*} + \frac{1+i_{t-1}}{1+\pi_t} a_{t-1}$$

The Government's Import Restriction Policy

$$q_t^o \leq (1-\rho_t) x_t^o,$$

where $\rho_t \in (0,1)$ is a policy instrument.

Notation: B^* = government's external debt; i^* = foreign interest rate; τ = primary fiscal deficit.
B^*, i^*, and τ are exogenous.

Optimal Exchange Controls

Variable	No Exchange Controls	Optimal Exchange Controls	Minimum Inflation
exchange-rate gap γ	0	0.03	0.87
import restrictions ρ	0	0.15	0.52
inflation (%/yr)	39.6	35.6	-3.8
seignorage (% GDP)	2.9	2.7	0
revenue FX controls (% GDP)	0	0.2	3.0
welfare cost (% consumption)	0.02	0	4.57

Takeaways: The optimal exchange-rate gap is virtually nil. The government finances its chronic fiscal deficit almost exclusively with seignorage income.

Optimal Policy With Two Official Exchange Rates

Variable	Baseline	Multiple official exchange rates
export exchange-rate gap γ^x	0.03	0.12
import exchange-rate gap γ^q	0.03	0
import restrictions ρ	0.15	0
inflation (%/yr)	35.6	6.6
seignorage (% GDP)	2.7	1.0
revenue FX controls (% GDP)	0.2	2.0

Takeaways: It's optimal to legalize the import exchange market ($\gamma^q = 0$). The exchange-rate gap on exports is small ($\gamma^x = 0.12$). Inflation is low (6%)

Conclusions

• Exchange controls lead to misallocation
– make the economy more closed (exports and imports decline);
– cause a shortage of imported inputs;
– cause lower consumption.

• Exchange controls can generate sizeable fiscal revenue.

• Under plausible calibrations, the trade off between financing the fiscal deficit with inflation or with exchange controls is resolved in favor of inflation.

• It is optimal to legalize the exchange market for imports.