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Exchange Rate Policies and Practices

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Standard international macro models suggest that a floating exchange rate is part of the optimal policy mix, along with free capital mobility and inward looking monetary policy that stabilizes domestic inflation and output gap, as suggested by Friedman (1953). This contrasts with the practice where many countries pursue active exchange rate management policies — ranging from a degree of capital controls and occasional FX interventions to managed floats, crawling pegs, and hard pegs — and hence exhibit the so-called "fear of floating" documented for many developing countries (Calvo and Reinhart 2002, Ilzetzki, Reinhart, and Rogoff 2019). Furthermore, the IMF has recently shifted their policy recommendations and no longer advocates against the use of capital controls and FX interventions (see, in particular, the Integrated Policy Framework proposed by Basu, Boz, Gopinath, Roch, and Unsal 2025).

In our recent work, we have developed a policy analysis framework that is consistent with the major empirical properties of exchange rates, in particular during the episodes of switching between floating and fixed exchange rate regimes (Itskhoki and Mukhin 2026). Specifically, we focus on a problem of a policymaker subject to two frictions — nominal rigidities in product markets and imperfect intermediation in a segmented financial (currency) market. The nominal exchange rate plays a dual role. In the goods market, when prices (or wages) are sticky, it allows for the real exchange rate adjustment and expenditure switching necessary to support the efficient level of output. In the financial market, nominal exchange rate volatility results in a currency risk premium and UIP deviations which limit the extent of international risk sharing. This second friction gives rise to effective interventions in the currency market (FXI) and distinguishes our analysis from the conventional "trilemma" models.

In the presence of endogenous frictional UIP deviations, a laissez-faire float results in excessive exchange rate volatility, which reflects not only macro-fundamental shocks, but also features non-fundamental financial volatility consistent with exchange rate disconnect. As a result, both a free float and a full peg are generally suboptimal, and the optimal policy features a degree of "fear of floating". When FX reserves and/or interventions are costly, the first-best allocation is generally infeasible, and the constrained optimal policy is implemented as a managed (or crawling) monetary peg combined with FX forward guidance and macroprudential accumulation of FX reserves.

In our previous work, we have provide general first-order optimality results for the optimal FX policies. In particular, the policymaker must optimally commit to compromise output gap stabilization

next period, $x_{t+1} \neq 0$, to eliminate a part of the exchange rate depreciation surprise, $e_{t+1} - \mathbb{E}_t e_{t+1} > 0$, with a monetary tightening, and vice versa:

$$x_{t+1} = -\delta_t \cdot (e_{t+1} - \mathbb{E}_t e_{t+1}), \tag{1}$$

where δ_t is the promised monetary policy lean against the future exchange rate surprise, and $\delta_t \neq 0$ whenever there are frictional UIP deviations at t. Similarly, FX interventions lean against frictional UIP deviations, stopping short of fully eliminating them whenever their use is statically or dynamically costly. When FXI can fully eliminate frictional UIP deviations, the first-best is feasible with inward-looking monetary policy that exclusively targets the output gap, $x_{t+1} = \delta_t = 0$.

We further provide a closed-form characterization of the optimal policies in some special cases. For example, when the first-best allocation is feasible in all periods but t, the optimal policy mix involves a limited FX interventional at t combined with a promise of a partial monetary peg in the following period. Specifically, the equilibrium UIP deviation, $UIP_t \equiv i_t - i_t^* - \mathbb{E}_t \Delta e_{t+1}$, is given by:

$$UIP_t = \omega \sigma_t^2 (n_t^* + f_t^*), \qquad \text{where} \qquad \sigma_t^2 = \mathbb{E}_t (e_{t+1} - \mathbb{E}_t e_{t+1})^2 \tag{2}$$

is the conditional (surprise) exchange rate volatility, ω is an inverse measure of the depth of the financial (intermediation) sector, n_t^* is the private currency demand shock (from both macro-fundamental and financial sources) and f_t^* is official FX reserves.[1] The optimal policies then satisfy:

$$f_t^* = -\underbrace{\gamma \kappa \cdot \varphi(\sigma_t^2)}_{\equiv \alpha_t} \cdot UIP_t \qquad \text{and} \qquad \delta_t = \frac{2\gamma}{1-\gamma} \cdot \frac{\varphi(\sigma_t^2)}{\sigma_t^2} \cdot (UIP_t)^2, \tag{3}$$

where $\varphi(\cdot) > 0$ is an increasing function of exchange rate volatility, $\gamma \in [0, 1)$ is a measure of the economy's openness, and κ is the inverse cost parameter of FXI. Therefore, FXI lean against UIP deviations, while the monetary lean against exchange rate surprises (which, in turn, reduces σ_t^2 in equilibrium) is quadratic in the UIP deviation. That is, for small UIP deviations, monetary policy is inward-looking and ignores the exchange rate, whereas the monetary policy lean against the exchange rate is increasing and convex in the UIP deviation, emphasizing non-linearity of the optimal policy.

Since closed-form solutions for constrained optimal policies are available only in a few special cases, we develop a numerical method to solve for optimal policies under general constraints on FX and monetary instruments. The central role of the risk premium and exchange rate volatility makes the policy problem intrinsically nonlinear and stochastic, ruling out solution methods that rely on certainty equivalence. At the same time, the time inconsistency of the optimal policy requires commitment and prevents a direct application of standard recursive techniques. To overcome these challenges, we build on the seminal work of Marcet and Marimon (2019) and show that the policy problem can be written recursively by introducing additional state variables that encode the penalties associated with violating past promises. This allows us to bring the framework closer to the data and use it as a quantitative tool

[1] Note that a sale of official reserves, $\Delta f_t^* < 0$, offsets the effect of the private currency demand shock, $\Delta n_t^* > 0$, on the frictional UIP deviation UIP_t.

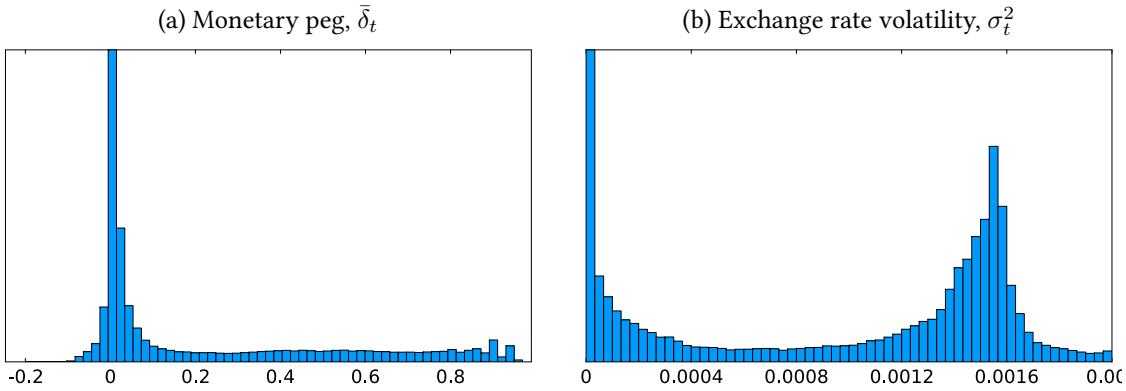


Figure 1: Ergodic distributions under optimal policies

Note: Partial distributions of the monetary peg lean $\bar{\delta}_t \equiv \delta_t/(1-\delta_t)$ and the resulting exchange rate volatility σ_t^2 based on 100,000 simulations of the equilibrium path under optimal policies. Note that, by construction, $\bar{\delta}_t \leq 1$ with $\bar{\delta}_t = 1$ corresponding to a full peg, while $\bar{\delta}_t = 0$ is a monetary float (inward-looking monetary policy). The values of σ_t correspond to quarterly standard deviation of the exchange rate.

for policy analysis. The results are quantitatively consistent with salient features of the data, including exchange rate volatility, currency risk premia, the estimated response of exchange rates to identified currency demand shocks, and the observed size of FX interventions.

We find that optimal policies are highly state-contingent: foreign reserves are used to offset smaller currency-demand shocks, while a stronger monetary-policy lean against exchange rate fluctuations is reserved for instances of large UIP deviations. As a result, the ergodic distribution of exchange rate volatility is bimodal (as we illustrate in Figure 1), with countries floating their currencies in normal times, but displaying "fear-of-floating" episodes and aggressively managing the exchange rate in periods of financial stress. Much of the time, the economy features high floating levels of exchange rate volatility (around 8–9% annualized), but there is also a long tail of periods with much lower managed volatility, occasionally approaching a full peg (with $\sigma_t^2 \to 0$ as $\bar{\delta}_t$ increases from 0 towards 1). This emphasizes the non-linear regime-switching nature of the optimal exchange rate policies, as well as inadequacy of linearized constant-volatility models for such analysis.

Exchange rate policies around the world We apply our theoretical and quantitative results to classify exchange rate policies observed across countries, as summarized in Figure 2.[2] The three largest developed regions of the world — the United States (dollar), the Euro Area, and Japan (yen) — are also the three major floating currencies of the world. These countries (currency areas) do not use monetary policy to lean against exchange rate shocks as they are large and closed to the rest of the world (low γ): the dominant share of the domestic non-tradable economy renders optimal a fully inward-looking monetary policy, $\delta_t \propto \gamma \approx 0$. At the same time, these countries do not use active FX interventions (with

[2]We characterize the policies in terms of their lean defined in (3) – the FX lean α_t against financial shocks and UIP deviations and the monetary-policy lean δ_t against exchange rate shocks. A "free float" corresponds to $\alpha_t = \delta_t = 0$; the first-best "Friedman float" corresponds to $\alpha_t \to \infty$ and $\delta_t = 0$, fully eliminating UIP deviations. A full monetary peg corresponds to $\delta_t \to \infty$ and requires no FX interventions. A variety of managed floats and crawling pegs can be achieved with a combinations of $\alpha_t > 0$ and $\delta_t > 0$.

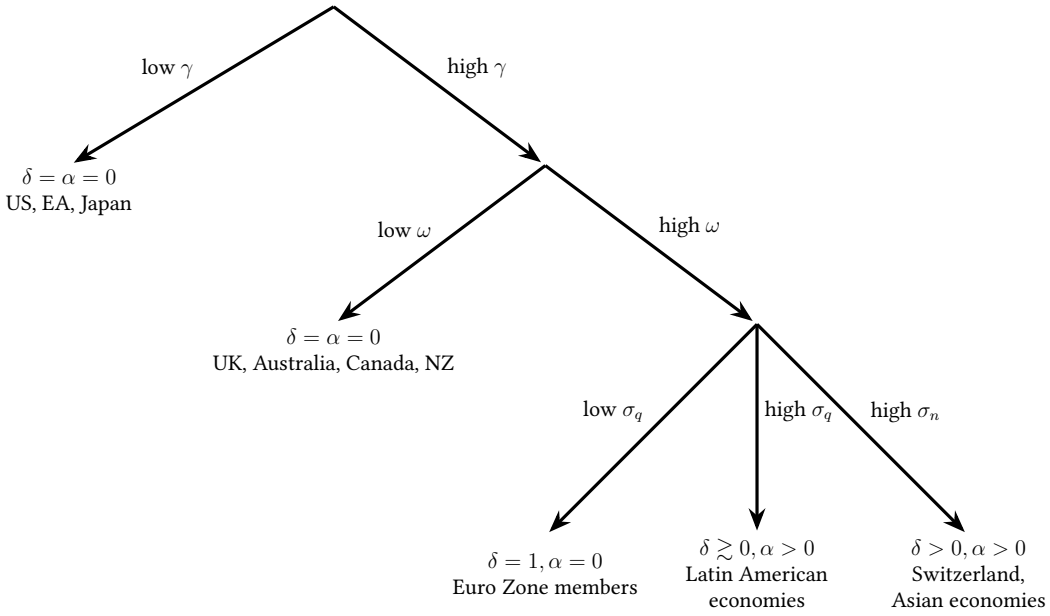


Figure 2: Classification of exchange-rate regimes

Note: α and δ are FX and monetary policy lean parameters against exchange rate shocks as defined in (3). γ and ω are the parameters of country openness and financial market depth, respectively. σ_q and σ_n are the volatility of the macro-fundamental and financial currency shocks, respectively.

rare exceptions) due to a very deep financial market (small ω and large variation σ_n), resulting in small-to-moderate equilibrium UIP violations despite large and volatile movements in n_t^*. Both large σ_n and small ω make FX interventions impractical (hence $\alpha_t \approx 0$), as otherwise it would require to take very large official FX positions with only moderate effects on UIP deviations (due to small ω).

A similar argument applies to the next set of developed countries, such as the U.K., Canada and Australia, which also feature the major floating exchange rates. While smaller and more open to international trade (larger γ), these countries have deep and developed currency markets (small ω), which allows them to absorb large shifts in currency demand with moderate UIP violations. This makes a monetary peg unnecessary and FXI ineffective, unless there are extraordinary shifts in the currency market — or a sharp decline in intermediation capacity — which may compel central banks in these countries to carry out an occasional currency intervention to stabilize the exchange rate.[3]

This contrasts with the individual members of the Eurozone, which combines both larger and smaller developed countries that are all characterized by extreme mutual openness to trade and financial flows, but more shallow local financial markets. At the same time, fundamental shocks hitting individual EU countries are generally correlated, leading to a more stable first-best real exchange rate, making currency union with a hard monetary peg a suitable option. Importantly, however, not only the cost of a currency union are lower in Europe (the Mundell, 1961, argument), but also the benefits are greater, as $\sigma_t^2 = 0$ results in greater financial integration and risk sharing via increased capital flows.

[3] Another reason why Canada and Australia do not systematically intervene in their currency market is that a large portion of their exchange rate volatility is due to fundamental commodity shocks corresponding to a large σ_q in our model. New Zealand is another country that can be added to this group of floating currencies, albeit with larger UIP deviations.

A high exposure to capital-flow shocks and shallow financial markets characterize several Latin America economies (e.g. Chile, Peru, Brazil, and Colombia). However, differently from the European counterparts, these economies are primarily commodity exporters and, thus, are subject to volatile natural real exchange rate (high σ_q). As a result, a nominal peg would come at a high cost in terms of domestic macroeconomic stability, exemplified by the Argentine experience around the 2001 crisis. Instead, the optimal policy mix includes limited monetary interventions ($\delta_t \gtrsim 0$) and active FX interventions to offset non-fundamental currency demand shocks ($\alpha_t > 0$). The same argument applies to other large commodity exporters of the world, including Norway, Russia and South Africa. Most of these countries indeed actively intervene in currency markets and accumulate large FX reserves, while at the same time use interest rates primarily to target inflation and economic activity. That said, monetary authorities do occasionally deviate from strict inflation targeting and raise interest rates during periods of large capital outflows, especially if FX reserves run low.[4]

Finally, Switzerland and many East Asian countries routinely use both FX interventions and conventional monetary policy to stabilize their exchange rates ($\alpha, \delta > 0$). Similarly to the previous two categories, these countries actively participate in international trade and are exposed to volatile capital flows (large γ and ω). What distinguishes them from Latin American economies is a relatively low share of commodities in exports and large capital-flow shocks relative to the size of the economy (that is, large σ_n and smaller σ_q). This is particularly true for Switzerland, with its status as a safe haven that attracts large foreign investment in periods of high global stress, but also applies to Singapore and Hong Kong, and other Asian economies. Local central banks accumulate enormous foreign reserves, but also use monetary policy to avoid excessive appreciation (Switzerland) or volatility (Singapore) of the exchange rate.

Additional results We build on these initial results to develop the analysis further along the following dimensions:

1. We study alternative policies, both methodologically and quantitatively. In particular, we look at the comparison between discretionary policies and policies with various degrees of commitment (e.g., commitment to constant-lean policy rule and constant exchange rate volatility versus full non-linear optimal policies). We compare policies in terms of their positive implications for equilibrium outcomes and normatively in terms of their welfare consequences.

2. We study the implications of policies for accumulation of official FX reserves depending on the cost functions associated with FX interventions and the stockpile of official FX reserves (e.g., the costs implied by non-negativity constraint on official reserves, inter-bank currency swap lines).

3. We study quantitatively the international policy spillovers and the optimal cooperative FX policies in a world of multiple heterogenous countries subject to correlated shifts in currency demand (e.g., global dollar cycle).

[4]Of course, this is not to say that all policies followed by countries are fully optimal or that there are no other policy considerations involved, e.g., anchoring inflation expectations by pegging (or even fixing) the exchange rate common in less developed countries. For example, it is debatable whether major commodity exporters in the Middle East should prefer a fully fixed exchange rate against the dollar over a combination of active FX interventions and a more flexible monetary policy.

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