Monetary Policy under International Sanctions*

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International economic interdependence—and the policy responses it demands—becomes particularly complex during episodes of geopolitical tensions. In this project, we investigate the conduct of monetary policy under such conditions in a two-country, two-sector model with firm heterogeneity, endogenous selection into trade, nominal rigidity, and sanctions. Our analysis sheds light on the policy trade-offs and offers a framework for guiding monetary interventions when sanctions fragment goods and financial markets.

We pose four interrelated questions. First, how do several types of trade (i.e., trade in intermediate inputs vs. final goods, or export vs. import) as well as financial sanctions alter the slope and intercept of the Phillips curve? Second, how do monetary policy rules in both the sanctioned and sanctioning economies adjust when sanction-induced distortions fundamentally alter the transmission of shocks? Third, how would each central bank's optimal policy framework under sanctions diverge from its benchmark behavior in normal times? And fourth, how do sanctioned and sanctioning economies' central bank responses interact strategically, and what are the resulting welfare implications of this non-cooperative behavior?

We build on our former work in Ghironi et al. 2024 in which we developed a framework to explore the effects of economic sanctions in a two-country, two-sector setting. In our model, Home has a comparative advantage in differentiated consumption goods, while Foreign specializes in homogeneous intermediate commodities. Under frictionless trade, Home

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runs a surplus in final goods and a deficit in intermediates—mirroring patterns in advanced economies importing energy and exporting high-value products. Interpreting the intermediate sector as, say, natural gas allows direct application to recent Russian sanctions, but the setup also covers other cases, such as China's role in supplying basic inputs to more sophisticated manufacturing.

Producers of the intermediate commodity use a constant-returns technology combining sector-specific labor with a natural-resource endowment. Under perfect competition, a representative distributor aggregates domestic and imported inputs into a non-traded homogeneous intermediate good, yielding zero markups. In contrast, downstream firms operate under monopolistic competition: they draw on the intermediate input and labor to produce differentiated consumption goods, exhibit firm-level productivity heterogeneity, set price markups, earn positive profits, and face endogenous entry costs. Fixed trade costs ensure that only the most productive firms export in equilibrium. Adjusting prices is costly for these firms, and hence, their output is effectively determined by demand. We consider the empirically-motivated case of dollar pricing in the downstream sector, in which export prices are sticky in U.S. dollars (see Goldberg and Tille 2008 and Gopinath et al. 2020)

Households in both countries hold bonds and equity, but only bonds circulate internationally. Incomplete international markets imply deviations from international risk sharing.

Sanctions are put on Foreign by Home. Trade sanctions impose either volume caps or price caps on the intermediate commodity (e.g. a gas embargo) or ban exports and imports of differentiated consumption goods above government-set productivity thresholds. Under such measures, only firms whose productivity lies between the usual trade-cost cutoff and the sanction-imposed cutoff can trade; if the latter falls below the former, all targeted trade halts. This captures the real-world tendency of sanctions to hit the largest, most advanced producers hardest. Under financial sanctions, a subset of Foreign households loses access to international bond markets, creating two distinct groups: sanctioned and non-sanctioned households. Non-sanctioned households continue to trade bonds with their Home counterparts, while sanctioned households can only transact with non-sanctioned Foreign households. In the extreme scenario—if every Foreign household is sanctioned—the country becomes under financial autarky.

Sanctions distort resource allocation both within and across sectors, and, in turn, total factor productivity (TFP) in the traded sector. Their implication on the economies are different than supply constraints as the shapes of demand and supply curves are simultaneously altered under sanctions. Shock transmission under the sanction equilibrium generates trade-

offs for central banks that differ markedly from those faced in normal times.

We compare the Phillips curve's slope and intercept under normal times vs. sanctions in both the sanctioned and sanctioning economies. Calibrated to the 2022–25 Russia sanctions episode, we find that imposing trade restrictions on intermediate goods markedly steepens the Phillips curve—thereby lowering the sacrifice ratio—and magnifies the inflationary impact of an accommodative monetary stance. We then show how this policy trade-off differs when sanctions target sectors in which the sanctioned economy holds a comparative advantage versus those in which it does not.

We also investigate how international capital flows shape the Phillips curve. In our model, households in both countries hold bonds and equity, but only bonds trade internationally. Incomplete financial markets and financial sanctions generate deviations from perfect risk sharing both within and across countries, and the resulting capital-flow dynamics induce exchange rate misalignments that feed into firms' marginal costs and thus alter both the slope and intercept of the Phillips curve in ways that are not immediately obvious. By quantifying this channel, we shed light on how shocks move financial frictions under sanctions, creating a more difficult trade-off for the central bankers.

Then, we assess the effectiveness of various rule-of-thumb interest-rate feedback rules—each responding to CPI inflation, PPI inflation, the output gap, and exchange-rate movements—to determine which best counteracts cyclical shocks under the sanction equilibrium.

We plan to address two additional, closely related questions in the full paper. First, we will characterize how each central bank's optimal policy under sanctions diverges from its benchmark behavior in normal times—identifying the key trade-offs and rule adjustments that emerge when markets are segmented by sanctions.

Second, we will embed these optimal policy problems in a non-cooperative game between the sanctioned and sanctioning authorities. Each bank will choose its rule parameters (or Ramsey policy weights) anticipating the other's strategy, and we will solve for the Nash equilibrium of this strategic interaction using a fixed-point algorithm on the joint policy space. By comparing the equilibrium to both unilateral best responses and the cooperative (joint-welfare-maximizing) solution, we will quantify the deadweight losses from policy non-cooperation, identify which types of sanctions exacerbate strategic frictions.

We aim to complete these extensions and integrate their quantitative results well ahead of the conference deadline, ensuring a fully rounded presentation of how sanctions reshape optimal monetary frameworks both unilaterally and in interaction.

References

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