

Optimal Monetary Policy in the Tariff-Imposing Economy under Imperfect Pass-Through

Eiji Okano Yang Zhou Masataka Eguchi

Nagoya City University

October 2026

Question and principal finding

Policy question

Should the central bank of a tariff-imposing country raise or cut its nominal interest rate?

Conventional benchmark: perfect pass-through (PPT)

Tariffs raise the purchaser price of imports and encourage expenditure switching toward Home goods.

Our mechanism: imperfect pass-through (IPT)

Sticky local-currency importer prices introduce a separate importer-markup / law-of-one-price (LOOP) stabilization motive.

At our calibrations, IPT generates an optimal initial rate cut in both the SOE and the two-country model.

Where the contribution differs

Monacelli (2025, Mimeo)

We extend his framework by introducing sticky prices set by local importers. CPI inflation targeting generates a tightening bias relative to optimal monetary policy. This does not necessarily imply that optimal policy calls for a nominal interest rate cut.

Bergin and Corsetti (2023, JIE; 2026, NBER-WP)

Under cooperative optimal policy, the tariff-imposing country raises its nominal interest rate even under LCP (2023). When the tariff-imposing country's currency is dominant, its optimal policy is expansionary relative to strict PPI targeting, which does not necessarily imply a nominal interest rate cut (2026). In both, the relevant sticky prices are set by exporting firms.

Bianchi and Coulibaly (2025, NBER-WP)

Optimal policy is expansionary relative to strict PPI stabilization; this does not necessarily imply a nominal interest rate cut.

Here

Domestic importing firms set sticky *ex-tariff* prices, internalize tariff-induced demand changes, and receive a fixed subsidy. We study Ramsey policy in the SOE and noncooperative Nash–Ramsey policies in the two-country economy.

Main finding: In the SOE, the optimal nominal rate rises under PPT but falls under IPT. The Home Markup Channel explains this reversal.

Two price-setting environments

PPT: exchange rates pass through to import prices

$$P_{F,t} = \mathcal{E}_t P_{F,t}^*, \quad \tilde{P}_{F,t}^{PPT} = (1 + \tau_{M,t}) \mathcal{E}_t P_{F,t}^*.$$

IPT: local importers set sticky ex-tariff prices

$$\tilde{P}_{F,t}^{IPT}(\iota) = P_{F,t}(\iota) + \tau_{M,t} \mathcal{E}_t P_{F,t}^*.$$

Key distinction

The statutory duty is added *outside* the Calvo ex-tariff price. Tariff receipts are rebated to households.

Under IPT, border-price changes and local selling-price changes are different.

Why a tariff changes importer markups

Effective elasticity facing a resetting importer

$$\frac{\partial \log C_{F,t}(\iota)}{\partial \log P_{F,t}(\iota)} = -\varepsilon_M \frac{P_{F,t}(\iota)}{P_{F,t}(\iota) + \tau_{M,t} \mathcal{E}_t P_{F,t}^*}.$$

A positive tariff reduces the elasticity in absolute value. Resetting importers therefore have an incentive to raise their own price.

Flexible-import-price benchmark

$$\Psi_t^{-1} = 1 + \frac{\tau_{M,t}}{\varepsilon_M - 1}, \quad \Psi_t \equiv \frac{\mathcal{E}_t P_{F,t}^*}{P_{F,t}}.$$

Tariffs create opportunistic ex-tariff importer pricing; sticky prices also make the actual markup respond to exchange rates.

The Ramsey problem and welfare

Policy is computed from the original nonlinear Ramsey problem

$$\max E_0 \sum_{t=0}^{\infty} \beta^t \left(\log C_t - \frac{N_t^{1+\varphi}}{1+\varphi} \right) \quad \text{subject to the nonlinear equilibrium.}$$

Second-order welfare representation (interpretation only)

$$\frac{1}{2} \left[\Lambda_y (y_t - y_t^w)^2 + \Lambda_\psi (\psi_t - \psi_t^w)^2 + \Lambda_{\pi,H} \pi_{H,t}^2 + \Lambda_{\pi,F} \pi_{F,t}^2 \right].$$

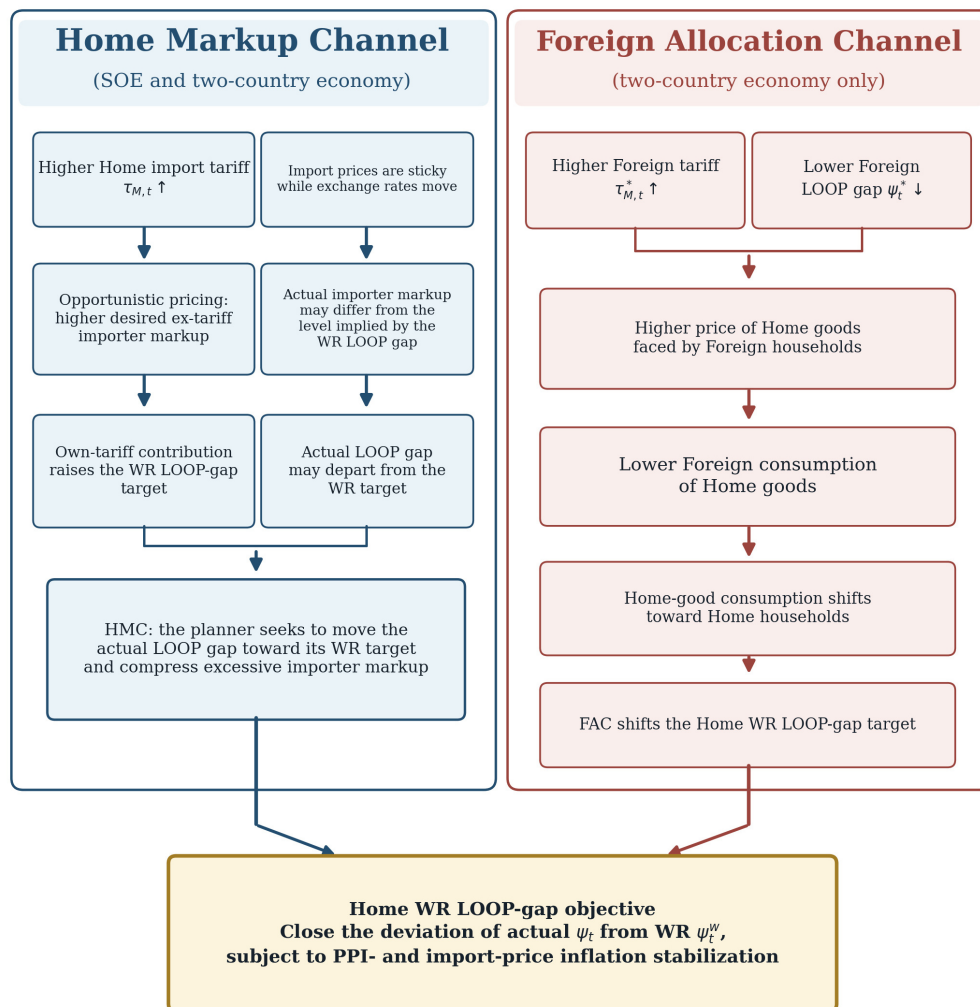
Home Markup Channel (HMC)

The planner seeks to move the actual LOOP gap toward its welfare-relevant (WR) value, while stabilizing both inflation rates.

Benchmark: $\beta = 0.99$, $\eta = 1.5$, $\varepsilon = \varepsilon_M = 3.8$, $\theta = \theta_M = 0.8$, $\rho_\tau = 0.7$; tariff shock: 20 pp.

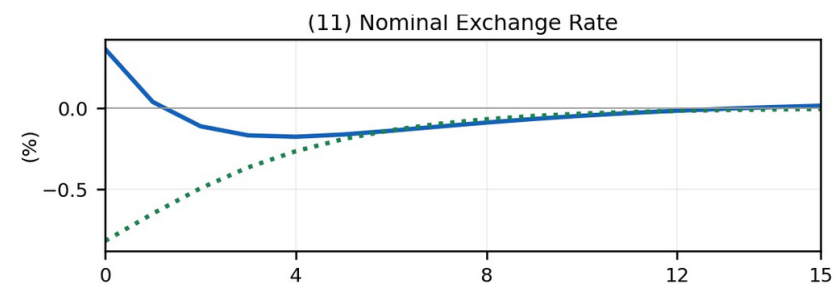
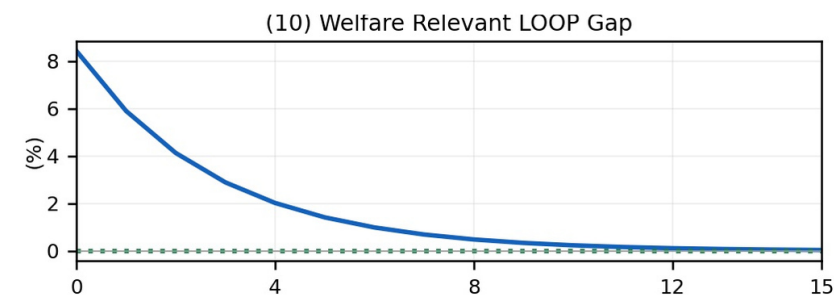
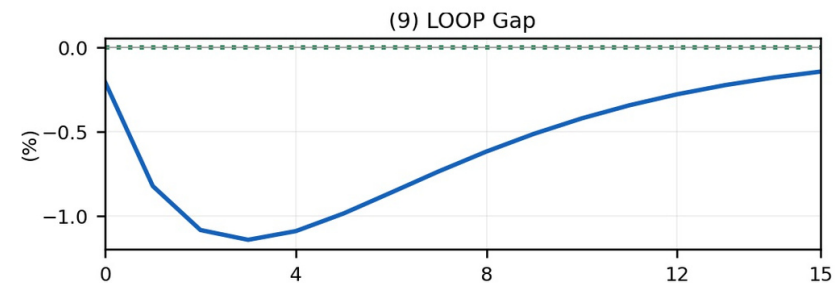
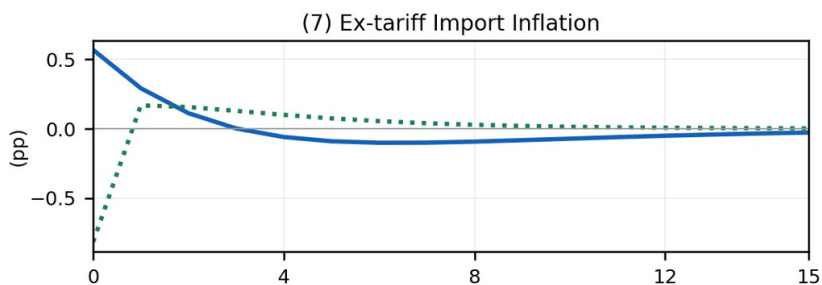
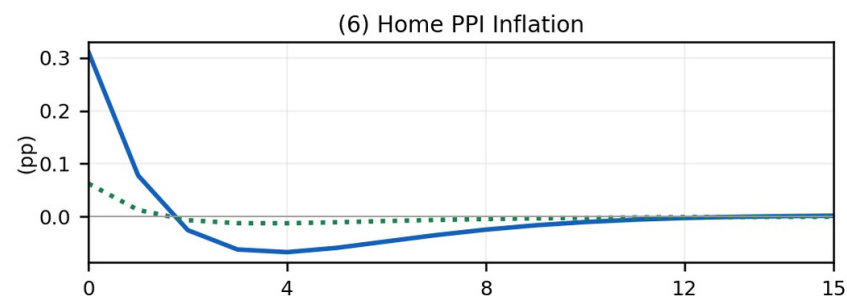
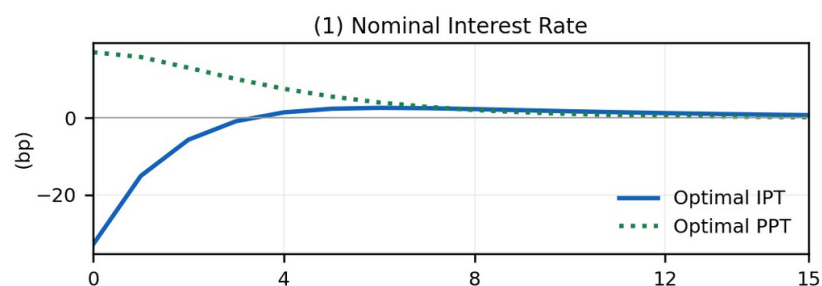
The welfare approximation does not replace the nonlinear Ramsey objective or its FOCs.

Home Markup Channel and Foreign Allocation Channel



SOE benchmark: IPT cuts by 32.87 bp; PPT raises rates by 17.03 bp

Six panels from paper Fig. 2; 20-pp tariff; ZLB imposed but nonbinding. Blue: IPT; green: PPT.



Proposition 1: importer rigidity alone can induce easing

Assume flexible Home producer prices, $\theta = 0$.

Consider the first-order approximation of the original nonlinear Ramsey FOCs, with a nonbinding ZLB.

Exact SOE equilibrium identity

$$\hat{i}_0 \equiv \log(1 + i_0) - \log(1/\beta) = e_1 - e_0 = (\psi_1 - \psi_0) + \pi_{F,1}.$$

Sufficient conditions for an initial rate cut

$$\tilde{\Gamma}_{\text{own}} > 0, \quad (\vartheta - 1)(\delta + \rho_\tau - 1) \geq 0.$$

$\tilde{\Gamma}_{\text{own}}$: tariff effect on the WR LOOP-gap target; ϑ : relative weight of import-inflation stabilization; δ : stable root.

Benchmark: $\tilde{\Gamma}_{\text{own}} = 0.414$, $\vartheta = 2.79$, $\delta = 0.687$; initial response -16.25 bp per 1-pp tariff (first order).

Under these conditions, importer rigidity alone produces an optimal initial rate cut to first order.

Proposition 2: an exact opposite limiting case

Assume fully flexible import prices, $\theta_M = 0$.

The IPT nonlinear Ramsey allocation is *exactly* the PPT allocation under a magnified tariff:

$$\tilde{\tau}_{M,t} = \frac{\varepsilon_M}{\varepsilon_M - 1} \tau_{M,t}.$$

At $\varepsilon_M = 3.8$, a 20% statutory tariff is equivalent to a 27.14% PPT tariff for the Ramsey allocation.

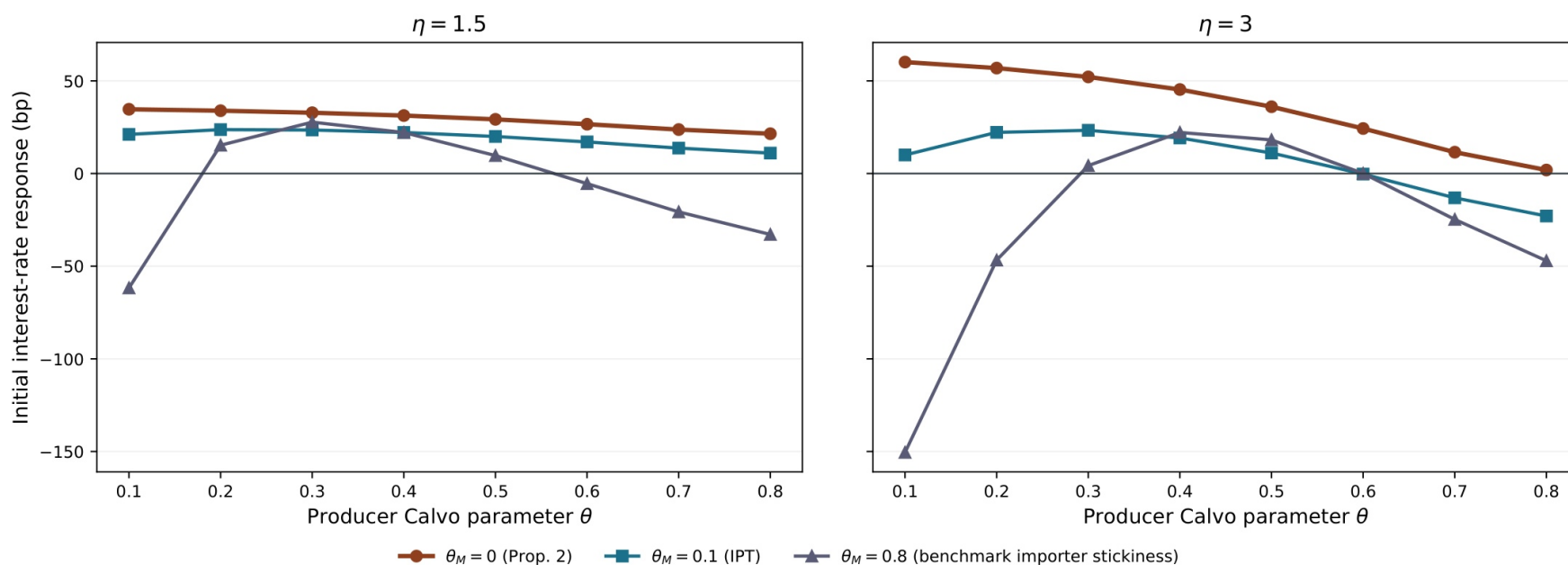
With flexible import prices, the importer markup immediately attains its flexible-price value: monetary policy cannot use the LOOP gap to correct that markup.

At $\theta = 0.8$ the nonlinear rate rises by +21.49 bp ($\eta = 1.5$) and +1.90 bp ($\eta = 3$).

Initial notional rate: producer and importer price rigidity (ZLB not imposed)

Proposition 2: exact PPT-equivalent boundary vs. sticky-importer IPT

SOE | no ZLB | original tariff 20pp; PPT effective tariff 27.1429pp | $\rho_\tau = 0.7$



With sticky import prices, cuts predominate. At intermediate θ , PPI stabilization tempers importer-driven easing, generating the hump (cf. Galí–Monacelli, 2016). No hump occurs at $\theta_M = 0$.

Two-country unilateral policy

Two national planners choose their committed monetary policies.

At $\eta = 1.5$, the exact impact responses are +8.14 bp (PPT) and −14.85 bp (IPT).

Welfare-relevant Home LOOP gap

$$\psi_t^{w,IPT} = \Gamma_{\text{own}}\tau_{M,t} + \Gamma_{\text{cross}}(\tau_{M,t}^* - \psi_t^*) + \Gamma_z z_t.$$

Foreign Allocation Channel (FAC)

Under a unilateral Home tariff, $\tau_{M,t}^* = 0$ and the Foreign LOOP gap rises; the FAC contribution is *negative*, not an additional easing impulse.

At $\eta = 3$, even PPT calls for easing (−34.08 bp), but IPT eases more (−47.81 bp).

Reciprocal tariffs and the ZLB

Both countries face weaker export demand; both optimally ease.

Home, $\eta = 1.5$: notional minimum (bp) and ZLB duration

Tariff shock	PPT		IPT	
	min. rate	ZLB qtrs	min. rate	ZLB qtrs
5%	58.84	0	60.35	0
10%	23.57	0	27.32	0
15%	-6.01	1	1.11	0
20%	-30.84	1	-19.19	1

At $\eta = 3$, 20% reciprocal tariffs:

Home ZLB: 4 quarters (PPT), 3 (IPT); Foreign ZLB: 1 quarter (PPT), none (IPT).

Notional rates are levels (steady state: 101.01 bp). PPT requires deeper easing than IPT.

Budget Lab: 2025 effective U.S. tariff increase about 9–10 pp; our 10-pp reciprocal experiment does not bind the ZLB.

Conclusions

1. Direction

Sticky local-currency importer prices can reverse the optimal response of the tariff-imposing central bank from a rate rise to a cut.

2. Mechanism

The Home Markup Channel links importer markups, the welfare-relevant LOOP gap, and optimal monetary accommodation.

3. Scope and limits

Analytical limiting cases, a nonlinear rigidity grid, bilateral Nash–Ramsey policy, and reciprocal-tariff ZLB episodes clarify when the mechanism operates. The PPT-to-IPT sign reversal is a benchmark result; at $\eta = 3$ in the two-country economy, PPT also calls for a cut.

Optimal monetary policy depends critically on who sets import prices and how they adjust.