Tariffs, Uncertainty, and the Exchange Rate

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Discussion: Basile Grassi
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U.S. Trade Policy

abc NEWS

Trump rolls out sweeping tariffs as he deems deficits a 'national emergency'

He signed an order in the Rose Garden declaring a "national emergency."

By Alexandra Hutzler
April 3, 2025, 12:32 AM

Apr. 2025: tariffs imposed

ALJAZEERA

EXPLAINER

Economy | Donald Trump

How Trump flip-flopped on pausing tariffs

Trump initially dismissed a tariff pause. The White House called talk of a pause 'fake news'. Then the US president announced a 90-day reduction for all except China.

Apr. 2025: a 90-day pause

CNN Business

BUSINESS • 2 MIN READ

Trump's attempt to impose new 10% tariffs gets struck down by a panel of judges

UPDATED MAY 8, 2026

By Elisabeth Buchwald

May 2026: struck down in court

Motivation

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This paper: uncertainty about trade policy matters, not just the level!

Three exercices:

1. Narrative-BVAR estimation of tariffs shocks effect.
2. A new Structural-Tariff Policy Uncertainty (S-TPU).
3. A model with incomplete international financial markets.

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Empirics

Response to a positive tariff shock

	(1) Low S-TPU	(2) High S-TPU	(3) Unconditional
Real exch. rate	appreciate	depreciate	depreciate
Monetary policy	tighten	ease	ease
GDP	↑	↓	↓
Inflation	↑	↓	↓ (then ↑)
Trade balance	deteriorate	improve	improve (then ↓)
Investment	—	—	↓

- NB: Conditioning on aggregate TPU kills the asymmetry (Caldara et al. 2020).
- 3rd column identified by narrative-dominance BVAR.
- 1st and 2nd State-dependent local projection.

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Model Overview: SOE, flex price (PPI target), no capital, incomplete markets (the foreign bond s.t portfolio-adjustment cost ψ)

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Three key ingredients:

1. Tariff enters through the CPI

$$p_t = (1-\nu)\, p_{H,t} + \nu\,(e_t + \tau_t) \qquad \Rightarrow \qquad e_t^r = (1-\nu)\, s_t - \nu\, \tau_t$$

2. Modified real UIP

$$e_t^r = \mathbb{E}_t\{e_{t+1}^r\} - (r_t - r_t^*) - \psi\, b_t \quad \Longrightarrow \quad e_t^r = \sum_{j\geq 0} \mathbb{E}_t\big(r_{t+j}^* - r_{t+j}\big) - \psi \sum_{j\geq 0} \mathbb{E}_t\, b_{t+j}$$

3. Intertemporal external budget

$$b_t = -\sum_{j\geq 1} \beta^j\, \mathbb{E}_t\{tb_{t+j}\} \qquad \text{(borrow today against expected future surpluses)}$$

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$\Rightarrow$ the real exchange rate prices the PV of expected future trade balances.

The Filtering Problem

1. The tariff process: two components.

$$\tau_t = \underbrace{\tau_{S,t}}_{\text{persistent}} + \underbrace{\varepsilon_{T,t}}_{\text{transitory}}, \qquad \tau_{S,t} = \rho_S \, \tau_{S,t-1} + \varepsilon_{S,t}, \quad \rho_S \simeq 1, \quad \sigma_S = \sigma(\varepsilon_{S,t})$$

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2. Agents see τ_t, not the split. They infer the stance from the surprise $\zeta_t = \tau_t - \mathbb{E}_{t-1}\tau_{S,t}$:

$$\text{(perceived)} \qquad \mathbb{E}_t\{\tau_{S,t}\} = K(\sigma_S^2)\,\zeta_t, \qquad K(\sigma_S^2) \in (0,1), \;\; K'(\sigma_S^2) > 0$$

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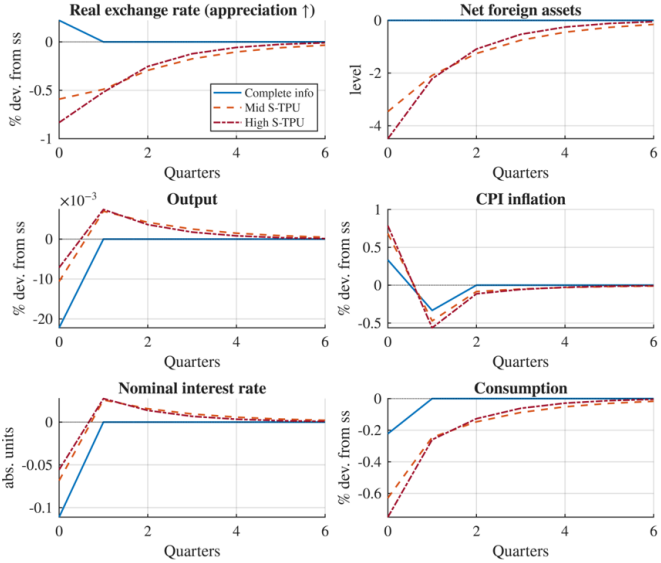
3. A transitory shock creates a persistent perceived path. A one-period spike $\varepsilon_{T,0}$, then zeros:

$$\mathbb{E}_t\{\tau_{t+1}\} = \rho_S \rho_S^t (1 - K(\sigma_S^2))^t\, K(\sigma_S^2)\, \varepsilon_{T,0}$$

realized tariff = one spike, but the perceived path is a slowly-decaying tail $\Rightarrow$ priced into the RER

Results (Fig. 11)



1pp transitory tariff.

- **Real exch. rate** (top-left): appreciates under complete info; depreciates, more so as S-TPU rises.
- **NFA** ↓: borrow against expected future surpluses.
- Output & consumption ↓; CPI up-then-down.

⇒ the model reproduces the high-S-TPU depreciation.

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Tariff Policy is about Capital Accumulation!

"Jobs and factories will come roaring back into our country, and you see it happening already."

Donald J. Trump, AOL, Liberation Day speech, April 2, 2025

"Foreign leaders have stolen our jobs, foreign cheaters have ransacked our factories, and foreign scavengers have torn apart our once beautiful American dream."

Donald J. Trump, NBC News, Liberation Day speech, April 2, 2025

"This is going to lead to the construction of a lot of plants, in this case auto plants. You're going to see numbers like you haven't seen ... in terms of employment."

Donald J. Trump, Fortune, March 26, 2025

To PM Carney: "We really don't want Canadian steel and we don't want Canadian aluminum because we want to be able to do it ourselves."

Donald J. Trump, The Hill, June, 2025

Baqaee & Malmberg (2025): Tarif and Capital Accumulation

Model

- Multi-country, multi-industry dynamic trade model; OLG; incomplete markets.
- International production and investment network; trade elasticity $\theta = 4$.
- Each sector*country have their own capital good.

Mechanism

- Investment goods are import-intensive $\Rightarrow$ tariffs raise the relative price of capital vs labour.
- Capital demand $\downarrow \Rightarrow$ long-run capital stock $\downarrow \Rightarrow$ consumption & real wages $\downarrow$.
- Capital accumulation amplifies the shock (long run worse than short run).

Exercise

- US tariff war vs rest of world (April 2025 schedule), unilateral/symmetric retaliation.
- Using "Long-Run Comparative Statics" (Baqaee & Malmberg, 2025) compares two cases: capital adjusts vs capital fixed (static benchmark).

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$\Longrightarrow$ Can use static tools (Hulten, Baqaee-Farhi, etc.) applies to long-run comparative statics

Capital Adjustment Dominates the Long Run

Log change in long-run consumption (%), trade war vs free trade

	Retaliation		Unilateral	
Region	Capital adjusts	Capital fixed	Capital adjusts	Capital fixed
United States	−2.6	−0.6	0.0	+0.5
Mexico	−3.6	−0.2	−4.1	−0.5
Canada	−1.5	−0.4	−1.9	−0.7
India	−1.4	−0.3	−1.1	−0.2
Rest-of-World	−0.9	−0.3	−1.0	−0.5
China	−0.5	−0.4	−0.5	−0.6
Japan	−0.4	−0.1	−0.4	−0.1
United Kingdom	−0.3	−0.0	−0.4	−0.0
European Union	−0.2	−0.1	−0.4	−0.2

- US: −2.6% when capital adjusts vs −0.6% static ⇒ ∼ 5× larger.
- Unilateral + K fixed: +0.5% (classic optimal-tariff gain) – vanishes once capital adjusts.
- Real wages even larger: −3.7% vs −1.8% (their Table 2).

Conclusion

- Very interesting paper on higly relevent subject.
- Empirical results surprising and rationalized by a simple but illuminating model.
- Although long-run capital accumulation might be first-order.
- Dynamic trade model with capital are complicated but there are new tools!
  (see Baqaee and Malmberg, 2026)

Small comments