Tipping into Protectionism: Tariff Shocks and the Fragility of Free Trade

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Abstract

This paper develops a dynamic political-economy model of trade-policy hysteresis. Tariffs reduce innovation and competitiveness but generate short-run benefits for import-competing sectors, creating incentives for myopic policymakers to adopt protectionism. The interaction between myopic protectionist policy and slow-moving competitiveness generates two stable steady states: a low-tariff, high-competitiveness regime and a high-tariff, low-competitiveness regime. Although free trade is welfare superior, it is politically fragile. Temporary tariff shocks that sufficiently erode competitiveness can permanently shift political incentives toward protectionism, trapping the economy in a low-competitiveness equilibrium with persistently high tariffs and lower welfare.

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1 Introduction

For decades, economists have emphasized the aggregate welfare gains from trade openness. At the same time, trade creates losses for some groups, making free trade politically vulnerable even when it is welfare superior. Policymakers may therefore face recurring temptations to deviate from openness in response to short-run distributional pressures. This raises a deeper question: how fragile is an open-trade equilibrium? Can temporary episodes of protectionism alter the long-run political equilibrium by reshaping the economic conditions that sustain support for free trade?

This paper shows that temporary protectionism can permanently alter political support for free trade by generating a feedback between trade policy, competitiveness, and political incentives. I develop a model in which trade policy shapes long-run competitiveness through firms' innovation incentives, and political support for trade policy depends on that competitiveness. As a first building block, I model protectionism as undermining innovation and competitiveness. The mechanism is motivated by the escape-competition view of innovation: competitive pressure from imports disciplines firms and stimulates innovation, as in Aghion et al. (2005). A large empirical literature

shows that trade liberalization and product-market competition raise innovation and productivity in exposed firms and sectors (Bustos, 2011; Bloom et al., 2016; Gorodnichenko et al., 2010). More broadly, stronger product-market competition is associated with higher productivity and innovation, especially in industries close to the technological frontier (Nickell, 1996; Blundell et al., 1999).

I combine this innovation channel with a political mechanism that determines the degree of protectionism. Benefits of protectionism are state-dependent: when industries are highly competitive, exposure to trade generates limited short-run disruption, so the marginal political benefit of protection is small and openness is politically sustainable. When industries are weak, import competition causes immediate losses in profits and employment, making protection more attractive (Colantone and Stanig, 2019). The political payoff to protectionism is therefore inversely related to competitiveness.

Under political myopia, policymakers respond to contemporaneous distributional pressures and take competitiveness as given. When competitiveness is high, the political benefits of protection are small, so low tariffs are optimal and free trade is self-sustaining. However, at low levels of competitiveness, protection becomes politically optimal in the short run, even though it further suppresses innovation and weakens long-run performance. The interaction of myopic policy choice and slow-moving competitiveness therefore generates two locally stable regimes—a low-tariff, high-competitiveness equilibrium and a high-tariff, low-competitiveness equilibrium—separated by a critical competitiveness threshold. Although free trade is welfare superior, it is politically fragile: sufficiently large temporary tariff increases that push the economy below this threshold can permanently shift political incentives toward protectionism, entrenching a persistent high-tariff, low-competitiveness regime.

2 Model

2.1 Competitiveness and innovation

Time is discrete, $t = 0, 1, \ldots$. The import-competing sector is characterized by competitiveness $A_t > 0$, which summarizes productivity and product quality. Competitiveness evolves according to

$$A_{t+1} = (1 - \delta)A_t + \psi I_t, \qquad \delta \in (0, 1),\ \psi > 0, \tag{1}$$

where δ captures depreciation of technological capability, and I_t denotes innovation investment. In the absence of innovation, competitiveness gradually erodes.

Firms choose innovation taking the tariff τ_t as given:

$$\max_{I_t \geq 0}\ B(\tau_t)I_t - \frac{c}{2}I_t^2, \qquad c > 0, \tag{2}$$

where $B(\tau)$ is the marginal payoff to innovation. I assume that $B'(\tau) < 0$. This assumption captures the idea that competitive pressure disciplines firms. When tariffs are low, foreign competition threatens domestic firms, raising the return to cost reduction and quality upgrading. Protectionism

reduces this pressure and lowers innovation incentives.

The optimal innovation choice is

$$I^*(\tau) = \max\left\{0, \frac{B(\tau)}{c}\right\}, \tag{3}$$

where $\frac{\partial I^*}{\partial \tau} = \frac{\partial I^*}{\partial B}\frac{\partial B}{\partial \tau} \leq 0$. Innovation declines monotonically in protectionism and may collapse entirely if tariffs are sufficiently high.

2.2 Political determination of trade policy

A social planner evaluates policies according to aggregate welfare,

$$W(A, \tau) = \Pi(A) - \Omega(\tau), \tag{4}$$

where $\Pi(A)$ captures aggregate output and income generated by the import-competing sector, and $\Omega(\tau)$ captures distortionary costs of protectionism. Because protectionism distorts relative prices without increasing productivity, tariffs reduce aggregate welfare.

In contrast, the government faces short-run distributional pressures from firms and workers in the import-competing sector. These pressures create political incentives to use protection even when it lowers aggregate welfare. Specifically, the government is myopic and chooses tariffs τ to maximize a political payoff function,

$$V(A, \tau) = \Pi(A) + R(A, \tau) - \Omega(\tau). \tag{5}$$

The term $R(A, \tau)$ captures politically salient rents and employment effects that increase with protection but do not contribute to aggregate welfare, as they reflect redistribution rather than increases in aggregate productivity.

Assumption 1 (Aggregate welfare and political incentives)**.** *The functions satisfy: (i)* $\Pi'(A) > 0$, $\Pi''(A) < 0$, *(ii)* $\Omega'(\tau) > 0$, $\Omega''(\tau) > 0$, *and (iii)* $R_\tau(A, \tau) > 0$, $R_{\tau\tau}(A, \tau) < 0$, $R_{\tau A}(A, \tau) < 0$.

Assumption 1 implies that higher competitiveness raises aggregate welfare, while protectionism reduces it but generates politically salient rents. The cross-partial condition $R_{\tau A}(A, \tau) < 0$ implies that the marginal political benefit of protection is larger when competitiveness is low, so political incentives to raise tariffs strengthen as the sector becomes less competitive.[1]

Because the government is myopic and maximizes contemporaneous political payoff V, it does not internalize the negative effect of tariffs on future competitiveness through innovation. The interaction of myopic political optimization and slow-moving competitiveness creates a feedback from eroding competitiveness to sustained protection.

[1]This logic is consistent with evidence that trade shocks elicit stronger political responses in more vulnerable regions and industries (e.g., Autor et al. (2013); Pierce and Schott (2016)) and with canonical political-economy models in which the return to protectionism rises with the rents at stake, particularly in sectors facing intensified foreign competition (e.g., Grossman and Helpman (1994); Goldberg and Maggi (1999)).

Lemma 1 (Political rule)**.** *There exists a unique interior policy rule* $\tau = T(A)$ *with* $T'(A) < 0$*.*

Higher competitiveness implies lower politically optimal protection. As a result, the political system endogenously raises tariffs when the sector becomes less competitive.

2.3 Self-sustaining regimes

Substituting the political rule from Lemma 1 into the law of motion for competitiveness given by eq. (1) yields

$$A_{t+1} = G(A_t) \equiv (1-\delta)A_t + \psi I^*(T(A_t)). \tag{6}$$

This equation captures the core feedback mechanism. An increase in current competitiveness A lowers tariffs through $T'(A) < 0$. Lower tariffs raise innovation incentives, which in turn strengthen future competitiveness. The reverse logic also holds: when competitiveness declines, political incentives raise tariffs, innovation weakens, and future competitiveness erodes further.

Importantly, if the political benefit of protectionism captured by $R(A, \tau)$ responds sufficiently strongly to competitiveness at intermediate levels of A, the induced policy rule $T(A)$ becomes highly elastic, and the map $G(\cdot)$ can intersect the 45-degree line three times. This arises if the marginal political benefit of protection responds weakly to competitiveness when the sector is very strong or already highly protected, but strongly when competitiveness is at intermediate levels where firms are most vulnerable to import competition. In that intermediate region, small changes in A induce large tariff adjustments, amplifying innovation dynamics and generating the S-shaped transition map underlying multiple steady states.

Proposition 1 (Self-sustaining trade regimes and welfare)**.** *If* $G'(A) < 1$ *for low and high levels of competitiveness but* $G'(A) > 1$ *on an intermediate range, the economy exhibits two locally stable steady states separated by an unstable threshold. Denote the two stable steady-state pairs by* $(\underline{A}^*, \underline{\tau}^*)$ *and* $(\overline{A}^*, \overline{\tau}^*)$*, with* $\overline{A}^* > \underline{A}^*$ *and* $\overline{\tau}^* < \underline{\tau}^*$*. Under Assumption 1, the high-competitiveness, low-tariff steady state welfare-dominates the low-competitiveness, high-tariff steady state, i.e.,* $W(\overline{A}^*, \overline{\tau}^*) > W(\underline{A}^*, \underline{\tau}^*)$*.*

When $G'(A) < 1$, the dynamics are locally contracting and deviations from a steady state shrink over time. When $G'(A) > 1$, they are locally expanding: higher A lowers tariffs, raises innovation, and further increases A, while lower A raises tariffs, reduces innovation, and accelerates decline. The economy then exhibits two locally stable steady states. In the high-competitiveness regime, low protection sustains innovation; in the low-competitiveness regime, protection prevents innovation. The intermediate fixed point acts as a threshold separating the two basins of attraction.

Since welfare increases in A and decreases in τ, the low-competitiveness regime is welfare inferior, but can become politically self-sustaining once competitiveness erodes.

Figure 1 illustrates the feedback mechanism generating self-sustaining trade regimes. The left panel plots a stylized political rule $\tau(A)$ and innovation rule $A(\tau)$ intersecting three times in the (A, τ)-space. The right panel displays the implied transition map $A_{t+1} = G(A_t)$, whose S-shape produces three fixed points.

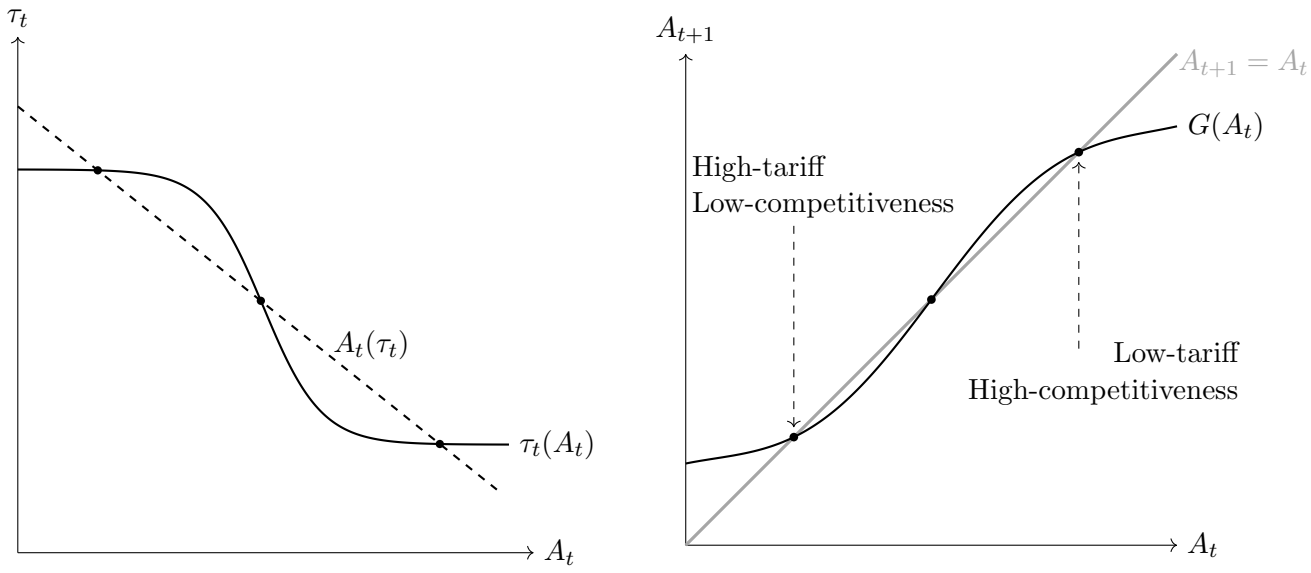

Figure 1: Left panel: political rule $\tau(A)$ and innovation rule $A(\tau)$ in (A, τ)-space. Right panel: implied transition map for competitiveness $A_{t+1} = G(A_t)$.

2.4 Tariff shocks and hysteresis

Suppose the economy initially resides in the high-competitiveness regime. An exogenous temporary tariff increase lowers innovation while in place. Because competitiveness evolves gradually through eq. (1), even a short-lived policy intervention may reduce A persistently.

Proposition 2 (Tariff shocks and hysteresis)**.** *A sufficiently large temporary increase in tariffs can push competitiveness below the unstable threshold, triggering a permanent transition to the low-competitiveness, high-tariff steady state.*

Once the threshold is crossed, endogenous political incentives sustain protectionism even after the original intervention is reversed. Hysteresis arises because free trade is politically costly once competitiveness has deteriorated due to temporary tariff hikes.

3 Conclusion

This paper shows how temporary tariff shocks can permanently entrench protectionism. When competitiveness evolves through innovation, protectionism reduces innovation, and policymakers are myopic, then temporary protectionist policy can tip the economy from a high-competitiveness, low-tariff regime into a self-sustaining low-competitiveness, high-tariff regime.

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A Proofs

A.1 Proof of Lemma 1

Proof. Fix A and consider $\max_\tau V(A,\tau)$. Strict concavity of R and convexity of Ω imply that $V(A,\tau)$ is strictly concave in τ, so the maximizer is unique. If the solution is interior, it satisfies $R_\tau(A,\tau) - \Omega'(\tau) = 0$. Differentiating implicitly gives

$$T'(A) \equiv \frac{d\tau}{dA} = -\frac{R_{\tau A}(A,\tau)}{R_{\tau\tau}(A,\tau) - \Omega''(\tau)}. \tag{A1}$$

Given Assumption 1, it holds that $T'(A) < 0$. □

A.2 Proof of Proposition 1

Proof. Define $H(A) = G(A) - A$. Since G is continuous, $H(0) \geq 0$, and for $\bar{A} = \frac{\psi}{\delta} I^*(0)$ it holds that $H(\bar{A}) \leq 0$, a steady state exists on $[0, \bar{A}]$.

Under the assumed shape where $G'(A) < 1$ at low and high A but $G'(A) > 1$ on an intermediate range, $H'(A) = G'(A) - 1$ is negative for low and high A and positive on an intermediate range, so H has a local minimum and a local maximum. This implies H crosses zero three times, yielding $\underline{A}^* < \widetilde{A} < \overline{A}^*$. Note that the condition on $G'(A)$ is satisfied whenever there exists an interval $\mathcal{I}$ such that $\psi\, I^{*'}(T(A))\, T'(A) > \delta$ for $A \in \mathcal{I}$ and $\psi\, I^{*'}(T(A))\, T'(A) < \delta$ outside $\mathcal{I}$, since $G'(A) = (1 - \delta) + \psi I^{*'}(T(A)) T'(A)$. This arises, for example, when the cross-partial $-R_{\tau A}(A, \tau)$ is large at intermediate levels of competitiveness but small outside them, inducing a highly elastic policy response $T'(A)$. Suitable functional forms and parameter values can be chosen accordingly.

For welfare, $W_A > 0$ and $W_\tau < 0$ under Assumption 1. Since $\overline{A}^* > \underline{A}^*$ and $\overline{\tau}^* < \underline{\tau}^*$, it follows that $W(\overline{A}^*, \overline{\tau}^*) > W(\underline{A}^*, \underline{\tau}^*)$.

□

A.3 Proof of Proposition 2

Proof. Suppose $A_0 > \widetilde{A}$. Consider a temporary intervention lasting for $t = 0, 1, \ldots, T-1$, during which $\tau_t = T(A_t) + \varepsilon_t$ where $\varepsilon_t \geq 0$, and assume that for $t \geq T$ policy reverts to the political rule $\tau_t = T(A_t)$. During the intervention, $I_t = I^*(T(A_t) + \varepsilon_t) \leq I^*(T(A_t))$, so competitiveness evolves weakly below the no-intervention path. Let A_T denote the level of competitiveness at the end of the temporary intervention, i.e., the state inherited at time T when policy reverts to $T(A)$. A sufficiently large temporary shock implies $A_T < \widetilde{A}$. Once policy returns to the political rule, the autonomous dynamics $A_{t+1} = G(A_t)$ apply. Since $\widetilde{A}$ is unstable and $A_T < \widetilde{A}$, the economy converges to the low-competitiveness steady state. □