Reciprocal Tariff Calculations

Executive Summary

Reciprocal tariffs are calculated as the tariff rate necessary to balance bilateral trade deficits between the U.S. and each of our trading partners. This calculation assumes that persistent trade deficits are due to a combination of tariff and non-tariff factors that prevent trade from balancing. Tariffs work through direct reductions of imports.

Reciprocal tariff rates range from 0 percent to 99 percent, with unweighted and import-weighted averages of 20 percent and 41 percent.

Introduction

To conceptualize reciprocal tariffs, the tariff rates that would drive bilateral trade deficits to zero were computed. While models of international trade generally assume that trade will balance itself over time, the United States has run persistent current account deficits for five decades, indicating that the core premise of most trade models is incorrect.

The failure of trade deficits to balance has many causes, with tariff and non-tariff economic fundamentals as major contributors. Regulatory barriers to American products, environmental reviews, differences in consumption tax rates, compliance hurdles and costs, currency manipulation and undervaluation all serve to deter American goods and keep trade balances distorted. As a result, U.S. consumer demand has been siphoned out of the U.S. economy into the global economy, leading to the closure of more than 90,000 American factories since 1997, and a decline in our manufacturing workforce of more than 6.6 million jobs, more than a third from its peak.

While individually computing the trade deficit effects of tens of thousands of tariff, regulatory, tax and other policies in each country is complex, if not impossible, their combined effects can be proxied by computing the tariff level consistent with driving bilateral trade deficits to zero. If trade deficits are persistent because of tariff and non-tariff policies and fundamentals, then the tariff rate consistent with offsetting these policies and fundamentals is reciprocal and fair.

Basic Approach

Consider an environment in which the U.S. levies a tariff of rate τ_i on country i and $\Delta\tau\_i$ reflects the change in the tariff rate. Let $\varepsilon<0$ represent the elasticity of imports with respect to import prices, let $\varphi>0$ represent the passthrough from tariffs to import prices, let $m\_i>0$ represent total imports from country i, and let $x\_i>0$ represent total exports. Then the decrease in imports due to a change in tariffs equals $\Delta\tau\_i*\varepsilon*\varphi*m\_i<0$. Assuming that offsetting exchange rate and general equilibrium effects are small enough to be ignored, the reciprocal tariff that results in a bilateral trade balance of zero satisfies:

$$\Delta\tau_i = \frac{x_i - m_i}{\varepsilon * \varphi * m_i}.$$

Parameter Selection

To calculate reciprocal tariffs, import and export data from the U.S. Census Bureau for 2024. Parameter values for ε and φ were selected. The price elasticity of import demand, ε, was set at 4.

Recent evidence suggests the elasticity is near 2 in the long run (Boehm et al., 2023), but estimates of the elasticity vary. To be conservative, studies that find higher elasticities near 3-4 (e.g., Broda and Weinstein 2006; Simonovska and Waugh 2014; Soderbery 2018) were drawn on. The elasticity of import prices with respect to tariffs, φ, is 0.25. The recent experience with U.S. tariffs on China has demonstrated that tariff passthrough to retail prices was low (Cavallo et al, 2021).

Findings

The reciprocal tariffs were left-censored at zero. Higher minimum rates might be necessary to limit heterogeneity in rates and reduce transshipment. Tariff rates range from 0 to 99 percent. The unweighted average across deficit countries is 50 percent, and the unweighted average across the entire globe is 20 percent. Weighted by imports, the average across deficit countries is 45 percent, and the average across the entire globe is 41 percent. Standard deviations range from 20.5 to 31.8 percentage points.

References

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