

Appendix: Equitable Growth tariff tracker

By Chris Bangert-Drowns

This analysis draws from several sources: Input-Output, or I-O, tables published by the U.S. Bureau of Economic Analysis, which show how commodities are used and imported by various industries; annual commodity-level import data by country of origin, published by the U.S. International Trade Commission; national employment data collected in the Current Employment Statistics dataset from the U.S. Bureau of Labor Statistics; and county-level employment data collected in the County Business Patterns dataset from the U.S. Census Bureau.

These datasets are woven together to help estimate how tariffs on imported inputs can impose costs differently across U.S. industries and potentially impact employment in those industries. The datasets use various methods to categorize U.S. industries, but all are commensurable with the widely used North American Industrial Classification System. These interlinked data can be used to estimate industry-level tariff costs, informing policy debates about the effectiveness and fairness of import taxes.

Assumptions about the data used

The findings in this analysis rely on a few basic assumptions inherent to these interlinked data. First, the analysis assumes that industry-level import decisions are largely unchanged over the short term and medium term. The detailed I-O tables used in this analysis are published every 5 years, with the most recent edition covering data from 2017. The benchmark tables are preferred because they offer a higher level of industrial specificity compared to their annual counterparts.

This assumption—that the 2017 benchmark table is representative of today’s industry-commodity use situation—can be tested by showing that industry-level imported shares of inputs do not on average change meaningfully in the years following 2017. This test does not say anything about whether industries switch imports from one country to another but does specify whether industries switch from imports to domestic sourcing.

The second assumption is that industry-level patterns about where to source inputs are consistent with economywide patterns. The I-O tables detail the value of commodity imports by industry but say nothing about where specifically those commodity imports are sourced. Similarly, the USITC import data shed light on the value of commodity imports from a source country but say nothing about how those imports flow to various U.S. industries.

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This analysis therefore assumes that a domestic industry importing a particular commodity input will import that commodity from the same group of source countries from which the United States as a whole imports that commodity. If, for example, the United States in aggregate imports a commodity from three countries (50 percent from country A, and 25 percent from both countries B and C) then we assume that any industry importing that commodity input does so at the same rate (50 percent from country A, and 25 percent from both countries B and C).

Finally, this analysis assumes that an industry in any given state uses and imports inputs at the same rate that the industry uses and imports inputs at the national level. If, for example, an industry uses two inputs in a certain ratio at the national level (75 percent of costs attributable to input A and 25 percent of costs to input B) and imports them in a certain ratio (50 percent of input A is imported while 60 percent of input B is imported) then we assume that same industry in any given state uses and imports inputs A and B at the same rates. This assumption allows us to make predictions about the state-level incidence of tariff costs in terms of the relative industrial composition of that state's employment.

Real effective tariff rates

This updated analysis produces estimates of industry-level tariff costs using real effective tariff rates calculated from USITC data, rather than relying on statutory rates announced by the White House. USITC data on customs and duties values by 6-digit NAICS category are aggregated to the highest level of commodity detail in the BEA I-O tables. Monthly real effective tariff rates are then calculated for each BEA commodity group by dividing duties value by customs value.

Industry tariff rates are estimated by multiplying each commodity's monthly real effective rate by an industry's annual value of imports of those commodities in the BEA tables, generating an annualized tariff cost to that industry attributable to each imported commodity. Those annualized tariff costs are summed within each industry, then divided by the value of each industry's total imports to produce an estimated monthly tariff rate. The summed tariff costs are divided by the value of each industry's total input costs to produce an estimated monthly tariff cost as a fraction of all inputs.

Employment data from the Bureau of Labor Statistics and Census Bureau are used to produce "exposure scores" at the national, state, and county level to compare tariff incidence by industry-geography combinations. Industry-level scores are calculated by multiplying an industry's fraction of state employment by its tariff costs as a fraction of inputs, then summed within each geographic unit. The scores are useful to compare relative potential tariff incidence across industry-geography combinations.