Data collection and construction

Value-added. We source sector-level real value-added from BEA GDP by Industry Table 10 and convert it from a seasonally adjusted annual rate (in millions of dollars) to a quarterly frequency.

Hours worked and employment. We source employment and average weekly hours worked per employee from BLS Table B1 and Table B2 at a monthly frequency, respectively. We map them to BEA summary-level sector codes via NAICS and aggregate to the quarterly level by summing monthly total hours worked, where total hours worked in each month is the product of total employees and average monthly hours worked per employee. We obtain monthly hours by scaling average weekly hours by four. We then calculate labor productivity by dividing real value-added by total hours worked, expressed in terms of dollars per hour worked.

Labor Shares. To construct labor shares at the industry level, we source information on wages from the Quarterly Census of Employment and Wages (QCEW). To be consistent with BEA levels, we allocate annual BEA compensation from the National Income and Product Accounts (NIPA) Table 62D to employees across quarters using wage shares from the QCEW. Wage shares represent the fraction of annual wages paid in a given quarter. We do this at the industry level. Formally, let $W_{iqt}L_{iqt}$ be the wage compensation in the QCEW, where $q = 1, 2, 3, 4$ index quarters within a year t. We compute the share of annual wages accruing to quarter q , α_{iqt}, as

$$\alpha_{iqt} = \frac{W_{iqt}L_{iqt}}{\sum_{q=1}^{4} W_{iqt}L_{iqt}}. \tag{1}$$

We use α_{iqt} to generate a quarterly series of compensation to employees based on the annual number available from the BEA input–output tables.

Because the QCEW belongs to the BLS, mapping to BEA sectors requires a similar NAICS concordance to our hours worked and employment data. We divide the allocated quarterly total compensation by nominal value-added from BEA GDP by Industry Table 1 to form labor shares.[1] We impute data for certain sectors from others when data are

[1]We cap labor share values at one whenever they exceed one. This happens for the following industries: apparel and leather manufacturing; motor vehicles, bodies and trailers, and parts; air transportation; warehousing and storage; funds, trusts, and other financial vehicles; management of companies and enterprises; nursing and residential care facilities; and social assistance.

unavailable. When data are not available, and it is not possible to impute from similar industries, we exclude that industry from the analysis. Table 1 shows the industries we impute and exclude from the analysis.

Table 1: Imputed and Excluded Industries

Industry	Treatment
Other Real Estate	Imputed from Housing Services
Farms	Excluded
Other Transportation Equipment	Imputed from Motor Vehicles, Bodies and Trailers, and Parts
Securities, Commodity Contracts, and Investments	Excluded
Funds, Trusts, and Other Financial Vehicles	Imputed from Securities, Commodity Contracts, and Investments, Excluded

Tariffs. We build a BEA industry-level tariff from product-country tariff rates $\tau_{pc,t}$, aggregated with 2024 import shares from the census foreign-trade import data. Formally,

$$\tau_{i,t} = \sum_{p,c} \omega_{ipc,2024}\, \tau_{pc,t}, \tag{2}$$

where $\omega_{ipc,2024}$ is industry i's import of product p from country c as a fraction of its total imports in 2024, and $\tau_{pc,t}$ is the statutory effective rate, corrected for USMCA duty-free entry from Canada and Mexico. We collect these in the vector $\boldsymbol{\tau}_t = \{\tau_{i,t}\}$, $i \in [N] = 1, \ldots, N$.

Input–Output and Import Costs Tables. We source the Use, Make, and Import matrices from the BEA (after redefinitions, 2024 vintage) and form the input–output coefficients

$$\Omega_{ij} = \frac{\text{Sales}_{j \to i}}{\text{Costs}_i}, \tag{3}$$

where Costs_i is industry i's variable cost, total intermediate inputs plus compensation of employees. From the same denominator, we form the variable-cost labor share $\omega_i^L = \text{Comp}_i/\text{Costs}_i$, held on the diagonal matrix $\boldsymbol{\Omega}^L$, and the import cost matrix $\boldsymbol{\Omega}^*$, each industry's imported input flows normalized by its variable cost. We then define the Leontief inverse $\boldsymbol{\Psi} = (\boldsymbol{I} - \boldsymbol{\Omega})^{-1}$ that captures all direct and indirect paths of intermediate input flows across countries.

Cost propagation. We map each force into a total unit-cost change by propagating it through $\boldsymbol{\Psi}$:

$$\Delta \boldsymbol{p} = \boldsymbol{\Psi}\big[\boldsymbol{\Omega}^L(\Delta \boldsymbol{w} - \Delta \boldsymbol{z}) + \boldsymbol{\Omega}^* \boldsymbol{\tau}\big], \tag{4}$$

where $\Delta \boldsymbol{w}$ and $\Delta \boldsymbol{z}$ are nominal-wage and labor-productivity growth. The tariff term $\boldsymbol{\tau}^{\text{total}} = \boldsymbol{\Psi\Omega}^{*}\boldsymbol{\tau}$ is our measure of tariff cost incidence after propagation through the supply chain.

Aggregation to PCE implied by tariffs and labor productivity

We aggregate industry cost changes with 2024 PCE weights, taking PCE at producer and purchaser prices from the BEA PCE Bridge tables. We follow the methodology in Barbiero et al. [2026]. The economy-wide production cost increase is $\Delta P = \sum_{i\in[N]} \nu_i \, \Delta p_i$, with ν_i industry i's core-PCE purchaser-value spending share. The consumer-price impact splits each industry by the domestic share $\theta_i = (\text{PCE}_i^{\text{prod}} - \text{Imports}_i)/\text{PCE}_i^{\text{prod}}$ and scales it by the share of the purchaser price that moves with producer cost, $\mu_i = \text{PCE}_i^{\text{prod}} / \big(\text{PCE}_i^{\text{prod}} + \sum_m \ell_m \, \text{PCE}_i^m\big)$, where m indexes the retail, wholesale, and transport margins. Finally, $\ell_m \, \text{PCE}_i^m$ is the compensation embedded in margin m. With these objects at hand, we define the change in the PCE index as:

$$\Delta P^{\text{PCE}} = \sum_{i\in[N]} \nu_i \, \mu_i \Big[\theta_i \big(\tau_i^{\text{total}} + \Delta c_i^w - \Delta c_i^z\big) + (1-\theta_i)\, \tau_i^{\text{dir}}\Big], \tag{5}$$

where the domestic share carries the input-output-propagated costs and the imported share $1-\theta_i$ carries the direct final-good tariff τ_i^{dir} in addition to the contribution of wages $\Delta c_i^w = \{\boldsymbol{\Psi\Omega}^L \Delta \boldsymbol{w}\}_i$ and productivity $\Delta c_i^z = \{\boldsymbol{\Psi\Omega}^L \Delta \boldsymbol{z}\}_i$, where $\{\}_i$ denotes the ith-element of a vector. All shares are fixed at their 2024 levels.

References

Omar Barbiero, Alvaro Silva, and Hillary Stein. The contribution of imports to domestic prices. *Available at SSRN 5262458*, 2026.