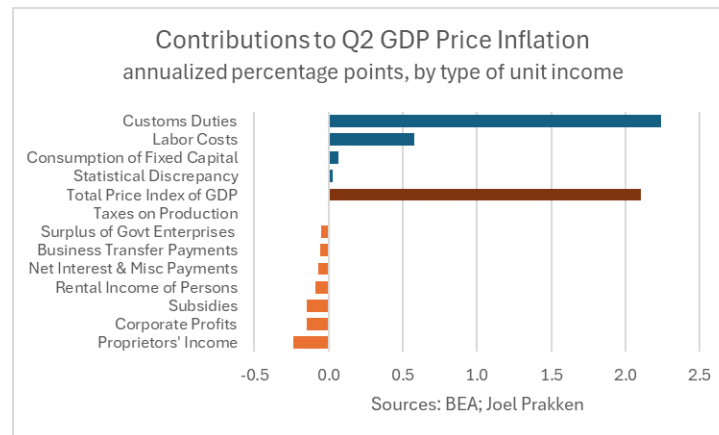


Cost Squeeze Limits Inflation Impact of Tariffs – for Now

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It is generally understood that Gross Domestic Product (GDP) does not include the value of imports. It is, however, less well appreciated that in the System of National Accounts tariffs are treated as domestic value added. That is, customs duties are included in GDP.

From the first to the second quarter of this year customs duties surged \$170.7 billion, from \$97 billion at an annual rate to \$267.7 billion -- an annualized growth rate of 5700%! -- as new tariffs imposed by the Trump Administration took effect. All else equal, if that increase in tariffs had immediately passed through to prices faced by final demanders of domestic product, the annualized rate of change in the GDP price index would have spiked nearly 3 percentage points in the second quarter. As it happened, GDP inflation in the second quarter was tame at 2.1%. Obviously, there were tariff slips twixt cup and lip.



The Bureau of Economic Analysis, in Table 1.1.8 of the National Income and Product Accounts (NIPA), routinely reports contributions to GDP inflation made by changes in elemental prices. However, to understand better why inflation remained quiescent in the second quarter despite the huge increase in tariffs, I used data on the income side of the NIPA to decompose inflation into contributions made by unit costs based on detail shown in table 1.10 of the NIPA, “Gross Domestic Income (GDI) by Type of Income.” (The derivation of the decomposition is shown in the technical appendix.)

Keep in mind that if all components of nominal GDI grow at the same rate, the contributions of unit costs to inflation are approximately equal to the inflation rate times the shares of each cost in

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GDI. For example, the “normal” contribution of unit labor costs to inflation of 2.1% is approximately $0.67 \times 2.1\% = 1.4$ percentage points.

Turning to the results of my decomposition shown in the nearby chart. The contribution from customs duties per unit of real GDP was a stunning 2.2 percentage points in the second quarter, *more than accounting for the entire increase in the GDP price index*. However, that outsized contribution was offset by an undersized contribution from unit labor costs and outright declines in unit rental income of persons, unit proprietors’ income, and unit corporate profits. This strongly suggests the cost of recent new tariffs is being squeezed from other costs and from net incomes – at least for now.

Technical Appendix:

Decomposing GDP Inflation into Contributions from Type of Unit Income

On the income side of the National Accounts, nominal (denoted by \$) GDP equals GDI equals the sum of GDI by type of income (including the statistical discrepancy).

$$GDP\$_t = GDI\$_t = \sum_i GDI\$_{i,t}$$

Quarterly data for nominal GDI by type of income are in Table 1.10. However, I also used data for customs duties from Table 3.2 (Federal Government Current Receipts & Expenditures) to decompose “Taxes on Production & Imports” into “Taxes on Production” and “Customs Duties.”

Continuing, the GDP price index is:

$$PGDP_t = \frac{GDP\$_t}{GDP_t} = \frac{GDI\$_t}{GDP_t} = \sum_i \frac{GDI\$_{i,t}}{GDP_t}$$

And the GDP inflation rate is:

$$\frac{\Delta PGDP_t}{PGDP_{t-1}} = \frac{1}{PGDP_{t-1}} \sum_i \Delta \left(\frac{GDI\$_{i,t}}{GDP_t} \right)$$

This is the expression I used to compute the contributions of unit incomes to inflation, but it can be re-written in terms of the shares of GDI by type of income. So, continuing:

$$\frac{\Delta PGDP_t}{PGDP_{t-1}} = \sum_i \left(\frac{1}{PGDP_{t-1}} \right) \left(\frac{\Delta GDI\$_{i,t}}{GDP_{t-1}} \right) + \sum_i \left(\frac{GDI\$_{i,t}}{PGDP_{t-1}} \right) \Delta \left(\frac{1}{GDP_t} \right)$$

Or:

$$\frac{\Delta PGDP_t}{PGDP_{t-1}} = \sum_i \left(\frac{GDI\$_{i,t-1}}{GDP\$_{t-1}} \right) \left(\frac{\Delta GDI\$_{i,t}}{GDI\$_{i,t-1}} \right) - \sum_i \left(\frac{GDI\$_{i,t}}{GDP\$_t} \right) \left(\frac{GDP\$_t}{PGDP_{t-1}} \right) \Delta \left(\frac{1}{GDP_t} \right)$$

Or:

$$\frac{\Delta PGDP_t}{PGDP_{t-1}} = \sum_i w_{i,t-1} \left(\frac{\Delta GDI\$_{i,t}}{GDI\$_{i,t-1}} \right) + \sum_i w_{i,t} \left(\frac{PGDP_t}{PGDP_{t-1}} \right) \Delta \left(\frac{1}{GDP_t} \right)$$

Where:

$$w_{i,t} = \frac{GDI\$_{i,t}}{GDP\$_{i,t}} = \frac{GDI\$_{i,t}}{GDI\$_{i,t}} \quad \sum_i w_i = 1$$

Note that:

$$GDP_t \Delta \left(\frac{1}{GDP_t} \right) = 1 - \frac{GDP_t}{GDP_{t-1}} = - \frac{\Delta GDP_t}{GDP_{t-1}}$$

So that finally:

$$\frac{\Delta PGDP_t}{PGDP_{t-1}} = \sum_i w_{i,t-1} \left(\frac{\Delta GDI\$_{i,t}}{GDI\$_{i,t-1}} \right) - \sum_i w_{i,t} \left(\frac{PGDP_t}{PGDP_{t-1}} \right) \left(\frac{\Delta GDP_t}{GDP_{t-1}} \right)$$

Next, suppose all components of income grow at the same rate as total GDI. Then:

$$w_{i,t} = w_{i,t-1}$$

And:

$$\frac{\Delta GDI\$_t}{GDI\$_{t-1}} = \frac{\Delta GDP\$_t}{GDP\$_{t-1}}$$

Also note that:

$$\frac{PGDP_t}{PGDP_{t-1}} \approx 1$$

Thus:

$$\frac{\Delta PGDP_t}{PGDP_{t-1}} \approx \sum_i w_{i,t} \left(\frac{\Delta GDP\$_t}{GDP\$_{t-1}} - \frac{\Delta GDP_t}{GDP_{t-1}} \right) \approx \sum_i w_{i,t} \left(\frac{\Delta PGDP_t}{PGDP_{t-1}} \right)$$

That is, under balanced growth, the contributions of unit incomes to the GDP inflation rate are approximately the inflation rate multiplied by the respective shares of GDI.