How do tariffs impact inflation?

Chief economist's comment

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Trade taxes, or tariffs, have been a burden for consumers for over four thousand years, pushing up prices as money is paid to the government. Today's trade is a lot more complex than it was even fifty years ago, and this makes the relationship between taxing trade and inflation more complicated than in the past.

There are eight ways in which trade taxes can impact inflation. In assessing the extent of the inflation damage, investors need to ask four questions:

- How visible are the effects of the tax to the consumer, and how likely is it that the tariffs will stay in place?
- How much of the tariff change will be passed directly to the consumer?
- How significant will the second-round effects of the tax be?
- How quickly can exporters adapt to help their overseas customers avoid paying the tax?

The net effect of tariffs will inevitably be higher consumer prices. The more complex way trade works adds uncertainty as to how much prices will rise.

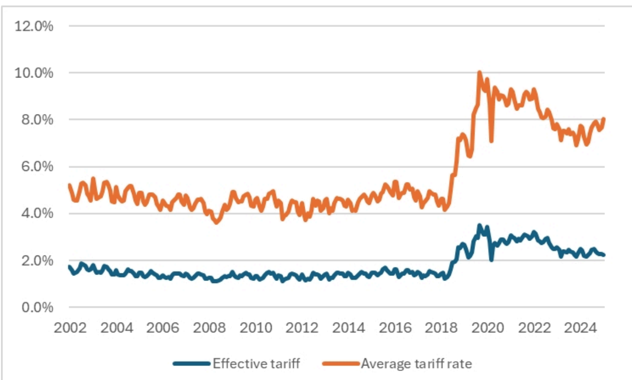
Tariffs are back, and with a ferocity not experienced in over half a century. The US government has imposed a series of trade taxes on its citizens, at one stage taking its tariff levels back to a point last seen in the 1940s. There have also been a series of rapid retreats from some of these taxes. Other countries have responded with their own trade taxes and other retaliatory measures. Trade taxes act as a sales tax on domestic consumers, but in a rather peculiar way. This means that while trade tariffs will always tend to increase inflation, there will be uncertainty about how bad the inflation shock is.

How much have tariffs increased? There are two measures that are commonly used—average tariff rates, and effective tariffs. The average tariff rate simply takes the average of every tariff rate that is being applied—and in doing so ignores the existence of trade that is not subject to tariff. The effective tariff is the total trade tax revenue received as a percentage of the total imports into a country—and so does include trade that is not subject to tariff. When considering the inflation impact of trade taxes, it is the change in the effective tariff that matters as this captures both the breadth and depth of the tax.

The complete effect of recent trade taxes, in the US and elsewhere, cannot be fully assessed in real time. In part, this is because US tariff policy has become so erratic (today's effective tariff rate may not be tomorrow's effective tariff rate, and retaliatory measures are responding to unpredictable US policy). It's also because effective tariff rates will adjust in response to the imposition of a tax, as supply chains alter and the ratio of tariffed to tariff-exempted goods shifts. Data to January 2024 primarily shows the effect of the increase in US tariffs on consumption of imports under the 2018 taxation wave.

Effective tariffs are the focus

US average tariff rate and effective tariff - the starting point



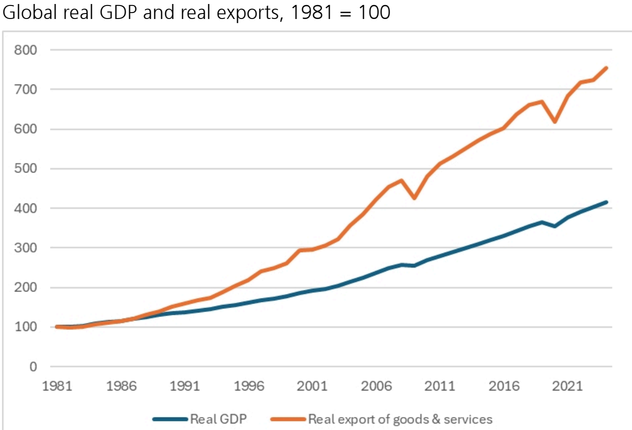
Source: UBS, US Census Bureau via Haver

Modern trade

Taxing trade is nothing new—tariffs have been around for at least four thousand years. However, modern trade does not have much in common with the trade of ancient Babylon or even with the world of the 1970s. In the past fifty years, trade has increased its share of GDP, but mainly because trade has become more complex.

Complexity drives trade ratios

Global real GDP and real exports, 1981 = 100



Source: UBS, OECD via Haver

Every time a good crosses a border, its value is added to global trade—it is cumulative, so if a good crosses a border three times, the total value of the traded product will be added to global export data three times. However, it is just the final value of the good that is added to global GDP, and that is added only once. Over the past fifty years, outsourcing and increasingly complicated supply chains have meant that more and more border crossings are required to make the same goods—so the trade-to-GDP ratio has increased.

One consequence of more complex supply chains is that over half of all global trade takes place inside a company. The old "imperial trade" model of importing raw materials and then manufacturing everything in one location has long since gone. The fact that more and more trade takes place inside companies potentially changes the flexibility of a response to a trade tax. It may be easier to swap an external supplier in the event of a tariff than it is to reorganize an internal supply chain.

Because so much trade is internalized to companies, assessing the inflation impact of trade is more difficult than in the past. Nonetheless, we can identify eight mechanisms through which tariffs have an effect on inflation.

1. Do tariffs matter? Visible versus less visible taxes

For a trade tax to impact inflation, it has to be a credible threat. If a tariff is thought to be a short-lived gesture, importers will use existing inventory (free from tariff) while they wait for the tariff to be reversed, and inflation will be largely unaffected. The credibility of the tariff threat is linked to the visibility of the tariff. The speed with which US President Trump has retreated from some trade taxes has tended to correspond to their visibility to the consumer. The two key factors are whether a product is finished or an input into the supply chain; and whether it is a high-frequency purchase. Thus, a tax on Mexican avocado imports is very visible—this is a product consumers buy, and may buy on a weekly basis. A tax on aluminum is much less visible. Consumers do not typically buy aluminum directly. While aluminum is included in the price of a six-pack of beers, a 25% aluminum tax would raise the price less than 1.5 US cents. That is likely to be absorbed in profit margins, or not noticed if passed to the consumer.

This may account for why China appears to have less bargaining power in trade negotiations with the US than some other countries. While trade taxes on imports from Canada and Mexico have been imposed, they have been very erratic and there has been a rapid retreat from most threatened tariffs. This is because a reasonable proportion of Mexican and Canadian exports to the US would be very visible (proximity means that food exports are important, as are energy exports from Canada). China exports things that are bought less frequently; while these items may be economically important, they have less visibility to the consumer and therefore generate less political pressure.

The US government has also at least temporarily retreated from the ending of the de minimus tariff, which would directly impact the cost of online purchases shipped direct to the US consumer from China. Taxing smaller items is administratively complex and potentially costly to enforce. The so-called "Temu Tax" would be very visible; US consumers would have to pay on receipt, in addition to whatever price they had paid online when ordering. And while such purchases are not as frequent as food or fuel, they are more frequent than purchases of durable goods like televisions or washing machines. This makes it very clear that it is domestic consumers and not foreign exporters who pay a trade tariff.

2. The obvious inflation – the direct effect

Tariffs are a tax that is paid by the consumer, not the exporter. The "consumer" in this sense is the buyer/user of the imported good, and that may of course be a company. A tariff is levied when goods arrive in a country, and the importer is liable for the tax. The direct effect is therefore to add to the cost of the import price of a product, without giving any more money to the exporter.

The US at the moment imports around 12.7% of GDP. This means that if the effective tariff rate of the US were to rise by 10%, all things being equal, the US economy would have to pay 1.27% of the economy to the US government in a tax. That represents a price increase somewhere in the supply chain. If all the tax is passed through to the retail consumer, the consumer price index would rise by 1.27%.

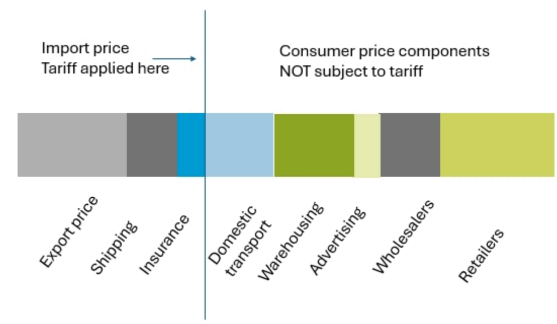
3. Technical inflation relationships – where the tax is charged

Because a trade tax is a sales tax that is charged quite high up the supply chain, passing on a 10% tariff does not mean a 10% increase in consumer prices. Fully passing through the nominal cost of the tariff will result in a percentage consumer price increase that is less than the percentage tariff increase. If a finished good is subject to a trade tax, that tax is paid on the price of the good when it first arrives in the country. After that point, there is a lot of markup that is not subject to tax. The tariff is not applied to the domestic transport costs, advertising costs, wholesale, warehousing, or retail costs. All of those are part of the consumer price, but not part of the tariff. In the US, the value added of the retail sector is almost 30% of the money consumers spend on buying goods. In other words, 30% of everything spent in a store is (on average) going to cover the costs and profit margin of the retailer.

When the other post-tariff links in the consumer supply chain are added to the 30% taken by the retailer, it becomes clear that a 10% tariff on a finished consumer good should only raise the consumer price by about 4%. The consumer is still paying the full amount of the tax in currency terms. However, the import price is less than half the consumer price (obviously this will vary from product to product)—hence, the tax generates a lower *percentage* increase in the consumer price level.

Where is the tariff in the supply chain?

A lot happens after tariffs are imposed



Source: UBS (stylized representation)

The fact that the trade tax is applied quite high up the supply chain also means that some of the tax might be absorbed by domestic companies' profit margins, rather than being passed on to the retail consumer. If consumers are very price sensitive, domestic companies along the supply chain may try to absorb some of the tax. This seems to be what happened with the 2018 US tariffs, where consumer prices either did not change or changed slowly for certain products. However, with consumers more used to price increases in the wake of the post-pandemic waves of inflation, the willingness of companies to pass along the tax is likely to be higher—or indeed absolute.

4. Making inflation worse? Domestic competition

The direct effect of a tariff on inflation may be increased by second-round effects from domestic companies. If imported goods are taxed, domestic companies have a choice: They can keep their prices unchanged, and try to increase market share. Alternatively, they could raise their prices to match (or nearly match) the import tax, maintaining their market share.

If domestic companies use the tariff to push through price increases and profit margin expansion, the inflation impact is obviously magnified. The extent to which domestic companies favor profit over market share may also change over time, making this aspect of inflation quite hard to forecast. When taxes of 20% to 30% were imposed on US consumers of imported washing machines in 2018, US manufacturers chose to increase prices (by around 17%).

If domestic prices do increase, there is zero incentive for exporters to try to reduce their prices. Their market share will stay the same, and the trade balance will be largely unaffected (because from the perspective of the domestic consumer, there is no relative price difference arising from the tariff—although total demand for the product may fall as prices from all producers increase). From a global economic perspective, the more domestic producers choose profit margin over market share, the less the growth impact of the tariffs on exporting economies.

5. Making inflation worse? Profit-led inflation

Profit-led inflation differs from margin expansion by domestic competitors, because this occurs at the retail level. As already mentioned, a 10% increase in a trade tax should only lead to around a 4% increase in the consumer price level. However, the media narrative is likely to focus on the 10% tax increase. That will also become part of the political debate. As a result, consumers may expect that the price that they pay will rise 10%, because that is the number that is dominating the narrative.

This means retailers have a choice. They could reflect the actual tariff, and raise prices only 4%. Or they could do what consumer expect, and perhaps accept, and raise the price 10%. In the latter case, retailers' profits would increase and inflation would get a boost that economic models would be unlikely to predict.

Trade taxes, as a high-profile policy, provide retailers with a cover story for raising prices (though some of the price increases are justified by the tariffs). This is similar to the profit-led inflation stories that followed the pandemic, and would mean that retailers' profits become a substantially higher share of the economy than was the case historically.

Profit-led inflation has been a recent trend

US retailers' profits as a share of retail GDP

Source: UBS, Bureau of Economic Analysis via Haver

6. Making inflation worse? Supply chain retaliation

In past trade wars, tariffs have led to retaliation from trading partners who have imposed trade taxes on their own citizens. Thus, US tariffs on imports from China have led to China putting taxes on imports of US agricultural products. China's action has no direct effect on the inflation rate of the US—at the margin, it might even lower US prices if some of the goods that were destined for export are now pushed into the domestic market.

However, there is another option available to exporters, which could raise inflation more significantly. Either by restricting exports of specific products or by imposing an export surcharge, exporting countries can raise domestic prices for the importer in retaliation for the importer's trade taxes. Canada's brief surcharge on electricity exports to the US is an example of this. For this to be successful, the embargo or surcharge needs to be on a product that the importing country will struggle to find a substitute for.

This process is more powerful when exports are primary goods rather than consumer goods. Although primary goods are not very visible to the consumer, if they are critical parts of a production process, restricting their supply can be very disruptive. The consequences of reduced chip production in the auto sector in the immediate aftermath of the pandemic is a parallel case study—it led to higher new car prices, higher second-hand car prices, and higher auto insurance costs.

The recent increase in economic nationalism has made this threat more conventional. Restrictions on exports have already been imposed against Russia and China, for different reasons.

7. Limiting the inflation shock? Avoiding tariffs

The inflation impact of tariffs should fade over time as companies adjust to the taxes. There are three ways in which the inflation effect of an import tax might be offset.

The most effective is to simply reroute supply chains. This will obviously only work when tariffs are directed against a specific country. A universal tariff can only be avoided by smuggling. In this case, goods from a country whose goods are subject to tariff reroutes those goods via a third country that has a lower tariff or no tariff at all. The evidence is that China now reroutes about a third of the value of its exports to the US in the wake of a series of trade taxes from 2018 onwards. This rerouting will lower the effective tariff rate (because goods that are subject to tariff change into goods that are not subject to tariff, if the origin of the goods is disguised).

The next alternative is to shift production to produce in the country that is imposing the tariffs—commonly known as onshoring. Shifting to domestic production will still tend to be inflationary. If it were cheaper to produce domestically, companies would already be doing that—so the implication of a global supply chain is that domestic production is more expensive than overseas production. There are other costs that may make this an unpalatable solution. Taxing trade creates uncertainty about the security of supply chains, and companies may be reluctant to shift final production to a country that may tax the components they need to import in the future. What is most likely is that companies that had already intended to localize production (because of automation, and efficiency gains arising from producing close to their consumers) will accelerate the process in the face of tariffs. It should be noted that if domestic competitors choose to increase their profit margins rather than increase their market share in the wake of tariffs, there is relatively little incentive for exporters to change their supply chains.

Finally, domestic currency appreciation and foreign currency depreciation might offset the costs of a tariff, but it is less likely to be effective than in the past. This is particularly unhelpful in countering US inflation from tariffs, because around 95% of US imports are priced in US dollars. That means that if an exporter’s currency depreciates against the dollar, the result is a profit windfall for the exporter—not a lower price for the US consumer (at least for the duration of the export contract). Exporters also face another problem with currency moves. Because supply chains have become so complex, the impact of a currency depreciation might be to increase the cost of imported components. While the depreciation can be used to lower the export price, this higher cost base must also be factored in. It means that to completely offset a tariff, a currency would have to depreciate by a larger percentage than the change in the effective tariff rate—and that would have an impact on the exporting country’s own inflation rate and standard of living.

8. Inflation without actual tariffs – living in uncertain times

It is also worth noting that uncertainty around trade taxes can have an inflationary effect, even if the taxes are never actually imposed. Firms may push for higher price rises than cost pressures alone dictate, if they feel that tariffs may emerge outside of their normal pricing cycle. Companies stockpiling goods in anticipation of possible tariffs incur extra warehousing costs and may create a squeeze on supply and transport, further raising their costs. The price impact of consumers stockpiling toilet rolls during the pandemic is a rather extreme example of the inflation consequences of increasing inventory. Sufficient talk about tariffs may also change consumers’ mindsets. It is hard enough for economists to keep up with what tariffs are in place and what have been canceled. Normal consumers are less likely to follow what is happening, and be more willing to accept price increases as being due to trade taxes, even if those taxes have been withdrawn. Finally, tariff uncertainty may deter investment, which may delay possible efficiency gains.

Not the 1970s

In judging the effects of tariffs on inflation, economists and investors need to consider four things:

1. How visible are the effects of the tax to the consumer, and how likely is it that the tariffs will stay in place?
2. How much of the tariff change will be passed directly to the consumer?
3. How significant will the second-round effects of the tax be?
4. How quickly can exporters adapt to help their overseas customers avoid paying the tax?

None of these effects is constant over time, and the second-round effects of trade taxes seem to be particularly uncertain. History offers limited precedent, because while tariffs have been this high in the past, that was in an age when trade followed the imperial model more than the current complex model. Second-round effects should also be monitored, as they are much more likely to provoke a central bank response than is the direct effect of tariffs (about which central bank policy can do little).

Tariffs will raise inflation. The current range of US tariff proposals are likely to at least offset established disinflation forces in the US, and might create noticeably higher inflation. This is unlikely to be double-digit inflation, as the negative growth consequences of higher trade taxes (as with any other tax increase) will slow price pressures over time.

Appendix

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