

Why Mexico won't pay for Trump's wall

President Trump's plan to "make Mexico pay" for his border wall by potentially imposing a 20% tariff on all US imports from Mexico ignores basic economics. US households – and particularly low- to middle-class households – will end up bearing the brunt of these tariffs, and both the US and Mexican economies will suffer. Ironically, the very families that voted for Trump are likely to be most negatively affected.

The grand plan: Build a wall, make Mexico pay for it

President Trump has wasted no time implementing a number of his campaign pledges. Last week he signed an Executive Order to "secure the southern border of the United States through the immediate construction of a physical wall on the southern border", in order to reduce "the recent surge of illegal immigration... [which] presents a clear and present danger to the interests of the United States".

Consistent with his pledges, his White House staff then indicated that while the US government would initially fund the wall's construction, payment would be recouped "100%" from Mexico. The precise mechanism to be used to "make Mexico pay" is not yet clear, but the President is considering a 20% tariff on all imports from Mexico as one option.¹

Trump's logic is appealingly simple, but appallingly wrong

Trump's logic is simple: the US puts a 20% tax on Mexican exporters, the additional revenue is pocketed by the US government and used to pay for the wall over time.

As an added bonus, Trump believes this tax will help reduce the US's bilateral trade deficit with Mexico, which he sees (incorrectly) as a sign that trade is not 'fair'. With Mexican imports more expensive, US firms producing cars, TVs and avocados domestically will become more competitive, which will create more US jobs.

The problem is that this logic is completely wrong. Imposing a tariff will likely hurt US consumers, and hit poorer US families hardest.² In a complex, globalised

world, simple solutions to perceived problems are rarely effective, and often have unintended consequences.

The costs of tariffs are not paid solely by the exporting country³

To explain why Trump's logic doesn't work, we have to go back to Economics 101: the incidence of a tax. It is important to think beyond the notion of who physically hands over money to pay for the new tax, and think instead about the various ways in which the economies adjust.

Let's work through a simplified example: a 20% US tariff on Mexican dishwashers.

- We assume very similar dishwashers can either be produced domestically by US firms or imported from Mexico. When a 20% tariff is placed on Mexican exports of dishwashers to the US, the cost of imported dishwashers goes up in US retail outlets, say by 10%.
- US producers become more competitive as a result, and as long as they keep their prices a little lower than imported dishwashers (say a 9% increment on the pre-tariff Mexican price), they gain market share.
- Mexican producers get less sales revenue, so they bear some of the cost of the tariff. The Mexican economy generates less export revenue, so its GDP falls. This will reduce the number of jobs in the Mexican economy overall.
- US consumers will buy fewer imported dishwashers and more US-produced dishwashers. But the price they pay will still be higher than before the tariff was imposed – say 9-10% higher. This will make it too expensive for some households. So US consumers are worse off too – they are paying more for effectively the same dishwasher, and fewer households can

¹ See PIIE. 2017. 'Trump's Border Tax Is Not the Right Fix for US-Mexico Trade' at <https://piee.com/commentary/op-eds/trumps-border-tax-not-right-fix-us-mexico-trade> for a broader discussion of these options.

² We put to one side the issue of whether imposing such a tariff would be legally possible, given the US's existing commitments under NAFTA and the WTO. Our focus is on the economics of the proposal, rather than its admittedly doubtful feasibility.

³ This has also been pointed out by Paul Krugman in his blog: <http://economistsview.typepad.com/economistsview/2017/01/paul-krugman-building-a-wall-of-ignorance.html>.

afford to buy one. Therefore, US households also end up bearing some of the cost of the tariff.

- The US economy receives higher tariff revenue, though it will be less than 20% of the value of imports before the tariff was imposed, because the US now imports fewer dishwashers. It can use this revenue for whatever it chooses, including building a wall on the border.
- But there are other negative effects on the US economy from imposing a tariff. Households are worse off, as explained above – they can buy fewer goods and services with their income. This acts as a drag on the economy. And resources like labour and capital will move away from previously unprotected manufacturing industries into the dishwasher industry instead.⁴
- This reduces non-dishwasher production, which pushes down GDP. In addition, employment (and/or wages) in these other manufacturing industries will fall because less is being produced, which compounds the negative effects on households mentioned above.
- The additional dishwasher industry production does not completely offset these losses elsewhere in the economy – there is an efficiency cost (or deadweight loss) due to the imposition of the tariff.

Table 1 Winners and losers from a US tariff on imports from Mexico⁵

Winners	Losers
US dishwasher companies and workers	Mexican dishwasher companies and workers
US wall building companies	US consumers
Other countries' dishwasher producers	Mexican consumers
	Other US manufacturing industries

Source: NZIER

⁴ The resources could also come from the agricultural or services sector, but we use manufacturing here for simplicity.

⁵ For the sake of clarity of argument, we abstract from reality here. Modern production systems are characterised by multi-country supply chains, so many of the impacts of US tariffs will affect trade in intermediate inputs between the countries rather than trade in final products. And of course some 'Mexican' producers will be owned by US and other countries' shareholders. Similarly, some US producers will be owned at least in part by foreign investors. Therefore, there will also be impacts on investment stocks and flows from the tariff.

In this simple example, we can see that the burden (cost) of the tariff does not fall solely on Mexican dishwasher exporters. US and Mexican consumers also bear some of the cost, as do other parts of the US manufacturing sector.

It is clearly wrong to think that "Mexico will pay" for the wall if a tariff is the tool used. Instead, US consumers and some producers will be paying too.⁶

The precise cost shares are difficult to determine

Unfortunately, there is no simple formula to work out how the cost of a tariff would be shared between US consumers and Mexican producers in practice (putting to one side the impacts on other US manufacturers and Mexican consumers).

The precise split depends primarily on the responsiveness (technically the elasticities) of demand and supply for dishwashers.

Ignoring supply elasticities for the moment, the more inelastic the demand, the greater the costs of the tariff to US consumers and the lower the costs to Mexican producers. That is, if US consumer demand doesn't change much after dishwashers become more expensive from the tariff, it is US consumers who bear the brunt of the tariff through paying higher prices.

The size of the country imposing the tariff also matters for who bears its burden. Generally speaking, the larger the country imposing a tariff, the more it is likely to be able to shift the burden back to the (smaller) exporting country. In this respect, the US could have an advantage.

We do not consider exchange rate effects in the example above, for the sake of simplicity. However, in reality, we would expect a 'shock' of this magnitude to also affect the exchange rate between the US dollar and the Peso, and various other bilateral exchange rates. These exchange rate movements will also play a role in determining the incidence of the tariff.

Empirical data on demand and supply elasticities is scarce, so we don't know exactly how the burden of the tariff will be shared. But we do know for all the likely scenarios that both US consumers and Mexican producers will share the cost.

⁶ The same logic applies to the removal of a tariff. It is incorrect to state, as Ministers are wont to do, that Kiwi exporters "save" all the duties previously paid when other countries reduce their tariffs under Free Trade Agreements. These tariff savings are always shared primarily between the importing country's consumers and Kiwi exporters.

Poorer households spend more on imports, so get hit hardest by a tariff

We also know that not all US households would be affected the same by the imposition of a 20% tariff on all imports from Mexico. Lower income families – many of whom voted for Trump – would get hit harder by these tariffs than richer families.

Poorer households tend to spend more of their income on imported products – there's a reason why Walmart is so successful. As incomes rise, households tend to spend proportionately more of their income on services than consumer items. They go to dinner and a show rather than cooking at home and watching TV; they go to theme parks instead of playing with Lego; they go on a fishing trip instead of buying imported fish fingers.

Since tariffs wouldn't be imposed on services under Trump's plan, the prices of these higher-income activities wouldn't be directly affected. Richer families won't feel much pain at all. But poorer families will face higher costs at the supermarket and Walmart for all of the consumable items they need to buy, because most of them are imported.

So not only will US households end up paying for the wall if it is funded through a tariff, poorer US families will be slapped with a proportionately larger bill.

OK, enough theory: show me the money

In reality, the effects of imposing a tariff are always more complicated than we have outlined above. That's because both the US and Mexican economies are made up of millions of firms, all of whom trade with each other domestically, with other firms in other countries, and sell to domestic and foreign households. The sheer number of interactions between millions of firms and potentially billions of consumers is mind-boggling.

Every time there is a change in prices (as there would be if a tariff was imposed), each firm and each consumer makes decisions that change what they buy and sell, and where they do it. The overall economic impact of a policy change is therefore the sum total effect of all of these changes.

Economic models can be helpful for providing insights into how these various effects play out and how firms and households are likely to be affected by a policy change.

A common model for exploring the impacts of trade policy changes like the imposition of a tariff is the GTAP Computable General Equilibrium (CGE) model. Technical details of this model and its database of global trade are available at <https://www.gtap.agecon.purdue.edu/>. In

essence this model provides a snapshot of the global economy in 2011 for 140 countries and regions who produce and trade in 57 industries. It includes all tariffs and trade flows between the 57 regions, including the US and Mexico.

Using this model, we impose a 20% tariff on all US imports from Mexico (not just dishwashers), and assume that Mexico retaliates in kind.⁷

A 20% tariff on Mexican imports does indeed raise tariff revenue which could be used to build a wall...

Under this scenario, the US tariff raises around US\$29 billion for the US government. This additional revenue could be ring-fenced and used to contribute to the costs of building the wall between the US and Mexico⁸. President Trump estimates the cost of the wall to be around US\$10 billion, though Senate Leader Mitch McConnell suggests US\$12-15 billion. Independent analysts indicate a figure closer to US\$25-30 billion is more likely.⁹

...but the US economy shrinks, which lowers business and income tax

The imposition of the tariff and Mexico's retaliation makes the US economy grow slower because it introduces a distortion into the US economy. Our modelling indicates the US economy will shrink slightly, by US\$12.3 billion.

This reduces business and income taxes and almost entirely offsets the additional revenue gained from the tariff. Overall US government tax revenue rises by just US\$0.6 billion in this scenario.

Since overall government revenue barely changes, if the additional tariff revenue is ring-fenced to pay for the wall, this will mean the US government either spends less on other government services such as health and education, has to increase other taxes, or borrows more.

⁷ Any number of scenarios could be envisioned and modelled, but it seems unlikely that the Mexican government would sit there quietly and accept the US imposition of a tariff without any response. The modelling results are broadly similar if a tariff is imposed by the US only.

⁸ Congressional approval would be required for the spending to construct a wall even if there was ring-fenced financing available.

⁹ See Bernstein Research. 2016. 'Bernstein Materials Blast: Who Would Profit from the Trump Wall?' 15 July 2016 and the Gleeds Worldwide estimate referred to in <https://www.theguardian.com/business/2017/jan/25/donald-trump-border-wall-mexican-construction-firms-workers-biggest-winners>.

...and US households are worse off...

The GTAP model has a measure of how ‘well off’ households are in aggregate, known as ‘equivalent variation’. Under our tariff scenario, US consumers are US\$11.4 billion worse off after the tariffs are imposed. On average, this equates to US\$85 per US household¹⁰, although remember that as explained above, poorer families will be harder hit.

US real wages fall, and unskilled workers (0.33% decrease) suffer more than skilled workers (0.24% decrease).¹¹

...as are Mexican households

Mexican households get hammered too, to the extent of US\$41.9 billion. This is around US\$1,900 per household. The average Mexican unskilled worker’s real wage drops 5.34% as a result of the tariff, again more than the decrease for skilled workers (4.96%).

The Mexican economy is smaller by around US\$14.8 billion as a result of this tariff war.

Think again, Mr President?

This modelling backs up our simple explanation of how the proposed option of imposing a 20% tariff on all Mexican imports to pay for the wall would play out:

1. US and Mexican households are worse off
2. Real wages fall in the US and Mexico, particularly for lower skilled workers
3. The US and Mexican economies both shrink.

Clearly, this is not what Trump intends to do by imposing a tariff to “Make Mexico pay” for his wall. He wants US households to be better off, yet his proposal (and retaliation by Mexico) would make poorer US workers and households worse off.

And it’s difficult to imagine he really has a beef with poor Mexican households and wants to make them suffer.

But his policy proposal is likely to have damaging unintended consequences that can be readily identified through basic economic theory and economic modelling. If both he and Congress choose to ignore the consequences, it would be a great concern.

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¹⁰ Numbers of households are from https://en.wikipedia.org/wiki/List_of_countries_by_number_of_households.

¹¹ In its basic set-up, as used here for this illustrative exercise, the GTAP model assumes total employment stays constant at all times. Therefore, all labour market impacts are felt through changes to real wages.