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SPECIAL ISSUE ARTICLE

The Trump Administration's Reciprocal Duties

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Abstract

This article considers the reciprocal duties proposed by the US administration, 2 April 2025. These are large import tariffs that will significantly disrupt the world trading system. Rather than considering the economic impacts of these tariffs, as others have and are doing, this article documents the rationale used to justify these destructive tariffs and their calculation. Using descriptive examples, the proposed duties are shown to be unfounded as reciprocal and generally ill advised.

Keywords: Reciprocal tariffs; trade deficits; bilateral trade imbalances; Trump trade policy

1. Introduction

This article questions the rationale used to justify the tariffs proposed by US President Donald J. Trump on 2 April 2025 and his formula for calculating the duty rates. These tariffs are conceptually and practically unfounded. Conceptually, Trump's Unfounded Reciprocal Duties (TURDs) are based on a misunderstanding of what a bilateral trade imbalance is or means. My approach to revealing the folly of TURDs in application is to use simple hypothetical examples based on accounting, avoiding the complexities of even basic economic theory as much as possible. I intentionally avoid math beyond basic operations and a symbolic representation of variables. Yet, I think the examples are effective in placating our fears around bilateral trade imbalances and shifting our fears toward the TURDs.

The concept of reciprocal tariffs, as opposed to TURDs, is not wholly without merit. It is always reasonable to reexamine the US's commitments under international agreements, like the recent US–Mexico–Canada Agreement (USMCA) signed by President Trump 30 November 2018 or the older General Agreement on Tariffs and Trade (GATT), which has governed orderly cooperative trade since 1947. In fact, over its history, the GATT has undergone multiple rounds of revision ultimately being transformed into the World Trade Organization (WTO) in 1995. Under the WTO, each member country has an itemized list of mutually agreed tariff bindings. Of course, these bindings can be modified in subsequent negotiations, or they can be ignored. If a country chooses to ignore its commitments, the WTO has a mutually agreed dispute settlement mechanism. Unfortunately, the US has chosen to disengage from even the dispute settlement mechanism.

Okay, so President Trump, with the support of the US electorate, thinks all these international legalities, which we and even he agreed to, are *very very unfair*. What is the solution? The rhetoric from the US administration leading up to the 2 April announcement was that the US would impose

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tariffs equal to the tariff (and non-tariff barriers) that US goods face when sold in that trade partner's market. This proposal is somewhat different than the tariff bindings embodied in WTO rules, but it is not an unfounded idea. It is, after all, in the spirit of the WTO reciprocity principle. It provides a tangible point of bilateral or multilateral negotiation. One could envision a new set of mutually agreed cooperative trade commitments built on the principles of reciprocal tariffs. Tit-for-tat reductions in trade barriers could lead to mutual gains. Under close examination, however, this is not the intent or implication of the US TURDs announced on 2 April.

To understand the intent of the US TURDs, we first need to understand how the accounting around international transactions works, because bilateral trade deficits are the true ire of President Trump. We might collectively benefit from educating ourselves around trade policy by simply understanding what it is we are looking at. The current US administration's focus on bilateral trade imbalances is wrongheaded. There is no amount of *sanewashing* that fixes this disengagement from reality. Worse yet, the US TURDs leave no party in a position to negotiate for mutually beneficial reforms. True reciprocal tariffs, in contrast to TURDs, would tie US tariffs to specific actionable foreign policies.[1] In contrast, the US is on a path to secure partner-country agreements that include more groveling than beneficial policy reform.

2. Balance of Payments Accounting and the Farmer's Market

Our discussion around trade deficits begins with a bit of accounting. Consider the following accounting identity where we measure total imports of goods and services as M, total exports of goods and services as X, and the country's capital-financial-account surplus as K

$$M = X + K. \tag{1}$$

We refer to this equation as Identity 1 because the right-hand and the left-hand sides measure the same thing. Double-entry accounting ensures this. Every debit has an equal credit. It is not a mathematical or economic model we are looking at, it is a rule for interpreting a world with international transactions.

A more familiar story might help us think about the identity more clearly. Rather than a country, let us say this equation applies to Sam, a produce vendor at a local farmer's market. It is spring, and Sam is selling asparagus. Later in the year, she expects to grow and sell zucchini. Let us consider some specific transactions. First, Sam sells $483 of asparagus for cash. Second, she visits a fellow vendor who propagates plants. She buys $596 worth of zucchini plants using a cheque. You may notice that Sam has spent more than she earned, but that is okay because her cheque is good by virtue of a line of credit at her bank. Furthermore, she expects to earn much more than her daily loss once the zucchini plants start producing. Sam is happy with her transaction, but her nagging accountant forces her to keep track of things.

Let us record Sam's transactions in a ledger that mimics our identity. When Sam sells asparagus, there is a debit to her produce account and a credit to her cash account. When Sam buys zucchini plants, there is a credit to her plant account and a debit on her line of credit. On the left-hand side of the identity, debits are negative and credits positive. On the right-hand side of the identity, debits are positive and credits are negative. Table 1 arranges the various debits and credits. Notice that we have a new addition of $113 on Sam's line of credit. This is a new asset for Sam's bank (a liability for Sam) which is backed by Sam's good credit rating. Everyone is still happy – agreed?

[1] I feel this is a strategic blunder by the administration. If one makes a strategic move to induce a real policy response, it seems essential that the response is a specific option and the relevant parties know what that option is. A reciprocal tariff with a rate tied to a specific set of foreign policies works, but one based on uncertain market outcomes does not. I am reminded of the exchange between Dr Strangelove and Russian Ambassador Alexei de Sadesky: 'The whole point of the doomsday machine is lost, IF YOU KEEP IT A SECRET! WHY DIDN'T YOU TELL THE WORLD?' (Kubrick, 1964).

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Table 1. Sam's ledger entries arranged on the identity.

			Account		
Transaction	M	=	X	+	K
Asparagus	0	=	483	+	−483
Zucchini plants	596	=	0	+	596
Total	596	=	483	+	113

Moving our example back to international transactions: replace Sam with Uncle Sam (the US) and scale up by a factor of 10 billion. Asparagus is US exports ($4.83 trillion) and zucchini plants are US imports ($5.96 trillion).[2] The US shows a large capital-financial-account (K) surplus in 2024 ($1.13 trillion). K-account surpluses have persisted for the US since the late 1990s. Foreigners are persistent purchasers of dollar denominated assets. Like Sam's bank, in our example foreigners are eager to extend credit to the US in the form of a K-surplus. Of course, the K surplus is the opposite of the trade deficit by our identity ($M = X + K$). A trade deficit is international borrowing. International borrowing is selling a capital or financial asset to a foreigner. We note that both the buyer and seller agree to this transaction presumably in the interest of mutual benefits, like Sam and her bank. Foreigners often buy US bonds, for example, because US bonds have historically been a safe bet in terms of preserving value, even if they pay a low interest rate relative to emerging-market bonds (denominated in a foreign currency). Any time a foreigner buys a bond in the US and there is a net debit on the K account, there must be either a credit to the M account or the X account: positive changes in M and negative changes in X. This expands the trade deficit which we now know is the K-account surplus.

3. Bilateral Trade Deficits: A Couple of Simple Hypothetical Examples

In the previous section, we defined the aggregate trade deficit. This raises a number of important policy questions regarding the US position as an international borrower and other countries, like China, as international lenders. These aggregate borrowing and lending issues are not, however, the focus of the Trump administration's metrics for *fair trade*. The administration has chosen to focus on a measure that has little or no meaning, the bilateral trade imbalance. The bilateral trade balance with an individual country measures the difference between US exports to that country and US imports from that country.

Let us again consider a simple example to illustrate what this measure is, so we can examine its meaning. Consider a hypothetical trade pattern represented in Figure 1. There are three countries Germany (G), Italy (I), and Saudi Arabia (S) with three associated goods VWs, Ferraris, and Oil. The arrows and associated numbers in the figure represent exports (X). So, for example, Saudi Arabia exports $4 million worth of oil to Italy and $5 million to Germany. Notice that total exports by each country equal total imports. In this example, there is no international borrowing or lending: $K_G = K_I = K_S = 0$. The example in Figure 1 assumes no trade barriers (tariff or non-tariff). The trade pattern is organic. It is driven by a set of underlying supply and demand conditions, which we can, but will not, discuss for the purpose of this article.

We do have *bilateral* trade imbalances in Figure 1. Notice that Germany imports oil from Saudi Arabia but does not export any VWs to Saudi Arabia. The *bilateral trade balance* for country i with country j is calculated as $(x_{ij} - m_{ji})$ where x_{ij} are exports from i to j and m_{ji} are imports by i sourced from j. Thus, we would say that Germany has a $5 million bilateral trade *deficit* with Saudi Arabia. This is offset by a $5 million bilateral trade *surplus* with Italy. Are these deficits and surpluses good

[2]The US Bureau of Economic Analysis reports the accounts as a part of its *Balance of Payments* (BOP) accounts. The reported numbers are for 2024. The data were pulled from the following link on 4 April 2025: www.bea.gov/news/2025/us-international-transactions-4th-quarter-and-year-2024.

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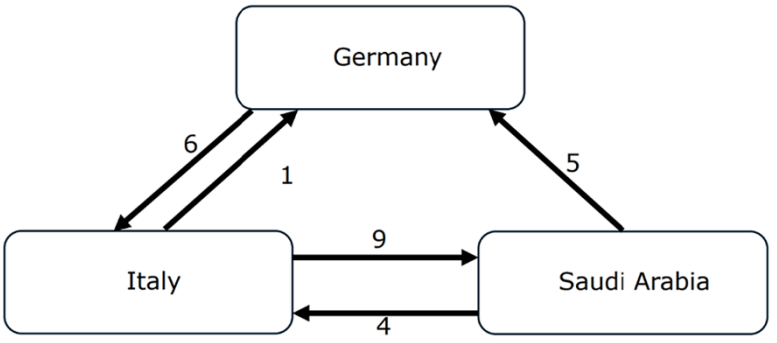


Figure 1. Three country trade example with $K = 0$

or bad from any country's perspective? The answer is an emphatic NO! There is nothing *unfair* about Germany's trade with Saudi Arabia. Germany sells VWs and gets the oil and Ferraris it wants.

Imagine our friend Sam, from the previous section, claiming that she is being treated unfairly by the zucchini plant vendor, because the zucchini-plant vendor is not the same person as the one who purchased her asparagus. A measured *bilateral* trade deficit means absolutely nothing about winners or losers. In fact, in the example given in Figure 1, we see that it does not even indicate borrowing or lending. When a billionaire purchases fuel for their private jet, do they insist that the fuel company buy an equivalent dollar amount of their meme coins? When you or I visit the grocery store and buy broccoli, do we insist that the transaction is unfair unless the store buys an equivalent dollar amount of our labor services? No. We, like countries, engage in transactions with multiple partners, so the deficit or surplus with a given partner does not indicate our overall welfare. It does not even indicate whether we are borrowing or saving.

Any trade advisor to the President, let alone a trade economist, who claims that *bilateral* trade imbalances are some sort of metric of relative economic performance is either unqualified or not being honest. Yet, the President still believes that bilateral deficits indicate US losses. Folks, you have failed. Try again. Do not defend the indefensible.

We made a point about bilateral trade deficits, but maybe we should add aggregate trade deficits to our example to see if anyone is being treated *very unfairly*, or even unfairly, in that case. Consider that the people of Saudi Arabia are forward looking and see that their oil reserves may eventually be depleted. They may look at investing in a different sector, or even in a different country. Let us say that they decide to forgo two million dollars of Ferrari purchases in order to purchase a share of VW production. Figure 2 illustrates the resulting trade pattern. We see that Germany is now borrowing from the rest of the world because $M_G = X_G + K_G$ becomes $6 = 4 + 2$. Of course, on the other side of the capital transaction Saudi Arabia is lending (they now hold a German asset) with their accounting identity becoming $7 = 9 - 2$. Again, just like in our previous example, it is not clear that anyone is being treated unfairly. Germany sold assets, but the Saudis must have paid a fair price, otherwise the Germans would not have sold. If they regret the transaction, they can simply buy back the asset at the market price in some future period, and this will put them in a trade surplus for that period because they will need to pay for the asset through reduced imports or increased exports. If this seems unclear, see Equation (1).

The purpose of this section was to illustrate that bilateral trade imbalances are a natural feature of any pattern of trade with more than two countries. This feature does not indicate the existence or level of foreign trade distortions. It does not even indicate the level of international borrowing or lending (a country's trade deficits or surpluses). As a matter of accounting, across all countries, net borrowing must be zero, and bilateral imbalances are organic to any system of recorded transactions. The amazing focus by the Trump administration on an utterly useless metric has led

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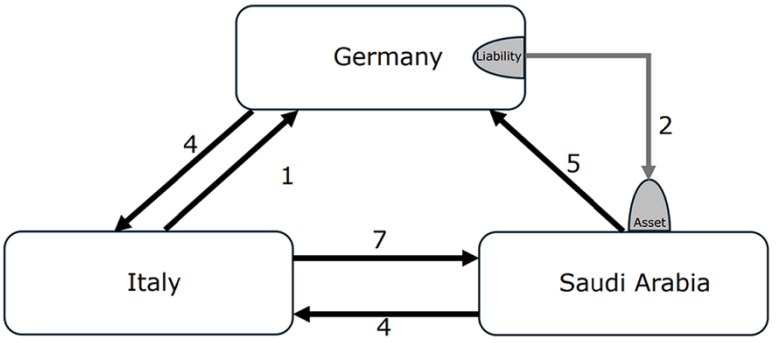


Figure 2. Three country trade example with $K \neq 0$.

them to develop TURDs. In the following section, we show how the specific TURDs are calculated from these meaningless bilateral trade imbalances.

4. The TURD formula

The formula for calculating the administrations TURDs has a basis in a set of economic responses to tariffs. This involves the concept of US import price elasticities and tariff passthrough.[3] We relegate this bit of technical economics to the following section, because in accord with the administration's assumptions the critical elasticity and passthrough parameters exactly offset one another in the formula. We can ignore them in the calculation of the TURDs.

Conceptually, the administration first asks: What is the additional tariff rate (Δt_i) on goods from country i that would need to be added to eliminate the bilateral trade deficit with that county?[4] The idea of reciprocity comes from an incorrect assumption that the bilateral trade deficit must be caused by some tariff and non-tariff barriers imposed by country i that have artificially reduced US exports to that country. In the previous section, however, we learned that these bilateral trade imbalances are a natural feature of any trade pattern with more than two countries, regardless of tariff or non-tariff barriers. This fact alone renders the TURDs completely devoid of their '*reciprocal*' content.[5]

Let us forge ahead, nonetheless, to see how the TURDs are calculated. The formula for the prescriptive change in tariff rates, under the administration's assumed parameter values, is given by

$$\Delta t_i = \frac{x_i - m_i}{-m_i} \tag{2}$$

where x_i are US goods exported to country i and m_i are US goods imported from country i. Mathematically, the change in the tariff rate is bound between minus infinity and 100%. The calculated Δt_i is then plugged into the following TURD formula to get the actual change in the tariff rates applied to goods from country i

$$\text{TURD}_i = \max\left\{0.1, \frac{\Delta t_i}{2}\right\}. \tag{3}$$

[3]The import price elasticity is a measure economists use to determine how imports react to a given price change, and the passthrough rate is the proportion of the tariff change that is realized in the prices faced by importers.

[4]As a matter of notation, the symbol Δ indicates that the 'change in' the trailing variable. Thus, Δt_i is the change in the tariff rate.

[5]The administration's flawed logic can, of course, be turned on itself. If the US runs a bilateral trade surplus with a country, like Australia, the US must be treating Australia *very* unfairly with its tariff and non-tariff barriers. In the interest of reciprocity, the US should impose negative tariffs on Australian goods to make up for our unfair treatment.

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All countries on the list regardless of bilateral trade imbalance, therefore, face at least a 10% tariff. Partner countries that run a significant bilateral trade surplus with the US face one-half of the Δt_i. Why one-half? According to the President, 'We are being *very* kind' (Donald J. Trump, 2 April, Rose Garden speech).

To give a simple example of how the TURDs would be applied let us consider the trade flows in Figure 1. Now by construction there are no tariffs, other trade frictions (non-tariff barriers), and there are no trade imbalances ($K_i = 0$ for all countries). There are, however, bilateral imbalances. Let us presume that countries are not imposing their optimal tariffs against one another because they have a cooperative trade agreement (like the WTO). The cooperative trade agreement is a set of promises that allows all countries to benefit from sharing each other's markets. Trade is a *prisoner's dilemma game* where aggregate surplus is maximized under cooperation.

Now let us say that a new German leader wakes up and decides to adopt TURDs to combat (a non-existent) *very* unfair treatment from its trade partners:

- German TURD against Saudi Arabia: 50% tariff rate
- German TURD against Italy: 10% tariff rate.

From Saudi Arabia and Italy's perspective, it would seem clear that Germany has abandoned the principals of cooperative trade. Their rational response would be to maintain cooperative trade among themselves but move to their dominant strategy of an optimal tariff against Germany. From a strategic perspective, Germany has ensured its unilateral engagement in a trade war with the rest of the world.

5. The Economics behind the TURD Formula

In this section, we discuss the economics engineered into the TURDs.[6] Consider a measure of the import demand elasticity, which is assumed to be the same for aggregate import bundles from any country *i*:

$$\epsilon = \frac{\%\Delta m_i}{\%\Delta p_i}$$

where p_i is a measure of the gross-of-duty price of the import bundle from country *i*. The parameter ϵ is less than zero given that an increased price reduces imports. The target change in imports is the amount that eliminates the bilateral trade deficit ($x_i - m_i$), conditional on assuming the tariffs have no collateral effects on exports with country *i* or any other targeted country. The assumption is that there are no 'general-equilibrium' effects, referring to the indirect effects that the tariffs certainly have on exports and other markets.[7] Transforming the targeted change in imports into a percentage change, and rearranging, we have

$$\frac{x_i - m_i}{m_i} = \epsilon\,(\%\Delta p_i)$$

Now let us consider another parameter that indicates the elasticity of the gross-of-tariff price with respect to the change in tariff rate

$$\varphi = \frac{\%\Delta p_i}{\Delta t_i}.$$

[6]The Office of the US Trade Representative (USTR) documents the calculation at the following link: https://ustr.gov/issue-areas/reciprocal-tariff-calculations

[7]We note that this is a particularly bad assumption. Studying trade without general-equilibrium effects is like studying physics without gravity. Tariffs effect aggregate, and by extension bilateral, exports regardless of retaliation. It is international *trade*, after all.

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Substituting this parameter into the previous equation we get

$$\frac{x_i - m_i}{m_i} = \epsilon\varphi\left(\Delta t_i\right).$$

Now solving for the prescriptive tariff change, we get USTR's reciprocal tariff formula:

$$\Delta t_i = \frac{x_i - m_i}{\epsilon\varphi \mathrm{m}_i}. \tag{4}$$

This simplifies to the formula used in Section 4 by assuming that the price elasticity is –4 and the passthrough elasticity is 25%. Thus, the product $\epsilon\varphi = -1$. We can quibble about the parameter values (e.g. Fajgelbaum et al., 2020; Cavallo et al., 2021, estimate passthrough rates close to 100%),[8] or the rather egregious structural assumption to ignore general equilibrium effect. The fundamental problem remains, however, that the TURDs are founded in a misguided attempt to *correct* bilateral trade imbalances.

6. Conclusion

Economists are often asked to comment on the effects of Trump's disruptive tariff policies. We have, are, and will continue to do this. Even in the absence of these studies, however, we know from theory that trade wars move us away from cooperative international outcomes that are mutually beneficial. The current quantitative analysis is consistent with this theory, suggesting substantial global economic costs and acute costs for the US in the range of many thousands of dollars per US household per year. In response to the 2 April tariff announcements, however, I find these studies lacking. I feel these studies are doomed to fail as accurate or effective policy tools – even my own studies. And I like my studies.

The first problem I have with economic tariff analysis is our fundamental lack of engagement with the true problem. If we cannot convince policy makers of the irrelevance of bilateral trade imbalances, how can we hope to have them take seriously our sophisticated policy analysis models? In one of my studies, for example, we show that Trump's campaign promise of tariffs combined with symmetric retaliation could cost the average US household $7,000 per year (Balistreri et al., 2025). This number is never taken seriously. It is rhetorical ammunition for half the country and dismissed as Trump derangement syndrome by the other half. To be effective, we need to start with a realistic foundation in transparent arguments, not a policy impact number. The quantitative analysis is only useful to the degree that we are willing to confine our debate to a reasonable perspective on the economy. One of these reasonable perspectives is that bilateral trade deficits are meaningless measures of economic performance. They also do not indicate anything about trade distortions. Any person engaged in non-barter transactions can understand this simple truth. We do not need an economic model to tell us that the 'trade deficit' we experience every time we visit the grocery store is neither the source nor consequence of our economic woes. This understanding alone might have helped us side-step the 2 April TURDs.

The second problem I have with our analysis of tariffs is our inability to communicate the fragility of our model results. This is similar to the concerns over econometric models raised more than 40 years ago by Leamer (1983). The quantitative estimates we make using structural models of tariffs are not robust predictors of realized outcomes by design. First, to maintain tractability our estimates are conditional on a slew of macroeconomic stability assumptions making them useful in evaluating alternative policies in an 'all else equal' thought experiment. Estimates of the costs of tariffs are not forecasts, even if that is the way they are interpreted. To give an example, the policy costs in (Balistreri et al., 2025) are conditional on an assumption that Trump's tariff policies and

[8]Cavallo et al. (2021) cite additional studies that find high passthrough rates. Corinth and Veuger (2025) argue that the Administration mistakenly uses the retail passthrough rate from Cavallo et al. (2021) rather than the import-price passthrough rate, which is 94.5%. This is shown by Corinth and Veugereuger (2025) to substantially exaggerate the tariff rates.

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partner-country retaliation do not change real investment or aggregate employment in the US. That assumption died about five seconds after the TURD-chart dropped in the Rose Garden. Second, the size of the distortions embodied in the TURDs are outside the range of our historic experience, bringing even the basic price response parameters under serious suspicion. How much will the tariffs cost if they disrupt financial and labor markets? The best answer I can suggest is 'a lot'. Once we start having significant macroeconomic adjustments to the tariff shocks, any number of things are bound to go awry.

In this paper I try to avoid the pitfalls of opaque economic models in an effort to be more effective. I use a set of accounting principles to show that the administration's focus on bilateral trade imbalances is unfounded as are the resulting TURDs. President Trump may well believe that the bilateral trade deficit with a country represents the US's trade losses to that country, but he is wrong. At a minimum we need to state this truth transparently. Perhaps my examples will help in that effort.

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