

Comments on NERA study of the “Impacts of Potential Aluminum Tariffs on the U.S. economy”

Testimony • By Robert E. Scott • July 14, 2017

The U.S. Commerce Department is engaged in two separate investigations of whether trade in steel and aluminum are a threat to U.S. national security (under a 1974 law).¹ Both investigations were initiated by President Trump and both were concluded at the end of June and awaiting a ruling from the department. They could lead to the imposition of tariffs or other trade restraints. These comments pertain to a study by NERA Economic Consulting that finds that tariffs on aluminum would cause job losses, particularly in manufacturing,

The NERA study, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, generates unreasonably large and incomplete estimates of the negative impacts of trade relief on the domestic economy. For example, it estimates that a 30 percent aluminum tariff would reduce national output (gross domestic product or GDP) by an average of \$21.5 billion per year over 10 years and that it would eliminate 99,800 jobs per year.² This is grossly inaccurate. When the United States International Trade Commission (USITC) conducted an in-depth analysis of the Steel 201 tariffs, which ranged up to 30 percent, the agency found that the tariffs had negligible economy-wide effects.³ In 2002, for example, the U.S. had a current dollar GDP of \$10,977.5 billion⁴ and the USITC estimated the economy-wide effects of the Steel 201 duties ranged from a gain of \$65.6 million (0.0006 percent of GDP) to a loss of \$110.0 million (0.0010 percent of GDP).⁵ There is every reason to believe that any tariff imposed on aluminum in this proceeding will likewise have an insignificant impact—if any measurable impact—on the overall economy.

Moreover, for further comparison, the USITC study of the economic impacts of the proposed Trans-Pacific Partnership Agreement (TPP) estimated that agreement, which would eliminate virtually all tariffs on trade between the United States and five countries (Brunei, Japan, Malaysia, New Zealand, and Vietnam), would increase U.S. real GDP by \$42.7 billion and create 128,200 jobs in 2032.⁶ The NERA study estimates that a 30 percent tariff on all aluminum products, which made up less 0.7 percent of total imports of manufactured goods in 2015,⁷ would have an impact on the economy nearly as large, in terms of absolute impact, as the entire TPP agreement. For comparison purposes, total imports of primary and semi-finished aluminum products totaled \$12.9 billion in 2016,

whereas total U.S. imports from the TPP countries in 2015 were \$858 billion in 2015.⁸ Hence, TPP imports were 66 times larger than total aluminum imports, yet NERA claims that aluminum tariffs would reduce output by half as much as the entire TPP agreement effect, and that employment losses would equal more than three-quarters of the impact of the TPP agreement.⁹

The distorted results of the NERA study reflect the inappropriate use of the REMI model to assess the impacts of the proposed remedies in this case. As the authors of the NERA study note, the “core of the REMI model is a set of input-output (“I/O”) relationships among different industries.¹⁰ I/O models are built on the assumption that inputs and outputs vary in fixed proportions among all sectors of the economy. Thus, if consumption of aluminum falls by five percent, then consumption of automobiles, haircuts, and medical and government services all fall by five percent. Obviously, this simplistic assumption does not in any way accurately describe the way that trade policy affects the domestic economy. The USITC uses a “dynamic computable general equilibrium (CGE) model” to assess the impacts of trade policy on the economy.¹¹ Such models allow for the elastic substitution and tradeoffs in consumption and production patterns in the economy which much more accurately describe how the economy responds to changes in price signals and trade flows. Analysis of proposed changes in aluminum trade policy should be more appropriately examined with a CGE model. Formal CGE analysis is beyond the scope of these comments. However, a few general observations are possible.

I demonstrated in my written comments on the Aluminum 232 investigation that the existing domestic and Canadian aluminum production capacity is available to service virtually the entire demand for primary aluminum in the United States.¹² Thus, if demand is highly inelastic, then real consumption of aluminum will not be significantly affected by aluminum tariffs. Domestic production would rise to replace some imports, and the prices and costs of downstream products would adjust to reflect increases in aluminum prices, leaving overall domestic consumption relatively unchanged. If real domestic output of aluminum increases, and output of other products remains roughly the same, then aluminum tariffs would have little net impact on real output or employment in the domestic economy. The only possible losses would result from increases in prices and costs, which might have a slight impact on overall demand in the economy, and for aluminum in particular, but these impacts would be vanishingly small.¹³

A few further illustrations of the extreme nature of the NERA results will demonstrate this point. Aluminum tariffs will have a relatively tiny impact on overall manufacturing and the economy. Thus, for example, a 30 percent tariff on aluminum imports (the largest considered in the NERA study) will raise the cost of aluminum imports by less than \$4 billion, before prices and quantities adjust.¹⁴ This will raise the cost of total (gross) manufacturing output, which reached \$5.8 trillion in 2015, by less than 7 hundredths of one (0.07) percent.¹⁵

There are few substitutes for aluminum, for which consumption has been rising in the domestic economy.¹⁶ Thus, the price elasticity of demand for aluminum is likely to be very low (highly inelastic, absolute value much less than one). In fact, the International Trade Commission has indicated as much, concluding that U.S. demand for downstream

aluminum products such as aluminum extrusions is highly inelastic, and that there are limited substitutes for these downstream products.¹⁷ Increases in import prices, or the cost of aluminum more generally, are likely to be absorbed by downstream consumers (e.g. other manufacturing firms), or passed along to consumers with little or no impact on final demand. Thus, even a 30 percent tariff should have little impact on real output or employment in the domestic economy.

Yet the NERA model predicts that a 30 percent tariff would reduce output in other manufacturing industries by \$8.93 billion, and by 15.7 billion in all other industries,¹⁸ for a total gross output decline (net of gains in the aluminum sector) in the rest of the economy of \$24.63 billion.¹⁹ This is more than six times greater than the initial tariff impact of \$3.87 billion. A more realistic (CGE-type) model with reasonable assumptions would generate much smaller employment and output impacts. Small, sector-specific tariffs of this type should be absorbed with little impact on real output. Thus, for example, when global aluminum prices on the LME fell by 39 percent between 2007 and 2016, they had no discernable impact on the prices (average unit values) of imported beverages in aluminum cans, which increased by nearly 7 percent in the same period, as noted in my written comments on the 232 investigation.²⁰

The employment impacts developed with the NERA model are also implausibly large. In a recent study of the impact of manufacturing on the economy, I estimated manufacturing employment multipliers using an I/O model, and found that each manufacturing job supported 1.4 jobs elsewhere in the economy.²¹ The NERA model, in contrast, estimates that a 30 percent tariff would eliminate 12,430 manufacturing jobs, and 87,400 nonmanufacturing jobs, which yields a ratio of seven nonmanufacturing jobs lost for every job lost in the manufacturing sector. These results reflect the vastly overstated losses in overall economic output in the domestic economy as a result of tariffs on aluminum products. Small changes in import prices in one sector of the economy which represents only 0.2 percent of total U.S. GDP are unlikely to generate such large changes in real output in the overall economy.²²

NERA study fails to consider the benefits of section 232 relief

The legislative purpose of a section 232 investigation is to determine whether U.S. national security is threatened by imports. Thus, if relief is provided, it will provide real and significant benefits to U.S. national security and economic preparedness. Yet no effort is made to quantify these benefits in the NERA analysis. This is a significant omission.

Beyond providing the United States with a domestic supply of material with critical U.S. national security applications in the event of a war or other national emergency, a tariff would allow idled U.S. production to restart, bringing back nearly 3,000 jobs to the primary aluminum industry²³ as well as critical tax revenue for the cities and states in which these smelters are located. For instance, the New Madrid facility, which was forced to shutter in early 2016, had a payroll estimated at \$95 million in 2013 or roughly \$107,955 per employee.²⁴ When that facility shut down, this revenue disappeared. If idled U.S.

production were to restart, this would mean an additional direct payroll revenue of over \$300 million ($\$107,955 \times 2,806$ jobs). Moreover, the indirect tax revenue gains of a tariff would exceed \$47 million.²⁵ In addition, a 20 percent import tariff on primary aluminum, for example, would result in additional revenue to the U.S. government of more than \$760 million.²⁶ Despite these significant financial benefits, nowhere are they discussed in the NERA study.

In addition, the NERA study fails to consider the “possible responses of other countries to a U.S. tariff.”²⁷ Among the possible responses is the very real possibility that other countries could respond, with U.S. encouragement, by entering into “negotiations ...with China” on excess capacity and overproduction of aluminum.²⁸ The first step in such negotiations would be to persuade our trading partners to adopt aluminum trade restraints similar to those imposed by the United States, which would have the effect of isolating China and increasing pressure on them to negotiate. Since China is the world’s biggest producer and biggest exporter of primary and semi-finished aluminum products, it has the most to lose from such a “global trade war” in aluminum.

If the U.S. could persuade other countries to collectively crack down on excess capacity and production in China, it could have great benefits for the U.S. and global economy.

In conclusion, reasonable comparisons demonstrate that the NERA Model vastly overstates the costs and understates the benefits of potential trade relief in the Aluminum section 232 investigation.

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Endnotes

1. See U.S. Department of Commerce, [Section 232 Investigation on the Effects of Imports of Steel on U.S. National Security](#); and U.S. Department of Commerce, [Section 232 Investigation on the Effects of Imports of Steel on U.S. National Security](#).
2. NERA Economic Consulting, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, June 2017, Table 1 at 3.
3. United States International Trade Commission (USITC), *Steel: Monitoring Developments in the Domestic Industry (Investigation No. TA-204-9) and Steel Consuming Industries: Competitive Conditions with Respect to Steel Safeguard Measures* (Investigation No. 332-452), vol. I (USITC Pub. No. 3632) at ix–xx.
4. U.S. Bureau of Economic Analysis (BEA), “Current-Dollar and ‘Real’ Gross Domestic Product” [Excel spreadsheet] available at <https://www.bea.gov/national/xls/gdplev.xls>.
5. USITC, *Steel: Monitoring Developments in the Domestic Industry* at ix–xx.
6. United States International Trade Commission (USITC), *Trans-Pacific Partnership Agreement*:

Likely Impact on the U.S. Economy and on Specific Sectors (Investigation No. TPA-105-001), tables ES-1 and ES-4 at 22 and 25, May 2016.

7. U.S. International Trade Commission (USITC), *Trade DataWeb*, 2017
8. NERA, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, Table 4 at 9, and Robert E. Scott and Elizabeth Glass, *Trans-Pacific Partnership, Currency Manipulation, Trade and Jobs*, Economic Policy Institute, 2016, Table 1.
9. This comparison assumes that changes in trade barriers have symmetric impacts, and that the impacts of raising tariffs on aluminum have a proportionate impact, of opposite sign, to the tariff reductions in the TPP agreement.
10. NERA Economic Consulting, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*. at 11.
11. USITC, *Trans-Pacific Partnership: Likely Impacts*. at 69.
12. Robert E. Scott “*Economic Policy Institute: Aluminum Public Comment*,” Economic Policy Institute, Commentary. June 26, 2017.
13. U.S. GDP exceeded \$18 trillion dollars in 2015 (BEA, “Current-Dollar and ‘Real’ Gross Domestic Product”, note 3 above). A tariff on aluminum imports would increase domestic prices by 0.02 percent (3.87/18,036).
14. Based on total aluminum imports of \$12.9 billion (NERA, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, Table 4 at 9), times 30 percent, which equals \$3.87 billion.
15. BEA, *Industry Economic Accounts*, “Total Gross Output of Manufacturing Industries,” 2017
16. Scott, *Economic Policy Institute: Aluminum Public Comment*.
17. U.S. International Trade Commission, *Certain Aluminum Extrusions from China*, Inv. Nos. 701-TA-475 and 731-TA-1177 (Final), Pub. No. 4229 (May 2011) at II-15 and II-16 (noting that changes in the price of aluminum extrusions will have only a small change in the quantity of aluminum extrusions consumed); U.S. International Trade Commission, *Aluminum Foil from China*, Inv. Nos. 701-TA-570 and 731-TA-1346 (Prelim.), Pub. No. 4684 (May 2017) at II-7 (finding that most domestic producers and importers indicated that there were no substitutes for aluminum foil and that substitutes were limited).
18. NERA, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, Table 2 at 4.
19. Sum of net output losses across all sectors of the economy with a 30 percent tariff (\$21.5 billion) minus net gains in primary aluminum (\$3.13 billion) yields gross output decline of \$24.63 billion (NERA, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, Table 2 at 4).
20. Scott, *Economic Policy Institute: Aluminum Public Comment*.
21. Robert E. Scott, *The Manufacturing Footprint and the Importance of U.S. Manufacturing Jobs*. Economic Policy Institute Briefing Paper, 2015 at 7.
22. NERA, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, Table 3 at 5. Total value of domestic shipments of primary and semi-finished aluminum products was, \$38.0 billion, and U.S. GDP in 2015 exceeded \$18 trillion (BEA, “Current-Dollar and ‘Real’ Gross Domestic Product” footnote 3, above).
23. In 2011, the total number of employees at the six aluminum smelters that were operational until

last year (Sebree, Massena West, Hawesville, Mount Holly, Ferndale, Warrick, and Wenatchee) was 5,341 workers. In 2016, that number fell to 2,533 workers, resulting in a decline of 2,808 workers.

24. Jacob Barker, "Noranda Aluminum Closure Marks the End of an Era in the Missouri Bootheel," *St. Louis Post-Dispatch*, Feb. 21, 2016. In 2013, New Madrid employed 880 workers (\$95,000,000 tax revenue/808 workers=\$107,955 direct tax revenue per worker).
25. For example, according to a 2015 study conducted by the University of South Carolina, "at full operation Mt. Holly provides over 2,806 direct and indirect jobs with a statewide economic impact of \$977 million annually..." Mt. Holly employed 582 workers and contributed \$260 million to South Carolina Gross state revenue in 2015. See Alan H. Price, *Century Aluminum: Public Comment*, Wiley Rein LLP, 2017. The Aluminum industry as a whole contributed \$3.8 billion in annual economic output, including \$47 million in tax revenue contributions.
26. Total U.S. imports of primary aluminum less Canada in 2016 were 1,935,651 metric tons at a total value of \$3,817,807. As a result, the average unit value of these imports was \$1,972. This means that at a proposed tariff rate of 20 percent, the average tariff income per metric tons would be \$394.47, resulting in a total tariff income in 2016 of \$763,561,400 (\$394.47 x 1,935,651 metric tons).
27. NERA, *Impacts of Potential Aluminum Tariffs on the U.S. Economy*, Footnote 7 at 12.
28. Aleem, Zeesham. 2017. "Trump's plan to make steel great again could set off global trade wars." VOX blog. June 26. Article concerns the steel 232 investigation, but the circumstances in this case are highly similar.