

**Classic Domino Effect:
Imposition of New Duties on U.S. imports of Tin Mill Products Will Hurt American Workers**

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www.tradepartnership.com

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About the Authors

This report was prepared by Laura M. Baughman and Dr. Joseph F. Francois of Trade Partnership Worldwide, LLC (www.tradepartnership.com). TPW is an international trade and economic consulting firm with a global outlook and reach through a network of international economists. Baughman is President of TPW. She holds degrees in economics from Columbia and Georgetown Universities. Dr. Francois is a Fellow of TPW, and Professor of Economics, University of Bern, Department of Economics and Managing Director, World Trade Institute. He also holds numerous research fellowships and professorships at think tanks and universities around the world. Dr. Francois formerly was the head of the Office of Economics at the U.S. International Trade Commission, and a research economist at the World Trade Organization. Dr. Francois holds a PhD in economics from the University of Maryland, and economics and history degrees from the University of Virginia.

Questions and comments can be directed to them at Baughman@tradepartnership.com.

About the Sponsor: Consumer Brands Association

The Consumer Brands Association champions the industry whose products Americans depend on every day, representing nearly 2,000 iconic brands. From household and personal care to food and beverage products, the consumer packaged goods industry plays a vital role in powering the U.S. economy, contributing \$2 trillion to U.S. GDP and supporting more than 20 million American jobs.

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Executive Summary

Cleveland Cliffs and the United Steelworkers union filed petitions seeking the imposition of antidumping (AD) and countervailing duties (CVD) on tariffs of up to 300% on imported tin mill products from eight countries. Tin mill products are used to make cans that package a range of consumer goods, from pet food to aerosol products. The targeted countries' producers are major suppliers of tin mill products to the U.S. can manufacturing industry, which in turn is a major supplier of cans to American consumer goods manufacturing industries. Final determinations in the investigations are expected by early 2024.

If the duties alleged are ultimately imposed on tin mill products imports, downstream American manufacturers will face higher input costs that will put them at a competitive disadvantage both domestically and internationally. This study attempts to estimate some of those impacts, including the likely impact on U.S. manufacturing employment. We focus on tin cans and canned food products.

Briefly, we find that the imposition of the duties on tin mill products imported from the subject countries will fall heavily on American downstream manufacturers and their workers.

- The proposed duties have a small positive impact on U.S. steel manufacturers and workers, increasing U.S. employment by an estimated 66 workers. Critically, any anticipated larger benefits to domestic steel producers are undercut by significant loss of competitiveness in downstream manufacturing industries (i.e., tin cans and canned food) which minimizes potential gains for steel manufacturing. Overall, the U.S. market for tin mill products drops significantly as demand from downstream customers declines.
- The higher costs for tin mill products will force American can manufacturers to raise the prices of cans, causing a drop in domestic output of tin cans destined for both U.S. and export markets. This will put nearly 2,800 manufacturing jobs at risk.
- Rising costs of U.S.-made tin cans will also make U.S. production of canned foods less competitive domestically and internationally, cutting U.S. output of canned foods while encouraging consumer substitution to imports. This will put U.S. food product manufacturers under pressure to reduce their workforce by nearly 37,000 workers.
- The job impacts will have an outsized negative impact on downstream manufacturing workers compared to tin mill products workers. In total, while an estimated 66 workers will ultimately benefit from the imposition of the AD and CVD duties, nearly 40,000 manufacturing jobs will be placed at risk by those same duties. In short, for every steel worker who gains from the duties, more than 600 other manufacturing jobs in downstream industries will be threatened. Indeed, one reason the steel industry benefits are so low is that the harm to downstream industries – its customers, directly and indirectly – is significant.

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Introduction

Cleveland Cliffs and the United Steelworkers union filed petitions January 18, 2023, with the Department of Commerce and the U.S. International Trade Commission (ITC) seeking new tariffs of between 13%-300% on imported tin mill products steel from eight countries (Canada, China, Germany, the Netherlands, Korea, Taiwan, Turkey, and the United Kingdom).¹ The company and union have asked that antidumping duties (AD) be imposed on imports of these products from all of the targeted countries, and that countervailing duties (CVD) as well be imposed on imports from China. Commerce and the ITC are moving forward with the investigation.

Tin mill products are used to make cans that package a range of consumer goods, from pet food to aerosol products. The targeted countries' producers are major suppliers of tin mill products to the U.S. can manufacturing industry, which in turn is a major supplier of cans to American food processing companies. U.S. can manufacturers believe that U.S. tin mill products producers do not have the capacity to offer the range of specialized tin mill products needed to meet their demand in the absence from the market of tin mill products imported from countries subject to the investigations.² As such, if the duties are imposed, can manufacturers will continue to need to purchase imported tin mill products at much higher costs. The uncertainty surrounding the potential to impose such high duties on imports of a raw material so basic to products purchased every day by American families has already begun to roil manufacturers of consumer products and cans.

Final determinations in the investigations are expected by early 2024. However, if the duties are ultimately imposed on tin mill products imports, American can manufacturers will be liable to begin paying them, as early as July 2023.³ The uncertainty hanging over the market will therefore persist for at least a year. Over time, while U.S. tin mill products production will expand somewhat, subject imports will continue to enter the market at costs made much higher by the duties. The downstream impacts will be felt in different ways. U.S. manufacturing of cans and processed foods will decline as can and processed food imports increase and some

¹ Tin mill products include sheet steel coated with tin, or costed with chromium or chromium oxides ("tin-free steel").

² See U.S. International Trade Commission, *Tin Mill Products from Canada, China, Germany, Netherlands, South Korea, Taiwan, Turkey, and the United Kingdom*, Inv. Nos. 701-TA-685 and 731-TA-1599-1606 (Preliminary), Pub No 5413, March 2023, https://www.usitc.gov/publications/701_731/pub5413.pdf.

³ The process by which AD and CVD duties are first imposed as posted bonds (technically contingent liabilities) with the final rate determined and assessed at a much later date, adds to the uncertainty of estimating potential costs of these duties to U.S. downstream manufacturers.

U.S. production moves offshore. The economic costs of the duties to U.S. workers in downstream industries will start to be felt.

Very briefly, we find that the imposition of the duties on tin mill products imported from the subject countries will have a very small positive impact on American steel workers, but a significant negative impact on downstream American manufacturers and their workers. The costs to consuming industries and workers far outweigh any potential benefits to tin mill products manufacturers.

Approach of Our Analysis

Trade Partnership Worldwide LLC has estimated the likely impacts of the antidumping duties⁴ sought by petitioners in the medium term on the broader U.S. tin mill products market (including downstream industries). The downstream industries are the U.S. can manufacturing sector and the U.S. food processing sector.⁵ **Because we have not included the impacts of tin mill products AD and CVD duties on non-food U.S.-made products packaged in tin containers, our results understate the potential impacts of the duties on American manufacturers and their employees.**⁶

We looked at the potential medium term (3-5 years after duty imposition) impacts, after downstream producers and the market generally have had a chance to adjust to the higher costs of the subject imports. Our base year is 2021: in other words, what would the U.S. supply chain have looked like in 2021 had the duties been in effect in that year for three to five years.

We followed the same basic method of analysis employed by the ITC in many of its “economic effects” studies, most recently its assessment of the economic effects of the steel and aluminum Section 232 tariffs and the Section 301 tariffs applied to imports from China.⁷ Very briefly, the model has one primary Industry – tin mill products -- and two downstream industries – tin cans and processed foods. Domestic production of tin mill products, along with

⁴ The duties ultimately imposed may be higher or lower than the alleged duties in the petitions, depending on the outcomes of the Commerce Department investigations. No specific countervailing duty margin was alleged in the petition filed against imports from China, so we did not add that potential rate into the analysis. **As such, our results understate the potential effects of the duties as they pertain to imports from China.**

⁵ Data are not available for U.S. shipments, exports and imports, as well as foreign exports and imports of non-food products sold in cans (e.g., aerosols, paint cans, decorative cans, etc.). Therefore we could not include these products in the modeling exercise and **our results understate the potential effects of the duties.**

⁶ The Can Manufacturers Institute estimates that 83% of the cans (by volume) made in the United States are for food products; 17% are for aerosols and decorative cans.

⁷ See U.S. International Trade Commission, *Economic Impact of Section 232 and 301 Tariffs on U.S. Industries*, Pub. No. 5405, Inv. No. 332-591, March 2023, <https://www.usitc.gov/publications/332/pub5405.pdf>.

imports, flows to the U.S. can industry, which consumes tin mill products. The tin mill products and downstream industries are linked, so a change in costs in the tin mill products industry, such as the imposition of AD and CVD duties, will affect the downstream industries as an increase in the cost of production. U.S. can producers use a combination of U.S. tin mill products and imported tin mill products. Imported tin mill products are disaggregated into those products that might be subject to the AD/CVD duties and those that would not be. Similarly, U.S. food producers use a combination of U.S.-made cans and imported cans, and U.S. retailers purchase U.S.-made canned food products and imported food products. Each downstream industry sees changes to domestic production, exports and imports as costs rise. The model captures each of these changes. The methodological approach and the inputs used are described in more detail in Appendix A.

The inputs into the model reflect the descriptions of the market for tin mill products in the ITC staff report issued March.⁸ **U.S. can manufacturers and U.S. food processors strongly disagree with many of the conclusions about the state of the market contained in that report.** They believe the ability of U.S. producers to increase supply of the volume and types of tin mill products required for manufacturing cans for food and other consumers goods is significantly lower than the staff report suggests, even in the medium term. They also disagree that the tin mill products produced by U.S. manufacturers is moderately substitutable for the subject imports. In their strongly expressed view, it is not substitutable at all.

Because we used parameters that reflect an ability for U.S producers to fill voids that will be left by the subject imports should the duties be imposed (again, an unrealistic assumption according to American can manufacturers), the estimates in this report are conservative regarding the potential impacts of duties on American downstream manufacturers. But because some members of the audience for this report include those who likely are persuaded that U.S. steel producers are capable of producing the tin mill products required for American downstream industries, we have used the ITC assessment of the market in order to demonstrate that even in that optimistic scenario, the negative impacts would be large and fall heavily on downstream manufacturers and their workers.

Results

After a period of three to five years, U.S. steel, can and food and consumer goods manufacturers will have had time to make some adjustments to their supply chains to reflect the higher costs and reduced volume of subject imports.

- **Tin mill products Industry Impacts.** U.S. tin mill products producers' output is just 1.3% higher than it otherwise would be in the absence of the duties. This small increase

⁸ See U.S. International Trade Commission, *Tin Mill Products from Canada, China, Germany, Netherlands, South Korea, Taiwan, Turkey, and the United Kingdom*, *op. cit.*

reflects in part the fact that U.S. producers are unable to meet demand for much of the tin mill products needed by U.S. can manufacturers for many of the can products they supply to U.S. food and other product manufacturers.⁹ But more significantly, it reflects the fact that the higher costs for tin mill products (both domestically-produced and imported), passed down through the supply chain, reduce overall demand for tin mill products to make cans in the United States, as detailed below. Overall, the U.S. market for tin mill products declines by 23.7%. Given the small increase in U.S. output (1.3% of a much smaller market), employment of workers making tin mill products in the United States expands by just 2%, or 66 workers (of which 60 are estimated to be members of unions).¹⁰ To reiterate, an important reason the steel industry benefits are so low is that the harm to downstream industries - its customers, directly and indirectly - is significant, dampening potential gains in sales volumes (rather than just market share).

- Tin Can Manufacturing Industry Impacts.** The higher U.S. and imported tin mill products costs ripple down to U.S. can manufacturers who are forced to raise the prices of U.S.-made tin cans. This causes a decline in U.S. tin can production of 19.2% and with it demand for U.S.-made tin mill products. The decline results from several responses to the higher tin mill products costs: (1) some U.S. can manufacturers may be forced to move some production offshore where they are able to continue to use the subject imports to make tin cans, absent the duties, and then export the finished cans back to the United States; (2) exports of U.S.-made tin cans decline as their higher costs make them less competitive in foreign markets so export demand also drops; (3) in response to the higher cost of U.S.-made tin cans, downstream demand from food product manufacturers falls as a result both of an increase in the use of imported tin cans and a shift to greater sourcing of imported canned food products (see below). Reduced domestic tin can production puts pressure on manufacturers to reduce U.S. can manufacturing jobs by 29%, or 2,790 workers (of which 220 are estimated to be members of unions).

⁹ See for example testimony February 8, 2023, before the U.S. International Trade Commission, Inv. Nos. 701-TA-685 and 731-TA-1599-1606 (Preliminary), of Dan Dietrich, Vice President, Procurement, Supply Chain, Trivium Packaging USA, Inc.; Thomas Hughes, Director of Metals Sourcing, Crown Cork Seal, USA, Inc.; Rich Brolly, Executive Vice President, DS Containers; Richard Huether, President and Chief Executive Officer, Independent Can Company; Mike Arena, Vice President for Logistics and Operational Support, Silgan Containers Manufacturing Company; and Ernest Haynes, President, Sonoco Metal Packaging, LLC.

¹⁰ Employment data for tin mill products manufacturers for 2021 are not publicly reported in the March 2023 ITC staff report. However, data for tin mill products production workers were reported for 2017 (first three quarter) in the ITC's review of tin mill products antidumping duties imposed on imports from Japan. See U.S. International Trade Commission, Tin- and Chromium-Coated Steel Sheet from Japan, Inv. No. 731-TA-860 (Third Review), Pub No 4795, June 2081, Table III-8, p. III-12, https://www.usitc.gov/publications/701_731/pub4795.pdf. We annualized the estimate for 2017 production workers only (to 3,300) and estimated the number of total tin mill products in workers (production works plus nonproduction workers) of 3,300 for 2021. The union rate for steel mill workers is 24.2% (see Barry T. Hirsch and David MacPherson, "Union Membership, Coverage, and Earnings form the CPS," data for 2021 by industry, <https://unionstats.com/>) but to be generous we assumed that the 90% of the benefiting workers were members of unions.

- Canned Food Manufacturing Industry Impacts.** Similarly, U.S. producers of canned food products are confronted with higher costs for U.S.-made tin cans, as not all are able to fully substitute imported cans for U.S.-produced cans. They will need to raise prices to their customers (retailers, wholesalers, other food distributors) of food products packaged in tin cans, which exposes them to greater competition from lower-cost imported canned food products. Like can manufacturers, food products manufacturers lose competitiveness not only in the U.S. market but in export markets as well. Some may be forced to move some production offshore to take advantage of lower costs abroad (reducing demand for U.S.-made tin cans using U.S.-made tin mill products). Overall, domestic output of food products packaged in tin cans declines by 17.6%. Taken together, all of these changes put U.S. food product manufacturers under pressure to cut jobs by 27%, or 36,990 workers (6,103 of which are estimated to be members of unions).

The job impacts have an outsized negative impact on downstream manufacturing workers compared to tin mill products workers. In total, while 66 workers would benefit from the imposition of the AD and CVD duties, nearly 40,000 jobs (39,780) are put at risk by those duties. In short, for every steel worker who gains from the duties, more than 600 (603) other manufacturing workers in downstream industries will lose. In terms of union jobs in manufacturing, 60 are supported but over 6,300 (6323) downstream union manufacturing jobs are at risk – more than 100 to one. Ironically, the proposed duties sought by a union co-competitor presumably in an effort to protect or expand union jobs will have the opposite impact when all the impacts of the duties are considered.

Conclusion

A substantial body of economic literature supports the conclusion that import protection has net negative impacts on downstream industries.¹¹ Those negative impacts reduce demand for the product that started the chain reaction: in this case, U.S. tin mill products. The downstream costs multiply such that in the aggregate they vastly exceed any benefit to the protected industry.

¹¹ See for example: Feinberg, R. M., & Kaplan, S. (1993). Fishing downstream: The political economy of effective administered protection. *Canadian Journal of Economics*, 150-158; Blonigen, B. A. (2016). Industrial policy and downstream export performance. *The Economic Journal*, 126(595), 1635-1659; Hoekman, B. M., & Leidy, M. P. (1992). Cascading contingent protection. *European Economic Review*, 36(4), 883-892; Erbahar, A., & Zi, Y. (2017). Cascading trade protection: Evidence from the US. *Journal of International Economics*, 108, 274-299; Liebman, B. H., & Tomlin, K. M. (2007). Steel safeguards and the welfare of US steel firms and downstream consumers of steel: a shareholder wealth perspective. *Canadian Journal of Economics*, 40(3), 812-842; and Andersen, M. T., & Feinberg, R. M. (2018). Fishing downstream revisited: a multi-country analysis of antidumping patterns. *Global Economy Journal*, 18(2), 20170096.

The proposed tin mill products AD and CVD duties provide yet one more example of unintended negative consequences inherent in ignoring the full supply chain when focusing solely on the U.S. manufacturing industry seeking protection from imports.

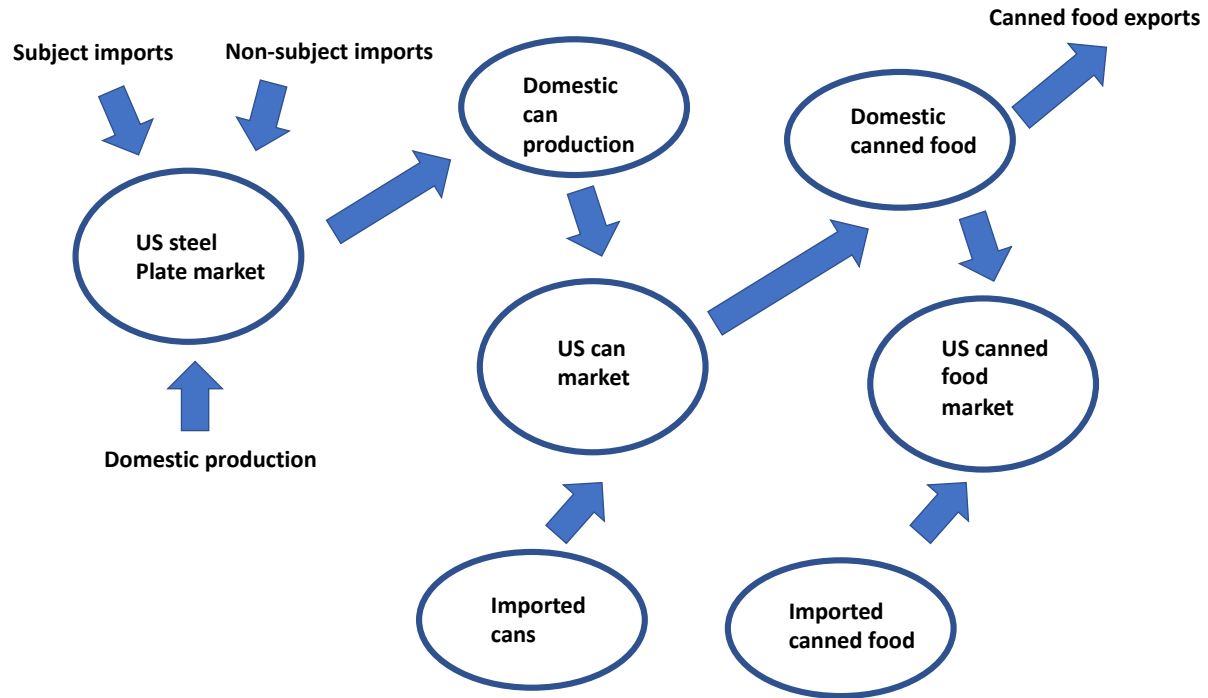
Appendix A

Methodology

We work with a set of partial equilibrium models of production and trade. These are multi-country Armington models (Francois and Hall 2009, Bacchetta et al 2012), in the same family used by the U.S. International Trade Commission (ITC) in its own assessments of duties on plated steel. In the present context, this involves separate but linked models for steel plate, plated steel cans, and canned food. The first of these markets is the market facing antidumping duties. The others are important downstream sectors. Plated steel is the primary input to produce plated steel cans (i.e., tin cans). Tin cans in turn are a major cost component for canned food products.

The basic mathematical structure of the model for each sector follows the “Global Simulation” (GSIM) model (Francois and Hall 2009). A key difference is that we model downstream markets as explicitly linked to the upstream price impact of antidumping duties. This follows the approach of the ITC in examining the downstream impact of Section 232 steel duties and Section 301 tariffs on certain imports from China.

The flow of goods, from steel plate to cans to canned food, is summarized in the figure below. At each stage (in each market) U.S. production competes with imports, and in the first two stages feeds both imports and domestic production further downstream. In the market for processed food, U.S. production competes with foreign production both in the domestic market and in export markets. Both of these are channels by which tin plate duties erode the international competitiveness of the U.S. processed food industry.



Data

Trade and production data

Trade and production data are for 2021, and are used to benchmark (i.e., calibrate) the model. These data come from several sources. Canned food data are based on the annual series of the Annual Survey of Manufactures, U.S. Department of Commerce, Bureau of the Census. These are supplemented by analytical tables available from USDA-ERS and have in turn been cross-checked against (private survey) industry data on production. Global trade data (i.e., third country trade) are derived from the UN-COMTRADE database and are combined with industry data on plated steel and can production from private industry sources, including the Can Manufacturers Institute (CMI) and the World Steel Association (subscription database). Cost shares for plated steel in can production (65%) and the average cost share of the can in canned food production (41%) are from industry surveys. Similar shares are reported by industry press (see Treadway 2021).

Elasticities

The model relies on a set of parameters which characterizes key elements of the market. We use the range of parameters for steel plate identified by the ITC in its preliminary report on the current set of proposed duties. This includes substitution elasticities, supply, and overall demand elasticities. For downstream sectors, we work with elasticities identified in the literature (Fontagné et al 2020, da Silva Marioni et al 2022) and confirmed by industry sources.

The specification of the model assumes that cost/price parameters linked to taxes and markups are multiplicative and those rates remain unchanged in the simulations. The modelling is at the ex-factory and c.i.f. level (in terms of prices). Constant markups mean that new costs (from new trade taxes) are marked up and passed through to the next stage of demand at the same rate as current costs for goods produced and sold.

Employment

Employment data were estimated for the tin mill products sector from U.S. International Trade Commission, Tin- and Chromium-Coated Steel Sheet from Japan, Inv. No. 731-TA-860 (Third Review), Pub No 4795, June 2081, Table III-8, p. III-12, https://www.usitc.gov/publications/701_731/pub4795.pdf. Data for tin can manufacturing employment are for 2021 and from the Can Manufacturers Institute. Food product manufacturing employment are from the Census Bureau, 2019 County Business Patterns (release date 2/11/22), the most recent data available. Industry union rates were pulled from Barry T. Hirsch and David MacPherson, "Union Membership, Coverage, and Earnings from the CPS," data for 2021 by industry, <https://unionstats.com/>.

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