Policy brief N°18 - April 2025

CHAIR CMA CGM PSE TANGRAM Globalization

Unintended Consequences of Trade Policies, Paris Trade Seminar - March 4, 2025

By **Hannes Tepper** (PSE)

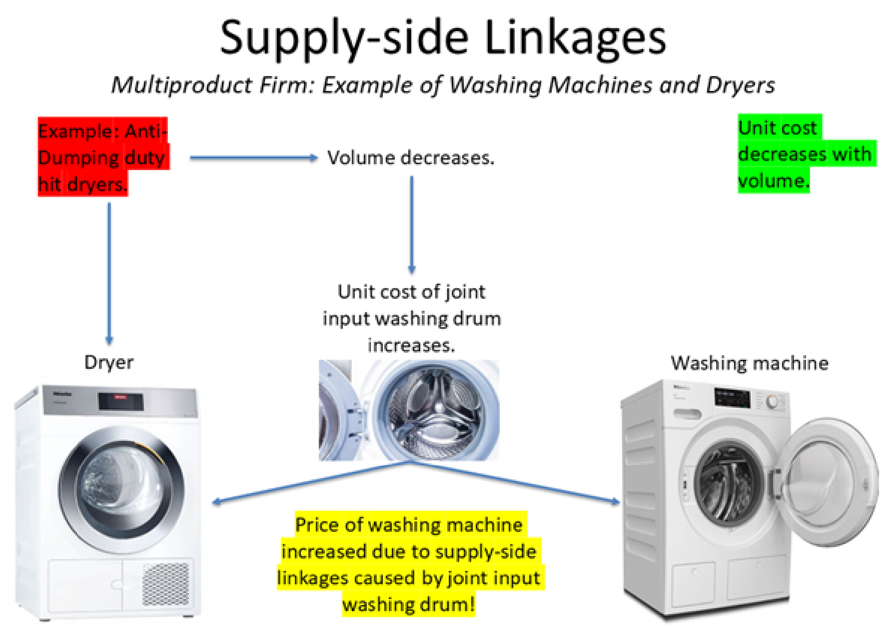
The Paris Trade Seminar held on March 4, 2025 at the Paris School of Economics featured Professor Lisandra Flach, Director of the ifo Center for International Economics, presenting research on "Demand and Supply Side Linkages in Exporting Multiproduct Firms." This collaborative study with Carsten Eckel and Ning Meng investigates how multiproduct firms—which dominate international trade—strategically respond to antidumping duties through their internal product linkages. The results reveal that firms make complex portfolio adjustments when faced with trade restrictions, often undermining the intended protective effects of these policies. Trade policymakers should consider these interconnected dynamics when designing and implementing protective measures to avoid unintended consequences in global markets.

The Critical Role of Linkages in Multiproduct Firms' Strategy

The dominance of multiproduct firms in international trade has increased significantly in recent decades (Irlacher, 2024). These firms, which produce portfolios of at least two interconnected products, exhibit linkages on both the supply and demand sides. When governments implement trade policies such as antidumping (AD) duties to protect domestic industries from unfair competition, these complex interdependencies can lead to unintended market shifts.

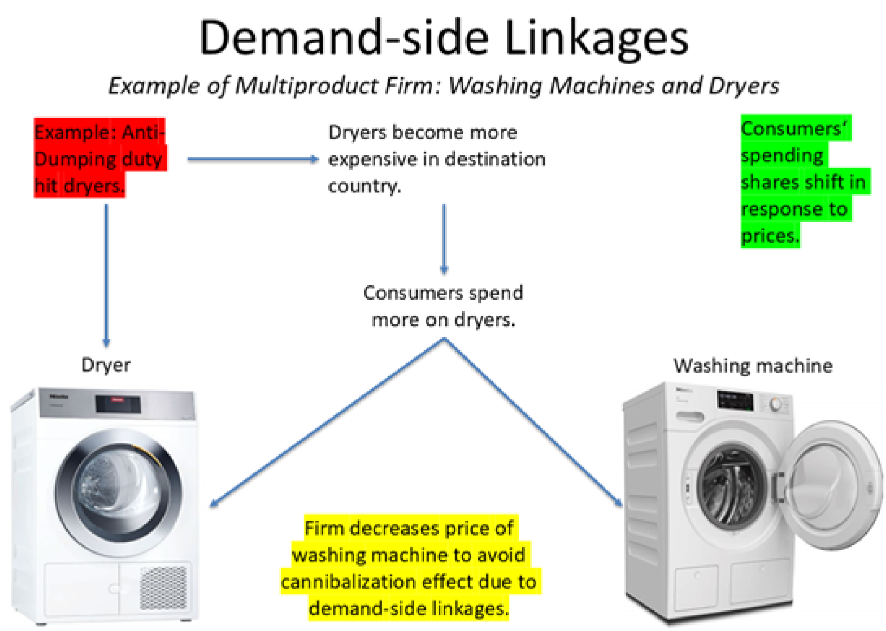
Supply-side linkages emerge when multiproduct firms use the same inputs across different goods, creating interdependencies in the marginal costs of various products within a firm's portfolio. For example, Figure 1 illustrated how a manufacturer that produces both washing machines and dryers might use washing drums as a common component. When antidumping duties lead to decreased production of one product (e.g., washing machines), the resulting reduction in shared component production (washing drums) increases the unit cost of those components due to lost economies of scale. This subsequently raises production costs for other products using the same components (dryers), creating ripple effects across the firm's entire product line.

Figure 1: **Illustration of supply linkages for a multiproduct firm**



On the demand side, consumer spending on one product from a multiproduct firm can be influenced by the prices of the firm's other products through what economists call "cannibalization effects. Figure 2 uses the same washing machine and dryer example and illustrates that if a company raises the price of washing machines—whether by choice or due to antidumping duties—dryer sales may decline as consumers have less disposable income available for additional purchases. These cannibalization effects tend to be more significant for firms with substantial market power, as they can meaningfully influence consumer spending patterns through pricing decisions.

Figure 2: **Illustration of demand linkages for a multiproduct firm**



A Novel Approach to Understanding Multiproduct Firms' Trade Responses

Understanding how multiproduct firms respond to trade policies remains an understudied area, particularly given the complex interplay of supply and demand linkages across product portfolios. Traditional research in this field faces significant empirical challenges—challenges that Professor Flach's innovative approach effectively addresses. To address these challenges, Professor Flach and her co-authors combined firm-product-level customs data covering the universe of Chinese exporters with comprehensive data on all antidumping measures imposed against Chinese firms between 2000 and 2015.

Analyzing how multiproduct firms respond to trade shocks presents two fundamental methodological challenges. First, researchers often struggle to clearly identify which firm–product–market combinations are directly affected by trade policies and which remain unaffected. Second, without precise targeting, studies risk drawing comparisons between fundamentally different scenarios—essentially comparing "apples to oranges"—which can lead to unreliable or misleading conclusions.

This research addresses these challenges directly by focusing on antidumping duties, which offer the precise targeting necessary for rigorous analysis. These duties are uniquely product-specific, firm-specific, year-specific, and country-specific, enabling the construction of clearly defined treatment and control groups. From an econometric perspective, these multiple sources of variation allow the researchers to control for various confounding factors through the use of fixed effects at multiple levels.

Antidumping Duties & Firm-Level Linkages

Antidumping measures are among the most widely used trade policy instruments today (Blonigen & Prusa, 2016). Governments impose these duties to protect domestic industries from foreign competitors that engage in unfair pricing practices—typically when firms sell products below production costs or at lower prices in export markets than in their home markets.

The research team strategically selected Chinese firms subject to antidumping duties as a case study. This approach creates a natural experiment, enabling the researchers to isolate and measure the influence of supply and demand linkages on firms' responses to targeted trade shocks across their product portfolios.

The researchers identify supply and demand linkages by analyzing how antidumping (AD) duties impact a firm's non-targeted products. Their methodology relies on regression analysis using two key indicator variables: one that identifies firms subject to AD duties in a specific destination country, and another that captures exports to unaffected destinations by firms facing AD duties elsewhere. Within their theoretical framework, a significant positive coefficient on the first indicator signals demand linkages, as non-targeted products exported to the same country would be expected to remain unaffected in the absence of such connections. In contrast to demand-side linkages, supply linkages span across markets. Thus, the second indicator is used to isolate these broader supply-side effects, offering a comprehensive view of how multiproduct firms adjust their entire product portfolios in response to targeted trade restrictions.

Key Findings: Trade Policy Impacts Through Supply and Demand Linkages

The research on Chinese firms facing antidumping duties reveals several important insights into multiproduct firm behavior—insights that are likely applicable to other trade policy contexts as well:

↗ *Strategic Portfolio Adjustments*

When antidumping duties target specific products, multiproduct firms strategically reallocate their export activities rather than reduce their overall export volumes. These firms typically increase exports of their non-targeted products to the same markets, thereby mitigating the intended impact of trade restrictions. Demand-side linkages are quantitatively more influential than supply-side connections in driving these adjustments. The analysis quantifies this effect, showing that antidumping duties on a single product lead, on average across all countries, to a 4% increase in the value of unaffected product exports from the same firm, holding all other factors constant.

↗ *Price and Market Power Effects*

Trade restrictions prompt sophisticated pricing adjustments across firms' product portfolios. While targeted products often experience price increases due to duties, firms may strategically lower prices for their non-targeted products to sustain overall demand. This behavior is consistent with the theoretical framework, which suggests that profit-maximizing firms anticipate shifts in consumer spending and adjust the pricing of non-targeted products to sustain overall demand. Empirical evidence supports this prediction: multiproduct firms systematically reduce prices on unaffected products in response to AD duties, generating complex ripple effects in consumer markets and potentially altering competitive dynamics.

↗ *Trade Deflection*

Trade deflection refers to the circumvention of trade barriers through alternative channels. It occurs through two primary strategies: First, firms may make slight product modifications to reclassify goods under duty-free product codes; second, they may reroute exports through third countries, often combining both tactics by conducting final assembly operations in intermediary locations. Vietnam's role during the U.S.–China trade war provides a well-documented example of this diversion pattern. While countries can challenge such strategies through WTO anti-circumvention investigations (107 such cases filed against China between 2000 and 2015), such phenomena, if not properly accounted for, can undermine the credibility of empirical findings. The study shows that the core findings on supply and demand linkages remain robust even after excluding clear instances of trade diversion and deflection.

Implications for Market Dynamics and Trade Policy

This research demonstrates that both supply and demand linkages critically shape how multiproduct firms respond to trade disruptions. On the supply side, firms adjust the prices of non-targeted products in response to changes in marginal costs resulting from antidumping duties. On the demand side, firms lower prices on unaffected products in anticipation of shifts in consumer spending behavior. For stakeholders across the international trade ecosystem, proactively anticipating shifts in export flows triggered by trade interventions is essential to maintain equilibrium in shipping capacity and avoid costly disruptions.

For policymakers, these findings highlight the need for more sophisticated trade policy approaches that balance protective goals with broader economic efficiency. Effective policy must move beyond treating products in isolation and instead account for the interdependencies within firms' product portfolios. Policymakers should implement targeted monitoring systems to track potential trade deflection and diversion when imposing antidumping duties.

Developing more nuanced policy tools that can address unfair trade practices while minimizing unintended consequences would be beneficial. Enhanced international coordination with trade partners can help address circumvention strategies that undermine policy effectiveness.

References

Blonigen B. A. & Prusa T. J., 2016, Chapter 3—Dumping and Antidumping Duties, in K. Bagwell & R. W. Staiger (Hrsg.), *Handbook of Commercial Policy* (Bd. 1, S. 107–159), North-Holland.

Eckel C., Flach L. & Meng, N., 2023, *Demand and Supply Side Linkages in Exporting Multiproduct Firms*, Working Paper 456, Discussion Paper.

Irlacher M., 2024, Multiproduct Firms in International Trade, in M. Irlacher, *Oxford Research Encyclopedia of Economics and Finance*, *Oxford University Press*.

Mayr-Dorn K., Narciso G., Dang D. A. & Phan, H., 2023, *Trade diversion and labor market adjustment: Vietnam and the U.S.-China trade war*, Trinity Economics Papers, Article tep0923.

Hannes Tepper is a PhD student at PSE. His research focuses on economy-wide country studies, structural change, inequality, and development.