

How Will the 2025 Tariffs Affect the US Economy?

Three Lessons from the 2018-2019 Tariffs

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¹Federal Reserve Board

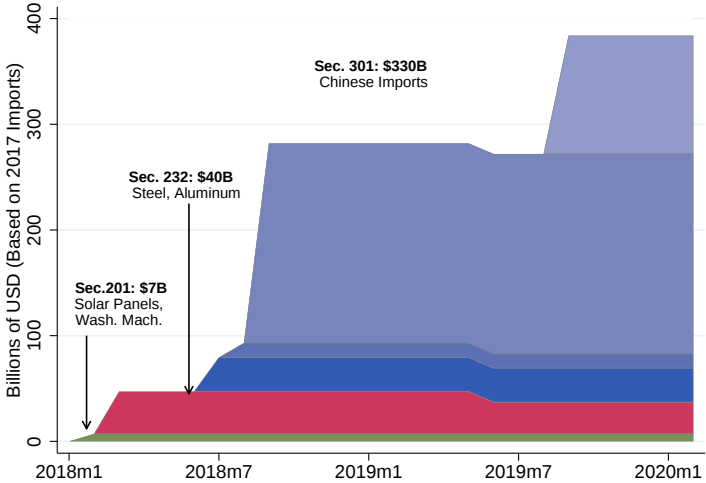
November 20, 2025

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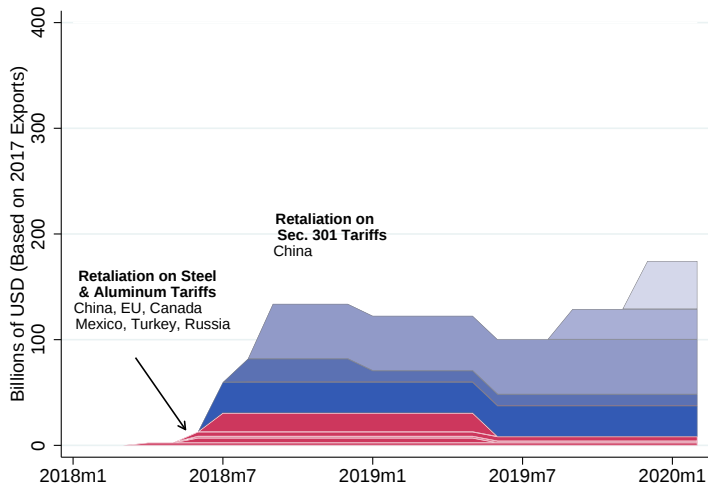
What Did We Learn from 2018-2019 Tariffs?

- Tariffs occupy the center of the U.S. economic policy debate unlike anything we've seen in nearly a century
- Yet, limited prior episodes of large advanced economy raising tariffs to the extent we've seen this year,
- Hence, experience of 2018-2019 tariffs targeting China offers useful lessons for what to look for in 2025 tariffs
- Research highlights following three lessons:
 1. Tariffs may help or hurt U.S. manufacturing Flaaen and Pierce (2024)
 2. Impacts of tariffs on inflation may be partially hidden Flaaen, Hortasçu, Tintelnot (2020)
 3. Methods for avoiding tariffs are hard to anticipate Flaaen et al (2025)

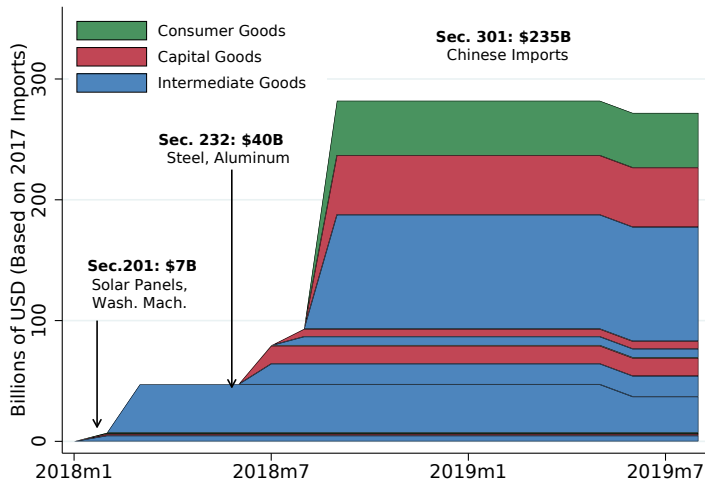
Background: Timeline of 2018-2019 Tariffs



Background: Timeline of New Tariffs



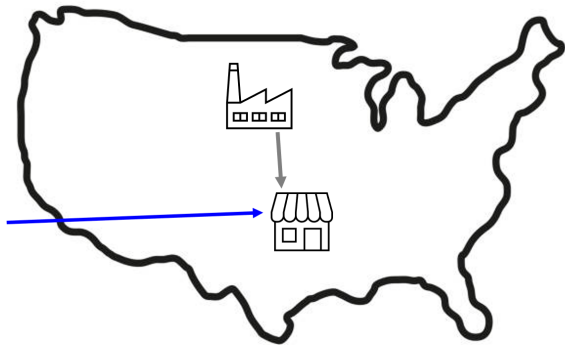
Background: Timeline of 2018-2019 Tariffs



Lesson #1: Three Channels for Tariff Impact on Manufacturing

Import Protection

- Tariffs on output (final goods)
- Raises employment, raises prices



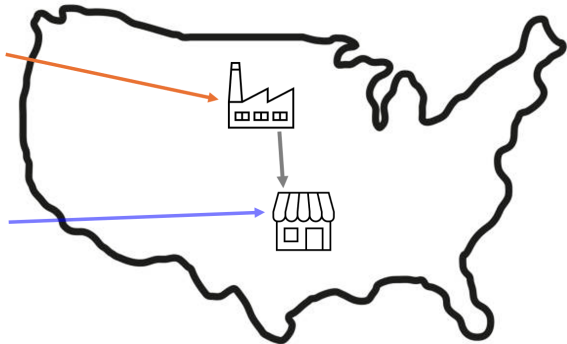
Lesson #1: Three Channels for Tariff Impact on Manufacturing

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Rising Input Costs

- Tariffs on inputs
- Lowers employment, raises prices



Lesson #1: Three Channels for Tariff Impact on Manufacturing

Import Protection

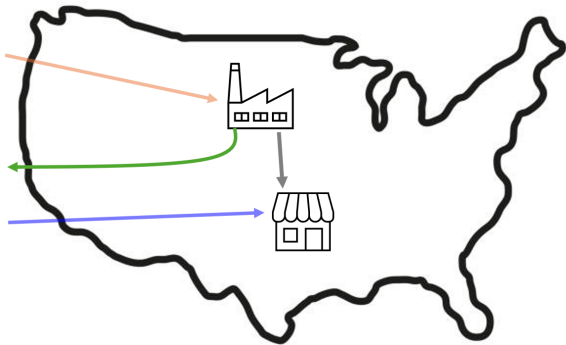
- Tariffs on output (final goods)
- Raises employment, raises prices

Rising Input Costs

- Tariffs on inputs
- Lowers employment, raises prices

Foreign Retaliation

- Foreign tariffs on U.S. output
- Lowers employment, lowers (export) prices



Three Channels of Tariff Exposure

We construct **industry-level** measures of each of these channels using data on trade flows, input-output tables, and tariff rates

Import Protection

[▶ Details](#)

- What fraction of industry consumption comes from foreign sources now subject to new tariffs?

Rising Input Costs

[▶ Details](#)

- What fraction of an industry's costs come from foreign sources now subject to new tariffs?

Foreign Retaliation

[▶ Details](#)

- What fraction of U.S. industry output is sold abroad and hit with retaliatory tariffs?

Import Protection: Through September 2018

Rank	NAICS	Industry Description	New Tariff Import Share of Absorption
1	331313	Primary Aluminum Production	67%
2	3351	Electric Lighting Equipment	30%
3	3371	Furniture & Kitchen Cabinet	24%
4	3344	Semiconductor and Electronic Component	21%
5	3311	Iron and Steel Mills and Ferroalloy Mfg	21%
6	33131B	Aluminum Sheet/Plate/Foil and Rolling/Drawing/Extruding	19%
7	3352	Household Appliance Manufacturing	18%
8	3359	Other Electrical Equipment & Component	16%
9	3160	Leather and Allied Product	15%
10	3332	Industrial Machinery	14%

Rising Input Costs: Through September 2018

				New Tariff Share of Costs
Rank	NAICS	Industry Description		
1	33131B	Aluminum	Sheet/Plate/Foil & Rolling/Drawing/Extruding	17.6
2	3312	Steel Product Mfg from Purchased Steel		8.4
3	3324	Boiler, Tank, and Shipping Container		8.3
4	3321	Forging and Stamping		7.4
5	331313	Primary Aluminum Production		7.2
6	331314	Secondary Smelting and Alloying of Aluminum		7.1
7	3323	Architectural and Structural Metals		5.3
8	3369	Other Transportation Equipment		5.0
9	3339	Other General Purpose Machinery		4.5
10	3352	Household Appliance Manufacturing		4.4

Foreign Retaliation: Through September 2018

Rank	NAICS	Industry Description	New Tariff Export Share of Output
1	3346	Manufacturing and Reproducing Magnetic & Optical Media	8.6%
2	3160	Leather and Allied Product	7.7%
3	33131B	Aluminum Sheet/Plate/Foil & Rolling/Drawing	7.7%
4	3311	Iron and Steel Mills and Ferroalloy Mfg	6.9%
5	3361	Motor Vehicle Manufacturing	4.9%
6	3352	Household Appliance Manufacturing	4.7%
7	3211	Sawmills and Wood Preservation	4.5%
8	3343	Audio and Video Equipment	4.3%
9	3253	Pesticide, Fertilizer, and Agricultural Chemical	4.1%
10	3341	Computer and Peripheral Equipment	3.9%

Estimating Equation

We estimate:

$$\begin{aligned}y_{it} = & \alpha + \sum_t \gamma_t \mathbf{1}(M_t = t)(\text{Import Protection}_i) \dots \\& + \sum_t \theta_t \mathbf{1}(M_t = t)(\text{Input Cost}_i) \dots \\& + \sum_t \lambda_t \mathbf{1}(M_t = t)(\text{Foreign Retaliation}_i) \dots \\& + \sum_t \omega_t \mathbf{1}(M_t = t)(\text{Import Share}_i) \dots \\& + \sum_t \varphi_t \mathbf{1}(M_t = t)(\text{Export Share}_i) + \delta_i + \delta_t + \varepsilon_{it}\end{aligned}$$

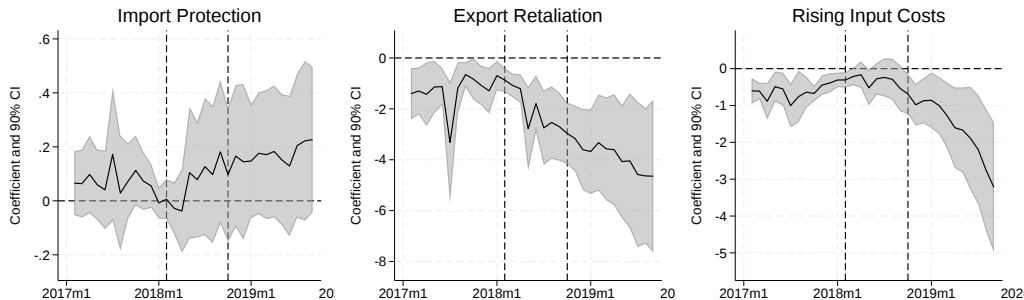
where:

$$y_{it} = \{\text{Employment, Industrial Production, Producer Prices}\}$$

after detrending [► Details](#)

Results: Employment: Detrended

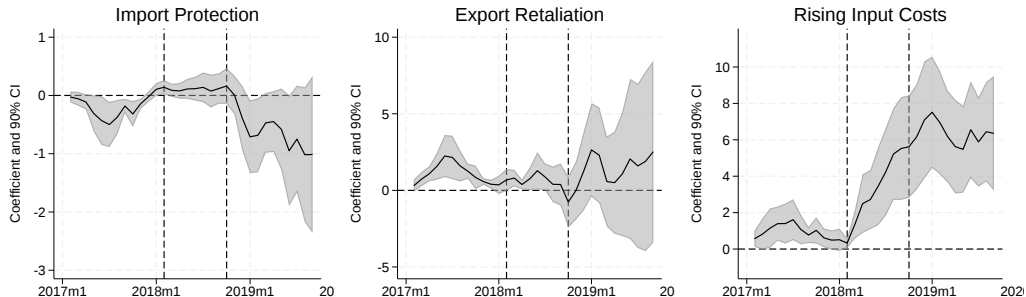
Coefficients on Mfg Employment



- Imprecise positive impact from import protection
- Significant negative impacts from export retaliation and (with delay) rising input costs

Results: Producer Prices: Detrended

Coefficients on Mfg Producer Prices



- Large and immediate impact on prices from rising input cost channel

Main Takeaway from Lesson #1

- Tariffs do not automatically support U.S. manufacturing activity. On net, 2018-2019 tariffs hurt U.S. manufacturing
- U.S. manufacturing is highly integrated in global supply chains
- Hence, the **composition of products affected by tariffs** will determine impact to manufacturing

Quantifying Impact on Employment

Channel	Implied Effects
Import Protection	+0.3%
Foreign Retaliation	-1.0%
Rising Input Costs	-1.8%
Total	-2.6 % ($\approx$ 320K jobs)

Lesson #2: Impacts on Inflation may be Partially Hidden

Feb. 2018 Tariffs on washing machines

- 25% tariffs on global imports
 - Compile individual item prices and track month-by-month before and after tariffs implemented
 - Identify change in price pre/post tariffs relative to other appliances
-
- Washing Machine prices up by less than amount of tariff
 - **Dryer prices also increase by similar margin!**



**Washing
Machines**

Dryers

	Washing Machines	Dryers
Foreign Brands	12.6%	11.8%
Domestic Brands	12.3%	14.9%

Main Takeaway from Lesson #2

- Firms decided to spread out cost of tariffs across both washers AND dryers
- Why? Firms sell matching pairs of washers/dryers at *identical* prices – and hence wanted to maintain parity

CURRENT ITEM

✓



\$998⁰⁰ Was \$1,199.00

★★★★★ (4.3 / 1485)

GE

2.4 cu. ft. Stackable

+

Matching Dryer ⓘ

✓ Select



\$998⁰⁰ Was \$1,249.00

★★★★★ (3.8 / 977)

GE

4.3 cu. ft. Vented Front

- **More generally:** economists seek to link tariffed products with abnormal price changes – yet retailers may spread out costs across wide range of products

Lesson #3: Methods for Avoiding Tariffs are Hard to Anticipate

Earlier Country-Specific Washing Machine Tariffs Led to Production Hopping

- 2012 Washer tariffs on Mexico/Korea: Firms switch production to China
- 2016 Washer tariffs on China: Firms switch production to Thailand/Vietnam

2019 Tariffs on European Wines

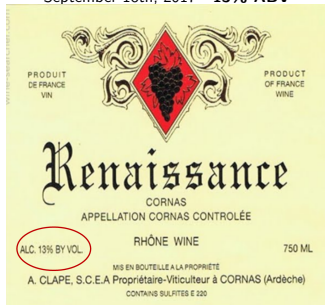
- Production hopping not possible for vineyards! Yet, ...
-tariffs only on wines with $\leq 14\%$ Alcohol by Volume (ABV)
- No tariffs on wines $>14\%$ ABV



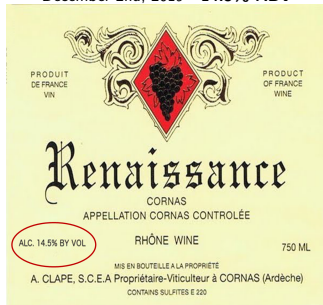
Tariff-Engineering: Modifying Product Characteristics

- Firms engaged in **tariff engineering**: modifying product attributes to avoid tariffs

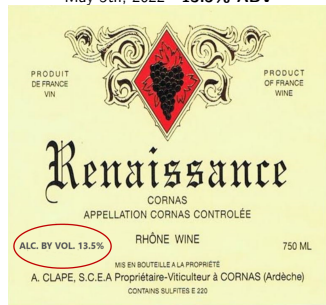
Panel A. Date of Label Application:
September 18th, 2017 - **13% ABV**



Panel B. Date of Label Application:
December 2nd, 2019 - **14.5% ABV**



Panel C. Date of Label Application:
May 5th, 2022 - **13.5% ABV**



Conclusion

Three lessons from 2018-2019 tariffs:

1. Tariffs may help or hurt U.S. manufacturing
2. Impacts of tariffs on inflation may be partially hidden
3. Methods for avoiding tariffs are hard to anticipate

What lessons might we learn from 2025?

- How to assess costs/benefits of secure/resilient supply chains?
- How to measure uncertainty impacts on firm decision-making?
- How do customer-supplier relationships change with wide range of tariff rates by source country?