



JONES COLLEGE OF BUSINESS
Business and Economic Research Center

MIDDLE TENNESSEE STATE UNIVERSITY

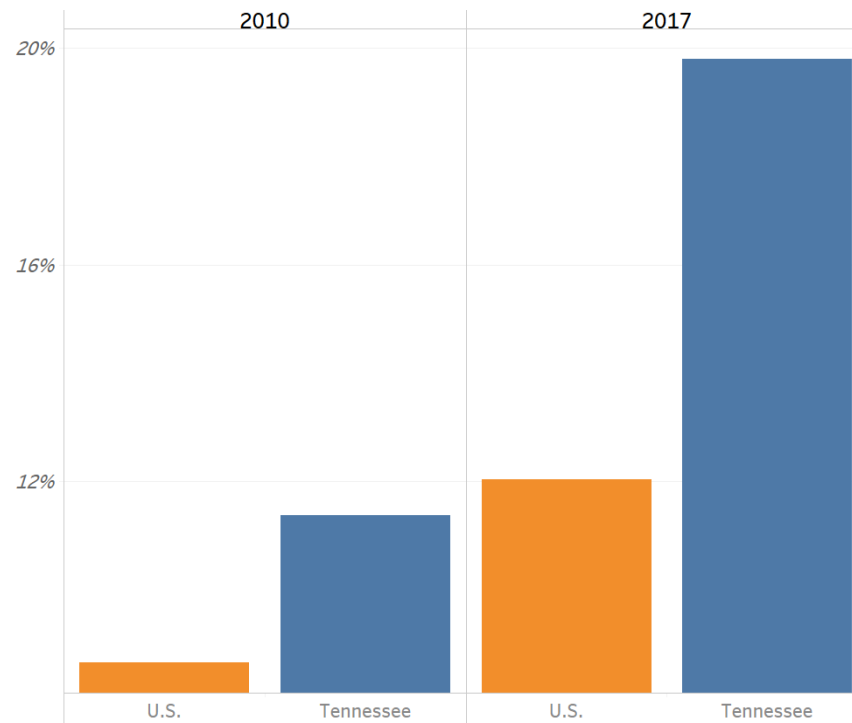
THE IMPACT OF TARIFFS ON REGIONAL ECONOMIES A CASE USING THE TENNESSEE AUTO INDUSTRY

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2019 AUBER Conference
Savannah Georgia

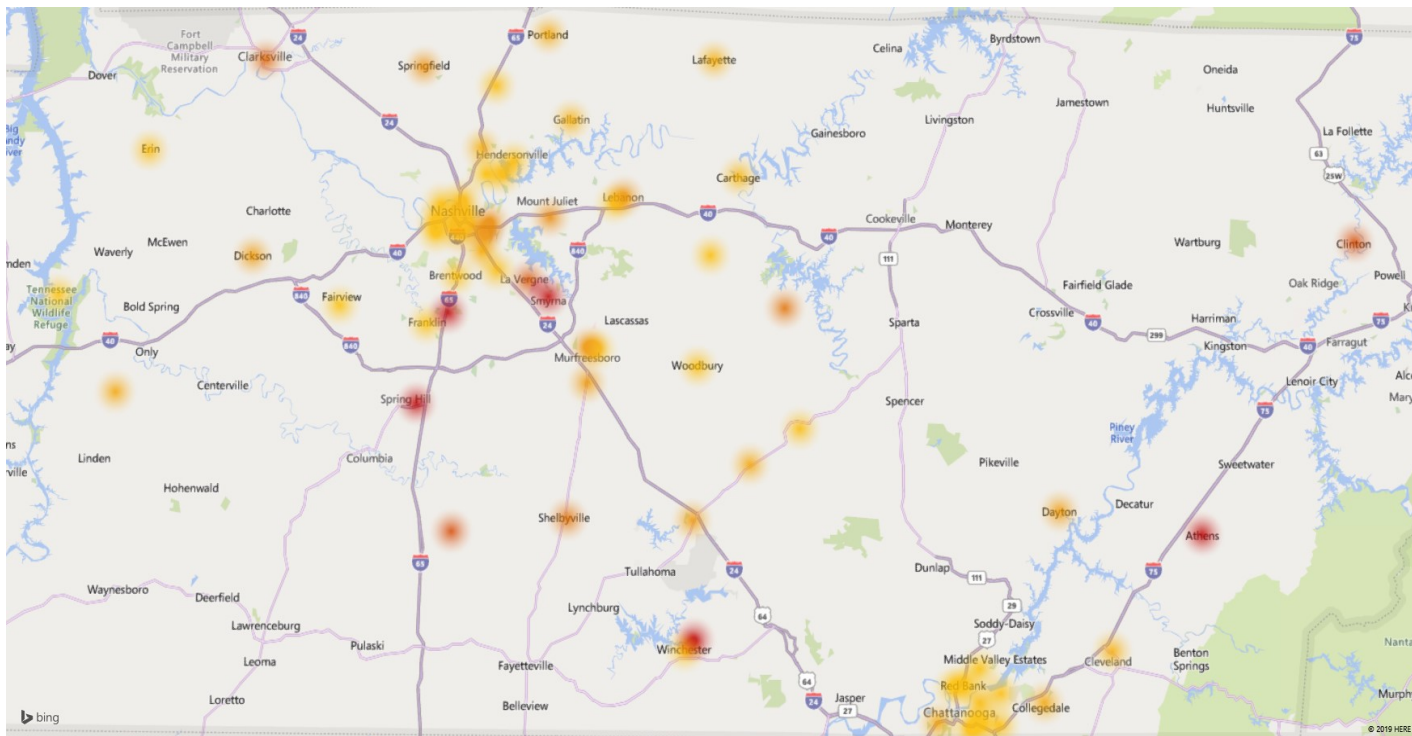


The Mid-State TN Auto Industry





Location



Steven Livingston



Obstacles to Analysis

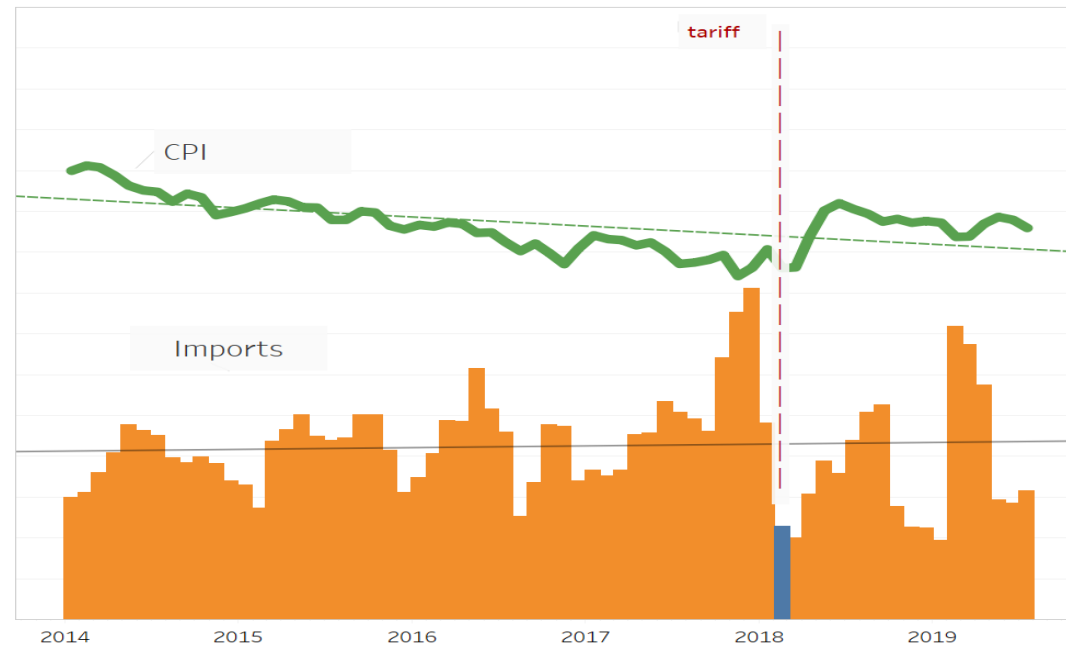
- Production/Trade Data
- Trade Elasticities
- New Prices (Pass Through)

There's nothing off the shelf!



What do we Know?

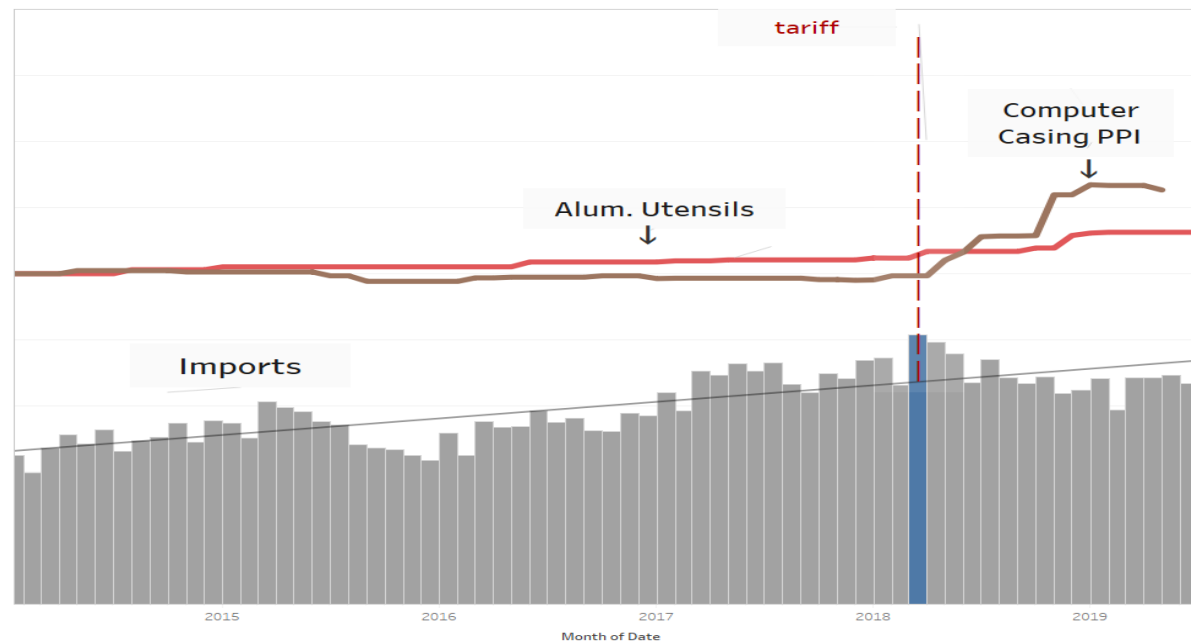
The Case of Washing Machines





What do we Know?

The Case of Aluminum





What do we Know?

Recent Estimations of Import Price Pass-Through

	Study	Year	Pass-Through
1	Amiti et al	2019	100 to 104%
2	Fajgelbaum et al	2019	100 to 109%
3	Flaaen et al	2019	“over” 100%
4	Ahn et al**	2016	90.4 to 105.7%

NB: Ahn et al results are for Western European countries. They find a lower pass-through for Korean imports.



Estimating Vehicle Costs Under Tariffs

Price Impact on Tennessee Autos with Tariffs and Full Pass Through

Company	Car	% NAFTA	Volume	MSRP	Japan 10%	EU 10%	“Worst Case” @ 25%
Nissan	Altima	60	219599	\$24,100	\$24,545	\$24,248	\$25,677
	Maxima	65	42561	\$34,050	\$34,679	\$34,234	\$36,082
	Leaf	35	23903	\$29,990	\$31,098	\$30,267	\$33,454
GM	Cadillac XT5	76	66232	\$41,695	\$42,177	\$41,888	\$43,381
	Cadillac XT6	77	30000*	\$52,695	\$53,304	\$53,304	\$54,825
	GMC Acadia	76	91485	\$29,000	\$29,335	\$29,134	\$34,583
Volkswagen	Atlas	71	77142	\$30,895	\$31,133	\$31,490	\$32,620
	Passat	61	46893	\$25,295	\$25,548	\$25,928	\$27,194

Assuming tariffs are imposed on all Japanese and European imported parts.

*2019 first year of production, figure is estimated future production

Production data from *MarkLines*, Foreign composition data from, National Highway Traffic Safety Administration. Part 583 American Automobile Labeling Act Reports.

Part price estimates from MEMA 2017.



But Will Jobs “Come Back?”

Unlikely in the short run:

1. “Related Party Trade” dominates
2. Suppliers and Auto Makers Jointly Design Model Specific products
3. Suppliers Typically have Long Term Contracts
4. Local Expansion of Supplier Capacity takes Time
5. Quality Issues
6. Some evidence that in the past firms have not responded this way (Bronigen 2002)



Estimating the Impact

Estimated Decline in Auto Production After Tariff

		EU 10%	EU 25%	Japan 10%	Japan 25%	Both 10%	Both 25%
Short Run	%	1.43%	3.58%	2.87%	7.17%	4.47%	11.17%
		(\$364,780,738)	(\$912,926,246)	(\$732,486,605)	(\$1,831,627,951)	(\$1,141,099,418)	(\$2,852,603,213)
Long Run	%	0.47%	1.16%	0.93%	2.34%	1.46%	3.64%
		(\$118,854,234)	(\$297,453,068)	(\$238,661,544)	(\$596,787,917)	(\$371,797,310)	(\$929,445,923)

Short run is based on an elasticity of -1.92

Long run is -0.59

Short Run Employment Impact

	EU 10%	EU 25%	Japan 10%	Japan 25%	Both 10%	Both 25%
Auto Makers	-240	-600	-482	-1,204	-750	-1,876
Suppliers	-402	-1006	-807	-2018	-1257	-3143
Induced	-358	-895	-718	-1796	-1119	-2796
Total	-999	-2501	-2007	-5018	-3126	-7815

from IMPLAN



- Supplier Relocation Over the Longer Term?

- Used GSIM to estimate amount of trade that would move
- Used ratio of Mexican Imports/TN Production to estimate amount moving to middle TN
- Assumed that suppliers would produce at price of the existing imports
- Assumed baseline was production level at year 3 after tariff

Possible Added Automotive Supplier Employment

EU 10%	EU 25%	Japan 10%	Japan 25%	Both 10%	Both 25%
777	2175	1350	2641	2985	3991

This one scenario suggest new supplier employment would be less that the loss of employment due to the tariffs



There you have it.....

Thank you!