

# Steel or Steal?

## What the Section 232 Tariffs Mean for American Wire

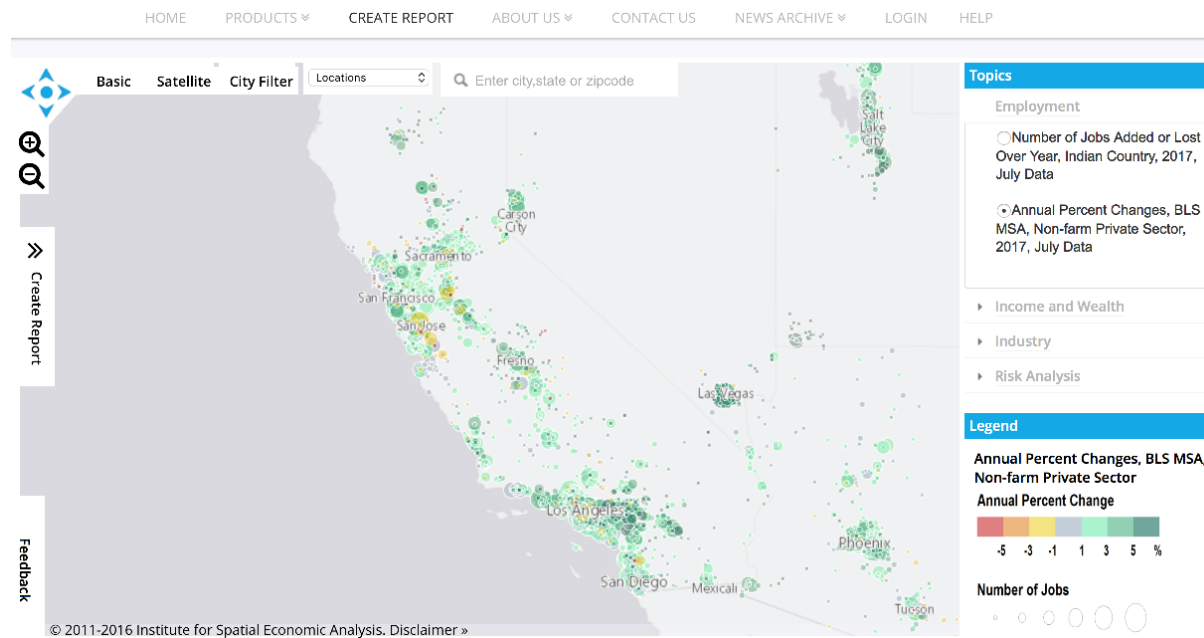
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Institute for Spatial Economic Analysis

# About ISEA

- Established April 2011
- At the University of Redlands in Redlands, CA
- [www.iseapublish.com](http://www.iseapublish.com)



# But Before We Get Started ...

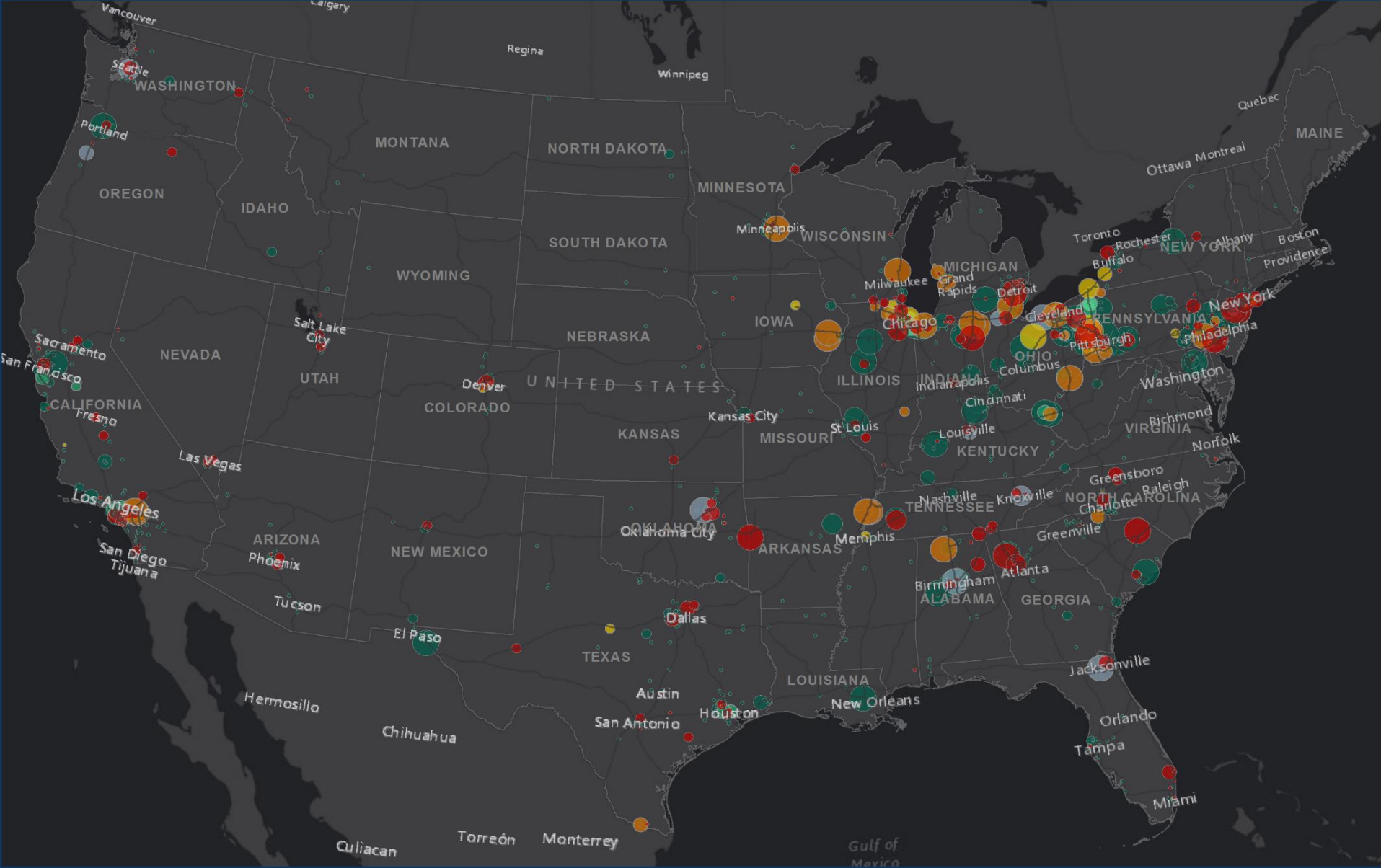
- All views presented are solely the author's and do not represent official positions neither of the University of Redlands, ISEApublish, SEI-consult, nor any of our sponsors
- Financial Support from two anonymous sponsors and the Hall Network for Public Policy at the University of Redlands is gratefully acknowledged.

# Steel Tariffs ...

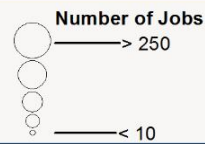
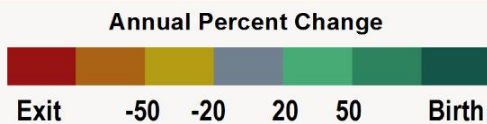
- ... will badly hurt wire producers in the short run
- ... will likely hurt steel producers in the long run
- ... could improve the strategic position of the wire industry

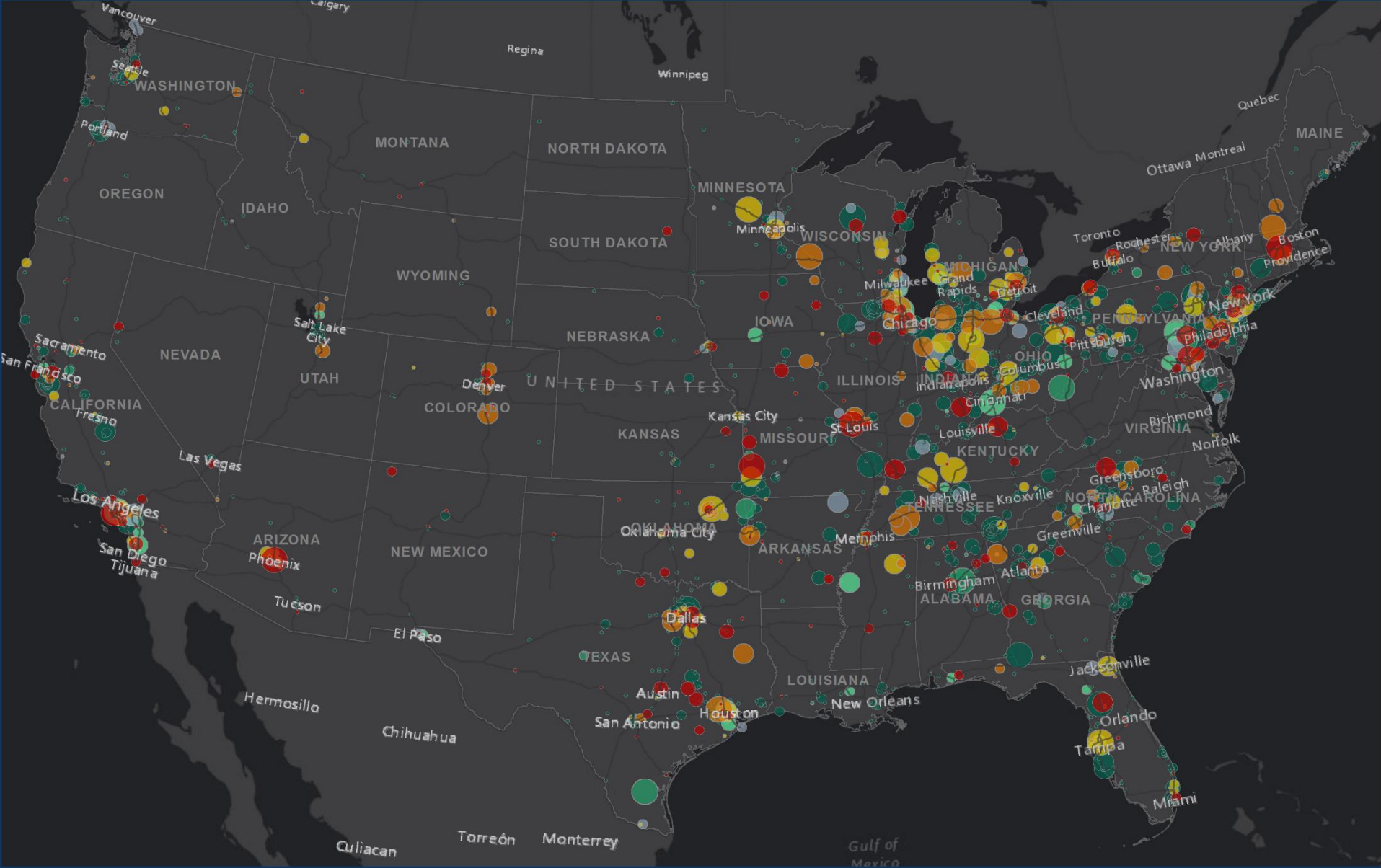
# Outline

- Where We Stand
- The Proposed Tariffs and its Expected Effects
- International Competitiveness
- Threats and Opportunities Ahead (Automation)
- What Does it All Mean?



## Three Year Average Growth in Employment, 2005: Steel Mills





## Three Year Average Growth in Employment, 2005: Wire, Wire Products, and Springs



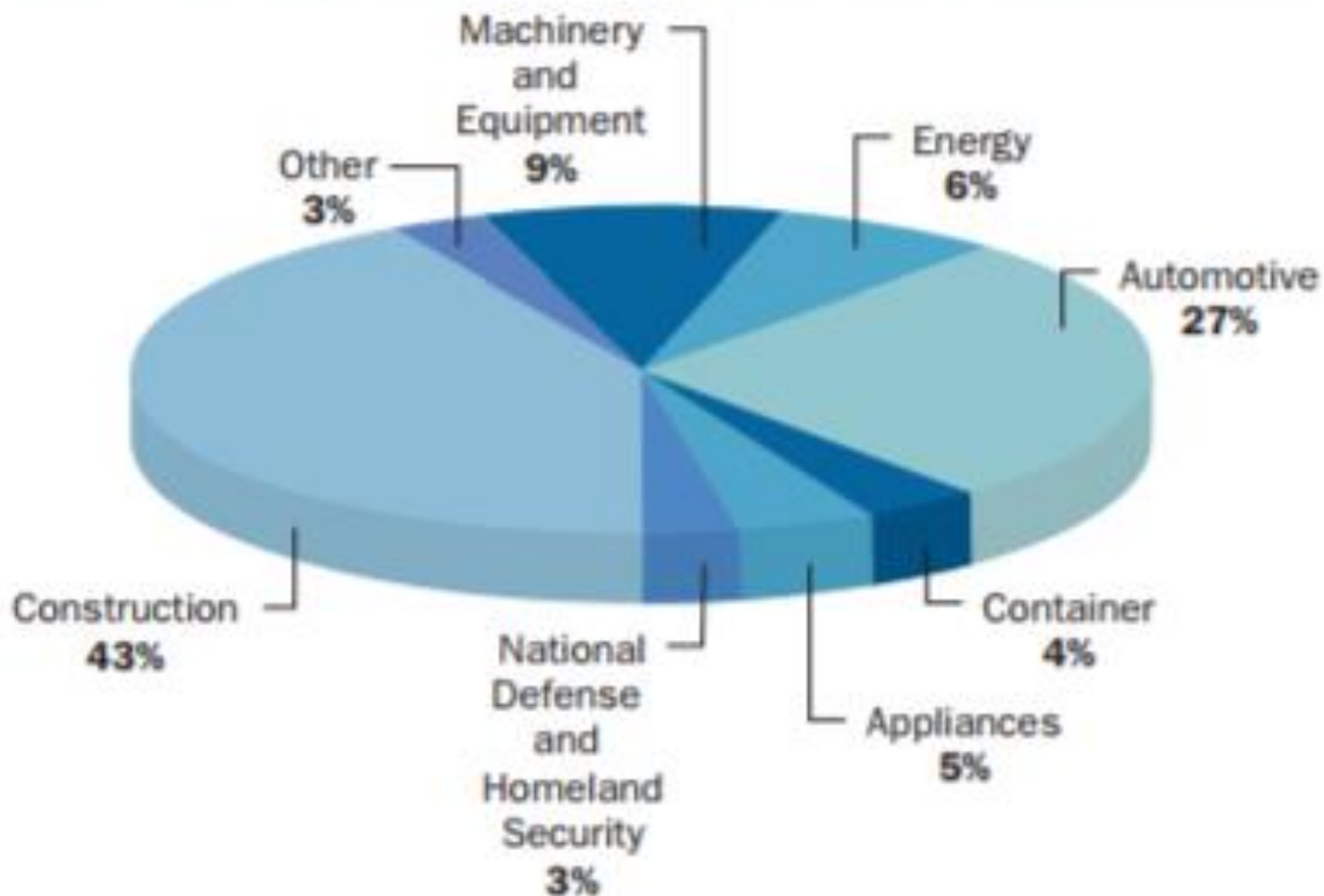
# Key Figures for Steel and Wire (2016, in 1000 tons)

	Steel	Wire
<b>Production</b>	86,500	3,186
<b>Imports</b>	26,300	4,343
<b>Exports</b>	9,300	1,290
<b>Domestic Demand</b>	103,600	6,240
<b>Imports to Production</b>	30.4%	<b>136.3%</b>
<b>Imports to Consumption</b>	25.4%	<b>69.6%</b>
<b>Export share</b>	10.8%	<b>40.5%</b>
<b>Import Export Ratio</b>	2.83	3.37

Source: AISI Profile 2017, AWWA, author's calculations



## 2016 Steel Shipments\* by Market Classification



Source: American Iron and Steel Institute  
\*Estimated percentages

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# The Proposed Tariffs

- Wilbur Ross: goal in the cases of both aluminum and steel was to lift the domestic industry's capacity utilization and that would create additional jobs
- Three options (steel only):
  - 24% on all steel imports
  - 53% on tariffs from 12 countries, 100% quota for all others
  - 63% quota based on 2017 imports from 12 countries

# Requirements for Dumping / Section 232

- Below total cost pricing (in foreign market)
- Differential pricing for home and foreign markets
  - Would expect: falling import prices
- Section 232 requirement: national security jeopardized
  - Would expect: substantial production for military and homeland security

# What We See

- Import prices on steel products :
  - 14% overall increase from 2016 to 2017
  - 19% increase for blooms, billets, and slabs
- Share of Military and Homeland Security: 3%

# Military Equipment Use

Use	Tons of Steel
Aircraft carriers	550,000
submarines	1,000,000
guided missile destroyers	227,500
Landing platform docks	144,000
Tanks	187,000
Light armored vehicles	30,000
<b>Total</b>	<b>2,138,500</b>
Share Annual Steel Production	2.5%

Source, AISI, Author's Calculations



# Academic Literature on Tariffs

- Tariffs can rarely be good for the economy overall
- Specifically damaging if tariffs on upstream products
- Consumers always worse off
- Data: Technology more important than trade



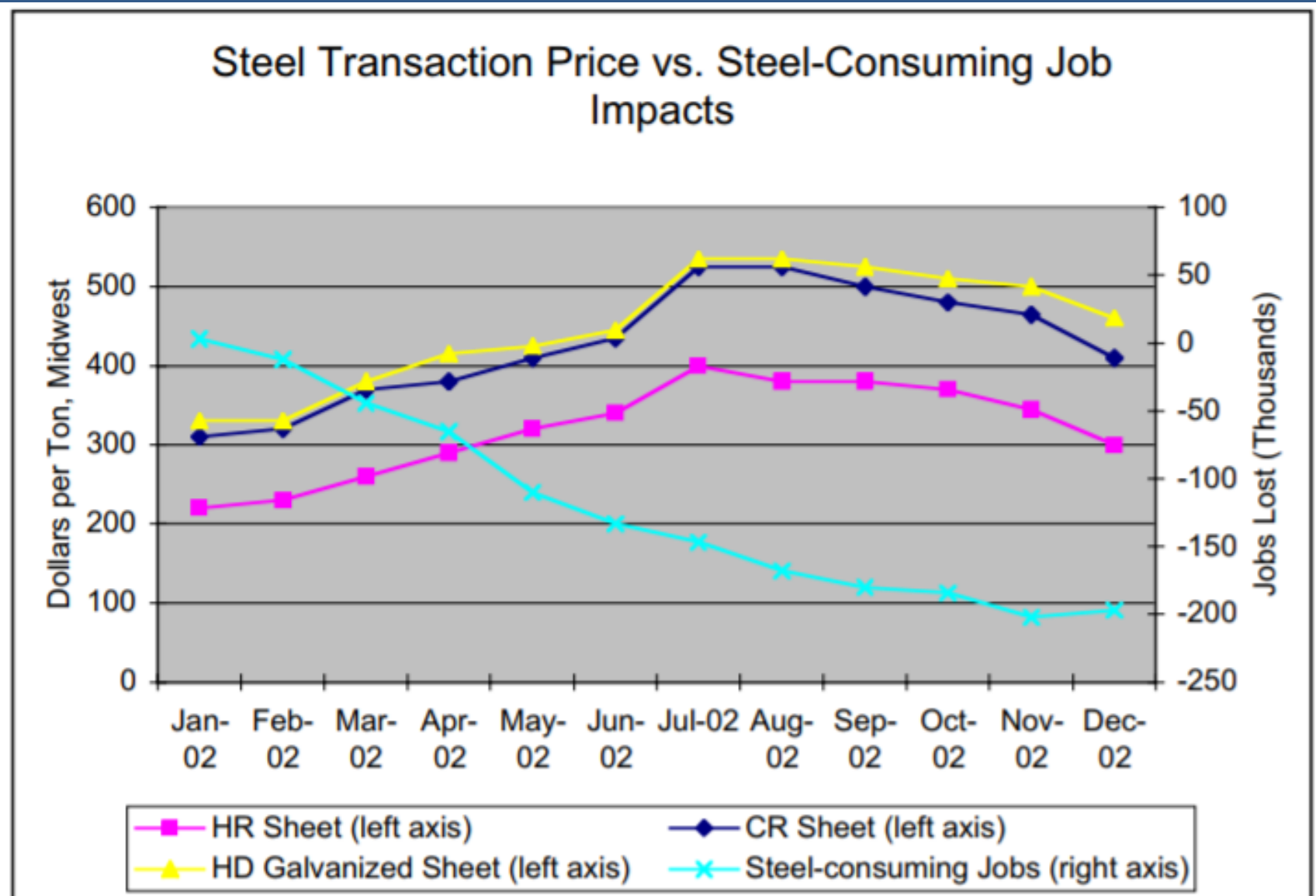
# Precedence: Bush Steel Tariffs

- Peterson Institute for International Economics
- Jobs saved: 3,000-4,000
- Jobs lost in steel using industries (like the wire industry): 26,000
- Expected a moderate price increase

# Anticipated Effect on Jobs

- "The 'Joint Remedy', which calls for tariffs of 15-20 percent on most products, would slash affected imports by 20 percent. Domestic prices and output would increase slightly, resulting in somewhat larger revenues for the steel industry. About 3,500 actual and potential jobs could be "saved" but at an annual cost of \$2 billion to the steel users-or \$584,000 per job saved."
- (Peterson Institute of Economics on the 2002 steel tariffs)

# Ex Post Analysis Claims Harsher Effect



Source: Trade Partnership Worldwide, LLC



# The Tariff Proposal: Price Effects

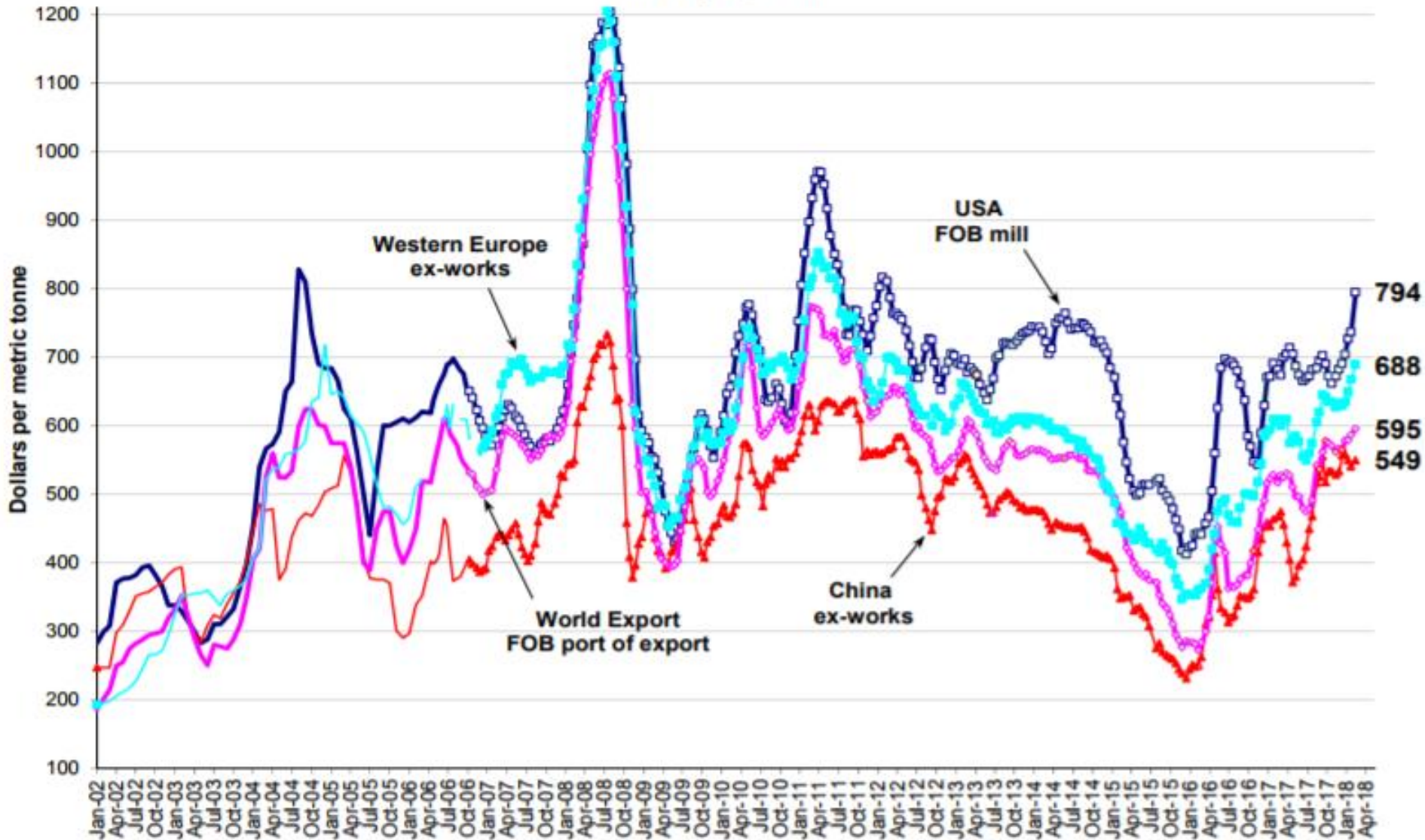
- Hard to Predict
- Evidence from Bush Steel Tariffs point towards substantial increase

# SteelBenchmarker™ HRB Price

## USA, China, Western Europe and World Export

(WSD's PriceTrack data, Jan. 2002 - March 2006; SteelBenchmarker data begins April 2006)

February 12, 2018



# The Long Run Effects

- Complacency of US steel mills
- Increased competitiveness of foreign steel mills
- Partial destruction of domestic customer base



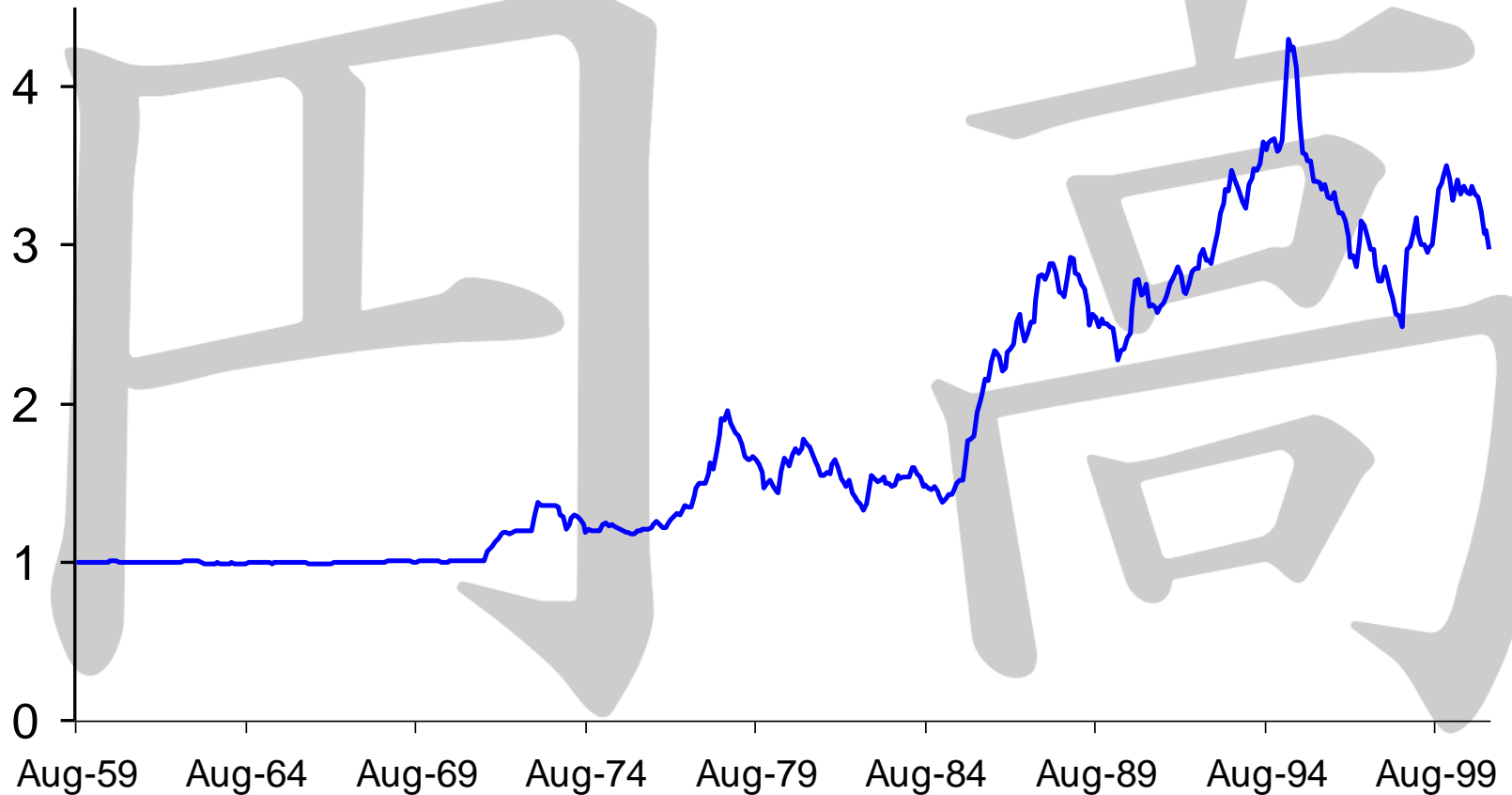


RAJKOT4G.COM





# The Yen from 1959 till 2000





# New Car Sales in the US, 79-94 (thousands)

円高

**Exhibit 10**      **New Car Sales in the United States, 1979-1994 (thousands of vehicles)**

	<b>Total</b>	<b>Import Sales</b>	<b>% Total</b>	<b>Transplant Sales</b>	<b>% Total</b>	<b>Big 3 Sales</b>	<b>% Total</b>
<b>1979</b>	<b>10,600</b>	<b>2,332</b>	<b>22</b>	-	-	<b>8,268</b>	<b>78</b>
<b>1980</b>	<b>8,976</b>	<b>2,397</b>	<b>27</b>	-	-	<b>6,579</b>	<b>73</b>
<b>1981</b>	<b>8,619</b>	<b>2,327</b>	<b>27</b>	-	-	<b>6,292</b>	<b>73</b>
<b>1982</b>	<b>7,939</b>	<b>2,223</b>	<b>28</b>	-	-	<b>5,716</b>	<b>72</b>
<b>1983</b>	<b>9,182</b>	<b>2,387</b>	<b>26</b>	<b>43</b>	<b>0.5</b>	<b>6,752</b>	<b>74</b>
<b>1984</b>	<b>10,390</b>	<b>2,439</b>	<b>23</b>	<b>293</b>	<b>3</b>	<b>7,658</b>	<b>74</b>
<b>1985</b>	<b>10,978</b>	<b>2,774</b>	<b>25</b>	<b>299</b>	<b>3</b>	<b>7,905</b>	<b>72</b>
<b>1986</b>	<b>11,404</b>	<b>3,189</b>	<b>28</b>	<b>540</b>	<b>5</b>	<b>7,675</b>	<b>67</b>
<b>1987</b>	<b>10,186</b>	<b>3,106</b>	<b>30</b>	<b>678</b>	<b>7</b>	<b>6,402</b>	<b>63</b>
<b>1988</b>	<b>10,543</b>	<b>3,004</b>	<b>28</b>	<b>804</b>	<b>8</b>	<b>6,735</b>	<b>64</b>
<b>1989</b>	<b>9,777</b>	<b>2,699</b>	<b>28</b>	<b>1,036</b>	<b>11</b>	<b>6,042</b>	<b>62</b>
<b>1990</b>	<b>9,300</b>	<b>2,403</b>	<b>26</b>	<b>1,415</b>	<b>15</b>	<b>5,482</b>	<b>59</b>
<b>1991</b>	<b>8,174</b>	<b>2,038</b>	<b>25</b>	<b>1,461</b>	<b>18</b>	<b>4,675</b>	<b>57</b>
<b>1992</b>	<b>8,213</b>	<b>1,944</b>	<b>24</b>	<b>1,460</b>	<b>18</b>	<b>4,816</b>	<b>58</b>
<b>1993</b>	<b>8,518</b>	<b>1,784</b>	<b>21</b>	<b>1,584</b>	<b>19</b>	<b>5,151</b>	<b>60</b>
<b>1994</b>	<b>8,991</b>	<b>1,750</b>	<b>19</b>	<b>1,841</b>	<b>21</b>	<b>5,414</b>	<b>60</b>

Source: Compiled from *Ward's Automotive Yearbook*, various issues

# Trade War with China

- Market access to China essential for many large US companies
- US consumers to feel large effect
- Chinese consumers to feel small effect
- Possible recession trigger for US

# The US Consumer Will Be Better off ...

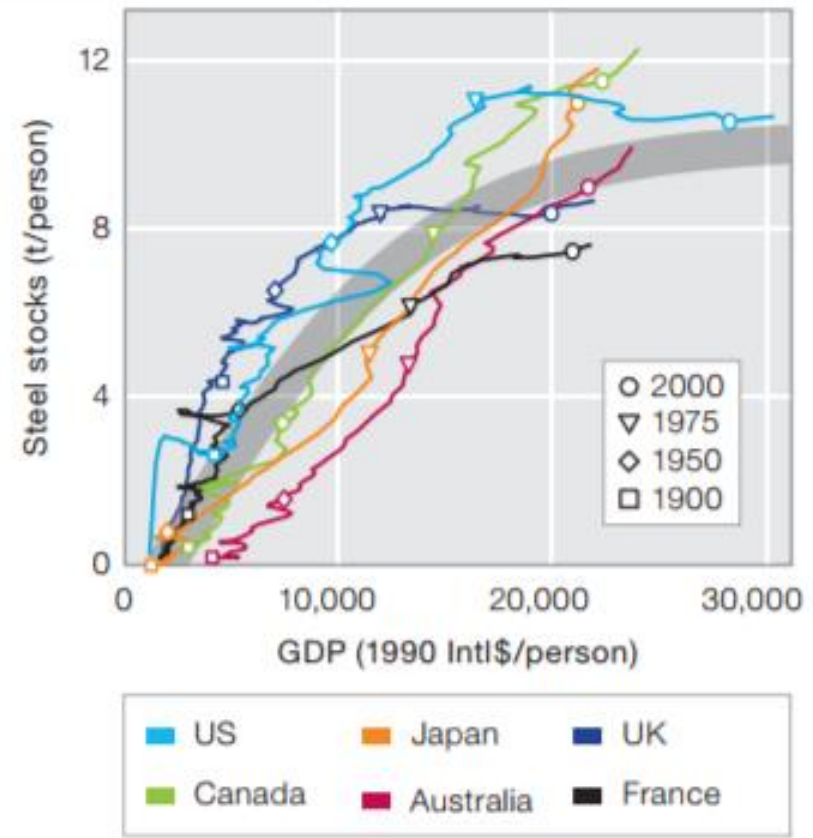
- ... as long as they exclusively consume Kentucky Bourbon and Wisconsin Dairy.
- If not, they may actually be worse off.

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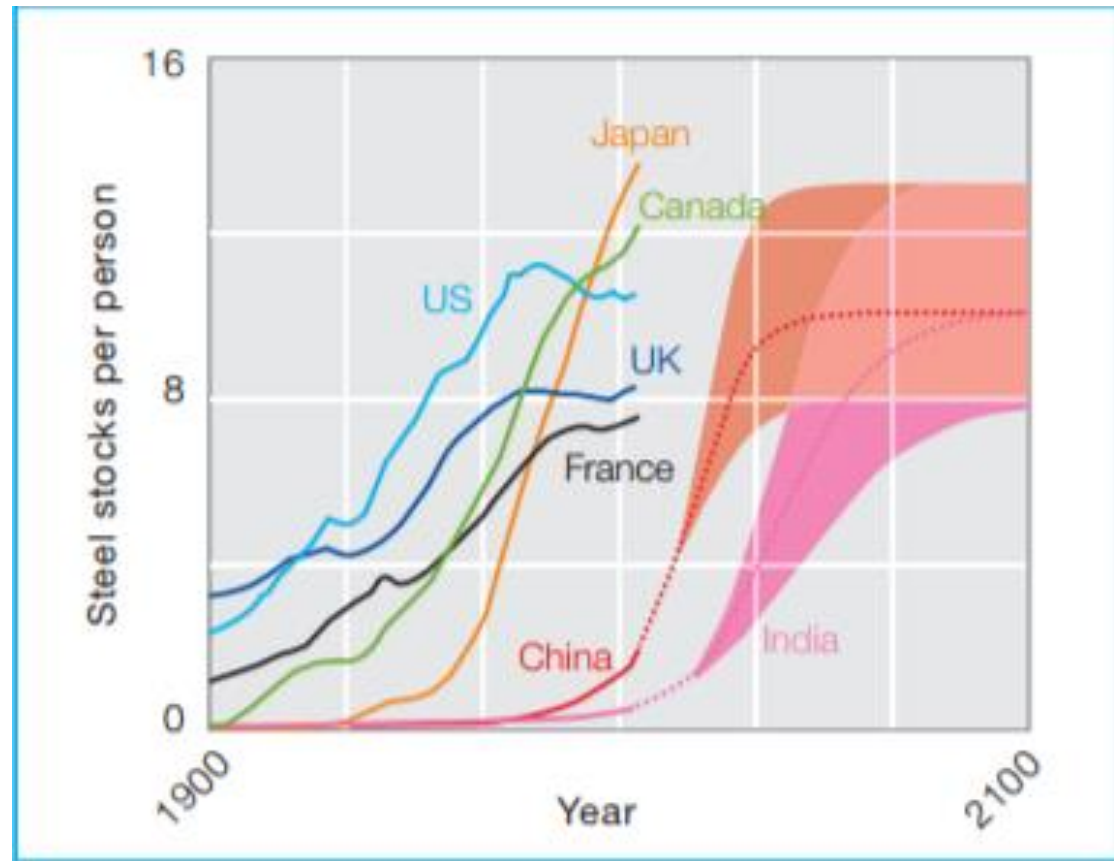
# Steel stocks per person & GDP: Not Much Additional Demand in NAFTA

- US: 10.5 t
- Canada 9.8 t
- Mexico 4.8 t
- Japan 13.6 t



# Huge Potential Outside the US

- Brazil 3.1 t
- South Africa 3.0 t
- India 0.4





# Measuring International Competitiveness

- Share of US Wire Exports in Total US Exports /  
Share of Worldwide Wire Exports in World Exports
- Example: Assume 20% of a country's export are wire products, while world average was 10%
  - Average country has 1
  - Below average country  $< 1$
  - Competitive country  $> 1$
- For readability: scaled it between -1 and 1



# US Wire Competitiveness

(2016 Data, Source: UN Trade Database, SITC 678 Wire of Iron and Steel, in millions of US\$)

Country	Total Exports	Competitiveness	Volume Rank	Compet. Rank
China	1,866.05	0.35	1	22
Rep. of Korea	790.38	0.74	2	10
USA	369.96	-0.71	8	54
India	249.77	0.41	9	20
Malaysia	177.14	0.39	15	21
Turkey	176.09	0.6	16	15
Thailand	149.47	0.12	18	29
Russian Federation	120.23	-0.37	23	39
Viet Nam	97.65	-0.11	25	36
Brazil	51.78	-0.66	30	52
South Africa	49.93	0.08	31	32
Costa Rica	17.59	0.78	39	9
Egypt	13.75	-0.01	44	33

Author's calculations



# US Wire Import Competition- Tariff Countries

(2016 Data, Source: UN Trade Database, SITC 678 Wire of Iron and Steel, in millions of US\$)

Partner	Trade Volume (1000 US\$)	volume share	volume rank	Value/Weight
China	201,878	19.6%	1	1.17
Rep. of Korea	133,885	13.0%	3	1.58
India	48,519	4.7%	6	4.10
Viet Nam	16,555	1.6%	10	1.30
Brazil	6,443	0.6%	14	1.04
Thailand	2,577	0.3%	22	1.78
Turkey	2,541	0.2%	24	1.05
Costa Rica	2,380	0.2%	26	4.59
Malaysia	1,246	0.1%	31	1.03
Russian Federation	212	0.0%	40	0.90
Egypt	132	0.0%	43	0.90
South Africa	42	0.0%	47	1.01

# US Wire Import Competition- Top 12

(2016 Data, Source: UN Trade Database, SITC 678 Wire of Iron and Steel, in millions of US\$)

Partner	Trade Volume (1000 US\$)	volume share	volume rank	Value/Weight
China	201,878	19.6%	1	1.17
Canada	196,285	19.1%	2	1.04
Rep. of Korea	133,885	13.0%	3	1.58
Japan	127,354	12.4%	4	1.41
Mexico	119,989	11.7%	5	0.96
India	48,519	4.7%	6	4.10
Germany	38,034	3.7%	7	1.43
Other Asia, nes	26,595	2.6%	8	1.58
Italy	25,991	2.5%	9	1.42
Viet Nam	16,555	1.6%	10	1.30
France	16,182	1.6%	11	1.37
Sweden	11,578	1.1%	12	1.76

# US Wire Export Competitiveness – Tariff Countries

(2016 Data, Source: UN Trade Database, SITC 678 Wire of Iron and Steel, in millions of US\$)

Partner	Trade Volume (1000 US\$)	volume share	volume rank	Value/Weight
Costa Rica	11,549	3.1%	4	3.68
Brazil	10,979	3.0%	5	0.84
China	9,594	2.6%	7	1.89
Rep. of Korea	3,806	1.0%	11	1.60
India	2,370	0.6%	18	2.03
Thailand	1,387	0.4%	22	1.32
South Africa	1,185	0.3%	26	1.05
Malaysia	1,137	0.3%	27	2.01
Turkey	663	0.2%	31	1.37
Viet Nam	315	0.1%	41	1.02
Russian Federation	291	0.1%	46	1.24
Egypt	121	0.0%	56	2.06

# US Wire Export Competitiveness – Top 12

(2016 Data, Source: UN Trade Database, SITC 678 Wire of Iron and Steel, in millions of US\$)

Partner	Trade Volume (1,000 US\$)	volume share	volume rank	Value/Weight
Mexico	140,885	38.1%	1	1.49
Canada	104,909	28.4%	2	1.19
Ireland	14,353	3.9%	3	3.49
Costa Rica	11,550	3.1%	4	3.68
Brazil	10,980	3.0%	5	0.84
United Kingdom	10,057	2.7%	6	1.04
China	9,594	2.6%	7	1.89
Germany	6,921	1.9%	8	1.31
Denmark	4,866	1.3%	9	3.36
Belgium	4,371	1.2%	10	1.14
Rep. of Korea	3,806	1.0%	11	1.60
Japan	3,604	1.0%	12	1.77



# Questions to Ask:

- Which wire market segments will those 12 countries attack?
- Which segments within Wire and Steel have we been successfully exporting? Why?
- Which other markets look alike those? Who is serving them right now?

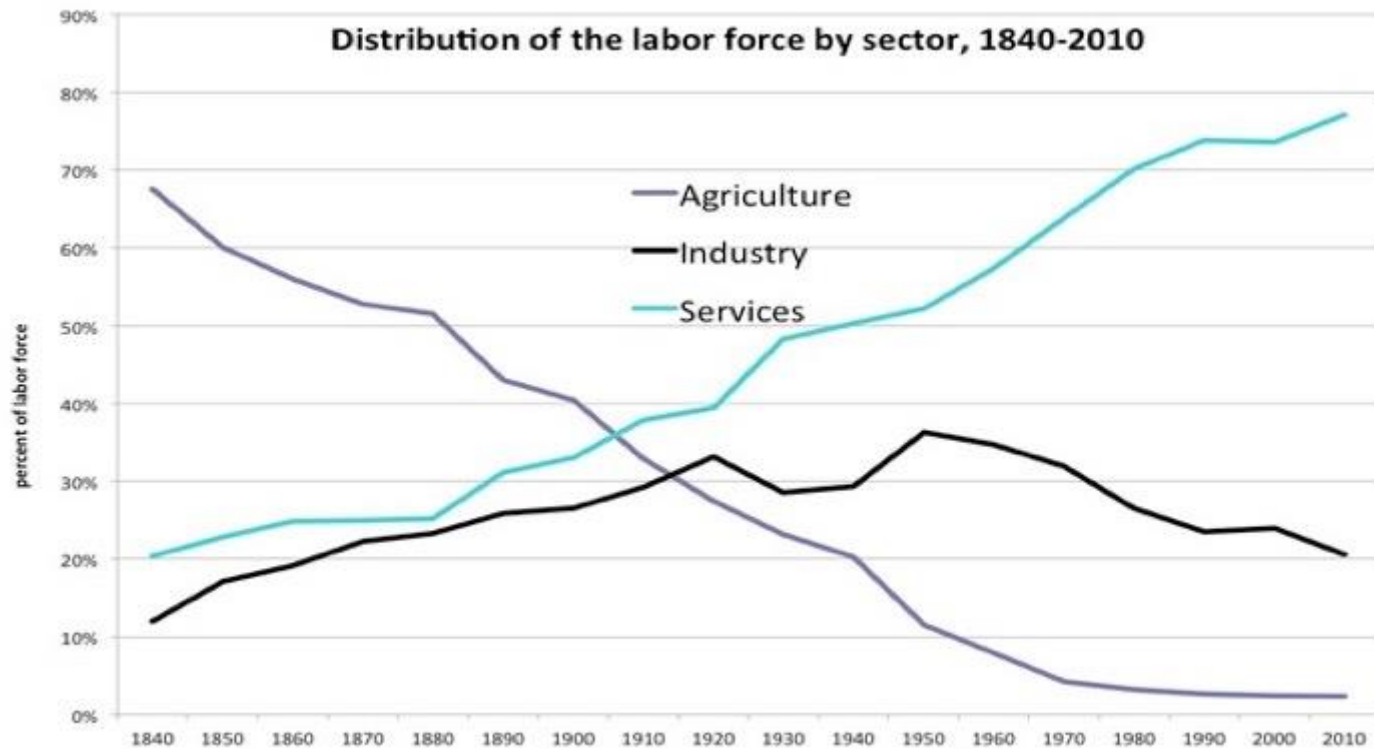
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# Five of the Six Drivers of Technological Change Relevant for Your Industry

- Artificial Intelligence
- Mobile Robotics
- Edge Computing
- Big Data Analytics
- Nano Technology
- Bio Technology

# Robots about to “Escape” Manufacturing



Sources: Gallman & Weiss 1969, Kendrick 1961, BEA



# AMAZON TODAY



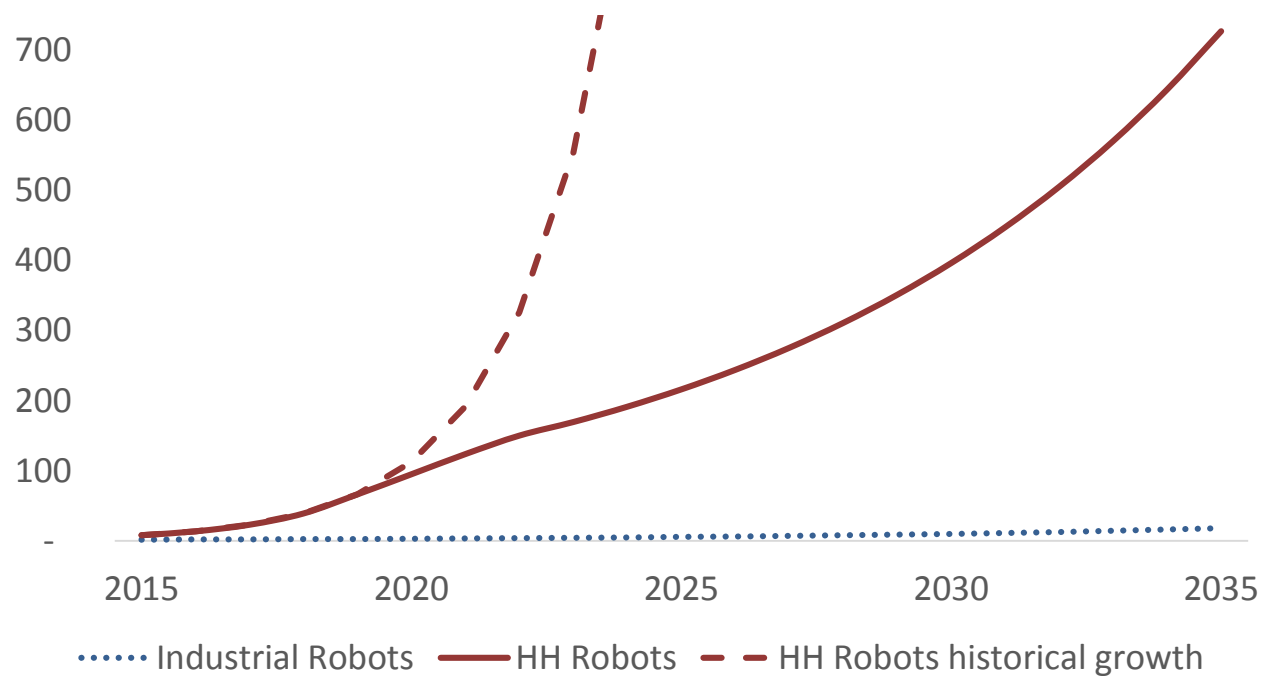




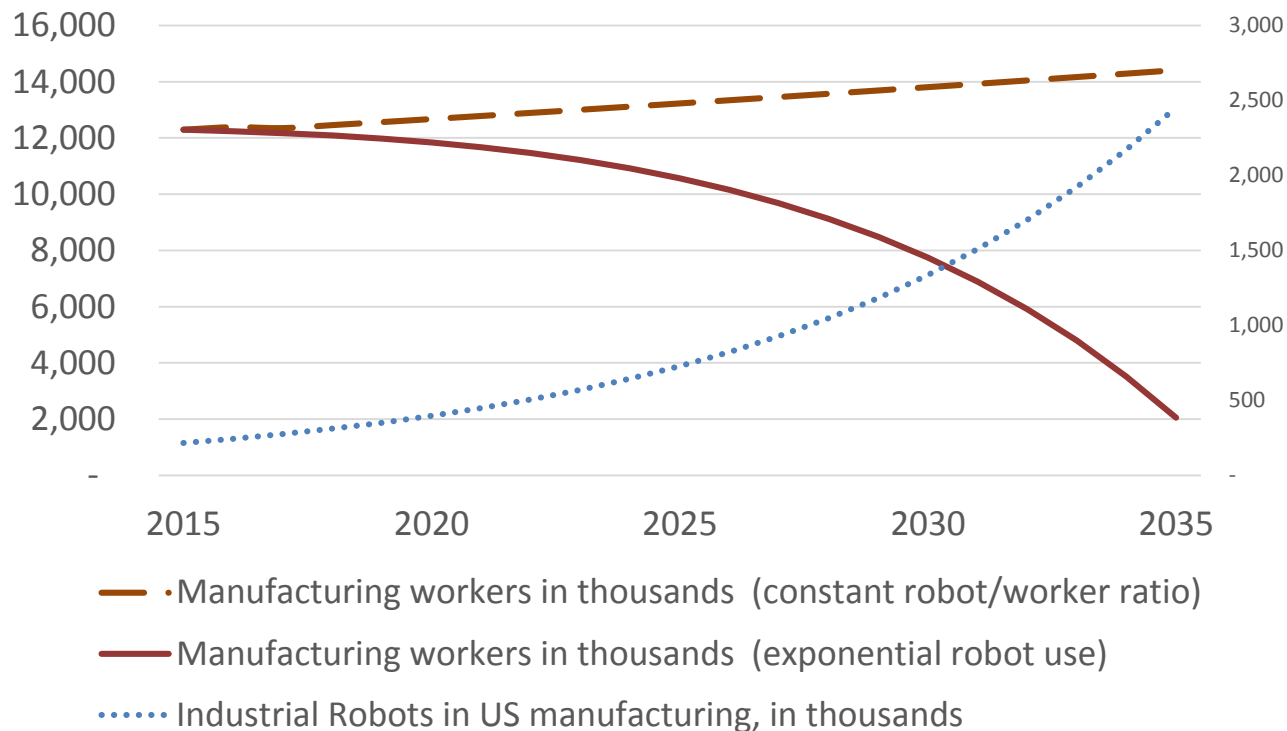
# AMAZON TOMORROW



# Robot Deployment



# ...and its Effects on Jobs



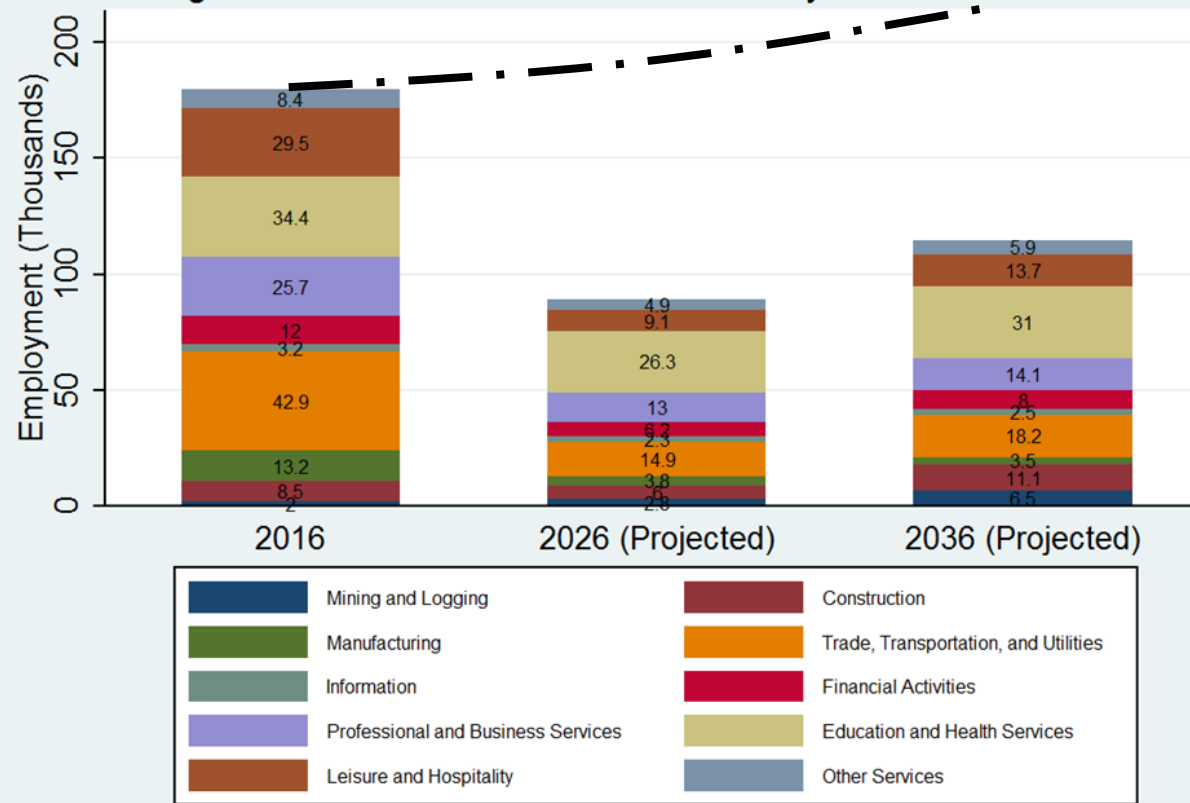


# Share of Jobs and Wages Automatable by NAICS

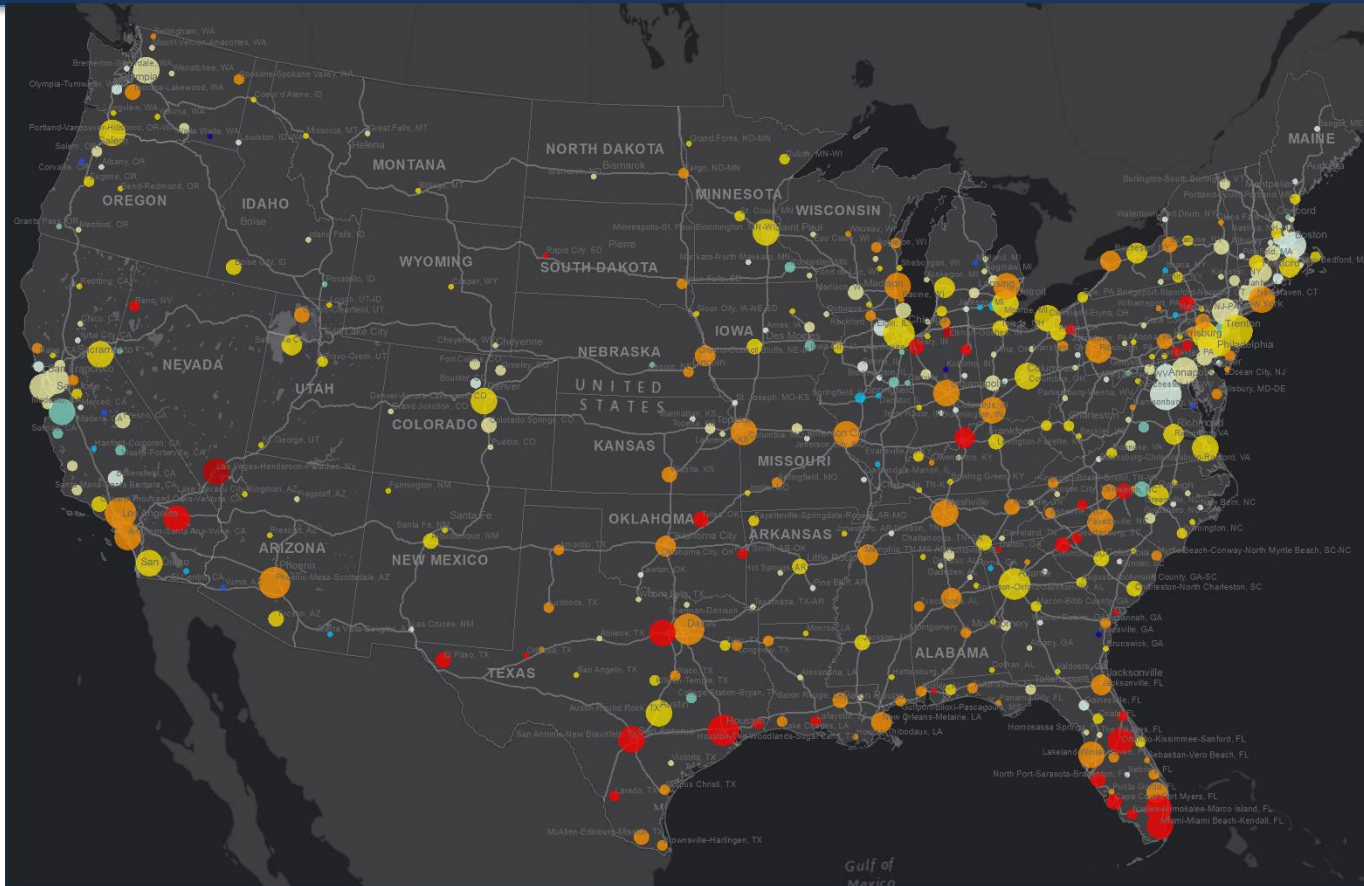
- 3312: Steel Product Manufacturing from Purchased Steel: **72% of jobs, 62% of wages**
- 3326: Spring and Wire Product Manufacturing: **72% of jobs, 61% of wages**
- 3311: Iron and Steel Mills and Ferroalloy Manufacturing: **66% of jobs, 58% of wages**

# Structural Change

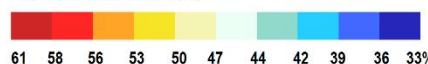
Figure 1b: Distribution of Sectors Currently and Post Automation



# Which Geographies Are Most at Risk?



Share of Jobs Facing Automation Risk by 2035, by Metropolitan Statistical Area



# Questions to Ask


- Which service sectors will need the most robots → steel / wire products in the future? What kind?
- What will car electrification do to our steel and wire demand? What to the grid?
- Where in the world will that happen the strongest, where should we try to enter?

# More Generally

- How will these developments change our markets?
- How will this all change our employment needs?
- How will it change our communities?

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A political cartoon depicting a man from the waist up, facing right. He is wearing a white t-shirt with the words "Steel Mills" printed in red on the back, and blue jeans. He has a beard and glasses. He is holding a black handgun with both hands, aiming it towards the left. A white bullet is shown in mid-air, having just been fired from the gun, and is heading towards a target on the left. The target is a small, dark, bullet-shaped object with the word "Tariff" written in black text next to it. The background is a plain, light gray.

Tariff

Steel Mills

Original cartoon by Mr. Fish  
altered for adaption to steel mills

# Sample Initiatives for AWPA to Consider

- Found a wire research institute within the AWPA
- Joint research with electric car and robotics industry
- Appoint a Chief Automation Officer within AWPA
- Case studies: export and overseas production



# Need to start today!

... and we are happy to help.

# More Information/ Contact

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