



US Tire Tariffs: Saving Few Jobs at High Cost

Gary Clyde Hufbauer and Sean Lowry

Gary Clyde Hufbauer, *Reginald Jones Senior Fellow since 1992, was the Maurice Greenberg Chair and Director of Studies at the Council on Foreign Relations (1996–98), the Marcus Wallenberg Professor of International Finance Diplomacy at Georgetown University (1985–92), senior fellow at the Institute (1981–85), deputy director of the International Law Institute at Georgetown University (1979–81), deputy assistant secretary for international trade and investment policy of the US Treasury (1977–79), and director of the international tax staff at the Treasury (1974–76). He has written extensively on international trade, investment, and tax issues. Among his numerous books are Figuring Out the Doha Round (2010), Global Warming and the World Trading System (2009), Economic Sanctions Reconsidered, 3d ed. (2007), and US-China Trade Disputes: Rising Tide, Rising Stakes (2006).* **Sean Lowry** has been a research analyst at the Peterson Institute since January 2012. He will complete his studies towards a master's degree in international economic and security policy from the University of Maryland, College Park in May 2012.

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In his 2012 State of the Union address, President Obama claimed that “over a thousand Americans are working today because we stopped a surge in Chinese tires.”¹ The tire tariff case, decided by the president in September 2009, exemplifies his efforts to get China to “play by the rules” and serves as a plank in his larger platform of insourcing jobs to America.

However, our analysis shows that, even on very generous assumptions about the effectiveness of the tariffs, the initiative saved a maximum of 1,200 jobs. Our analysis also shows that American buyers of car and light truck tires pay a hefty price for this exercise of trade protection. According to our calculations, explained in this policy brief, the total cost to American consumers from higher prices resulting from safeguard tariffs

1. Obama, Barack. 2012. State of the Union Address. Available at: <http://www.whitehouse.gov/>.

on Chinese tires was around \$1.1 billion in 2011. The cost per job manufacturing saved (a maximum of 1,200 jobs by our calculations) was at least \$900,000 in that year. Only a very small fraction of this bloated figure reached the pockets of tire workers. Instead, most of the money landed in the coffers of tire companies, mainly abroad but also at home.

The additional money that US consumers spent on tires reduced their spending on other retail goods, indirectly lowering employment in the retail industry. On balance, it seems likely that tire protectionism cost the US economy around 2,531 jobs, when losses in the retail sector are offset against gains in tire manufacturing. Adding further to the loss column, China retaliated by imposing antidumping duties on US exports of chicken parts, costing that industry around \$1 billion in sales.

THE 421 PETITION TO THE US INTERNATIONAL TRADE COMMISSION

On April 20, 2009, the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial, and Service Workers International Union, representing tire manufacturing workers among others, filed a petition with the US International Trade Commission (ITC) requesting a Section 421 investigation involving certain passenger vehicle and light truck tire imports from China.² Section 421 is the US legislative vehicle for implementing the transitional import safeguard contained in Article 16 of China's Protocol of Accession to the World Trade Organization (WTO), as agreed by the United States and other WTO members in 2000.

The ITC found that US imports of the subject Chinese tires increased both in quantity and value terms during the

2. Section 421, created by the Trade Act of 1974, as amended, refers to a safeguard mechanism directed at non-market economies. After approving a petition to institute an investigation, the US International Trade Commission (ITC) determines whether imports of a product from a non-market economy (here, China) are being imported into the United States in such increased quantities or under such conditions as to cause, or threaten to cause, “market disruption” to the domestic producers of like or directly competitive products. If the ITC finds market disruption, it then proposes a remedy. The ITC sends its report to the president and the US Trade Representative. The president can choose to approve the ITC's recommendation for relief, modify it, or reject it.

Box 1 US tariff rates on Chinese imports (percent)

Harmonized tariff schedule provision	Article description	Rates <i>ad valorem</i>			
		General ¹	Year 1	Year 2	Year 3
4011	New pneumatic tires, of rubber:				
4011.10	Of a kind used on motor cars (including station wagons and racing cars): ²				
4011.10.10	Radial	4.0	39.0	34.0	29.0
4011.10.50	Other	3.4	38.4	33.4	28.4
4011.20	Of a kind used on buses or trucks:				
4011.20.10	Radial:				
4011.20.1005	On the highway, light truck	4.0	39.0	34.0	29.0
4011.20.50	Other:				
4011.20.5010	On the highway, light truck	3.4	38.4	33.4	28.4

1. Normal trade relations, formerly known as the most-favored-nation duty rate, applicable to China prior to the tire tariff that went into effect on September 26, 2009.

2. Although “racing car tires” fall under the HTS 4011.10 sub-heading, they were exempted from the 2009 safeguards.

Source: US International Trade Commission (ITC) HTS Online Reference Tool, ITC 2009a.

period 2004 to 2008, and concluded that the increases were “large, rapid, and continuing” (ITC 2009a, 12). Additionally, the ITC found that relevant indicators of US shipments, production workers, plant capacity utilization, and financial performance all dropped between 2004 and 2008. Based on this data, collected through industry questionnaires, the ITC determined that the domestic tire industry was materially injured by imports from China, declaring that “virtually all the industry indicators declined during that period” (ITC 2009a, 18).

On June 18, 2009, the ITC voted four to two that the imports of the Chinese tires subject to investigation were causing “market disruption” to domestic producers (ITC 2009b). The ITC recommended that President Obama should impose an additional *ad valorem* duty on the imported tires from China for three years, beginning with an additional 55 percent duty in the first year (2009–10), a 45 percent duty in the second year (2010–11), and a 35 percent duty in the third year (2011–12). The ITC also recommended expedited consideration of Trade Adjustment Assistance (TAA) for affected workers, firms, and communities.

THE PRESIDENT’S DECISION

On September 11, 2009, President Obama approved relief for domestic producers by increasing tariffs on new (as opposed to retreaded) Chinese car and light truck tire imports for three years (although at lower rates than the ITC’s recommendation) and ordering expedited consideration of TAA for producers, workers, and communities affected by tire imports (Obama 2009). Box 1 compares the most favored nation (MFN) tariffs

applied to Chinese imports prior to the safeguards and the additional tariff rates that the president imposed specifically on imports of Chinese passenger and light truck tires. Starting on September 26, 2009, Chinese tires were subjected to an additional 35 percent *ad valorem* tariff duty in the first year, 30 percent *ad valorem* in the second year, and 25 percent *ad valorem* in the third year.

It is worth noting that the ITC had previously handed down affirmative market disruption determinations covering other imported goods in four out of six prior Section 421 investigations since 2000, but relief in those cases was rejected by President George W. Bush. President Obama’s decision was the first time a US president approved Section 421 relief on imports from China (Hufbauer and Wollacott 2010).

CHINA FIGHTS BACK

On December 21, 2009, China requested a WTO dispute settlement panel; this request came after consultations with the United States yielded no change in President Obama’s decision. In the WTO proceedings, China challenged the ITC report, arguing that Chinese tire exports were not a “significant cause” of material injury or the threat of material injury to US producers (WTO 2009). For the first time, China also argued the inconsistency between China-specific safeguards on the one hand, and both GATT Article XIX and the WTO Agreement on Safeguards on the other hand. The heart of China’s contention was that the Section 421 remedy applies only to Chinese exports, rather than exports of like products from all WTO members. However, on December 13, 2010, the WTO panel

rejected China's criticisms of the ITC report and declared that it was not the role of the WTO Dispute Settlement Body (DSB) to reinterpret the bilateral negotiations concerning Article 16 in China's Protocol of Accession to the WTO (WTO 2010). China filed an appeal to the WTO Appellate Body on May 24, 2011, but was ultimately unsuccessful in changing the panel's ruling. Hence the Section 421 safeguards passed muster in the WTO and remain in effect to this day.

Despite the fact that the WTO rejected its appeal against US tire safeguards, China found a different way to retaliate against US trade protectionism—tariffs on the import of US chicken parts. On February 5, 2010, China's Ministry of Commerce announced it would begin imposing antidumping tariffs ranging from 50.3 to 105.4 percent and countervailing duties of between 4.0 and 30.3 percent on US and other foreign chicken part exports to China (Office of the US Trade Representative 2011a). The Chinese tariffs reduced exports by \$1 billion as US poultry firms experienced a 90 percent collapse in their exports of chicken parts to China.³ Given the timing of the Chinese government's actions, many trade policy experts view the trade dispute over China's imports of "chicken feet" from the United States as a tit-for-tat response to the US safeguards on Chinese tire exports.⁴ In September, bilateral consultations with China failed to resolve the tariff dispute. On December 8, 2011, US Trade Representative Ron Kirk requested a WTO dispute settlement panel hear the issue, where the case of chicken parts to China currently stands (Office of the US Trade Representative 2011b).

THE EFFECT OF TARIFFS ON US CONSUMERS

To analyze the impact of tire tariffs on US consumers, we examined US import and industry production data related to the types of tires affected by the tariffs between the first quarter of 2007 (2007Q1) and the third quarter of 2011 (2011Q3).⁵ This window enables us to observe trends both before and after the safeguard tariffs took effect on September 26, 2009.

3. Richburg, Keith. 2011. "U.S., China embroiled in trade spat over chicken feet." *Washington Post*, December 17. Since chicken parts ("chicken feet") are a by-product of whole chickens, it seems unlikely that US poultry firms reduced employment as a consequence of Chinese retaliation, but did lose significant revenue.

4. This view is also expressed by a Washington attorney who was deeply involved in the "chicken feet" case.

5. We ignore Harmonized Tariff Schedule (HTS) 4011.10.50 and 4011.20.5010 for the purposes of our quantitative analysis, even though these non-radial categories are affected by the 2009 tariffs. We focus our analysis on radial automotive tires because non-radial automotive tires are a very small share of the US tire market.

Radial Car Tires⁶

As shown in figure 1a, following imposition of the tariffs, radial car tires imported from China fell from a high of approximately 13.0 million tires in 2009Q3 to 5.6 million tires during 2009Q4—a 67 percent decrease. During the post-tariff era, imports from China have continued to range between 5 million and 7 million tires per quarter. Meanwhile, tire imports from all other countries exhibited a gradual increase throughout 2009 and a sharper increase in 2010. Evidently, the safeguard tariffs caused a significant decline in US imports of Chinese tires during a period when total tire imports were increasing, reflecting the substitution of greater imports from other countries for fewer imports from China in 2010 and 2011. Figure 1b shows that the Chinese share of the value of US car tire imports dropped from a high of approximately 32 percent in 2009Q3 to 14 percent by the end of 2009Q4 (see table 1 for the underlying data). By 2011Q3 the market share of car tire imports from China further declined to around 11 percent in value terms.

Radial Light Truck Tires⁷

Figure 2a shows that the total quantities of radial light truck tire imports from China and AOC were gradually decreasing between 2007Q1 and 2009Q1. During the middle two quarters of 2009, imports from both sources experienced a sharp jump.⁸ After the implementation of tariffs, imports of Chinese tires took a hit—dropping from 1,631 thousand in 2009Q3 to 643 thousand in 2009Q4 (a 39 percent decrease). During the same period, tire imports from AOC rose from 3.0 million to 3.7 million (a 26 percent increase). Since the safeguards went into effect, the United States has imported radial light truck tires from China at roughly half the pre-tariff peak of 1,631 tires. Meanwhile, the quantity of imports from AOC rose approximately 42 percent in the post-tariff era from 2009Q3 to 2011Q3.

Figure 2b shows that China's share of the total value of US radial light truck tire imports dropped from approximately 24 percent in 2009Q3 to 10 percent in 2009Q4. Although

6. This part of our analysis refers to HTS 4011.10.10 (new, pneumatic, radial, car tires). As mentioned in note 5, we ignore HTS 4011.10.5010 (new, pneumatic, non-radial, car tires) for the purposes of our quantitative analysis. Racing car tires were excluded from the safeguard tariffs.

7. This part of our analysis refers to HTS 4011.20.1005 (new, pneumatic, radial, light truck and/or bus tires). As mentioned in note 5, we ignore HTS 4011.20.5010 (new, pneumatic, non-radial, light truck and/or bus tires) for the purposes of our quantitative analysis because of their small volume.

8. Imports often experience a sharp increase in the period just prior to imposition of new protectionism, as domestic importers try to stockpile the product before tariffs go into effect.

Figure 1a US radial car tire imports: quantity

US tire imports (1,000 units)

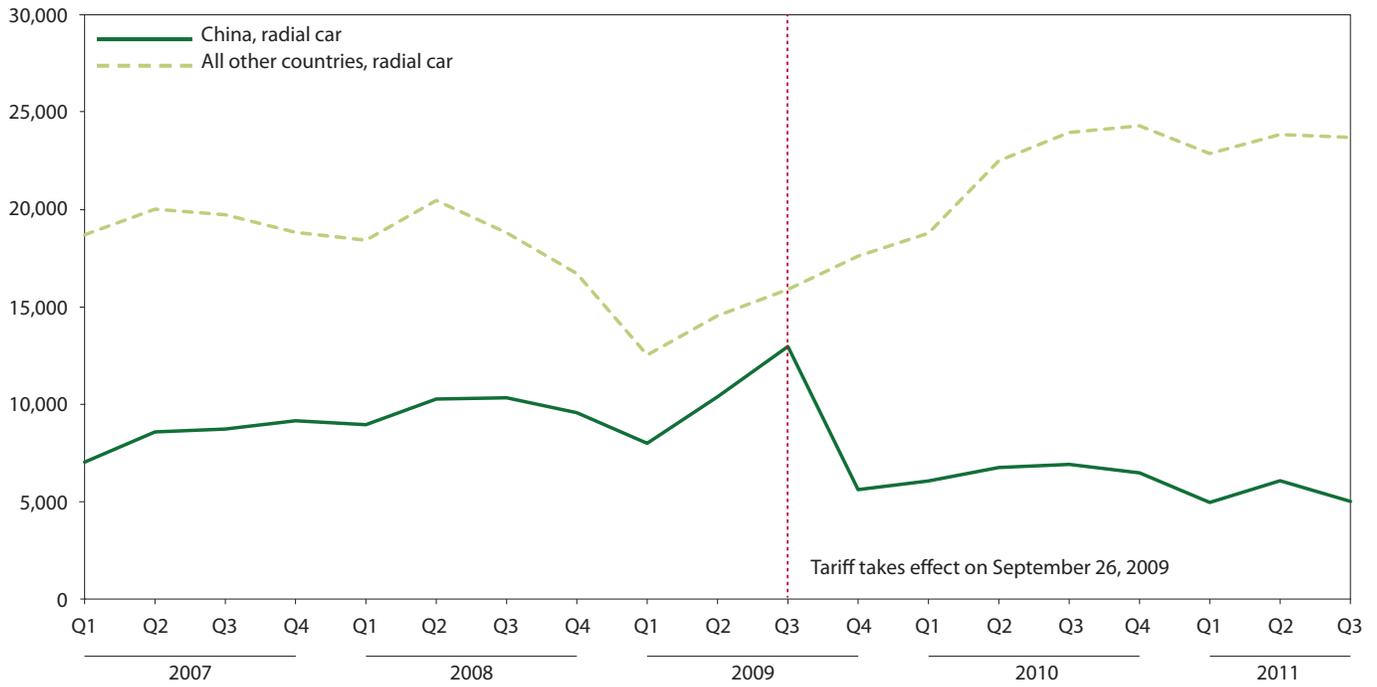
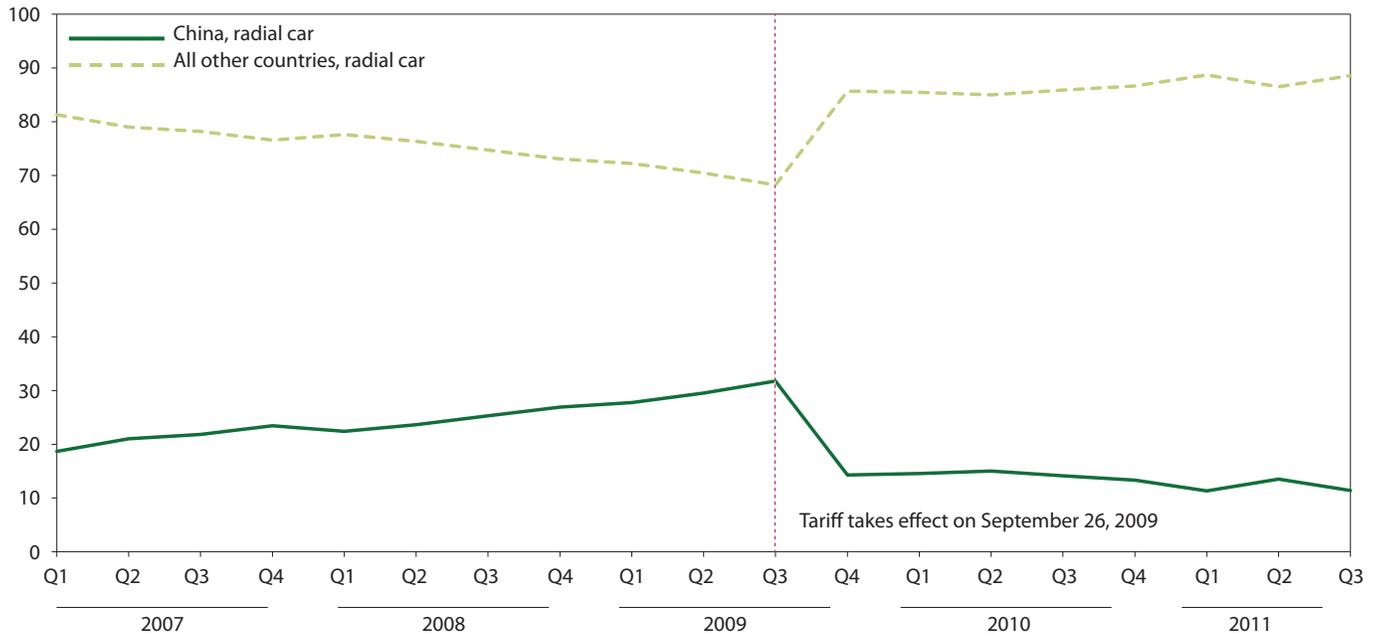


Figure 1b US radial car tire imports: share of value

percent



Sources: US International Trade Commission, authors' calculations.

Table 1 Share of the value of US tire imports (percent)

HTS Code	Category of tires	Date														
		2007				2008				2009		2010		2011		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
China																
4011.10.10	Radial car	18.69	21.02	21.82	23.43	22.40	23.65	25.29	26.93							
4011.20.1005	Radial light truck	20.29	23.06	23.08	23.65	22.52	25.00	26.57	28.11							
All other countries																
4011.10.10	Radial car	81.31	78.98	78.18	76.57	77.60	76.35	74.71	73.07							
4011.20.1005	Radial light truck	79.71	76.94	76.92	76.35	77.48	75.00	73.43	71.89							
China																
4011.10.10	Radial car	27.77	29.54	31.77	14.30	14.55	15.01	14.13	13.34	11.32	13.50	11.40				
4011.20.1005	Radial light truck	22.48	23.72	27.56	9.90	12.23	12.15	14.25	14.83	11.46	11.62	10.64				
All other countries																
4011.10.10	Radial car	72.23	70.46	68.23	85.70	85.45	84.99	85.87	86.66	88.68	86.50	88.60				
4011.20.1005	Radial light truck	77.52	76.28	72.44	90.10	87.77	87.85	85.75	85.17	88.54	88.38	89.36				

HTS = Harmonized Tariff Schedule

Sources: US International Trade Commission, authors' calculations.

Chinese tires regained some of their lost market share during that latter half of 2010, imports from China were only slightly more than 10 percent of total US imports of radial light truck tires by the end of 2011Q3. As was the case with radial car tire imports, it appears that the safeguard tariffs exerted a significant substitution effect on the quantity of US light truck tire imports from China.

Price Effects

Figures 3a and 3b plot the unit value of US car and light truck tire imports (see table 2 for the underlying data). These values closely equate to the average wholesale prices (exclusive of the tariff) paid by US retailers that deal in tires and by automotive manufacturers that use imported tires. Import unit value statistics are the best data available to measure the adverse price effects on US consumers who purchase imported tires. Unit values are expressed on a cost, insurance, and freight (CIF) basis, before the imposition of tariffs. The tariffs, like any other sales or excise tax, put money in the Treasury and take money from consumers. For the purpose of this analysis, we consider that transfer a wash, though a more refined analysis would show that the loss of consumer welfare exceeds the gain in government revenue.

Figure 3a indicates that a slight decline in unit values for car tires occurred after the 2009 tariffs were imposed, but soon

the trend resumed of higher unit values on imports from China and all other countries through 2011Q3. Chinese-made unit values increased from \$30.79 to \$38.92 per car tire between 2009Q3 and 2011Q3—representing a 26 percent increase in the post-tariff era.

Figure 3b shows that the average unit value of a light truck tire imported from China declined from \$52.73 in 2009Q3 to \$48.21 by 2009Q4—a 9 percent decrease. By contrast, the average unit value of imports from AOC only decreased by one percent between 2009Q3 and 2009Q4. Over the safeguard period, Chinese-made light truck tire unit values increased from \$52.73 to \$61.48 between 2009Q3 and 2011Q3—representing a 17 percent increase during the post-tariff era. The average unit value of US light truck tire imports from AOC increased from \$76.20 to \$89.64 between 2009Q3 and 2011Q3—an 18 percent increase during the post-tariff era.

The initial decreases in the unit values of Chinese car and light truck tires probably reflect inventory buildup in anticipation of the tariff. Chinese tire exporters probably took a price hit as US retailers reduced their inventories to normal levels. However, the unit values of both car and light truck tires from China and AOC increased, on balance, over the entire post-tariff era, as the safeguards pushed the prices of imported tires towards the higher prices of US-made tires.

Figure 4 allows us to put the unit value increases of US car and truck tire imports in the context of overall price develop-

Figure 2a US radial truck tire imports: quantity

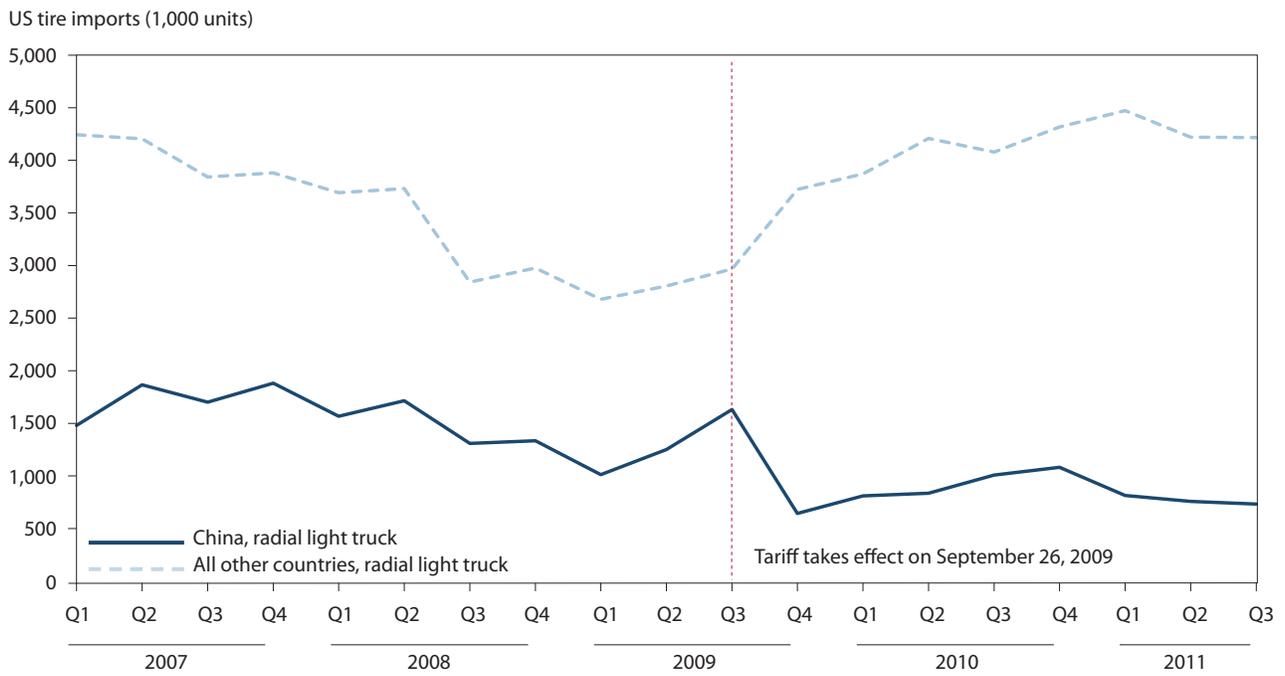
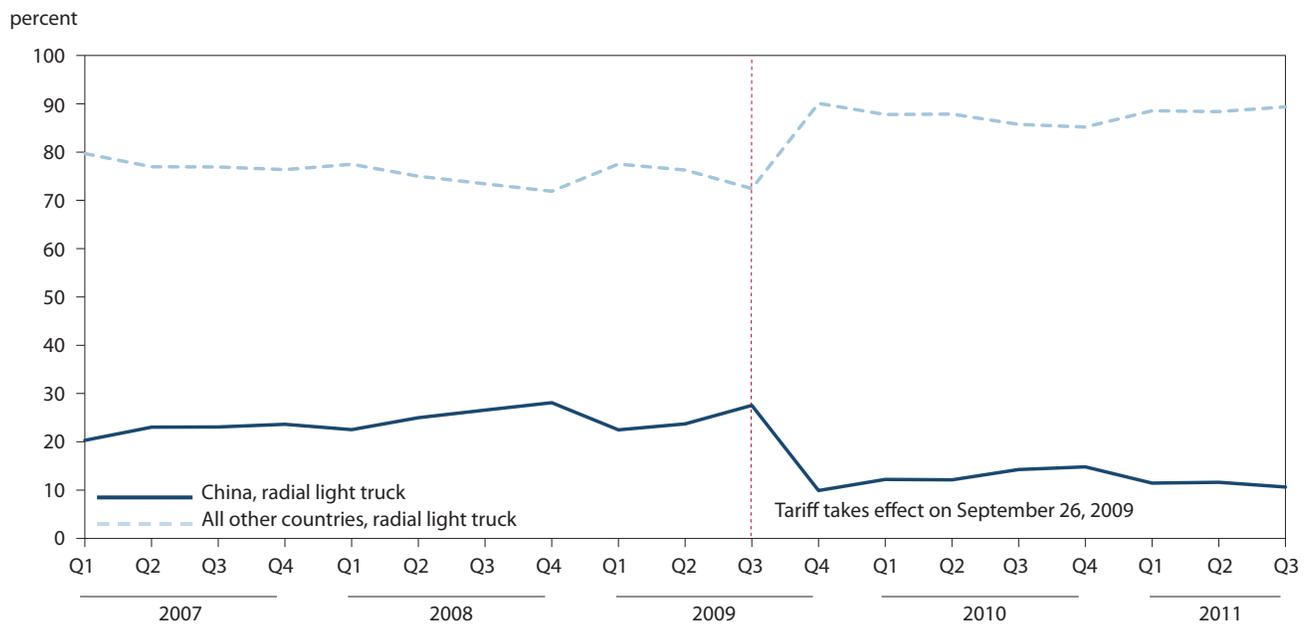


Figure 2b US radial truck tire imports: share of the value



Sources: US International Trade Commission, authors' calculations.

Table 2 Per-unit value of US tire imports (current US dollars)

HTS Code	Category of Tires	Date														
		2007				2008				2009		2010		2011		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
China																
4011.10.10	Radial car	26.77	27.91	28.57	29.27	28.81	30.32	31.71	33.23							
4011.20.1005	Radial light truck	46.62	44.46	45.83	44.13	47.83	50.15	54.96	59.18							
All other countries																
4011.10.10	Radial car	43.73	45.06	45.20	46.53	48.53	49.06	51.53	51.62							
4011.20.1005	Radial light truck	63.85	65.87	67.67	69.07	69.88	69.13	70.00	67.88							
China																
4011.10.10	Radial car	32.21	31.51	30.79	27.87	27.78	30.82	31.24	32.05	34.50	37.98	38.92				
4011.20.1005	Radial light truck	57.26	51.96	52.73	48.21	48.09	51.44	50.55	53.55	58.90	63.32	61.48				
All other countries																
4011.10.10	Radial car	53.54	53.59	53.94	53.42	52.53	52.32	54.80	55.35	58.58	62.05	63.94				
4011.20.1005	Radial light truck	74.65	74.51	76.20	75.73	72.35	73.91	75.28	77.12	82.94	86.49	89.64				

HTS = Harmonized Tariff Schedule

Sources: US International Trade Commission, authors' calculations.

ments. For the first seven quarters of our observation period (2007Q1 to 2008Q3), the rate of increase in the Producer Price Index (PPI) for American-made car and truck tires was below the average rate of the increase in the PPI for all US manufacturing sectors.⁹ This relationship reversed following a decline in the PPI for all US manufactured goods between 2008Q4 and 2009Q3. Following 2009Q3, however, the PPI for US-made car and light truck tires increased at a faster rate than the PPI across all US manufacturing sectors.

Jobs Data

According to President Obama's 2012 State of the Union address, restrictions on Chinese car and light truck tire imports saved "over one thousand jobs" in the tire manufacturing industry. Figure 5 plots Bureau of Labor Statistics (BLS) employment data for the tire industry. Consistent with the president's claim, employment in the industry rose from 50,800 in September 2009 to 52,000 in September 2011. Although this level remains below the employment level of 60,000 workers seen during 2007 and much of 2008, the president's policy coincides with a rise of 1,200 workers in the tire manufacturing industry. For

purposes of our calculations, we generously attribute all 1,200 additional jobs to the safeguard tariffs on Chinese tires.¹⁰

Later in our analysis of the retail employment effects of tire protection, we will need to consider the added purchasing power of otherwise unemployed tire builders. According to the BLS, tire builders earned an annual average salary of \$40,070 in 2011.¹¹ Multiplying that figure by 1,200 jobs gives a total of \$48 million of additional worker income and purchasing power—assuming that, in the absence of tire protection, these workers earned nothing and had no money to purchase goods and services (extreme assumptions).

THE COST OF PROTECTIONISM

To estimate the additional costs that the invocation of safeguard tariffs imposed on US consumers we perform two calculations. First, we estimate the higher amount paid for imported tires (not counting the tariff itself) on account of the substitution towards higher cost car tires from other countries. Second, we estimate the boost in amount paid by American consumers for US produced tires.

9. Changes in the Bureau of Labor Statistics Producer Price Index (PPI) measure the average changes over time in selling prices received by domestic producers for their output.

10. Of course it seems likely that the general improvement in economic conditions between the fall of 2009 and the fall of 2011 was responsible for a good part of the rise in tire manufacturing employment.

11. This 2011 annual salary data comes from the BLS Occupational Employment Statistics (<http://data.bls.gov/oes/>) information for the position of tire builders (SOC 519197) under the rubber product manufacturing industry (NAICS 326200).

Figure 3a US radial car tire imports: unit value

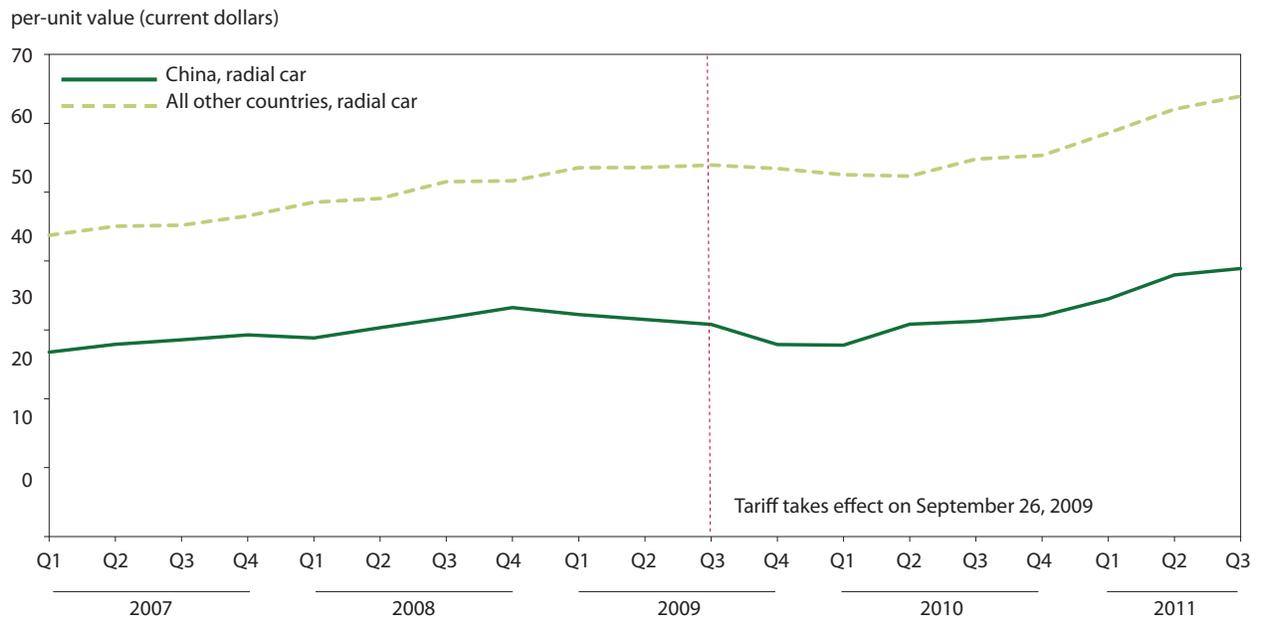
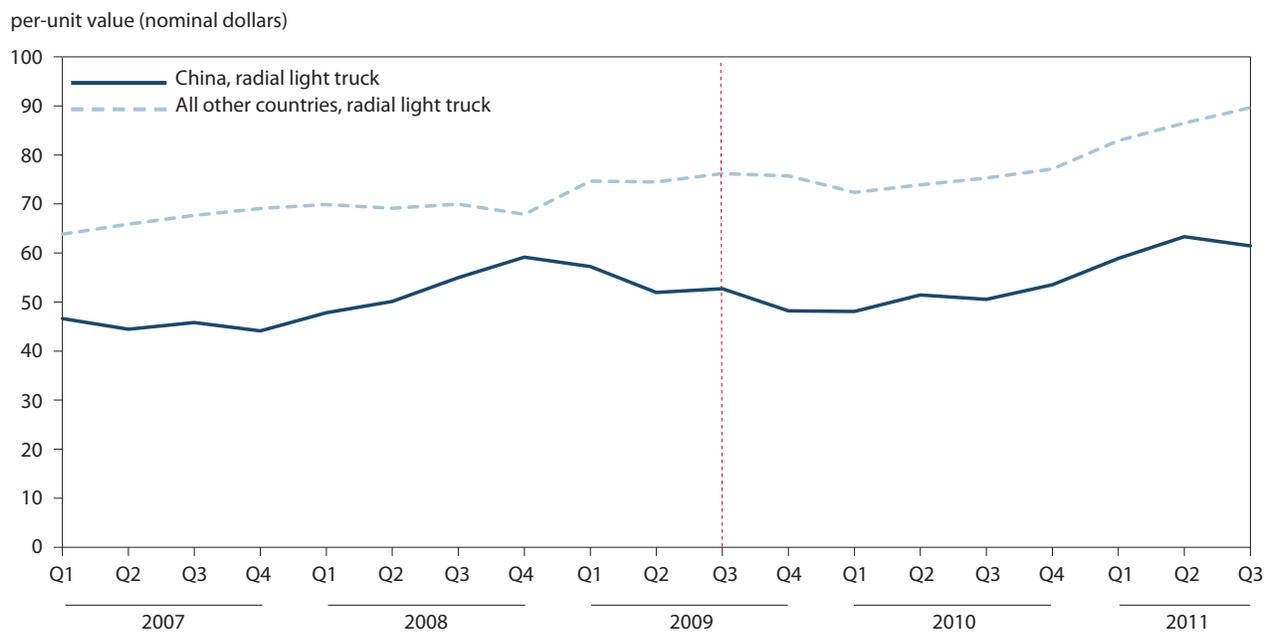


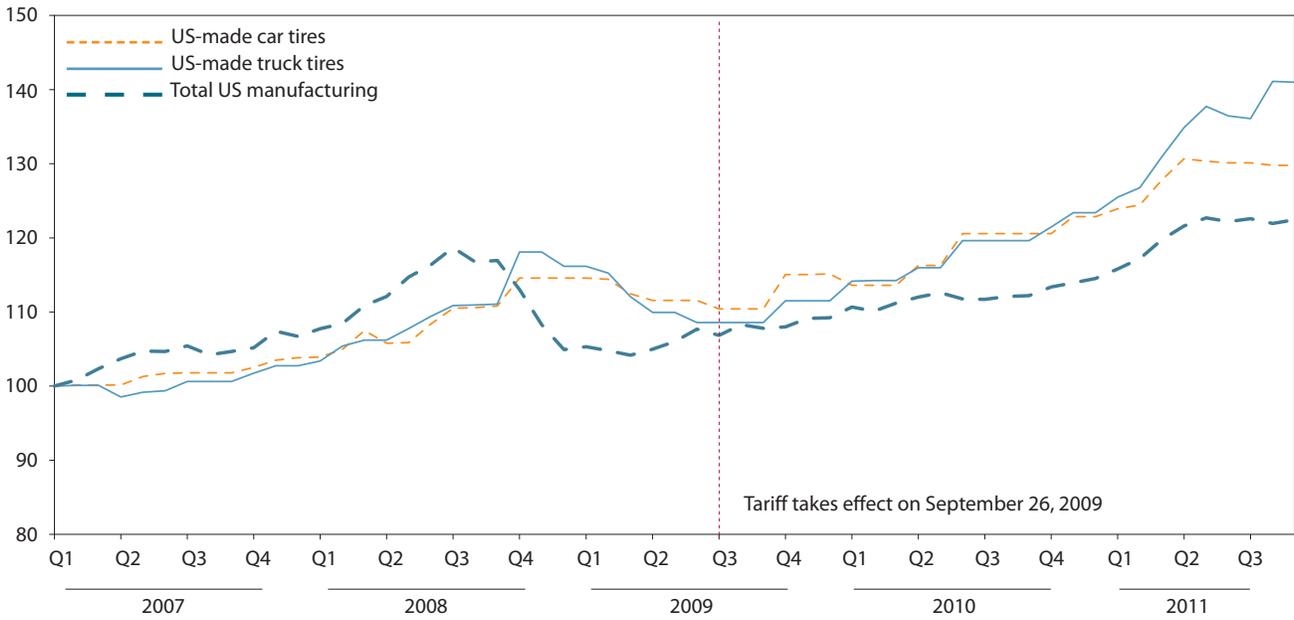
Figure 3b US radial truck tire imports: unit value



Sources: US International Trade Commission, authors' calculations.

Figure 4 US Producer Price Index

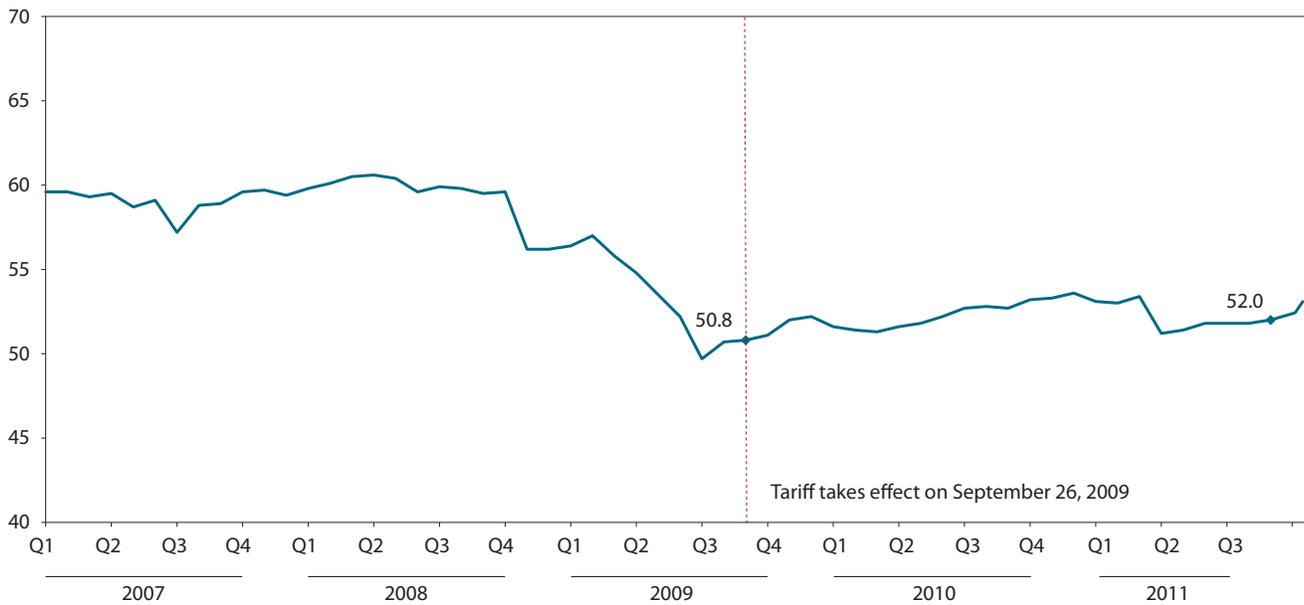
producer price index, 2007Q1 = 100



Sources: US Bureau of Labor Statistics, authors' calculations.

Figure 5 Employment in the US tire industry

employees (thousands)



Source: US Bureau of Labor Statistics, authors' calculations.

Table 3 Estimating the costs of the safeguard tariffs to US consumers of imported tires

	2009	
	Q3	Q4
Radial car tire imports		
Unit value of imports from China, in dollars	30.79	27.87
Unit value of imports from all other countries (AOC), in dollars	53.94	53.42
Unit value difference (AOC minus China), in dollars	23.15	25.55
Average value difference (AOC minus China) 2009Q3 and 2009Q4, in dollars	24.35	
Quantity of imports from China, in 1,000 tires	12,968	5,617
Decline in quantity of imports from China between 2009Q3 and 2009Q4, in 1,000 tires	7,351	
Annualized cost to US consumers from switching imports from China to AOC, in million dollars (calculated as \$24.35 per tire, times 7.351 million tires, times four quarters)	716.00	
Radial light truck tire imports		
Unit value of imports from China, in dollars	52.73	48.21
Unit value of imports from all other countries (AOC), in dollars	76.20	75.73
Unit value difference (AOC minus China), in dollars	23.47	27.51
Average value difference (AOC minus China) 2009Q3 and 2009Q4, in dollars	25.49	
Quantity of imports from China, in 1,000 tires	1,631	643
Decline in quantity of imports from China 2009Q3–Q4, in 1,000 tires	988	
Annualized cost to US consumers from switching imports from China to AOC, in million dollars (calculated as \$25.49 per tire, times 988,000 tires, times four quarters)	100.70	

Sources: US International Trade Commission, authors' calculations.

Price Increase from the Shift to Non-Chinese Tire Imports

For the first calculation, we calculate the pre-tariff unit value difference (averaging data for 2009Q3 and 2009Q4) between radial car and light truck tire imports from China and radial car and light truck tire imports from all other countries (AOC). Table 3 shows the average pre-tariff unit value difference, separately for car and light truck tire imports from China and AOC, respectively. We then multiply the AOC premium by the quantity decline of car and light truck tire imports respectively from China during the same period (2009Q4 versus 2009Q3). This indicates a combined car and light truck tire annual cost increase of \$816.7 million (\$716.0 million related to car tires and \$100.7 million related to light truck tires). This is our calculation of the annualized cost inflicted on American consumers as a result of their switch from Chinese tires to AOC tires in the wake of the safeguard tariffs.

These calculations assume that foreign suppliers soon replaced, one-for-one, the decline in tire imports from China after the tariffs took effect on September 26, 2009. Of course this is an approximation. Close examination of the trade data indicates that US car tire imports from China decreased by 7.4 million from 2009Q3 to 2009Q4, whereas imports from

AOC increased by only 1.7 million during this period. But by 2010Q2, car tire imports from AOC rose substantially, virtually replacing all the lost car tire imports from China.¹² In the case of light truck tires, the substitution of 758,000 AOC light truck tires for the decline of roughly 988,000 Chinese light truck tires took place between 2009Q3 and 2009Q4. Although domestic tire producers might have captured some of this difference, imports of light truck tires from AOC more than replaced the post-tariff decline of light truck tire imports from China by 2010Q2.

In other words, exporters in countries such as Thailand, Indonesia, and Mexico benefited substantially from stepping into China's market shoes as those countries, like China, manufacture lower-priced car and light truck tires. Goodyear, the largest US tire manufacturer, is not such a direct competitor with Chinese tires, as it exited the low-end tire market years ago.¹³ Evidently foreign firms, not US producers, are largely filling the space once occupied by Chinese tires in the US market.

12. The delay in AOC substitution may be explained by the anticipatory stockpiling of Chinese tire imports prior to the imposition of tariffs in 2009Q3.

13. Bussey, John. 2012. "Get Tough Policy on Chinese Tires Falls Flat." *Wall Street Journal*, January 20.

Table 4 Estimating the effects of the safeguard tariffs on the price of US-made tires and the cost to US consumers

Category	Average in month-to-month Producer Price Index changes (percent)	Difference between average month-to-month Producer Price Index changes in tires and all manufacturing (percent)	Annualized difference between average month-to-month Producer Price Index changes in tires and all manufacturing (percent)
Pre-tariff period (January 2007–September 2009)			
US-made tires ¹	0.41	0.13	1.55
Total US manufacturing	0.29		
Post-tariff period (October 2009–September 2011)			
US-made tires	1.07	0.40	4.81
Total US manufacturing	0.67		
Approximate value of US-made tire sales, billions of US dollars ²	18.10		
Annualized differential price increase, in percentage terms, before and after the tariff, US-made tires vs. all manufacturing (4.81 percent minus 1.55 percent)	3.26		
Annualized value of the post-tariff differential price increase, US-made tires vs. all manufacturing, millions of US dollars	590.10		
Annualized cost increase attributed to tariff (one-half of total differential), millions of US dollars ³	295.00		

1. Average for US-made tires was calculated using a simple average of the month to month Producer Price Index (PPI) changes for US-made car and truck tires.

2. Taken from the Bureau of Economic Analysis's (BEA) 2010 Input-Output Accounts, see table 5.

3. The authors conservatively attribute just one-half of the dollar value of the total differential price increase to the consequences of the safeguard tariffs

Sources: US Bureau of Labor Statistics, Bureau of Economic Analysis, authors' calculations.

Price Increase in US-Made Tires

Even so, the safeguard tariffs gave an attenuated boost to US tire producers. Table 4 shows our calculations for the effect of the tariffs on prices for US-made tires. Between January 2007 and September 2009, the spread between a simple average of month-to-month changes in the PPI for US-made car and truck tires versus the month-to-month changes in the PPI for all US manufacturing was 1.55 percent, expressed on an annualized basis. After the tariff was imposed, the same spread jumped to 4.81 percent. In other words, the spread increased by 3.26 percent, comparing the before-tariff and after-tariff differentials between the rises in the tire PPI and the all manufacturing PPI. Multiplying 3.26 percent by the approximate value of US-made tire sales during the post-tariff period (\$18.1 billion in 2010), we conclude that the larger post-tariff spread cost American consumers \$590 million on an annualized basis.

Table 5 shows that foreign imports represent roughly half of the total value of tires sold in the United States—in other words a significant market share. Accordingly, we think a conservative calculation can properly attribute one-half of the large spread,

or \$295.5 million annually, to the impact of safeguard tariffs. Put another way, we assume that the safeguard tariff enabled domestic tire producers to raise their price somewhat more than might otherwise have been possible. However, these calculations (and the underlying assumptions) suggest that the bulk of benefits from safeguard tariffs accrued to foreign tire producers, not US producers.

Cost Per Tire Job Saved

Adding together the \$817 million price increase from the shift to non-Chinese tire imports and the \$295 million price increase in US-made tires, we conclude that the gross annualized cost of the safeguard tariffs to American consumers in 2011 was around \$1,112 million.

The arithmetic in box 2 shows that, if this cost is divided by the maximum of 1,200 jobs saved since the safeguard tariffs took effect, the total cost to American consumers exceeded \$900,000 per job saved. While this figure seems extravagant, it is consistent with prior research. Studies repeatedly show that the consumer

Table 5 Estimating the effects of the safeguard tariffs on the price of US-made tires and the cost to US consumers

Category	Average in month-to-month Producer Price Index changes (percent)	Difference between average month-to-month Producer Price Index changes in tires and all manufacturing (percent)	Annualized difference between average month-to-month Producer Price Index changes in tires and all manufacturing (percent)
	Pre-tariff period (January 2007–September 2009)		
US-made tires ¹	0.41	0.13	1.55
Total US manufacturing	0.29		
	Post-tariff period (October 2009–September 2011)		
US-made tires	1.07	0.40	4.81
Total US manufacturing	0.67		
Approximate value of US-made tire sales, in billion dollars ²	18.10		
Annualized differential price increase, in percentage terms, before and after the tariff, US-made tires vs. all manufacturing (4.81 percent minus 1.55 percent)	3.26		
Annualized value of the post-tariff differential price increase, US-made tires vs. all manufacturing, in million dollars	590.10		
Annualized cost increase attributed to tariff (one-half of total differential), in million dollars ³	295.00		

1. Average for US-made tires was calculated using a simple average of the month to month PPI changes for US-made car and truck tires.

2. Taken from the BEA's 2010 Input-Output Accounts, see Table 4.

3. The authors conservatively attribute just one-half of the dollar value of the total differential price increase to the consequences of the safeguard tariffs.

Sources: US Bureau of Labor Statistics, Bureau of Economic Analysis, authors' calculations.

Box 2 Summarizing the cost to US consumers of protection against Chinese tire imports, 2011

Annualized cost to consumers for switching from imported radial car tires from China to tires from other foreign countries, in million dollars (table 3)	716.00
Annualized cost to consumers for switching from imported radial light truck tires from China to imported tires from other foreign countries, in million dollars (table 3)	100.70
Annualized cost to consumers for the safeguard tariff's impact on the price of US-made tires, in million dollars (table 5)	295.00
Total cost to consumers, in million dollars (excluding the tariff revenue collected from consumers)	1,111.70
Total jobs saved by tariffs, September 2009–11 (figure 5)	1,200
Annualized cost to consumers per manufacturing job saved by the safeguard tariffs on Chinese tire imports, in thousand dollars (\$1,111.7 million cost divided by 1,200 jobs)	926.5

Sources: US Bureau of Labor Statistics, Bureau of Economic Analysis, International Trade Commission, authors' calculations.

Table 6 Loss of US retail jobs due to higher tire prices resulting in less US household purchasing power

Annual employment in the retail sales trade, in millions of jobs ¹	14.73
Annual US retail sales, in trillion dollars ²	\$4.20
Jobs in retail sales created per \$1 billion of US retail sales annually	3,507
Annualized higher consumer spending on AOC tires plus higher cost of US tires, in million dollars ³	\$1,111.70
Less: additional income to tire builders saved by the safeguards (1,200 workers with annual salaries of \$40,040 each), in million dollars ⁴	\$48.10
Annual net loss of purchasing power by US households as a result of tire safeguards to US consumers, in million dollars	\$1,063.60
Calculation of lost retail jobs in the United States due to higher tire prices (3,507 jobs times \$1.064 billion in lost consumer purchasing power)	3,731

1. Taken from the BLS Current Employment Statistics for the retail trade sector in December 2011.

2. Combined sum of the Census Bureau's total monthly retail sales statistics (excluding food services) for 2011.

3. Taken from box 2, line 4.

4. Employment data comes from table 5, whereas salary data comes from the BLS Occupational Employment Statistics information for the position of tire builders (SOC 519197) under the rubber product manufacturing industry (NAICS 326200). We assume that, in the absence of safeguards, some 1,200 tire builders would be unemployed and have no income.

Sources: US Bureau of Labor Statistics, US Census Bureau, authors' calculations.

cost of trade protection typically exceeds, by a wide margin, any reasonable estimate of what a normal jobs program might cost.¹⁴ Of course only a small fraction of the bloated cost reaches the pockets of factory workers. Most of the money extracted by protection from household budgets goes to corporate coffers, at home or abroad, not paychecks of American workers. In the case of tire protection, our estimates indicate that fewer than 5 percent of the consumer costs per job saved reached the pockets of American workers (\$48 million out of \$1,112 million).

When consumers spend more money on tires, then they have less money to spend on other retail goods. By dividing the total number of workers employed in the retail services at the end of 2011 by annual sales (not including food services) in that year, table 6 calculates that 3,507 retail sales jobs are created in the United States for every one billion dollars spent in the domestic retail market.¹⁵ The tire safeguards extracted an

estimated \$1,112 million annually from US consumers; at the same time, the safeguards put \$48 million in the pockets of otherwise unemployed tire workers. The net effect was to reduce consumer spending on other retail goods by about \$1,064 million, indicating that the safeguard tariffs probably cost around 3,731 jobs in the retail sector.¹⁶ This loss of employment in the retail sector is admittedly widely disbursed and therefore politically unnoticed. But when the retail job loss figure is offset against the highly visible figure of a maximum of 1,200 manufacturing jobs saved, it appears that safeguards actually cost the American economy around 2,531 jobs. A net loss of jobs may surprise many observers (including those in the White House), but in fact trade protection often takes more jobs from the retail sector than it saves in the manufacturing sector.

CONCLUSION

The big winners from the 2009 safeguard tariffs were alternative foreign exporters, primarily located in Asia and Mexico, selling low-end tires to the United States. Domestic tire producers were secondary beneficiaries. The members of the labor union that petitioned the ITC's investigation received only a small share of the money extracted from the pockets of American households.

14. In one of the first such studies, a 1994 analysis of 21 highly protected sectors found that the consumer cost per job saved averaged about \$170,000 on an annualized basis, and far exceeded the contemporary annual compensation of manufacturing workers. A study of the Steel Revitalization Act of 2001 found that the proposed bill would have cost consumers about \$360,000 annually per job saved in the steel industry. See: Hufbauer, Gary Clyde, and Kimberley Ann Elliot. 1994. *Measuring the Costs of Protectionism in the United States*. Washington: Peterson Institute for International Economics; and Hufbauer, Gary Clyde, and Ben Goodrich. 2001. *Steel: Big Problems, Better Solutions*. Washington: Peterson Institute for International Economics.

15. To obtain this figure, we divided 14.7 million employees in retail trade industry (not including food services) in December 2011 by \$4.2 billion in total retail sales in 2011. Employment data came from the BLS Current Employment Statistics seasonally adjusted data on employment in "retail trade" (<http://www.bls.gov/ces/>), and retail sales data came from the US

Census Monthly and Annual Retail Trade statistics (<http://www.census.gov/retail/marts/www/timeseries.html>).

16. This number is derived using simple algebra: [\$1,064 million net reduction in consumer spending divided by \$1,000 million] times 3,507 retail jobs per billion dollars of consumer spending equals a loss of 3,731 retail jobs.

US car and light truck tire consumers are paying higher prices regardless of whether they purchase a Chinese or non-Chinese tire. Jobs created in the tire manufacturing industry were more than offset by the loss of jobs in the US retail sector. As an added consequence, US chicken firms lost export sales in the wake of Chinese retaliation.

Creating jobs in the American manufacturing sector and ensuring that China plays fair on the international market are both worthy policy goals. Trade protection targeted at selected imports, however, is a costly way of going about these tasks. Admittedly, targeted protection can be highly popular with US trade unions and individual firms. In some circumstances, denying China access to the US market might help reform Chinese policies. But tire safeguards provoked Chinese retaliation, not compliance. In this instance safeguard tariffs extracted more than one billion dollars annually from American households, causing a net loss of jobs in the American economy, when job losses in the retail sector are offset against job gains in the manufacturing sector. Collecting a billion dollars in taxes or tolls, and spending the money on renewing dilapidated infrastructure, would create some 7,000 jobs in construction and many more in manufacturing, a far better outcome for the US economy (Hufbauer and Wong 2011). In retrospect, tire safeguards did not change Chinese policies in a helpful way, nor did they boost US employment. The best thing about the tire tariffs is that they expire in September.

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