



## VOXEU COLUMN INTERNATIONAL TRADE LABOUR MARKETS

### The price effects of trade: New evidence from the US and implications for quantitative trade models

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International trade creates both winners and losers. Using comprehensive price data, this column estimates the US price effects of the China shock from 2000 to 2007. It finds that US consumers benefited from large price declines in product categories in which imports from China increased, as increased trade with China eroded the market power of US producers. The positive impact of the China shock on the purchasing power of US consumers is large in comparison to its negative impact on US jobs.

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International trade is widely viewed as creating winners and losers in the economy.

Influential work has documented that US labour markets were heavily disrupted by the surge of imports following China's joining the WTO in 2001, a historic change in trade widely referred to as the 'China shock' (Autor et al. 2013, Pierce and Schott 2016). However, much less is known about the extent to which the China shock may have benefited US consumers by reducing consumer prices and thereby increasing their purchasing power. What were the price effects of the China shock and the consequences for US consumers?

In a recent paper ([Jaravel and Sager 2019](#)), we study comprehensive price data on hundreds of thousands of products to estimate the price effects of the China shock, focusing on the period from 2000 to 2007. Using micro-data from the US Consumer and Producer Price Indices, our analysis yields three main lessons.

**Lesson 1. US consumers benefited from large price declines in product categories in which imports from China increased**

We find that prices fell substantially in product categories where imports from China increase. Specifically, we find that retail prices faced by US consumers fall by 2% when China’s market share in the US increases by one percentage point. To interpret how large of a price decline this is, it is useful to compute the gain in purchasing power this represents for US consumers. Our findings indicate that, on average, each US household saw its annual purchasing power increase by \$1,500 thanks to lower prices caused by increased trade with China from 2000 to 2007. These gains from lower prices were broadly shared across all income groups in the economy, although they were proportionally larger for low-income groups (with gains about 15% larger than average).

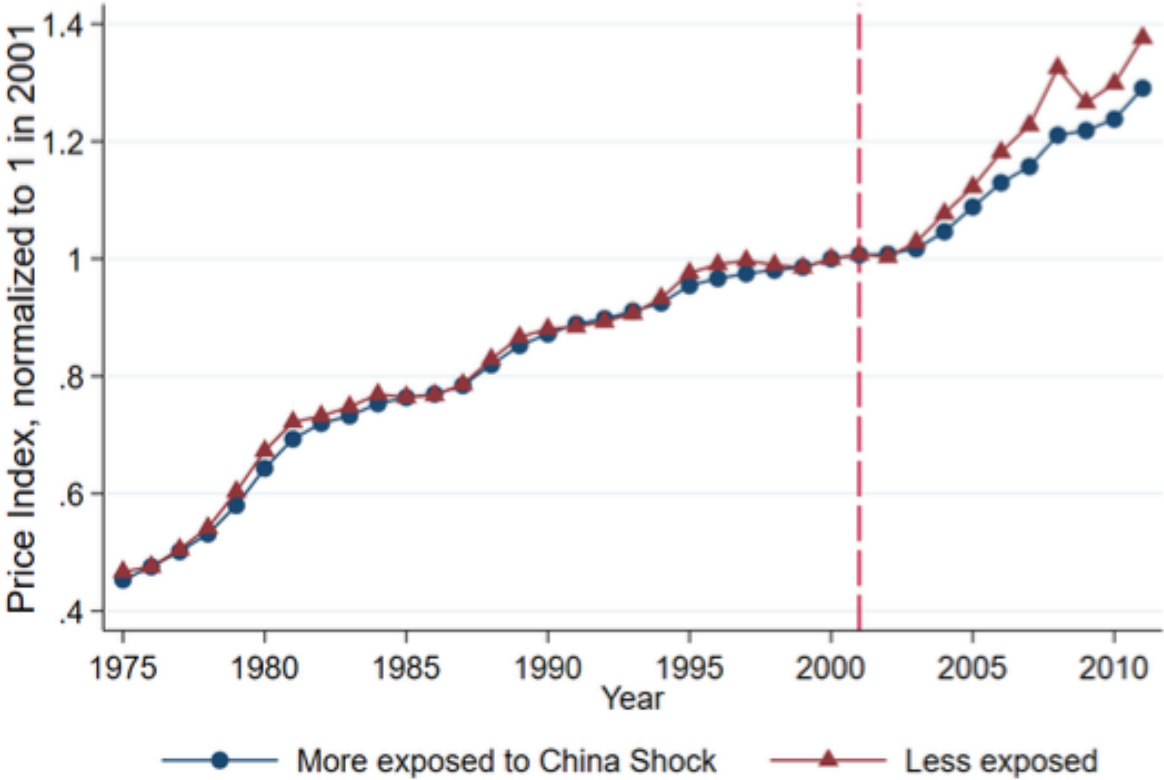
The comprehensive price data we use for this analysis have several advantages, which we describe in the paper. Notably, we estimate price changes while holding products’ quality constant, so that price declines reflect a true increase in purchasing power (and not a decline in quality).

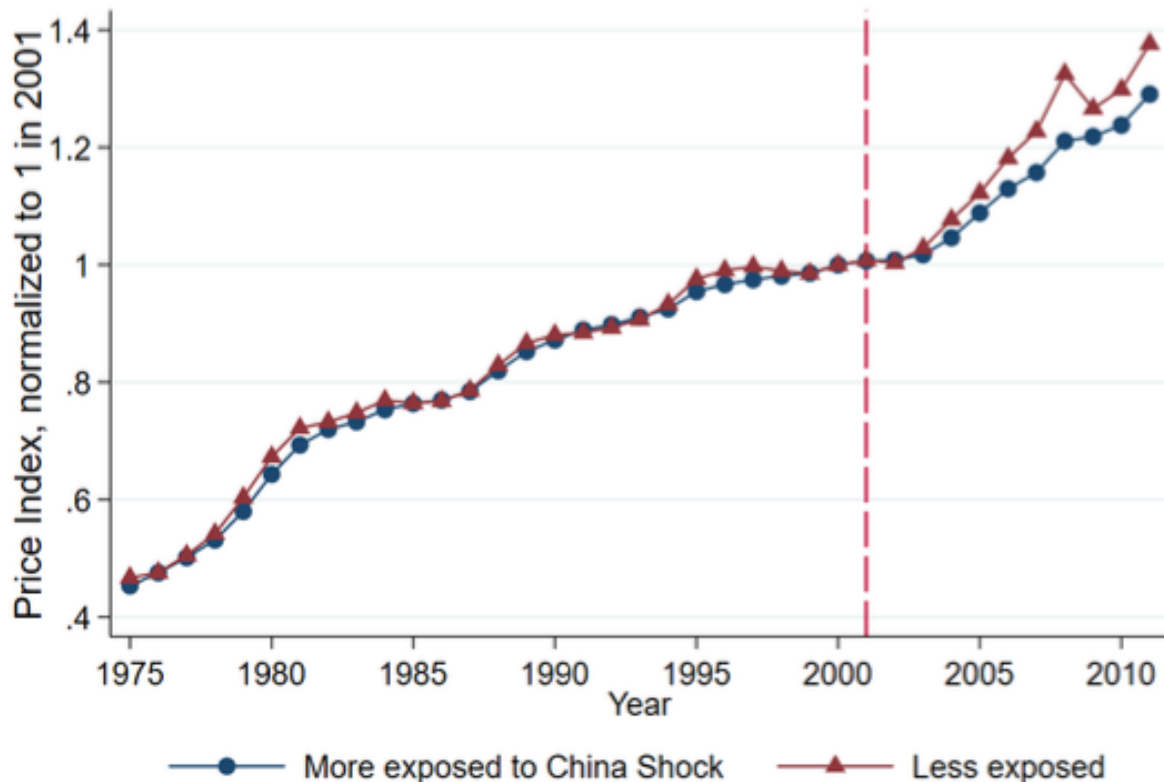
Estimating the causal effect of trade with China on US consumer prices is challenging because of potential omitted variable biases and reverse causality. For example, China has a comparative advantage in specific product categories that may be on different inflation trends, such as consumer electronics or apparel.

To overcome this challenge, we use two complementary research designs borrowed from recent work by Pierce and Schott (2016) and Autor et al. (2013), who studied the consequences of trade with China for employment across US industries.<sup>1</sup> Several falsification, pre-trend and robustness tests, which we describe in the paper, support the causal interpretation of the estimates.

Figure 1 illustrates these findings by reporting the path of prices for two groups of products, ranked by their level of exposure to the China shock. The figure shows that, following China’s WTO accession, prices fell in product categories that were more exposed to the China shock.

**Figure 1** The effect of the China shock on prices





*Note:* The figure shows price trends before and after China joined the WTO in 2001 (indicated by the red bar).

### **Lesson 2. Increased trade with China eroded the market power of US producers and led to lower prices for US consumers**

We find that much of the large price response to the China shock comes from a fall in the price of domestically produced goods, rather than from the inflow of cheaper products imported from China alone. Statistical decompositions indicate that the response of domestically produced goods accounts for over half of the total increase in purchasing power for US consumers.

Consistent with the competition channel, industries that had the highest levels of market concentration and the least competition from Chinese exporters prior to the China shock tended to experience larger price declines.

Recent work has documented a trend of rising market concentration in the US (De Loecker et al. 2018). Our findings suggest that trade may be particularly valuable to US consumers in a time of rising market concentration. Indeed, trade with China or with other trading partners may mitigate the monopolistic pricing behaviour that could potentially result from increased concentration and market power.

### **Lesson 3. The positive impact of the China shock on the purchasing power of US consumers is large in comparison to its negative impact on US jobs**

Trade creates winners and losers. In the case of the China shock, US consumers benefited through lower prices while some US workers were hurt. How do these effects compare to each other? We linked the price data to detailed labour market data to precisely compare the employment and price effects of the China shock.

We find that the economy-wide increase in purchasing power for US consumers is very large in comparison to the labour market disruptions. Specifically, we find that trade with China increased the total purchasing power of US consumers by \$411,464 for each displaced job

(while average annual pay for jobs in these industries is about \$40,000). This finding implies that the overall gains to US consumers through lower prices are large enough to compensate all US workers who lost their jobs due to increased competition from China in their industries.

In practice, compensating the exact individuals who lost their jobs because of trade may be challenging. It requires that policymakers find and implement the proper policies to redistribute the gains from the winners to the losers from trade. But our results indicate that there is much room to organise such transfers. For example, this could potentially be achieved through job training, relocation allowances or income support within federal programmes such as the Trade Adjustment Assistance (for example, Hyman 2018 documents large returns to the Trade Adjustment Assistance).

### **Concluding remarks**

By and large, US consumers benefited from the surge of imports following China's joining the WTO in 2001. Consumers saw their cost of living decline as domestic producers responded to increased competition from Chinese exports by cutting their prices. While the China shock disrupted US labour markets and caused many US workers to lose their jobs, the gains to US consumers through lower prices were so widely experienced that policymakers could use a fraction of the gains to compensate the group of workers who suffered.

Our findings suggest that such targeted compensation schemes are a promising avenue for policy, while protectionist policies increasing import tariffs are likely to have large welfare costs through higher prices for all consumers.

*Authors' note: The views expressed here are those of the authors and do not necessarily represent those of the institutions with which they are affiliated.*

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### **Endnotes**

[1] Pierce and Schott (2016) leverage a change in US trade policy passed by Congress in October 2000, which eliminated potential tariff increases for Chinese imports. Autor et al. (2013) instrument for changes in import penetration from China across US industries with contemporaneous changes observed in eight comparable economies.