

# The China Shock and Its Enduring Effects

David Autor, David Dorn, and Gordon H. Hanson (2021). **On the Persistence of the China Shock**. NBER working paper.

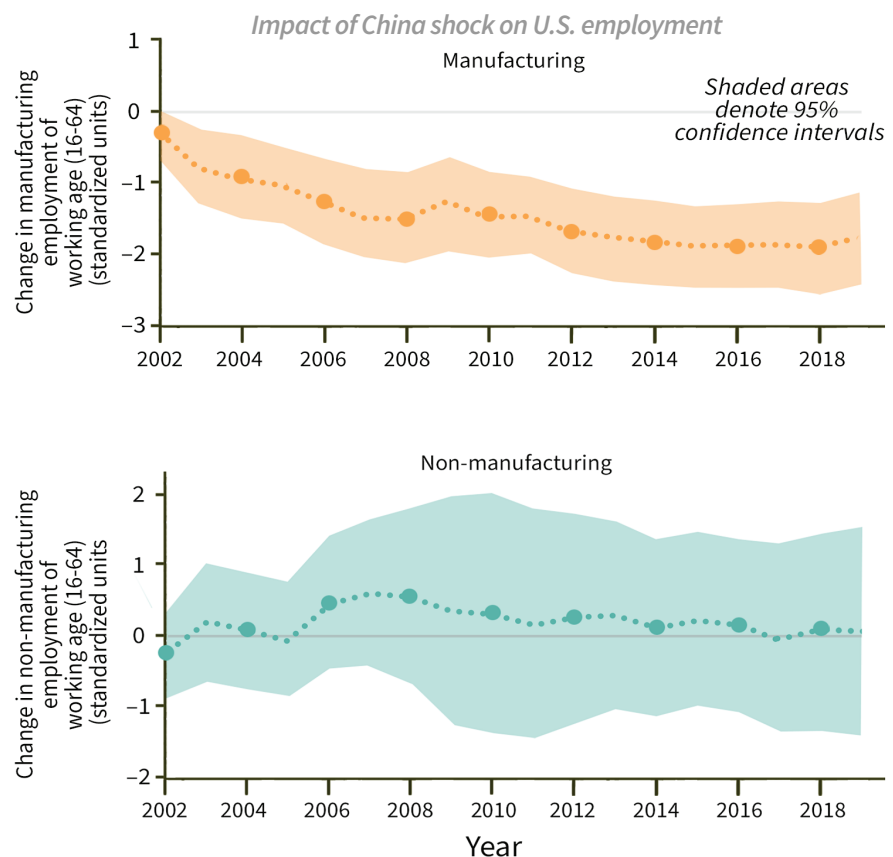
The explosive growth of China's exports to the rest of the world over the past two decades has fueled longstanding debates about the merits and costs associated with globalization. New research sheds light on the effects of import competition from China on trade-exposed areas in the U.S. and documents the persistent and geographically-concentrated nature of the "China shock" on the hardest hit segments of the American workforce.

**The data.** To examine the magnitude of trade exposure to China for 722 out of 741 local labor economies (or "commuting zones") in the U.S., the research team used import data from the UN Comtrade and the National Bureau of Economic Research's manufacturing productivity database. To measure the impact of the China shock on employment outcomes and population headcounts, the researchers used employment data from the Bureau of Economic Analysis Regional Economic Information System (REIS) and population data from National Vital Statistics System. To measure the impact of import competition from China on average income in the U.S., researchers used county-level data from the REIS on per capita personal income, labor compensation, and government transfers.

## INSIGHTS

- The impact of the China shock accounted for 59.3% of all U.S. manufacturing job losses between 2001 and 2019, mostly in labor-intensive manufacturing where fewer workers had college degrees.
- Laid-off workers converted nearly one for one into long-term unemployment, causing a corresponding rise in government transfer receipts per capita.
- Adverse impacts of the China shock lasted two decades beyond the initial trade shock and one decade following its peak intensity in 2010.
- Despite lower consumer prices of goods imported from China, 6.3% of the U.S. population still experienced net losses in real income due to the China shock.

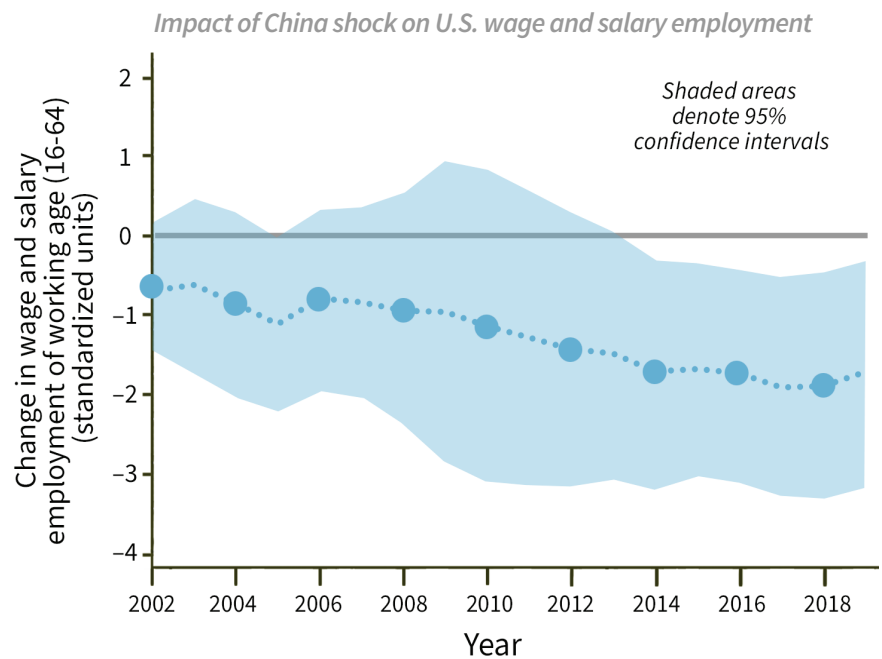
**Persistence of the China shock.** The research team defines the China trade shock as occurring between 2000 and 2012, starting one year prior to China's entry into the World Trade Organization and ending two years after the China trade shock reached peak intensity in 2010. The findings show that the China shock inflicted enduring losses past 2012 and generated intense variation in labor market outcomes across local economies in the U.S. The analysis demonstrates that the impacts of the trade shock included suppressed labor participation and declines in wages, salaries, and personal incomes in trade-exposed regions.



The evidence indicates that the U.S. witnessed a 2.68% drop in manufacturing employment-to-population ratio between 2001 and 2019. The scholars find that import penetration from China, which increased at an average rate of 0.89% between 2000 and 2012, accounted for 59.3% of all manufacturing job losses in the U.S. between 2001 and 2019. Furthermore, the research findings show that the regions experiencing larger trade-induced reductions in manufacturing employment did not experience a corresponding drop in local population due to out-migration nor increased absorption of laid-off workers into non-manufacturing sectors. Manufacturing job losses caused by the China trade shock converted nearly one for one into long-term unemployment.

The findings further indicate that the economic distress appeared to be most acute in local labor markets characterized by narrowly specialized, labor-intensive manufacturing (e.g., furniture making) and fewer college-educated workers.

Finally, alongside increasing joblessness in trade-exposed localities, the data also indicate corresponding declines in personal income per capita and an uptick in government transfer receipts per capita. Increased government assistance was insufficient to offset the financial fallouts from unemployment and declines in personal incomes, however. The adverse effects of greater import competition from China, furthermore, continued to persist through 2019 when the study period ended; i.e., nearly two decades beyond the intensification of the trade shock in 2001 and almost a decade after the shock reached peak intensity in 2010.



**The China trade shock by comparison.** The research team also compared the China trade shock to other concentrated episodes of economic distress. In particular, they analyzed the decline of the coal industry (1980–2000) and the 2008 Great Recession in the U.S. The scholars conclude that while the impacts on employment, earnings, and population from import competition with China were qualitatively not unique relative to these other shocks, the large magnitude of the China trade shock and the extreme variation in labor market outcomes were without precedent.

**Net losses to real incomes for many.** To determine net changes in overall economic welfare, the research team also estimated the gains from trade with China — primarily lowered consumer prices — that could potentially offset gross income losses from the China trade shock. Using estimates produced by prior research, scholars used the high-end figure of 1.25% average reduction in consumer prices across all local economies in the U.S. Despite this conservative analytical approach, the research team found that 82 commuting zones, or 6.3% of the U.S. population, still experienced absolute declines in real incomes.

**Lessons learned.** The China trade shock caused spatially concentrated job losses that persisted for two decades with lasting declines in both employment and income levels in the most exposed communities. The scholars suggest that existing policies in the U.S. failed to adequately insulate workers from mass-layoff events such as the China trade shock; and such policy failures have fueled right-wing populist movements in both the U.S. and Europe. The global economy, they suggest, will face repeated localized shocks from the energy transition, advanced automation, and even China’s massive industrial policy intended to support its technology sector. Armed with knowledge of the consequences of localized job loss and the likely location of future worker displacements, the authors of this research express hope that their research findings will enable policymakers to better prepare the U.S. workforce against regionalized economic shocks in the future.