US Trade and Labor Markets: The Case of China

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International Commerce and the World Economy

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Pre-China Shock

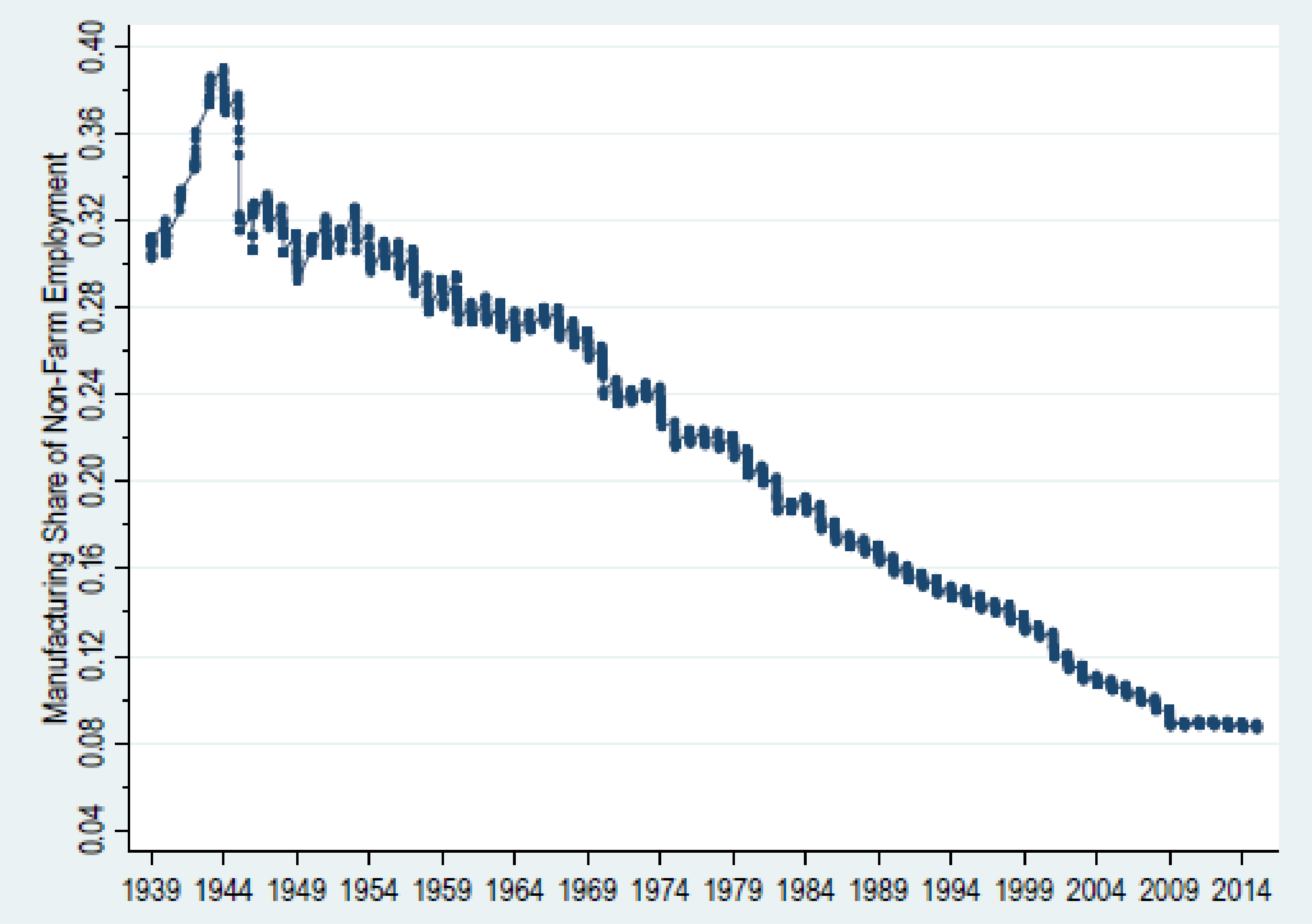
- Key prediction of H-O model: trade will tend to make low-skilled workers worse off in country such as US
- Prior to 1990s, most trade North-North, and imports from low-wage countries small – little distributional impact (Krugman, 2008)
- Beginning in 1990s, economists began to worry about rising wage inequality in US
- At same time, low-skill wages and employment fell, and manufacturing employment contracted in US
- Consensus by 2000: technological change and not trade to blame

Pre-China Shock

- Three pieces of evidence supported conclusions:
  - Share of US employment in manufacturing sector in decline post-1945 (see Figure 1)
  - Rise in wage inequality and fall in low-skilled wages not closely correlated with trade openness
  - Evidence of skill-biased demand shift due to adoption of new technology
- Answer to Freeman's (1995) question, "Are your wages set in Beijing?" was an emphatic "no" from trade economists (Autor *et al.*, 2016)

US Manufacturing

Figure 1: US Manufacturing Share of US Employment



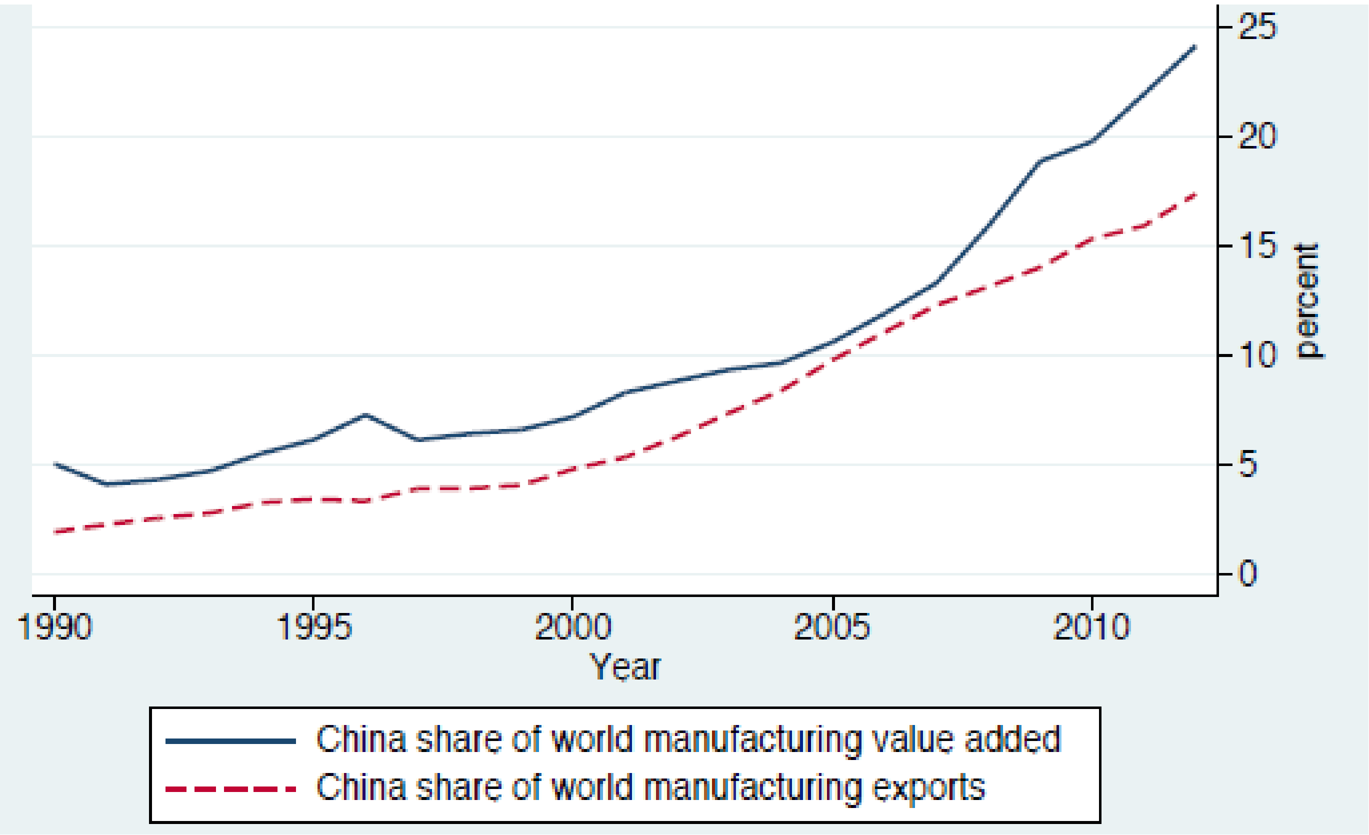
Source: St. Louis Federal Reserve Bank

China's Rise

- In late 1980s, considerable skepticism about China's economic future despite decade of reforms
- Economic reformers regained political control in early-1990s, pushing creation of Special Economic Zones (SEZs) – 20 in 1991 to 150 in 2010
- Encouraged significant inflows of foreign direct investment (FDI) – 0.7% of GDP in 1980s to 4% of GDP in 1990s and 2000s
- Production for export markets grew at fast pace (Figure 2) – China's share of global manufacturing increasing from 2% in 1991 to 19% in 2013

China and World Manufacturing

Figure 2: China's Share of World Manufacturing



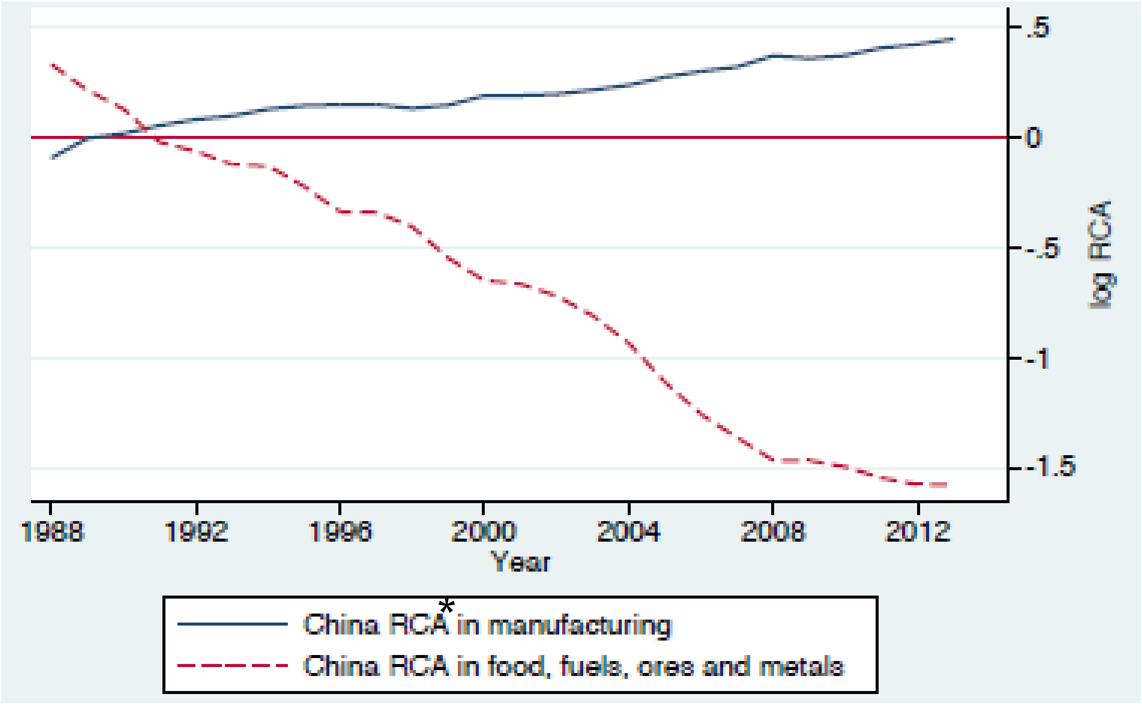
Source: World Bank Development Indicators

Factory China

- China's revealed comparative advantage (RCA) in manufacturing only emerged in 1990s (Figure 3)
- Strength in manufacturing reflects its abundant supply of labor, given massive increase in its industrial labor force, due to:
  - De-collectivization of agriculture
  - Closing of inefficient state-owned enterprises
  - Migration of 250 million from farms to cities
- Export surge accelerated after 2001 when China joined WTO, along with productivity growth rate of 8%/annum

China’s Comparative Advantage

Figure 3: China’s Revealed Comparative Advantage



Source: World Bank Development Indicators

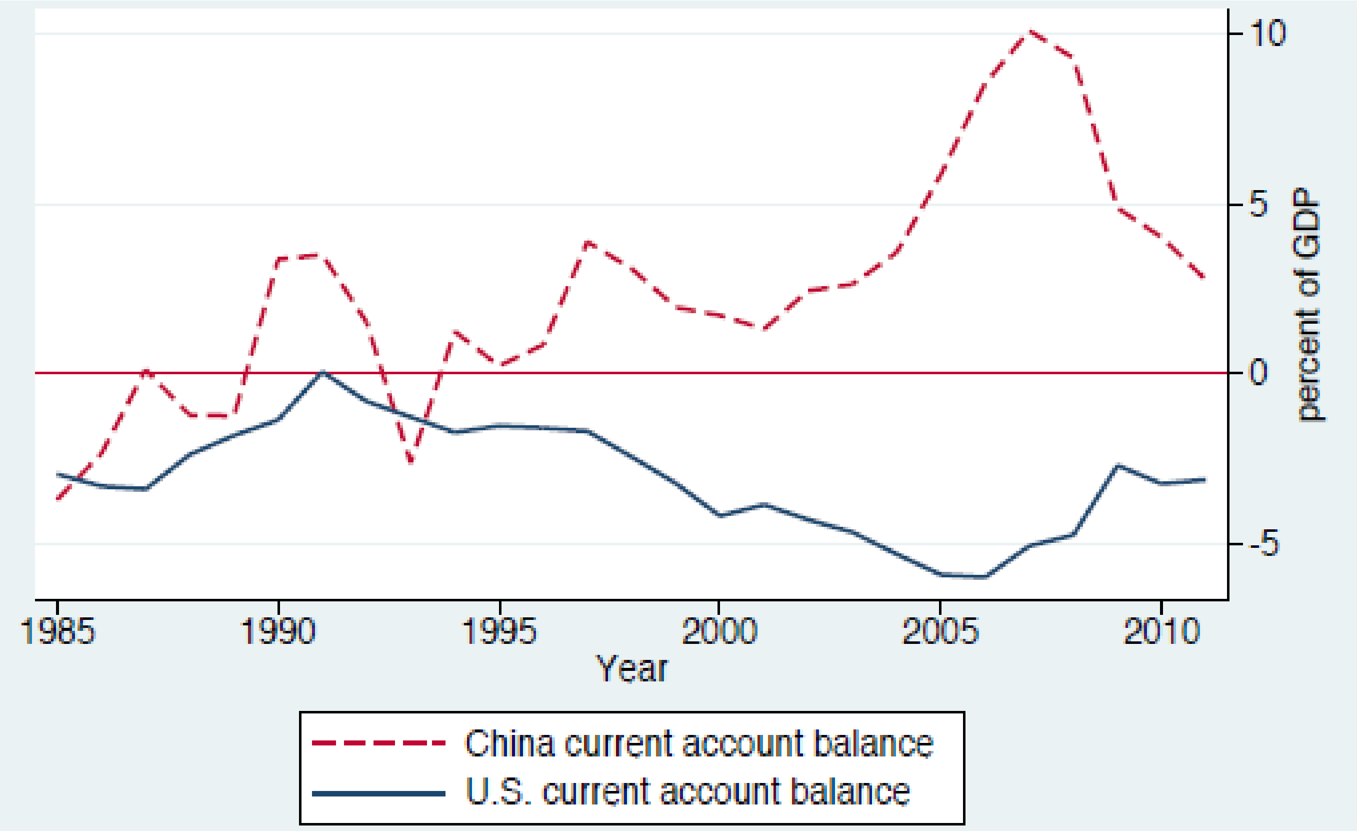
*** RCA definition: country’s share of global exports in sector divided by its share of aggregate global exports**

Macroeconomic Context

- China's trade surplus (US trade deficit) as percent of GDP have both increased (Figure 4)
- In multilateral world, no reason why US trade deficit should be systematically related to any specific country
- However, with net outflows of Chinese financial capital mostly invested in dollar-denominated assets, China has underwritten US trade deficit
- China's continued trade surplus considered to be a function of: (a) Chinese savings being kept at artificially high level, (b) currency undervaluation

China/US Trade Balances

Figure 4: China/US Trade Balance as Share of GDP



Source: World Bank Development Indicators

The China Syndrome

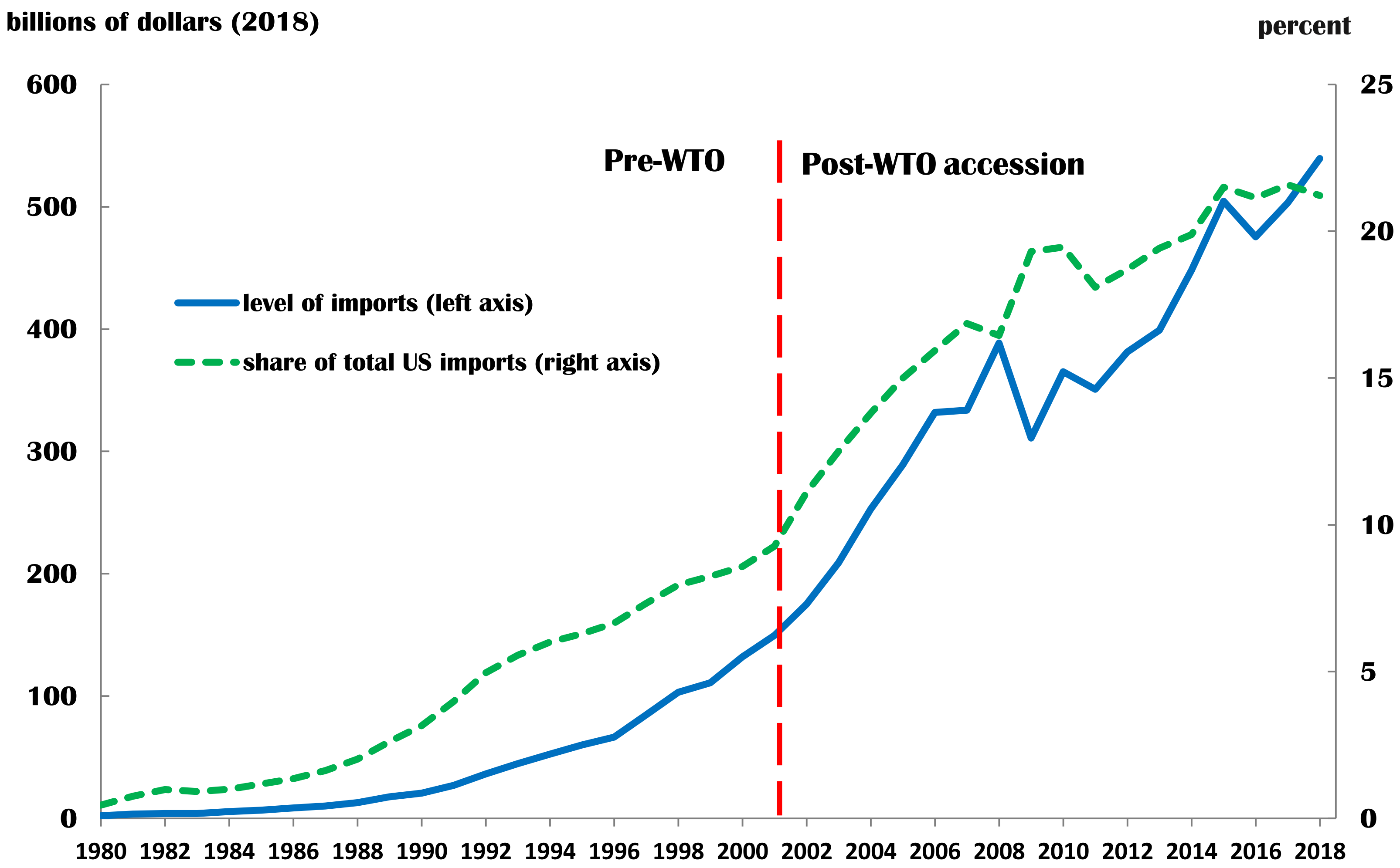
- In 1991, US imports from low-income countries accounted for 9 percent of manufacturing imports
- By 2007, share grew to 15 percent, China accounting for 89 percent of growth
- Share of US spending on Chinese goods rose from 0.6 percent in 1991 to 4.6 percent in 2007, with an inflection point in 2001 when China joined WTO
- At same time fraction of US working-age population in manufacturing fell from 12.6 to 8.4 percent
- Significant increase in US imports from China (1991-2007) not matched by US exports to China (Table 1)

The China Syndrome

Table 1: Value of Trade for US with China and Value of Imports from Other Countries – 1991/92-2007					
	Trade with China (billions 2007 US$)		Imports from other countries (billions 2007 US$)		
	Imports from China	Exports to China	Imports from other LDCs	Imports from Mexico/CAFTA	Imports from ROW
1991/92	26	10	7.7	39	322
2000	122	23	23	152	650
2007	330	57	45	183	763
1991-2007 (%)	1,156%	456%	491%	375%	137%

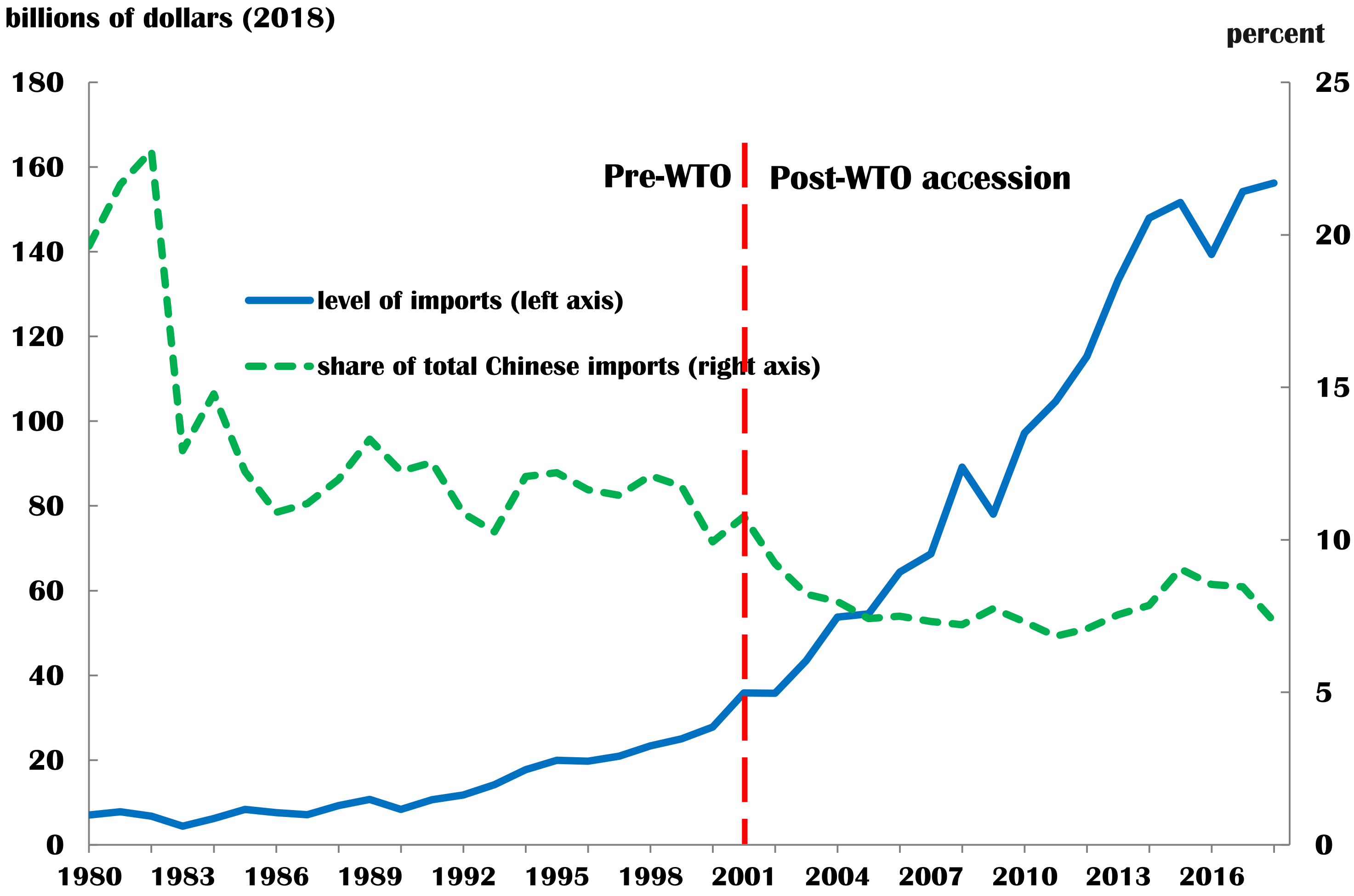
Source: Autor *et al.* (2013)

US Imports from China



Source: Bown (April, 2019)

Chinese Imports from US



Impact of Chinese Imports

- US employment "sag" of 2000s coincided with increased Chinese import competition
- Growth rate of employment was 0.9 percent for 2000-07 compared to 2.6 percent for 1991-2000
- US manufacturing employment fell by 5.8 million over period 1999-2011
- How much of the "sag" was due to Chinese imports?
- Acemoglu *et al.* (2016) break down effect on US national employment over period into two effects:

Direct impact on exposed industries

\+ *Indirect impact* on linked industries

Job Impact of Chinese Imports

- *Direct impact*: 560,000 jobs lost, accounting for 9.7 percent of total US manufacturing jobs lost
- *Indirect impact*: 425,000 extra US manufacturing jobs lost, and 995,000 jobs lost to rest of economy
- Total impact: 1.98 million jobs in US economy, with 985,000 in total lost in manufacturing, i.e., 16.9 percent of total manufacturing jobs lost
- Hicks and Deveraj (2015) also calculated 750,000 US manufacturing jobs lost over 2000-10 (13.4 percent of total), with total job loss of 1.7 million
- Bulk of job losses due to growth in labor productivity

Other Effects of Chinese Imports

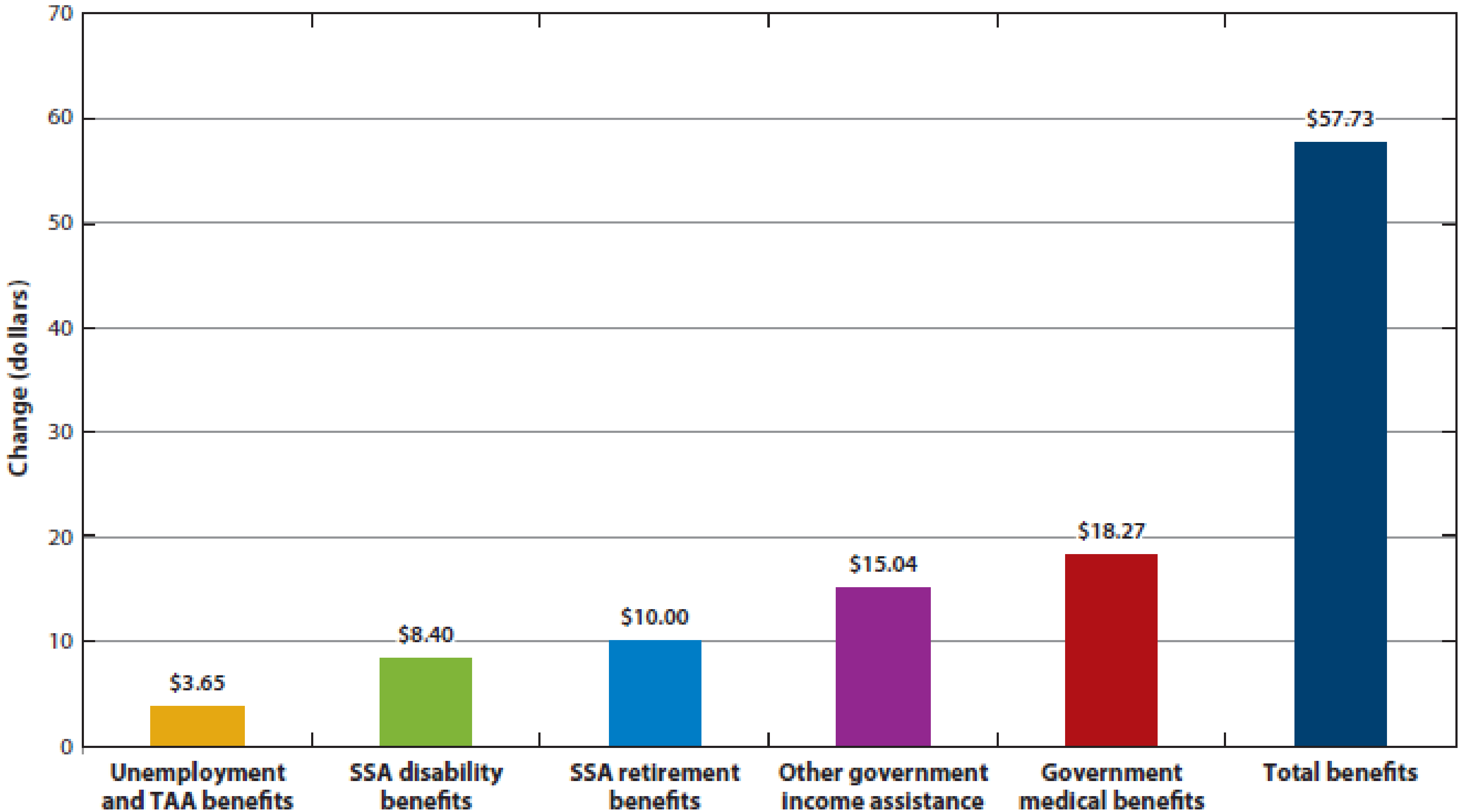
- Autor *et al.* (2013) analyze effects of Chinese imports at regional level using US commuting zone (CZ) data for 1990-2007
- For 2000-07, more exposed CZs had:
  - 4.5 percent larger fall in employment
  - 0.8 percent larger decline in mean weekly wages
  - 2-3.5 percent larger increase in unemployment, and other benefits totaling extra $63/capita
- Displaced workers also unlikely to move to seek new jobs, and those that do, move to similar and equally vulnerable employment

TAA program

- Labor getting more insurance against job loss from federal transfers as opposed to the Trade Adjustment Assistance (TAA) (see Figure 5)
- TAA dates from 1962, workers getting extension to unemployment benefits, and beneficiaries can enroll in training programs
- Workers over 50 get wage insurance up to $12,000 over two years for taking jobs on lower pay
- Benefits probably inadequate: $1,700/worker in 2007; insurance insufficient to make up for wage loss, and young workers not eligible for insurance

Government Transfers

Figure 5: Effect of $1,000 Increase in Chinese Imports on U.S. Government Transfers/Capita in Commuting Zones (1990-2007)



Impact on US Political Economy

- Trade exposure contributed to growth of *populism*: "anti-elite, authoritarian and nativist" (Eichengreen, 2018)
- Driven by impact of globalization on income distribution (Grossman and Helpman, 2018)
- Trade exposure contributed to polarization in US politics (Autor *et al.*, 2017)
- Shift to *economic nationalism* – i.e., opposition to free trade and strong nationalist stance (Colantone and Stanig, 2018)