THE BURDEN OF OUTSOURCING

U.S. non-oil trade deficit costs more than 5 million jobs

BY ROBERT E. SCOTT

The U.S. trade deficit has a corrosive effect on U.S. workers and the domestic economy. In 2007, 5.6 million jobs were lost or displaced by the U.S. non-oil trade deficit. Despite strong export growth over the past few years, that deficit still totaled $473 billion in 2007, only $48 billion less than its record peak in 2006. More than 4 million (70%) of the jobs displaced by non-oil trade in 2007 were in the manufacturing sector. Elimination of the U.S. non-oil trade deficit could support millions of new jobs in export industries and contribute to the revitalization of U.S. manufacturing.

In addition to its finding of 5.6 million U.S. jobs lost or workers displaced by U.S. non-oil trade deficits in 2007, this study finds:

- The 5.6 million job opportunities lost nationwide are distributed among all 50 states and the District of Columbia, with the biggest losers, in numeric terms: California (696,300 jobs), Texas (405,300), New York (326,100), Michigan (319,200), Ohio (303,800), Illinois (260,800), Florida (233,800), Pennsylvania (228,900), North Carolina (222,100), and Georgia (186,000).

- The hardest-hit states, as a share of total state employment, are: Michigan (319,200, 7.5%), South Carolina (121,100, 6.2%), Alabama (117,700, 5.9%), Tennessee (161,400, 5.8%), Ohio (303,800, 5.6%), Maine (34,500, 5.6%), Indiana (165,600, 5.5%), North Carolina (222,100, 5.4%), New Hampshire (34,000, 5.2%), and Kentucky (97,000, 5.2%).

- Just two industries—motor vehicles and parts ($123.5 billion) and computer and electronic parts ($121.3 billion)—accounted for more than half of the $473 billion non-oil trade deficit in 2007. Other sectors with large trade deficits included: Apparel and accessories ($74.9 billion), miscellaneous manufactured goods ($71.2 billion), primary metals ($40.7 billion),

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and electrical equipment ($28.3 billion). Overall, durable goods industries were responsible for $360 billion (76%) of the U.S. non-oil trade deficit.
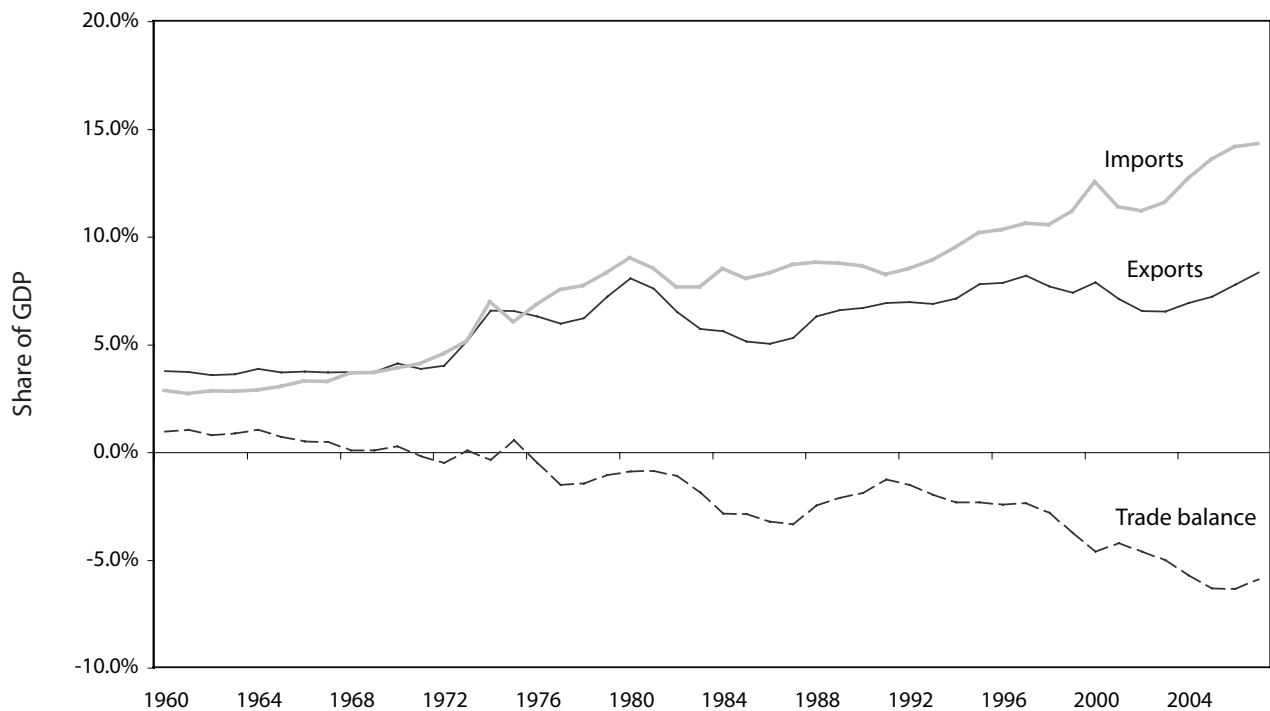
- Only a handful of major industries generated trade surpluses in 2007, lead by aerospace products and parts ($61 billion), agriculture, forestry, and fisheries ($18 billion), and scrap and used goods ($17 billion).

- More than three quarters of a million jobs were displaced in the computer and electronic parts industries (-766,000 jobs, 13.6% of net jobs displaced). Other hard hit sectors included apparel (646,000 jobs, 11.4%), motor vehicles and parts (-440,000 jobs, 7.8%), and miscellaneous manufactured commodities (-462,000 jobs, 8.2%). Several service sectors supported by production of goods for export were also hard hit by job losses, including administrative support services (-288,000 jobs, -5.1%) and profes-

sional, scientific, and technical services (-270,000 jobs, -4.8%).

Currency manipulation and other unfair trade policies are important causes of U.S. non-oil trade deficits. They are responsible, in part, for the growth of offshore outsourcing by U.S. manufacturers, by foreign multinationals, and by retailers of all kinds. The U.S. dollar has fallen 26% since early 2002 against the Euro and other fairly traded currencies. This reduced the costs of American-made products on world markets and stimulated rapid growth of U.S. exports to those markets. However, China and a number of other countries in Asia have maintained artificially cheap currencies in this period, and the U.S. trade deficit with China has soared as a result. In addition to manipulating its currency to gain unfair trade advantage, China also competes unfairly through extensive suppression of labor rights and widespread export subsidies (AFL-CIO 2006; Haley 2008).

FIGURE A

U.S. goods trade, 1960 - 2007

SOURCE: EPI analysis of Census Bureau and BLS data.

The non-oil trade deficit displaced 5.6 million jobs in 2007, as noted above. The number of jobs displaced by trade has varied over time, generally increasing when the non-oil trade deficit increased (as it did between 2001 and 2006). The U.S. non-oil deficit improved (shrank) between 2006 and 2007, thus supporting the creation of 273,000 net jobs. U.S. non-oil trade deficits with many countries or regions have increased since 2000 (e.g., the Euro-currency countries) while our non-oil deficit with other countries has improved (e.g., Canada). The growth of the U.S. trade deficit with China is responsible for the loss or displacement of 2.3 million jobs since 2001, and can explain all of the net jobs displaced by growing trade deficits since 2000 (Scott 2008).

The U.S. trade deficit has displaced millions of U.S. workers from good jobs in manufacturing and other traded goods industries. Average weekly earnings in traded goods industries were 16% to 19% higher than earnings in other, non-manufacturing industries in 2007. Competition with artificially cheap imports has also put downward pressure on the wages of all U.S. workers (Bivens 2008a).

Growing U.S. trade deficits

The overall U.S. trade deficit has grown steadily since the 1990s, as shown in **Figure A**. Imports, exports, and the trade balance (including oil) are reported as a share of GDP in Figure A to show their importance to the economy. Both exports and imports have increased markedly since the 1960s, reflecting, in part, the growth of globalization, which has increased the flows of trade, and especially investment, across international borders.

U.S. imports have grown much more rapidly than exports since the early 1980s, which explains the steady growth of the trade deficit. Exports declined sharply (as a share of GDP) during two prolonged periods, the first between 1980 and 1986, and the latter between 1997 and 2003. Each of these periods coincided with an era of strong dollar over-valuation that made U.S. exports less competitive on world markets. The U.S. trade deficit grew rapidly in these periods of dollar over-valuation. U.S. import growth was fairly steady through the period shown (with the exception of cyclical downturns in the 1980s and with the recession of 2001). However, the import share has grown at an unusually rapid rate since 2002,

and has been well above its trend for the past 35 years since 2005. This is due, in part, to the rapid growth of oil prices since 2002.

U.S. exports also grew rapidly after 2002, in part due to the fall in the value of the dollar, which made domestic products more competitive on world markets by lowering the relative costs of U.S-made products. However, due to the vast size of the U.S. trade deficit, which was $791 billion in 2007, U.S. exporters have been running hard just to stay in place, relative to imports. Imports of commodities were 42% larger than exports in 2007, so exports had to grow 42% faster than imports just to keep the trade deficit from growing. In fact, non-oil exports increased more than twice as fast as imports in 2007, as shown in **Table 1**, so the non-oil trade deficit did shrink by $48 billion.[1] Rapidly rising oil prices have certainly contributed to the growth of the U.S. trade deficit in recent years. Oil imports, which averaged only $23 per barrel in 2002, increased to $64/bbl in 2007, and $101/bbl during the first seven months of 2008 (U.S. Census Bureau 2008a). However, despite sharply rising oil prices, crude oil and petroleum products were only responsible for about 40% of the total U.S. trade deficit in 2007, as shown in **Figure B**. U.S. exports totaled $1.1 trillion in 2007, and imports were nearly $2 trillion, resulting in an overall trade deficit of $791 billion. Net imports of U.S petroleum products and natural gas imports reached $318 billion in 2007, and are on pace to reach $500 billion in 2008 if the average cost of petroleum imports is in the $100/bbl range for the remainder of this year.

Trade and employment

Government officials and business leaders frequently claim that U.S. exports support manufacturing jobs (Aeppel 2008, Guitierrez 2008). Commerce Secretary Carlos Guitierrez recently claimed that "trade drives economic growth and boosts jobs." While it is true that trade creates jobs in exporting industries, it is equally true that imports destroy jobs or job opportunities when they replace the output of domestic firms (Bivens 2008b). The net effect of trade flows on employment is determined by changes in the *trade balance*.[2] Since U.S. imports have increased much more rapidly than exports over the past few decades, and the United States has a large trade deficit, trade

TABLE 1

U.S. non-oil trade and job displacement, 2000-07

U.S. non-oil trade (billions of dollars)*

	2000	2006	2007	Changes in:			Percent change
				2000-06	2006-07	2000-07	2000-07
U.S. exports	$770	$1,007	$1,126	$237	$119	$356	46%
U.S. imports	1,087	1,527	1,598	440	71	512	47
U.S. trade balance	-317	-520	-473	-203	48	-155	49
Average annual change in the trade deficit				-41	48	-26	7%

U.S. trade-related jobs supported and displaced (thousands of jobs)

	2000	2006	2007	Changes in: (thousands of jobs)			Percent change
				2000-06	2006-07	2000-07	2000-07
U.S. exports—jobs supported	7,467	9,085	9,813	1,618.4	728.4	2,346.8	31%
U.S. imports—jobs displaced	10,963	15,003	15,459	4,040.6	455.9	4,496.5	41
U.S. trade balance—net jobs displaced	-3,496	-5,918	-5,646	-2,422.2	272.5	-2,149.7	61
Average annual job displacement				-484.4	272.5	-358.3	8

*Total exports, general imports, and trade balance, excluding all trade in oil and gas products (NAIC 2111) and petroleum and coal products (NAICS 3241).

SOURCE: EPI analysis of Census Bureau and BLS data.

is actually a drag on the domestic job creation, costing the United States millions of jobs, as shown below. This study uses the most widely accepted models to estimate the employment content of U.S. trade.[3]
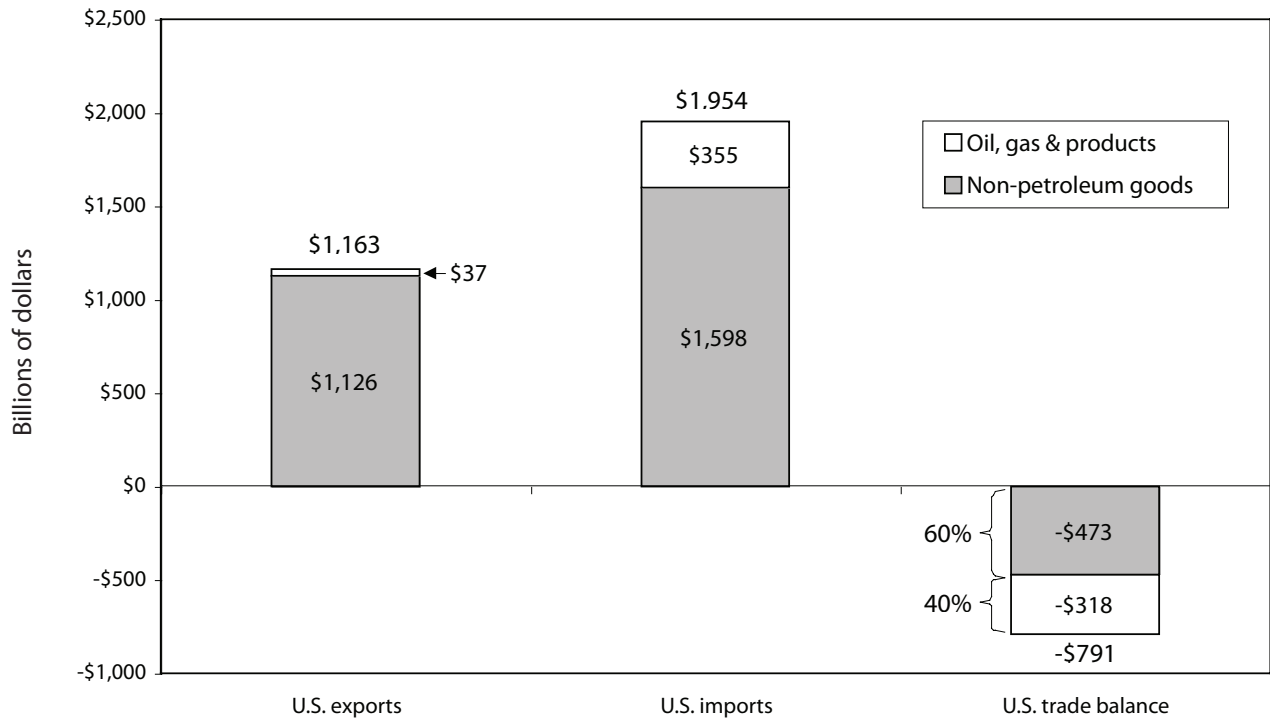
Secretary Guitierrez also claimed that the Bush administration has implemented "Free Trade Agreements" with 11 countries and that the U.S. trade surplus with those countries has grown from 2001 to 2007. Of course, this is not the whole story. China, the source of the United States' largest and most rapidly growing trade deficit, entered the World Trade Organization under the terms of an accession agreement that President Bush implemented in 2001. When China is included in the totals, the United States has a huge, rapidly growing trade deficit

with countries it has negotiated trade agreements with in the past eight years, despite the more recent overall improvement in U.S. exports.

This paper estimates the employment impacts of growing trade deficits using an input-output model that estimates the direct and indirect labor requirements of producing output in a given domestic industry. The model includes 201 U.S. industries, 84 of which are in the manufacturing sector.[4] The model estimates the amount of labor (number of jobs) required to produce a given volume of exports, and the labor displaced when a given volume of imports is substituted for domestic output. The gap between these two numbers is essentially the net jobs lost due to the trade deficit, holding all else equal.

FIGURE B

U.S. Commodity Trade, 2007

SOURCE: EPI analysis of Census Bureau and BLS data.

Table 1 shows the U.S. trade and employment estimates. U.S. non-oil trade for 2000, 2006, and 2007 are shown in the top half of the table. The employment supported (by exports) or displaced (by imports) in each of these years are shown in the bottom half of Table 1. Thus, in 2000 U.S. exports were $770 billion and imports were $1,087 billion ($1.1 trillion), generating a non-oil trade deficit of $317 billion, as shown in column 1. Exports supported 7.4 million U.S. jobs in 2000, but imports displaced 10.9 million jobs, so non-oil trade displaced 3.5 million domestic jobs in that year, as shown in column 1 in the bottom half of Table 1.

U.S. non-oil trade has grown rapidly since 2000, as shown in the top half of Table 1. U.S. non-oil exports rose from $770 billion in 2000 to $1,126 billion in 2007, an increase of 46%. However, U.S. non-oil imports rose from $1.087 trillion to $1.598 trillion, an increase of 47% (on a much larger base in 2000). Thus, the United

States had a $473 billion non-oil trade deficit in 2007, which displaced 5.6 million jobs (column 3). This was an improvement over 2006, when the $520 billion trade deficit displaced 5.9 million jobs. Hence, trade supported the creation of a net total of 272,500 jobs in 2007 (column), relative to the preceding year. Further reductions in the U.S. trade deficit could support millions of additional U.S. jobs in the future in manufacturing and other trade-related industries.

Table 1 thus provides two ways of looking at the effects of trade on U.S. employment. Net, trade-related job displacement in selected years is shown in the last row of the first three columns (e.g., trade displaced 5.6 million workers in 2007, as shown in column 3). The next three columns show the changes in trade flows and the number of jobs supported by trade between selected years (thus, trade displaced 2.1 million jobs between 2000 and 2007, as shown in the last row of column 6).

U.S. exports grew at double-digit rates in every year since 2004 (not shown), in large part due to the sharp 26% decline in the real, trade-weighted value of the dollar since 2002. However, U.S. imports also grew at double-digit rates between 2004 and 2006, so the non-oil trade deficit continued to increase. The U.S. trade deficit did not begin to improve until 2007, as import growth slowed sufficiently to allow the non-oil trade deficit to shrink.

The rapid growth of U.S. exports has helped sustain manufacturing output and employment during the current downturn. During the last recession, the United States lost 1.1 million manufacturing jobs (7% of manufacturing employment) in the first eight months of the 2001 recession, fully 70% of all the jobs displaced in that phase of the downturn. In the first eight months of the current downturn (since December 2007), U.S. manufacturing has lost only 344,000 jobs (2% of manufacturing employment). The rise in total joblessness (as of September 2007) has been less steep overall (600,000 total jobs lost vs. 1.6 million in 2001), and the manufacturing share of those losses (57%) has been smaller, as well. Strong export growth has helped insulate U.S. manufacturing from the effects of the housing collapse and spreading financial and housing crises, which may have dampened the effects of the housing collapse on overall employment.

U.S. non-oil trade displaced 3.5 million jobs in 2000 (Table 1, column 1). Thus, the growth of the trade deficit displaced an additional 2.1 million jobs between 2000 and 2007, as noted above. Growing U.S. trade deficits with China displaced 2.3 million jobs between 2001 and 2007 (Scott 2008). Thus, growing trade deficits with China can explain all of the net growth of trade-related job displacement since 2000.

Most trade-related job displacement has taken place within the past decade. In 1997, the U.S. non-oil trade deficit was only $115 billion, only 24% of the deficit in 2007. Roughly three-quarters of the jobs displaced by trade in 2007 were lost in the past decade.[5]

Jobs displaced by the U.S. non-oil trade deficit are a net drain on employment in trade-related industries, especially those in the manufacturing sector. Even if increases in demand in other sectors absorb all the workers displaced by trade (an unlikely event), it is likely that job-quality will suffer. Between 2000 and 2007, the United States lost 3.4 million manufacturing jobs. The service sector added 6.5 workers, and was responsible for all of net jobs created were in this period (total employment increased only 5.8 million jobs (Mishel, Bernstein, and Shierholz 2009, Table 3.26). Average hourly earnings in 2005 in the service industries were 22% lower than in manufacturing. Rapidly growing industries in the service sector include home health care, accommodation, and food services, sectors where wages are typically much lower than in manufacturing, especially for workers without a college degree.[6] Workers displaced from manufacturing, the sector hardest hit by U.S. non-oil trade deficits, are often forced to take jobs in sectors such as these.

U.S. trade deficits have clearly reduced domestic employment in traded goods industries, especially in the manufacturing sector, which has been hard hit by plant closings and job losses. More than 23,000 manufacturing establishments closed between 2000 and 2006 (U.S. Census Bureau 2008b). Workers displaced by trade from the manufacturing sector have had particular difficulty finding comparable employment elsewhere in the economy, or any employment at all in many cases. More than one-third of workers displaced from manufacturing dropped out of the labor force and average wages of those who were re-employed fell 11-13% (Kletzer 2001, Table D2).

State-by-state analysis

U.S. non-oil trade deficits represent reduced domestic demand for goods produced in every region of the United States and have displaced jobs in all 50 states and the District of Columbia, as shown in **Table 2a.** More than 400,000 jobs or job opportunities were lost in each of California and Texas, and more than 300,000 each in New York, Michigan, and Ohio. Jobs displaced by the non-oil trade deficit exceeded 5.0% of total employment in 2007 in Michigan, South Carolina, Alabama, Tennessee, Ohio, Maine, Indiana, North Carolina, New Hampshire, Kentucky, Arkansas, Rhode Island, and Mississippi, as shown in **Table 2b** and **Figure C**. An alphabetical list of job losses by state is shown in **Table 2c**.

The state job loss map (Figure C) shows that the effects of U.S. non-oil trade deficits were felt widely across the United States, and that no area was exempt from its impact. While traditional manufacturing states such as

TABLE 2A

Net job loss due to U.S. non-oil trade deficit, ranked by number of job losses, 2007

Rank	State	Net job loss*	Rank	State	Net job loss*
1	California	696,300	27	Maryland	59,400
2	Texas	405,300	28	Mississippi	59,100
3	New York	326,100	29	Iowa	56,900
4	Michigan	319,200	30	Connecticut	54,700
5	Ohio	303,800	31	Louisiana	42,700
6	Illinois	260,800	32	Utah	39,300
7	Florida	233,800	33	Oklahoma	37,600
8	Pennsylvania	228,900	34	Maine	34,500
9	North Carolina	222,100	35	New Hampshire	34,000
10	Georgia	186,000	36	Nebraska	29,800
11	New Jersey	185,200	37	Kansas	26,000
12	Indiana	165,600	38	Rhode Island	25,400
13	Tennessee	161,400	39	Idaho	25,000
14	Wisconsin	141,100	40	Nevada	24,900
15	Missouri	129,300	41	New Mexico	20,900
16	Massachusetts	123,600	42	West Virginia	17,800
17	South Carolina	121,100	43	Vermont	13,000
18	Alabama	117,700	44	Delaware	11,000
19	Minnesota	112,500	45	South Dakota	9,400
20	Kentucky	97,000	46	Hawaii	8,900
21	Virginia	87,800	47	Montana	8,200
22	Oregon	85,000	48	Alaska	8,100
23	Arizona	75,700	49	District of Columbia	5,400
24	Washington	70,100	50	North Dakota	4,300
25	Colorado	68,100	51	Wyoming	3,900
26	Arkansas	62,200		**National Total***	5,645,900

* Totals vary slightly due to rounding errors.

SOURCE: EPI Analysis of Census Bureau and BLS data.

Michigan, Ohio and the Carolinas in the industrial heartland were certainly hard hit, so too were states in the tech sector such California, Texas, Oregon, and Minnesota. Many states in the South, such as Kentucky, Tennessee, Arkansas, and Mississippi were also hard hit by the loss of textile and apparel industries. Michigan, which was espe-

cially hard hit by the loss of jobs in the auto industry, lost more than 300,000 jobs or job opportunities overall and was the hardest hit state in the country as a share of total state employment (7.5%), as shown in Table 2b.

Some economists have argued that job-loss numbers extrapolated from trade flows are uninformative, based

**Net job loss due to U.S. non-oil trade deficit,
ranked by share of state employment, 2007**

Rank	State	Net job loss*	Share of state employment	Rank	State	Net job loss*	Share of state employment
1	Michigan	319,200	7.49%	28	New York	326,100	3.73%
2	South Carolina	121,100	6.21	29	Connecticut	54,700	3.22
3	Alabama	117,700	5.87	30	Utah	39,300	3.14
4	Tennessee	161,400	5.77	31	Nebraska	29,800	3.10
5	Ohio	303,800	5.60	32	Colorado	68,100	2.92
6	Maine	34,500	5.59	33	Florida	233,800	2.91
7	Indiana	165,600	5.54	34	Arizona	75,700	2.84
8	North Carolina	222,100	5.36	35	Alaska	8,100	2.55
9	New Hampshire	34,000	5.24	36	Delaware	11,000	2.52
10	Kentucky	97,000	5.19	37	New Mexico	20,900	2.48
11	Arkansas	62,200	5.17	38	Oklahoma	37,600	2.40
12	Rhode Island	25,400	5.15	39	Washington	70,100	2.39
13	Mississippi	59,100	5.13	40	West Virginia	17,800	2.35
14	Oregon	85,000	4.91	41	Virginia	87,800	2.33
15	Wisconsin	141,100	4.90	42	South Dakota	9,400	2.31
16	Missouri	129,300	4.63	43	Maryland	59,400	2.28
17	California	696,300	4.59	44	Louisiana	42,700	2.22
18	New Jersey	185,200	4.55	45	Nevada	24,900	1.93
19	Georgia	186,000	4.49	46	Kansas	26,000	1.89
20	Illinois	260,800	4.36	47	Montana	8,200	1.85
21	Vermont	13,000	4.22	48	Hawaii	8,900	1.43
22	Minnesota	112,500	4.06	49	Wyoming	3,900	1.35
23	Pennsylvania	228,900	3.95	50	North Dakota	4,300	1.20
24	Texas	405,300	3.91	51	District of Columbia	5,400	0.78
25	Idaho	25,000	3.81				
26	Massachusetts	123,600	3.77				
27	Iowa	56,900	3.75		**National Total***	5,645,900	4.11

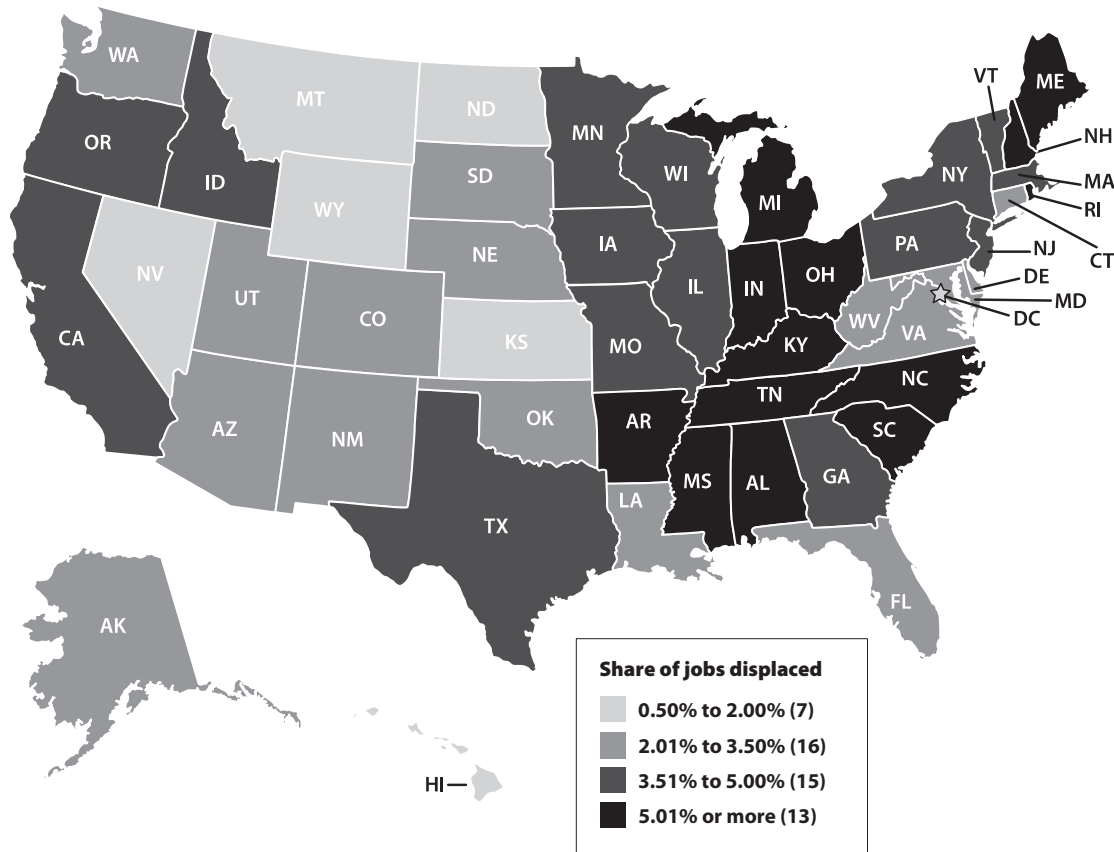* Totals vary slightly due to rounding errors.

SOURCE: EPI Analysis of Census Bureau and BLS data.

on the presumption that *aggregate* employment levels in the United States are set by a broad range of macroeconomic influences, not just by trade flows. However, while the trade balance is but one of many variables affecting aggregate job creation in the United States, the employment impacts of trade identified in this paper can be interpreted as the "all else equal" effect of trade on domestic employment. The Federal Reserve, for example, may decide to cut interest rates to make up for job loss stemming from deteriorating trade balances (or any other economic

FIGURE C

Non-oil trade deficit cost jobs in every state, 2007

Share of jobs displaced

- 0.50% to 2.00% (7)
- 2.01% to 3.50% (16)
- 3.51% to 5.00% (15)
- 5.01% or more (13)

* Share of jobs displaced as a percent of total state employment in 2007. Includes District of Columbia.

SOURCE: EPI analysis of Bureau of Labor Statistics and Census Bureau data.

influence), leaving net employment unchanged. This, however, does not change the fact that trade deficits *by themselves* are a net drain on employment.

Further, even in the best-case scenario where other jobs are created one-for-one to replace those displaced by trade flows, the job-numbers in this paper are a (quite conservative) measure of the involuntary job displacement caused by growing trade deficits and a potent indicator of imbalance in the U.S. labor market and wider economy. Economists may cheerfully label it a wash when the loss of 100 manufacturing jobs in Ohio or Pennsylvania is offset by the hiring of 100 construction workers in Phoenix, but in the real world these displacements (as noted before) often result in large income losses and even permanent damage to workers' earning power (Bivens 2008a).

Trade and jobs, industry details

This section will examine patterns of trade and its consequences for U.S. employment, by industry. **Table 3** summarizes U.S. non-oil trade in 2007. Non-oil imports ("Total, no oil," near the bottom of table) were $1.598 trillion in 2007. Manufactured goods were 96.4% of non-oil imports, and included a wide array of commodities. Just five industries accounted for almost two thirds (61%) of U.S. non-oil imports: computer and electronic products ($309 billion, 19%), motor vehicles and parts ($234 billion, 15%), miscellaneous manufactured commodities

TABLE 2C

Net job loss due to U.S. non-oil deficit, 2007

State	Net job loss*	State	Net job loss*
Alabama	117,700	Montana	8,200
Alaska	8,100	Nebraska	29,800
Arizona	75,700	Nevada	24,900
Arkansas	62,200	New Hampshire	34,000
California	696,300	New Jersey	185,200
Colorado	68,100	New Mexico	20,900
Connecticut	54,700	New York	326,100
Delaware	11,000	North Carolina	222,100
District of Columbia	5,400	North Dakota	4,300
Florida	233,800	Ohio	303,800
Georgia	186,000	Oklahoma	37,600
Hawaii	8,900	Oregon	85,000
Idaho	25,000	Pennsylvania	228,900
Illinois	260,800	Rhode Island	25,400
Indiana	165,600	South Carolina	121,100
Iowa	56,900	South Dakota	9,400
Kansas	26,000	Tennessee	161,400
Kentucky	97,000	Texas	405,300
Louisiana	42,700	Utah	39,300
Maine	34,500	Vermont	13,000
Maryland	59,400	Virginia	87,800
Massachusetts	123,600	Washington	70,100
Michigan	319,200	West Virginia	17,800
Minnesota	112,500	Wisconsin	141,100
Mississippi	59,100	Wyoming	3,900
Missouri	129,300	**National Total***	5,645,900

* Totals vary slightly due to rounding errors.

SOURCE: EPI Analysis of Census Bureau and BLS data.

($162 billion, 10%), chemicals ($149 billion, 9%), and non-electrical machinery ($125 billion, 7.8%). Other major importing sectors included primary metal ($89 billion, 5.6%), and apparel ($79 billion, 4.9%).

U.S. non-oil exports totaled $1.027 trillion in 2007. Manufactured goods were 91.2% of U.S. exports in 2007, which also included farm products and other natural resources ($55 billion, 5%). Six industries accounted for more than two thirds (68%) of U.S. exports: computer and electronic parts ($188 billion, 17%), chemicals ($151 billion, 13%), non-electrical machinery ($131 billion, 12%), motor vehicles and parts ($111 billion, 10%), aerospace products and parts ($96 billion, 9%) and miscellaneous manufactured commodities ($91 billion, 8%). The United States engages in extensive two-way trade in many of the industries noted above, both importing and

TABLE 3

U.S. commodity trade*, 2007 (billions of dollars)

NAICS	Industry	Imports	Exports	Trade balance
111-114	Agriculture, forestry, fisheries	$37.7	$55.5	$17.9
	Mining	283.7	17.1	(266.6)
211	Oil and gas	278.0	5.7	(272.3)
212-213	Minerals and ores	5.8	11.4	5.6
31-33	Manufacturing	1,618.2	1,057.8	(560.4)
31	Non-durable goods	183.0	62.7	(120.3)
32	Industrial supplies	327.0	246.9	(80.1)
33	Durable goods	1,108.1	748.1	(360.0)
311	Food and kindred products	34.8	39.4	4.6
312	Beverage and tobacco products	16.6	4.4	(12.1)
313	Textiles and fabrics	7.5	8.5	1.0
314	Textile mill products	15.4	2.9	(12.6)
315	Apparel and accessories	79.0	4.2	(74.9)
316	Leather and allied products	29.7	3.3	(26.3)
321	Wood products	18.6	5.2	(13.3)
322	Paper	23.5	20.3	(3.2)
323	Printed matter and related products	6.4	6.6	0.3
324	Petroleum and coal products	77.3	31.2	(46.1)
325	Chemicals	149.2	151.1	1.9
326	Plastics and rubber products	32.4	23.5	(8.9)
327	Nonmetallic mineral products	19.7	9.0	(10.7)
331	Primary metal	88.9	48.2	(40.7)
3311	Iron and steel mills ferroalloy	33.9	13.4	(20.5)
332	Fabricated metal products	50.4	32.2	(18.2)
333	Machinery, except electrical	125.0	131.1	6.2
334	Computer and electronic parts	309.3	188.0	(121.3)

exporting large volumes of products within the sector. For example, the United States exported $49 billion in auto parts in 2007, including large volumes shipped to U.S.-owned auto assembly plants in Canada. The United States also imported $154 billion in finished autos in 2007.[7]

More than four-fifths (83%) of the U.S. non-oil trade deficit in 2007 was explained by trade deficits in just four sectors: motor vehicles and parts ($124 billion, 26%), computers and electronic parts ($121 billion, 26%), apparel ($75 billion, 16%), and miscellaneous manufactured products ($71 billion, 15%). The United States also had a large trade deficit in primary metals ($41 billion, 9%). These losses were partially offset by a $61 billion trade surplus in aerospace products and parts (-13% of the deficit).

Trade deficits are highly correlated with job losses by industry, as shown in **Table 4**. U.S. non-oil trade deficits eliminated 4,025,000 manufacturing jobs in 2007, more than two-thirds (71%) of the total. By far the largest job

TABLE 3 (cont.)

U.S. commodity trade*, 2007 (billions of dollars)

NAICS	Industry	Imports	Exports	Trade balance
3341	Computer and peripheral equipment	$86.3	$45.4	$(40.9)
3342	Communications equipment	66.9	25.2	(41.7)
3343	Audio and video equipment	48.4	8.5	(39.9)
3344	Semiconductor and other electronic components	65.7	66.1	0.4
335	Electrical equipment, appliances, and component	66.5	38.2	(28.3)
336	Tranportation equipment	278.1	215.3	(62.8)
3361-3363	Motor vehicles and parts	234.2	110.7	(123.5)
3364	Aerospace product and parts	34.8	96.0	61.2
337	Furniture and fixtures	27.6	3.9	(23.7)
339	Miscellaneous manufactured commodities	162.3	91.1	(71.2)
511-519	Information	0.1	1.0	0.9
511	Newspapers, books, and other published matter	0.1	1.0	0.9
521-525	Finance and insurance	-	-	-
	scrap and used goods (including paper and metal scrap)	14.0	31.3	17.3
	TOTALS	1,953.7	1,162.7	(791.0)
	Manufacturing share of total	83%	91%	71%
	Addendum, trade excluding petrolueum & related products:			
	TOTAL, NO OIL	1,598.4	1,125.8	(472.6)
	Manufacturing, no oil	1,540.9	1,026.6	(514.3)
	manufacturing share, no oil	96.40%	91.19%	108.83%

* Total exports, general imports, and trade balance, excluding all trade in oil and gas products (NAIC 2111) and petroleum and coal products (NAICS 3241).

SOURCE: EPI analysis of Bureau of Labor Statistics and United States International Trade Commission data.

losses occurred in the computer and electronic products sectors, which lost more than 766,000 jobs (13.6% of the 5.6 million jobs lost). This sector included computer and peripheral equipment (-287,000 jobs, 5.1%) and audio and video equipment (-228,000 jobs, 4.0%). Other hard hit sectors included apparel and accessories (-646,000 jobs, 11.4%), miscellaneous manufacturing (-462,000 jobs, 8.2%), motor vehicles and parts (-440,000 jobs, 7.8%), fabricated metal products (-241,000 jobs, 4.3%), and furniture and fixtures (-239,000 jobs, 4.2%). These six industries, alone, were responsible for nearly half of the jobs displaced by U.S. non-oil trade deficits in 2007 (2.8 million jobs, 49.5%).[8] Several service industries, which provide key inputs to traded goods productions,

experienced large job losses, including administrative and support services (-288,000 jobs, 5.1%) and professional, scientific and technical services (-270,000 jobs, 4.8%).

The computer parts and electronics industries have been particularly hard hit by trade in recent years. Growing trade deficits with China between 2001 and 2007 alone displaced 562,000 jobs in this sector (Scott 2008, Table 5), or about 73% of all U.S. trade-displaced jobs in this industry. China was responsible for the entire U.S. global trade deficit in advanced technology products (ATP) in 2007 (Scott 2008, Table 4). The vast bulk of U.S. ATP imports from China were in information and communications and electronic products industries in 2007 (U.S. Census Bureau 2008c).

TABLE 4

Net U.S. jobs created or displaced by non-oil trade*, by industry, 2007 (thousands of jobs)

NAICS	Industry name	Import jobs**	Export jobs**	Trade balance, net effects Jobs gained or lost	Share of total
111-114	**Agriculture, forestry, fisheries**	537.6	623.3	85.7	-1.5 %
21	**Mining**	85.6	82.4	(3.2)	0.1
211	**Oil and gas**	13.2	11.2	(1.9)	0.0
212-213	**Minerals and ores**	72.4	71.2	(1.3)	0.0
221	Utilities	52.9	36.7	(16.3)	0.3
23	**Construction**	89.7	60.2	(29.5)	0.5
31-33	**Manufacturing**	9,977.0	5,951.6	**(4,025.4)**	71.3
31	Non-durable goods	1,533.1	366.9	(1,166.2)	20.7
32	Industrial supplies	1,566.0	1,053.3	(512.7)	9.1
33	Durable goods	6,877.9	4,531.4	(2,346.5)	41.6
311	Food and kindred products	152.0	136.1	(15.8)	0.3
312	Beverage and tobacco products	37.4	9.0	(28.4)	0.5
313	Textiles and fabrics	305.5	124.0	(181.5)	3.2
314	Textile mill products	118.5	32.1	(86.4)	1.5
315	Apparel and accessories	686.3	40.0	(646.3)	**11.4**
316	Leather and allied products	233.4	25.7	(207.8)	3.7
321	Wood products	205.1	72.7	(132.5)	2.3
322	Paper	190.8	139.7	(51.1)	0.9
323	Printed matter and related products	159.5	112.8	(46.7)	0.8
324	Petroleum and coal products	15.7	14.0	(1.8)	0.0
325	Chemicals	424.2	373.1	(51.1)	0.9
326	Plastics and rubber products	386.3	247.3	(139.0)	2.5
327	Nonmetallic mineral products	184.4	93.9	(90.5)	1.6
331	Primary metal	510.6	324.0	(186.6)	3.3
3311	Iron and steel mills ferroalloy	108.7	59.9	(48.8)	0.9
332	Fabricated metal products	779.1	538.1	(241.0)	**4.3**
333	Machinery, except electrical	732.0	676.6	(55.4)	1.0
334	Computer and electronic parts	2,069.5	1,304.0	(765.5)	**13.6**
3341	Computer and peripheral equipment	607.4	320.6	(286.8)	**5.1**
3342	Communications equipment	194.0	80.2	(113.8)	2.0
3343	Audio and video equipment	277.9	49.9	(228.0)	**4.0**

TABLE 4 (cont.)

Net U.S. jobs created or displaced by non-oil trade*, by industry, 2007 (thousands of jobs)

NAICS	Industry name	Import jobs**	Export jobs**	Trade balance, net effects Jobs gained or lost	Trade balance, net effects Share of total
3344	Semiconductor and other electronic components	745.1	614.9	(130.1)	2.3%
335	Electrical equipment, appliances, and component	397.5	224.1	(173.4)	3.1
336	Tranportation equipment	1,069.8	846.5	(223.3)	4.0
3361-3363	Motor vehicles and parts	894.1	453.7	(440.3)	**7.8**
3364	Aerospace product and parts	135.0	352.0	217.0	-3.8
337	Furniture and fixtures	286.0	47.1	(238.9)	**4.2**
339	Miscellaneous manufactured commodities	1,033.3	571.0	(462.3)	**8.2**
42	**Wholesale trade**	-	-	-	
44, 45	**Retail trade**	-	-	-	
48, 49	**Transportation**	690.6	448.4	(242.2)	4.3
511-519	Information	389.8	245.8	(144.0)	2.6
511	Newspapers, books, and other published matter	148.8	89.9	(58.9)	1.0
521-525	Finance and insurance	327.0	216.2	(110.8)	2.0
531-533	Real estate and rental and leasing	140.7	95.6	(45.1)	0.8
541	Professional, scientific, and technical services	829.6	559.5	(270.1)	**4.8**
55	Management of companies and enterprises	448.4	297.8	(150.5)	2.7
561-562	Administrative and support and waste mgmt. and remediation svs.	765.1	477.5	(287.6)	**5.1**
611	Education services	35.8	22.6	(13.2)	0.2
621-624	Health care and social assistance	5.2	3.3	(1.9)	0.0
711-713	Arts, entertainment, and recreation	85.7	53.7	(32.0)	0.6
721-722	Accomodation and food services	298.7	190.8	(107.9)	1.9
811-813	Other services	235.2	141.9	(93.3)	1.7
	Government	464.8	306.0	(158.7)	2.8
	scrap and used goods (including paper and metal scrap)	-	-	-	
	TOTALS	**15,459.2**	**9,813.4**	**(5,645.8)**	100.0
	Manufacturing share	**65%**	**61%**	**71%**	

* Total exports, general imports, and trade balance, excluding all trade in oil and gas products (NAIC 2111) and petroleum and coal products (NAICS 3241).
** Retail and wholesale trade and advertising employment effects are ignored.

SOURCE: EPI analysis of Bureau of Labor Statistics and United States International Trade Commission data.

Most rapidly growing export industries, 2006-07

		Growth in export jobs	
NAICS	**Industry name**	**Jobs**	**Percent of total**
111-114	**Agriculture, forestry, fisheries**	82,194	11%
31-33	**Manufacturing**	406,946	56%
325	Chemicals	31,822	4
332	Fabricated metal products	37,034	5%
333	Machinery, except electrical	43,138	6
334	Computer and electronic parts	47,071	6%
3361-3363	Motor vehicles and parts	47,198	6
3364	Aerospace product and parts	32,672	4%
339	Miscellaneous manufactured commodities	69,226	10
48, 49	**Transportation**	35,548	5%
541	**Professional, scientific, and technical services**	40,648	6
561-562	**Administrative and support and waste mgmt. and remediation svs.**	32,429	4%
	TOTALS	**728,359**	**100%**

SOURCE: EPI analysis of Bureau of Labor Statistics and United States International Trade Commission data.

Export jobs of the future

The growth of U.S. exports between 2006 and 2007 supported an additional 728,000 jobs, as shown in Table 1 above. Rapidly growing foreign demand for U.S. commodities and manufactured products has partially offset declining domestic demand in 2008 and buffered manufacturing from the worst effects of the current economic downturn. News reports suggest that the growth of exports is also supporting the creation of new jobs in some industries and communities (Aeppel 2008). A list of the industries responsible for the largest shares of export-related job growth is shown in **Table 5**.

Rapidly growing agricultural exports, in response to the world food crisis of 2007 and 2008 supported an additional 82,000 jobs in agricultural and related products (11% of the total increase in export related employment). More than half of the export-supported employment gains were in manufacturing. Miscellaneous manufacturing products led the way with 69,000 job gains (10%), followed by non-electrical machinery, computer and electronic parts, and motor vehicles, each with more than 40,000 jobs gained (6%). Fabricated metal products and chemicals also gained more than 30,000 jobs (5% and 4%, respectively). In the service industries, 41,000 additional jobs were supported in professional, scientific and technical services, and more than 30,000 each in transportation and administrative support (including employment services).

Elimination of the U.S. non-oil trade deficit could support millions of additional jobs in manufacturing and related sectors of the economy. However, changing trade flows are likely to dramatically change the structure of manufacturing, even if trade flows are balanced. It is likely that trade related job growth would be concentrated in sectors where the United States has experienced rapidly growing exports in recent years, including fabricated metal products, motor vehicles and parts, and chemicals. When net, trade-related job growth is considered, a few

**Currency revaluation required to achieve
fundamental equilibrium exchange rates**

	Change in dollar exchange rate* (percent)
China	31.5%
Hong Kong	29.0
Indonesia	22.6
Japan	19.0
Malaysia	30.7
Philippines	18.2
Singapore	41.2
Taiwan	26.0
Thailand	17.9
Average	**26.2**

* Table 2, central simulation.

SOURCE: Cline and Williamson (2008).

additional sectors are also likely to support increased labor demand, including primary metal and wood products. Even if non-oil trade deficits are eliminated, the United States will not regain most trade-related jobs lost in relatively low-skilled, labor-intensive products such as apparel and assembly of computer products.

Conclusion

The non-oil trade deficit has displaced huge numbers of jobs in the United States and been a prime contributor to the crisis in manufacturing employment. The unfair trade practices of many U.S. trading partners—especially the distortion of exchange rates through the currency intervention policies of China and other Asian governments—are an important cause of that deficit. The best estimates are that these governments need to raise the value of their currencies against the U.S. dollar by 18% to 41%, as shown in **Table 6**. By manipulating their currencies, these countries have made their exports artificially cheap and raised the relative cost of U.S. exports. Eliminating these distortions would increase U.S. exports and slow the growth of U.S. imports.

China is the most important currency manipulator. Other countries have resisted currency adjustment out of fear of being undercut by Chinese exporters. Without the increase in the trade deficit with China, the U.S. trade deficit would have remained unchanged since 2000. The Chinese government also engages in a range of other unfair trade practices, including repression of labor rights and widespread industrial subsidies, both of which artificially subsidize its exports. Ending Chinese currency manipulation is essential in order to persuade Japan and other currency manipulators to end these practices.

Recent improvements in the U.S. trade balance could not have occurred at a better moment. They provided a substantial boost to GDP growth and employment just as the collapse of the housing bubble and ensuing financial crisis threaten to push the economy into recession. Elimination of the U.S. trade deficit over the next few years can create millions of new jobs in manufacturing and other trade-related sectors of the economy and help the domestic economy recover from the devastating effects of the current downturn. Ending unfair trade practices can significantly improve the fundamentals of the domestic

economy and restore sustainable, broadly shared growth of jobs and income.

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Endnotes

1. Non-oil exports increased 11.8% in 2007, while imports increased only 4.7%, so the rate of growth of exports was 150% larger than for imports (Table 1).

2. National output (gross domestic product or GDP) is the sum of consumption, investment government spending, and the trade balance. The trade balance is the sum of exports less imports. A declining trade balance lowers output (GDP). Although the trade balance has improved recently, prior to 2007 the growth of the U.S. trade deficit has reduced U.S. GDP and the demand for labor. Holding all other sources of demand constant, growing trade deficits reduce the demand for labor in the United States.

3. These models have become the industry standard for estimating the employment content of trade. Fred Bergsten (2008) used a similar approach to estimate that recent improvements in the U.S. trade balance are "generating at least 2 million new and high-paying jobs." Bergsten estimates that the trade balance improved by $200 billion in real terms (from the second quarter of 2007 to the second quarter of 2008), implicitly generating 10,000 jobs per billion dollars of improvement in the trade balance. This is roughly consistent with the trade-related employment estimates shown below, which imply roughly 8,700 jobs per billion dollars of exports and 9,700 jobs per billion dollars of imports.

4. See Scott (2006) for further details on the model, and Ratner (2006) for a technical presentation and details on data sources used. This model has been completely updated for this study using new employment requirements tables for 2001 and related economic data from the Bureau of Labor Statistics (2008a and 2008b). Trade data collected by the U.S. Census Bureau were downloaded from the U.S. International Trade Commission (2008).

5. The non-oil trade deficit displaced approximately 1.5 million jobs in 1997, about 27% of jobs displaced by trade in 2007. Thus, the growth of trade deficits in the past decade can explain about three-fourths of non-oil, trade-related job losses in 2007. (EPI analysis of Census Bureau and BLS data, for 1997. Results available on request).

6. Four sectors accounted for 48% of the 5.6 million jobs created between January 2001 and December 2007: accommodation and food services (+1.4 million), home health care (302,000), nursing and residential care (344,000), and social assistance (575,000). Average hourly earnings of production workers in these sectors in 2007 ranged from $9.81 (accommodation and food services) to $15.40 (home health care), 12% to 44% less than average hourly earnings in manufacturing ($17.41) (Bureau of Labor Statistics 2008c).

7. The United States also had auto parts imports of $154 billion in 2007, so it had a very large trade deficit in that industry. However, exports of auto parts have grown rapidly in recent years and the motor vehicle and parts trade deficit shrank in 2007.

8. The six hardest-hit industries were: apparel and accessories, fabricated metal products, computer and electronic parts, motor vehicles and parts, furniture and fixtures, and miscellaneous manufactured commodities.

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