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## Studies Reveal Consensus: Trade Flows during “Free Trade” Era Have Exacerbated U.S. Income Inequality

*Recent Studies: Trade’s Contribution to Inequality Has Increased since the 1990s and Is Likely to Increase Further*

Since 1941 [standard economic theory](#) has held that trade liberalization will contribute to greater income inequality in developed countries like the United States. In the early 1990s, as U.S. income inequality soared amid the enactment of U.S. “free trade” deals, a spate of economic studies put the theory to the test, aiming to determine the relative contribution of trade flows to the rise in U.S. income inequality. **The result was an [academic consensus](#) that trade flows had, in fact, contributed to rising U.S. income inequality. The only debate was *the extent of the blame to be placed on trade*, with most studies estimating that between 10 and 40 percent of the rise in inequality during the 1980s and early 1990s stemmed from trade flows, as indicated in the table below.**<sup>1</sup>

1990s Studies on Trade’s Impact on U.S. Income Inequality		
Author(s)	Year of Study	Portion of Inequality Increase Attributed to Trade
Borjas, Freeman, Katz	1997	5%
Lawrence	1996	9%
Borjas and Ramey	1993	10%
Cooper	1994	10%
Krugman	1995	10%
Baldwin and Cain	1994	9-14%
Leamer	1994	20%
Cline	1997	39%
Karoly and Klerman	1994	55-141%
Wood	1994	100%

In one of the more frequently cited studies from the 1990s – [a 1997 report published by the pro-“free trade” Institute for International Economics](#) (now the Peterson Institute for International Economics) – author William Cline estimated that trade was responsible for a 7 percent gross increase in U.S. wage inequality during a time period in which wage inequality rose by a total of 18 percent – meaning that **the trade impact on U.S. wage inequality amounted to 39 percent of observed inequality growth.**

Cline used an economic model to calculate that trade liberalization, trade costs, and offshoring were responsible for an estimated 7 percent gross increase in the wage inequality that had occurred from 1973 to 1993 (i.e. a 7 percent rise in the ratio of the wages earned by those with some college education compared to the wages earned by those with a high school education or lower).<sup>2</sup> Cline reported an 18 percent total wage inequality increase during this time period.<sup>3</sup> Dividing the 7 percent trade-prompted inequality increase by the 18 percent total inequality increase amounts to a 39 percent contribution of trade to the rise in inequality.

In his study, Cline noted that trade was just one of several factors contributing to the rise in inequality, and that trade's 7 percent gross contribution was less than 10 percent of the total estimated gross contributions of all inequality-exacerbating factors.<sup>4</sup> While Cline attempted to downplay the results of his own model (trade's estimated 39 percent contribution to the net increase in inequality) and instead emphasize trade's smaller share of the total estimated *gross* contributions to inequality, Cline himself admitted that this interpretation of the results was not "typical[.]"<sup>5</sup> Indeed, in his review of other scholars' studies listed in the above table, Cline himself reported the primary result of each study by dividing the estimated trade-prompted gross inequality increase by the observed net inequality increase – the same method used to arrive at the 39 percent estimate using the data from Cline's study.<sup>6</sup> This standard approach makes sense, because if trade flows had not spurred a 7 percent increase in U.S. wage inequality (to use Cline's study), the total observed rise in inequality indeed would have been about 39 percent lower.

Further, while Cline's study named several non-trade factors contributing to the rise in income inequality, the factor with the largest substantiated gross contribution to inequality was trade. Other inequality-exacerbating factors included increased immigration (an estimated 2 percent contribution), a reduced real minimum wage (an estimated 5 percent contribution) and deunionization (an estimated 3 percent contribution – one arguably influenced by trade deals that enable the offshoring threats used to counter union drives).<sup>7</sup> After accounting for all of these factors, Cline was left with a missing 67 percent gross contribution to wage inequality (required to arrive at the observed 18 percent net inequality increase after taking into account downward pressures on inequality).<sup>8</sup> Cline then "arbitrarily" assigned half of this mystery category to "skill biased technical change" and kept the other half as "unexplained."<sup>9</sup> While the resulting role allocated to technological change significantly exceeded that found for trade, the allocation was not substantiated by any economic model or calculation, leaving trade as the study's largest inequality-exacerbating factor backed up by data.

### ***Recent Studies Project Rising Impact of Trade on U.S. Income Inequality***

More recent studies have concluded that **trade's role in exacerbating U.S. income inequality has likely grown since the 1990s**, as U.S. imports from lower-wage countries, and U.S. job offshoring to those countries, have risen dramatically amid the implementation of a series of U.S.

“free trade” deals, impacting an increasing swath of middle-class jobs. Further, an array of studies now project future increases in the offshoring of U.S. jobs, suggesting that **even under current U.S. trade policy, trade flows will soon be responsible for an even greater share of rising U.S income inequality**. Attempts to [Fast Track](#) through Congress controversial deals like the [Trans-Pacific Partnership](#), which would expand status quo U.S. trade policy and incentivize further offshoring, including to extremely-low-wage Vietnam, would only exacerbate the historically high degree of U.S. income inequality.

### [Using Standard Models to Benchmark the Costs of Globalization for American Workers without a College Degree](#)

*Josh Bivens; Economic Policy Institute; March 22, 2013*

In this study Josh Bivens of the Economic Policy Institute updates an early-1990s model estimate of the impact of trade flows on U.S. income inequality and finds that, using the model’s own conservative assumptions, one third of the increase in U.S. income inequality from 1973 to 2011 was due to trade with low-wage countries.<sup>10</sup> More importantly, Bivens finds that the trade-attributable share of the rise in income inequality has increased rapidly since the 1990s as manufacturing imports from low-wage countries have escalated. The data reveal that while trade spurred 17 percent of the income inequality increase occurring from 1973 to 1995, trade flows were responsible for more than 93 percent of the rise in income inequality from 1995 to 2011 – a period marked by a series of U.S. “free trade” deals.<sup>11</sup> Expressed in dollar terms, Bivens estimates that trade’s inequality-exacerbating impact spelled a \$1,761 loss in wages in 2011 for the average full-time U.S. worker without a college degree.<sup>12</sup> Bivens concludes, “**various policy decisions that have governed how the American economy is integrated into the global economy have increased the damage done to American workers...[including] pursuing expanded global integration through trade agreements that carve out protections for corporate investors but not for American workers...**”<sup>13</sup>

### [Rising Income Inequality: Technology, or Trade and Financial Globalization?](#)

*Florence Jaumotte, Subir Lall, and Chris Papageorgiou; International Monetary Fund; July 2008*

The International Monetary Fund authors find that the rise in income inequality from 1981-2003 in 20 developed countries, including the United States, is *primarily* attributable to trade and financial globalization trends. They conclude that globalization’s contribution to inequality has outweighed the role of technological advancement: “**Among developed countries...the adverse impact of globalization is somewhat larger than that of technological progress.**”<sup>14</sup>

### [Trade and Wages, Reconsidered](#)

*Paul Krugman; The Brookings Institution; Spring 2008*

In a Brookings Institution study, Nobel-winning economist Paul Krugman finds that trade flows likely now account for an even greater degree of U.S. income inequality than that found in a

series of studies from the early 1990s, which had already concluded that trade liberalization had a negative, but modest, impact on income inequality in developed countries like the United States. Like Bivens (see above), Krugman notes that U.S. manufacturing imports from low-wage developing countries have grown dramatically in the last two decades, suggesting that the role of trade flows in spurring U.S. income inequality growth is “considerably larger” than before.<sup>15</sup> Krugman concludes, “...there has been a dramatic increase in manufactured imports from developing countries since the early 1990s. And it is probably true that this increase has been a force for greater inequality in the United States and other developed countries.”<sup>16</sup>

### Globalization, American Wages, and Inequality: Past, Present, and Future

*Josh Bivens; Economic Policy Institute; September 6, 2007*

In this report Bivens cites an array of recent economic studies that project that the offshoring of U.S. jobs will increase under current trade policy, suggesting a substantial further rise in the impact of trade flows on U.S. income inequality.<sup>17</sup> For example, Princeton economist and former Council of Economic Advisors member Alan Blinder estimates that about one in every four U.S. jobs, including higher-paying service-sector jobs, could be offshored in the foreseeable future.<sup>18</sup> While such studies differ in the projected extent of future U.S. job offshorability, all imply an increase in the impact of trade flows on U.S. income inequality. Bivens finds that the range of projections for increased offshoring suggest a further 74 to 262 percent increase in U.S. income inequality attributable to trade with lower-wage countries, compared to the level seen in 2006.<sup>19</sup> Bivens concludes, “**The potential level of redistribution caused by offshoring is vast, and, so should be the policy response.**”<sup>20</sup>

### ENDNOTES

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<sup>1</sup> Most of these studies were summarized by William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 35-150 (see summary table at 140-143). The studies cited here are those that have produced numerical estimates of trade’s contribution to the rise in wage inequality. Other studies producing non-numerical assessments have produced an equally varied assessment of trade’s role, from “minimal” to “very high,” as summarized by Cline. Cline did not include the Lawrence study: Robert Z. Lawrence, *Single World, Divided Nations?: International Trade and the OECD Labor Markets* (Washington, D.C.: Brookings Institution, 1996), at 68-71.

<sup>2</sup> The 7 percent estimate is actually the lower of two estimates produced by the model in Cline’s report. Using the sectoral elasticities of the original model, Cline found that trade flows contributed to a 10 percent increase the wage ratio, or 56 percent of the observed increase in wage inequality. It is after narrowing the gap between sectoral elasticities in a sensitivity test that Cline produced the 7 percent estimate. William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 232.

<sup>3</sup> William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 254.

<sup>4</sup> William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 268. Cline estimated that an increase in the supply of skilled labor relative to unskilled labor should have accounted for a 40 percent gross *decrease* in the skilled/unskilled wage ratio during the time period of study. Given the observed 18 percent net *increase* in the wage ratio, Cline calculated that a 97 percent gross increase must have been the total effect from all inequality-exacerbating factors (e.g. trade, immigration, deunionization, etc.). The unchained sum of the inequality contribution of all these factors amounted to 75 percentage points. See Cline’s summary table on page 264 for more information.

<sup>5</sup> William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 145-146.

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- <sup>6</sup> William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 35-150 (see summary table at 140-143).
- <sup>7</sup> William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 264.
- <sup>8</sup> William R. Cline, *Trade and Income Distribution* (Washington, D.C.: Institute for International Economics, 1997), at 268.
- <sup>9</sup> William Cline, "Trade and Income Distribution: The Debate and New Evidence," Peterson Institute for International Economics, Policy Brief 99-7, September 1999. Available at: <http://www.iie.com/publications/pb/pb.cfm?ResearchID=94>. It should be noted that Cline's decision to assign half of the unexplained gross inequality contribution to skill biased technical change is more prudent than other studies that have attributed 100 percent of unexplained inequality contributions to this factor without serious substantiation. Still, an arbitrary assignment of any significant portion of such a large unexplained category to any factor seems inappropriate without more rigorous, data-based justification.
- <sup>10</sup> Josh Bivens, "Using Standard Models to Benchmark the Costs of Globalization for American Workers without a College Degree," Economic Policy Institute, Briefing Paper #354, March 22, 2013, at 6. Available at: <http://s3.epi.org/files/2013/standard-models-benchmark-costs-globalization.pdf>. Income inequality is measured here as the wage ratio of U.S. workers with a college degree versus those without one.
- <sup>11</sup> Josh Bivens, "Using Standard Models to Benchmark the Costs of Globalization for American Workers without a College Degree," Economic Policy Institute, Briefing Paper #354, March 22, 2013, at 6. <http://s3.epi.org/files/2013/standard-models-benchmark-costs-globalization.pdf>.
- <sup>12</sup> Josh Bivens, "Using Standard Models to Benchmark the Costs of Globalization for American Workers without a College Degree," Economic Policy Institute, Briefing Paper #354, March 22, 2013, at 8. <http://s3.epi.org/files/2013/standard-models-benchmark-costs-globalization.pdf>.
- <sup>13</sup> Josh Bivens, "Using Standard Models to Benchmark the Costs of Globalization for American Workers without a College Degree," Economic Policy Institute, Briefing Paper #354, March 22, 2013, at 9. <http://s3.epi.org/files/2013/standard-models-benchmark-costs-globalization.pdf>.
- <sup>14</sup> Florence Jaumotte, Subir Lall and Chris Papageorgiou, "Rising Income Inequality: Technology, or Trade and Financial Globalization?" International Monetary Fund, Working Paper 08/185, July 2008, at 14. Available at: <http://www.imf.org/external/pubs/ft/wp/2008/wp08185.pdf>.
- <sup>15</sup> Paul R. Krugman, "Trade and Wages, Reconsidered," Brookings Institution, Brookings Papers on Economic Activity, Spring 2008, at 106. Available at: [http://www.brookings.edu/~media/projects/bpea/spring%202008/2008a\\_bpea\\_krugman.pdf](http://www.brookings.edu/~media/projects/bpea/spring%202008/2008a_bpea_krugman.pdf).
- <sup>16</sup> Paul R. Krugman, "Trade and Wages, Reconsidered," Brookings Institution, Brookings Papers on Economic Activity, Spring 2008, at 134. Available at: [http://www.brookings.edu/~media/projects/bpea/spring%202008/2008a\\_bpea\\_krugman.pdf](http://www.brookings.edu/~media/projects/bpea/spring%202008/2008a_bpea_krugman.pdf).
- <sup>17</sup> Josh Bivens, "Globalization, American Wages, and Inequality: Past, Present, and Future," Economic Policy Institute, September 6, 2007, at 6. Available at: <http://s1.epi.org/files/page/-/old/workingpapers/wp279.pdf>.
- <sup>18</sup> Alan S. Blinder, "On the Measurability of Offshorability," VOX, October 9, 2009. Available at: <http://www.voxeu.org/article/twenty-five-percent-us-jobs-are-offshorable/>
- <sup>19</sup> Josh Bivens, "Globalization, American Wages, and Inequality: Past, Present, and Future," Economic Policy Institute, September 6, 2007, at 7. Available at: <http://s1.epi.org/files/page/-/old/workingpapers/wp279.pdf>.
- <sup>20</sup> Josh Bivens, "Globalization, American Wages, and Inequality: Past, Present, and Future," Economic Policy Institute, September 6, 2007, at 8. Available at: <http://s1.epi.org/files/page/-/old/workingpapers/wp279.pdf>.