

BRIEFING PAPER

**Job Losses Due to Trade Since NAFTA
Deepen Pennsylvania's
Manufacturing Crisis**

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Summary

In the context of an intense national and state debate about the future of U.S. manufacturing, this briefing paper provides an update on the impact of trade on manufacturing jobs in Pennsylvania. It estimates job loss within Pennsylvania due to trade with Mexico and Canada, building on a paper released recently by the Washington-based Economic Policy Institute (EPI).¹ Our main findings follow.

- Since 1993, the year before the North American Free Trade Agreement (NAFTA) went into effect, a rising U.S. trade deficit with all trading partners has cost Pennsylvania up to 150,000 manufacturing jobs.
- A more precise estimate reveals that trade with Mexico and Canada has, since 1993, cost Pennsylvania 38,325 jobs, including 31,014 manufacturing jobs. Over the same period, trade with these countries cost the United States as a whole an estimated 879,280 U.S. jobs, 686,700 of which (78 percent) were in manufacturing.
- Pennsylvania has experienced the seventh-highest job losses of any state due to trade with our NAFTA trading partners – Mexico and Canada. Only California, New York, Michigan, Texas, Ohio, and Illinois lost more jobs due to trade with Mexico and Canada since 1993.
- The Pennsylvania manufacturing jobs lost due to trade with Mexico and Canada since 1993 equal 3.5 percent of 1993 manufacturing employment.
- Manufacturing job loss tends to drive down wage and benefit levels:

In 2002, the average annual pay in Pennsylvania manufacturing was \$42,852 while the average annual pay in service-producing industries (including high-paying ones such as health care and education) was \$33,376;

The manufacturing-services pay gap is especially large in Pennsylvania rural areas, in some of which manufacturing still accounts for more than one in five jobs;

Most jobs in Pennsylvania accessible to displaced blue-collar manufacturing workers pay a lot less than \$33,376. For example jobs in security services, call centers, and retail trade range between \$16,000 and \$22,000 per year.²

The Jobs Picture

Recent news reports have trumpeted the return of economic growth. Despite this, and the official end of the recession a full two years ago -- in November 2001 -- job creation has remained elusive (Figure 1).

- Between the end of the recession in November 2001 and November 2003, Pennsylvania lost 9,500 jobs.
- Since the start of the recession in March 2001, Pennsylvania has lost 79,200 jobs.

One reason for sluggish job growth has been the continuing hemorrhaging of manufacturing jobs

- During the current economic recovery, manufacturing employment in Pennsylvania declined by 71,900 jobs.
- Since the beginning of the recession, in March 2001, manufacturing employment has declined by 128,200.

One factor that has contributed to job loss in manufacturing has been rising trade deficits.

Methodology: Estimating the Impact of Trade on Jobs

Trade can create jobs by allowing firms to export goods and services to foreign consumers. Trade also destroys jobs when U.S. producers shift production off shore or foreign producers drive existing U.S. producers out of business.

Proponents of status quo U.S. trade policies emphasize the rapid growth over time in U.S.

exports and the jobs created by these exports. Some U.S. exports, however, do nothing to create U.S. jobs: they are simply processed in other countries and then come back into the U.S. domestic market. Such “revolving door exports” are especially important in U.S.-Mexico trade. University of California-Berkeley Professor Harley Shaiken estimates that they account for an estimated 60 percent of U.S. exports to Mexico.

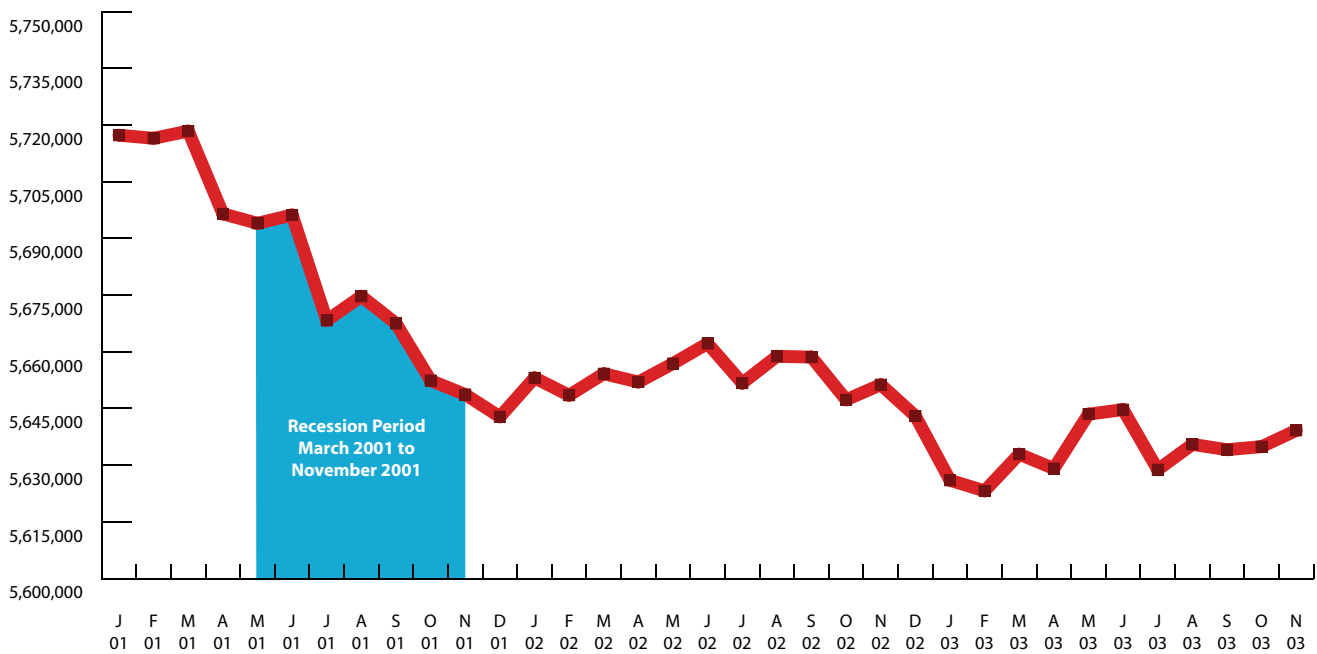
More generally, as Robert Scott of EPI points out, ignoring the job-displacing impact of imports while pointing to jobs created by exports is analogous to looking at only the credit side of a balance sheet. Such accounting might be nice in our personal finances but does not give an accurate overall picture.

To get a complete picture of the impact of trade on jobs requires looking at imports and exports, as Scott has done in a series of papers over the past several years. To estimate job gains due to exports and job losses due to imports, Scott uses trade figures by detailed industry and industry-specific conversion factors that translate dollars of production into a number of jobs.³

To generate state-level estimates of job loss due to trade, Scott allocates imports and exports among the states based on each state’s share of employment in detailed industries. Scott’s method of allocating trade among the states is the same as that used by the U.S. Department of Commerce in developing official export figures by state.

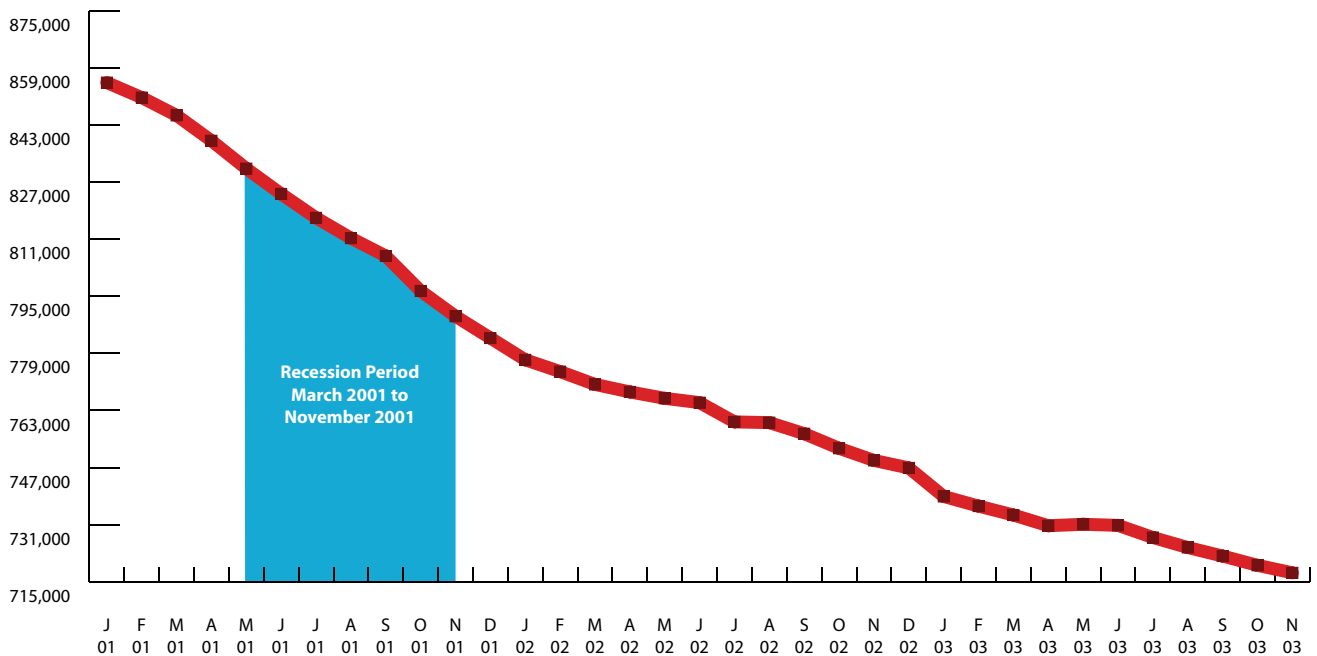
The same approach Scott uses to derive state-level estimates of job gains and losses due to trade can be used to generate estimates for counties or regions of a state. That is, starting with Scott’s figures for trade-induced job gains and losses by detailed industry for Pennsylvania as a whole, estimates for counties and regions are set equal to the statewide figure for the industry times the county or region’s share of employment in the detailed industry.

**Figure 1. Since the End of the Last Recession Pennsylvania Has Lost 9,500 Jobs
Monthly Total Non-Farm Employment 2001-2003 (seasonally adjusted)**



Source: KRC analysis of U.S. Bureau of Labor Statistics Current Employment Statistics

**Figure 2. Since the End of the Last Recession Pennsylvania Has Lost 71,900 Manufacturing Jobs
Monthly Total Manufacturing Employment 2001-2003 (seasonally adjusted)**



Source: KRC analysis of U.S. Bureau of Labor Statistics Current Employment Statistics

Pennsylvania Jobs Lost Due to All Trade

In October 2002, piggybacking on an earlier Scott briefing paper, KRC estimated Pennsylvania job loss due to trade between 1993 and 2000 in nine regions made up of one or more congressional districts.⁴ Since those estimates, no new national estimates of overall job loss due to trade have been built up from detailed industry figures. We do know, however, how much the trade deficit has increased since 2000. To the extent that the real trade deficit between 1993 and the present has increased by more than the trade deficit between 1993 and 2000, job loss due to trade would be expected to increase. An important qualifier is that productivity growth over time means that each real \$1 million of trade corresponds with a gradually declining number of jobs. Thus adjusting job loss figures by the increase in the trade deficit since 2000 generates an upper bound on the current level of manufacturing job loss due to trade.

Column one of Table 1 presents our earlier estimates of manufacturing job loss for different Pennsylvania regions. It also shows our upper bound estimates for job loss due to all trade currently. The statewide upper bound is 149,816, up from the 2000 Scott estimate of 106,142. The real figure of trade displacement due to the rise in the trade deficit from 1993 to the present is somewhere between these two figures.

Region	Manufacturing Job Loss, Per Congressional District (CD), due to Rising Trade Deficit		
	1993 to 2000	1993 to 2003 (first three quarters at an annual rate)*	Congressional Districts
SE	5,610	7,925	1, 2, 6, 7, 8, 13, 16
Central E	7,676	10,843	11, 15
NE	6,904	9,752	10
Capital Region	7,734	10,925	17
Southern Metro	6,766	9,558	19
Southern Rural	5,716	8,074	9
NW Central	6,936	9,798	5
NW	5,313	7,505	3
SW	3,019	4,265	4, 12, 14, 18
Statewide Average	5,582	7,885	All
Total	106,142	149,816	

*Equals column to the left multiplied by the ratio of the rise in the goods trade deficit, 1993 to 2003 (first three quarters at an annual rate) vs. 1993 to 2000. As a result of productivity growth from 2000 to 2003, figures in middle data column represent an upper bound for job loss due to trade.

- As noted in our October 2002 figure, the hardest hit part of Pennsylvania due to the rise in the trade deficit with all trading partners since 1993 has been the Capital region encompassing the new 17th Congressional District. Updating our figures to reflect the rise in the trade deficit since 2000, this district has lost up to 10,925 jobs. This region included heavy concentrations of hard-hit apparel and leather products industries.

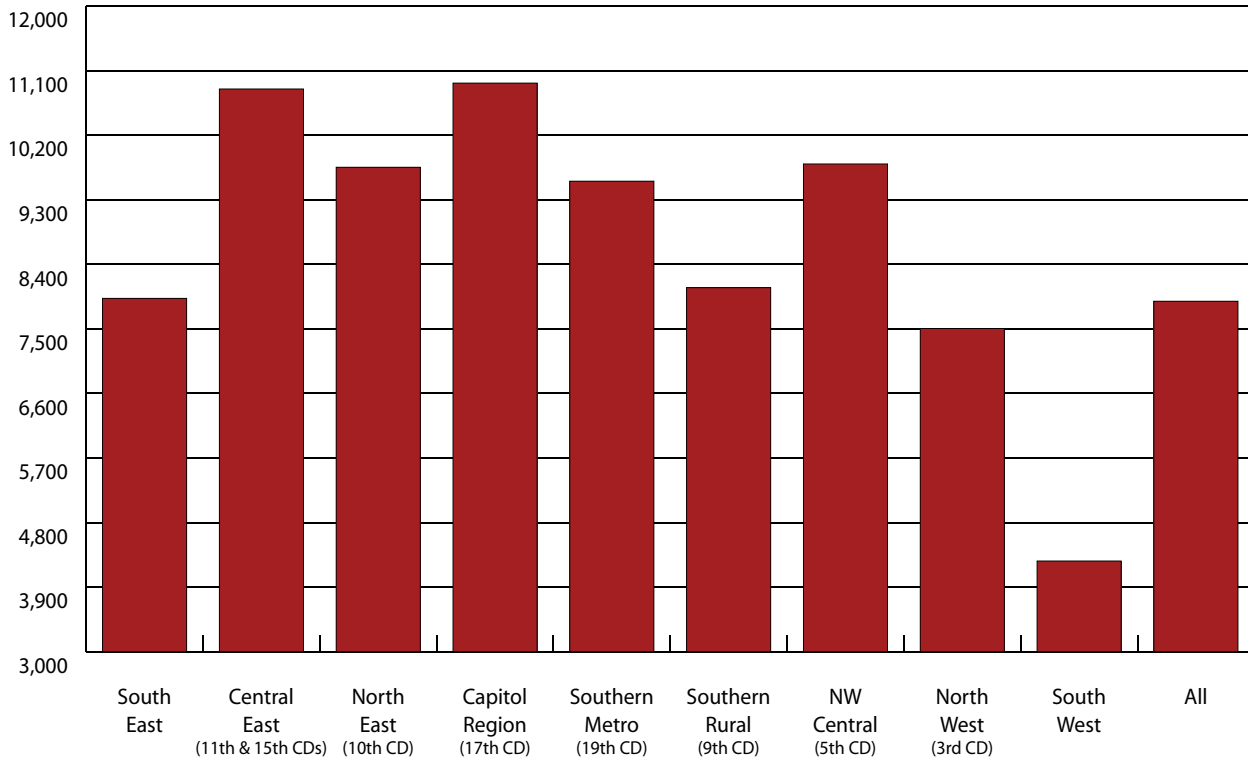
- The second hardest hit part of Pennsylvania was the Lehigh Valley spanning the 11th and 15th Congressional Districts, which also lost up to nearly 11,000 manufacturing jobs each.

- Other hard hit areas include Districts 19 (Southern Metropolitan PA), District 10 (in the Northeast

including Scranton), and District 5 (Northwest Central including State College), each of which lost up 9,500 manufacturing jobs.

- The seven-congressional district Philadelphia region lost almost the same number of jobs per district as the state as a whole. This region includes a substantial fraction of the state's chemical industry, which was not especially hard hit. In addition, the Philadelphia area already had a relatively low proportion of low-end labor-intensive manufacturing industries prior to 1994.
- The least hard hit areas include four congressional districts that fall mostly in the

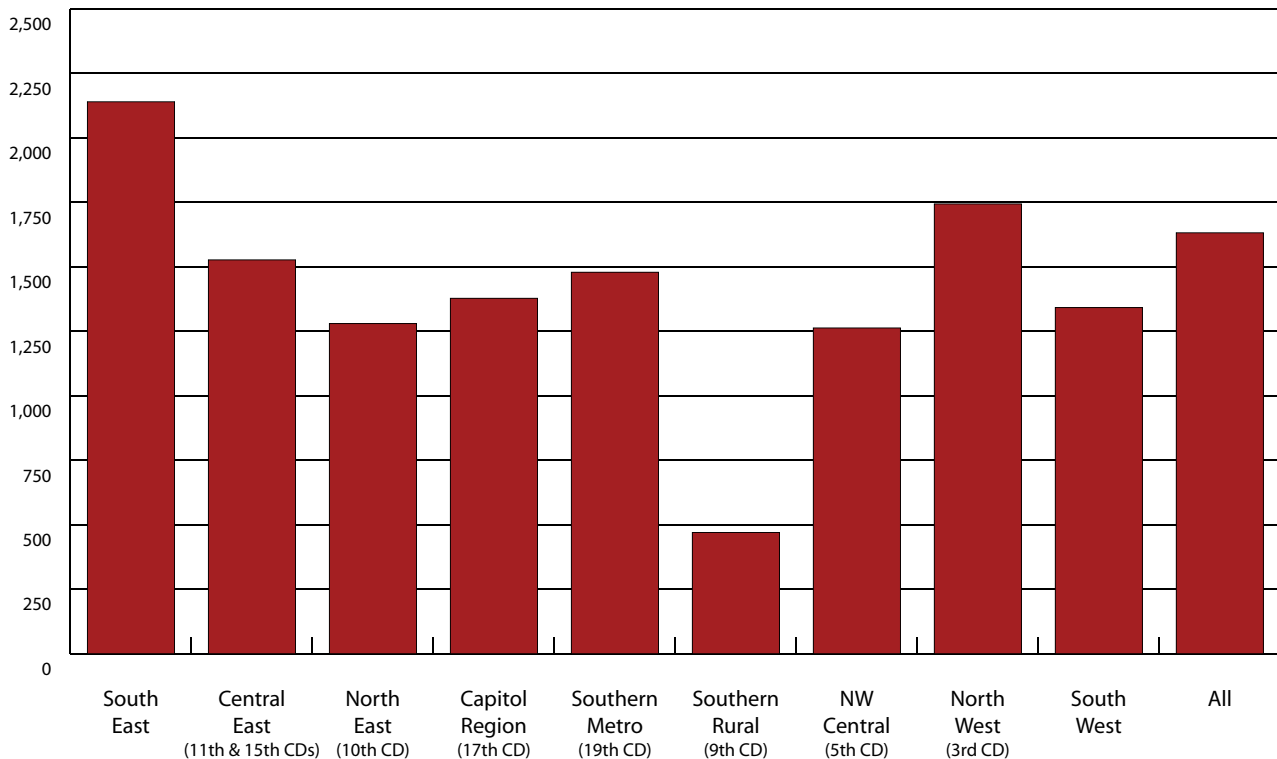
Figure 3. Manufacturing Job Loss Per Congressional District Due to Rising Trade Deficit, 1993 to 2003 (first three quarters at an annual rate)



Note: SE refers to Southeast and includes PA congressional districts 1, 2, 6, 7, 8, 13, 16. SW refers to Southwest and includes congressional districts 4, 12, 14 and 18. For the geographic area covered by each congressional district, see Table 1, column 1.

Source: Table 1.

Figure 4. Manufacturing Job Loss Per Congressional District Due to Rising Trade Deficit with Mexico and Canada, 1993-2002



Note: SE refers to Southeast and includes congressional districts 1, 2, 6, 7, 8, 13, 16. SW refers to Southwest and includes congressional districts 4, 12, 14 and 18. For the geographic area covered by each congressional district, see Table 2, column 1.

Source: Table 2

Pittsburgh metropolitan area. Southwest Pennsylvania now has a relatively small portion of most of the state's manufacturing industries except metalworking.

Job Loss due to U.S.-Mexico Trade

Scott's new paper, focusing on U.S.-Mexico trade, uses the same basic methodology as his earlier one. The only difference is that it is built on more detailed industry statistics, for a total of 192 sub-sectors. The paper also looks at the impact of job loss due to a rising trade deficit with Mexico and Canada from 1993 to 2002. Scott's findings follow.

- From 1993 to 2002, a rising trade deficit with Canada and Mexico destroyed 879,280 U.S. jobs, 78 percent of which or 686,700 were in manufacturing.
- With 38,325 net jobs lost, Pennsylvania experienced the seventh-highest job losses of any state, behind California, New York, Michigan, Texas, Ohio and Illinois.
- Pennsylvania experienced the eight-largest manufacturing net job losses due to trade, 31,014. This equals 3.5 percent of 1993 manufacturing employment.
- In 2002 the average annual pay in Pennsylvania manufacturing was \$42,852 while the average annual pay in the service sector was \$33,376.

Starting with Scott's new NAFTA paper, we estimate job loss within each of our nine regions using the same methodology as above. That is, we allocate net job losses in each of 192 industries (estimated by EPI for Pennsylvania as a whole) to

sub-state regions based on each region's share of total Pennsylvania employment in the industry. Regional shares of industry employment were calculated from the quarterly census of employment and wages for 2000 published by the Bureau of Labor Statistics. Table 2 and Figure 4 contain the results of this regional analysis.

Region of the State	Congressional Districts	Job Loss Per Congressional District	Manufacturing Job Loss Per Congressional District
Southeast	1,2,6,7,8,13,16	-2,615	-2,164
Central East	11,15	-1,887	-1,527
Northeast	10	-1,487	-1,244
Capital Region	17	-1,742	-1,377
Southern Metropolitan	19	-1,814	-1,426
Southern Rural	9	-812	-473
Northwest Central	5	-1,414	-1,220
Northwest	3	-2,022	-1,744
Southwest	4,12,14,18	-1,739	-1,332
Statewide Average	All	-2017	-1632

As with overall trade, the impact of NAFTA varies substantially by region. The regions that have lost the most jobs due to trade with NAFTA partners differ somewhat because of the composition of the U.S. and Pennsylvania trade deficits with Mexico and Canada. In general, imports from these two countries tend to be more capital-intensive than trade with the world as a whole. For example, motor vehicles and parts account for a very substantial part of U.S. trade with Mexico and Canada. (Our refined methodology, with its reliance on 192 instead of only 31 sectors, may also help explain differences with the results presented earlier.)

- The SE region of the state in and around Philadelphia suffers more job loss relative to other regions as a result of NAFTA-related trade than as a result of trade overall. This region has lost 2,164 jobs due to the rising trade deficit with Mexico and Canada since 1993.
- The Northwest, a region with hard hit

electronics, lumber, and wood industries, has lost an estimated 1,744 jobs due to rising trade deficits with Mexico and Canada since 1993.

- Most of the rest of the state has manufacturing job losses per Congressional District between 75 and 95 percent of the statewide average.
- The southern rural Pennsylvania region, which now has a lower manufacturing employment share than most regions, has relatively low job losses due to trade with NAFTA countries.

Conclusion

Trade with Mexico and Canada accounts for 20-25 percent of overall Pennsylvania job loss due to rising trade deficits since 1993. Without trade-induced job loss, today in Pennsylvania there would be as many as 878,427 manufacturing jobs, a level of manufacturing employment not seen since 1993.

In principle, international trade can raise living standards in the United States and promote economic modernization in the developing world. The current rules governing the international trade and financial systems, however, generate distorted trade patterns that have hurt Pennsylvania's middle class, while doing little to improve the lives of workers in many developing country trading partners. For example, Mexican wages in manufacturing declined 3 percent between 1993 and 2001. In the Mexican economy as a whole, wages in 1998 (the latest year for which we have figures) were 40 percent lower than in 1991.⁵

Pennsylvania, the United States, and the developing world urgently need a new approach to trade that can benefit people generally. In Pennsylvania and the nation, a new trade approach should be one component of an overall manufacturing revitalization strategy. Such an overall strategy should also address such issues as workforce development, industrial retention

and modernization, and access to capital.

A century or so ago, Britain faced the potential of losing global manufacturing pre-eminence because of its failure to adapt to new competitive conditions. When it failed to adapt, its living standards dropped substantially below those of the United States and, in the end, other leading advanced industrial countries.

The decisions the United States and Pennsylvania make about manufacturing over the next decade will determine whether our living standards slip sharply below those of other nations in the next 50 years. The clock is ticking.

Endnotes

¹ Robert E. Scott, *The High Price of “Free” Trade: NAFTA’s Failure Has Cost the United States Jobs Across the Nation* (Washington, D.C.: Economic Policy Institute, 2003).

² Source: Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW).

³ Obtaining industry-specific factors (or “input-output coefficients”) to translate dollars of trade into jobs is important because labor content varies a lot by industry. For example, a million dollars supports a lot more jobs in apparel than in aircraft engine production.

⁴ David H. Bradley, *Trade and Pennsylvania: Distorted Trade Patterns Translate into Job Loss for Commonwealth* (Harrisburg, Keystone Research Center, October 2003).

⁵ Bradley, *Trade and Pennsylvania*.

The Keystone Research Center

The Keystone Research Center (KRC) was founded in 1996 to broaden public discussion on strategies to achieve a more prosperous and equitable Pennsylvania economy. Since its creation, KRC has become a leading source of independent analysis of Pennsylvania’s economy and public policy.

The Keystone Research Center is located at 412 North Third Street, Harrisburg, Pennsylvania, 17101. Most of KRC’s original research is available from the KRC Web site at **www.keystoneresearch.org**. The Keystone Research Center welcomes questions or other inquiries about its work at 717-255-7181, or toll free at 888-618-2055.