

**THE CHANGING NATURE OF CORPORATE GLOBAL RESTRUCTURING:
THE IMPACT OF PRODUCTION SHIFTS ON JOBS
IN THE US, CHINA, AND AROUND THE GLOBE**

Submitted to the US-China Economic and Security Review Commission

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October 14, 2004

Executive Summary

Despite the increasing amount of trade between China and the US, and the increase in foreign direct investment from the US into China, there is no government body that collects information detailing the incidence of production shifts out of the US to China or any other country. In the fall of 2000, the predecessor to the US-China Economic and Security Review Commission (USCC) commissioned Cornell and the University of Massachusetts Amherst to study the extent and nature of production shifts out of the US and into China from October 2000 through April 2001. In order to conduct this research we developed a methodology that involves a combination of online media tracking and corporate research and the creation of a database including information on all production shifts announced or confirmed in the media during that period. In July 2004 the USCC asked us to update that research, starting with an initial period of January 1 through March 31, 2004.

In this report we provide our findings, for January through March 2004. Major highlights include:

- There has been a major increase in production shifts out of the US in the last three years particularly to Mexico, China, India, and other Asian countries. There were 69 announced or confirmed production shifts to Mexico, followed by 58 shifts to China, 31 to India, 39 to other Asian countries, 35 to other Latin American and Caribbean countries, 23 shifts to other countries including Eastern and Western Europe and Canada. This compares to 2001, where during the same three month time period we found only 25 shifts to China, 30 to Mexico, and 1 to India.
- With 58 shifts to China, the US is the primary source of production shifts into China. However, this is followed closely by Europe, which had 55 shifts. There were 33 shifts from other Asian countries to China, primarily Japan, Taiwan, the Philippines and Singapore.
- Unlike in 2001, when the majority of shifts were simple site-to-site shifts with one company shifting production from the US to a single destination country, today we find that of the 255 shifts out of the US, 48 percent were simultaneous shifts to ‘near-shore’ countries in Latin America (primarily Mexico) and to China and other ‘offshore’ countries in Asia. This trend was a global phenomenon, with countries in Europe simultaneously shifting work to Eastern Europe and Asia, and countries in Asia shifting both to neighboring countries and China.
- Altogether we found announcements or confirmations for shifts of 48,417 jobs out of the US to other countries in January-March including 23,396 to Mexico, 8,283 to China, 3,895 to India, 5,511 to other Latin American countries, 4,419 to other Asian countries, and 2,933 to all other countries. Based on our estimates that media tracking captures approximately two-thirds of production shifts to Mexico and about a third of production estimates to other countries, these data suggest that in 2004 as many as 406,000 jobs will be shifted from the US to other countries compared to 204,000 jobs in 2001.

- Based on our estimates, as many as 99,000 jobs are shifted from the US to China and 140,000 jobs will be shifted to Mexico this year compared to approximately 85,000 jobs to each country in 2001. However, because more than a third of the shifts to China were simultaneous shifts to multiple destinations in Latin America, Asia, or other regions of the world, jobs lost from shifts to China are often directly linked to job losses to other countries both, near and off shore.
- These data also suggest that the Bureau of Labor Statistics (BLS) estimate of jobs lost due to the shifting of US jobs out of the country grossly underestimates the total number of jobs lost. While BLS reported 4,633 private sector workers in establishments with 50 or more workers lost their jobs due to global outsourcing in January-March 2004, we were able to find solid confirmation for an absolute minimum of 25,000 jobs shifting out of the US during that same period.
- Today production shifts from the US to China represent a cross section of industrial sectors including apparel and footwear, sporting goods and toys, wood and paper products, aerospace, appliances, household goods, industrial equipment and machinery, electronics and electrical equipment, metal fabrication and production, chemicals and petroleum, textiles, and plastics, glass, and rubber. This contrasts with 2001 when most production shifts to China were concentrated in a few industries: electronics and electrical equipment, chemicals and petroleum, household goods, sporting goods and toys, textiles, wood and paper products.
- Workers have filed Trade Adjustment Assistance (TAA) claims in only 31 percent of the cases where production shifts occur. This appears to be a consequence of the inherent challenges in proving that work actually shifted out of the country and the fact that TAA petitions for workers in non-manufacturing jobs in IT or call centers have been consistently denied by the Labor Department because the workers are not producing a product as defined by the TAA.
- Unionized workplaces are being disproportionately affected by US production shifts. Twenty-nine percent of the companies shifting production out of the US were unionized and 39 percent of all jobs being shifted out of the US are from unionized facilities. Fifty-three percent of jobs shifting out of the US to Mexico and 34 percent of jobs shifting to China are unionized. Even taking into consideration the higher union density rate in the industries where many of the production shifts are concentrated, these numbers far exceed the union density rate in those industries.
- The companies shifting jobs from the US to China tend to be large, publicly held, highly profitable, and well-established. Seventy-six percent of the facilities impacted by the production shift have been in operation for more than 20 years. At the same time, 55 percent have been under their current ownership for no more than ten years. Seventy-two percent are owned by US multinationals.

- The region that has seen the most jobs shifted overall is the Midwest, which lost 18,938 jobs to offshoring between January and March 2004. The Southeast lost 8,604 jobs, followed by the Northeast that lost 7,223 jobs. In terms of specific states, the state of Illinois had the greatest number of jobs lost (7,555) almost all of which went to Mexico. It was followed by Michigan, which lost 5,283 jobs, mostly to Mexico. North Carolina witnessed the greatest number of jobs moving to China, with 839 for January-March. There were 773 jobs moved from Ohio to China, 650 from California, and 510 from Indiana during the first quarter of 2004.
- Unlike shifts from the US to China, shifts from other Asian countries into China tend to be more concentrated, particularly in electronics and electrical equipment production, as well as textiles and metal fabrication and production. Shifts from Europe to China are primarily concentrated in electronics, chemicals and petroleum, and metals industries.
- In contrast with our 2001 study, we also found a significant increase in production shifts to India, particularly IT, call center and other white-collar occupations from the US and UK. Similarly we captured an increasing trend in large production shifts from Western Europe to Eastern Europe and from higher wage Asian countries to lower wage countries in the same region.
- We conclude that our data speak to a growing phenomenon of global corporate restructuring and capital mobility. Throughout the world, US and foreign owned multinationals are simultaneously shifting production from high-wage countries to multiple low-wage destinations, both near shore and off shore, with China as one of the primary destinations for all countries. Yet, three years after our original report to the USCC, there continues to be no government mandated reporting system to track production shifts out of the US. Absent government-mandated reporting, the continued funding of research such as this becomes essential to efforts to track the changing trends and effects of global capital mobility on US workers and the US economy.

Table of Contents

Executive Summary	i
Introduction	1
Research on global production shifts	3
Research design and methodology.....	8
Challenges of media tracking research.....	14
Overview of media tracking data.....	15
Production shifts out of the US.....	25
Job losses from US-based production shifts.....	25
Trade Adjustment Act Data.....	31
Markets.....	33
Union status.....	36
US region of origin.....	41
Company characteristics and structure.....	47
Impact of US production shifts on workers and communities.....	50
Estimates of annual job losses from production shifts out of the US.....	53
Production shifts out of other countries into China.....	57
Jobs lost in production shifts from other countries into China.....	57
Industrial sector for production shifts into China.....	58
Company characteristics and structure for shifts into China.....	59
Global production shifts.....	64
Global shifts in textiles.....	71
Global shifts in white-collar occupations.....	72
Global shifts in manufacturing.....	726
Conclusion.....	78
Works Cited.....	82

Table of Tables

Table 1: Production shifts out of the US, announced or reported, January-March 2004.....	16
Table 2: Production shifts to China from other countries, announced or reported, January-March 2004	22
Table 3: All production shifts in media tracking study, announced or reported, January-March 2004	24
Table 4: Distribution of production shifts out of the US by industry and destination country, January–March 2004	29
Table 5: Trade Adjustment Assistance Act (TAA) applications and certifications, by destination country and economic sector for shifts out of the US, January-March 2004	31
Table 6: Production shifts out of the US by region, January-March 2004.....	42
Table 7: Number of jobs lost and number of production shifts out of the US for twenty five states with highest job losses, January-March 2004	44
Table 8: Company structure for production shifts out of the US, January-March 2004.....	47
Table 9: Company characteristics for production shifts out of US, January-March 2004.....	49
Table 10: Estimates of total annual job loss from production shifts out of the US, 2001 and 2004	55
Table 11: Distribution of non-US production shifts into China by source country and industry, January-March 2004	59
Table 12: Company structure for production shifts into China by source country, January-March 2004	60
Table 13: Company characteristics for production shifts into China by source country, January-March 2004	61
Table 14: Comparative characteristics of global production shifts by destination country, all source countries combined, January-March 2004.....	66
Table 15: Global production shifts out of the US by industry and destination country, January-March 2004	70

Table of Figures

Figure 1: Number of production shifts out of US announced or relocated by month, January-March 2004	12
Figure 2: Number of production shifts out of other countries, announced or relocated by month, January-March 2004	13
Figure 3: Number of Jobs Shifted out of US, January-March 2004	26
Figure 4: Total number of jobs lost from production shifts out of the US by industry, January-March 2004	27
Figure 5: Unionization rates for companies shifting production out of the US, by destination country, January-March 2004	36
Figure 6: Number of union and non-union jobs lost from the US by destination country, January-March 2004	37
Figure 7: Percentage of production shifts in US region by destination country, January-March 2004	43
Figure 8: Parent company country for foreign-owned multinationals for all production shifts out of the US, January-March 2004	48
Figure 9: Number of jobs lost from production shifts into China, from the US and other countries, January-March 2004	58
Figure 10: Percent of global production shifts into each destination country, by country or region of origin, January-March 2004	65
Figure 11: Shifts in white-collar work by industry, all countries origin, January-March 2004	72
Figure 12: Shifts in white-collar work by type of service, all countries, January-March 2004	73
Figure 13: White-collar shifts by destination country, January-March 2004	73

Introduction

In 2001 we were commissioned by the US Trade Deficit Review Commission (the predecessor to the China Economic and Security Review Commission) to conduct a pilot study on the impact of US-China trade relations on workers, wages and employment in the US. The findings from our study were incorporated into the China Economic and Security Review Commission's July 2002 *Report to Congress*. In particular the Commission recommended, consistent with our findings:

[T]he creation of a federally mandated corporate reporting system that would gather appropriate data to provide a more comprehensive understanding of the US trade and investment relationship with China. The reporting system should include reports from US companies doing business in China on their initial investment, any transfers of technology, offset or R&D cooperation associated with any investment, and the impact on job relocation and production capacity from the United States or US firms overseas resulting from any investment in China (USCC 2002: 5).

Three years later, in July 2004, with still no government mandated monitoring system in place, the Commission asked us to update our 2001 research by examining current trends in production shifts from the US to China and other countries, and whether there had been a change in the nature and extent of global production shifts out of the US and into China since 2001.¹

Our 2001 report was written just after the US approved Permanent Normal Trade Relations (PNTR) to China. At the time, there was much speculation that the granting of PNTR, and China's subsequent entry into the World Trade Organization (WTO), would dramatically increase the amount of direct investment from the US into China. Congressman

¹ The authors would like to thank the following research staff who worked on this project: Robert Hickey, Senior Research Assistant, Cornell ILR; Tamara Lovell, Research Aide, Cornell ILR; Liana Fox and Patrick Furey, research assistants, University of Massachusetts Amherst Labor Center; and Cindy Cho, Paul Hayes, Laura MacDonald, and Ed Yoo, research assistants, Cornell ILR.

Bob Ney (R-OH) declared the result would be hundreds of thousands of jobs lost in the US (Deans 2000: 2E).

However, the years since 2001 have seen significant events that might suggest a slowdown in capital movement to China, in particular the combined impact of 9-11, economic recession, and the outbreak of SARS. Yet most data suggest that trade with China has steadily increased since 2001, including exports from the US to China, as well as imports from China to the US (US Department of Commerce 2004).

What has been the impact of this increased investment and trade on employment and economic security? Despite the importance of the topic, the lack of government mandated reporting of production shifts out of the US means that there are no hard data to answer these questions. The purpose of this study is to help fill this void by capturing the nature and extent of production shifts out of the US for the first quarter of 2004.² This will allow us to get an initial view of changing trends in production shifts three years after the granting of PNTR to China and China's entry into the WTO. The updated database will also allow us to make comparisons of job shifts with our initial data from 2001.

In this report we present our findings on production shifts out of the US and into China that were announced or confirmed to have taken place between January 1, 2004 and March 31, 2004, along with a comparison to the 2001 period. Below, we first review other sources that attempt to estimate the number of jobs moving from the US to China. We then present our research methodology and findings.

² Due to the time and financial constraints under which the Commission must operate, this study was limited to the first three months of 2004. However, once this phase is completed, we hope to work with the Commission to conduct the second phase of the study, which will be to expand our database to include production shifts which occurred April 1-June 30, 2004 and to conduct in-depth case studies on the impact of these production shifts on workers and communities across the US.

Research on global production shifts

Despite the increased interest in tracking the number of jobs shifted from the United States to other countries, there are little hard data on the actual nature and extent of production shifts. Much of the new research focuses on the service sector and those industries such as information technology (IT) and call centers that make up the new wave of job relocations. Additional insights can be gained from the limited number of surveys of top executives and their experiences and projections of offshore outsourcing. On a macroeconomic scale, a number of studies attempt to estimate the number of jobs involved by modeling changing trends in trade data.

As mentioned above, in 2001 we developed the first tracking system of production shifts through systematic research of print and on-line media sources.³ Our report, “Impact of the US-China Trade Relations on Workers, Wages and Employment,” identified some eighty production shifts from the US to China, involving an estimated 34,900 jobs for the first seven months after PNTR was passed in October 2000 (Bronfenbrenner et al. 2002). During this same period we found that 29,267 jobs shifted to Mexico, 9,061 jobs to other Asian countries, and fewer than 1,000 jobs to other Latin American countries. However, because only a portion of actual production shifts are captured in the on-line media, we found that media tracking significantly underestimated the number of jobs involved. We estimated that the actual number of jobs involved in production shifts from the US to China and Mexico each year totaled between 70,000 and 100,000. This number matches our 2001 study’s macroeconomic findings that calculated a loss of 770,000 jobs from the US-China deficit from 1992 to 2000.

³ The European Foundation for the Improvement of Living and Working Conditions employs similar tracking methods as part of its European Restructuring Monitor program. This foundation, established by the European Union, uses media reports to track all forms of economic restructuring, such as outsourcing, relocation, and closures. <http://www.emcc.eurofound.eu.int/erm/> (EMMC 2004).

In addition to capturing the extent of production shifts out of the US to China and other countries, our 2001 study also provided important insights into the kinds of companies and jobs that were leaving the US and the impact these production shifts were having on workers and communities around the globe. As we described in our 2001 report, “the US companies that are shutting down and moving to China and other countries tend to be large, profitable, well established companies, primarily subsidiaries of publicly-held, US-based multinationals” (Bronfenbrenner et al. 2002: ii).

Where in past years production shifts to China had been concentrated in low-skill light manufacturing, by 2001 an increasing percentage of the jobs shifting to China were in higher-end manufacturing of goods such as bicycles, furniture, motors, compressors, generators, fiber optics, injection molding, and computer components. We also found that the majority of firms shifting production to China were not simply targeting a Chinese market. From Mattel Barbie Doll Playhouses to Samsonite luggage, Rubbermaid kitchenware, and Lexmark printers, many of these companies shifting work to China were targeting a US and global market.

When we first released our media tracking findings in the fall of 2001, the big story in terms of production shifts was the hemorrhaging of the US manufacturing sector. Ninety-nine percent of all the employment losses that we found in our study were in manufacturing industries, with just a handful in call centers and banking services. Media reports and academic research on outsourcing had yet to forecast a significant increase in global shifts in service sector and IT employment.

Today, a very different picture is emerging of the kinds of jobs and industries that can easily be shifted across borders and around the world. The most widely cited projections come from Forrester Research Inc, a research and consulting firm specializing in technology trends.

Forrester recently increased their predictions for the number of US service jobs outsourced overseas to 830,000 by 2005. Projecting further into the future, Forrester predicts that as many as 3.4 million service jobs will move off shore by 2015 (Hilsenrath 2004). Gartner, another industry research and analysis group, predicts that 10 percent of US technology jobs will be moved off shore by 2005 (Krim 2003).

Berkeley economist, Dr. Cynthia Kroll, estimates that as many as 14 million jobs in the US are at risk for outsourcing (Kroll 2004). Jobs that are most “at-risk” require no face-to-face customer service, use remote telecommunications technology, and have high wage differentials between countries.

A number of management consultant groups have conducted surveys of executives on their experiences with offshore outsourcing. The consulting firm DiamondCluster found in March 2004 that 86 percent of companies polled expected to send more technology jobs overseas in the next year (Brown 2004). This compares to just 32 percent of companies polled two years earlier. Watson Wyatt surveyed thirty-three multinational corporations regarding their offshoring practices (Wyatt 2004). India was the top destination reported by the companies as a target destination for offshoring jobs (84 percent) followed by China (45 percent). Thirty-five percent of respondents anticipated a significant increase in offshoring of customer service and 41 percent anticipated an increase in offshoring of internal support services. Confirming the growing trend of high-end professional offshoring activity, Watson Wyatt found that 24 percent of the companies planned to significantly increase the offshoring of research and development (R&D) and professional services.

A recent study of offshoring trends in the global telecommunications industry by consulting firm Deloitte Touche Tohmatsu confirms that offshoring of IT and back office

operations is not simply a US phenomenon (Deloitte Touche Tohmatsu 2004). The survey of forty-two of the leading telecommunications companies worldwide found that 32 percent of the companies surveyed had already begun to shift work from high-cost to low-cost countries, another 2 percent had definite plans to offshore work in the near future, and 7 percent were evaluating offshoring work in their company. Only 20 percent of those surveyed reported that they had decided, for the time being, against offshoring. The study reported that the primary reasons given for offshoring in the telecommunications industry were cost reduction (53 percent), improved quality (19 percent), accelerated processes (11 percent), and post merger ‘rationalization’ (10 percent). Based on their findings Deloitte predicts that by 2008, 5 percent of the global technological workforce, approximately 270,000 jobs, will be located in what they call “low-cost offshore centers” in locations such as India, China, and Eastern Europe (2004:5).

The loss of nearly 3 million manufacturing jobs in the past four years has also sparked studies examining the nature and causes of the rapid decline of manufacturing employment. Several studies have specifically considered the impacts of trade and production shifts on the US manufacturing sector. In February 2004, the Congressional Budget Office (CBO) report, “What Accounts for the Decline in Manufacturing,” found that decreases in domestic demand and increases in productivity were significant contributing factors (Congressional Budget Office 2004). The CBO also cited increasing competition from foreign producers and changes in the structure of manufacturing employment as additional factors causing decline in manufacturing employment. The Economic Policy Institute (EPI) contends that as much as 59 percent of the loss in manufacturing employment in recent years can be attributed to the growing trade imbalance (Bivens 2004).

Beginning in January 2004, the US Department of Labor, Bureau of Labor Statistics (BLS) began recording data on job loss related to the movement of work as part of the Mass Layoff Statistics program (BLS 2004a). The BLS program surveys companies that employ fifty or more workers where at least fifty individuals have filed for unemployment insurance during a five-week period and the layoff lasted for more than 30 days. BLS found that only 4,633 workers were separated from their jobs for at least thirty-one days as a result of the movement of work outside the US in January-March 2004. Thus, according to BLS data on extended layoffs, only 2.5 percent of the 239,361 private sector non-farm workers were laid off due to overseas job relocations in the first quarter of 2004. BLS will continue to release data on job relocations as part of its quarterly reports on Extended Mass Layoffs. The fact that these numbers are strikingly lower than all other estimates most likely reflects that they are limited to self-reporting by employers in a climate where there has been significant negative pushback from the media, politicians, and the general public on the outsourcing of US jobs overseas.

In addition to these sources, there has been an explosion of interest among the general public in tracking the companies that are shifting jobs from one country to another. Examples range from CNN's "Exporting America" features on Lou Dobbs Tonight (2004), to the Washington Alliance of Technology Workers outsourcing website (Techs Unite 2004). While these organizations attempt to provide accurate listings of companies that have at some point shifted jobs and production out of the US, they do not tend to follow a rigorous research methodology to reliably capture when the shifts occurred, the actual numbers of jobs shifted to each country, and the characteristics of the companies and jobs that are being shifted. Still, the groups highlight the increased public awareness of the practice of global outsourcing of jobs and

the policy implications of job dislocations for workers, unions, communities, business, and government.

Absent government mandated reporting and disclosure of employment location and service or product sourcing, tracking the number of jobs impacted by production shifts will remain an imprecise science. Media-tracking currently offers the only source of hard data collection to measure the nature and extent of production shifts taking place in the global economy. However, given the extremely sensitive nature of negative corporate exposure over the issue of outsourcing jobs and the number of production shifts that are never reported in online media sources, such media reports capture only a fraction of the actual shifts that occur.

Research design and methodology

To calculate the number of planned or actual job shifts, we replicated the core of our research methodology from our 2001 study. We constructed a database of firm and job relocations using an extensive search of English-language media sources, relying heavily on international, national, and regional news sources in Lexis-Nexis, the premiere database for full text global news sources. We searched for cases of plant closings and relocations from the US to China, using a complex Boolean search string,⁴ on a day-by-day basis for January 1, 2004 through March 31, 2004.

⁴ After extensive experimentation with various search strategies the following Boolean search string was developed for use with China searches and then adapted for searches for each destination country: ((plant OR factory OR facilit! OR manufacturing OR operation OR unit OR headcount OR production OR jobs OR employment OR "high tech" OR "white-collar" OR "call center" OR "back office" OR "software" OR "business process" OR ALLCAPS(it)) w/p (clos! OR shift OR shut OR relocat! OR restructur! OR move OR transfer! OR outsource! OR offshor! OR near shor! OR global sourc!) and (china OR shanghai OR beijing OR hangzhou OR chengdu OR guangzhou OR tianjin OR xiamen OR guangdong OR wuhon OR dalian)) OR subject ("new plants" OR outsource! OR closings OR offshor!) AND (china OR shanghai OR beijing OR hangzhou OR chengdu OR guangzhou OR tianjin OR xiamen OR guangdong OR wuhon OR dalian).

For purposes of comparison, we collected data on job shifts from the US to other Asian countries, Mexico, and other Latin American countries; and production shifts from Asia, Europe, and other countries into China, other Asian Countries, and Latin American countries. However, unlike in our previous study, we did not limit our data reporting to those countries focused on in our targeted searches. For all cases where we found that companies had shifted production to multiple countries, including Canada and countries in Eastern and Western Europe, the Middle East, and Africa, which were not included in our search string, we also included information on those shifts in our database. Obviously, because we did not conduct targeted searches for these countries, our findings on production shifts to countries outside of Asia and Latin America greatly underestimate the extent of production shifts to these countries, particularly from Western to Eastern Europe. However, these data do provide information on where these other production shifts are happening and the kinds of companies and industries where production shifts into these countries are concentrated.⁵

For each case where we were able to confirm a planned or actual production shift, we then did follow-up research for additional or corroborating information, which was all entered in the database. This included descriptive information on the company name, location, parent company, parent company country for the base company, as well as information on the location of the city and country where the production was shifted. In addition, more specific information

⁵ In the short time period and with the limited funding available for this study we focused our research on actual shifts in production where jobs were lost in one country and moved to another. Thus we did not record expansions, where, for example, a US company would increase production, expand operations, or increase investment in production in another country without a concurrent loss of production in US sites and locations. Yet, in the process of conducting our research on production shifts, we have found just as many, if not more, announcements of companies shifting their expansion of production and investment in new ventures out of the US. We believe it would be extremely important to consider including announced expansions in future research, given the likelihood that any expansion of operations in another country, rather than investing in operations and increased employment in the country where the production originates, will likely result in job losses in the base country in the long term. Unfortunately the connection between expansion of foreign production in one time period, and subsequent layoffs and plant closures in domestic facilities, can often only be assumed, and rarely verified.

was collected on the base company including years in operation, years under current owner, industry, product, date of announcement, date of relocation, and the parent company structure (publicly or privately held), annual revenue, net income, and total employees worldwide.

In addition to Lexis-Nexis, we utilized a variety of data sources and on-line databases. This includes January 2004 – August 2004 issues of the *Plant Closing News*, a monthly newsletter of US plant closings produced by Project Development Services (2004); the database on outsourcing and offshoring maintained by the Communication Workers of America (Techs Unite 2004); the CNN/Lou Dobbs “Exporting America” database (Lou Dobbs Tonight 2004); the ISI Emerging Markets database (ISI Emerging Markets 2004) and websites that track outsourcing, such as openoutsource.com (OpenOutsource 2004). In addition we used other on-line company news and information sources such as ABI-Inform, FACTIVA, Business and Company Resource Center, Dun and Bradstreet’s Million Dollar Database and Business Source Premier, most of which are fee-for-service sites available through our university libraries.

For each notice of a potential plant closing or production shift, we reviewed company records, including annual and quarterly reports, SEC filings, conference call transcripts, company web sites, and press releases in order to confirm that the job shift actually took place. We also checked local newspapers for additional media coverage to confirm closings or details about the company. We used both Hoover’s Online business information database (www.hoovers.com) and Mergent OnLine (www.mergentonline.com) to collect parent company data, such as annual revenue and net income, total number of parent employees, as well as company ownership history. We relied on the AFL-CIO’s UNICORE database to confirm data on unionization for all US companies. In addition, we utilized government data sources to track

plant closings including Trade Adjustment Assistance (TAA) applications and determinations,⁶ as well as Worker Adjustment and Retraining Notification (WARN) notices.⁷

Each job shift to a particular country was entered as a single record. In our 2001 study almost all of the production shifts involved a company shifting production to just one country at a time. In contrast, in our current study we found a significant increase in the number of companies that shifted production out of the US to multiple countries (for example, they would lay off 600 workers in Michigan and announce that the jobs would be moved to Mexico, Malaysia and China.) In these cases, we entered three records – one for each shift to a country. If it was not possible to confirm the actual number of jobs moving to each country, we simply took an average, for example, in a case such as the one cited above, assigning 200 jobs to each of the three countries. For those countries that were moving some jobs to other sites within the source country as well as shifting production out of the country, we only reported the proportion of the jobs lost that we estimated left the source country. While this may result in an overestimation or underestimation of the jobs moving to a specific country in a specific shift, in the aggregate these estimations balance out and ensure that we accurately account for no more than the reported job loss for an individual company for all destination countries combined.

In the data analysis, we use two different units of analyses. For information about companies shifting production, we use a firm-based database, where each company is only

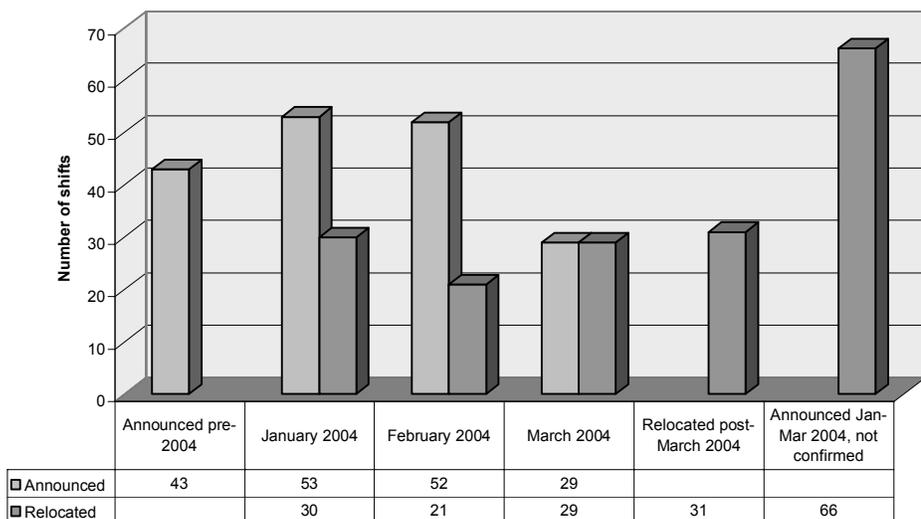
⁶ The Trade Adjustment Assistance Reform Act of 2002 (107 P.L. 210) reauthorizes and amends the Trade Adjustment Assistance (TAA) program through fiscal year 2007. It is administered by the Employment and Training Administration of the US Department of Labor. For determinations on petitions filed see <http://www.doleta.gov/tradeact/determinations.cfm>.

⁷ The Worker Adjustment and Retraining Notification Act was enacted in 1988. The Act requires employers to provide a minimum of sixty days advance notice of plant closings and mass layoffs in workplaces with one hundred or more employees. The notice may be provided directly to the workers, or to their union, the local government, of the state dislocated worker unit. It is a program under the Employment and Training Administration of the US Department of Labor, although the Department of Labor has no legal responsibility for administering or enforcing the law (Public Law 100-379 (29 USC. 2101, et seq.)). For more information see <http://www.doleta.gov/programs/factsht/warn.htm>.

represented once. When we focus on job shifts to the destination countries, we use an expanded database, where companies have multiple entries for each shift to a different country. For example, in cases where a company closes one site in the US but moves to three foreign sites, this counts as three job shift records (with the number of jobs shifted to each country calculated based on the total number of jobs lost in the company divided by the number of sites) but just one company record. Thus in the company record we have one case for each facility where jobs or production was shifted out of the US, while in the destination record we have a case for each country destination case.

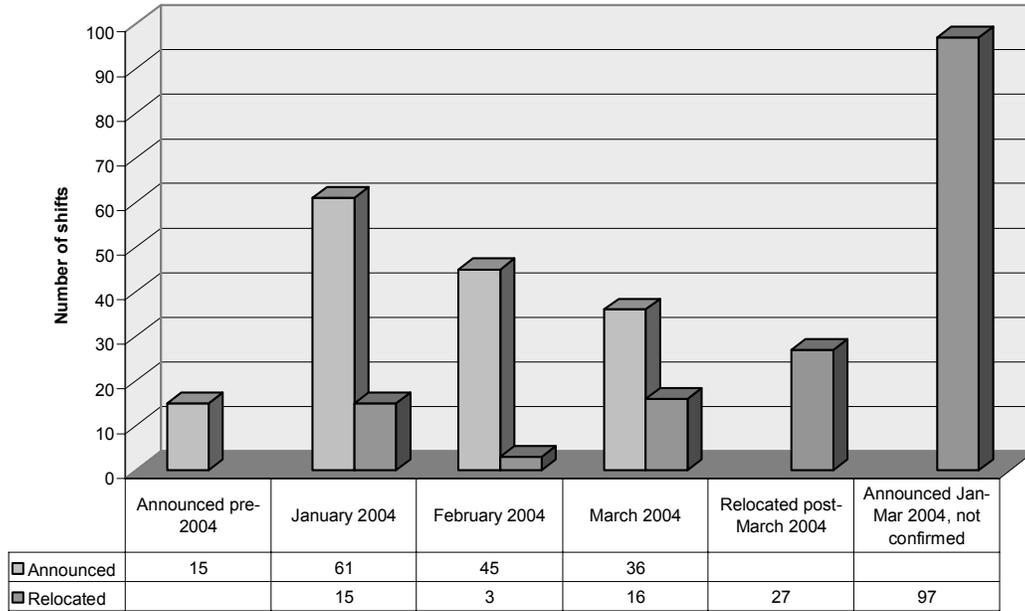
Because our search was focused on January through March, we did not include any shifts that were announced after March 31, 2004 or that occurred prior to January 1, 2004. However, when we found actual shifts that occurred in January-March, we searched backwards, prior to 2004, to find when the company first announced that the shift would occur. Similarly, once we found an announcement of a production shift in the January-March period, we would then do follow-up searches to find if and when the shift actually occurred.

Figure 1: Number of production shifts out of US announced or relocated by month, January-March 2004



In Figure 1, we provide data on the cases where we found companies to have either announced production shifts or actually shifted production (relocated) out of the US during our target period. As these data show, we found forty-three announcements that were made prior to January 1, 2004 for production shifts that occurred during our targeted period of January-March 2004. There were then fifty-three announcements in January, fifty-two in February, and twenty-nine in March.⁸ The number of relocations went from thirty in January to twenty-one in February, twenty-nine in March, and thirty-one some time after March 31, 2004.

Figure 2: Number of production shifts out of other countries, announced or relocated by month, January-March 2004



In Figure 2, we offer data on production shifts announced or reported out of other countries, besides the US, during our research period. For these shifts, we found fewer announcements in the pre-January period (fifteen), increasing to sixty-one in January, forty-five in February, and thirty-six in March. For the actual relocations, we find fifteen in January, only

⁸ The lower number for March reflects that often announcements of shifts did not get reported in the media until several months after the announcement occurred. Thus, if we expanded our search to include April and May, the number of March announcements would probably be at or above the number we found for January and February.

three in February, sixteen in March, twenty-seven post-March, and as many as ninety-seven that were announced but we were never able to confirm during our time period. However, given that we limited our search to English language sources, we believe that these data severely underestimate shifts out of European and Latin American countries. While most of the Asian business media is translated into English, the Latin American and European business media is much less likely to be translated. Thus we would estimate that these numbers would increase if searches were conducted in Spanish, German, French, Italian and other European languages.

Challenges of media tracking research

As the above discussion reveals, enormous challenges are involved in developing a reliable and comprehensive media-tracking system. Although we have made significant progress from ten to twelve years ago when media searches involved endless hours hunched over microfiche readers and newspaper vertical files, online media searching remains a difficult and time-consuming endeavor. In particular, as the subjects of global offshoring and outsourcing become an increasingly hot topic in the media, the media tracking process becomes much more cumbersome, simply because we have to filter out all of the general discussion articles in order to find relevant articles about specific production shifts.

Using the search keywords and criteria we established, our researchers averaged as many as five hundred articles per day of news for each country or region, of which five or fewer were actually relevant to the subjects they were searching for. This means that for every confirmed case they found, the researchers had to scan through several hundred articles. In addition to the difficulties in confirming cases, we also had to bear in mind at all times the other limitations of our searches and our sources, namely that (1) only a limited, albeit growing, selection of media sources has searchable online archives; (2) local news media are the least likely to have online

media archives but the most likely to report plant closings and production shifts; (3) not all production shifts are covered in the media and we have no reliable way of determining how many are not covered; (4) media reports range greatly in the reliability, veracity, and comprehensiveness of the information reported; and (5) it would take staff and financial resources well beyond the scope of this research endeavor to thoroughly search all available online media data, much of which is available only from expensive fee-for-service and limited-access databases or has not been translated into English.

Based on these limitations, it is our assumption that the media-tracking data underestimate rather than overestimate the total number of production shifts out of the US into China and other countries, and from other countries into China and around the globe. In particular we believe that a significant percentage of production shifts out of Europe, Asia, and Latin America were missed by our searches because they were not covered in the major online English-language media sources on which we relied. Still, the data that we have been able to collect provide an excellent cross section of the kinds of industries, companies, occupations, regions, and communities that are affected by production shifts out of the US to China and other countries. In addition, we believe these findings provide valuable insights into the impact that US-China trade and investment policies and other US trade and investment agreements have had on workers and employment not just in the US but in other countries as well.

Overview of media tracking data

As shown in Table 1, we found a total of 255 facilities with announced or reported job shifts from the US to other countries in January-March 2004.

Table 1: Production shifts out of the US, announced or reported, January-March 2004				
	Number of announced/reported production shifts	Percent of all production shifts from the US	Percent production shifts confirmed	Percent shifted January – March
China	58	23%	62%	43%
India	31	12%	58%	42%
Other Asian countries	39	15%	77%	64%
<i>Indonesia</i>	1	0%	100%	100%
<i>Japan</i>	2	1%	50%	50%
<i>Korea</i>	6	2%	67%	67%
<i>Malaysia</i>	6	2%	67%	67%
<i>Philippines</i>	14	6%	93%	64%
<i>Singapore</i>	5	2%	80%	60%
<i>Taiwan</i>	2	1%	100%	100%
<i>Thailand</i>	3	1%	33%	33%
Mexico	69	27%	65%	48%
Other Latin American and Caribbean countries	35	14%	77%	63%
<i>Brazil</i>	7	3%	71%	71%
<i>Colombia</i>	1	0%	100%	100%
<i>Costa Rica</i>	6	2%	100%	67%
<i>Dominican Republic</i>	3	1%	67%	33%
<i>El Salvador</i>	6	2%	100%	67%
<i>Honduras</i>	5	2%	40%	40%
<i>Jamaica</i>	5	2%	100%	100%
<i>Trinidad</i>	2	1%	0%	0%
Eastern Europe	6	2%	33%	0%
<i>Cross Eastern Europe</i>	2	1%	100%	0%
<i>Czech Republic</i>	1	0%	0%	0%
<i>Hungary</i>	2	1%	0%	0%
<i>Poland</i>	1	0%	0%	0%
Other countries⁹	17	7%	65%	41%
<i>Belgium</i>	1	0%	0%	0%
<i>Canada</i>	8	3%	75%	50%
<i>France</i>	1	0%	0%	0%
<i>Ireland</i>	2	1%	50%	50%
<i>Israel</i>	1	0%	0%	0%
<i>New Zealand</i>	1	0%	100%	100%
<i>Sweden</i>	1	0%	100%	0%
<i>United Kingdom</i>	2	1%	100%	50%
Total US facilities with shifts	255	100%	66%	49%
US facilities with multiple destination countries	121	48%	68%	54%
Total number of destinations	475	--	--	--

⁹ Because for phase one of this study we were only asked by the Commission to focus on production shifts into Asia and Latin America, only Asian and Latin American countries were included in our search string as destination countries for shifts out of the US. Thus any cases we found for other countries were found as a by-product of searches for shifts into Asia or Latin America. Thus these results are not representative of the actual number or percentage of production shifts out of the US to these other countries.

Of these, the largest share—sixty-nine shifts, or 27 percent of all production shifts out of the US—were to Mexico. The second most common destination, with fifty-eight shifts, was China, followed by thirty-one shifts to India. No other single country stands out as a large destination for US jobs. Rather, Asia as a whole, except China and India, was the destination for thirty-nine shifts, and Latin American and Caribbean countries, except Mexico, were the destination for thirty-five shifts. Finally, six announcements were for shifts to Eastern European countries, and seventeen to other countries in North America (Canada), Europe, the Middle East, or Australia. Overall, we were able to confirm that 66 percent of the 255 announced shifts in our study actually occurred, with approximately one-half confirmed to have taken place in January through March, and the other half sometime in the seven to nine months after the announcement was made.

What is particularly striking about these findings is the significant increase in production shifts to China over what we found in our research three years ago. In contrast to the fifty-eight production shifts from the US to China and sixty-nine production shifts to Mexico that we found to have been announced or reported in the first quarter of 2004, three years earlier, in January-March 2001, we found a total of only twenty-five production shifts to China and thirty to Mexico in the period just after PNTR was passed.

Even more dramatic are the increases in the number of production shifts to other Asian countries (averaging about thirteen per month) and other Latin American countries¹⁰ (averaging about eleven per month), given that in the 2001 study the number of production shifts to other Asian countries averaged fewer than six per month and the number to other Latin American countries averaged fewer than two per month. Equally significant is the fact that although there

¹⁰ From this point forward “other Latin America” refers to all Caribbean, Central American, and South American countries, excluding Mexico.

has been an escalation in production shifts to China, India and other Asian countries, Mexico continues to be the primary destination for jobs leaving the US, more than ten years after NAFTA was passed.

The number of job shifts out of the US to India (thirty-one) has greatly increased since 2001, when we found only one company had shifted production to India between January and March. Still, given the intense media coverage regarding outsourcing of white-collar jobs to India in 2004, the number of shifts to India from the US might seem lower than expected. In part this may be because the negative public reaction to the white-collar outsourcing issue has made companies reluctant to make public announcements about job shifts. Thus, corporations that lay off workers in the US and expand operations in India may try to deny or obscure a direct link between the two events.

For example, in late 2003 Accenture LLP (formerly known as Anderson Consulting) announced that it planned to increase employment in India from 4,300 people to 10,000 employees by the end of 2004 (*Press Trust of India* 2003). On January 27, 2004 the corporation announced that it would lay off ninety of its 450 workers in its Wilmington, Delaware plant. When announcing the layoff, an Accenture spokesperson said that the company had been asked by a client to shift some of their work to other locations, and noted that the jobs may be moved to India (Milford and Biddle 2004). In April and May 2004 the company filed WARN notices in Pleasanton, California, announcing they would lay off 129 workers (Alameda County Workforce Investment Board 2004). By March 2004 the company was building a second facility in southern India, in Chennai (*Economic Times*, 2004). However, Accenture would not confirm that the jobs were in fact being moved to India, or that the layoffs in Wilmington (or elsewhere) were connected with the expansions in India.

Additional confirmation that companies are increasingly sensitive to the bad publicity associated with the outsourcing of service sector and white-collar occupations to Asia can be found in company documents. For example, an executive at Lionbridge, an outsourcing firm with many employees in India, made this comment in response to a question about new clients during the company's Fourth Quarter 2003 conference call:

One of the challenges, Charles, you mentioned, you know, politically, it's a little insensitive to get press releases out about pushing jobs off shore. So we're finding that people are less enthusiastic about announcing significant contracts and so I think that we're just going to have to communicate our numbers and our performance (*Fair Disclosure Wire* 2004e: not paginated).

Or, consider the case of computer giant IBM. In January the *Wall Street Journal*, based on leaked internal IBM memos, broke the story that IBM was planning to send 5,000 US programming jobs to countries with lower labor costs. The company later announced that the total number of jobs sent overseas would be 3,000. The memos make clear that IBM is very much aware of the potentially bad publicity associated with the move. For example, a memo to managers on how to notify employees said: "Do not be transparent regarding the purpose/intent." It also warns managers that the "Terms 'On-shore' and 'Off-shore' should never be used." In addition, the memo instructs that any written materials about the layoffs must be 'sanitized' by people in the human resources and communications department before being handed out (Buckley 2004: A1).

Another possible explanation for the limited number of India cases is that the attention given to outsourcing to India is simply overrated. In our research in 2000-2001, we found that despite the large media focus on China, more jobs were still moving to Mexico than to China.

Three years later, the number of shifts to China has increased, but still trails Mexico. It is possible that the trend in shifts to India will follow a similar course.

While these are data for only three months, they still suggest that the number and extent of production shifts out of the US had increased significantly since 2001. Not only are more companies announcing production shifts out of the US than they did three years ago, but they are also shifting production to more, and often shifting production to multiple, offshore and nearshore destinations at the same time. As shown at the bottom of Table 1, although there were 255 reported production shifts out of the US, almost half (48 percent) went to multiple destinations, for a total of 475 different destinations, an average of almost two destinations per shift.

A large percentage of these shifts were simultaneous shifts to ‘nearshore’ countries in Latin America (primarily Mexico) and to China and other ‘offshore’ countries in Asia. Dallas-based Texas Instruments (TI), which bills itself as a world leader in digital signal processing and analogue technologies, exemplifies the global nature of production shifts. In February 2004, TI closed the leadframe facility at its sprawling 261 acre campus in Attleboro, Massachusetts. The closure followed a year long shift of electronics manufacturing to a near-shore facility in Mexico and offshore facilities in China, Malaysia and Taiwan. Nearly 1,200 workers lost their jobs in this production shift which was only part of a larger corporate restructuring process undertaken by TI. In December 2003, workers at the Texas Instruments plant in Tucson, Arizona, were certified as eligible for TAA benefits after the Department of Labor found that production and more than two hundred jobs at that facility had been sent to Thailand (USDOL 2003; McPherson 2004).

Another US-based electronics manufacturer, Kemet Corporation, has been massively reducing its global workforce since 2001, when it announced 3,400 layoffs. In July 2003, Kemet announced it would be further consolidating its US workforce in order to shift operations to Mexico and China. This includes cutting more than 550 jobs from plants in Fountain Inn and Simpsonville, South Carolina, where work will be shifted to both Nogales, Mexico and its newly opened facility in Suzhou, China. Another one hundred jobs will be shifted to China from Kemet plants in Shelby and Mauldin, North Carolina (Bell 2003; Chin and Ojo 2003).

In Table 2 we offer a closer look at China as a destination for production shifts. In addition to the fifty-eight shifts from the US to China in January-March 2004, there were an additional ninety-six announcements of production shifts from other countries into China. These were mostly from Europe (fifty-five shifts), followed by thirty-three shifts from Asia, with a small number coming from other countries. Here we see that the percentage of announcements that could be confirmed is much lower than in the US cases. This is in large part due to the fact that we were limited to English-language sources and because, for shifts out of countries other than the US, we had no access to additional confirmation sources such as TAA certifications and WARN notices.

Similar to the US cases, here too we see multiple instances where production shifts to several countries at once. While the Asian companies tend to shift operations to multiple countries within Asia, we found several cases where European countries simultaneously shifted production to China and Eastern Europe. This most likely occurred for the same reasons that a US company would shift to Mexico and China: to keep some production cross border but not offshore, so it still can be quickly, easily, and cheaply accessed through ground transportation. One example of this trend involves the UK auto parts manufacturer Brook Crompton (a

subsidiary of Singapore based Lindeteves-Jacoberg), which announced in January that it would close its ninety-one-year-old factory in Guiseley, UK and shift electric motor production to both China and Poland, for a cost of 225 jobs (Hebden 2004).

Table 2: Production shifts to China from other countries, announced or reported, January–March 2004

	Number of announced/reported production shifts to China	Percent of all production shifts to China	Percent production shifts confirmed	Percent shifted January- March
Asia	33	34%	21%	15%
<i>Japan</i>	17	18%	12%	0%
<i>Korea</i>	2	2%	0%	0%
<i>Malaysia</i>	2	2%	100%	100%
<i>Philippines</i>	4	4%	25%	25%
<i>Singapore</i>	3	3%	33%	33%
<i>Taiwan</i>	5	5%	20%	20%
Europe	55	57%	39%	16%
<i>Austria</i>	1	1%	0%	0%
<i>Belgium</i>	2	2%	50%	50%
<i>Czech Republic</i>	1	1%	0%	0%
<i>Denmark</i>	1	1%	0%	0%
<i>Finland</i>	1	1%	100%	100%
<i>France</i>	3	3%	67%	0%
<i>Germany</i>	7	7%	14%	14%
<i>Ireland</i>	5	5%	60%	20%
<i>Italy</i>	3	3%	0%	0%
<i>Luxembourg</i>	1	1%	0%	0%
<i>Netherlands</i>	2	2%	50%	0%
<i>Norway</i>	1	1%	100%	0%
<i>Spain</i>	3	3%	33%	0%
<i>Sweden</i>	1	1%	0%	0%
<i>Switzerland</i>	1	1%	0%	0%
<i>United Kingdom</i>	18	19%	44%	28%
<i>Cross Europe</i>	4	4%	75%	0%
Latin America	3	3%	33%	33%
<i>Mexico</i>	3	3%	33%	33%
Other countries	5	5%	60%	60%
<i>Australia</i>	1	1%	0%	0%
<i>Canada</i>	4	4%	75%	75%
Total foreign shifts to China	96	100%	34%	19%
Shifts into China with multiple destination countries	33	34%	39%	21%
Total number of destinations for companies shifting to China	136			

In many cases these shifts not only involved multiple destination countries, but were truly global shifts, with plants being closed and jobs being shifted from multiple higher wage countries in Europe, North America, and Asia to multiple lower wage countries in Asia, Latin America, and Eastern Europe. For example, in March 2004 auto components manufacturer GKN announced that they would be shifting as many as 3,000 jobs from high-cost facilities in the US, Europe, and Japan, to lower wage countries such as Mexico, China, and Eastern Europe. GKN is a major supplier of auto parts to Toyota, Ford, and Volkswagen. While the company took pains to avoid releasing any details of which plants, in which countries, would be shifting production, company officials outlined their strategy in their March conference call with shareholders:

The traditional major automotive production markets of Western Europe, North America and Japan, have provided little growth in recent years. Forecasters estimate low growth in the future. About 85% of the value of our Driveline assets is currently deployed in these markets. In contrast, the emerging markets in South America, Asia and Eastern Europe, which together account for 22% of global light vehicle production, are forecast to continue to grow strongly. We already have an established presence in these markets which provide much lower cost sources of supply. A fact we cannot afford to ignore in today's competitive world.

We have decided, therefore, that over the next three years we will migrate around 20% of our CVJ production to high growth and low-cost economies. Such that, by 2007 over 50% of our production will take place in these regions (*Fair Disclosure Wire* 2004a: 3).

In Table 3, we provide data on all production shifts in our database. As these data show, the story of outsourcing and production shifts is not a US-China story, but a global one. We can see that China is the largest destination in terms of global production shifts. For January through March 2004, 154 shifts from all countries went to China, which accounted for 33 percent of all global shifts.

Table 3: All production shifts in media tracking study, announced or reported, January-March 2004

	Destination Country											
	China		India		Other Asia		Latin America		Eastern Europe		Other Countries ¹¹	
	#	%	#	%	#	%	#	%	#	%	#	%
Asia	33	65%	4	8%	11	22%	2	4%	0	0%	1	2%
<i>Japan</i>	17	65%	1	4%	7	27%	1	4%	0	0%	0	0%
<i>Malaysia/Indonesia</i>	2	40%	0	0%	3	60%	0	0%	0	0%	0	0%
<i>Philippines</i>	4	100%	0	0%	0	0%	0	0%	0	0%	0	0%
<i>Singapore</i>	3	60%	2	40%	0	0%	0	0%	0	0%	0	0%
<i>Taiwan</i>	5	71%	1	14%	0	0%	1	14%	0	0%	0	0%
<i>Other Asia</i>	2	50%	0	0%	1	25%	0	0%	0	0%	1	25%
Europe	55	40%	25	18%	17	12%	8	6%	24	17%	4	3%
<i>France/Italy/Spain</i>	9	56%	2	13%	1	6%	0	0%	4	25%	0	0%
<i>Germany/Austria/ Switzerland</i>	9	47%	1	5%	3	16%	2	11%	2	11%	0	0%
<i>Ireland</i>	5	50%	0	0%	2	20%	2	20%	1	10%	0	0%
<i>Luxembourg/Belgium/Netherlands</i>	5	46%	1	9%	2	18%	1	9%	2	18%	0	0%
<i>Scandinavia</i>	4	36%	0	0%	2	18%	0	0%	4	36%	0	0%
<i>United Kingdom</i>	18	29%	19	31%	7	11%	2	3%	10	16%	4	7%
<i>Other Europe</i>	5	56%	2	22%	0	0%	1	11%	1	11%	0	0%
Latin America	3	38%	1	13%	0	0%	3	38%	0	0%	0	0%
<i>Mexico/Brazil</i>	3	38%	1	13%	0	0%	3	38%	0	0%	0	0%
USA	58	23%	31	12%	39	15%	104	41%	6	2%	17	7%
Other countries	5	42%	1	8%	0	0%	5	42%	0	0%	1	8%
<i>Australia</i>	1	33%	1	33%	0	0%	0	0%	0	0%	1	33%
<i>Canada</i>	4	44%	0	0%	0	0%	5	56%	0	0%	0	0%
Total shifts	154	33%	62	13%	67	14%	122	26%	29	7%	23	5%
Shifts with multiple destinations	60	29%	30	15%	38	18%	49	24%	17	8%	8	4%

The second largest destination was Latin America (particularly Mexico and Brazil).

There were a total of 122 global shifts to Latin America in this period, or 26 percent of all shifts.

For Asian countries, 65 percent of all production shifts were to China, and another 30 percent

¹¹ “Other countries” includes three shifts to Turkey and one to South Africa from the UK, one shift from India to the UK, one shift from Australia to Egypt, and the seventeen shifts from the US to Canada, UK, Ireland, and Europe, previously summarized in Table 1.

were to other Asian countries, including India. Particularly noteworthy is Japan, which had seventeen production shifts during this period, almost all of which went to China (65 percent) and other Asian countries (31 percent including India).

In contrast, shifts out of European countries show a great deal more variation across Europe. UK companies were much more likely to shift production to English speaking countries such as India (31 percent), but also had a significant percentage of production shifts moving to China (29 percent) and Eastern Europe (16 percent). In contrast, countries in continental Europe were more likely to shift to Eastern Europe (25 percent for France, Italy, and Spain and 36 percent for Scandinavian countries). Latin America was not a prime destination for most of the Asian and European countries, but, not surprisingly, accounted for the majority of the shifts out of its NAFTA partner, Canada.

Production shifts out of the US

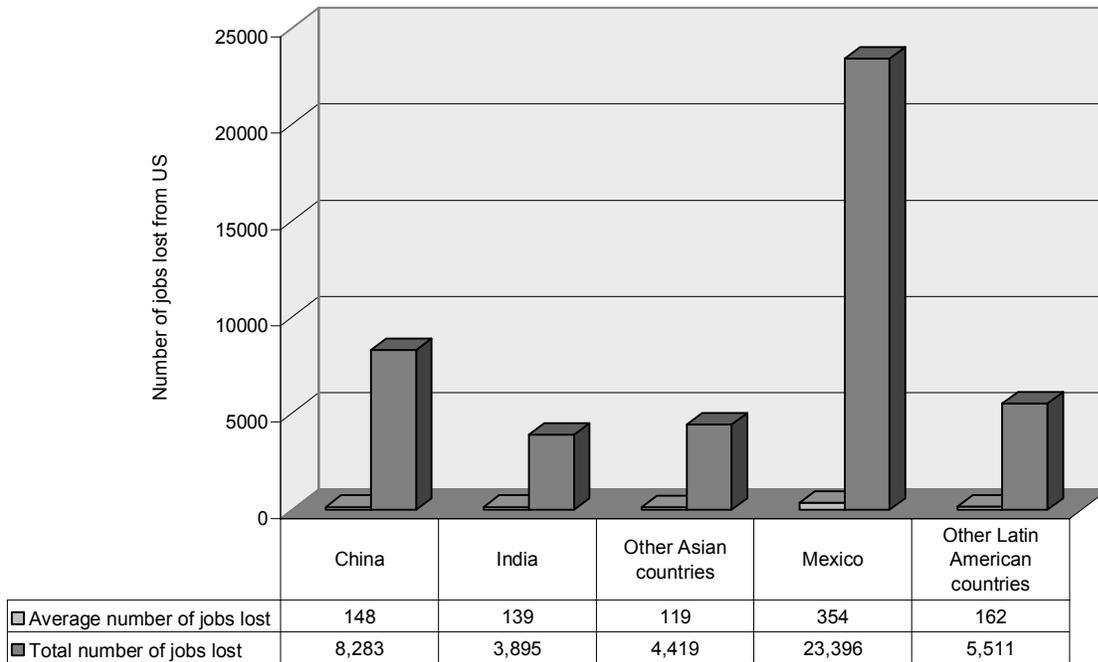
Job losses from US-based production shifts

When we move from a firm-based to job-based analysis, our results amplify those presented in Table 1. Mexico was not only the main destination of production shifts out of the US, it also was the destination country associated with greatest number of US jobs lost. As Figure 3 shows, the average number of jobs lost per production shift was 354 to Mexico, followed by 162 to other Latin American countries, 148 to China, 139 to India and 119 to other Asian countries.

These trends hold in terms of the total number of jobs shifted. Mexico is by far the largest destination for US jobs, with 23,396 jobs moving from the US to Mexico in January-March 2004. China was the second largest destination for jobs, with 8,283 total jobs. They were

followed closely by other Latin American countries (5,511 jobs), other Asian countries (4,419 jobs), and India (3,895 jobs). If we also include jobs lost in shifts to other countries in Europe, Canada, and Australia the total number of jobs that left the US between January and March 2004 reaches 48,417.

Figure 3: Number of Jobs Shifted out of US, January-March 2004

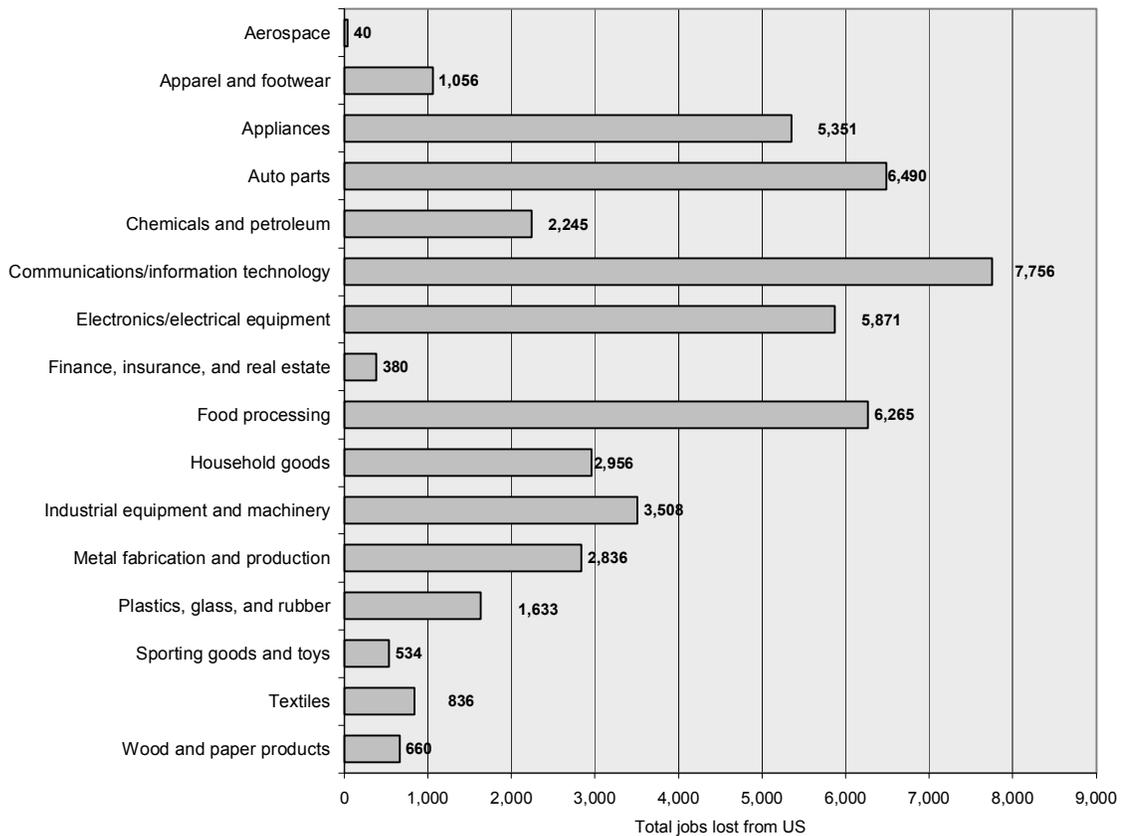


These job loss numbers are limited to the actual number of jobs lost in the specific facility where production is being shifted out of the community to another country. What they do not capture is the larger ripple effect that plant shutdowns and major layoffs can have on the larger community. For example, in February 2004, German auto parts producer, Robert Bosch, announced it would be closing its Kentwood, Michigan diesel fuel injection plant just a year after it had purchased the plant from Penske Corporation. The plant will close by the end of 2004, shifting production to Brazil, costing 1,255 unionized workers their jobs. However, based on estimations by Calvin College Professor Van Der Helde, the impact on the Kentwood community goes far beyond those 1,255 jobs. According to Van Der Helde, another 325 jobs

will be lost in the companies supplying the plant and, because the laid-off workers will be cutting back spending in the community, as many as 692 jobs will be lost in the region from businesses which served Bosch workers and their families. Van Der Helde estimates that overall spending in the community will ultimately drop by as much as \$265 million (Bauer 2004a).

And this is just one of several major closings in the area. More than three thousand other workers at the Electrolux Frigidaire plant in nearby Greenville, Michigan learned in January 2004 that they will lose their jobs when their plant moves operations to Mexico (Bennett and Gumbrecht 2004). Another 120 workers at Keeler Die Cast in Grand Rapids, Michigan learned in January that their fifty-eight year old foundry would be closing down in May, with production shifting to China (Bauer 2004b).

Figure 4: Total number of jobs lost from production shifts out of the US by industry, January-March 2004



In Figure 4, we present the total number of jobs lost by industry. Production shifts in the communications and IT industries have been receiving a lot of media attention, and indeed the largest number of jobs lost (7,756) was in this industry. The auto parts industry was the second largest category, with 6,490 jobs leaving the country, followed by food processing with 6,265. Together, these three industries accounted for approximately 45 percent of all jobs shifted out of the US in January-March 2004. Other industries with significant numbers of jobs lost included electronics and electrical equipment (5,871), appliances (5,371), industrial equipment and machinery (3,508), household goods (2,956), metal fabrication and production (2,836), and chemicals and petroleum (2,245).

Table 4 describes the proportion of production shifts per industry for each destination country. Most notably we found that companies in many industries were sending more production to China than any other destination country. For example all production shifts in sporting goods and toys went to China, as did 40 percent of production shifts in electronics and electrical equipment, and 38 percent of shifts in apparel and footwear. Approximately one-third of all production shifts in aerospace, appliances, household goods, and wood and paper products went to China.

Despite these trends, certain industries remain much more likely to move production to Mexico. Not surprisingly, 68 percent of the auto parts shifts went to Mexico, as did 58 percent of plastics, glass and rubber; 56 percent of appliances; 53 percent of industrial equipment and machinery; and 50 percent of wood and paper products.

Table 4: Distribution of production shifts out of the US by industry and destination country, January–March 2004

	China	India	Other Asian countries	Mexico	Other Latin American countries	Eastern Europe	Other
Aerospace	33%	0%	67%	0%	0%	0%	0%
Apparel and footwear	38%	0%	0%	38%	13%	13%	0%
Appliances	33%	0%	11%	56%	0%	0%	0%
Auto parts	8%	16%	0%	68%	4%	4%	0%
Chemicals and petroleum	29%	14%	14%	14%	14%	7%	7%
Communications/information technology	3%	32%	27%	0%	32%	0%	5%
Electronics/electrical equipment	40%	4%	27%	18%	0%	4%	7%
Finance, insurance, and real estate	0%	100%	0%	0%	0%	0%	0%
Food processing	0%	0%	20%	40%	0%	0%	40%
Household goods	31%	0%	15%	23%	15%	0%	15%
Industrial equipment and machinery	26%	0%	5%	53%	0%	5%	11%
Metal fabrication and production	25%	0%	13%	44%	13%	0%	6%
Plastics, glass and rubber	17%	0%	0%	58%	0%	0%	25%
Sporting goods and toys	100%	0%	0%	0%	0%	0%	0%
Textiles	10%	0%	0%	20%	70%	0%	0%
Wood and paper products	33%	0%	0%	50%	17%	0%	0%

Once again these data confirm the diversity of companies and industries that are shifting production to China, producing for a global market that includes the US. The list includes large high-end manufacturers such as United Technologies' subsidiary Carrier Corporation, an air conditioning and refrigeration equipment manufacturer in Dewitt, NY. In January, after sixty-four years as one of the Syracuse areas' largest and most profitable employers, Carrier moved all of its manufacturing production from Dewitt to China and Singapore for a loss of 1,200 union jobs (Hannagan 2003). The companies that shifted production to China also include small

specialty producers. For example Magnequench, which produces magnet powders used in 80 percent of US smart bombs, in January shifted its headquarters from Indiana to Singapore and its production from Indiana to China, despite the objections of numerous elected officials (Moberg 2004).

All of the shifts in finance and insurance went to India, and 59 percent of production shifts in communications and IT (mostly computer programming and call centers) went to India and other Asian countries, primarily the Philippines. Thirty-two percent of the communications and IT work also went to Latin America, with call center work going to Central American countries (for marketing to Spanish speakers) and computer programming going to Brazil.

The scope of the call center shifts from the US to India and other Asian countries is best captured by the story of EarthLink, which closed four call centers, laid off 1,300 workers, and shifted production to India, Jamaica, and the Philippines. In January 2004 EarthLink, an internet service provider (ISP) based in Atlanta, GA, announced plans to lay off 39 percent of its workforce, outsourcing the work to India, Jamaica, and the Philippines. The 1,300 workers who lost their jobs came from both the closure of call centers in San Jose, Pasadena, and Roseville, CA, and Harrisburg, PA, as well as staff reductions at EarthLink's call center in Atlanta. By March 2004 the layoffs were completed and the work had been transferred overseas (Husted 2004).

Harrisburg, once a center of US manufacturing, was particularly hard hit by the loss of EarthLink. Since 1970 the area has experienced the loss of more than 20 percent of these once plentiful factory jobs (Benjamin 2004). Mid-level white-collar jobs such as those at the EarthLink call centers were portrayed as the solution to these industrial job losses, the new direction for the Pennsylvania economy. However, the EarthLink call center jobs, like so many

others, were not to last. In the Harrisburg area, the new hope is that a high-tech “knowledge economy” will replace both manufacturing and white-collar work that has been transferred overseas, with industries such as biotechnology (Benjamin 2004). Whether or not this plan succeeds, it is unlikely that the 1,300 former EarthLink employees throughout the country will be able to compete for new high-tech jobs without significant retraining.

Trade Adjustment Act Data

The Trade Adjustment Act (TAA) data provides one source of information on the kinds of companies that are moving production overseas. The TAA is a federal program established under the Trade Act of 1974. It allows for workers to receive some compensation and retraining benefits if they lose their jobs or if their hours of work are reduced due to adverse effects on their employer caused by increased imports.

Table 5: Trade Adjustment Assistance Act (TAA) applications and certifications, by destination country and economic sector for shifts out of the US, January – March 2004

	Percent TAA applications filed	Percent of applications certified	Percent in manufacturing sector	Percent TAA applications filed in manufacturing	Percent manufacturing applications certified	Percent non-manufacturing applications certified
All US shifts	31%	89%	75%	37%	99%	0%
China	43%	100%	97%	45%	100%	NA
India	7%	0%	26%	0%	NA	0%
Other Asia	28%	82%	59%	39%	100%	0%
Mexico	32%	100%	100%	32%	100%	NA
Other Latin America	29%	60%	46%	38%	100%	0%
Eastern Europe	17%	100%	100%	17%	100%	NA
All other	41%	86%	82%	50%	86%	NA

Workers who have been laid off or put on a reduced workload may file a petition to receive TAA benefits. After an investigation into the case, the Department of Labor then certifies or denies the petition. However, the process is neither simple nor guaranteed. Workers must be able to show that a required minimum number of workers in the workplace were laid off,

that sales or production in their firm has declined, and that an increase in imports was a significant factor in the layoff. They also must show that their jobs are involved in the production process as defined by the TAA. Filing a successful petition is particularly challenging for small groups of workers who do not have the assistance of a union representative, local politician, or supportive employer.

It is therefore not surprising that workers filed TAA petitions in only 31 percent of the cases in our database where we found announced or reported production shifts out of the US (Table 5). Often, in a climate where companies go to such great lengths to avoid negative publicity about production shift denials, the TAA process is one of the only ways to confirm whether or not the company is in fact shifting work out of the country. For example, in January 2004, the office furniture producer, Haworth Inc., announced that they would be closing their sixty-eight year old plant in Lincolnton, NC, putting 161 people out of work. The company is the third largest manufacturer of office furniture in the US, operating forty factories worldwide.

While in news reports the company consistently claimed the production would be transferred domestically, the workers believed otherwise and filed a claim under TAA. After an investigation the Labor Department confirmed that production from the Lincolnton plant was being transferred to China and South Korea. In fact, the closure of the North Carolina plant was part of a national restructuring and consolidation of Haworth's US operations that involved the closing of three additional plants in Jonesboro, Arkansas; Henderson, Texas; and Hazelton, Pennsylvania later in the year (White 2004; *Associated Press Newswires* 2004a, Aldinger 2004, USDOL 2004b).

TAA petitions were most commonly filed for shifts to China, and least commonly filed for shifts to India and Eastern Europe. This should be no surprise. Almost all production shifts

to China and Mexico were in the manufacturing sector, while the majority of the companies that shifted production to other Asian countries were in non-manufacturing industries such as telecommunications and IT, finance, and transportation.

The data show that the Department of Labor certified most of the petitions filed, including all of the petitions for job shifts to China and Mexico. However, only 60 percent of petitions were approved when firms moved to other Latin American countries, and 82 percent for moves to other Asian countries. As described in Table 5, these data also show that TAA primarily relates to manufacturing shifts. Therefore, when services such as call centers, computer programming, or R&D operations moved overseas, their petitions for TAA assistance were typically denied because the workers were not producing a product as defined by the TAA.

For example, in February 2004 the Department of Labor denied a petition from workers at Accenture in Oaks, Pennsylvania for TAA assistance, ruling that while programming jobs were being shifted by Accenture from the US to the Philippines, Accenture workers, who were involved in software development and maintenance, were not eligible for TAA because they did not “produce an ‘article’ within the meaning of the Trade Act of 1974.” The Department of Labor made the determination based on the fact that “formatted electronic databases and codes are not tangible commodities” and the work being shifted was not “subject to a duty on the tariff schedule and [did not] have a value that makes it marketable, fungible and interchangeable for commercial purposes” (US Department of Labor 2004a: not paginated).

Markets

While some of the production shifts are intended to capitalize on foreign markets, it is clear that the majority of the US-based multinational corporations that are shifting production to China are not simply targeting a new Chinese market. For example, US based Amerock

announced in February 2004 that it would be shutting down its Rockford, Illinois cabinet and window manufacturing plant after seventy-five years in operation. The company plans to move 450 jobs from Illinois to China and Mexico—not to sell hardware to the Chinese and Mexican market, but in an effort to reduce production prices and stay competitive in the US market. This is true for a wide variety of products that will be produced in China to sell back to the US market by companies such as Carrier Corp. (air conditioners), Levis (jeans), Werner Co. (ladders for Home Depot), Union Tools Inc. (lawn and garden tools) and Remington Products Company (electric shavers).

Some companies are explicitly outsourcing production to Chinese subcontractors that will produce entirely for export to the US market. One such company is Whirlpool, which announced in January that it was going to outsource about eighty jobs producing ice makers for Whirlpool refrigerators from its Fort Smith, Arkansas, plant to a subcontractor in China. Whirlpool is being helped in this process by outsourcing firm TTI (*Associated Press Newswire* 2004b).

Others, such as French-based cellular phone company Wavecom, announced a major restructuring of its global operations to increase its focus on its key markets of China and Korea. The restructuring involved a shift in production to China resulting in 300 job cuts, mainly in the US and France. Initial cuts began in March and continued throughout the spring and summer. While Wavecom eventually left the cell phone market altogether, other companies, particularly in communications, have made similar moves.

In 2001 we reported that the production shifts out of the US involved some staple products thought of as uniquely American, such as Converse shoes and Etch-A-Sketch toys. We

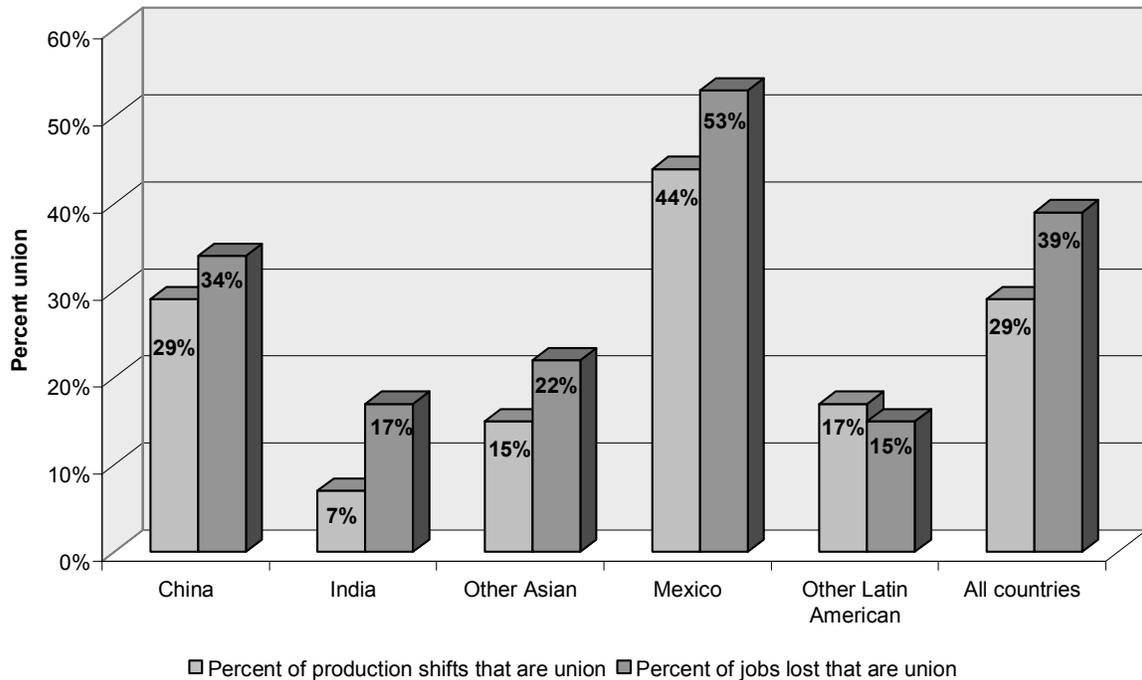
found the same phenomenon in 2004, with plant closings for US products like John Deere cotton pickers, Bic USA pens and shavers, K2 snow shoes, Radio Flyer wagons, and Levi Strauss jeans. Levi Strauss, founded in San Francisco in 1853, had long been considered an American institution. But on January 8, 2004, the company closed its last factory in the US, in San Antonio, Texas. Two thousand workers lost their jobs as the work was moved to plants in Mexico and China. In only two decades, the company had gone from sixty-three factories in the US to none. Viola Casares, one of the workers who lost her job when the last plant shut, remarked, “For me right now, I feel like I'm in mourning. We used to be like a family. It's hard to believe that it's final.” However, Walter Loeb, a retail analyst in New York, said that in the end, the cost savings of shifting production were more valuable than remaining in the US for symbolic reasons. Loeb commented, “Investors are not very sentimental these days” (CNN.Com 2004: not paginated).

A similar story occurred when Radio Flyer wagons announced it would move production of its signature red metal children's wagons to China after eight-seven years in Chicago. While its website calls Radio Flyer “America's Dream Factory for Over 85 Years,” the company had already moved production of its tricycle and scooter to China. The company's R&D and headquarters will remain in Chicago and the production of plastic wagons in Wisconsin, but the company said that cost pressures forced them to move production of the red metal wagon to China. Framed as the loss of an American icon, the Radio Flyer wagon became the poster child of the ‘outsourcing of America’ story, and was featured in hundreds of news stories in the week after it was first announced.

Union status

In our 2001 study we found significant differences in the union status of companies shifting production from the US to China, only 14 percent of which were unionized, and those shifting production to Mexico, 26 percent of which were unionized. In contrast, three years later, with private sector union density now as low as 8 percent (Bureau of Labor Statistics 2004b) we find that 29 percent of production shifts out of the US are in unionized facilities, including 44 percent of firms moving jobs from the US to Mexico and 29 percent of firms moving jobs to China (see Figure 5).

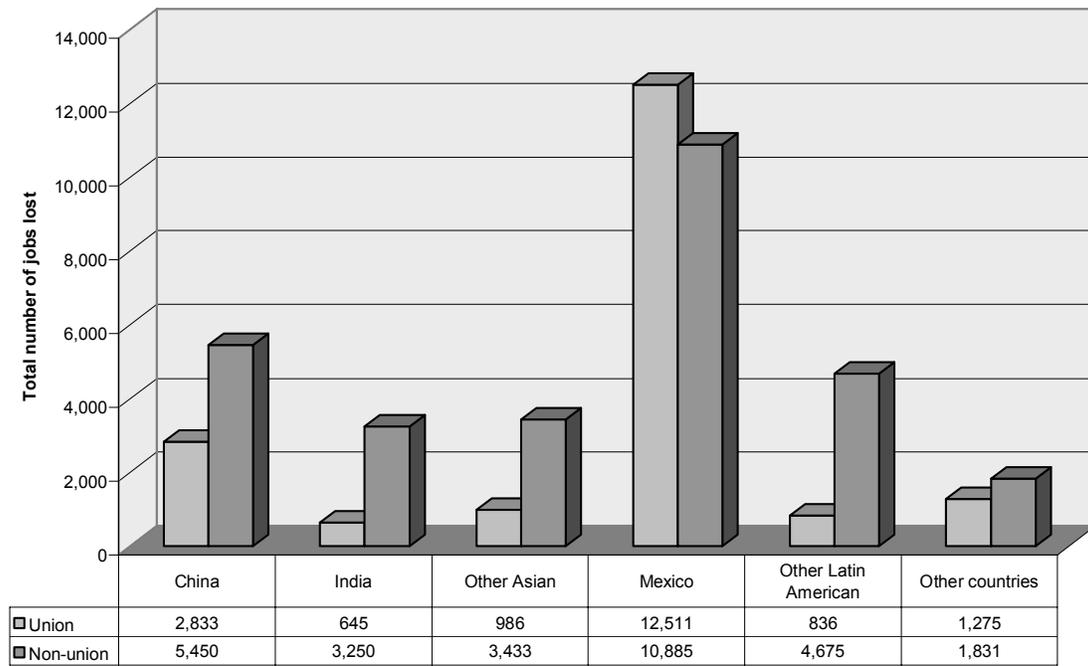
Figure 5: Unionization rates for companies shifting production out of the US, by destination country, January-March 2004



Seventeen percent of production shifts to other Latin American countries and 15 percent of production shifts to other Asian countries were in unionized workplaces. It is only among the firms moving to India (7 percent) where we found unionization levels close to the national average.

Figure 5 also provides the percentage of shifts by total jobs. These numbers provide an even stronger picture of the trends in global relocation. More than half of the jobs leaving the US for Mexico and 34 percent of the jobs leaving the US for China are union jobs, while, overall, 39 percent of all jobs leaving the US are union. Even among the white-collar and high tech jobs moving to India and Latin American countries other than Mexico, the percent of union jobs is much higher than the unionization rate in those industries.

Figure 6: Number of union and non-union jobs lost from the US by destination country, January-March 2004



When we convert these percentages to numbers, we see in Figure 6 that in January-March 2004, 12,511 union jobs left the US for Mexico. In that same period, 2,833 union jobs left for China. Altogether, 19,086 union jobs were moved overseas in the first three months of 2004.

This change from 2001 to 2004 reflects the increase in production shifts among high-end manufacturing industries to China and other countries, but it also reflects the current labor relations environment. As documented in Bronfenbrenner’s past research on employer use of

plant closings and plant closing threats in the context of union organizing campaigns, US employers are feeling increasingly emboldened to use the threat of plant closings, or actual plant closings, to keep unions out where they do not already exist and get rid of them where they do (Bronfenbrenner 2000). In some cases, companies used the threat of an intended production shift to extract concessions from their unionized workers. For example, at the John Deere Des Moines Works in Ankeny, Iowa, in January 2004 the company announced plans to shift forty assembly parts jobs from Ankeny to Monterrey, Mexico. In the short term, no workers would lose their jobs. However, under the contract with UAW Local 450, the union had 120 days to prove that they could do the work more cheaply and more effectively than in Mexico. If they succeed the work will stay. If they fail, the forty jobs will be transferred to Mexico (Ryberg 2004).

It is possible that our data overstates the proportion of unionized jobs leaving the US, given that our data on union jobs may be more reliable. However, it is clear that the absolute number of union jobs shifting out of the US is quite high – almost 20,000 in three months. It seems difficult to deny a systematic pattern of firm restructuring that is moving jobs from union to non-union facilities within the country, as well as to non-union facilities in other countries. One example of this occurred at Continental Tire.¹²

Continental Tire North America is a subsidiary of Continental AG, a global auto parts and tire manufacturer based in Germany. As of mid-2004, Continental Tire North America had approximately 7,000 employees in six locations in North America: Charlotte, North Carolina (where its headquarters are located); Bryan, Ohio; Mayfield, Kentucky; Mt. Vernon, Illinois; Barnesville, Georgia; and San Luis Potosi, Mexico. Continental Tire went through some

¹² Because the actual announcement of Continental Tire's closure came before 2004 and the actual plant shut down occurred after the first quarter in 2004, we were unable to include it in our database.

difficulty when it voluntarily recalled a half-million tires at the end of 2002 due to a mislabeling of tire pressure requirements. However, by May 2004, Continental AG CFO Alan Hippe announced “a positive dynamic in the US,” and strong sales growth including a 5 percent sales increase worldwide (*Fair Disclosure Wire* 2004b: 1). Summarizing 2003, CEO Manfred Wennemer remarked, “Passenger Cars last year was the division with the highest growth rate, 8.4%” (*Fair Disclosure Wire* 2004d: 3).

Yet Continental Tire had already begun restructuring passenger tire production. In late 2002, the company notified the United Steelworkers of America (USWA) (which represents workers at most of the plants), that the Mayfield, Kentucky plant was too costly and was no longer competitive. The company asked the union to come up with ways to reduce costs in the plant. The company then asserted that the union refused to work with them, and laid off two hundred workers in December 2003. The union claimed that it had in fact tried to negotiate with the company, but the company insisted the only way to save the plant was “to somehow cut \$35 million from a \$55 million payroll, and management had no proposals for how to do this” (*Business Wire* 2004: not paginated).

In a March 30, 2004 conference call with investors, Wennemer stated that the company had reduced capacity at the Mayfield, Kentucky plant, and that “a potential closure of the Mayfield plant is clearly in the cards.” Wennemer went on to say that in addition to reductions at Mayfield, “we also reduced the headcount in the two headquarters and, more importantly we also [began] the increase of production capacity in Malaysia and the start of building a new greenfield in Brazil. This is all in addition to the long continuing increase of production in our [San Luis Potosi] plant in Mexico” (*Fair Disclosure Wire* 2004d: 3). The next month, two

hundred more workers were laid off in Mayfield. In May, when asked for more detail about a possible closure and the potential for industrial action, Hibbe stated:

[H]ow about a potential closure? For me, the most important thing is, yes, and you know all the legal restrictions. Before we do a closure we have to make the decision and then we have to announce it. Then we have a six-month period before we can do the potential closure. As said, there is no decision done. We are ramping down the capacity. We are bringing capacity to plants abroad, that means [San Luis Potosi]. Another plant where we ramp up capacity, but just to a small portion is Mount Vernon. A non-unionist playing plant in the US that we have. As said, a potential closure of the tire production of Mayfield is not excluded (*Fair Disclosure Wire* 2004b: 4).

Then in late June, the company announced it would suspend production at Mayfield indefinitely and lay off more than eight hundred workers.

Meanwhile, the USWA had been engaged in an effort to organize 1,500 workers at the Mt. Vernon, Illinois plant, the one US plant that remained non-union. The union had held four unsuccessful elections at the plant since 1989, and another was scheduled for July 22-24, 2004. However, by mid-July the union began filing NLRB charges, claiming that the company was intimidating workers, including announcing the potential plant closure in Mayfield as a way to scare workers into voting against the union. According to a *Business Wire* report, the company had already been charged by the NLRB with “massive labor law violations” against the USWA local in Charlotte, North Carolina, in 1999. The vote was held in July, and once again the union lost – though by only fifty-eight votes, its closest margin yet (United Steelworkers of America 2004).

By the August 2 conference call, Continental managers were speaking about the Mayfield plant as essentially closed. CFO Alan Hippe noted, “You would surely have heard that we have

an indefinite suspension of tire production in Mayfield in place. It will be done and finalized at the end of the year 2004” (*Fair Disclosure Wire* 2004f: 2).

On September 2, the company opened negotiations with the union. According to a *PR Newswire* release, the USWA presented their cost savings proposal to the company on September 17. They estimated that their plan could save the company \$20 million a year. Continental Tire rejected the proposal. Nick Fletcher, Vice President of Human Resources, remarked, “It is regrettable that these negotiations did not result in an agreement to preserve jobs at the Mayfield plant,” but that the proposals “simply did not go far enough to address the cost disparity between Mayfield and our other tire plants” (*PR Newswire* 2004: 1). At the end of September, Continental Tire made the official announcement that they would permanently suspend tire production in Mayfield, Kentucky and lay off more than eight hundred workers by the end of 2004 (Walker 2004). Meanwhile, the nonunion facility, Mt. Vernon, remains open, with the union organizing drive quashed, while Mayfield’s closure serves as a stark reinforcement of Continental’s threat to close Mt. Vernon if they ever were to choose a union.

US region of origin

Of the 255 production shifts out of the US, the largest share came from the Midwest region. This was followed closely by shifts from the Southeast and Northeast regions. Fourteen percent of the shifts came from the West Coast/Mountain region. There were few shifts from the Southwest or US Territories, and in nine cases companies announced job losses nationwide across several regions (see Table 5). The Midwest also accounted for the highest number of jobs lost, with a total of 18,938 jobs lost in January through March. However, the companies that announced cross-regional production shifts had the highest average number of jobs lost per

production shift, with 637. This was followed by moves from the Southwest, which averaged 528 per shift.

Overall 83 percent of the production shifts were in manufacturing industries, a trend that was particularly evident in the Midwest (94 percent), and Southeast (91 percent). In contrast, non-manufacturing companies in telecommunications, IT, and financial services tended to be concentrated in the West Coast and Mountain states, or in multi-state production shifts that crossed regions. Unionization rates among companies shifting production out of the US were highest in the Midwest (56 percent) and the Northeast (35 percent). Even in the Southeast, where union density is historically quite low, 22 percent of production shifts were from unionized firms.

Table 6: Production shifts out of the US by region, January-March 2004

Region	Number of production shifts	Percent of production shifts	Percent manufacturing	Percent unionized	Average number of jobs lost	Total number of jobs lost
Northeast	37	21%	78%	35%	212	7,223
Midwest	48	27%	94%	56%	403	18,938
Southeast	46	26%	91%	22%	191	8,604
Southwest	11	6%	82%	9%	528	5,281
Territories	1	1%	100%	0%	100	100
West Coast/Mountain	25	14%	60%	4%	194	4,451
Cross region	9	5%	56%	0%	637	3,820
All US	177	100%	83%	29%	292	48,417

When we break down the regional data by destination country, we find even greater variation across regions (Figure 7). The largest share of production leaving the Southeast (38 percent) is moving to China. This is also true for shifts from multiple regions within the country. Twenty-one percent of production from the Midwest is going to China, compared to 17 percent

of production from the Northeast, 11 percent from the Southwest, and 10 percent from West Coast and Mountain states.

Just over half of the production from the Midwest and 42 percent from the Southwest is going to Mexico. In terms of the total number of jobs, the Southeast region experienced the largest percentage of jobs shifted to China, accounting for 41 percent of all jobs moved to China in the first quarter of 2004.

Figure 7: Percentage of production shifts in US region by destination country, January-March 2004

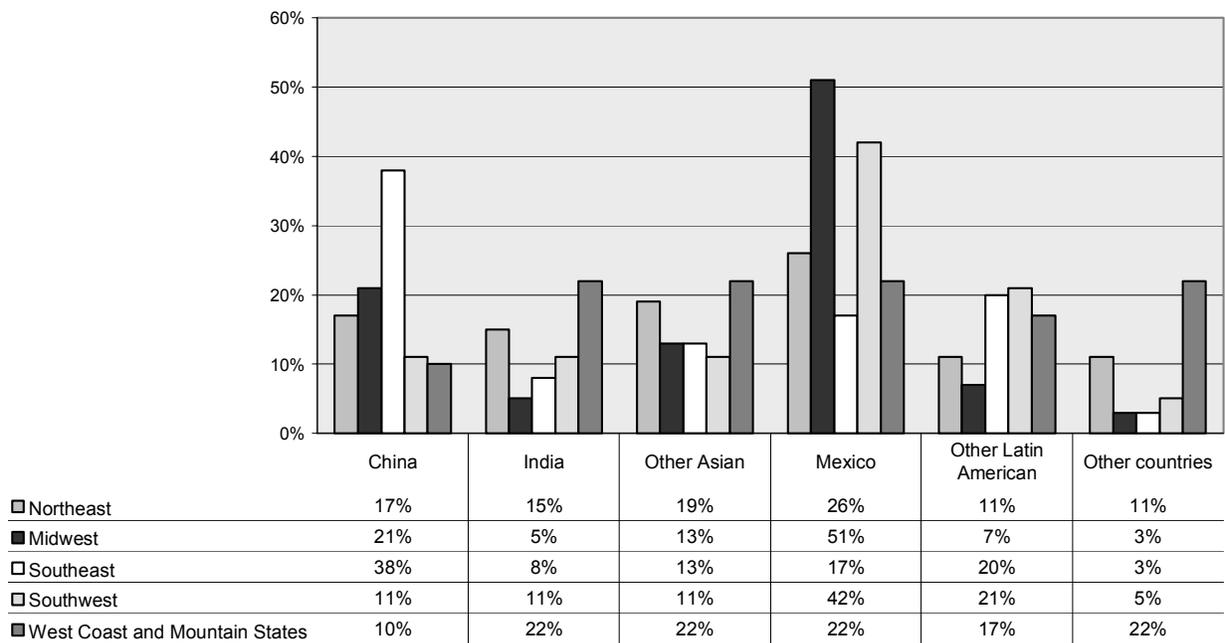


Table 7 provides more detailed data regarding the number of shifts and the number of jobs lost by state. Looking at specific states, we find that Illinois lost the most jobs in January – March 2004, a total of 7,555 jobs, the overwhelming majority of which went to Mexico. This was followed by Michigan, which had twelve shifts out of the country and lost a total of 5,283 jobs which were also primarily sent to Mexico. Four other states—Ohio, Texas, California and New York—all had job losses of more than two thousand, and a total of twenty-three states lost

more than five hundred jobs. Of these states with the most job losses, the states losing the most jobs specifically to China were North Carolina, Ohio, California, Indiana, Texas and New York.

Table 7: Number of jobs lost and number of production shifts out of the US for twenty five states with highest job losses, January-March 2004

State	All US		Shifts to China		Shifts to India		Shifts to other Asian Countries		Shifts to Mexico		Shifts to other Latin American countries		Shifts to other countries	
	Shifts	Jobs	Shifts	Jobs	Shifts	Jobs	Shifts	Jobs	Shifts	Jobs	Shifts	Jobs	Shifts	Jobs
IL	12	7,555	3	380	0	0	2	135	7	7,040	0	0	0	0
MI	13	5,283	2	279	1	10	0	0	7	4,542	2	442	1	10
OH	13	3,151	4	773	1	120	2	55	5	1,932	0	0	1	270
TX	13	3,141	2	463	1	134	1	134	5	660	2	1,700	1	134
CA	21	2,395	2	650	5	258	5	553	2	400	3	204	2	330
NY	16	2,005	3	445	2	102	4	769	4	578	1	17	2	94
KY	15	1,778	1	175	2	179	2	180	3	665	7	579	0	0
PA	13	1,750	1	30	3	724	2	433	3	192	1	133	1	258
TN	7	1,703	3	86	0	0	1	38	2	1,449	0	0	1	130
OK	5	1,665	0	0	1	110	1	110	1	1,225	2	220	0	0
IN	9	1,543	2	510	0	0	1	18	6	1,033	0	0	0	0
NC	12	1,449	8	839	0	0	1	80	2	415	1	115	0	0
OR	10	1,349	0	0	2	141	2	141	0	0	4	282	2	785
MA	8	1,180	2	305	0	0	4	611	1	262	0	0	0	0
SC	6	950	2	276	0	0	0	0	3	674	0	0	0	0
NJ	4	780	0	0	1	250	0	0	1	40	1	245	1	245
WA	8	677	0	0	2	330	1	180	0	0	0	0	4	167
VA	3	632	0	0	1	250	0	0	0	0	2	382	0	0
AL	4	610	2	305	0	0	1	40	1	265	0	0	0	0
CT	7	583	2	221	0	0	0	0	3	162	1	100	1	100
WI	2	580	1	80	0	0	0	0	1	500	0	0	0	0
FL	3	505	0	0	0	0	1	440	0	0	2	65	0	0
NH	1	500	0	0	0	0	0	0	0	0	0	0	1	500
AZ	1	475	0	0	0	0	0	0	1	475	0	0	0	0
KS	6	425	0	0	1	93	2	117	1	30	2	185	0	0

North Carolina, in particular, was hit hard by production shifts to China, with 839 jobs transferred to China, more than any other state. This is largely due to the fact that two of North Carolina's major industries, furniture and textiles, have been among those shifting production to China at an ever-increasing rate. Since 2001, North Carolina's manufacturing employment has decreased by 21 percent for a loss of 160,000 jobs. For the textile sector, the situation is even worse. Since 2001, more than one-third of North Carolina's textile workers have lost their jobs, resulting in 60,000 layoffs in that sector alone (Patterson 2004).

One of the many textile plants to shift production from North Carolina was owned by Unifi Inc. The company laid off 140 workers when it closed the plant (Moffat 2004). Although Unifi at first claimed that production was being shifted to another North Carolina facility, the company later disclosed that machinery from its idled factories was being transferred to its new facility in China (Malone 2004). North Carolina's textiles crisis will likely get much worse as the US, Canada, and the European Union remove all quotas from textiles, including apparel, as mandated by the World Trade Organization on January 1, 2005 (Martinez 2004). Industry leaders predict that the post-January 1, 2005 textile world will be completely dominated by China (Patterson 2004).

North Carolina's furniture industry has also suffered major employment losses from production shifts into China. From January 2000 to July 2004, furniture employment was reduced by nearly a third, from 78,500 to 57,400 (Johnson 2004). Many in the industry have blamed the production shifts on pressure to be cost-competitive with cheap Chinese imports. For example, Furniture Brands International, which owns such brands as Drexel Heritage, Thomasville Furniture, Lane, and Broyhill, announced in 2003 that it would begin consolidating its US operations and increasing import volume from China (Becker 2004). In January 2004, it

announced that it would close its Drexel Heritage plants in Marion and Morgantown, NC with a loss of nearly 400 jobs (Becker 2004). Although the company claimed that production would be transferred to other domestic plants, the United States Department of Labor found that the company had transferred a “significant” portion of the work to China (USDOL 2004c). The shift has had repercussions beyond Furniture Brands itself. For example, Connor Carving and Turning Co, a small company that specialized in custom wood carving and turning, announced in January 2004 that it would close its doors, ending forty-five years in Thomasville, NC. The company’s former clients, including Furniture Brands’ Thomasville Furniture, had transferred their business to China, leaving Connor without clients. A Trade Adjustment Act case is pending (USDOL 2004d), and the former owner of the company himself reports that he will be filing for unemployment (Abbott 2004).

A very different story emerges in California. While the North Carolina shifts were mostly in textiles and furniture, with eight of the twelve production shifts out of the state going to China, the twenty one production shifts and 2,395 jobs leaving California were concentrated in the electronics and communications and IT industries. The largest number of jobs leaving California went to China (650). Still, 258 went to India, 553 went to Malaysia, Thailand and the Philippines, 400 jobs went to Mexico, 204 to the Caribbean, and 330 to the UK and Ireland. The companies include Magnecomp Corporation, a Singapore-owned company which shifted its production of hard-drive suspension assemblies from Temecula to China and Thailand (USDOL 2004e), Brecis Communications, which shifted semi-conductor design from San Jose to China (Wirbel 2004), and Medtronic, Inc., which announced it would be shifting production of ‘artery-clearing devices’ from Santa Rosa to Mexico and Ireland (Rose 2004).

Company characteristics and structure

We now turn to an examination of the ownership structure and company characteristics of the particular companies that shifted their jobs overseas. As described in Tables 8 and 9, the overwhelming majority of companies that shifted production out of the US between January-March 2004 were ultimately owned by extremely large, profitable, US-based, publicly-held multinationals. At the same time, many of the facilities where work had been moved out of the country had been in operation for several decades, yet had relatively recently been taken over by their current ownership. In fact, we found many of the companies where production shifts had taken place had been bought and sold, merged and acquired, or taken public or private multiple times in the years prior to the work being shifted.

Table 8: Company structure for production shifts out of the US, January -March 2004

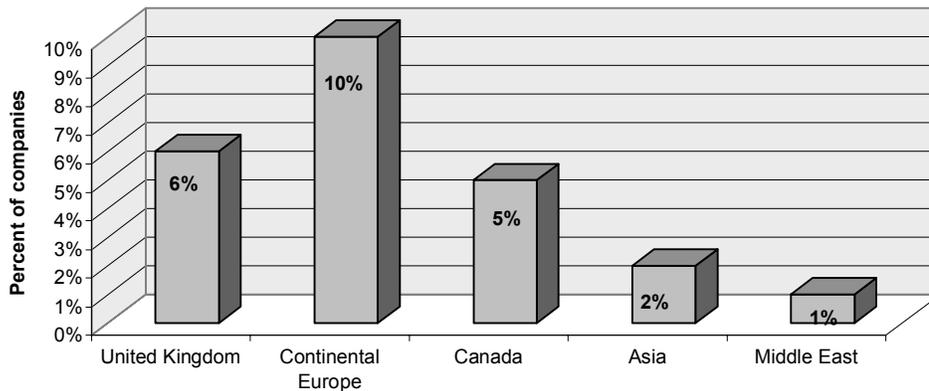
	Shifts out of US	Shifts to China	Shifts to India	Shifts to other Asian countries	Shifts to Mexico	Shifts to other Latin American countries	Shifts to all other countries
Subsidiary	58%	53%	48%	49%	67%	40%	74%
Publicly held	74%	71%	87%	82%	74%	83%	78%
Privately held	26%	29%	13%	18%	26%	17%	22%
US-based multinational	75%	72%	81%	79%	75%	91%	43%
Foreign-based multinational	25%	28%	19%	21%	25%	9%	57%

Table 8 summarizes findings on the ownership structure of the parent company. Almost three-quarters of the firms that shifted production from the US to China were publicly held, and 72 percent were US-based multinationals. Seventy-four percent of firms that shifted production to Mexico were publicly-held and 75 percent were US-based multinationals. The firms that moved production to other Asian countries and other Latin American countries were even more likely to be publicly-held (82 percent and 83 percent respectively). Except for the “all other

countries” category, there were more foreign-based multinationals moving to China (28 percent) than to anywhere else. Almost all moves to other Latin American countries came from US-based multinational companies. Fifty-three percent of companies that shifted production to China were subsidiaries of larger parent companies. This compares to 48 percent of companies that shifted to India, 49 percent of companies that shifted to other Asian countries, 67 percent of companies that shifted to Mexico, and 40 percent of companies that shifted production to other Latin American countries.

Figure 8 shows the base country for all foreign-owned parent companies that shifted production out of the US. Ten percent of all companies were multinationals based in continental Europe and 6 percent were multinationals based in the UK. Five percent were multinationals based in Canada, while only 2 percent were multinationals based in Asia, and 1 percent were multinational investment firms based in the Middle East (Bahrain and Kuwait).

Figure 8: Parent company country for foreign-owned multinationals for all production shifts out of the US, January-March 2004



As shown in Table 9, the ultimate parent companies for firms moving jobs out of the US tended to be extremely large and profitable, averaging a total of 38,316 employees worldwide, an annual revenue of \$9.9 billion, and a net income of \$654 million. These statistics vary somewhat depending on the destination country. Companies that moved jobs to India, Mexico and “other

countries” had a higher number of total parent company employees than those that shifted production to China, other Asian countries and other Latin American countries. On the other hand, companies that moved production to China, India, and other Asian countries had somewhat higher average annual revenue. The parent companies of companies that shifted production to other Latin American countries were smaller than those moving elsewhere, reflecting that many of the Latin American cases involved fairly new communications and IT companies that moved call center operations to the Caribbean and Central America.

In Table 9 we can also see that the firms moving out of the US have been in operation for an average of forty-five years, with as many as 76 percent having been in operation for more than twenty years. While 78 percent of firms moving production to China and 84 percent of firms moving production to Mexico have been in operation for more than twenty years, that is true for only 36 percent of firms moving to India and 43 percent of firms moving to other Asian countries.

Table 9: Company characteristics for production shifts out of US, January-March 2004

	All shifts out of US	Shifts to China	Shifts to India	Shifts to other Asian countries	Shifts to Mexico	Shifts to other Latin American countries	Shifts to all other countries
Parent company characteristics							
Total parent company employees	38,316	33,440	50,010	36,364	42,520	28,811	58,097
Annual revenue (USD millions)	\$9,922.6	\$11,012.5	\$12,550.4	\$12,790.1	\$9,193.4	\$6,280.2	\$15,201.6
Net income (USD millions)	\$654.6	\$647.1	\$878.8	\$146.8	\$924.5	\$549.4	\$1,284.7
Company ownership history							
Average years in operation	45	45	31	31	49	34	32
Percent more than 20 years in operation	76%	78%	36%	43%	84%	54%	80%
Average years under current owner	18	17	21	22	16	13	18
Percent 10 years or less under current owner	55%	42%	79%	53%	54%	67%	53%

At the same time, our data show that many of the companies shifting production out of the US have had relatively recent changes in ownership. While 42 percent of companies moving to China have been under the current ownership for ten years or fewer, 79 percent of companies moving to India and 67 percent of companies moving to other Latin American countries have been under their current ownership for no more than ten years. Those moving to other Latin American countries have been under current ownership for an average of only thirteen years, which reflects the high number of telecommunications and IT companies moving to those countries.

Impact of US production shifts on workers and communities

As mentioned earlier, the impact of these production shifts out of the US has a ripple effect that goes well beyond the individual communities where the plants have shut down and the work has been moved. Many of these companies had been major employers in their communities for several decades. Others were situated in small towns in rural areas where these companies brought significant tax revenues and economic security upon which the small towns and cities grew to depend. This is perhaps, best captured by Sykes Corporation, which provides call center services to prominent corporations such as SBC and Microsoft. About ten years ago, Florida-based Sykes Enterprises began to open up call centers in the US, and the company was able to provide hundreds of jobs for many economically depressed communities in places such as Oregon, Kentucky, Kansas and Oklahoma. These communities welcomed Sykes, and several encouraged its continued presence by offering the company tax incentives. However, in 2002 Sykes announced that, due to market pressures, they were moving a large majority of their US operations overseas to places like Costa Rica, India, and El Salvador. Confirming this

announcement in January of 2004, Sykes began to methodically close six call centers, laying off almost 1,800 people.

Many of the communities left behind by Sykes were economically dependent upon the company. For example, the town of Milton-Freewater, Oregon, bent over backwards to give Sykes a tax incentive package of \$3.5 million to set up shop in their community, and now faces a \$2.6 million debt to pay and no employer to keep the economy afloat. Also, in the towns of Pikesville and Hazard in Kentucky, Sykes received \$3 million in incentives in both locations. “Obviously our citizens are disappointed and angry,” reported Milton-Freewater Assistant City Manager Linda Hall. “They expected Sykes to be in for the long run” (Kosterlitz 2004:13). Sykes sees their moves as a consequence of demands from the client companies they service. According to Subhaash Kumar, senior director of investor relations at Sykes, “[Sykes] is client-driven . . . Our clients tell us where they want the centers to be, and we do it” (Streitfield 2004: A1).

In other cases, cities and states bid against each other in an effort to keep companies open in their community. This was the case with Phelps Dodge Magnet Wire, which in 2003 announced plans to keep either its Fort Wayne, Indiana or El Paso, Texas magnet wire production facilities open as they shifted production to Suzhou, China and Monterrey, Mexico. The company decided to close down the El Paso plant after state and local governments in Fort Wayne offered them more than \$900,000 in incentives, including workforce training grants, tax credits, and tax abatements. In January, the El Paso plant began to shut down production, shifting the work of 125 El Paso workers to both Mexico and China. While Fort Wayne officials and workers celebrated their victory, it is unlikely to last long. In June the company announced

the grand opening of its wholly-owned, state-of-the-art magnet wire facility in Suzhou, China (*El Paso Times* 2004; Karkaria 2004; Shugert 2004).

The impact on communities is not just felt in the source country. In some cases we companies are moving work to other countries to avoid enforcement of health and safety and environment regulations in the US. One glaring example of this practice is the semiconductor manufacturer AXT, Inc.

AXT has been in the process of transferring all of its manufacturing, engineering, and R&D from Fremont, CA to China since 2001. Before its move to China, the bulk of AXT's US labor force was made up of Chinese immigrants who spoke little or no English. They produced gallium arsenide wafers, made from an easily inhaled compound that turns to arsenic in the body. In 2000, US government investigations found that, although AXT management knew that employees were being exposed to up to thirty-one times the permitted amount of arsenic, they did little or nothing to remediate the situation. Ventilation systems were found to be in disrepair, and proper procedures for decontamination were not followed, potentially exposing the workers' families to the toxin as well(Thompson 2004a).

Many former AXT employees developed cancer and other ailments. Employees were not given protective gear or trained in proper procedure for handling arsenide. At least one employee, after being forced to work without protection through her ninth month of pregnancy, gave birth to a child with severe birth defects. After the 2000 investigation, AXT was issued forty-two citations by the State Division of Occupational Safety and Health (Cal-OSHA), who subsequently issued a fine to AXT (Fischer 2004). However, the company chose to fight the fines in court, and when AXT met with CAL-OSHA representatives in 2001, the company announced it would begin to transfer production to China (Thompson 2004a). More than five

hundred workers lost their jobs and remain uncompensated for health problems (Fischer 2004). As of July 21, 2004, the company was wrapping up business in Fremont and preparing the facility there for sale (*Fair Disclosure Wire* 2004c). Now AXT will be able to expose Chinese workers to the same toxic chemicals without fear of OSHA investigations or media exposés.

Estimates of annual job losses from production shifts out of the US

As we mentioned previously, because of the inherent limitations in using media tracking to capture the full extent of global production shifts and job losses, we assume that the production shift job numbers we were able to collect for both our 2001 and 2004 study, seriously underestimate the actual number of production shifts and job losses that occur. In 2001, we estimated that media sources captured only half of all production shifts out of the US, which at that time were primarily concentrated in Mexico and China. We came to that conclusion based on the fact that so many companies shifting production out of the country were situated in small towns with local newspapers that were not archived in the online news databases, and because we found that even in large cities, plant closings and jobs shifts were not always reported in the media, particularly in small, non-union workplaces.

Three years later our research suggests that media tracking captures an even smaller portion of the total number of production shifts and job losses than it did in 2001. As we discussed previously in this report, we find that in 2004 companies are going to greater lengths to keep their job shifts quiet, particularly shifts covering white-collar occupations and shifts to China, India, and other Asian countries, all of which have become hot button issues in the media. We have also found that production shifts in certain occupations and sectors, such as communications and IT and financial services, are much harder to track, as they often involve smaller employers and there is no data set equivalent to the TAA. Furthermore, the process of

sending IT and other service jobs to offshore locations is often handled through intermediary subcontractors or outsourcing firms. For example, a US firm may outsource its internal support services to another domestic firm, which then in turn contracts with a foreign-based service provider. Job shifts through such complex sourcing networks are difficult to identify, particularly through on-line media searches.

For all of these reasons, we believe that for most countries we captured only about one-third of the actual jobs lost. Similarly, because the manufacturing shifts that went to China, Asia, and Latin America tended to be concentrated in smaller workplaces, they were much less likely to be covered by the WARN Act or reported in the media. In contrast, for Mexico, because all of the production shifts were in manufacturing plants, the majority of which were unionized and almost all of which were large enough to be covered by the WARN Act, we were able to provide a more accurate picture of job loss than we were with the 2001 data. Thus, for jobs lost to Mexico in 2004, we estimate that we are capturing as much as two-thirds of all production shifts out of the US.

Table 10 summarizes our findings for total estimated job losses, by country, for 2001 and 2004. For 2001 we took the total estimate of jobs shifting for our seven month period, and multiplied by twelve-sevenths to get an annual rate of job loss per country. We also adjusted the estimate based on the assumption that we were only capturing about half of the actual job losses through our media search and that, based on the trends in job loss for the year, approximately the same number of jobs would be lost to Mexico and China, which came to approximately 85,000 for each country.¹³

¹³ Our media-tracking in the 2001 study found a markedly changing picture of production shifts and job relocations. Because conditions were changing from month to month, we developed job loss estimates based on the entire seven month period, rather than developing monthly numbers. Therefore, our annual estimates below for 2001 are derived from annual estimates that averaged the number of shifts over the year.

Table 10: Estimates of total annual job loss from production shifts out of the US, 2001 and 2004

Destination country	2001			2004		
	Total job shifts out of US, Jan-March	Multiply to adjust for coverage ¹⁴	Multiply by 4 to get annual rate	Total job shifts out of US, Jan-March	Multiply to adjust for coverage ¹⁵	Multiply by 4 to get annual rate
China	10,625	21,250	85,000	8,283	24,849	99,000
Mexico	10,625	21,250	85,000	23,396	35,094	140,000
India	125	250	1,000	3,895	11,685	47,000
Other Asia	3,875	3,875	31,000	4,419	13,257	53,000
Other Latin America	250	500	2,000	5,511	16,533	66,000
Total	25,500	51,000	204,000	45,504	101,418	406,000

For 2004, because we assume that our data capture two-thirds of all production shifts to Mexico, we multiplied the total number of jobs lost for the first three months of 2004 by a factor of 3/2. We then multiplied our three-month estimate by four to get an annual rate of job loss, once again adjusting for incomplete reporting and rounding to the nearest thousand.¹⁶

Using the adjustments described above, Table 10 shows a marked increase in the number of jobs shifted from 2001 to 2004, for each country. In 2001 we estimated that there were approximately the same number of jobs shifting to China and Mexico—roughly 85,000 per year for each country. By 2004 the number of jobs shifting to China had increased to 99,000, while the number of jobs shifting to Mexico increased to 140,000. Other countries saw increases as

¹⁴ As described in the text for 2001 we used a multiplier of two in order to reach our job estimate.

¹⁵ For 2004, we used a multiplier of three for all countries except Mexico, where we used a 3/2 multiplier.

¹⁶ Our estimates of job loss include announced job losses, as well as actual relocations. Our research found that announcements precede the actual relocation by some time. Indeed, the federal WARN Act requires employers to provide a minimum of 60 days notice in plant closings and mass lay-offs. Some employers provide much more notice, announcing plant closings that will not happen for a year or two. For this reason, our database captured actual relocations that were sometimes announced in 2003, as well as announcements that would lead to relocations in late 2004 and 2005. We believe that reporting on announcements and relocations made in January through March provides a more accurate picture of job shifts than reporting only actual relocations, because it balances out announcements of production shifts that do not occur until after the time period with relocations that occurred during the time period, but not captured, because they were announced before the period being examined. Because our methodology does not allow for double-counting, we believe this becomes even less of an issue when we move from estimating production shifts out of the US for one quarter to estimating production shifts for one year.

well, including marked increases to India (from 1,000 to more than 47,000 jobs), and to other Latin American countries (from 2,000 to more than 66,000). The number of jobs shifting to other Asian countries increased from 31,000 to 53,000. Overall, we find that the total number of jobs leaving the US for countries in Asia and Latin America increased from 204,000 in 2001 to as much as 406,000 in 2004.¹⁷

These data make clear that while in 2001 jobs were primarily being shifted to China and Mexico, today, because so many companies are simultaneously shifting to both near-shore locations in Mexico and Latin America and offshore locations in China, India, and other Asian countries, job losses to China and Mexico are directly linked to jobs losses to other countries worldwide.

Because shifts to China are more likely to occur in the context of multiple shifts to multiple countries at the same time, the portion of jobs lost to China is smaller than might be expected, given the large number of shifts in production to that country, because for 34 percent of shifts out of the US to China, the total jobs lost from the facility had to be divided among the destination countries. Still, based on our job loss estimated, China is second only to Mexico in terms of total jobs lost, and the number of jobs shifting to China each year continues to increase.

These data also suggest that the BLS estimate of jobs lost due to overseas relocations grossly underestimates the total jobs lost (BLS 2004a). While BLS reported 4,633 private sector workers in establishments with fifty or more workers lost their jobs due to job shifts to overseas locations in January-March 2004, we were able to find solid confirmation that an absolute minimum of 25,000 jobs shifted out of the US to other countries during that same period.

¹⁷ We do not present results for other countries outside of Asia and Latin America here because we did not track these numbers in 2001.

Production shifts out of other countries into China

As the summary data we presented in Table 2 clearly demonstrates, production shifts into China are a global rather than simply an American phenomenon. The same kinds of pressures and opportunities that drive US companies to move production into China apply to Canadian and European countries as well, while for Asian countries, China is the nearby equivalent of Mexico for the US, with easy access and reduced shipping times and costs.

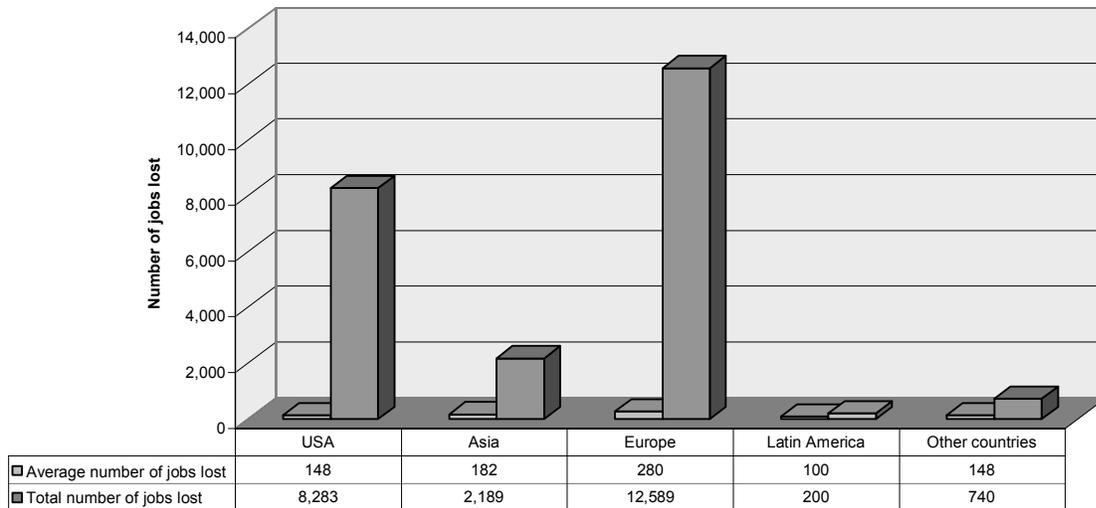
As shown previously in Table 2, in addition to the fifty-eight shifts from the US into China, we also found ninety-six cases of production shifts from other countries into China. This includes fifty-five from Europe, thirty-three from other Asian countries, and five from Canada and Australia. We also found three cases of shifts of production from Mexico or other Latin American countries to China in January-March 2004.

Jobs lost in production shifts from other countries into China

In Figure 9 we present the total and average number of jobs lost for all countries with production shifts into China. Total jobs lost data are not fully available for Asia, because, as we found in our 2001 study, media stories in the Asian press rarely mention the actual jobs lost in announced or reported production shifts out of those countries into China. In addition, corporate filings for publicly held companies trading on the Japanese or Singapore exchanges also do not report specifics about production shifts. This contrasts sharply with production shifts out of the US, Europe, Canada, and Australia, where we were able to get job loss data for all but a handful of cases. Thus the average number of jobs lost reflects average number of jobs lost in the four out of seventeen production shifts from Asia to China in January through March, where the number of jobs was reported.

For the remaining countries, Europe had the highest total and average number of jobs shifted to China, with 12,589 total jobs and an average of 280 jobs per shift. Europe is followed by the US, which had 8,283 jobs shift to China, with an average loss of 148 jobs per production shift. From other Asian countries, the average number of jobs moved to China was 182, for a total of 2,189 jobs. From Latin America, a total of two hundred jobs, and an average of one hundred jobs per production shift, moved to China. Finally, there were a total of 740 jobs lost in shifts from other countries into China, for an average of 148 jobs per production shift.

Figure 9: Number of jobs lost from production shifts into China, from the US and other countries, January-March 2004



Industrial sector for production shifts into China

It appears that the types of industries moving to China from the US are similar to the types of industries moving from other countries (see Table 11). More than half of the shifts from other Asian countries were in electronics and electrical equipment, followed by textiles, and metal fabrication and production, which together accounted for approximately one-quarter of the Asian production shifts into China in January through March. A third of the shifts into China

from Europe were in electronics and electrical equipment, while 18 percent were in the chemicals and petroleum industry.

While we found a significant number of cases where European companies, particularly from the UK, shifted back office and IT operations to countries such as India and Singapore, almost all of the production shifts from Europe to China were in the manufacturing sector.

Table 11: Distribution of non-US production shifts into China by source country and industry, January-March 2004

	Asia	Europe	Latin America	Australia and Canada
Apparel and footwear	0%	2%	0%	60%
Appliances	6%	6%	0%	20%
Auto parts	6%	6%	0%	0%
Automobiles	3%	0%	0%	0%
Chemicals and petroleum	3%	18%	0%	20%
Communications/information technology	0%	2%	0%	0%
Electronics/electrical equipment	52%	33%	0%	0%
Finance, insurance, and real estate	0%	2%	0%	0%
Household goods	0%	2%	0%	0%
Industrial equipment and machinery	0%	7%	33%	0%
Metal fabrication and production	12%	6%	33%	0%
Plastics, glass and rubber	3%	7%	0%	0%
Sporting goods and toys	0%	2%	0%	0%
Textiles	12%	7%	33%	0%
Wood and paper products	3%	2%	0%	0%

Company characteristics and structure for shifts into China

Table 12 shows slight variations in the kinds of companies that shifted production into China. While only just over half of the companies moving to China from the US were subsidiaries of larger multi-nationals, 61 percent of the moves from other Asian countries, 73 percent of moves from Europe, and 100 percent of moves from other countries were subsidiaries.

Similar to shifts out of the US, 80 percent of shifts from Europe were from publicly held firms. For those coming from other Asian and Latin American countries, all were from publicly held companies. On the other hand, only 20 percent coming from all other countries were publicly-held. Not surprisingly, while only 28 percent of production shifts from the US into China were by foreign-owned multinationals, US-owned multinationals accounted for only 18 percent of all production shifts from Asian and European countries into China, and 33 percent of those from Latin America. Eighty-nine percent of Asian companies shifting production into China were Asian owned, while 77 percent of European countries were owned by companies from the UK or continental Europe.

Table 12: Company structure for production shifts into China by source country, January-March 2004

	Percent of shifts from US	Percent of shifts from other Asian countries	Percent of shifts from Europe	Percent of shifts from Latin America	Percent of shifts from all other countries
Subsidiary	53%	61%	73%	100%	100%
Publicly held	71%	100%	80%	100%	20%
Privately held	29%	0%	20%	0%	80%
US-based multinational	72%	18%	18%	33%	60%
Foreign-based multinational	28%	82%	82%	67%	40%
<i>Asia</i>	2%	89%	20%	50%	0%
<i>Canada and Australia</i>	5%	0%	0%	0%	50%
<i>Continental Europe</i>	10%	7%	53%	0%	0%
<i>Middle East</i>	1%	0%	2%	0%	0%
<i>United Kingdom</i>	8%	4%	24%	50%	50%

In Table 13 we compare features of the parent companies shifting jobs into China. As these data show, we found that the parent companies of firms that shifted production into China from other Asian countries and Europe were larger than those of firms that shifted production

from the US, both in terms of total employees and annual revenue. Interestingly, the parent companies of firms shifting production from other Asian countries and all other countries had, on average, a negative net income for 2003, much of which, as we found from our reading of public filings for these companies, was related to the enormous start-up costs associated with global restructuring. The parent companies of firms that shifted production from Latin America were much smaller than those from the US and elsewhere, both in total employment and annual revenue.

Table 13: Company characteristics for production shifts into China by source country, January-March 2004

	Shifts from US	Shifts from other Asian countries	Shifts from Europe	Shifts from Latin America	Shifts from all other countries
Parent company characteristics					
Total parent company employees	33,440	59,291	56,816	4,721	17,983
Annual revenue (USD millions)	\$11,012.5	\$14,821.5	\$15,697.8	\$703.2	\$5,675.8
Net income (USD millions)	\$647.1	-\$67.1	\$767.4	\$27.3	-\$253.0
Company ownership history					
Average years in operation	45	49	43	21	27
Percent more than 20 years in operation	78%	65%	70%	33%	67%
Average years under current owner	17	37	11	21	18
Percent 10 years or less under current owner	42%	33%	68%	67%	33%

We can also see that company ownership history differs somewhat between the companies coming from different regions. The companies based in Latin America and all other countries had been in operation for a much shorter period than US firms, and a greater percentage of European and Latin American firms had been under their current owner for ten years or less. Those coming from Asia had been under their current ownership for thirty-seven years on average, much longer than the seventeen years found in the US-based companies.

Ireland, in particular, was devastated with production shifts to China during this period, especially in manufacturing. There was a time when Ireland was a primary destination for US companies seeking to shift production to cheaper locations overseas. But in the ever-pressing drive to cut costs and increase profits, companies operating in Ireland have moved to countries with even lower wages and taxes, and weaker regulations (Mulligan 2004). Similar to areas in Upstate NY and the Southeast in the US, rural areas in Ireland have been among the most affected by the layoffs associated with these transfers of production (Sheehy 2004).

Among the companies that shifted production out of Ireland was Tretorn Sports, a subsidiary of German sporting goods manufacturer, Puma AG. Tretorn laid off sixty-eight workers when it announced closure of its tennis ball factory in Portlaoise and shifted production to China in January 2004 (Humphreys 2004). Also in January, eyeglasses manufacturer Sola Lenses, a subsidiary of US-based Sola International, announced it was transferring production from Wexford, Ireland to Venezuela, Mexico, and China, with a loss of 103 jobs (*Irish Independent* 2004). Three months later, US-based textile manufacturer Unifi announced it would move operations to China, a shift that ultimately cost the small city of Letterkenney, Ireland, 400 jobs (Ashmore 2004).

As our data show, production shifts into China are not limited to North America and Europe, but also include many of the former “Asian tiger” countries, now considered high wage economies compared to China. On March 8, the giant electronics manufacturer Motorola announced that it would shift chip design from Singapore, Taiwan, and Hong Kong to China and India. This move followed a much larger production shift of TV decoder boxes from Taiwan to Mexico. In January 2004, Motorola announced that it would spend \$75 million to expand manufacturing capacity at its plant in Nogales, Mexico. In combination, Motorola’s production

shifts involved more than 1,000 jobs, most leaving Taiwan. While the shift of Motorola's chip design involved just twenty-five jobs in Singapore, the move is part of a much larger exodus of computer parts manufacturing out of the city-state. Seagate Technology, Maxtor Corporation and Western Digital Corporation, the world's three largest computer parts manufacturers, have all moved production of computer disk drives out of Singapore to lower-cost countries in Asia. The losses prompted Singapore to reduce its corporate tax rate to retain and recruit capital investments (*India Telecom 2004; Austin American Statesmen 2004a; Corporate Mexico 2004*).

Japan also was a major site of production shifts into China, including many multi-site shutdowns of long term Japanese manufacturing facilities in textiles and electronics. For example, after announcing a plan to lay off 2,800 workers by the end of its fiscal year 2005, Japanese textile manufacturer Kanebo Ltd. announced in January plans to slash its domestic workforce and transfer production to China (*Japan Economic Newswire 2004*). This will result in the closure of spun-cotton factories in Nagahama and Hamamatsu and a research lab in Izumo, as well as a 30 percent reduction in output from a spun cotton factory in Nagahama and a wool production facility in Ogaki. A total of 470 jobs will be lost in all of the facilities combined (*Knight Ridder/Tribune Business News 2004*). These closures mark the end of an era as Kanebo transfers production to China that has been in Japan for the last hundred years (*Asia Africa Intelligence Wire 2004*).

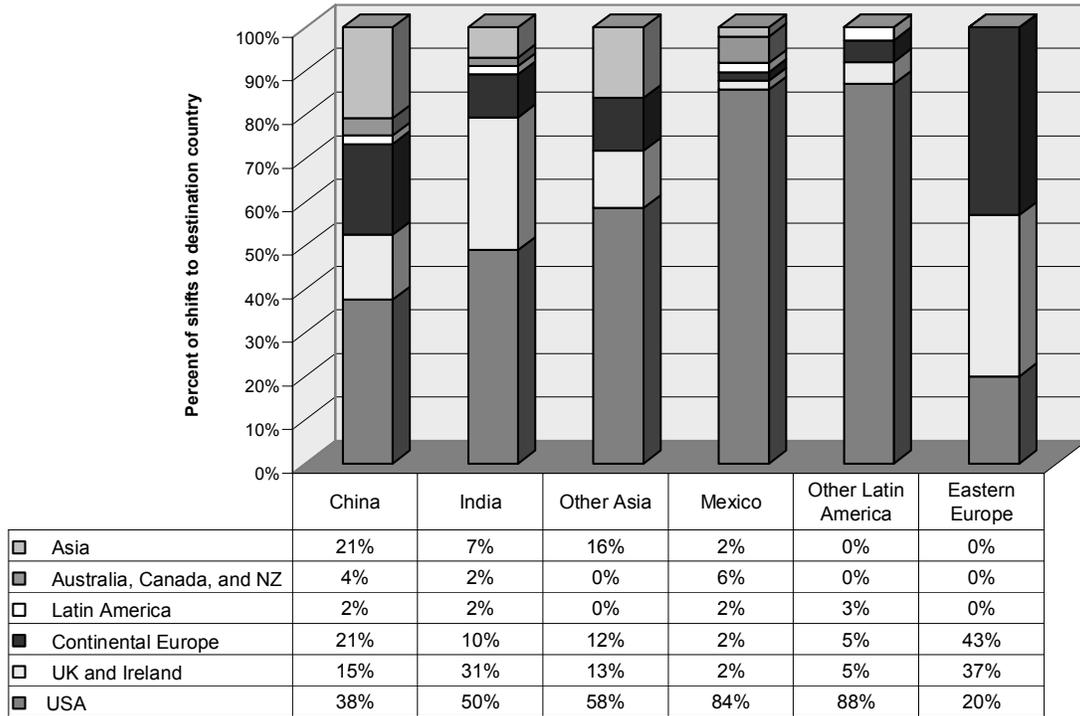
As we mentioned in the beginning of this section, what these data show is just how global and extensive production shifts into China have become. Particularly striking are the large number of US and foreign-owned multinationals that are shifting production, in close succession, into China from Europe, North America, and elsewhere around the globe.

Global production shifts

The data presented above make clear that, although we were commissioned to look at production shifts from the US to China, the issue of production and job shifts is truly a global one. We see a great deal of movement of jobs and production between many different countries, including companies that shift production to more than one country at once. In this section, we provide some more detail on these global production shifts. These findings need to be understood as a conservative estimate of global movements. We were not deliberately tracking movements to Africa, Western and Eastern Europe, Canada, Australia, New Zealand, or the Middle East. Therefore, our results are more complete for shifts into Asia and Latin America. Still, in the process of tracking these latter shifts, we picked up the other shifts described below. While these findings undercount shifts to these other regions of the world, they still capture which industries and which kinds of companies are shifting work from one destination region to another.

In Figure 10, we can see that the companies that shifted production to Mexico and the rest of Latin America continued to come primarily from the US. In fact, almost all shifts to Mexico were from the US and Canada (90 percent), while some firms from Continental Europe and the UK shifted production to other Latin American countries (5 percent for each). In contrast, shifts into China, represent a fairly dispersed range of global source countries. Shifts into India were dominated by companies from English-speaking countries, the US and UK firms together accounting for 81 percent of all shifts into India.

Figure 10: Percent of global production shifts into each destination country, by country or region of origin, January-March 2004



In Table 14 we describe the characteristics of companies that shifted production to various regions, combining records from all source countries. We see that all companies that shifted production to Mexico and Eastern Europe, as well as the overwhelming majority of companies that moved production to China, are in manufacturing industries. In contrast, only one-third of companies that shifted production to India and only one-half that shifted production to other Latin American countries were in manufacturing. This highlights the higher percentage of communications and IT jobs that moved to those regions. Not surprisingly, the average number of jobs per production shift was somewhat higher for countries where the majority of production shifts were in manufacturing industries.

The one exception to this is China, where the average job shift was only 200 people – smaller than the average shift to most other regions. This reflects the fact that 29 percent of all the companies shifting production into China from different parts of the world were

simultaneously shifting production to other countries. Thus, even a relatively large manufacturing company would show a smaller number of jobs being sent to China because some portion of the jobs lost in that company shifted to other countries as well.

Table 14: Comparative characteristics of global production shifts by destination country, all source countries combined, January-March 2004.

	Shifts to China	Shifts to India	Shifts to other Asian countries	Percent of shifts to Mexico	Shifts to other Latin American countries	Shifts to Eastern Europe
Company characteristics						
Manufacturing industry	97%	34%	75%	100%	53%	100%
Non-manufacturing industry	3%	66%	25%	0%	47%	0%
Average number of jobs shifted	200	243	399	329	162	560
Total number of jobs shifted	24,001	13,109	22,355	24,971	6,143	14,562
Years in operation	44	50	37	48	34	56
More than 20 years in operation	71%	55%	49%	85%	56%	75%
Years under current owner	19	20	24	17	13	20
Ten or fewer years current owner	50%	67%	45%	53%	67%	60%
Parent company characteristics						
Total parent company employees	46,539	53,427	40,982	44,971	37,955	79,424
Annual revenue (USD millions)	\$13,174.3	\$17,426.6	\$12,260.5	\$10,289.5	\$10,923.0	\$25,886.1
Annual income (USD millions)	483.3	\$1,382.5	\$243.1	\$801.6	\$527.2	\$1,817.0
Publicly held	79%	84%	81%	72%	83%	87%
Privately held	21%	16%	19%	28%	17%	13%
US-based multinational	40%	48%	51%	72%	83%	20%
Foreign-based multinational	60%	52%	49%	28%	17%	80%

Firms that shifted production to China, Mexico, and Eastern Europe were much more likely to be long-term, well-established companies than firms shifting to India, other Asian, and other Latin American countries. Eight-five percent of companies that shifted production to

Mexico, 71 percent of firms that shifted production to China, and 75 percent that moved production to Eastern Europe had been in operation for more than twenty years. In contrast, two-thirds of companies shifting to India and other Latin America have been under current ownership fewer than 10 years—again reflecting a higher proportion of communications and IT firms.

Manufacturing companies that shifted production out of the UK and Ireland, in particular, tended to be long-established, major employers in small communities. The loss of such companies has been especially devastating. For example, when Herdman's, a textile manufacturer, announced it would close its spinning mill in Sion Mills in Northern Ireland, the town lost more than the 270 jobs that were shifted to South Africa—it lost a piece of its identity.

Herdman's had been the small town's primary employer for the last 170 years. As the name of the town implies, Sion Mills grew up around the mill, which once employed 1,200 people and remained open even through the Irish Famine (Moriarty 2004). Many local families had several family members working at the mill, and Herdman's had employed many families through multiple generations (Palmer 2004). As the people of Sion Mills look elsewhere for employment, it remains to be seen whether the community can retain its cohesiveness in the face of this loss.

As described in Table 14, we found that the firms that shifted production to Eastern Europe tended to be some of the world's largest employers, with, on average, 79,424 parent company employees, sales revenues averaging above \$25 billion dollars, and net income averaging \$1.8 billion a year. These parent companies include some of the world's most powerful and well-known corporations such as Siemens AG, IBM, Delphi, Samsung Electronics, Royal Philips Electronics, and Matsushita. The parent companies of firms that shifted production to India also tended to be quite large, averaging 53,427 employees worldwide. They

were also quite profitable, with \$17.4 billion in annual revenue and \$1.3 billion in net income. This is not surprising given that the parent companies for firms shifting jobs into India include some of the world's largest financial corporations such as HSBC, Lloyds TSB Group, Axa Insurance, and Barclays PLC.

The parent companies of firms that shifted production to China, Mexico, and other Asian and Latin American countries were slightly smaller, averaging between 37,955 parent company employees for firms shifting to Latin America to 46,539 employees for firms shifting to China. Yet once again, these parent companies include some of the worlds' largest multinationals, such as United Technologies (China) Robert Bosch (China, Brazil, and Mexico), Boeing (South Korea), GlaxoSmithKline (China and India), RAG Aktiongesellschaft (China), BASF (Mexico), Daimler Chrysler (Brazil), Citigroup and Tyco International (Mexico), Toshiba (China and the Philippines), Alcoa (China), and Royal Dutch/Shell Group (China and Singapore).

As Table 14 shows, the majority of firms in our study were publicly-held. That is particularly evident for those firms that shifted production to Eastern Europe and India, while the greatest percentage of privately-held firms, 28 percent, were found among those shifting to Mexico. Finally, Table 14 shows that 83 percent of the parent companies of those firms that shifted production to other Latin American countries and 72 percent of those that moved production to Mexico were US-based multinationals. In contrast, only 40 percent of parent companies that moved production to China were US-based multinationals, while just 20 percent of those that moved production to Eastern Europe and 48 percent of those that moved production to India were US-based. These findings reflect the large number of European and Asian countries that shifted production into China, as well as the high percentage of Western European countries that move production to Eastern Europe and UK firms that moved production to India.

For some of the largest production shifts out of the US and Western Europe to Eastern Europe and Asia, it was extremely difficult to confirm details about when and whether the work was actually going to be shifted and how many workers would be impacted by the shift. For example, on February 16, 2004, Siemens managing director of information systems in India, Anil Laud, stated that, "Siemens has recognized that a huge amount of software development activity needs to be moved from high-cost countries to low-cost countries" (*Austin American Statesman* 2004: B6). A Siemens AG official announced that the company would move most of its 15,000 software-programming jobs from the US and Western Europe to India, China and Eastern Europe. However, the next day, a Siemens spokesperson in New York countered that the company had no significant plans to outsource work. In early April, Siemens confirmed that it had plans to shift mobile phone manufacturing work from Germany to low-cost countries (*Financial Times* 2004). IG Metall, the German union representing Siemens employees, estimated that the production shifts would cost up to 10,000 jobs in Germany. Later that month, Siemens stated that it would be able to maintain some work in Germany if the union agreed to concessions, including increasing the number of working hours per week with no additional pay (AFX.COM 2004).

Table 15, provides more details on which countries we found to be the primary destinations for global production shifts for specific industries.

Table 15: Global production shifts out of the US by industry and destination country, January – March 2004

	China	India	Other Asia	Mexico	Other Latin America	Eastern Europe	All Other
Aerospace	33%	0%	67%	0%	0%	0%	0%
Apparel and footwear	39%	0%	11%	33%	11%	6%	0%
Appliances	47%	0%	21%	26%	0%	5%	0%
Auto parts	17%	20%	0%	49%	2%	12%	0%
Automobiles	33%	0%	0%	33%	33%	0%	0%
Chemicals and petroleum	50%	16%	9%	9%	6%	6%	3%
Communications/information technology	4%	39%	23%	0%	27%	0%	7%
Electronics/electrical equipment	48%	5%	24%	9%	0%	11%	3%
Finance, insurance, and real estate	6%	88%	6%	0%	0%	0%	0%
Food processing	0%	0%	38%	25%	13%	0%	25%
Household goods	33%	0%	20%	20%	13%	0%	13%
Industrial equipment and machinery	36%	7%	4%	36%	0%	10%	7%
Metal fabrication and production	44%	0%	11%	26%	11%	4%	4%
Plastics, glass and rubber	28%	0%	4%	36%	4%	16%	12%
Sporting goods and toys	89%	0%	11%	0%	0%	0%	0%
Textiles	42%	0%	0%	13%	29%	0%	17%
Wood and paper products	44%	13%	0%	33%	11%	11%	0%

As might be expected, China continued to be a primary destination for sporting goods and toys (89 percent), electronics and electrical equipment (48 percent) textiles (42 percent), and wood and paper products (44 percent). But it was also the primary destination for higher-end industries including appliances (47 percent), chemicals and petroleum (50 percent), household goods (33 percent), and metal fabrication and production (44 percent). India was the primary destination country for communications and information technology (39 percent) and finance, insurance and real estate (88 percent), while Mexico remains the primary global destination for

auto parts (49 percent), plastics glass and rubber (36 percent), and a major destination for industrial equipment and machinery (36 percent), metal fabrication and production, and appliances (both 26 percent), apparel and footwear (33 percent), food processing (25 percent), and automobiles (33 percent). Other Asian countries are the primary destination for food processing, including the shift of 14,000 poultry feed jobs by Japfa Comfeed from Indonesia to Myanmar and Vietnam.

Global shifts in textiles

Many observers note that increased global offshoring trends began to shift in the last quarter of 2004, in preparation for the end of the Multi-Fiber Arrangement (MFA) on December 31, 2004. The MFA has been the agreement governing global trade in textiles and apparel since 1974. When the World Trade Organization went into effect in 1995, it replaced the MFA with a new set of guidelines (Agreement on Textiles and Clothing) designed to phase out quotas in the industry. According to Scott Nova of the Workers Rights Consortium, a US-based non-profit that monitors working conditions in factories for compliance with university codes of conduct, the phase-out will lead to massive changes in the industry:

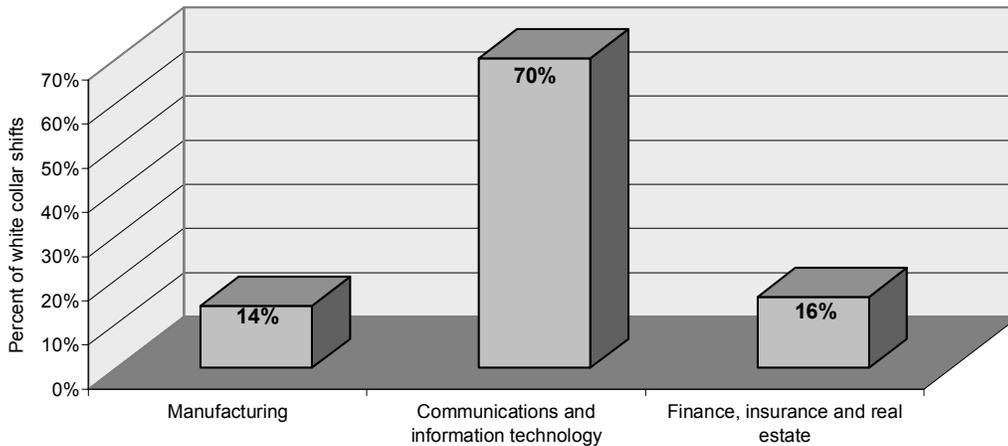
As MFA is phased-out, there will be a major shift of apparel production to China, and to a lesser extent India and possibly some other locales. The result will be widespread job loss in many other Third World countries, especially in Indonesia, the Philippines, Bangladesh, Mexico, Central America and the Caribbean, and southern Africa. There is broad agreement throughout industry, labor and government circles that this shift will occur and already is occurring. The only disagreement is over the extent and pace of job loss in individual countries. The World Trade Organization predicts that China, which now accounts for 16% of the US apparel import market, will account for more than 50% after MFA phase-out, with this gain coming at the expense of suppliers in other Third World nations. In Bangladesh alone, some economists predict the loss of more than one million jobs – half of all apparel employment in the country (Nova 2004).

While we observed some shifts in textiles, apparel and footwear, our data are unlikely to capture moves in this industry that will not occur until late 2004 or early 2005. Given that much of the textile and apparel production in the US and Europe has already moved, it is likely that the majority of MFA production shifts that will occur will be from Latin America and other Asian countries to China.

Global shifts in white-collar occupations

Because of the media attention on the offshoring of white-collar employment, we felt it was important to provide more details on global production shifts involving these occupations. In Figure 11 we provide data on the shifts in white-collar work by industry. Not surprisingly, 70 percent of white-collar work moving from all countries is in the communications and IT sector. Sixteen percent of the shifts were in finance, insurance and real estate, and 14 percent in manufacturing, including research and design and back office operations.

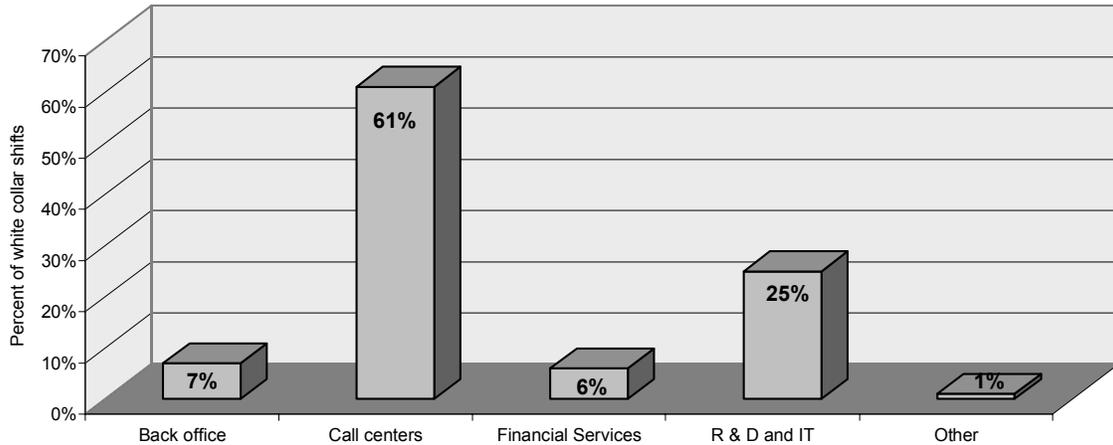
Figure 11: Shifts in white-collar work by industry, all countries origin, January-March 2004



We also provide a breakdown of white-collar work by the type of service being shifted. As Figure 12 describes, 61 percent of the white-collar shifts from all countries were call centers, which parallels the media attention on this industry. Twenty-five percent of the shifts were in

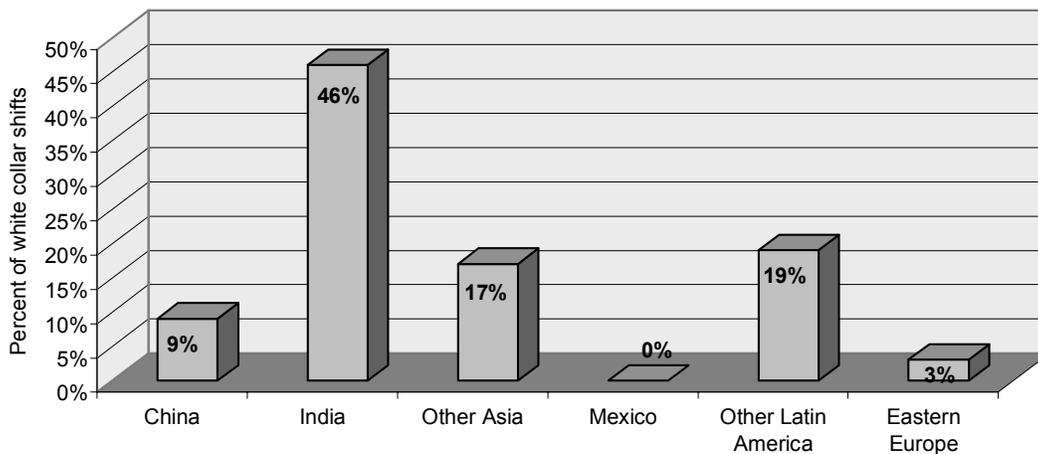
R&D and IT. Despite much media attention on back office shifting, we found only 7 percent of the white-collar shifts were in this category, and 6 percent were in financial services.

Figure 12: Shifts in white-collar work by type of service, all countries, January-March 2004



India is the largest destination for the white-collar shifts in our database, with almost half of all shifts headed there in January through March 2004. Nineteen percent of the shifts were headed to other Latin American countries, and 19 percent to other Asian countries. Only 9 percent went to China, 3 percent to Eastern Europe, and none to Mexico.

Figure 13: White-collar shifts by destination country, January-March 2004



The UK has been a primary source of white-collar shifts to India. Similar to the US, the UK has been experiencing the loss of manufacturing jobs to cheaper locations for years. Also like the US, many in the UK hoped that white-collar service jobs—such as those in call centers, customer service, IT, and computing technical support—would fill the unemployment vacuum left in communities throughout the country when big manufacturing sector employers shifted production overseas (*Labour Research* 2004). For a while it seemed that this would be the case. The UK's service sector appeared to be booming, with call centers taking the lead. In fact, according to the UK Department of Trade and Industry, call centers were responsible for more than a third of new jobs created in the UK in 2001 (*Labour Research* 2004). Many of these centers were set up in communities which were devastated by the loss of major manufacturing employers.

The boom was short-lived, however. Now communities throughout the UK are going through a second wave of offshoring, experiencing once again the devastation caused by the withdrawal of a major employer. According to Labour Research, to date, more than 50,000 service sector jobs have been offshored, particularly to India (*Labour Research* 2004). In December 2003, insurer Aviva sparked outrage in the UK when it announced its intentions to transfer 2,350 UK call center, processing, administrative, and information technology jobs to India. By August 2004, with the move partially completed, Aviva boasted a 37 percent increase in profits. The same month Aviva announced a further 950 job cuts, as it plans to shift some functions from within its life insurance division to India as well (*Bristol Evening Post* 2004).

In January 2004, Axa Insurance announced plans to lay off 700 UK workers, shipping 230 back office jobs to Bangalore, India (Jones 2004). Also in January, UK insurer Lloyds TSB announced it had finalized plans to shift 960 call center jobs to India (Croft 2004). In February

2004, National Rail Enquiries announced it would outsource 850 UK call center jobs to Bangalore, where operators will answer questions about train arrivals, routes, and departures (Clement 2004). Also in February, the bank HSBC announced that it had finalized a deal that will send 4,000 UK jobs to India, Malaysia, and China. On March 2, 2004, HSBC was accused in the British media of profiteering when the bank reported record-breaking profits of more than \$8.7 billion (Manning 2004). On June 17, 2004 HSBC announced 3,500 further UK job cuts, 835 of which will be sent to call centers in India, on top of the 4,000 previously announced (*Queensland Courier Mail* 2004).

In perhaps one of the most controversial white-collar outsourcing moves, a number of pharmaceutical companies, including industry giant GlaxoSmithKline (GSK), are beginning to move their clinical trials from high wage countries in North America and Europe to low wage countries in Asia and Eastern Europe. In February 2004 GSK announced plans to transfer R&D operations to Poland, China and India. The company announced its plans to locate statistical and data management in Bangalore, India and move case reporting to both India and Poland. It is also setting up two R&D centers in China.

While drug companies have long used disadvantaged populations in the US and around the globe for drug testing, the practice of offshoring clinical trials is being actively touted for its potential cost savings. For example, the Confederation of Indian Industry (CII) released a study stating that while clinical trials cost \$300-350 million in the US, they could be done in India for only \$25 million. CII noted that India offered an ideal environment for testing drugs, because of the vast population and the prevalence of a large number of diseases and patient resources (Ando 2004).

Currently, there are 70,000 patients enrolled in clinical trials for GSK. CEO J.P. Garnier remarked, “We are leaving a lot of money on the table by going through clinical trials in high-cost countries, which could be done faster and cheaper in India, Poland and other low-cost countries.” GSK estimates that it could save more than \$200 million per year through the practice, by shifting 30 percent of those trials to developing countries at a savings of \$10,000 to \$15,000 per patient (Food & Drug Letter 2004: not paginated).

Global shifts in manufacturing

While the offshoring of white-collar jobs to India and China is clearly a hot topic in the global media, the overwhelming majority of workers in the US and other countries that have been negatively impacted by global production shifts continue to be those employed in manufacturing. This is also a story that has gotten much more complicated since we first tracked manufacturing production shifts in 2001. Although in 2001 most manufacturing production shifts involved simple site-to-site transfers of jobs and work, that is no longer the case. Rather, production transfers often involve multiple shifts occurring along complex networks of production and corporate ownership, sometimes taking place over the course of several years. For example, the Tomkins PLC closure of their Trico wiper blade plant in Buffalo, New York, eliminating 212 jobs, was the culmination of nearly twenty years of shifting production to Mexico and Brownsville, Texas. But Trico is just one of the many auto components subsidiaries under Tomkins umbrella, all of which are being shifted from high wage countries to low wage countries around the world.

The Trico story begins in 1985 when they had three plants and some 2,500 workers in Buffalo. By 1987, Trico had closed two plants and sent more than 1,600 jobs south to Texas and Mexico (Begin 2003a). Continued threats of closure during the 1990’s forced union members to

accept contract concessions totaling more than \$4.00 per hour. Despite concessions and productivity improvements, Trico announced in 2003 that it would close the plant and send the production to plants on both sides of the US-Mexico border.

The move was also part of a much larger restructuring plan by Trico's UK-based parent company, Tomkins PLC. At the same time that Trico's jobs were leaving Buffalo, Tomkins announced that it would shift all wiper production from Europe to North America, primarily Mexico (Begin 2003b). Tomkins also financed the restructuring of its subsidiary, Gates Rubber Co. as it moved automotive hose production from Galesburg, Illinois to Cohisa, Mexico (*Rubber & Plastics News* 2003). Also in 2003, Gates announced plans to shut down plants in Branford, Canada and Elizabethtown, Kentucky while it simultaneously opened a new plant in Thailand.

Another Tomkins subsidiary, Schrader-Bridgeport, announced in November 2003 that it would close its Muskogee, Oklahoma plant and transfer work to other North American plants, including one in Matamoros, Mexico (Droege 2003). The closure meant the loss of 207 jobs in a community that had recently lost 500 other manufacturing jobs to plant closures. In addition to the global production transfers, Tomkins has also dedicated significant capital to investment in China, including a new "state of the art facility" in Suzhou. Jim Nicol, Tomkins CEO, countered misperceptions that Chinese plants are run down and inefficient.

[W]hen I talk about China, people, think, well, the plants have got hundreds of people running around with ball peen hammers going tick, tick, tick, knocking things around, and this is actually a plant that was set up by the people from Windsor, Ontario. . . As you can see, it's nice on the outside. . . On the inside, look, this is a state of the art facility. . . One operator, multiple functions and then a readout gear that tells you the first time deliver, speed and matching tack time and everything else. So, that a state of the art facility, and that's China (*Fair Disclosure Wire* 2003g: 8).

Tomkins is just one of many stories we found where one parent company simultaneously shifted operations from multiple subsidiaries and divisions from various sites to various countries. We found this to be especially common in industries producing high-end electronic components and in auto parts, but the pattern held true in nearly every industry in every country.

Conclusion

While our findings report on production shifts for just the first three months of 2004, the shifting of production and employment from country to country has become so pervasive that even data from a single quarter can provide critical insights into the changing nature and effects of global production shifts. And, as our data show, for all countries China stands at the center of the story, for the US and for other countries as well. At the same time China is also just one part of the story. Large multinationals, both US- and foreign-owned, are restructuring their operations, buying and selling companies, and simultaneously shifting production near shore (the US to Mexico, Europe to Eastern Europe, Asia to other Asian countries) and off shore (the US, Europe, and Asia to China and other Asian countries).

In combination, these data remind us that it is not a story of good jobs being stolen from US workers by low-wage workers in Latin America and Asia, especially China, with whom US workers can never hope to compete. Instead it is a story of the world's largest multinational corporations buying and selling companies and pieces of companies, opening and closing plants, downsizing and expanding operations, and shifting employment from one community to another, all around the world. With no particular loyalty to country, industry, community, or product, what our data suggest is that this global race to the bottom is driven by several unifying factors: the search for ever cheaper production costs, accessibility to expanding global markets, and the

flexibility that comes from diverse supply chains in an ever more volatile global economic and political climate.

These data also provide the first hard data with which to inform the raging debate on the internet, in the media, and on the campaign trail on the nature, extent, and impact of outsourcing of US jobs to other countries. First, these data make clear that, despite some initial slowdown in the economy after 9-11 and the wars in Afghanistan and Iraq that followed, firms continue to move significant numbers of jobs out of the US to both Asia and Latin America. Contrary to recent estimates by BLS, we estimate that the numbers of jobs being lost through production shifts out of the US are significant, averaging as much as 99,000 a year to China, 140,000 a year to Mexico, and 406,000 overall.

Second, although the media has focused a great deal on the outsourcing of IT and customer service jobs to India, and, to a lesser extent, China, manufacturing firms continue to be the primary source of exported jobs, and Mexico is still a top destination for many firms. At the same time, the global outsourcing of service and high tech jobs is growing rapidly, and so in the years to come we should see a shift in the balance between the proportion of jobs leaving the US that are in manufacturing and service sectors.

Third, the new story these data tell is that corporations are no longer shifting to just Mexico, Latin America, China, or other Asian countries. Instead, what our findings show is that for all multinationals, US or foreign owned, there is an increasing tendency to move production to multiple destinations in multiple countries at the same time, simultaneously meeting the need to keep access to near-shore markets with less costly and less cumbersome shipping structures, while also gaining access to the large cost savings, market opportunities, and government supported infrastructure provided by offshore destinations in China and other Asian countries.

Fourth, these data show that the outsourcing of production, both near shore and off shore, from the US and around the globe, crosses nearly every major industrial sector, from communications and IT, to high-end manufacturing of industrial machinery and electronics components, to low wage manufacturing in food processing and textiles.

Fifth, the incidence of production shifts among unionized firms and unionized workers in the US is striking. Whether or not employers are shifting production in a deliberate attempt to break the union, unionization rates among the firms shifting production out of the US far exceed the national average union density—even taking industry into account. It also means that the jobs leaving the US are more likely to be good jobs, with full health care and pension plans, making the costs of these production shifts to workers and communities even higher.

Sixth, our research shows that because the topic of outsourcing is politically sensitive, companies may be attempting to keep production shifts quiet. There have been several cases where plans for outsourcing or production shifts have been uncovered in the media, highlighting the fact that some companies do not want this information known. And we have found numerous TAA cases where the Labor Department ultimately found production had shifted out of the US at the same time that the company was persistently telling the media that jobs were only being shifted domestically. This may be a change from our findings in previous research, when it appeared that companies frequently made public statements about planned moves in order to threaten workers attempting to unionize, or to boost their stock values. It also suggests that the actual numbers of jobs lost, particularly in customer service and IT occupations and industries where the subject of outsourcing is particularly sensitive, may be seriously underestimated by media tracking data.

Finally, the importance of this topic suggests that further research is needed. Despite the attention paid outsourcing, there still exists no government agency that monitors production shifts out of the US and the impact of those production shifts on US wages, employment, and taxpayer-supported social services, and tax revenue. Our research is the only empirical work that allows scholars and policymakers the information needed to understand these global trends. Yet it is only a brief snapshot of one quarter of one year. Additional and more comprehensive research is required to track production shifts over a longer period, throughout the global economy, and with multi-lingual searches. In addition there need to be more in-depth case studies to better understand the changing trends in the global outsourcing of production and employment and the impact that global corporate restructuring and capital mobility continue to have on workers and communities in the US and around the globe. There also needs to be comparable research that looks at which companies are expanding production and employment in which countries. Most of all, governments around the world need to do a better job of monitoring and tracking the ever more rapid and complex shifting of capital and jobs around the globe, because the effects of these shifts will be long lasting on workers, employment, health and safety, environment, living standards, and public services, in both source and destination countries for the offshoring of employment, services, and production.

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