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Article

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NBER Reporter

Provided in Cooperation with:
National Bureau of Economic Research (NBER), Cambridge, Mass.

Suggested Citation: Autor, David; Hanson, Gordon (2014) : Labor market adjustment to international trade, NBER Reporter, National Bureau of Economic Research (NBER), Cambridge, MA, Iss. 2, pp. 11-14

This Version is available at:
https://hdl.handle.net/10419/103263

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Research Summaries

Labor Market Adjustment to International Trade

David Autor and Gordon Hanson*

The past two decades have seen a fruitful debate on the impact of globalization on U.S. labor markets. Research by economists in the 1990s revealed that while international trade, particularly in the form of offshoring, was associated with modest increases in the wage premium for skilled labor, other shocks, including skill-biased technical change, played a more important role in the evolution of the U.S. wage structure.[1] Recent evidence suggests that since the early 1990s, expanding global trade, propelled by China's spectacular growth, is playing a much larger role in the U.S. labor market.

One factor limiting trade's impact on U.S. labor was that, historically, imports from low-wage countries were small. As recently as 1990, low-income countries accounted for less than 4 percent of U.S. manufacturing imports. With China's emergence as a global economic power, the situation has changed markedly. Today, China accounts for one-fifth of the manufactured goods that the United States purchases from abroad.

The causes of China's manufacturing surge are its strong comparative advantage in labor-intensive production coupled with a rapid overall rate of economic growth. Its comparative advantage, which lay dormant during the decades of global economic isolation imposed by Mao, was unleashed in dramatic fashion by the reforms of the 1980s and 1990s, which also contributed to progressive increases in the country's aggregate productivity. For U.S. manufacturing, which still accounts for the majority of U.S. trade, China's expansion repre-

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sents a substantial competitive shock. Compounding the effects of this shock are trade imbalances in both China and the United States. Large Chinese trade surpluses along with large U.S. trade deficits mean that increases in U.S. imports from China have not been offset by corresponding increases in U.S. exports to China.

The emergence of China from being a technologically backward and largely closed economy to the world's third largest manufacturer in just two decades provides a unique opportunity to learn about the impact of international trade on labor market outcomes. In a series of recent papers with various co-authors, we have sought to trace out these impacts.

Local Labor Market Impacts of Import Competition

Because trade shocks play out in general equilibrium, assessing their causal effects presents a conceptual and empirical challenge. One needs to map many industry-specific changes (attributable, say, to industry productivity growth in China) into a small number of aggregate outcomes. Our solution to this "degrees of freedom" problem is to use regional economies as laboratories in which to study the labor market consequences of trade.[2]

In work with David Dorn, we relate changes in labor-market outcomes from 1990 to 2007 across U.S. local labor markets to changes in exposure to Chinese import competition.[3] These local labor markets are subject to differential trade exposure according to their initial patterns of industry specialization. Some regions, such as Raleigh, North Carolina, specialize in industries such as furniture that are heavily exposed to trade with China, whereas others, such as Fresno, California, specialize in fruit and vegetable products that are lightly exposed.

We find that greater import competition from China affects local labor markets not just through manufacturing employment, which unsurprisingly is adversely affected, but also along other margins which have escaped notice in earlier research. Local labor markets facing rising low-income country imports as a result of China's growth experience increased unemployment, decreased labor-force participation, and increased use of disability and other transfer benefits, as well as lower average wages. Notably, import shocks trigger a decline in wages that is primarily observed outside the manufacturing sector. Reductions in both employment and wage levels lead to a drop in the average earnings of households. These changes contribute to rising transfer payments through multiple federal and state programs. The largest transfer increases are for federal disability, retirement, and in-kind medical payments. Unemployment insurance and income assistance play a significant but secondary role. Trade Adjustment Assistance (TAA), which specifically provides benefits to workers who have been displaced by import competition, accounts for a negligible part of the trade-induced increase in transfers.

The differential take-up rates of TAA and of Social Security Disability Insurance (SSDI) that we document are particularly notable. TAA grants are temporary, whereas most workers who collect disability receive SSDI benefits until retirement or death. For regions affected by Chinese imports, the estimated dollar increase in per capita SSDI payments is more than 30 times as large as the estimated dollar increase in TAA payments. This implies that workers are far more likely to use SSDI to insure themselves against increases in import competition than to use TAA.[4]

Import Competition and the Great U.S. Employment "Sag" of the 2000s

Even before the Great Recession, U.S. employment growth was unimpressive. Between 2000 and 2007, the economy gave back the considerable jump in employment rates it had achieved during the 1990s, with major contractions in manufacturing employment being a prime contributor to the slump. This pre-Great Recession U.S. employment "sag" of the 2000s is widely recognized but little understood. In work with Daron Acemoglu, Dorn, and Brendan Price, we explore whether rising import competition from China played a significant role in this sag — both directly through import competition-induced reductions in U.S. manufacturing employment, and indirectly through spillovers to employment in other upstream and downstream sectors inside and outside of manufacturing.[5]

Our approach includes analysis at both the national industry level and the local labor market level. These two perspectives are helpful for framing the mechanisms through which increased import competition affects aggregate employment. One impact of import competition on employment is through direct competition — intuitively, industries more exposed to rising imports contract output and reduce the number of workers on the payroll. This direct impact leads to further indirect effects on upstream industries that supply inputs to the affected industry and on downstream industries that purchase inputs from the affected industry. Our national industry perspective allows us to capture these upstream and downstream effects explicitly via input-output linkages between industries. However, the national industry data miss two other potentially important impacts: the offsetting positive employment effects that occur as workers displaced by trade find jobs in other sectors, and the further negative employment effects of initial job loss on aggregate demand. Helpfully, we are able to capture a portion of these latter two effects in our data on local labor markets. Thus, the impacts of trade on employment observed in national industry and local labor market data give us two complementary perspectives on the aggregate employment effects that we seek to identify.

We estimate that import competition reduced aggregate U.S. employment between 600,000 and 1.25 million jobs between 1991 and 2011. This reduction constitutes a meaningful contribution to the aggregate U.S. employment sag in this period. But it is nevertheless modest relative to the decline in U.S. manufactur-

ing employment of 5.2 million workers between 2001 and 2011, and more modest still when compared to the aggregate employment sag including non-manufacturing. The exercise serves as an additional step toward quantifying the full employment impact of increasing import competition on the U.S. labor market. Perhaps as important, the multiple angles of attack used in our analysis underscore the considerable conceptual challenges in drawing general equilibrium inferences from national and sub-national data.

Estimating Trade Impacts for Individual Workers

In work with Dorn and Jae Song, we widen our focus from market-level reactions to import competition, and study adjustment at the worker level.[6] What happens to workers employed in industries that undergo a sharp increase in import competition? Are the consequences for individual worker earnings, employment, and uptake of government transfers merely transitory or do they persist over the longer run?

Using worker-level data from the U.S. Social Security Administration (SSA), we estimate the impact of exposure to Chinese import competition on cumulative earnings, employment, movement across sectors, movement across regions, and receipt of Social Security benefits over the period 1992 to 2007. By exploiting links between workers and their employers observable in the SSA data, we are able to study four margins of worker adjustment: the change in earnings at the initial employer (that is, the worker's place of employment before the increase in imports from China), the change in earnings associated with job loss, the change in earnings associated with uptake of government benefits, and the change in earnings associated with moving between employers, industries, and/or regions. Decomposing changes in earnings across these margins — and capturing how they vary by worker characteristics — reveals where in the adjustment process labor market frictions arise and which types of workers face larger burdens in adjusting to shocks.

Labor economists are interested in the long-run consequences of job loss. To deal with the challenge of distinguishing involuntary from voluntary worker separations from employers, previous researchers have studied episodes of mass layoffs in which plants let go a substantial fraction of their employees within a short span of time. Perhaps not surprisingly, the repeated finding of mass layoff studies is that workers suffer an immediate loss in earnings that they partially, but not fully, make up through subsequent employment. Perhaps more surprisingly, this earnings loss, in proportional terms, appears to be similar across workers at different skill levels. Our analysis allows us to revisit the consequences of job loss in the context of rising import competition.

Our data provide clear evidence that workers more exposed to trade with China experience lower cumulative earnings, lower cumulative employment, and greater receipt of SSDI over the sample window of 1992 through 2007. Strikingly, trade exposure increases job churning across firms, industries, and sectors, but not across regions. Workers more exposed to import competition spend less time working for their initial employer, less time working in their initial narrow manufacturing industry, and more time working elsewhere in manufacturing and outside manufacturing altogether.

While trade exposure has comparatively modest earnings effects on the median exposed worker — of approximately 3 percentage points per year — the magnitudes of job churn and adjustment in earnings and employment differ substantially across demographic groups. Reductions in cumulative earnings are concentrated among workers with low initial wages, workers with low tenure at their initial firm, workers with weak attachment to the labor force, and those employed at large firms with low wage levels. Trade competition also affects the careers of high-wage workers, who are able to rapidly separate from their initial employers and to move to other firms, often outside manufacturing. High-wage workers frequently make these adjustments prior to large-scale layoffs at their initial firm, and without notable declines in earnings. Low-wage workers instead stay longer in their initial trade-exposed firms and industries, are more likely to separate from their initial firm during mass layoffs, and incur greater losses of earnings both at the initial firm and after moving to other employers. Thus, while trade exposure induces augmented job churn for both high- and low-wage workers, the consequences for their overall earnings are distinct: high-wage workers appear to primarily obtain "safe harbor" in equally highly paid work, often outside of manufacturing. Low-wage workers, by contrast, churn primarily within the manufacturing sector and experience reduced earnings at both the initial employer, where the initial shock transpired, and at subsequent employers.

These findings are complementary to the local labor market approach of our other research. The variation in disruptions to earnings and employment induced by trade that we identify reveals the presence of frictions in moving workers between jobs. Absent such frictions, wages would equalize for similar workers at all moments of time and we would detect no wage differences across workers, either in the short or long run. That we find substantial evidence of outcome differences suggests that frictions are materially important. Though our worker-level perspective prevents us from estimating the impact of international trade on equilibrium employment or wages for entire skill groups, it allows us to see differences across workers in adjustment to greater import competition. These adjustment burdens may color how workers perceive global economic integration.

Conclusions

Economic theory suggests that trade with China yields aggregate income gains for the U.S. economy. What our findings add to this well understood insight is that the distributional consequences of trade and the offsetting, medium-run efficiency losses associated with adjustment to trade shocks are substantial. These aspects of labor market adjustment to trade are often

overlooked in research on trade because of a focus on wages as the sole channel of trade adjustment. The consequences of Chinese trade for U.S. employment, household income, and government benefit programs may contribute to public ambivalence toward globalization and specific anxiety about increasing trade with China.

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[3] *D. H. Autor, D. Dorn, and G. H. Hanson. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States," NBER Working Paper No. 18054, May 2012, and* American Economic Review, *103 (6) (2013), pp. 2121–68.*

[4] *Two related papers include D. H. Autor, D. Dorn, and G. H. Hanson, "The Geography of Trade and Technology Shocks in the United States," NBER Working Paper No. 18940, April 2013, and* American Economic Review: Papers and Proceedings, *103 (3) (2013), pp. 220–5; and "Untangling Trade and Technology: Evidence from Local Labor Markets," NBER Working Paper No. 18938, April 2013. In this work, we juxtapose the effects of trade and technology on employment in U.S. local labor markets between 1990 and 2007. Regional exposures to trade and technology are uncorrelated, conditional on initial manufacturing employment.*

[5] *D. Acemoglu, D. H. Autor, D. Dorn, G. H. Hanson, and B. Price, "Import Competition and the Great U.S. Employment Sag of the 2000s," MIT Working Paper, September 2013; and D. Acemoglu, D. H. Autor, D. Dorn, G. H. Hanson, and B. Price, "Return of the Solow Paradox? IT, Productivity, and Employment in U.S. Manufacturing," NBER Working Paper No. 19837, January 2014, and forthcoming in* American Economic Review: Papers and Proceedings.

[6] *D. H. Autor, D. Dorn, G. H. Hanson, and J. Song, "Trade Adjustment: Worker Level Evidence," NBER Working Paper No. 19226, July 2013.*

Economic Consequences of Gender Identity

Marianne Bertrand*

An increasingly discussed explanation for why women and men experience different labor markets is the existence and persistence of gender identity norms. Influential research by George Akerlof and Rachel Kranton[1] has imported into economics insights from social psychology regarding an individual's social identity and how it can influence behaviors and choices. These researchers define identity as one's sense of belonging to one or multiple social categories. One's identity encompasses a clear view about how people who belong to that category should behave. In their model, identity directly enters the utility function: identity influences economic outcomes because deviating from the behavior that is expected for one's social category is assumed to decrease utility. Hence, people's economic actions can in part be explained by a desire to conform with their sense of self. Akerlof and Kranton apply their model to the concept of gender identity. In this case, the two relevant social categories are those of "man" and "woman," and these two categories are associated with specific behavioral prescriptions which, if violated, will decrease utility.

Gender identity norms may help to explain why occupational segregation by gender has been slow to disappear. Women may feel discomfort entering certain professions, and men may feel dis-

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