How Do Local Labor Markets in the U.S. Adjust to Immigration?

BY ETHAN GATEWOOD LEWIS

In recent years, more than 1 million people a year have immigrated to the U.S., a level not seen since before the Great Depression. This boom is most apparent in the urban areas where immigrants tend to cluster. Given their numbers, these newly arrived residents must have some effect on local labor markets. Yet economists have been puzzled by the evidence that immigration has little impact on the wages and employment of native-born workers. So how great is immigration's impact on local labor markets? Is it limited to markets where immigrants settle, or is it spread across the country? Ethan Lewis sifts through the theory and evidence to answer these questions.

Since the 1960s, the number of foreign-born people living in the U.S. has risen rapidly. At present, over 1 million people immigrate to the U.S. each year (both legally and illegally),[1] a level not seen since before the Great Depression.[2] This boom is most apparent in the urban areas where immigrants tend to cluster: Foreign-born residents now make up 60 percent of the population of Miami and large pluralities of the population of other major gateway destinations such as New York, Los Angeles, and Chicago (Table). There are at least some immigrants in all parts of the U.S., however. In the Third Federal Reserve District, Philadelphia is the top destination for the foreign-born, followed by Trenton, Wilmington, Atlantic City, and Allentown. In addition, immigration to some cities that had few immigrants not long ago has been increasing rapidly in recent years, especially in the South.

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In a recent *Business Review* article, Albert Saiz discussed immigration's impact on U.S. cities. The evidence suggests immigrants have surprisingly little impact on the wages and employment rates of similarly skilled native-born workers in the same labor market. On the other hand, Saiz's research shows immigrants bid up the price of housing, and thus immigration may still affect the "real" disposable income of native-born workers, at least in the short run.[3] In one study, Saiz showed that rents in Miami jumped up and remained high for up to four years after a large influx of mostly less-skilled Cuban refugees to Miami in 1980 (the Mariel boatlift). The impact was largest for rental units of lower quality than one would expect the Cuban refugees to occupy; so the real disposable income of less-skilled workers in Miami fell. Saiz's article also discusses

[1] These data come from the 2000 U.S. Census of Population. To the extent that illegal immigrants are not willing to respond to government surveys asking people where they were born, this may understate the total number of immigrants. However, the U.S. Census Bureau takes great pains to make clear that responses to their surveys are, by law, confidential (and cannot be given to other government agencies). In addition, the Bureau uses statistical methods to correct for nonresponse. There is also some evidence that the census captures many illegal immigrants: the number of self-reported immigrants is much larger than the number of legal visa holders in the U.S.

[2] The last big wave of immigration, at the turn of the 19th century, occurred at a time when there were few (legal) restrictions on immigration. Though that wave was almost as large in numbers as the current wave, the U.S. population was much smaller; therefore, the impact was proportionately greater. During the current wave, however, population *growth* among native-born Americans is much lower than at the turn of the 19th century. As a result, the foreign-born share of the population is growing faster now. Another period in which immigration rapidly transformed the U.S. population was in the decades before the Civil War, when masses of Irish and other northern European immigrants settled in the U.S.

[3] In the long term, construction of new housing units or out-migration of people unwilling to pay the higher rents is expected to diminish the impact of any short-term crunch in housing availability.

TABLE

Top Destinations of Working Age* Immigrants in the 1990s

	Metro Area	Number of Immigrants in the 1990s	% of Area's Population: 1990s Immigrants	% of Area's Population: All Immigrants	Share of 1990s Immigrants	Share of Native Born
1	New York, NY	1,016,309	17.2%	41.9%	10.2%	2.3%
2	Los Angeles, CA	909,483	15.3%	47.8%	9.1%	2.0%
3	Chicago, IL	493,585	9.5%	22.1%	4.9%	2.7%
4	Houston, TX	317,918	11.8%	26.5%	3.2%	1.3%
5	Miami-Hialeah, FL	310,981	22.4%	61.4%	3.1%	0.4%
6	Washington, DC	308,940	9.5%	21.0%	3.1%	1.7%
7	Dallas, TX	261,997	11.1%	21.3%	2.6%	1.2%
8	Orange County, CA	241,899	13.4%	38.2%	2.4%	0.7%
9	San Jose, CA	205,785	18.6%	42.4%	2.1%	0.4%
10	Atlanta, GA	205,030	7.5%	12.9%	2.1%	1.6%
	Top 10 Metro Areas	4,271,927	13.2%	33.1%	42.8%	14.3%
	Top Third District Metropolitan Areas					
22	Philadelphia, PA	100,715	3.5%	8.7%	1.0%	1.7%
73	Trenton, NJ	17,909	8.1%	17.6%	0.2%	0.1%
97	Wilmington, DE	12,969	4.1%	8.2%	0.1%	0.2%
102	Atlantic City, NJ	11,983	5.5%	11.8%	0.1%	0.1%
121	Allentown, PA	8,574	2.2%	6.4%	0.1%	0.2%
	Entire Third District**	199,636	2.7%	6.7%	2.0%	4.5%
	Entire U.S.	9,979,417	5.7%	14.0%	100.0%	100.0%

Data source: 2000 Census of Population public-use microdata.
*Age 16-65 and completed school, regardless of grade level attained. Calculations include only working age native-born Americans and immigrants.
**Approximate boundaries.

the impact of immigration on government finances and crime.[4]

In this article, I take a closer look at how local labor markets in the U.S. are adjusting to the immigration boom. The evidence that immigration has little impact on the wages and employment rates of native-born workers has puzzled economists, whose theories suggest there should be a larger impact, and it has raised a number of questions. Why is immigration's impact on the local labor market so small? Has the impact been limited to the markets where immigrants settle, or is it spread across the country (and if so, how)?

[4] Immigration may also have other social impacts, some good and some bad. For example, Harvard professor Samuel Huntington's recent book argues that immigration poses a threat to American culture and national identity. A different view is presented by economists Giovanni Peri and Gianmarco Ottaviano. They show that Americans value the cultural diversity that immigration generates. They find evidence that Americans are willing to pay more to live in a city after it receives an unexpected inflow of immigrants.

THEORY AND EVIDENCE ON LOCAL LABOR MARKET COMPETITION

Two Views. A common negative view of immigration is that immigrants take jobs from native-born Americans, often expressed in terms that imply there is a one-for-one transfer of jobs from Americans to immigrants. For example, Federal Reserve Chairman Alan Greenspan was asked during congressional testimony: "If we have

8.4 million unemployed, according to our official statistics, and if 6 million illegal immigrants are working, are these 6 million taking the jobs that the 8.4 million want? Also, if these 6 million were not here, would we suddenly have virtually full employment?"[5]

Another extreme, but more positive, view is that immigrants largely find employment in jobs that native-born Americans would not take. New York Congressman Emanuel Cellar, a sponsor of the 1965 immigration reform legislation that is thought to have contributed to the current wave of immigration, once said, "You couldn't conduct a restaurant in New York…if you didn't have rough laborers. We haven't got the rough laborers anymore…Where are we going to get the people to do that rough work?"[6]

There may be a grain of truth to the view that immigrants take jobs natives "don't want." For one thing, immigrants are disproportionately less skilled: Almost 40 percent of immigrants (and less than 20 percent of native-born Americans) are high-school dropouts (Figure 1). Related to this, many immigrants work in jobs that are rarely taken by native-born workers. There are, for example, more household service workers in high-immigration areas, suggesting that immigrants are more willing to take these jobs than native-born workers.

An immigration expert at the University of Texas-Austin, Stephen Trejo, has shown that minimum wage immigrants and natives often work in quite distinct occupations and industries. On the other hand, the fact that immigrants and natives hold different types of jobs does not, by itself, prove that immigration's impact on native-born workers is small. Another possibility is that immigrants have driven native-born workers out of certain types of jobs. In addition, there turns out to be sufficient overlap in the occupations of immigrants and native-born workers that we would expect to see substantial labor market competition between them. For one thing, many native-born Americans do take less-skilled jobs. It is also worth remembering that a substantial fraction of immigrants seek high-skill jobs; for example, a larger proportion of immigrants have advanced degrees than do native-born Americans (Figure 1).

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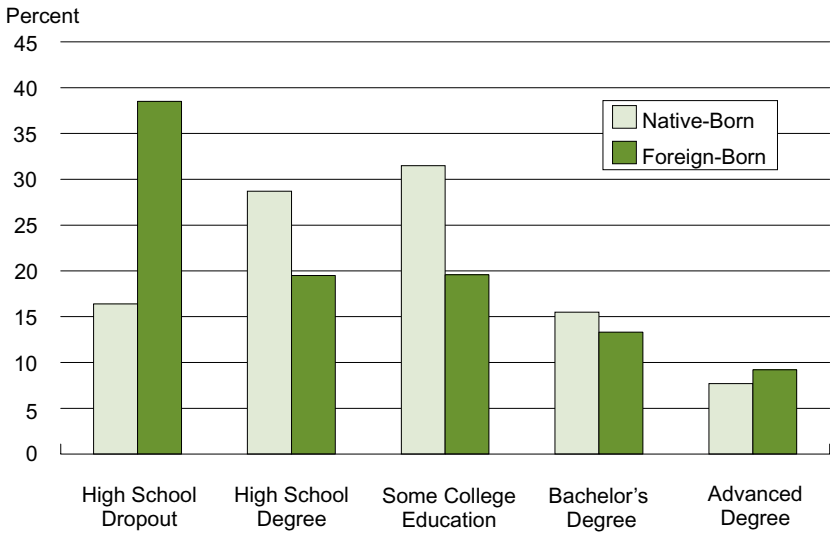
FIGURE 1

Skill Distribution of Working Age* Native-Born and Foreign-Born U.S. Residents, 2000



Data source: 2000 U.S. Census of Population.
*Age 16-65 and completed school, regardless of grade level attained.

[5] Tennessee Senator Lamar Alexander asked Greenspan this question in Greenspan's appearance before the Joint Economic Committee on April 21, 2004 (quote obtained from the *Congressional Record*). The larger question was how accurate official unemployment figures are. Greenspan is reported to have replied that getting information about how many illegal aliens are working in the U.S. has "bedeviled statisticians." The view that immigrants take jobs was expressed more explicitly by a labor department official testifying before Congress in 1973: "I think it is logical to conclude that if they [immigrants] are actually employed, they are taking a job away from one of our American citizens." (Quote from *Public Interest*, Winter 1975, and Ronald Ehrenberg and Robert Smith's labor economics textbook, p. 353.)

[6] Quote obtained from the Winter 1975 issue of *Public Interest*.

In addition, economists expect immigration to have a long-run impact only if the immigrants have a different mix of skills than native-born workers. To see why, suppose immigrants had the same mix of skills as natives. If so, immigrants could eventually be employed in a "replica" of the existing economy: skilled and unskilled workers would still perform the same tasks (and, hence, get paid the same wages) but would work in a proportionately larger economy.[7] If immigrants were disproportionately unskilled, in contrast, businesses in high-immigration markets might find it difficult to find productive tasks for all of them to do. As a result, they would be willing to hire immigrants only if wages for unskilled workers fell.

In reality, immigration tends to increase the relative number of less-skilled workers (Figure 1). (This is not true everywhere. Some markets attract a disproportionate number of high-skill immigrants.) Thus, in most cases, we expect immigration to reduce the wages of less-skilled native-born workers relative to the more skilled. If there are impediments to the adjustment of wages, such as minimum wage laws, we expect immigration to increase unemployment among less-skilled native-born workers.

Evidence. Returning to the question asked of Chairman Greenspan, it should be clear that we should not expect immigrants to displace native-born workers one-for-one. Instead, if economists' views are correct, labor market competition from immigrants will lead to some displacement and some fall in the relative wage rate of less-skilled native-born workers.[8] To test this view, researchers have exploited the fact that immigrants tend to locate in certain labor markets more than others. For example, of the 10 million working-age immigrants who came to the U.S. during the 1990s, over 40 percent settled in just 10 metropolitan areas (Table). In contrast, only 14 percent of native-born Americans live in those same metro areas. In the average of these top 10 metro areas, immigration in the 1990s amounted to 13 percent of the area's population, and in Miami, recent inflows amounted to over 20 percent of the population. In contrast, in other parts of the U.S., the immigrants who came during the 1990s made up less than 6 percent of the local population on average. If economists' view of immigration's impact on the labor market is correct, one might expect to find that relative wages are lower and unemployment rates higher for less-skilled workers in the high immigration areas.

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The evidence suggests that local labor market competition between immigrants and natives, while present, is not very strong (see *Does Immigration Harm the Labor Market Outcomes of Native-Born Workers?*). Economists find that wages and employment rates for less-skilled workers in an area do not fall by much in response to an immigrant inflow to that area. In a typical estimate, a 10 percent increase in the proportion of workers in an area who are less-skilled reduces the wages of low-skill workers relative to those of high-skill workers in the area less than 1 percent.[9] Even competition from immigrant workers in the same occupation seems to have little impact on the relative wages and employment rates of native-born workers in that occupation. In one study, economist David Card of the University of California-Berkeley, divided all occupations into six broad skill classes. He found that in the average metropolitan area, the wage in a given occupation class relative to the wage in other occupation classes was diminished only slightly by an unexpected inflow of immigrants seeking jobs in that class of occupations. The impact on the local unemployment rate was also small.[10]

[7] This ignores where the buildings and machinery to employ the immigrants would come from. In the short run, therefore, even this skill-balanced type of inflow could reduce wages and employment.

[8] The relative wage means the ratio of the average wage of less-skilled workers over the average wage of other types of workers.

[9] A 10 percent increase in the proportion of workers who are dropouts is not large in comparison to the variation across U.S. cities. For example, the proportion of workers in Los Angeles who are dropouts is roughly twice that in the rest of the nation.

[10] In a recent article, economist Madeline Zavodny examined the impact of *high-skill* immigrants. She demonstrated that immigrants admitted to the U.S. to fill positions requiring skilled workers (those with H1-B visas) have little impact on the wages and employment rates of native-born information technology workers in the states where they work.

Does Immigration Harm the Labor Market Outcomes of Native-Born Workers?

Does labor market competition from immigrants harm native-born workers? Most estimates indicate that immigration's overall impact on the labor market is positive (but small). This small impact essentially derives from the fact that immigrants tend to be disproportionately less skilled relative to native-born workers (Figure 1), so immigration tends to make skilled labor relatively "scarce," driving up the wage of the typical native-born worker.[a] On the other hand, less-skilled native-born Americans do potentially face labor market competition from immigrants, and the average impact hides the fact that immigration may harm less-skilled native-born workers while benefiting skilled workers.

Since many immigrants are relatively unskilled by U.S. standards, much (though not all) of the research on immigration's impact on the labor market has focused on measuring the impact of immigration on less-skilled native-born workers. Economists disagree about the size of this impact.[b] Harvard economist George Borjas found that over the past 40 years, periods of high immigration were associated with somewhat slower growth in the relative wages of native-born workers who have levels of education and work experience similar to the immigrants'. Borjas's argument says that the large influxes of less-skilled immigrants during the 1980s contributed to the fall in the wages of less-skilled workers in that decade. On the other hand, research that exploits the geographic variation in the volume of immigration (Table) consistently finds little association between changes in the density of immigrants in a locality and changes in the relative wages of less-skilled Americans in that locality.

A legitimate concern about comparing labor markets with different amounts of immigration is that job-seeking immigrants might choose to settle in markets where wages and employment are high or growing. If so, comparing changes in the wages of less-skilled workers (or unemployment) in areas that experienced high inflows of immigrants with other areas might understate immigration's true impact. (Wages might not be lower per se, but they might be lower than they otherwise would have been, something not easily observed.)

To get around this problem, economists have relied on the fact that not all immigrants settle in particular locations for economic reasons. Some come to settle with family, for example. When one attempts to study the impact of immigrants who settle in a particular location for "noneconomic" reasons, one still tends to find little local impact. A famous example of this is an investigation by David Card of what happened to the Miami labor market as a result of the influx of Cuban refugees during the Mariel boatlift. Miami is a traditional Cuban stronghold because of its closeness to Cuba, and the Mariel boatlift happened suddenly for reasons that had nothing to do with labor market conditions in the city.[c] Thus, the event provides a reasonable "experiment" to tell us what immigration does to a local labor market. Card found that the event had little adverse impact on the labor market outcomes of Miami's existing less-skilled workers, even though the Cuban refugees increased enormously the availability of less-skilled labor in Miami (and did so in a short period of time). To reconcile the finding of some national impact and little local impact, Borjas suggests that the impact of immigration is dispersed throughout the U.S., not merely limited to the particular markets where immigrants settle.

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[a] An additional impact comes from the fact that the native born are more likely to own "capital" – buildings and machinery – which also become relatively "scarce" with an influx of labor.

[b] More details can be found in the 1994 review by George Borjas and the review by Rachel Friedberg and Jennifer Hunt.

[c] A long-running political dispute between Fidel Castro, the Cuban exile community, and the Carter administration culminated in an announcement by Castro in early 1980 that Cubans were free to leave the island. Over 100,000 took him up on the offer.

IS IMMIGRATION'S IMPACT DISPERSED?

One possible reason for immigration's small impact on the local labor market is that its effect is dispersed throughout the country, including places where very few immigrants settle. This could happen in a combination of two different ways. First, competing native-born workers might move away from high-immigration areas to avoid job market competition. If they left, they would bring employment competition to their new destinations. Second, because goods and some services are traded between different locations in the country, competition between producers in different locations could force wages to be the same everywhere. If this were true, immigrants would not lower wages disproportionately in the particular markets in which they settle. They could, however, lower wages in the U.S. as a whole.[11] This view says local markets adjust to less-skilled immigrants by specializing in making goods that require an abundance of less-skilled labor (apparel, for example). Similarly, markets adjust to the arrival of skilled immigrant workers by specializing in goods and services that require an abundance of skilled labor. The result is that the local impact of immigration is small.

Native Flight. Native-born workers may resist local labor market competition from immigrants by moving away. When they relocate, they bring job competition to their new locations. In the extreme, any local wage decline induced by immigration disappears because native-born workers relocate to other areas until the wage paid in the high-immigration market and other locations is the same. If natives were mobile enough, immigration's impact on wages or employment would be spread across the U.S.

Though compelling in theory, in practice this seems unlikely to be how local labor markets adapt to immigration. For openers, evidence suggests that workers are slow to respond to changes in wages and unemployment rates in different locations. Two prominent economists, Olivier Blanchard of MIT and Lawrence Katz of Harvard, have studied whether workers respond to unexpected declines in employment in a state by moving out of the state. They find that workers are slow to respond. According to their estimates, unemployment remains higher and wages lower for up to eight years after an unexpected fall in employment in a state.[12]

> Recent debates about outsourcing make it clear that workers need not be physically located in an area for job competition to exist.

In addition, a number of researchers have investigated the question of whether native-born workers respond to immigration in their area by moving away. Some research shows that natives avoid high-immigration areas. An article by three Harvard economists (George Borjas, Richard Freeman, and Lawrence Katz) provides some support for this view.[13] However, their results turn out to be very sensitive to the method of estimation. Other examinations of this question whose results are less sensitive to the method of estimation tend to find little support. David Card and University of Michigan professor John DiNardo showed that during the late 1980s, native-born workers, if anything, had a slight tendency to relocate to the same metropolitan areas as the immigrants with whom they would be expected to compete for jobs.

Local Specialization. Recent debates about outsourcing make it clear that workers need not be physically located in an area for job competition to exist. Similarly, trade between locations within the U.S. can spread immigration's impact across the country without the need for workers to relocate.

To see how, let us take a theoretical example. Imagine that the arrival of less-skilled immigrants in some city lowered the wages of less-skilled workers in that city alone. As a result of lower wages, that city would be able to produce all goods more cheaply, giving it a competitive advantage in trade with other markets. The advantage would be strongest for those goods – such as textiles and apparel – for which the wages paid to less-skilled workers were a large part of the cost of producing the goods. The high-immigration city would thus be able to gain national market share in sales of such so-called less-skill-intensive goods, provided transportation costs or other barriers to trade were not substantial. (See *Factor Proportions Theory*.)

According to this theory, in the long run, immigration of less-skilled workers to a city brings about two changes. First, the cheaper goods com-

[11] In a more extreme version of this view, world competition would force wages to be the same in all countries. In this case, immigration does not affect wages even at the national level.

[12] Employment dynamics are similar in a small sample of metropolitan areas for which the authors can get data for several years.

[13] Support also comes from the work of University of Michigan demographer William Frey, who has written extensively on what he calls the demographic "balkanization" of the U.S. or the "new white flight."

Factor Proportions Theory

Markets that trade freely with one another will have the same wages in the long run, according to the factor proportions theory. This theory states that immigration should not have any local impact on wages. Instead, immigration to some location will induce firms in that location to make more of the goods that require a large proportion of the type of labor that immigrants disproportionately supply (usually less skilled). The additional goods are sold on the world market.

This theory has limitations. The first is that it holds only to the extent that goods and services are traded between markets.* Goods and services that cannot be sold outside the location in which they are made – house cleaning, for example, or child care – play no role. Barriers to the free exchange of goods between locations, such as the cost of transporting goods, make it harder for wages to be equalized by this mechanism. Finally, the theory may not hold if there are other differences between locations (besides the number of immigrants). Among other things, the theory requires that the technology used to produce goods in each location be the same.

As it turns out, there is little evidence that this theory describes how the world works in practice. It fails to correctly predict the patterns of trade between countries, for example, and its prediction that wages will become equal in all countries does not appear to be true. Barriers to trade and differences in technology across countries are held responsible for the failure. This has not stopped researchers from speculating that the theory should hold within the U.S., which may not be completely unreasonable: Differences in technology and barriers to the exchange of goods may be smaller within the U.S. than between countries.

To demonstrate that this theory could hold inside the U.S., two economists who specialize in trade, University of California-San Diego professor Gordon Hanson and Dartmouth professor Matthew Slaughter, showed that changes in the technology used by different industries were similar in several large U.S. states during the 1980s. They reasoned that since technological changes are similar in different locations, we can credibly infer that the U.S. economy is integrated enough for the theory to hold.

However, Hanson and Slaughter ignored differences in technological change across states that occurred equally in all industries before making the comparisons in their analysis. In her Ph.D. dissertation, Joelle Saad-Lessler demonstrated that these economy-wide differences in technological change are related to the changes in the skills of the state's workforce. My own research found a similar relationship in U.S. metropolitan areas: When the skills of workers in a metropolitan area change because of immigration, the area adapts by choosing a technology that can employ the new mix of workers at similar wages.

* A traded service is one that can be carried out in one location and used in another. For example, lawyers often work for clients outside their own labor market.

ing from the high-immigration city put downward pressure on the wages of less-skilled workers in other locations. After adjustment, the difference in wages between the high-immigration city and other locations disappears. Second, the high-immigration city becomes more specialized in sectors producing goods that require a lot of unskilled labor. In theory, these sectors expand just enough to employ all of the new less-skilled immigrants, and the additional output is sold to consumers in other locations.[14] Another interpretation of how a city adjusts to unskilled immigration, then, is that it "exports" the added labor to other locations in the form of goods that require a lot of unskilled labor.

Does the world actually work this way? Does immigration really induce local markets to produce more of the goods that use immigrants' skills intensively? To find out, in a recent paper, I looked at large metropolitan areas that were the top destinations for less-skilled immigrants during the 1980s (Los Angeles, Orange County, Fresno, Santa Barbara, Monterey, and Riverside in California, and Miami, Florida).[15] Immigration greatly increased competition for less-skilled jobs in these cities. The proportion of workers who were less skilled, measured by the proportion of

[14] It does not have to be the immigrants themselves who work in these sectors. Unskilled natives may move into these new jobs, while immigrants take other unskilled jobs.

[15] This list of cities is different from the "top 10" in the table, in part because it is a different decade – the 1980s, not the 1990s – and the top immigrant destinations can change somewhat from one decade to the next. In addition, many immigrants are high skilled, as I noted earlier, and the skill mix of immigrants going to different cities is different. For example, New York and Chicago received a smaller proportion of less-skilled immigrants than this list of cities. Cities on this list also received skilled immigrants – many Cubans in Miami are highly skilled, for example – but these cities are distinctive because they attracted an unusually large proportion of less-skilled immigrants during the 1980s.

workers who were high-school dropouts, increased in these cities over the 1980s. This includes both immigrants and the native born, but the change appears to have been driven mainly by immigration, since in other parts of the country, the proportion of workers not holding a high-school diploma fell dramatically.

Labor market outcomes for less-skilled workers did not worsen disproportionately in these high-immigration cities. The wages and employment rates of less-skilled workers relative to skilled workers fell in these cities during the 1980s, but this occurred in almost equal magnitude in other parts of the country.[16] This leaves open the possibility that the impact of immigration in these cities was dispersed to other parts of the country.

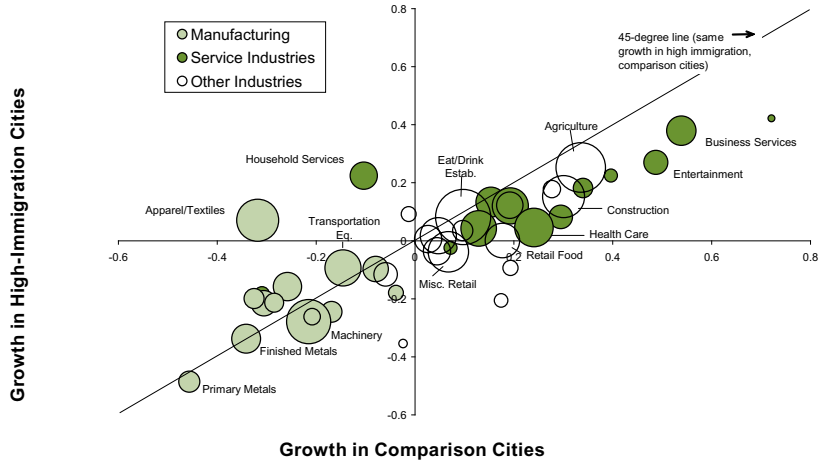
To find out if the high-immigration cities adjusted to immigration by specializing in making goods that require a lot of unskilled labor, we must first know how the high-immigration cities' mix of industries would have changed had the immigrants not come. I inferred this by looking at a group of comparison cities that did not receive so many less-skilled immigrants during the decade, but otherwise, the group was similar to the high-immigration cities at the beginning of the decade. In particular, the comparison cities had a mix of industries similar to that in the high-immigration cities in 1980. They also had workers with a similar skill mix and a similar unemployment rate for less-skilled workers (around 13 percent for high-school dropouts) in 1980.[17]

We can see how the industry mix of the high-immigration cities changed relative to that of the comparison cities during the 1980s (Figure 2). Each circle in the figure plots the growth in the employment share of an industry in the high-immigration cities (vertical axis) against the growth in the employment share of the same industry in the comparison cities (horizontal axis). All of the circles would be plotted on the diagonal line if each industry grew by the same amount in both groups of cities. Circles above the line grew by more in the high-immigration cities than in the comparison cities; circles below the line grew by less in the high-immigration cities than in the comparison cities. The size of the circle shows the proportion of all high-school dropouts the industry employed in 1980. Large circles represent industries that employed a large percentage of less-skilled workers; for example, eating and drinking establishments employed 9 percent of high-school dropouts in 1980.

Notice that most of the points in Figure 2 are near the diagonal line, indicating that the industries grew by the same amount in both sets of cities. However, there are some interesting outliers. Apparel and textiles grew much more rapidly in the high-immigration cities than in the comparison cities. This difference was so large that the apparel and textiles industries grew in the high-immigration cities, but they declined 30 percent in the comparison cities. This seems to fit with the specialization story: Apparel and textiles both use less-skilled labor intensively. On the other hand, apparel and textiles are not, by themselves, large enough to absorb many less-skilled workers (even

FIGURE 2

Not Much Specialization — Industry Growth in High-Immigration and Comparison Cities, 1980s



Notes: Each circle represents a broad industry and is proportional in size to the share of high-school dropouts employed in that industry in 1980 (in the high-immigration cities). What is plotted is the growth in each industry's employment share. Data source: 1980,1990 Census of Population.

[16] During the 1980s, the wages of low-skill workers relative to high-skill workers fell 22 percent in the high-immigration cities, 20 percent in the comparison cities, and 26 percent in the U.S. as a whole. Economists have hotly contested why wages for less-skilled workers fell in the U.S. during the 1980s. Explanations include technological change, immigration, competition from developing countries, decline in unionization, and a fall in the real value of the minimum wage.

[17] For the curious, the comparison cities include three western cities (Oakland, CA; San Diego, CA; Portland, OR) five northeastern cities (Bergen-Passaic, NJ; Newark, NJ; Nassau-Suffolk, NY; Somerset, NJ; Philadelphia, PA), three midwestern cities (Kansas City, MO; St. Louis, MO; Cincinnati, OH), and one southern city (Nashville, TN). Most of these cities also attracted substantial numbers of immigrants during the 1980s, but the impact on the skill mix of their workers was considerably smaller.

when the industries grow a lot). Other industries that are just as large (note the circle sizes) as apparel and textiles – such as machinery or agriculture – were either not growing or were declining.

Another interesting outlier is household services, for example, house cleaners or nannies. This industry is a fairly large employer of less-skilled workers, particularly immigrants, and just like apparel and textiles, it grew in the high-immigration cities but declined elsewhere. However, household services are different from apparel and textiles in an important way: They can only be performed locally, but apparel and textiles can be sold to consumers in other markets. So although household services may have absorbed a disproportionate share of less-skilled immigrants, the expansion of this sector cannot help disperse the impact of immigration to other locations.

Broader evidence supports the result illustrated in Figure 2. I also examined adjustment in a larger number of metropolitan areas (179), and the adjustment to both high-skill and low-skill immigrants. In a typical metropolitan area I found that specialization could have absorbed no more than 10 percent of changes in the local skill mix that immigration generated.

A second investigation confirmed these results. This study examined how Miami adapted to a sudden influx of mostly unskilled Cuban refugees during the Mariel boatlift of 1980. Miami's experience after the boatlift is an important case study because the timing of these immigrants' arrival had nothing to do with labor market conditions in Miami. The event led to a large and unexpected increase in the proportion of unskilled workers in the Miami labor market. A study by David Card demonstrated that the Miami labor market adapted quickly to the event. The relative wages of Miami's existing less-skilled workers did not fall as a result of the boatlift. (See *Does Immigration Harm the Labor Market Outcomes of Native-Born Workers?*)

Did Miami specialize? Again, the evidence suggests the answer is no. Though there were many changes in Miami's manufacturing mix after the boatlift occurred, the changes look quite similar to those in comparable cities.

All in all, it appears that specialization is not a big part of how local labor markets in the U.S. adapt to immigration. But a puzzle remains – if not through specialization, or native flight, how else might local markets be adapting?

ADAPTING TECHNOLOGY TO THE SKILL MIX

The theories considered thus far have been largely unhelpful in explaining how local labor markets in the U.S. adjust to influxes of immigrants. One explanation that shows some promise is that localities change their production methods or "technology" to accommodate employment of immigrants.

Usually, several technologies can be used to produce the same good. Cars, for example, can be produced using automated assembly lines with robots or a more traditional assembly line with workers trained in particular tasks. The latter technology requires more manual labor, and the former requires skilled workers to design and operate the automated process.

There is some evidence that firms adjust to immigration by switching to a technology that requires more unskilled labor. For example, in the high-immigration cities examined in Figure 2, the ratio of unskilled to skilled workers rose 10 percent over the 1980s.[18] A wide variety of industries in these cities responded by raising the unskilled/skilled ratio of their own workers nearly 10 percent. This suggests industries in the high-immigration cities made use of a technology that could make productive use of more unskilled labor: Unskilled relative wages hardly fell as a result of the change.

Computer technology may help localities adjust to changes in worker mix. Research by economists at MIT has shown that skilled workers use computers to perform repetitive tasks that used to be carried out by less-skilled co-workers before the adoption of computers.[19] My own research shows that during the 1980s, computers were added more slowly in workplaces located in areas where the availability of unskilled labor remained relatively high. For example, the Mariel boatlift seems to have slowed the adoption of computers by skilled workers in Miami workplaces. Miami employers apparently chose to hire workers from the expanded local pool of less-skilled labor and invest less in computers. This could be one reason that wages of less-skilled workers did not fall in Miami after the boatlift. The importance of this should not be overstated; computers are but one of many technologies firms use.[20] However, the idea that flexible technology choice helps U.S. labor markets adapt to immigration seems a promising avenue for further investigation.

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[18] During this same period, rising levels of schooling among younger generations of workers caused the ratio of unskilled to skilled workers to fall 40 percent in other parts of the U.S. Thus, by the end of the decade, the cities in Figure 2 had a vastly different mix of workers than other U.S. cities.

[19] See the article by David Autor, Frank Levy, and Richard Murnane.

[20] Popular usage notwithstanding, economists use "technology" to mean more than modern machinery. Technology also includes such things as how the workplace is organized and which types of workers are assigned particular tasks.

CONCLUSION

U.S. labor markets are currently absorbing immigrants at a rate unprecedented in recent history. Despite the heavy concentration of immigrants in certain labor markets, whatever harm immigrant competition does to the wages and employment rates of native-born workers in those markets appears to be small. There is also little evidence that immigration's impact has been dispersed across the U.S. through either natives moving out of high-immigration areas or indirect downward pressure on wages transmitted through the price of goods coming from high-immigration areas. How local labor markets adjust to immigration is not yet clear, but preliminary research suggests that the choice of technology may have an important role.

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