



Gone to Texas: Migration Vital to Growth in the Lone Star State

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ABSTRACT: Texas has relied on a large and sustained influx of workers from other states and other countries. These transplants—making up nearly half of the state’s workforce—account for an even larger share of Texas’ growth than their relative numbers. Significantly, this inflow brought the types of workers most in demand.

With nearly half of its workers born outside the state, Texas depends on—and is shaped by—migration. For most of its history, Texas has relied on migration to populate its expansive landmass and power its economy.

It wasn’t always easy to attract people. In the beginning, land grants and other enticements were used to lure settlers. Admittedly, the spirit of enticements has lived on; the state continues working hard to be welcoming—it can be argued that maintaining low taxes, less regulation and an accommodating business climate helps attract people and firms.

In addition to bringing in outsized numbers of migrants, the state also retains its existing residents. Texas is by far the “stickiest” state in the nation with over 82 percent of those born in the state remaining here.

Since 2000, natural increase and net migration have contributed roughly equal parts to the state’s population

growth—about 210,000 on average per year for natural increase, another 200,000 for net migration (*Chart 1*). The state’s 1.8 percent average annual population growth is about double the nation’s 0.9 percent.

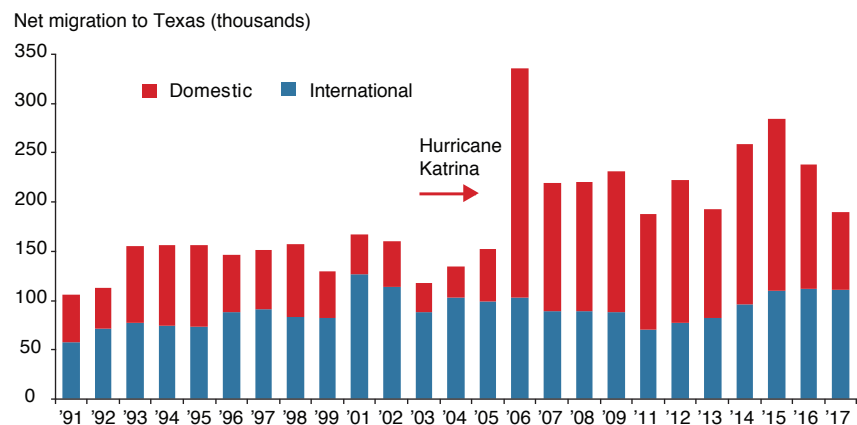
Although the state grows faster and is currently slightly younger than the rest of the nation, the trajectory of aging in Texas resembles that of the U.S. By 2050, about 20 percent of the population will be 65 or older, the highest share in the state’s history.¹

Population growth and aging are important because they largely determine the growth of the workforce, which helps set the speed limit of economic growth. An economy can grow by adding workers and/or by workers becoming more productive. Migration plays an important role in productivity; by channeling the right workers to the right jobs, migration makes labor markets more efficient.²

States typically don’t differ much from one another in terms of produc-

CHART 1

Migration to Texas Reaches Record Highs After 2005



NOTES: Census Bureau population estimates approximate the population on July 1 of the year indicated and, thus, capture changes from the previous year. Data are not available for decennial census years, 2000 and 2010. SOURCE: Census Bureau.

tivity growth, but they tend to differ greatly with respect to population growth, especially migration. These patterns can also reverse themselves quickly. For most of the 20th century, international and domestic migrants streamed into California in a seemingly endless flow. International immigrants still do, but in every year since 1991, net domestic migration to California has been negative, with a significant share of Golden State residents leaving for Texas.

Rapid economic growth for most of the last four decades has been the key factor attracting people to Texas.³ Diversification of the state's economy in the 1990s, following the mid-1980s oil bust, provided a powerful and steady jobs magnet, creating sustained economic opportunity for millions. Employment in the state grew from 7.2 million jobs in 1990 to 12.4 million at year-end 2017. Gone are the drastic oil-led swings that used to throw the state economy alternately into booms and busts.⁴ The energy sector remains key, but consistent and robust service sector growth has muted its fluctuations.

Texas was the nation's ninth-fastest-growing economy in 2017, behind most western states. The state's diversified economic base and resurgent oil and gas sector portend a bright economic

outlook. That said, with the unemployment rate already at a historic low, the economic challenge may not be creating jobs, but filling jobs.

Domestic Migration

Migration between the 50 states (and the District of Columbia) is typically referred to as domestic migration.⁵ States can be net recipients or net senders of domestic migrants. In the postrecession period—2010 to 2017—Texas was the recipient of 920,000 net domestic migrants, equal to 3.6 percent of the state's 2010 population (*Map 1*).⁶

Texas was the second-largest net recipient of domestic migrants after Florida; North Carolina was third and Arizona fourth. Many of Florida's arrivals have historically been retirees. As a percentage of population, Texas was the 12th largest net recipient destination after North Dakota, South Carolina, Nevada, Florida, Colorado, District of Columbia and other less-populous states in the Mountain West and Northwest.

The patterns in the map reflect longstanding regional population growth trends, with little or no growth in the Midwest and Northeast states but substantial expansion in the South, Mountain West and Northwest.

Domestic migrants to Texas tend to come from two types of states—large and populous states, such as California and Florida, and neighboring states, principally Louisiana and Oklahoma.

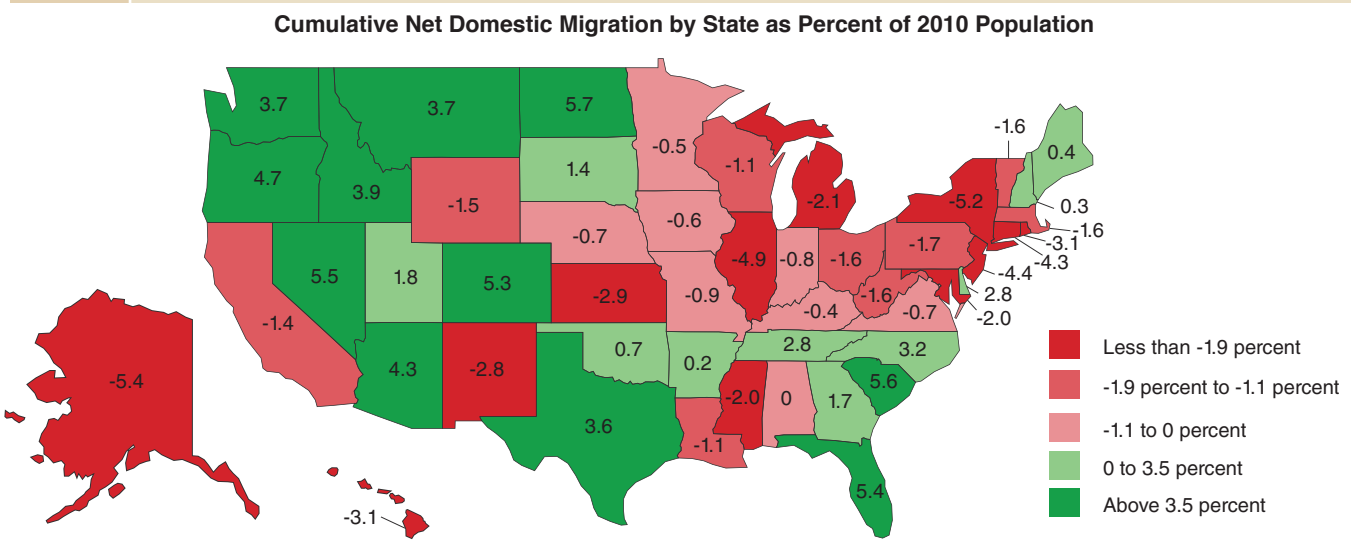
In the postrecession period, 12 percent of domestic migrants to Texas came from California, followed by Florida (6 percent) and Oklahoma and Louisiana (both 5 percent) (*Chart 2*). Unlike the map's depiction, these are gross (not net) measures of migration. Migration from populous states in part reflects their larger populations; California is 12 percent of the U.S. population, so it's not surprising that 12 percent of migrants to Texas come from there.

Gross migration from neighboring states, meanwhile, is likely overstated because it captures significant cross-border activity.

What motivates domestic migration? Surveys such as the Current Population Survey ask people who moved why they did so. Just over half of cross-state movers to Texas relocated for a job (53.1 percent), another 24 percent for family reasons and 20 percent for cheaper housing or other amenities such as a shorter commute.⁷

Among domestic migrants who chose a state other than Texas, 43 percent said

MAP 1 Among Most-Populous States, Domestic Migration Additive in Only Texas, Florida



NOTE: Chart labels show accumulated net domestic migration from July 2010 to July 2017 as a percent of population in 2010. SOURCE: Census Bureau.

they moved for employment, 27 percent said for family reasons, and 24.5 percent said they relocated for cheaper housing or other amenities.

Employment opportunities in Texas are a clear draw. Besides adding jobs at a rapid clip, employment growth in the state has been widespread across industries and has required a wide skill distribution. Since the end of the Great Recession, every major industry has added jobs, led by 35 percent gains in professional and business services, 22 percent in construction and 33 percent in leisure and hospitality.⁸

Dividing the economy into quarters based on wage rates during the 2010–15 economic expansion, Texas' lowest-paying jobs (with hourly wages below \$10) grew 10 percent, while the two highest-paying job quartiles expanded 12 and 18 percent (with hourly wages starting at \$16 and \$27, respectively).⁹ The rates of growth for the nation were lower across the board: 8 percent in the lowest-paying quartile, and 6 and 10 percent, respectively, in the two highest-paying quartiles.

Texas job growth was weakest among the lowest paid, in the first quartile. For the U.S., growth was weakest in the upper-middle wage quartile—jobs paying \$18 to \$29 per hour rose 6 percent over the five years.

In addition to robust labor markets, Texas has traditionally offered a lower cost of living than other large states, although that advantage has recently eroded as house prices and rents have surged in cities such as Dallas and Austin. Nevertheless, the cost of living in Texas is still about 9 percent below the U.S. average and 19 percent below that of the nation's other nine largest states.¹⁰

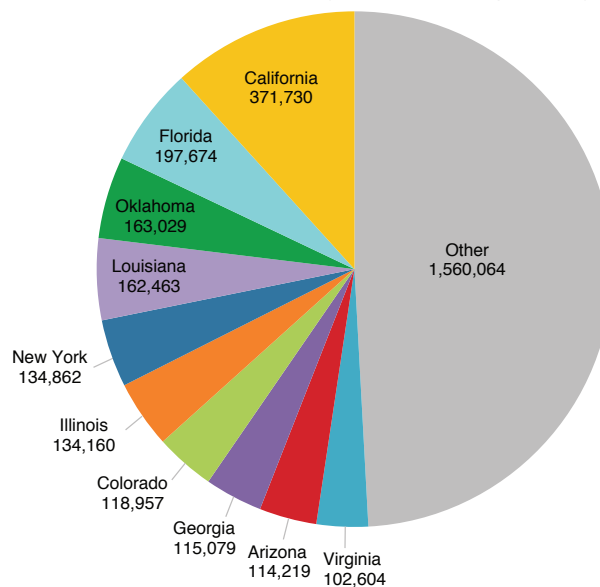
The tax burden is also lower in Texas than in other large states; though there is no state income tax, property taxes are relatively high.¹¹ With lower taxes come fewer services, a trade-off that migrants to Texas must consider before making the move.¹²

Workers may follow firms that move to the state, or firms may follow workers. Whichever the case, firms move

CHART 2

Domestic Migrants to Texas Come from Variety of States

Cumulative Gross Domestic Migration to Texas by Sending State



NOTE: Pie-slice labels show total number of movers from sending state to Texas from 2011 through 2016.
SOURCE: American Community Survey, 2011–16.

for many of the same reasons workers do—to maximize current and future earnings. Firms move for growth potential, including available high-skilled and low-skilled labor; cheaper real estate; and ease of doing business. The latter might include everything from proximity to airports and ground transportation to the ability to build new plants and hire and fire workers.

In 1996, there were 37 Fortune 500 companies headquartered in Texas; today there are 52. The most recent transplants include Jacobs Engineering and Toyota's North American headquarters—both relocating to the Dallas area from California.¹³ Firms also report moving for proximity to a supply chain or for a more central location.

International Migration

Migration into the 50 states from another country is typically referred to as international migration or immigration. While states could be net recipients or net senders of international migrants, each U.S. state receives more migrants from abroad annually than it does mi-

grants who leave. The U.S. remains the world's No. 1 immigrant destination.

Texas was the recipient of 660,000 net international migrants—about 2.6 percent of the state's 2010 population—from 2010 to 2017 (*Map 2*).¹⁴ In absolute terms, Texas was the fourth-largest recipient of net international migrants after California, Florida and New York. It bears noting that census and Bureau of Labor Statistics data include both legal and illegal immigration; population surveys make a point not to ask about legal status in order to obtain an accurate count.

The influx from abroad helps California and New York offset net domestic outmigration. Their populations would not grow were it not for immigrants. Florida also receives a large number of international migrants, about 127,000 (net) per year, but like Texas, it also attracts domestic migrants.

In percent terms, Texas was the 12th-largest net recipient of international migrants. Florida, District of Columbia, New York and Massachusetts were the top four net recipients.

There has been an interesting change in the relative magnitudes of domestic and international migration to Texas. From the 1990s through the mid-2000s, international migration to Texas typically exceeded domestic migration. Then, domestic migration rose sharply, from 55,000 annually before 2005, to nearly 135,000 in the years since then. Before 2005, international migrants numbered about 87,000 per year. Since 2005, they have averaged about 94,000 annually.

It's notable that international migration to the country and the state declined immediately after the Great Recession and only slowly picked up. The biggest change was a decline in illegal immigration; migrant apprehensions along the Southwest border have declined 75 percent from their peak of 1.6 million in 2000.

Arrivals from Mexico have historically dominated immigration to Texas. Willing workers have provided a steady stream of new hires for more than 100 years. Many individuals in recent decades came as undocumented immigrants.

This longstanding immigration pattern changed in the postrecession

period, with surging Central American immigration assuming a larger role. Still, about 52 percent of the foreign-born population in Texas is from Mexico. Other growing flows include high-skilled immigrants from India, China and South Asian nations. Nevertheless, Mexican inflows remain the largest, comprising one-quarter of total inflows after 2010 (*Chart 3*).

Besides those of Mexican origin, other large groups in Texas are Central American (8 percent of the state's foreign-born population), Indian (7 percent) and Chinese (3 percent). The total undocumented population in Texas is an estimated 1.65 million, about 6.1 percent of the state's population, with large shares from Mexico and Central America.¹⁵

Among the undocumented in the postrecession period, about 120,000 Texas immigrants came as children and obtained Deferred Action for Childhood Arrivals (DACA) status.¹⁶ Other immigrants targeted by recent policies include those with Temporary Protected Status (TPS), including 36,300 Salvadorans and 8,500 Hondurans in Texas.¹⁷ Amid federal moves to strip legal status from both DACA and TPS

groups, it is likely Texas' undocumented immigrant population will increase.

Education, Skills

Migrants are an important source of labor and skills. Migrants typically come "ready to work" with their education completed when they arrive. When the inflow of migrants is highly skilled, this relocation is sometimes referred to as "brain drain" for the origin state and "brain gain" for the destination state.

Migrants into Texas are much more likely than the general population to have a college degree or higher (*Chart 4*). This suggests the state is filling its need for high-skilled workers with migrants, relying on a brain gain.

International arrivals have a bimodal distribution; they are disproportionately concentrated at the low and high ends of the education distribution. Almost one-quarter of new international arrivals lack a high school diploma, while 43 percent have a college degree or higher.

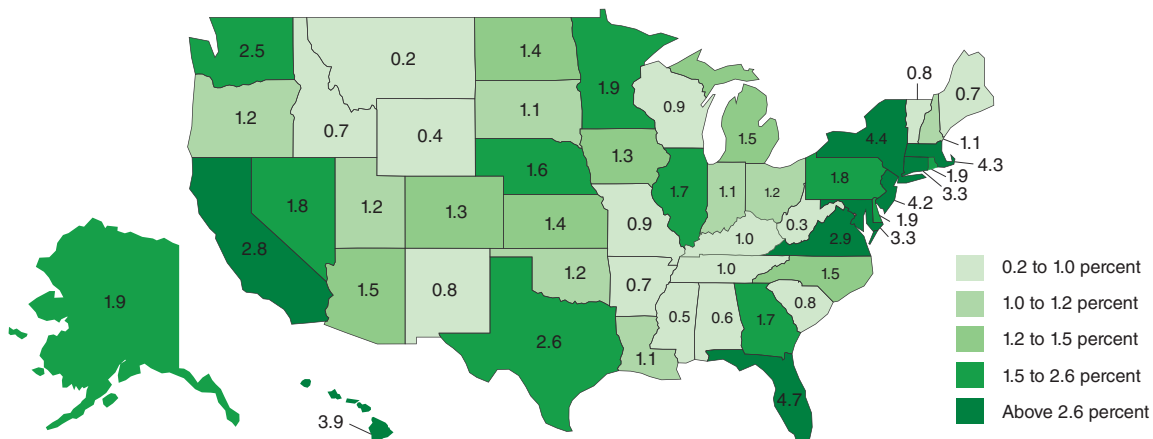
Domestic migrants are far less likely to be low-skilled and far more likely to be high-skilled individuals than the existing Texas population.

Which states are the sources of high-skilled domestic migrants? Domestic

MAP 2

International Migration Most Aids Populous Coastal States

Cumulative Net International Migration by State as Percent of 2010 Population



NOTE: Chart labels show accumulated net international migration from July 2010 through July 2017 as a percent of population in 2010. SOURCE: Census Bureau.

transplants to Texas from New York, Illinois and Georgia are the most educated (Chart 5). Among migrants age 25 and older who moved from New York to Texas since 2010, 51 percent had a bachelor's degree or higher compared with the native Texan population in which 27 percent had at least a bachelor's degree.

The least-educated domestic migrants to Texas come from Louisiana, New Mexico and Oklahoma. Nearly three-quarters of recent arrivals from Louisiana and about two-thirds from Oklahoma have no bachelor's degree. Some of these workers are likely employed in the energy sector, and while they may lack college degrees, they often have technical certificates, vocational degrees and valuable work experience.

Among international migrants, the least educated are from Mexico and Central America (Chart 6). This should not be surprising; educational attainment is relatively low in these countries overall.

The most educated international immigrants to Texas are from India—76 percent have a college-or-higher degree—followed by China, Korea and Canada.

High-skilled immigrants tend to work in the science, technology, engineering and math (STEM) fields or in the health care sector. Low-skilled immigrants tend to work in construction, agriculture, domestic service, building janitorial services and food preparation. In Texas, 54 percent of construction laborers, 56 percent of gardeners, 63 percent of painters and 63 percent of housekeepers are foreign born.

Labor Market Outcomes

Texas attracts migrants largely because of its strong economy. As a result, migrants tend to do relatively well in the labor market. Texas immigrants have higher labor force participation rates and significantly lower unemployment rates than immigrants elsewhere in the country (Table 1).

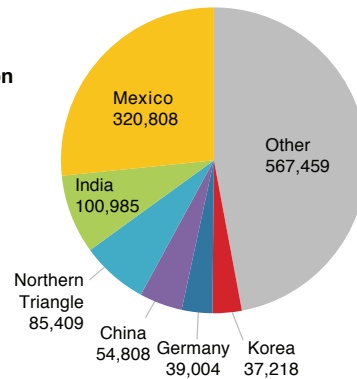
Texas natives also tend to outperform natives elsewhere in the country.

The relative strength of the Texas economy in the aftermath of the Great

CHART 3

Mexico Accounts for More than a Quarter of International Migration to Texas

Cumulative Gross International Migration to Texas by Country of Origin



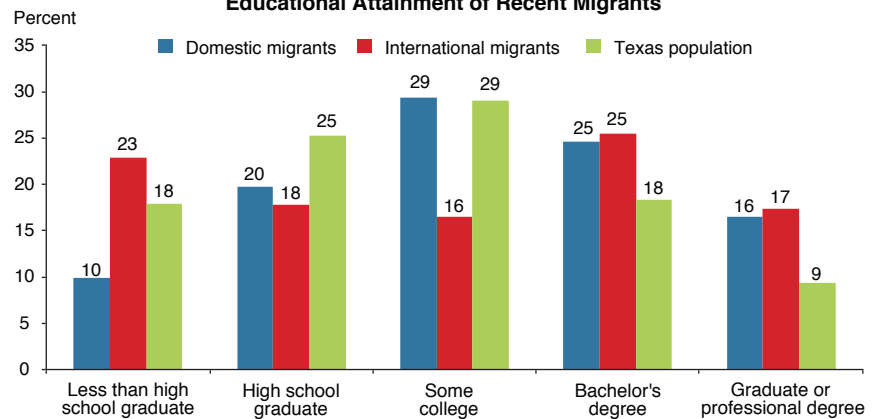
NOTES: Pie-slice labels show total number of movers from sending region to Texas from 2011 through 2016. Northern Triangle is El Salvador, Guatemala and Honduras.

SOURCE: American Community Survey, 2011–16.

CHART 4

New Arrivals a Key Source of Skilled Workers for Texas

Educational Attainment of Recent Migrants



NOTE: Calculations include individuals age 25 and over who moved to the state during the 12 months prior to being surveyed.

SOURCE: American Community Survey, 2011–16.

Recession accounts for much of the difference. From the onset of the U.S. recession in December 2007 through year-end 2017, employment grew about 17 percent in Texas versus about 7 percent in the U.S. overall.

Notwithstanding differences between Texas and the rest of the nation, immigrants also compare very favorably with U.S. natives within the state. As shown in Table 1, even among the lowest skilled, immigrants are nearly 50 percent more likely to be in the labor force and working and, conversely, are one-

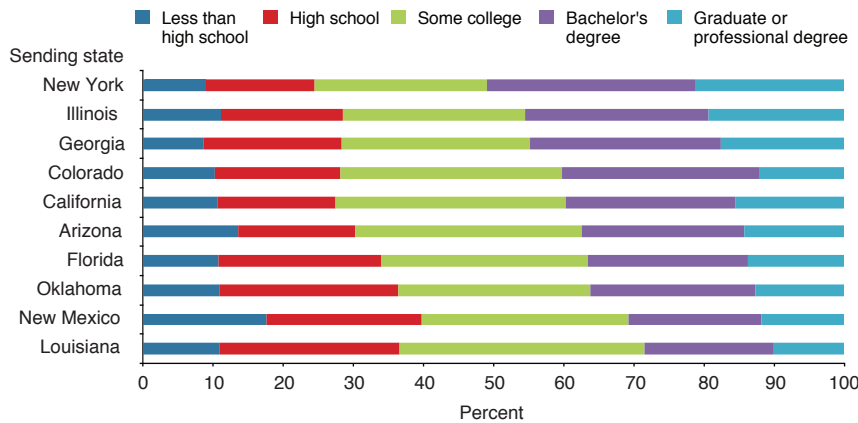
third as likely to be unemployed relative to similarly educated U.S. natives.

Lower Immigrant Earnings

Immigrants' overall earnings tend to fall short of those of natives, whether in Texas or not, since immigrants have less education, and English is typically not their native language. Median weekly earnings among Texas immigrants in 2017 were \$608, while immigrants elsewhere in the U.S. earned \$700, as shown in the next to last row in Table 1. U.S. natives' \$885 pay in Texas

CHART 5

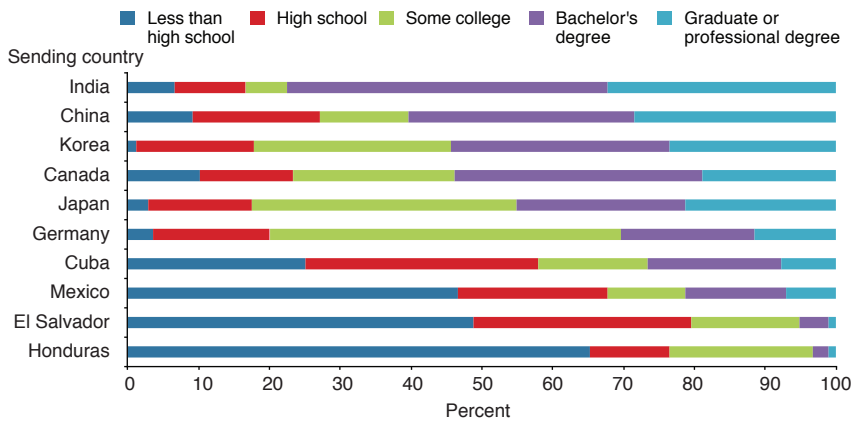
Domestic Migrants' Educational Attainment by Sending State



NOTES: Chart shows education levels of migrants age 25 or older who moved in the past year from each state to Texas. Included are the top 10 states by total population over age 25, whose residents moved to Texas in the past year. SOURCE: American Community Survey, 2011–16.

CHART 6

International Migrants' Educational Attainment by Birth Country



NOTES: Chart shows education levels of immigrants age 25 or older who moved in the past year from each country to Texas. Included are the top 10 countries by total population over age 25, whose residents moved to Texas in the past year. SOURCE: American Community Survey, 2011–16.

exceeded natives' earnings in the rest of the U.S.—\$865.

Since educational attainment is such a strong determinant of earnings, it is instructive to hold education constant and compare earnings for a given education group. Interesting patterns emerge.

Despite large-scale, low-skilled immigration to Texas, Texas immigrants who have not completed high school actually earn slightly more than their counterparts in the rest of the country and just as much as similarly educated U.S. natives in Texas. This is surprising because most of these low-skilled im-

migrants are likely undocumented.

In the education categories of high school and higher, Texas immigrants tend to earn slightly less than their counterparts elsewhere in the country and less than U.S. natives within the state. This may reflect a lack of English proficiency, less U.S. labor market experience or a form of occupational downgrading that sometimes happens when professionals move and their credentials transfer imperfectly. Discrimination could also play a role.

Comparing earnings or incomes across different parts of the country is

complicated by cost-of-living differences. Accounting for the lower cost of living would lift the relative earnings of Texans vis-à-vis workers in the rest of the U.S.

Economic Effects of Migration

Migration helps power and grease the regional economy's engines.¹⁸ First, migration increases the labor force, enlarging the local economy and increasing output as measured by the gross domestic product (GDP). In 2016, domestic migrants to Texas made up about 25 percent of the state labor force.¹⁹ International migrants constituted 23 percent of the state's workers. Taken together, nearly five out of 10 Texas workers today were not born in Texas (but got here as soon as they could).

It's not just the volume of migration that's important. The economic effect of migration also depends on who comes and the skills they bring. Texas benefits from the brain gain through migrants' disproportionate educational attainment—the large number with a college degree or more. Of course, with so much migration from Mexico and Central America, another concentration is at the other end of the spectrum—the lowest-skilled workers.

The bimodal education distribution of immigrants maps into similarly bimodal sets of occupations that immigrants fill. Because high-skilled immigrants are far more likely to have STEM degrees than college-educated natives, they tend to fill jobs in those sectors, as well as in the health professions—doctors and nurses.

About 46 percent of college-educated immigrants hold STEM degrees compared with 28 percent of college-educated U.S. natives.²⁰ Top occupations for high-skilled immigrants to Texas include medical scientists (59 percent are foreign born), computer software developers (45 percent) and engineers (33 percent). Many of these high-skilled individuals enter the U.S. on temporary, employment-based H-1B visas. Dallas has one of the heaviest concentrations of H-1B holders among major cities.²¹

Research has linked increases in

the science and engineering workforce to higher productivity growth. One study estimates over half of total factor productivity growth in the U.S. is attributable to greater numbers of scientists and engineers, a proxy for research and development intensity.²² Immigrants made up the majority of the increase in the STEM workforce in the past two decades, so it follows that high-skilled immigrants have accounted for a significant share of recent U.S. productivity growth.

This conclusion is bolstered by evidence of immigrants' direct contributions to patenting and other innovative activity, including entrepreneurship. One study finds that immigrants pat-

ent new products at double the rate of U.S. natives, a difference explained by immigrants' overrepresentation in STEM occupations.²³ There is also some evidence of positive spillovers in patenting among U.S. natives. Another study finds that increases in H-1B visas significantly raise patent activity by immigrants without reducing patenting among natives.²⁴

According to economic theory, as long as migrants differ from locals—which they do to varying degrees—specialization occurs. This is particularly apparent in the case of international immigration. For example, one recent study shows that less-educated U.S. natives have a comparative advantage

in communications-intensive jobs, whereas less-educated immigrants have a comparative advantage in manual-labor jobs.²⁵

Highly educated U.S. natives have a comparative advantage in interactive and communications-intensive jobs; highly educated immigrants have a comparative advantage in quantitative and analytical jobs.²⁶ Specialization increases efficiency, which allows more output to be produced with fewer resources. This boosts labor productivity, raising GDP.

Immigration also leads to lower prices for the goods and services immigrants produce, as well as higher returns on investors' capital and land.

TABLE 1

Labor Market Outcomes of Immigrants and Natives in Texas, U.S.

	Texas		Rest of U.S.	
	Immigrants	U.S. natives	Immigrants	U.S. natives
Labor force participation (%)				
Less than high school credential	61.3	42.2	58.1	35.4
High school credential	67.3	59.4	65.5	56.0
Some college	75.9	65.9	69.8	65.2
Bachelor's degree	70.9	74.3	70.2	74.0
Graduate/professional degree	77.5	79.3	77.6	74.0
All groups	67.9	65.5	67.1	63.5
Unemployment rate (%)				
Less than high school credential	2.4	7.4	5.1	8.5
High school credential	2.9	5.3	4.0	4.8
Some college	2.5	3.7	3.8	3.9
Bachelor's degree	2.0	2.6	3.5	2.3
Graduate/professional degree	2.5	1.9	2.7	1.9
All groups	2.5	3.8	3.9	3.6
Median real weekly earnings				
Less than high school credential	\$484	\$484	\$480	\$486
High school credential	\$576	\$701	\$582	\$677
Some college	\$641	\$725	\$679	\$742
Bachelor's degree	\$1,013	\$1,109	\$1,063	\$1,114
Graduate/professional degree	\$1,402	\$1,286	\$1,519	\$1,367
All groups	\$608	\$885	\$700	\$865
All groups (including ages 16–24)	\$605	\$775	\$675	\$770

NOTES: All data refer to January–October 2017. Median weekly earnings are deflated to October 2017 and are conditional on being employed, over age 24, with positive earnings. SOURCE: Current Population Survey (CPS) Merged Outgoing Rotation Groups (MORG).

In cases where immigrants and U.S. natives are complements, lower prices can have far-reaching effects. For example, research shows the immigration-induced decrease in the cost of child care and housekeeping has significantly increased the labor supply of highly educated native women.²⁷

Have jobs for immigrants to Texas come at the expense of opportunities for Texas natives? It doesn't appear so. The aggregate data do not indicate any obvious effect on natives' employment or wages. Immigrants accounted for about 40 percent of state labor force growth between 2000 and 2017.²⁸

During that period, the number of employed U.S. natives living in Texas increased by 1.7 million. The number of employed immigrants living in the state increased by a slightly smaller number. In other words, immigrants and U.S. natives alike gained jobs in Texas. Meanwhile, the Texas unemployment rate fell below the national rate in 2007, remaining there and reaching a historic low at under 4 percent in 2017.

It also doesn't appear that the migrant influx depressed Texas wage growth, which was identical to the

nation's 26 percent increase in average hourly wages from 2010 to 2017.²⁹ Moreover, pay for the lowest-skilled workers, as shown in Table 1, is as high or higher in Texas than elsewhere among both immigrants and natives despite the disproportionately high volume of low-skilled migration to the state and a state minimum wage set at the \$7.25 per hour federal rate. Most other large states exceed the federal minimum standard.

Research on the labor market impacts of immigration tends to find a small but significant adverse wage effect on low-skilled natives who compete directly with foreign workers. However, if there are bottlenecks that constrain growth in a region—such as a lack of workers in rapidly growing industries—then worker inflows can actually accelerate growth, stimulate investment and mitigate any negative effects on natives. This appears to be more in line with the Texas experience.

Fueling Future Growth

Texas' economic prowess has relied on a large and sustained influx of workers from other states and other countries. These transplants account

for an even larger share of Texas' growth than their relative numbers. More importantly, because so much of this inflow was employment related, it naturally brought the types of workers most in demand, whether it was construction and oil field laborers, computer engineers, medical scientists or college professors.

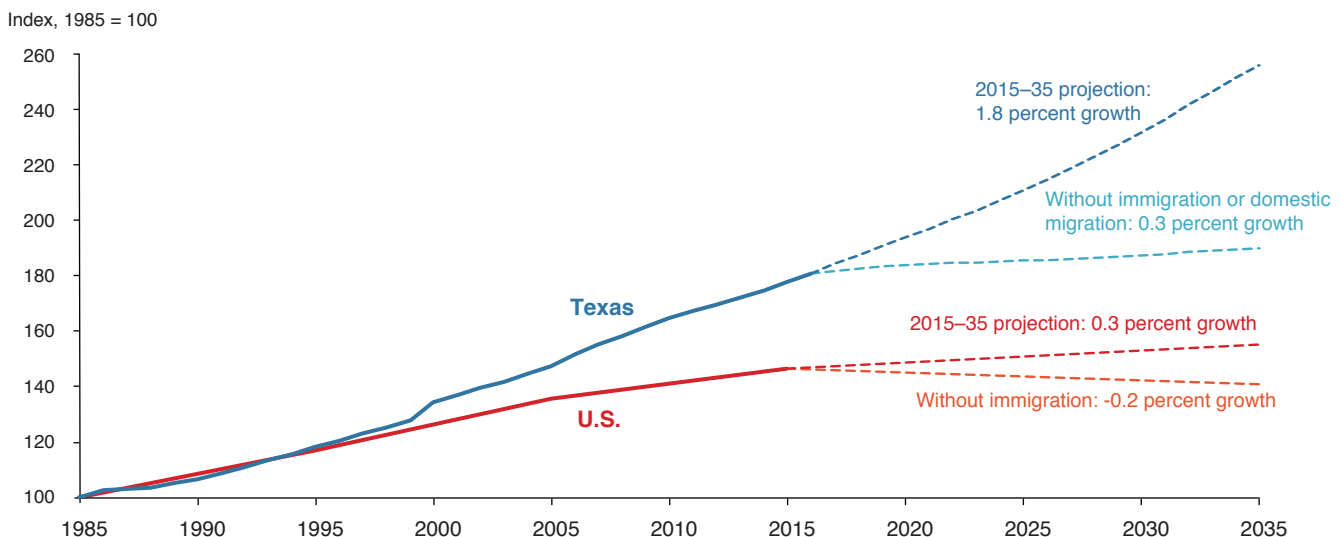
Two national trends will play an important future role. First, the nation has entered a period of rapid aging of its workforce due to the retirement of baby boomers that began around 2010 and is expected to wind down by 2030. Baby boomers, born in the years after World War II, are an unusually large birth cohort—about 76 million nationwide and 5.7 million in Texas.³⁰

Demographers have decomposed the likely change in the future workforce into the contributions of U.S. natives, immigrants and the children of immigrants for the nation as a whole. Among potential workers who are U.S.-born by U.S. parents, a net 8.1 million will have exited the working-age population between 2015 and 2035.³¹

As a result, all U.S. workforce growth over these two decades is expected to comprise immigrants and

CHART 7

Without Migration, Working-Age Population Projected to Stagnate



NOTES: Chart refers to growth in working-age (25–64) population. Growth rates are annualized. SOURCES: Census Bureau; Texas Demographic Center; Pew Research; adjustments by Federal Reserve Bank of Dallas.

their children.³² Without immigration, the U.S. workforce will decline (*Chart 7*).

A second issue going forward is the future of domestic migration, which may not remain a reliable source of growth. Interstate mobility within the nation as a whole has fallen since the 1980s. Population aging may explain about half of this decline.³³

Texas and the U.S. will need migration to fuel labor force growth in coming decades. Without migration, Texas' working-age population would remain nearly flat at 0.3 percent yearly growth through 2035, while the U.S.' working-age population would decline 0.2 percent.

The Texas Demographic Center's projections suggest that if migration into the state continues at the 2000–10 pace, the working-age population will increase 1.8 percent annually through 2035. Pew Research Center projections for the U.S., meanwhile, suggest that immigration at current levels will be enough to counteract the trend of retiring baby boomers and lead to a modest 0.3 annual growth rate percent of the working-age population.

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Notes

¹ According to the state demographer, if there is no migration, 21.3 percent of the population will be 65 or older by 2050; if there is half the 2000–10 level of migration, this figure will be 19.5 percent, and if there is the same level of migration as in 2000–10, it will be 17.4 percent. Data from Texas Population Projections Program, Texas State Demographer, accessed Feb. 26, 2018, <http://txsdc.utsa.edu/Data/TPEPP/Projections/>.

² "What Caused the Decline in Interstate Migration in the United States?" by Fatih Karahan and Darius Li, *Liberty Street Economics* (Federal Reserve Bank of New York's blog), Oct. 17, 2016, accessed Feb. 27, 2018, <http://libertystreeteconomics.newyorkfed.org/2016/10/what-caused-the-decline-in-interstate-migration-in-the-united-states.html>.

³ See "Gone to Texas: Immigration and the Transformation of the Texas Economy," by Pia M. Orrenius, Madeline Zavodny and Melissa LoPalo, Federal Reserve Bank of Dallas special report,

November 2013.

⁴ See "Texas Job Growth Swings More with Services than Oil," by Navi Dhaliwal, Soojin Jo and Mine Yücel, Federal Reserve Bank of Dallas *Economic Letter*, vol. 13, no. 1, 2018.

⁵ Domestic migrants can be foreign born (immigrants); the only requirement in census data is that they move from one state to another.

⁶ From Census Bureau state population estimates, which measure annual migration from July to July.

⁷ Based on tabulations from the March Current Population Survey, 2011–16.

⁸ Based on employment growth from June 2009 to December 2017.

⁹ Based on tabulations of American Community Survey, 2011–16.

¹⁰ As of 2017, Texas was 8.8 percent cheaper than the national average cost of living, and Texas was 19.1 percent below the population-weighted index of the nine states with the highest populations other than Texas.

"Cost of Living Data Series 2017 Annual Average," Missouri Economic Research and Information Center, Missouri Department of Economic Development, accessed Feb. 27, 2018, www.missourieconomy.org/indicators/cost_of_living.

¹¹ Per capita state and local taxes in Texas were \$4,144 in 2015; this is lower than the national average of \$4,891, California's average of \$5,875 and New York's average of \$8,745, according to Census Bureau data.

¹² "Texas Taxes: Who Bears the Burden?" by Jason Saving, Federal Reserve Bank of Dallas *Southwest Economy*, Third Quarter, 2017.

¹³ See "Jacobs Engineering Plans to Move Jobs from Pasadena to Texas," by Natalie Kitroeff, *Los Angeles Times*, June 6, 2016, www.latimes.com/business/la-fi-jacobs-dallas-move-20160606-snap-story.html.

¹⁴ From Census Bureau state population estimates, which include annual migration from July to July.

¹⁵ See "U.S. Unauthorized Immigration Population Estimates," Pew Research Center, Nov. 3, 2016, accessed Feb. 27, 2018, www.pewhispanic.org/interactives/unauthorized-immigrants/.

¹⁶ According to Pew Research, there are 121,300 Deferred Action for Childhood Arrivals (DACA) recipients in Texas, measured as initial applications approved from August 2012 to March 31, 2017.

See "DACA Has Shielded Nearly 790,000 Young Unauthorized Immigrants from Deportation," by Jens Manuel Krogstad, Pew Research Center, Sept. 1, 2017, accessed Feb. 27, 2018, www.pewresearch.org/fact-tank/2017/09/01/unauthorized-immigrants-covered-by-daca-face-uncertain-future/.

¹⁷ See "A Statistical and Demographic Profile of the U.S. Temporary Protected Status Populations from El Salvador, Honduras, and Haiti," by Robert Warren and Donald Kerwin, *Journal on Migration and Human Security*, vol. 5, no. 3, 2017, pp. 577–92.

¹⁸ See note 3.

¹⁹ Migrant share data are based on American Community

Survey 2017 data.

²⁰ See "How Highly Educated Immigrants Raise Native Wages," by Giovanni Peri, Kevin Shih and Chad Sparber, Centre for Economic Policy Research, May 29, 2014, accessed Feb. 27, 2018, <http://voxeu.org/article/how-highly-educated-immigrants-raise-native-wages>.

²¹ See "The H-1B Visa Race Continues: Which Regions Received the Most?" by Neil G. Ruiz and Jill H. Wilson, Brookings Institute, April 2015, accessed Feb. 27, 2018, www.brookings.edu/blog/the-avenue/2015/04/02/the-h-1b-visa-race-continues-which-regions-received-the-most/;

"Key Facts About the U.S. H-1B Visa Program," by Neil G. Ruiz, Pew Research Center, April 27, 2017, accessed Feb. 27, 2018, www.pewresearch.org/fact-tank/2017/04/27/key-facts-about-the-u-s-h-1b-visa-program/.

²² See "Sources of U.S. Economic Growth in a World of Ideas," by Charles I. Jones, *American Economic Review*, vol. 92, no. 1, 2002, pp. 220–39.

²³ "How Much Does Immigration Boost Innovation?" by Jennifer Hunt and Marjolaine Gauthier-Loiselle, *American Economic Journal: Macroeconomics*, vol. 2, no. 2, 2010, pp. 31–56.

²⁴ See "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention," by William R. Kerr and William F. Lincoln, *Journal of Labor Economics*, vol. 28, no. 3, 2010, pp. 473–508.

²⁵ See "Task Specialization, Immigration, and Wages," by Giovanni Peri and Chad Sparber, *American Economic Journal: Applied Economics*, vol. 1, no. 3, 2009, pp. 135–69.

²⁶ See "Assessing Inherent Model Bias: An Application to Native Displacement in Response to Immigration," by Giovanni Peri and Chad Sparber, *Journal of Urban Economics*, vol. 69, no. 1, 2011, pp. 82–91.

²⁷ See "Low-Skilled Immigration and the Labor Supply of Highly Skilled Women," by Patricia Cortés and José Tessada, *American Economic Journal: Applied Economics*, vol. 3, no. 3, 2011, pp. 88–123.

²⁸ Calculations based on Current Population Survey Outgoing Rotations Group data for 2000 and 2017.

²⁹ Calculations based on Current Employment Statistics payroll survey.

³⁰ See "The Boomer Nation: A State-by-State Snapshot," AARP, 2014, accessed Feb. 27, 2018, www.aarp.org/politics-society/history/info-2014/map-where-boomers-live.html#TX.

³¹ See "Immigration Projected to Drive Growth in U.S. Working-Age Population Through at Least 2035," by Jeffrey S. Passel and D'Vera Cohn, Pew Research Center, March 8, 2017, accessed Feb. 27, 2018, www.pewresearch.org/fact-tank/2017/03/08/immigration-projected-to-drive-growth-in-u-s-working-age-population-through-at-least-2035/.

³² Although most children of immigrants are also U.S. born, they are broken out into their own category in this exercise.

³³ See note 2.