

## Key Points

- While some policymakers have blamed immigration for slowing U.S. wage growth since the 1970s, most academic research finds little long run effect on Americans' wages.
- The available evidence suggests that immigration leads to more innovation, a better educated workforce, greater occupational specialization, better matching of skills with jobs, and higher overall economic productivity.
- Immigration also has a net positive effect on combined federal, state, and local budgets. But not all taxpayers benefit equally. In regions with large populations of less educated, low-income immigrants, native-born residents bear significant net costs due to immigrants' use of public services, especially education.

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# The Effects of Immigration on the United States' Economy

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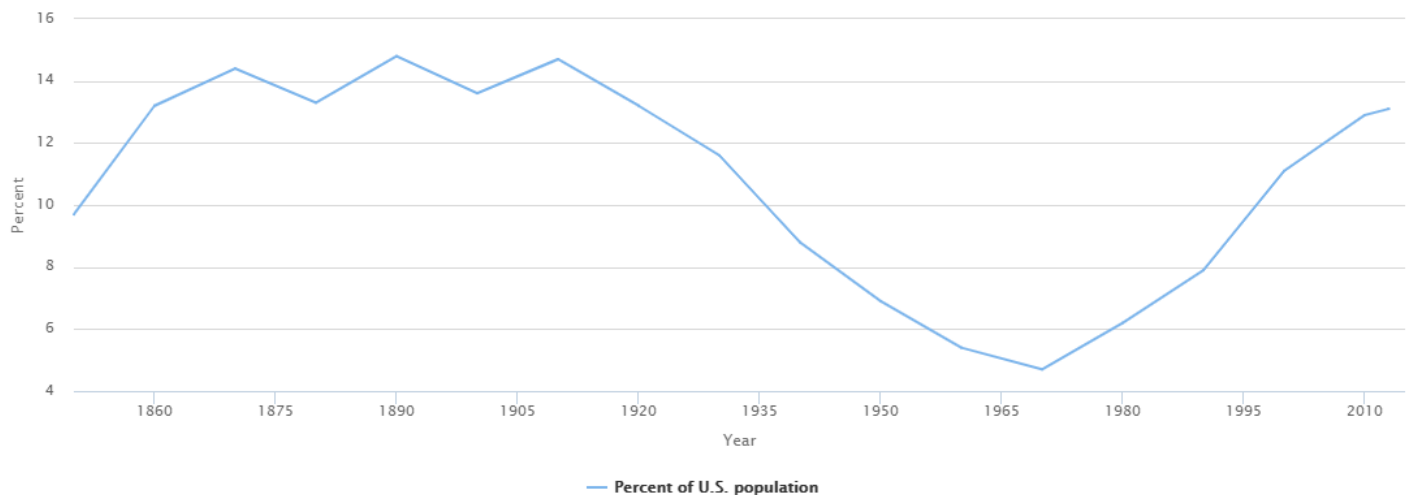
## Introduction

Today, the United States is home to the largest immigrant population in the world. Even though immigrants assimilate faster in the United States compared to developed European nations, immigration policy has become a highly contentious issue in America. While much of the debate centers on cultural issues, the economic effects of immigration are clear: Economic analysis finds little support for the view that inflows of foreign labor have reduced jobs or Americans' wages. Economic theory predictions and the bulk of academic research confirms that wages are unaffected by immigration over the long-term and that the economic effects of immigration are mostly positive for natives and for the overall economy.

Figure 1 shows that the foreign-born population has grown rapidly in recent decades, rising from less than 5 percent of the U.S. population in 1970 to 13 percent in 2013. Although immigrants today comprise a larger share of the population than at any time since World War II, the foreign-born share today is roughly the same as during the late 19th and early 20th centuries, when about 15 percent of U.S. residents were born in a foreign country.

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Figure 1: Foreign-Born Share of U.S. Population, 1850–2013



Source: U.S. Census Bureau.

Has the surge in immigration since 1970 led to slower wage growth for native-born workers? Academic research does not provide much support for this claim. The evidence suggests that when immigration increases the supply of labor, firms increase investment to offset any reduction in capital per worker, thereby keeping average wages from falling over the long term. Moreover, immigrants are often imperfect substitutes for native-born workers in U.S. labor markets. That means they do not compete for the same jobs and put minimal downward pressure on natives' wages. This might explain why competition from new immigrants has mostly affected earlier immigrants, who experienced significant reductions in wages from the surge in immigration. In contrast, studies find that immigration has actually raised average wages of native-born workers during the last few decades.

Immigrants are at the forefront of innovation and ingenuity in the United States, accounting for a disproportionately high share of patent filings, science and technology graduates, and senior positions at top venture capital-funded firms. In addition, the presence of immigrants often creates opportunities for less-skilled native workers to become more specialized in their work, thereby increasing their productivity.

Immigration generally also improves the government's fiscal situation, as many immigrants pay more in taxes over a lifetime than they consume in government services. However, native-born residents of states with large concentrations of less-educated immigrants may face larger tax burdens, as these immigrants pay less in taxes and are more likely to send children to public schools.

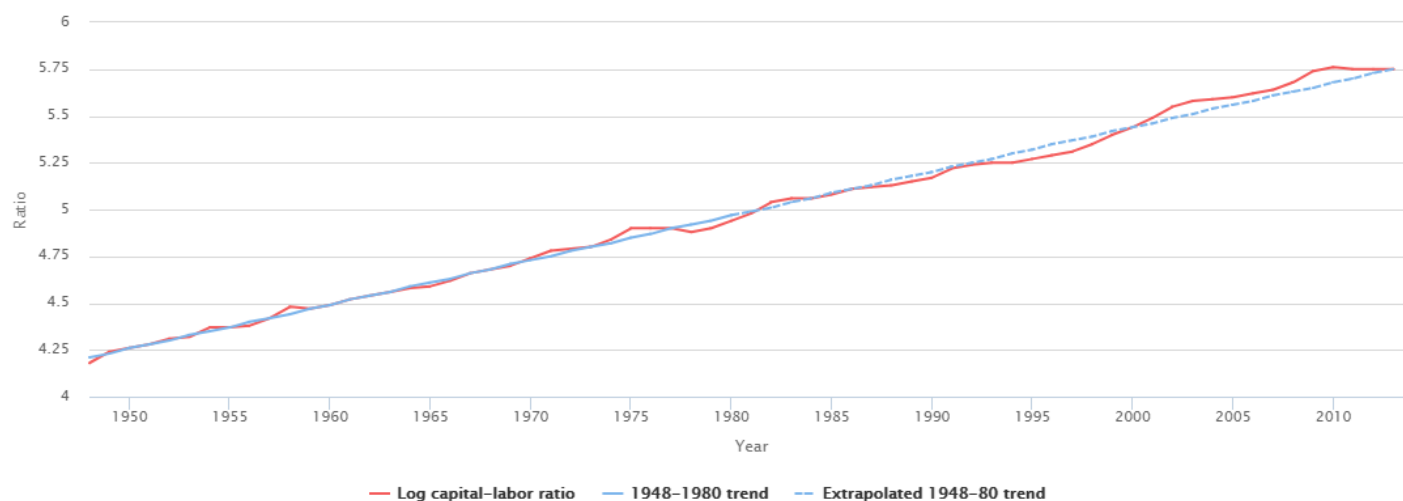
### Labor Market Competition

A popular view is that immigrants are taking jobs from American citizens. However, although immigrants increase the supply of labor, they also spend their wages on homes, food, TVs and other goods and services and expand domestic economic demand. This increased demand, in turn, generates more jobs to build those homes, make and sell food, and transport TVs.

Most empirical studies indicate long-term benefits for natives' employment and wages from immigration, although some studies suggest that these gains come at the cost of short-term losses from lower wages and higher unemployment.<sup>1</sup> Standard economic theory implies that while higher labor supply from immigration may initially

depress wages, over time firms increase investment to restore the amount of capital per worker, which then restores wages. Steady growth in the capital-labor ratio prevents workers' average productivity, and therefore their average wages from declining over the long run. Figure 2 shows the pre-1980 trend in the capital-labor ratio extrapolated over the next few decades – the period when U.S. immigration accelerated. Consistent with the theory, the actual capital-labor ratio did not significantly or permanently deviate from that trend after 1980.<sup>2</sup>

Figure 2: U.S. Log Capital–Labor Ratio, 1948–2013



Log capital services per worker and trend, business sector.

Source: Bureau of Labor Statistics and author's calculations.

While growth in the capital stock keeps average wages from falling, immigration may affect the relative wages of different types of workers by changing their relative supplies. As shown in Table 1, immigration over the last few decades has had a bimodal impact across education groups: The largest impact has been on the supply of workers without a high school degree and of workers at the high end of the education spectrum – those with a college or postgraduate degree. Relative to the native-born, recently-arrived immigrants are less likely to have completed high school. At the same time, at the higher end, recent immigrants are more likely to have completed college and hold advanced degrees than their native counterparts.<sup>3</sup> Thus, immigration has primarily raised the supplies of the least and the most skilled workers.

**Table 1. Distribution of the Population 25 Years and Over by Educational Attainment, 2012**

Percent

	Share of total	Foreign-born share of total	Foreign-born share of education group
<b>High school or less</b>	<b>42.7</b>	<b>9.1</b>	<b>21.3</b>
No degree	12.4	4.7	38.3
High school degree	30.4	4.4	14.4
<b>Some college or more</b>	<b>57.3</b>	<b>7.6</b>	<b>13.2</b>
Some college or associate degree	26.3	2.7	10.3
Bachelor's degree	19.8	3.0	15.1
Graduate or professional degree	11.1	1.9	16.8

Source: Current Population Survey, Annual Social and Economic Supplement.

Despite these increases in labor supply, in many cases immigrants appear to complement American-born workers rather than replacing them. Because less-educated immigrants often lack the linguistic skills required for many jobs, they tend to take jobs in manual labor-intensive occupations such as agriculture and construction. Even for low-skilled native-born workers in these industries, the effects of increased competition from immigrants are ambiguous, as many take advantage of their superior communication abilities and shift into occupations where these skills are more valuable, such as personal services and sales.<sup>4</sup> Similarly, highly educated immigrants face a disadvantage in communication-intensive jobs, and therefore tend to work in scientific and technical occupations. Highly skilled natives in management, media, and other culture- and language-dependent jobs face little competition from high skilled immigrants. The inflow of foreign labor is, therefore, concentrated in a subset of occupations that tend to employ many immigrants already. Consequently, it is earlier immigrants who face the greatest increase in competitive pressure.

Table 2 presents the results of two academic analyses of the wage impacts of immigration over the last several decades. These studies account for firms' investment response and the imperfect substitutability between immigrant and native-born workers. They find a small but positive effect, equal to about half a percentage point, on the average wages of native workers. One of the studies indicates a minor decline in the wages of those without a high school degree or with a college degree, while the other study finds only positive gains. In sharp contrast, both studies find that earlier immigrants experienced wage declines, on average, of 4 to 7 percent concentrated among the most and least educated.

**Table 2. Estimates of the Long-Run Wage Impact of Immigration**

	<i>Percent change in hours worked due to immigration</i>	<i>Estimated wage impact (percent)</i>			
		<b>Ottaviano and Peri (2012)<sup>5</sup></b>		<b>Borjas (2014)<sup>6</sup></b>	
	1990–2010	1990–2006		1990–2010	
		Native- born	Foreign- born	Native- born	Foreign- born
No degree	25.9	1.7	-8.1	-1.7	-5.3
High school degree	8.4	0.6	-12.6	0.9	-3.4
Some college or associate degree	6.1	1.2	-2.2	1.2	-2.7
Bachelor's degree	10.9	0.0	-5.5	0.5	-4.9
Graduate or professional degree	15.0	0.0	-5.5	-0.1	-5.3
<b>All workers</b>	<b>10.6</b>	<b>0.6</b>	<b>-6.7</b>	<b>0.6</b>	<b>-4.4</b>

Change in hours from Borjas (2014).

## Productivity

Immigrants also bring a wave of talent and ingenuity, accounting for a disproportionate share of workers in the fields most closely tied with innovation. A 2011 survey of the top fifty venture capital funded companies found that half had at least one immigrant founder and three quarters had immigrants in top management or research positions.<sup>7</sup> A significant share of advanced degrees awarded in science and engineering — often the foundation for innovation and job growth — go to foreign-born students with temporary visas studying in American universities. According to a 2012 National Science Board report, foreign students earned 27 percent of science and engineering master's degrees in 2009.<sup>8</sup> And in recent years, the number of foreign-born undergraduate students studying in American universities has grown rapidly, rising to 18 percent between 2011 and 2012.<sup>9</sup>

In 2011, 76 percent of patents from top 10 U.S. patent-producing universities had at least one foreign-born author.<sup>10</sup> Indeed, immigrants produce patents at double the rate as natives, and the presence of these immigrants generates positive spillovers on patenting by natives.<sup>11</sup> Economic theory suggests a direct link between a skilled

and innovative labor force and faster GDP growth, and more than three quarters of U.S. growth over the last 150 years can be explained by improvements in education and research-driven innovation.<sup>12</sup>

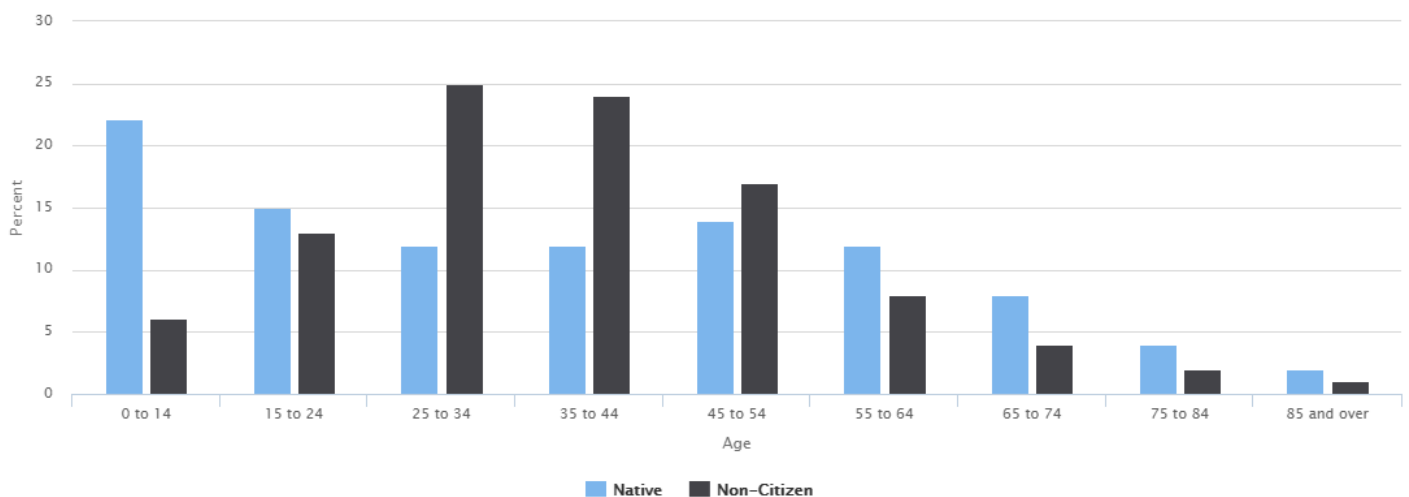
Moreover, states with a high concentration of foreign-born workers experience significantly faster productivity growth.<sup>13</sup> As discussed earlier, less-skilled natives often respond to increased competition from immigrants by leaving manual labor for occupations that emphasize language and communication skills. This greater specialization leads to a more efficient allocation of labor, raising the incomes and productivity of both natives and immigrants.

### Fiscal Impact

Immigrants in general — whether documented or undocumented — are net positive contributors to the federal budget. However, the fiscal impact varies widely at the state and local levels and is contingent on the characteristics of the immigrant population — age, education, and skill level — living within each state.

Figure 3 shows that immigrants, and especially recent arrivals, are generally of working age; thus, they impose relatively small costs on Social Security and Medicare — the largest components of federal non-defense spending. While immigrants' taxes help pay for defense spending, they do not generate any additional significant costs for the military, thereby somewhat reducing the federal tax burden of the average native.

Figure 3: Age Distribution of Natives and Non-Citizen Immigrants, 2012



Source: Current Population Survey, Annual Social and Economic Supplement.

More often than not, immigrants are less educated and their incomes are lower at all ages than those of natives. As a result, immigrants pay less in federal, state, and local taxes and use federally-funded entitlement programs such as Medicaid, SNAP, and other benefits at higher rates than natives. But they are also less likely than comparably low income natives to receive public assistance. Moreover, when they do take public assistance, the average value of benefits received is below average, implying a smaller net cost to the federal government relative to a comparable low income native.<sup>14</sup>

However, immigrants often impose a heavier tax burden on natives at the state and local level. Immigrants — particularly those with low levels of education and income — generally have larger families and more children using public K-12 education, the largest component of state and local budgets. Furthermore, if immigrants' children are not already fluent English speakers, the per-student cost of education may be substantially higher than for native-born children.<sup>15</sup> These factors impose short-term costs on state budgets. Over the long term, however, the upward economic mobility and taxpaying lifetime of second generation immigrants more than offset the initial fiscal burden.<sup>16</sup>

Because the net cost to state and local governments is closely related to immigrants' education and income, the socioeconomic composition of the immigrant population determines the fiscal impact in each state. For example, because New Jersey has a high proportion of well-educated and high income immigrants who contribute more to state and local revenues than they consume in public services, the net fiscal burden of immigration is small in New Jersey. In contrast, California's high share of less-educated and low-income immigrants means that immigrants' contribution to state and local revenues is smaller relative to their consumption of public services. As a result, the estimated fiscal burden of immigration is five times higher for native residents of California than of New Jersey.<sup>17</sup>

## Conclusion

Economists generally agree that the effects of immigration on the U.S. economy are broadly positive.<sup>18</sup> Immigrants, whether high- or low-skilled, legal or illegal, are unlikely to replace native-born workers or reduce their wages over the long-term, though they may cause some short-term dislocations in labor markets. Indeed, the experience of the last few decades suggests that immigration may actually have significant long-term benefits for the native-born, pushing them into higher-paying occupations and raising the overall pace of innovation and productivity growth. Moreover, as baby boomers have begun moving into retirement in advanced economies around the world, immigration is helping to keep America comparatively young and reducing the burden of financing retirement benefits for a growing elderly population. While natives bear some upfront costs for the provision of public services to immigrants and their families, the evidence suggests a net positive return on the investment over the long term.

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1. One prominent analysis found that the surge in immigration during 1980-2000 reduced wages by 3 percent on average; see George Borjas, "The Labor Demand Curve is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market," *Quarterly Journal of Economics* 118, no. 4 (2003): 1335–1374, available at: <http://qje.oxfordjournals.org/content/118/4/1335.full.pdf>. However, most studies find negligible or small positive long-run effects on Americans' average wages: See G. I. P. Ottaviano, and Giovanni Peri, "Rethinking the Effects of Immigration on Wages," *Journal of the European Economic Association* 10, no. 1 (2012): 152–197, available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1542-4774.2011.01052.x/epdf>; Jean, B. Grossman, "The substitutability of natives and immigrants in production," *Review of Economic and Statistics* 64, no. 4 (1982): 596–603. Available at: <http://www.jstor.org/stable/1923944>; David Card, "The Impact of the Mariel Boatlift on the Miami Labor Market," *Industrial and Labor Relations Review* 43, no. 2 (1990): 245–257, available at: <http://www.jstor.org/stable/2523702>; David Card, "Immigrant inflows, native outflows and the local labor market impacts of higher immigration," *Journal of Labor Economics* 19, no. 1 (2001): 22–64. Available at: <http://www.jstor.org/stable/10.1086/209979>; David Card, "Immigration and Inequality," *American Economic Review* 99, no. 2 (2009): 1–21, available at: <http://www.aeaweb.org/articles.php?doi=10.1257/aer.99.2.1>. ↩
  2. Despite sustained growth in the capital-labor ratio at its pre-1980 trend, wage rates might still decline if the share of labor compensation declines – as it has since the year 2000. However, the timing of the decline in

labor compensation share suggests that it is driven by other changes such as changes in technology and increased globalization. ↩

3. Pew Research Center, "Modern Immigration Wave Brings 59 Million to U.S., Driving Population Growth and Change Through 2065: Views of Immigration's Impact on U.S. Society Mixed," September 2015, available at: [http://www.pewhispanic.org/files/2015/09/2015-09-28\\_modern-immigration-wave\\_REPORT.pdf](http://www.pewhispanic.org/files/2015/09/2015-09-28_modern-immigration-wave_REPORT.pdf). ↩
4. Giovanni Peri and Chad Sparber, "Task Specialization, Immigration, and Wages," *American Economic Journal: Applied Economics* 1, no. 3 (July 2009): 35–169, available at: <http://pubs.aeaweb.org/doi/pdfplus/10.1257/app.1.3.135>. ↩
5. G. I. P Ottaviano, and Giovanni Peri, "Rethinking the Effects of Immigration on Wages," *Journal of the European Economic Association* 10, no. 1 (2012): 152–197, available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1542-4774.2011.01052.x/epdf> ↩
6. George Borjas, *Immigration Economics* (Cambridge, MA: Harvard University Press, 2014). ↩
7. Stuart Anderson, "Immigrant Founders and Key Personnel in America's 50 Top Venture-Funded Companies," *NFAP Policy Brief* (December 2011). ↩
8. National Science Board, *Science and Engineering Indicators*, 2012, pp. 2-26, available at: <http://www.nsf.gov/statistics/seind12/pdf/c02.pdf>. ↩
9. National Science Board, *Science and Engineering Indicators*, 2014, pp. 2-5, available at: <http://www.nsf.gov/statistics/seind14/content/chapter-2/chapter-2.pdf> ↩
10. "Patent Pending: How Immigrants are Re-inventing the American Economy," Report of the Partnership for a New American Economy, June 2012, available at: <http://www.renewoureconomy.org/wp-content/uploads/2013/07/patent-pending.pdf> ↩
11. Jennifer Hunt and Marjolaine Gauthier-Loiselle, "How Much Does Immigration Boost Innovation?" *American Economic Journal: Macroeconomics* 2, no. 2 (April 2010): 31–56. ↩
12. John G. Fernald and Charles I. Jones, "The Future of US Economic Growth," *American Economic Review* 104, no. 5 (2014): 44-49, available at: <http://dx.doi.org/10.1257/aer.104.5.44> ↩
13. Giovanni Peri, "The Effect of Immigration on Productivity: Evidence from U.S. States," *Review of Economics and Statistics* 94, no. 1 (February 2012): 348–358, available at: [http://www.mitpressjournals.org/doi/pdf/10.1162/REST\\_a\\_00137](http://www.mitpressjournals.org/doi/pdf/10.1162/REST_a_00137) ↩
14. Leighton Ku and Brian Bruen, "The Use of Public Assistance Benefits by Citizens and Non-citizen Immigrants in the United States," Cato Working Paper No. 13, February 2013, available at: [http://object.cato.org/sites/cato.org/files/pubs/pdf/workingpaper-13\\_1.pdf](http://object.cato.org/sites/cato.org/files/pubs/pdf/workingpaper-13_1.pdf) ↩
15. Congressional Budget Office, "The Impact of Unauthorized Immigrants on the Budgets of State and Local Governments," December 2007, available at: <https://www.cbo.gov/sites/default/files/110th-congress-2007-2008/reports/12-6-immigration.pdf> ↩



16. James P. Smith and Barry Edmonston, eds., *The New Americans: Economic, Demographic, and Fiscal Effects of Immigration* (Washington, DC: National Academy Press, 1997). [↩](#)
17. *Ibid.*, Chapter 6. [↩](#)
18. See Chicago Booth IGM Forum, "[Low-Skilled Immigrants](#)," and "[High-Skilled Immigrants](#)," 2013. [↩](#)