

From **Brawn to Brains**
How Immigration Works for America





The New Colossus Not like the brazen giant of Greek fame,

From **Brawn to Brains**

*I*mmigrants help fuel the U.S. economy, representing about one in every six workers. Because of accelerated immigration and slowing U.S. population growth, foreign-born workers accounted for almost half of labor force growth over the past 15 years.¹ Public attention has focused mainly on the large number of low-skilled immigrant workers, but the number of high-skilled immigrants actually grew faster during the period. Highly educated immigrants filled critical jobs in the science, engineering, information technology and health care sectors as well as fostered innovation and created high-tech businesses.



How Immigration Works for America

By Pia Orrenius and Madeline Zavodny

Future U.S. prosperity depends on having a skilled workforce. This requires educating the native-born population and continuing to attract the world's best and brightest to the U.S. For decades, the nation has been the world leader in attracting skilled immigrants who, until recently, had few good alternatives. Today, other destination countries increasingly recognize the economic benefits of these workers and are designing policies to attract them, even as the immigrants' nations of origin seek ways to entice them to return home.

The U.S. immigration system, meanwhile, has not kept up. Piecemeal fixes have turned current law into a web of outmoded, contradictory and inefficient quotas, rules and regulations. For example, the number of high-skilled immigrant workers admitted on temporary visas has doubled since 1996, but the number of employment-based permanent-residence visas, or "green cards," has remained the same. As a result, the wait for employment-based green cards extends more than a decade. It's not known how many high-skilled immigrants are turned away by the broken system, but the U.S. risks falling behind in the global race for talent if immigration laws are not reformed.

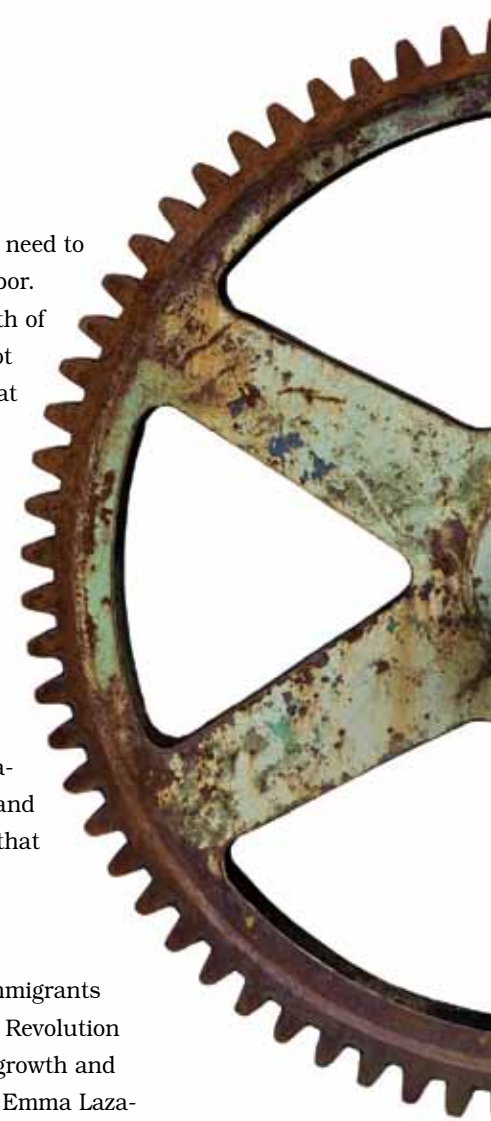
Immigration legislation has been put on the back burner while lawmakers have focused on the recession, health care, tax policy and financial reform. At the same time, the economic downturn has wracked U.S. labor markets and damped public support for comprehensive immigration reform. Given the distressed housing market, high unemployment and sluggish job growth in a still-nascent economic

recovery, U.S. workers may not see the need to replenish the workforce with foreign labor.

Although dealing with the aftermath of the recession is important, it should not stand in the way of creating policies that lay the groundwork now for stronger economic growth tomorrow. Highly educated immigrants help build the nation's human capital, which, together with physical capital and technological progress, forms the foundation of the nation's future. This report examines historical perspectives on immigration, who comes to the U.S. and why, the economic and fiscal impacts of immigration, the problems with current policy and the arguments for immigration reform that prioritizes brains over brawn.

A Historical Perspective

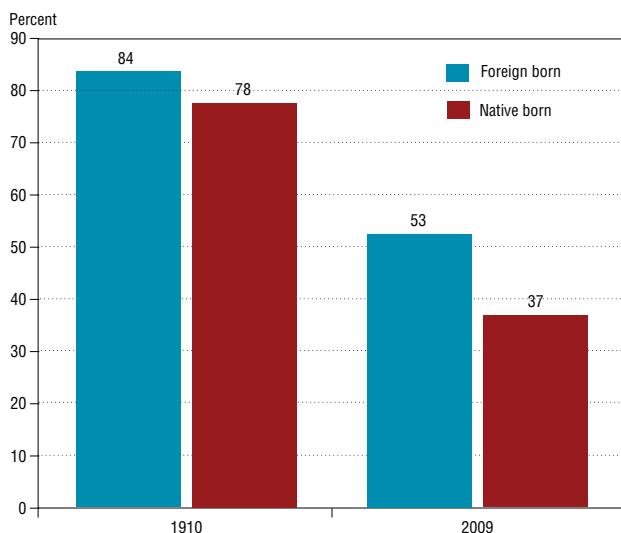
Since the first arrivals, waves of immigrants have shaped the nation. The Industrial Revolution ushered in a period of rapid economic growth and high levels of immigration. By the time Emma Lazarus wrote her famous poem, "The New Colossus," in 1883, the national image was not just of people remaking the nation but also of the nation remaking the people. "Give me your tired, your poor, your huddled masses yearning to breathe free," Lazarus wrote, as if coming to America changed the fate of the "homeless" and "tempest-tossed." To enter America was to go through the "golden door," presumably to a place where even the most common of men and





Technology has done away with much of the need for swaths of workers to perform manual labor, and blue-collar wages are falling.

Chart 1
Blue-Collar Work on the Decline



NOTE: Percentage of workers age 25 and over in blue-collar occupations in 1910 and 2009.

SOURCES: 1910 census; 2009 American Community Survey.

women could find fortune.

Lazarus' poem is rooted in the U.S. experience during the late 19th and early 20th centuries. The economy absorbed massive immigrant influxes. The lure of economic opportunity was not lost on Europeans and Asians who struggled to survive at home. Once in the U.S., Europeans cultivated farmland in the Midwest, Chinese laborers toiled on railroads in the West and immigrants of all nationalities fueled urban industrialization in the Northeast and Great Lakes states. Before the 1880s, immigration to the United States—and throughout the world—was largely unregulated. The movement of people to the U.S. was limited more by migration costs than by restrictive government regulation. Policies were permissive by design, to settle and claim the West, but also because economic growth was possible only with more workers, and more workers led to greater growth. Land was abundant, labor was scarce and wages were rising.

How are things different today? To be sure, the country no longer has a vast expanse of empty, productive land. Agriculture and manufacturing, mainstays of the 19th-century U.S. economy, employ a shrinking number of workers. Technology has done away with much of the need for swaths of workers to perform manual labor, and blue-collar wages are falling. Meanwhile, the economy has shifted toward the service sector.

These long-run trends have manifested themselves in the labor market in an important way: fewer blue-collar workers. The proportion of native-born individuals employed in blue-collar occupations today is less than half what it was in 1910, the historical peak of U.S. immigration (Chart 1). Among immigrants, who are disproportionately employed in blue-collar occupations, the fraction working in these jobs has fallen to 53 percent from 84 percent a century ago.² These statistics highlight another important fact: Immigrants' and natives' skill levels differ more today than in 1910. The gap between the immigrant and native blue-collar employment share has grown to 16



percentage points, compared with 6 percentage points a century ago.

The Changing U.S. Workforce: Where Immigrants Fit

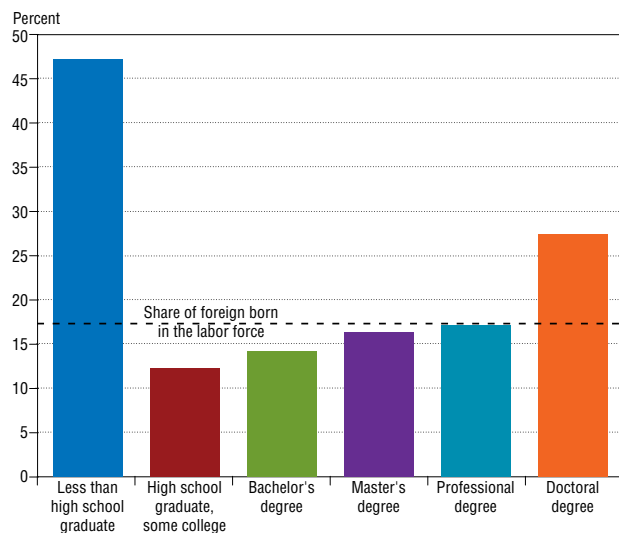
One of the most dramatic transformations of the U.S. workforce in the post-war years has been its rising educational attainment. In 1950, 64 percent of U.S.-born workers lacked a high school diploma. Today, fewer than 10 percent have not completed high school. This rapid rise in U.S. workers' education levels created an opening for low-skilled foreign labor that was readily filled, both legally and illegally. Low-skilled immigrants are increasingly employed in service jobs as well as disproportionately in the traditional industries: agriculture, construction and manufacturing. Service industries where low-skilled immigrants dominate include landscaping and building maintenance, food preparation, personal care and service, transportation and health care.

All told, immigrants make up almost half of work-

ers in the U.S. lacking a high school degree (*Chart 2*). The immigrant shares among workers in the middle of the education distribution—those who graduated from high school or college—are much lower at 12 percent and 14 percent, respectively. For workers with master's degrees, the foreign-born share rises to 16 percent; for those with professional degrees, such as doctors and lawyers, it is 17 percent; and among doctoral degree holders, the share reaches 27 percent. Overall, 17 percent of workers age 25 and older were foreign born in 2009 (*dotted line on Chart 2*). Immigrants, thus, are concentrated at the bottom and top of the education distribution. Most U.S. workers are in the middle of the education distribution (*Chart 3*). Workers with at least a high school diploma but not a bachelor's degree represent 57 percent of the workforce.



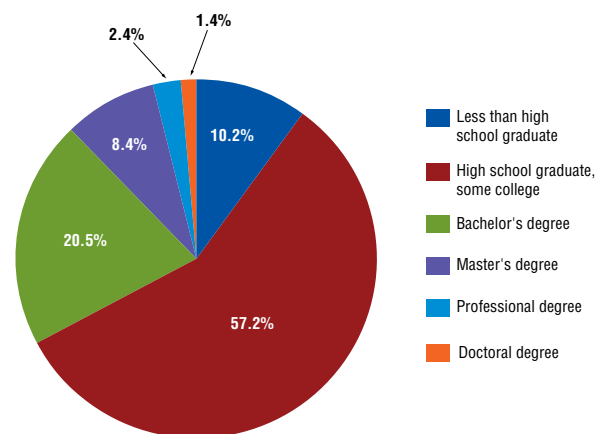
Chart 2
Immigrant Workers Overrepresented at Extremes of the Education Distribution



NOTE: Percentage of foreign workers age 25 and over in the U.S. labor force by education.

SOURCE: 2009 American Community Survey.

Chart 3
Most Workers Have High School but Not College Degree (Labor force by education)



NOTE: Percentage of foreign and native workers age 25 and over in the U.S. labor force by education.

SOURCE: 2009 American Community Survey.



Although the U.S. tapped Western Europe for skilled labor for over a century, rising education levels in Asia, unrest in the Middle East and the collapse of the U.S.S.R. have generated new streams of skilled workers for U.S. employers.

High-Skilled Immigrants

High-skilled immigrants tend to complement high-skilled native-born workers by flowing into fast-growing fields where native labor supply cannot keep up.³ As a result, highly educated immigrants are over-represented in some of the most skill-intensive occupations (Chart 4). They make up 45 percent of medical scientists and 37 percent of computer programmers, for example. Immigrants also have a large presence in medicine, engineering, higher education, accounting

Of Note

Mexico–U.S. Migration in Structural Decline?

The housing crisis and recession produced sharp declines in Mexico–U.S. migration. While these demand-side factors influence the volume of Mexican migrants, supply-side factors are important too, especially in the long run. Labor supply shocks caused by changes in the size of birth cohorts explain as much as a third of U.S. immigration from Mexico in recent decades.¹ With Mexico in the midst of one of history’s most dramatic demographic transitions, declining population growth there carries significant implications for the future of Mexican immigration to the U.S.

From the late 1970s to 2010, fertility rates in Mexico fell from 6.8 to 2.2 children per woman, just above the “replacement rate” of 2.1 needed for a country’s population to remain stable.² Factors leading to declining fertility rates include a large drop in infant mortality, rising education levels and increased female labor-force participation.³ Public policy also had an impact. The Mexican government launched an aggressive family planning campaign in the early 1970s, since expanded to include rural areas. Population growth has slowed dramatically as a result.

If this trend continues, Mexico’s population will shift significantly toward older cohorts and away from the younger generations who tend to migrate. The youngest age group (ages 0–14) is on track to represent 16 percent of the population in 2050, compared with 28 percent today.⁴ Older cohorts (ages 65 and up), by contrast, will likely rise to 22 percent from 7 percent over the same period. Current concerns about the inflow of Mexican immigrants are likely to diminish as the Mexican population ages and the share of young workers in the labor force declines dramatically.

Notes

¹ “The Great Mexican Emigration,” by Gordon H. Hanson and Craig McIntosh, *Review of Economics and Statistics*, vol. 92, no. 4, 2010, pp. 798–810.

² Data from “World Population Prospects: 2008 Revision,” Population Division, Department of Economic and Social Affairs, United Nations, 2008.

³ “Are Young Cohorts of Women Delaying First Birth in Mexico?,” by Alfonso Miranda, *Journal of Population Economics*, vol. 19, no. 1, 2006, pp. 55–70.

⁴ See note 2.



and auditing, nursing and architecture. On average, immigrants make up 15.5 percent of the high-skilled labor force (dotted line on Chart 4).

Although the U.S. tapped Western Europe for skilled labor for over a century, rising education levels in Asia, unrest in the Middle East and the collapse of the U.S.S.R. have generated new streams of skilled workers for U.S. employers. Census data show 80 percent of workers in the U.S. who arrived from India have at least a bachelor's degree, followed by Taiwan, Japan, Iran, the former U.S.S.R. and South Korea (Chart 5).⁴

Low-Skilled Immigrants

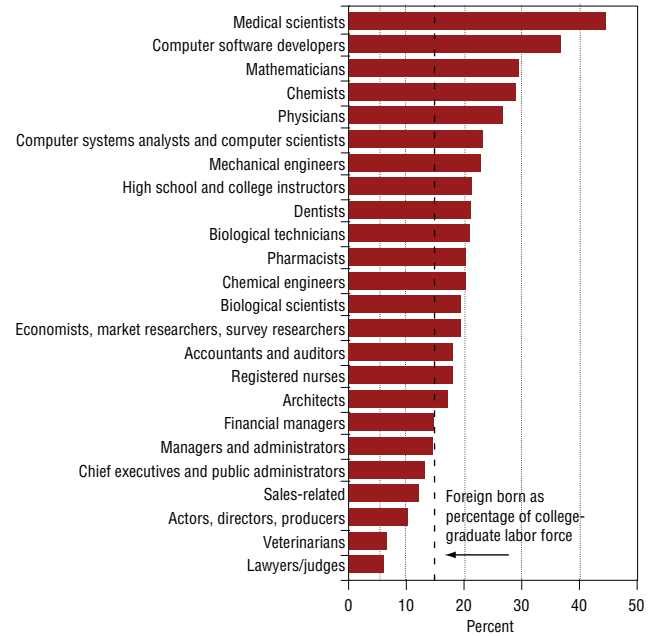
The least-educated workers come from Mexico, Central America and the Caribbean. This is largely a result of geographic proximity, continued demand for low-skilled labor among U.S. employers and large wage differentials. Research suggests a Mexican immigrant earns about 2.5 times as much (in purchasing-power-adjusted terms) in the U.S. as he would have if he remained in his native country.⁵ For a Haitian immigrant, earnings are as much as 10 times greater in the U.S. than at home.⁶

Because immigration policy makes it hard for low-skilled workers to be admitted to the U.S. unless they have a close relative here who can sponsor them, many enter illegally. Estimates suggest there are almost 8 million unauthorized immigrant workers in the U.S. today, the great majority with less than a high school education.⁷ As many as 80 percent of Mexican immigrants initially arrived as unauthorized immigrants.⁸

Immigration and the Economy: A Bigger Pie

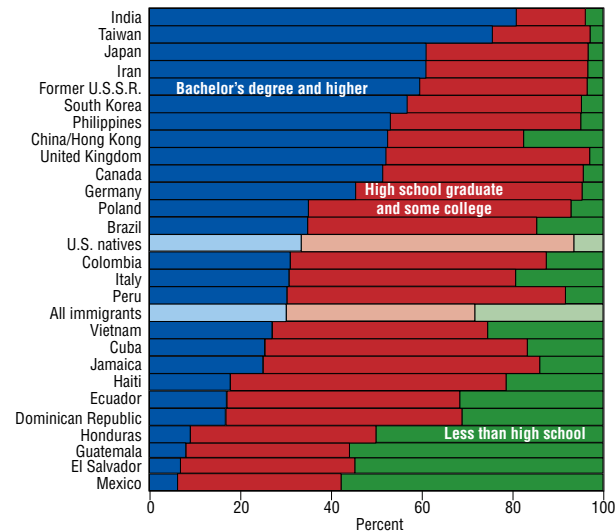
Immigrants differ from natives; they tend to have either a great deal more or a great deal less education than the average native, and they are clustered in certain occupations. Another difference is language. About 32 percent of immigrants report that they either do not speak English or do not speak it well. Although immigrants may have fewer skills than natives, being different isn't bad.⁹ In fact, differences

Chart 4
STEM, Health Care Occupations Rely on High-Skilled Foreign Workers



NOTES: Percentage of foreign-born workers age 25 and over with bachelor's degree or higher in selected occupations. STEM stands for science, technology, engineering and mathematics.
SOURCE: 2009 American Community Survey.

Chart 5
Highest-Educated Immigrants Are From Asia, Iran, Former U.S.S.R.



NOTE: Composition of educational attainment among immigrants by country of origin.
SOURCE: 2009 American Community Survey.



are crucial. There would be no economic gains to immigration for natives if immigrants were clones of natives or, in economic jargon, *perfect substitutes*. Differences can create complementarities, with immigrant workers making natives better off.

How does immigration affect the economy? Its first-order effect is boosting the number of available workers, increasing total output and gross domestic product (GDP). Most of the gain in GDP accrues to immigrant workers in the form of their earnings, but natives gain as well. Business owners benefit from lower labor costs and a larger customer base. Natives benefit from lower prices. In cases where immigrants and natives are complements, lower prices can have far-reaching effects. For example, research shows the immigration-induced decline in the cost of child care and housekeeping has significantly increased the

labor supply of skilled native women.¹⁰

One drawback of immigration's economic effects is uneven distribution of the gains. Employers, investors and complementary workers benefit while substitutable workers lose out. These losses are concentrated at the low-wage end of the labor market because so many immigrants are low-skilled. Although there is general belief that immigration has hurt low-skilled native workers, there is no consensus on the size of the impact.¹¹

Estimates of the immigration-induced GDP increase that accrues to natives—known as the “immigration surplus”—are typically based on simulations of macroeconomic models or back-of-the-envelope calculations. Standard competitive models produce small estimates, between 0.1 and 0.3 percent of U.S. GDP.¹² The immigration surplus is larger if immigrants are

Of Note

States Fight Bright Flight

For years, a number of states, especially in the Midwest and Northeast, have dealt with either domestic net outmigration or brain drain, the mass departure of young skilled workers for other states. Net domestic emigration has been a concern in California, Iowa, Connecticut, Kansas and Ohio. Illinois, Michigan and New York have experienced especially high outmigration, with more than 1.4 million residents leaving in the past decade.

States have launched initiatives to combat brain drain and skilled labor shortages. These initiatives aim to retain and attract workers, primarily in critical skill areas. They range from boosting workforce skills through investment in community colleges and apprenticeships, such as Maryland's Skills2Compete program, to targeting high-tech job growth, as with Michi-

gan's 21st Century Jobs Fund. Other programs, such as Vermont's Next Generation Workforce project, provide cash grants to businesses that create critical-skills jobs.

Some states have even launched ambitious Internet-based campaigns that leverage online networking to connect former residents with job opportunities in advanced fields. With names such as “Move Back to Nebraska” and “You Belong in Connecticut,” these campaigns seek to brand states with skilled-labor shortages as attractive places to “Stay, Work, Play” (New Hampshire).

Though the success of these nascent initiatives remains to be seen, it is clear that many states have felt the negative ramifications of skilled-labor shortages and are working to stem the flow.



complementary to natives and complementary to capital. This is more likely to occur if immigrants are highly skilled. High-skilled immigrants tend to attract capital and work in occupations where native-born labor is scarce, creating a larger immigration surplus.

High-Skilled Immigrants and Economic Growth

If high-skilled immigrants are also more innovative and entrepreneurial, the immigration surplus is larger still. In this case, immigration can actually boost productivity growth, leading to a higher long-run rate of economic growth.¹³ Recent research provides convincing empirical evidence that high-skilled immigrants play an important role in innovation and, in certain sectors, entrepreneurship. Highly educated immigrants receive patents at more than twice the rate of highly educated natives. The difference has been linked to immigrants' overrepresentation in STEM (science, technology, engineering and mathematics) fields and the growing number of immigrants entering on employment-based and student visas.¹⁴ There is also evidence of positive spillovers on natives, meaning that immigrants not only raise innovation directly but also boost overall patent activity, perhaps by attracting additional resources and boosting specialization.¹⁵

High-skilled immigrants' entrepreneurial activities have been instrumental in the growth of the U.S. high-tech sector, for example.¹⁶ Immigrants founded 25 percent of U.S. high-tech startups between 1995 and 2005.¹⁷ Immigrants have much higher rates of business creation than natives and slightly higher self-employment rates.¹⁸

Efficiency Gains From Immigration

Immigration can help the economy in a number of other ways, many that economists have not studied in-depth. Immigrants are more mobile than natives, for example, responding more readily to regional differences in economic opportunity.¹⁹ Foreign-born workers are more likely than natives to move to where the jobs are (and leave where jobs aren't). In this way, they increase labor market efficiency by alleviating

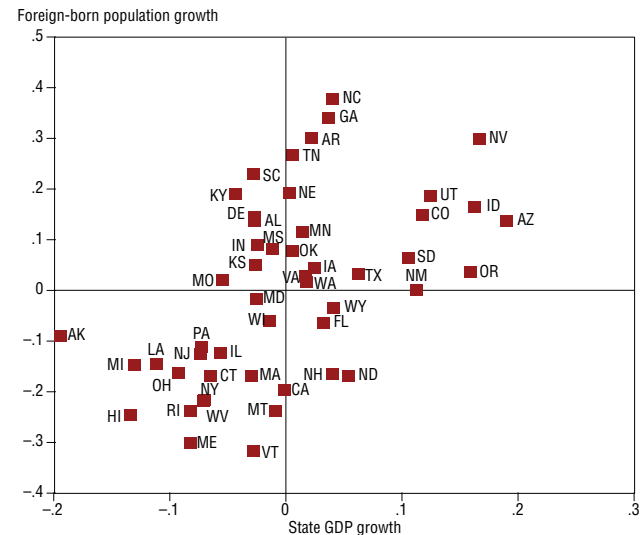
labor shortages and speeding up wage convergence. A simple plot of foreign-born population growth against real GDP growth by state shows the great majority of states clustered in the lower left and upper right quadrants, demonstrating that immigration and economic activity are positively correlated (*Chart 6*).

Immigration also can lead to greater efficiency if production is characterized by economies of scale. These can occur in a number of ways when the population increases: Fixed costs per unit fall as production rises; larger markets lead to a better division of labor and greater specialization; higher production volume leads to more learning-by-doing; and a larger population makes more investment in infrastructure worthwhile. There is little empirical evidence quantifying these gains.²⁰

Fiscal Impact of Immigration

Conventional estimates of the economic impact of immigration on natives, discussed above, suggest

Chart 6
Immigrants Go Where the Jobs Are



NOTE: Coordinates indicate deviation from average foreign-born population growth (vertical axis) and from average real state GDP growth (horizontal axis) from 1990 to 2009.
SOURCES: 1990 census; 2009 American Community Survey; Bureau of Economic Analysis.



"Keep ancient lands, your storied pomp!" cries she

*L*ow-skilled immigrants are a net fiscal drain, but overall, immigration need not be. High-skilled immigrants can offset the fiscal cost of low-skilled immigrants. The net effect depends on each group's relative share.



it is a small fraction of GDP overall, but likely higher if more immigrants are skilled. Estimates of the fiscal impact of immigration are also more favorable the greater the share of high-skilled immigrants. Immigration's fiscal impact is the difference between taxes paid by immigrants and the cost of government services they receive. Since income is so highly correlated with education, the fiscal impact of an immigrant essentially depends on educational attainment. The same is true for natives.

Estimates from 1996—the most recent comprehensive estimates available—indicate that immigrants with less than a high school diploma cost \$89,000 more than they contribute in taxes over their lifetimes, while immigrants with more than a high school education contribute \$105,000 more in taxes than they use in public services.²¹ In other words, low-skilled immigrants are a net fiscal drain, but overall, immigration need not be. High-skilled immigrants can offset the fiscal cost of low-skilled immigrants. The net effect depends on each group's relative share.

Immigration's adverse fiscal impacts are most felt at the local level. State and local governments meet many of the needs of low-skilled immigrants by bearing the bulk of the cost of education and public hospitals and part of the cost of public assistance programs, such as public health insurance (Medicaid and the Children's Health Insurance Program, or CHIP) and traditional welfare (Temporary Assistance for Needy Families, or TANF).

In 2010, about 31 percent of immigrant-headed households participated in a major means-tested public assistance program, compared with 19 percent of native-headed households.²² The difference is entirely explained by Medicaid and CHIP participation, a consequence of the low rates of private health insurance coverage among immigrant families.

Some policymakers argue that more immigration can remedy the looming shortfalls in pay-as-you-go programs, such as Social Security. Although a large increase in immigration can extend trust fund solvency a few years, higher levels of immigration would



do little to reduce Social Security's overall unfunded liabilities, which are in the trillions.²³

A more attainable goal may be to mitigate federal budget deficits. An interesting 2000 study showed that a selective immigration policy that admitted 1.6 million high-skilled immigrants age 40–44 years old annually into a hypothetical U.S.-style economy with a 50 percent debt-to-GDP ratio would have balanced the budget within five years and eventually eliminated the national debt.²⁴ Balancing the budget via tax increases instead would have required a 4.4 percentage point increase in income tax rates, according to that study.

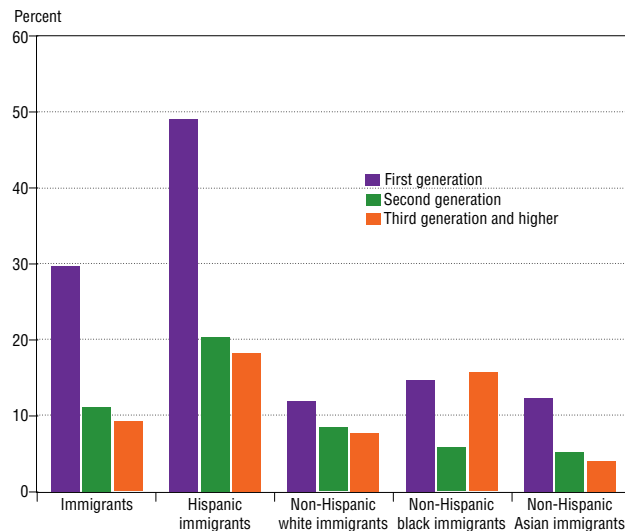
The Second Generation

High-skilled immigrants, thus, can help the fiscal picture. But many immigrants have relatively low education levels and impose significant fiscal costs. One silver lining is that these costs dissipate in the very long run as their descendants assimilate and “pay back” the costs imposed by their predecessors. Economic or educational assimilation is, therefore, a very important piece of the immigration calculation. Although many first-generation immigrants lack even a high school degree, their descendants generally reach typical U.S. education outcomes over time.

Patterns of educational attainment by generation suggest immigrants' children, the second generation, show a large improvement over the first generation, with the share lacking a high school degree declining steeply from 30 percent to 11 percent (Chart 7). Improvements tend to continue but at a slower pace in the third generation, with the exception of non-Hispanic blacks, who appear to backslide in the third generation.

With education playing such a central role in immigrant integration and with so many low-education immigrants, the challenge facing U.S. schools is formidable. In California, 50 percent of children enrolled in K–12 schools are either immigrants or the children of immigrants. In Texas, the share is 32 percent; nationally, it is 22 percent. These children have advantages and disadvantages—they are likely to be bi-

Chart 7
Second-Generation Education Outcomes a Big Improvement Over Parents
 (Individuals age 25 and over lacking a high school diploma)



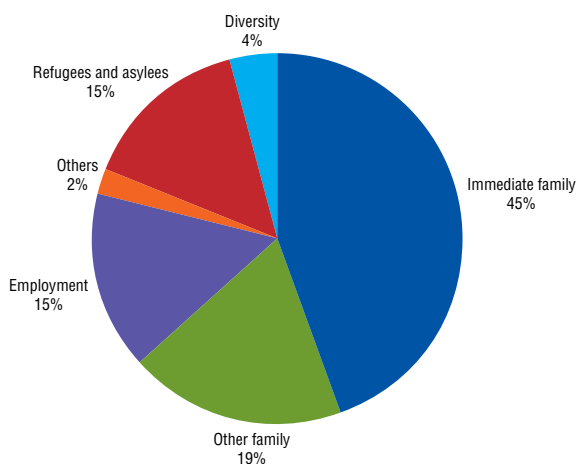
SOURCE: 2009 American Community Survey.

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Your huddled masses yearning to breathe free,

Chart 8
Green Cards Go Mostly to Family, Humanitarian Immigrants



NOTE: Share of legal permanent residents by admission class (2005 through 2009).

SOURCE: *Yearbook of Immigration Statistics*, Department of Homeland Security.



lingual and have parents who want them to succeed, but many are from families with limited resources. Compounding the problem is that states and localities are confronting significant budget cuts in coming years, cuts that will undoubtedly impact schools.

Implications for Immigration Policy

The benefits of immigration accrue from high- and low-skilled immigrants. Both tend to complement the native workforce, bringing brains or brawn to locations and occupations where there is a need. The Hispanic immigrant population in Louisiana jumped nearly 20 percent following Hurricane Katrina, as workers converged there to assist the cleanup and reconstruction.

High-skilled workers, however, come with more benefits and fewer costs than low-skilled workers. And their skills are key to the vitality and growth of some of the nation’s most successful industries and to research and development. In addition, many high-skilled immigrants work in industries that produce tradable goods or services, meaning companies can employ their workers here or overseas. Google can hire programmers to work in Mountain View, Calif., or in Guangzhou or Hyderabad or any of the other 49 non-U.S. cities in which it currently operates. If it cannot get visas for its workers, it can just employ them overseas.²⁵ For all these reasons, the U.S. has a lot to gain from rewriting U.S. immigration policy to focus more on high-skilled and employment-based immigration.

Existing policy is rooted in the 1965 amendments to the Immigration and Nationality Act, which made family reunification the primary objective. The U.S. annually issues about 1.1 million green cards, allowing permanent legal residence. About 85 percent go to family members of U.S. citizens or permanent legal residents, people seeking humanitarian refuge and “diversity immigrants,” who come from countries with low rates of immigration to the United States (*Chart 8*).²⁶ The remaining 15 percent go to people who are immigrating for work reasons—but half of these are



for workers' spouses and children, meaning a mere 7 percent of green cards go to so-called principal workers, most of whom are high-skilled. No other major developed economy gives such a low priority to employment-based immigration (Table 1).

The U.S. has created several temporary visa programs in the past two decades to help compensate for the low number of employment-based green cards (Chart 9). The best known is the H-1B program, which admits about 131,000 workers in a typical year, many of them high-skilled Indians going to work in the information technology sector.²⁷ Another important temporary job-based measure is the Trade NAFTA (TN) visa, which brings in an additional 72,000 professionals, mostly from Canada. The L1 program allows multinational corporations' intracompany transferees (about 74,000), and the O1 program provides visas for a small number of workers of "extraordinary ability."

Unprecedented green card queues are a byproduct of expanding temporary, but not permanent, visas for high-skilled personnel. More than 1 million high-skilled workers are waiting for an employment-based green card, and untold numbers have given up on waiting or even applying. For those in the queue, their applications have been approved, but their green cards won't be available for years because of strict numerical limits on employment-based permanent visas. There also are country-of-origin limits that restrict the number of immigrants from populous nations such as China and India.

Expanding employment-based immigration would offer a host of benefits, including more high-skilled and procyclical immigration. Employment-based immigration is demand driven, which means it declines when the U.S. labor market weakens, as it did during the recent recession. The high-tech boom of the late 1990s and the housing and financial boom of the mid-2000s produced rapid expansion in visa issuance, while the 2001 recession, subsequent jobless recovery and the recession that began in late 2007 were all periods of visa declines. While temporary work-based visas responded to the business cycle, the total

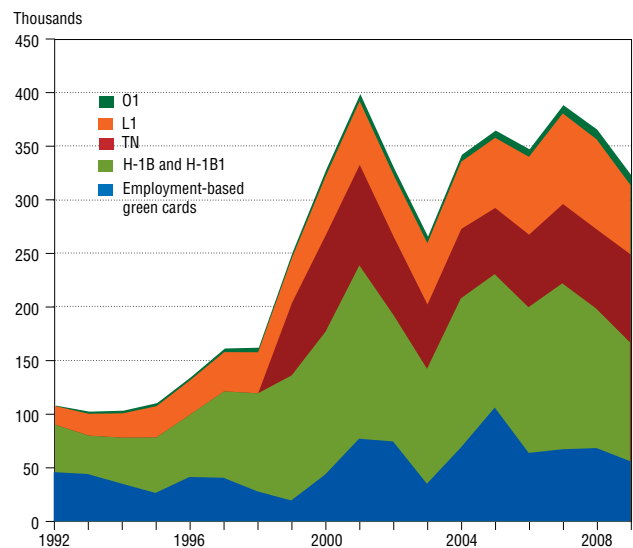
Table 1
U.S. Lags Behind Other Nations in Share of Work-Based Immigrants

Country	Total number (thousands)	Work (percent)	Family (percent)	Humanitarian (percent)	Other (percent)
South Korea	195	81	17	0	2
Switzerland	139	80	14	5	2
Spain	392	79	20	0	1
Italy	425	65	31	3	1
Germany	228	59	22	16	2
United Kingdom	347	58	31	1	10
Australia	206	42	51	6	1
France	168	34	52	7	8
Canada	247	25	62	13	0
United States	1,107	7	73	15	5

NOTES: Only includes OECD countries. Work includes free-movement migrants. Percentages may not add to 100 due to rounding.

SOURCE: *International Migration Outlook 2010*, Organization for Economic Cooperation and Development.

Chart 9
Temporary Visas, Not Green Cards, Driving High-Skilled Immigration



NOTE: Number of visas issued to high-skilled workers by visa type and fiscal year.

SOURCES: Statistical Yearbook of the Immigration and Naturalization Service; *Yearbook of Immigration Statistics*, Department of Homeland Security; State Department visa office.



Send these, the homeless, tempest-tost to me,

number of green cards issued has not changed much. Green card issuance barely budged in 2008 and 2009, during the worst recession in 80 years, despite the more than 6 percent drop in employment nationwide and steep rise in unemployment.

Conclusion

Although immigration has played a fundamental role in shaping the U.S., it has always been controversial. In the 19th century, natives agonized over the German influx, then the Irish and then the Chinese. In the 20th century, natives revolted against the waves of southern and eastern Europeans. In the

wake of the 1920–21 recession, lawmakers passed the most restrictive immigration act in the nation’s history, the National Origins Act of 1924.

Clearly, recessions and immigration do not mix well. Still, most of the postwar period has been devoted to loosening restrictions or finding ways around them.

Immigration laws should be rewritten to focus on economic priorities. These include leveraging high-skilled immigration to build the nation’s human capital base, retain skilled jobs, foster research and development, and bolster competitiveness. These payoffs will take years to occur but require making changes now. Other economic goals, such as making inflows more cyclical, can be readily achieved with a greater share of employment-based visas. Labor demand is naturally cyclical, and work-based immigration will decline in downturns and rise in expansions.

As global growth shifts increasingly to emerging markets, such as China and India, competition for skilled workers will only increase. The share of Chinese students educated abroad—most of them in the critical STEM fields—who return to China to work has doubled since 2001. Globalization and technologi-

cal change already favor high-skilled workers, in a trend that goes back decades. Since the early 1970s, the inflation-adjusted wages of only the most highly educated U.S. workers have consistently risen. Blue-collar pay, particularly for men, has declined in real terms. The nature of economic growth has shifted from brawn and machines to brains and microchips. Immigration policy should reflect this change and be a tool that helps secure the nation’s prosperity, now and in the future.

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Notes

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¹ This report uses the terms foreign born and immigrant interchangeably to refer to individuals born abroad to foreign-born parents and uses native born to refer to anyone born in the U.S. (or born abroad to U.S. citizens).

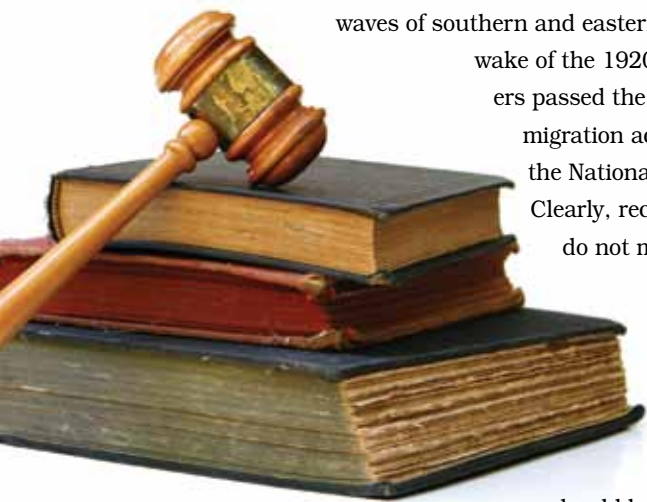
² The decennial census did not ask about education or income until 1940. We use data on workers’ occupations to proxy for the shares of low-skilled (blue-collar) and high-skilled (white-collar) workers.

³ Since 1993, the number of U.S. citizens and permanent residents enrolled in graduate studies in science and engineering (S&E) has risen, although not as fast as the number of foreign students. Foreign students who were doctoral graduates in S&E made up 33 percent of total graduates in 2007. See appendix Table 2-30 in “Science and Engineering Indicators 2010,” National Science Board, Arlington, Va., 2010.

⁴ The former U.S.S.R. consists of Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

⁵ “The Place Premium: Wage Differences for Identical Workers Across the U.S. Border,” by Michael Clemens, Claudio Montenegro and Lant Pritchett, Center for Global Development, Working Paper no. 148, July 2008, www.cgdev.org/content/publications/detail/16352.

⁶ For a historical comparison with domestic migration, personal income per capita was 2.4 times higher in New England than in the South in 1929, 2.7 times higher in the mid-Atlantic states, and 2.2 times higher in the Midwest (authors’ calculations based on





Bureau of Economic Analysis data not adjusted for differences in purchasing power).

⁷ "U.S. Unauthorized Immigration Flows Are Down Sharply Since Mid-Decade," by Jeffrey S. Passel and D'Vera Cohn, Pew Hispanic Center report, September 2010, <http://pewhispanic.org/files/reports/126.pdf>.

⁸ "Mexican Immigrants: How Many Come? How Many Leave?," by Jeffrey S. Passel and D'Vera Cohn, Pew Hispanic Center report, July 2009, <http://pewhispanic.org/files/reports/112.pdf>.

⁹ Differences in English ability may create opportunities for native-born workers to move up the skill chain. 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. As Peri and Sparber show, immigration appears to push natives into jobs that require communication skills, an area where natives have an advantage over immigrants with limited English fluency.

¹⁰ "Low-Skilled Immigration and the Labor Supply of Highly Educated Women," by Patricia Cortés and José Tessada, University of Chicago Graduate School of Business, unpublished paper, 2009.

¹¹ See "The Economic Analysis of Immigration," by George J. Borjas, in *Handbook of Labor Economics*, vol. 3, part 1, 1999, pp. 1697–1760; and "Is the New Immigration Really So Bad?," by David Card, *Economic Journal*, vol. 115, no. 507, 2005, pp. 300–23. Economists agree, however, that in the long run, wages are not affected by immigration. This is because the capital stock should adjust in the long run. If the number of workers increases as a result of immigration, wages initially fall and returns to capital increase. As the amount of capital increases in the long run in response to higher returns to capital, the returns to capital and labor revert to their initial levels.

¹² See note 11, Borjas (1999), and "Immigration's Economic Impact," by the Council of Economic Advisers, Washington, D.C.: Government Printing Office, June 2007.

¹³ *The Theory of Economic Development*, by Joseph Schumpeter, Cambridge, Mass.: Harvard University Press, 1934; "A Model of Growth Through Creative Destruction," by Philippe Aghion and Peter Howitt, *Econometrica*, vol. 60, no. 2, 1992, pp. 323–51.

¹⁴ "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; "The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention," by William R. Kerr and William F. Lincoln, Harvard Business School, Working Paper no. 09-005, December 2008; "Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions by Entry Visa," by Jennifer Hunt, National Bureau of Economic Research, Working Paper no. 14920, April 2009; "The Contribution of International Graduate Students to U.S. Innovation," by Gnanaraj Chellaraj, Keith E. Maskus and Aaditya Mattoo, *Review of International Economics*,

vol. 16, no. 3, 2008, pp. 444–62.

¹⁵ See note 14, Hunt and Gauthier-Loiselle (2010).

¹⁶ *Silicon Valley's New Immigrant Entrepreneurs*, by AnnaLee Saxenian, San Francisco: Public Policy Institute of California, 1999.

¹⁷ "America's New Immigrant Entrepreneurs," by Vivek Wadhwa, AnnaLee Saxenian, Ben Rissing and Gary Gereffi, Duke Science, Technology and Innovation Paper no. 23, January 2007, http://people.ischool.berkeley.edu/~anno/Papers/Americas_new_immigrant_entrepreneurs_l.pdf.

¹⁸ Estimates suggest immigrants are 30 percent more likely to start a business. See "Estimating the Contribution of Immigrant Business Owners to the U.S. Economy," by Robert W. Fairlie, Small Business Administration, Washington, D.C.: Government Printing Office, November 2008. Immigrant self-employment rates are 11.3 percent versus 9.1 percent for natives (authors' calculations based on 2010 Current Population Survey data). This difference in self-employment is driven by less-educated immigrants, perhaps because of their relatively poor labor market options.

¹⁹ See "Does Immigration Grease the Wheels of the Labor Market?," by George J. Borjas, *Brookings Papers on Economic Activity*, 2001, pp. 69–119. Borjas estimates that the efficiency gains accruing to natives from a greater rate of regional wage convergence are around \$5 billion to \$10 billion per year.

²⁰ One recent study concludes that immigration raises total factor productivity, perhaps by increasing task specialization. See "The Effect of Immigration on Productivity: Evidence from U.S. States," by Giovanni Peri, National Bureau of Economic Research, Working Paper no. 15507, November 2009.

²¹ *The New Americans: Economic, Demographic and Fiscal Effects of Immigration*, James P. Smith and Barry Edmonston, ed., Washington, D.C.: National Academies Press, 1997.

²² Calculations are based on March 2010 Current Population Survey. Major means-tested programs are TANF, Medicaid, CHIP, Supplemental Security Income (SSI) and Supplemental Nutrition Assistance Program (SNAP, or food stamps).

²³ "The 2010 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds," Washington, D.C.: U.S. Government Printing Office, August 2010, www.ssa.gov/OACT/TR/2010/tr2010.pdf.

²⁴ "Sustaining Fiscal Policy Through Immigration," by Kjetil Storesletten, *Journal of Political Economy*, vol. 108, no. 2, 2000, pp. 300–23.

²⁵ "Tech Recruiting Clashes With Immigration Rules," by Matt Richtel, *New York Times*, April 11, 2009.

²⁶ Countries eligible for the diversity visa lottery include many African and European nations. Applicants from Ghana, Bangladesh and Ethiopia were the top recipients of visas in the 2011 lottery.

²⁷ Although the official H-1B cap is 85,000 visas (65,000 plus 20,000 for holders of U.S. advanced degrees), the nonprofit sector is exempt from the cap.