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Immigration's Economic Impact
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"Our review of economic research finds immigrants not only help fuel the Nation's economic growth, but also have an overall positive effect on the income of native-born workers."

-Council of Economic Advisers Chairman Edward P. Lazear

Introduction

In 2006, foreign-born workers accounted for 15% of the U.S. labor force, and over the last decade they have accounted for about half of the growth in the labor force. That immigration has fueled U.S. macroeconomic growth is both uncontroversial and unsurprising – more total workers yield more total output. That immigrant workers benefit from working in the United States is also uncontroversial and unsurprising – few would come here otherwise.¹

Assessing how immigration affects the well-being of U.S. natives is more complicated. This is because immigration's economic impact is complex and may play out over generations, and because not all natives are alike in terms of their economic characteristics. Even in retrospect it is not easy to distinguish the influence of immigration from that of other economic forces at work at the same time. Nor is it easy to project costs and benefits far into the future. Nonetheless, economists and demographers have made headway on many of the measurement problems. This white paper assesses immigration's economic impact based on the professional literature and concludes that immigration has a positive effect on the American economy as a whole and on the income of native-born American workers.

Key Findings

1. On average, US natives benefit from immigration. Immigrants tend to complement (not substitute for) natives, raising natives' productivity and income.
2. Careful studies of the long-run fiscal effects of immigration conclude that it is likely to have a modest, positive influence.
3. Skilled immigrants are likely to be especially beneficial to natives. In addition to contributions to innovation, they have a significant positive fiscal impact.

¹ This document will use "immigrant" and "foreign born" interchangeably. The terms encompass both legal and illegal migrants. Because it is difficult to determine the legal status of migrants in standard data sets, the economics literature generally assesses all foreign-born workers together.

General Points

- **Immigrants are a critical part of the U.S. workforce and contribute to productivity growth and technological advancement.** They make up 15% of all workers and even larger shares of certain occupations such as construction, food services and health care. Approximately 40% of Ph.D. scientists working in the United States were born abroad. (Source: Bureau of Labor Statistics; American Community Survey)
- **Many immigrants are entrepreneurs.** The Kauffman Foundation's index of entrepreneurial activity is nearly 40% higher for immigrants than for natives. (Source: Kauffman Foundation)
- **Immigrants and their children assimilate into U.S. culture.** For example, although 72% of first-generation Latino immigrants use Spanish as their predominant language, only 7% of the second generation are Spanish-dominant. (Source: Pew Hispanic Center/Kaiser Family Foundation)
- **Immigrants have lower crime rates than natives.** Among men aged 18 to 40, immigrants are much less likely to be incarcerated than natives. (Source: Butcher and Piehl)
- **Immigrants slightly improve the solvency of pay-as-you-go entitlement programs such as Social Security and Medicare.** The 2007 OASDI Trustees Report indicates that an additional 100,000 net immigrants per year would increase the long-range actuarial balance by about 0.07% of taxable payroll. (Source: Social Security Administration)
- **The long-run impact of immigration on public budgets is likely to be positive.** Projections of future taxes and government spending are subject to uncertainty, but a careful study published by the National Research Council estimated that immigrants and their descendants would contribute about \$80,000 more in taxes (in 1996 dollars) than they would receive in public services. (Source: Smith and Edmonston)

1. Evaluating the Effect of Immigration on the Income of Natives

Immigrants not only change the size of the labor force, they change the relative supplies of factors such as unskilled labor, skilled labor, and capital in the economy. US natives tend to benefit from immigration precisely because immigrants are not exactly like natives in terms of their productive characteristics and factor endowments. For example, Chart 1 shows that in contrast to their 15% share in the total labor force, foreign-born workers accounted for much higher proportions of workers without high school degrees *and* of those with Ph.D. degrees (especially for those working in scientific occupations). Differences between natives and immigrants lead to production complementarities that benefit natives.

Example:

- The presence of unskilled foreign-born construction laborers allows skilled US craftsmen and contractors to build more homes at lower cost than otherwise – therefore the US natives’ productivity and income rise.
- Thus, when immigrants are added to the US labor force, they increase the economy’s total output, which is split between immigrants (who receive wages) and natives (who receive wages and also earn income from their ownership of physical and human capital). Natives may also gain from having a wider variety of goods and services to consume and from lower prices for the goods and services produced by industries with high concentrations of foreign-born workers.

The “immigration surplus” is a simple and frequently cited metric of natives’ total gains from immigration. The surplus accrues to native factors of production that are complemented by immigrant workers – that is, to factors whose productivity is enhanced by the presence of immigrants. In a simple model with just capital and labor (not differentiated by skill), similar in structure to that presented in the National Research Council (NRC) analysis, one can estimate this surplus as the area of a triangle defined by a downward sloping labor demand curve and the shift in labor supply attributed to immigration. Using a standard estimate of labor demand elasticity (0.3) and measures of the foreign-born share of the labor force, the current immigration surplus is about 0.28% of GDP, or roughly \$37 billion per year.²

Although the simplicity of the “immigration surplus” approach is attractive, the implicit assumptions are numerous, and it is well-understood by economists that this is not a full reckoning of immigration’s influence on the economy. For example, the approach does not differentiate between different kinds of workers (by skill, experience or nativity) and does not allow for an endogenous and positive capital market response to the change in labor supply. Because immigration changes the mix of factors in the economy, it may influence the pattern of factor prices, which in turn may induce endogenous changes in other factor supplies. Moreover,

² Arithmetically, as a share of GDP the surplus is approximated by one-half times labor’s share of income times the proportional increase in employment times the estimated wage adjustment to a supply shift of that size. Varying the assumed elasticity of labor demand changes the estimated surplus proportionally. An elasticity of 0.1 yields a surplus estimate of \$12 billion, whereas an elasticity of 0.5 yields surplus estimate of \$62 billion. The approach is discussed at some length in chapter 4 of J. Smith and B. Edmonston (eds.), *The New Americans: Economic, Demographic, and Fiscal Effects of Immigration*, Washington DC: National Research Council, National Academy Press, 1997. The NRC’s rough immigration surplus estimate was \$14 billion in 1996. The larger 2006 figure here is due to a larger economy, inflation to 2006 dollars, and growth in the immigrant share of the workforce.

implicit in the surplus calculation is an assumed negative effect on average wages for natives – an effect that is difficult to detect in empirical studies of the U.S. wage structure.³

A more complex approach to measuring the influence of immigration on natives' income differentiates workers by skill, nativity, and experience and also allows for a capital accumulation response to changes in the supply of labor. In this scenario complementarities from immigrant workers are allowed to accrue to native workers. A recent paper by Ottaviano and Peri (2006) takes such an approach to measuring the wage effects of immigration and concludes that immigration since 1990 has boosted the average wage of natives by between 0.7% and 1.8% depending on the assessment's timeframe – the effect is more positive when the capital stock has had time to adjust.⁴ Fully 90% of US native-born workers are estimated to have gained from immigration. Multiplying the average percentage gains by the total wages of US natives suggests that annual wage gains from immigration are between \$30 billion and \$80 billion.⁵

In both approaches described above, natives benefit from immigration because the complementarities associated with immigrants outweigh any losses from added labor market competition. Rather than focusing on average effects, special attention could be paid to the well-being of the least-skilled natives. The number of natives with less than a high school degree has declined over time, which is one reason less-skilled immigrants have been drawn into the US labor force to fill relatively low-paying jobs. Even so, based on Chart 1, one might expect the remaining least-skilled natives to face labor market competition from immigrants.⁶ Evidence on this issue is mixed. Studies often find small negative effects of immigration on the wages of low-skilled natives, and even the comparatively large estimate reported in Borjas (2003) is under 10% for immigration over a 20 year period.⁷ The difficulties faced by high school dropouts are a serious policy concern, but it is safe to conclude that immigration is not a central cause of those difficulties, nor is reducing immigration a well-targeted way to help these low-wage natives.

- Conclusion: Immigrants increase the economy's total output, and natives share in part of that increase because of complementarities in production. Different approaches to estimating natives' total income gains from immigration yield figures over \$30 billion per year. Sharply reducing immigration would be a poorly-targeted and inefficient way to assist low-wage Americans.

³ See, for instance, D. Card, "Is the New Immigration Really So Bad?" NBER Working Paper 11547 (2005) or R. Friedberg and J. Hunt, "The Impact of Immigration on Host Country Wages, Employment and Growth," *Journal of Economic Perspectives* 9 (1995): 23-44.

⁴ The 1.8% figure is based on Ottaviano and Peri's "median" value for the elasticity of substitution between native and foreign-born workers within education-experience groups (6.6). Varying the parameter from 5 to 10 yields long-run average wage gains ranging from 2.3% to 1.2%. See G. Ottaviano and G. Peri, "Rethinking the Effects of Immigration on Wages," NBER Working Paper 12497 (2006).

⁵ Total wages earned by US natives were calculated using the 2005 American Community Survey.

⁶ Note that even within categories defined by education and experience levels, natives may have language skills and local knowledge that substantially differentiate them from immigrants.

⁷ G. Borjas, "The Labor Demand Curve Is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market," *Quarterly Journal of Economics* 118 (2003): 1335-1374. The figure cited in the text appears on p. 1369. G. Ottaviano and G. Peri (2006), using an approach that builds directly on Borjas (2003), estimate a negative effect of only 1% to 2% for the least-skilled natives. A key methodological difference is that Ottaviano and Peri allow for imperfect substitution between immigrants and natives within education-experience cells. Card (2005) also questions whether immigrants substantially lower the wages of unskilled natives.

2. Evaluating the Fiscal Benefits and Costs

To assess the fiscal implications of immigration, it is important to take a long-term view of the process and its interaction with projected demographic and economic trends. The National Research Council (NRC) published a landmark study of immigration in 1997, including an assessment of the overall fiscal impact (incorporating taxes and benefits at all levels of government).⁸ Although 10 years have passed since its publication, the volume's basic methodological lessons and empirical results are worth repeating.⁹

One key point is that “snapshot” views of immigration's fiscal impact, particularly when based on analysis of households headed by immigrants, are insufficient and potentially misleading guides to immigration's long-run fiscal impact.¹⁰ Instead, “Only a forward-looking projection of taxes and government spending can offer an accurate picture of the long-run fiscal consequences of admitting new immigrants” (Smith and Edmonston 1997, p. 10). This approach captures the full costs and benefits of the children of immigrants. Of course, such projections must rely on assumptions about the future path of taxes and government spending as well as economic and demographic trends. From this long-run point of view, the NRC study estimated that immigrants (including their descendants) would have a positive fiscal impact – a present discounted value of \$80,000 per immigrant on average in their baseline model (in 1996 dollars).¹¹ The surplus is larger for high-skilled immigrants (\$198,000) and slightly negative for those with less than a high school degree (-\$13,000). It is worth noting that the NRC's estimated fiscal cost from less-skilled workers is far smaller than some commentators have recently suggested based on less satisfactory methods.

The long-term fiscal approach imparts four main lessons: 1) although subject to uncertainty, it appears that immigration has a slightly positive long-run fiscal impact; 2) skilled immigrants have a more positive impact than others; 3) the positive fiscal impact tends to accrue at the federal level, but net costs tend to be concentrated at the state and local level; and 4) the overall fiscal effect of immigration is not large relative to the volume of total tax revenues – immigration is unlikely to cure or cause significant fiscal imbalances.

- **Conclusion:** Although subject to the uncertainties inherent to long-run projections, careful forward-looking estimates of immigration's fiscal effects, accounting for all levels of government spending and tax revenue, suggest a modest positive influence on average. The fiscal impact of skilled immigrants is more strongly positive.

⁸ J. Smith and B. Edmonston (eds.), *The New Americans: Economic, Demographic, and Fiscal Effects of Immigration*, Washington DC: National Research Council, National Academy Press, 1997.

⁹ For a more recent but parallel investigation, see R. Lee and T. Miller, “Immigration, Social Security, and Broader Fiscal Impacts,” *American Economic Review* 90, 2 (May 2000): 350-354.

¹⁰ For example, see R. Rector and C. Kim, “The Fiscal Cost of Low-Skill Immigrants to the U.S. Taxpayer,” Washington, DC: Heritage Foundation, 2007.

¹¹ The NRC volume estimated that the limitations on public benefits in the 1996 Personal Responsibility and Work Opportunity Reconciliation Act would raise the fiscal impact by an additional \$8,000 on average. The NRC baseline model assumed that the debt-GDP ratio would be stabilized after 20 years by a 50-50 combination of falling government spending and rising taxes. The report discusses alternative scenarios and concludes that the basic results are not strongly affected by the assumed mix of adjustment of benefits versus taxes (Smith and Edmonston 1997, p. 338).

3. Immigrants in the U.S. Labor Force

From the perspective of workers in many countries today, the potential income gains from migration are large. For example, Hanson (2006) measured average wages for Mexican-born men who had recently moved to the United States and compared them to the wages of similar men who were still working in Mexico.¹² The real wage ratios (that is, wages adjusted for international differences in prices) ranged from about 6-to-1 to 2-to-1 in favor of the U.S.-based workers, depending on the age and education group. Facing such large international wage differences, a worker might hope to move to the U.S. permanently or with the expectation of returning home after accumulating some savings. In this scenario the opportunity to work abroad temporarily can help finance large purchases or investments (like a house, car, or new business) in home countries where credit markets are underdeveloped and where wealth accumulation is difficult due to low wages. Migration might also allow households to expand and diversify their income sources, thereby serving as a lifeline to a higher and more stable income level for family members who remain based in a less-developed economy. In short, the economic gains to immigrants and their families are typically quite large.

These immigrants, like those in the past, work hard to improve their lot and that of their children. Their labor force participation rate, reflecting their concentration in prime working ages, is somewhat higher than that of natives (69% versus 66% in 2006), and conditional on being in the labor force their unemployment rate is somewhat lower than that of natives (4.0% versus 4.7% in 2006).¹³ Although their average income level is lower than natives', Table 1 shows that they do fairly well in comparison with natives who have similar levels of education. Immigrants have low rates of incarceration compared to natives.¹⁴ And they are more likely to engage in entrepreneurial activity.¹⁵ Children of Latino immigrants overwhelmingly learn English.¹⁶ Finally, relative to natives, the children of low-education immigrants narrow much of the educational and income gap that their parents faced.¹⁷

- **Conclusion:** As in the past, immigrants evince a strong work ethic, and the children of immigrants tend to assimilate in terms of language acquisition and educational attainment.

¹² G. Hanson, "Illegal Migration from Mexico to the United States," *Journal of Economic Literature*, 44 (2006): 869-924.

¹³ <http://www.bls.gov/news.release/pdf/forbrn.pdf>.

¹⁴ See Anne Morrison Piehl's testimony before the U.S. House of Representatives Committee on the Judiciary, Subcommittee on Immigration, Citizenship, Refugees, Border Security, and International Law (May 17, 2007), available at <http://judiciary.house.gov/media/pdfs/Piehl070517.pdf>. Piehl, an economist at Rutgers University, testified that "...there is no empirical evidence that immigrants pose a particular crime threat. In contrast, the evidence points to immigrants having lower involvement in crime than natives. The direct evidence on crime rates shows that localities that receive large numbers of immigrants do not experience increases in relative crime rates."

¹⁵ See the Kauffman Foundation's index of entrepreneurial activity (available at www.kauffman.org).

¹⁶ See the Pew Hispanic Center/Kaiser Family Foundation 2002 National Survey of Latinos, summary results are available at: <http://pewhispanic.org/files/execsum/15.pdf>.

¹⁷ See D. Card, "Is the New Immigration Really So Bad?" NBER Working Paper 11547 (2005). Also See D. Card, J. DiNardo, and E. Estes, "The More Things Change: Immigrants and the Children of Immigrants in the 1940s, 1970s, and the 1990s," in G. Borjas (ed.), *Issues in the Economics of Immigration*. Chicago: University of Chicago Press, 2000.

Additional Reading

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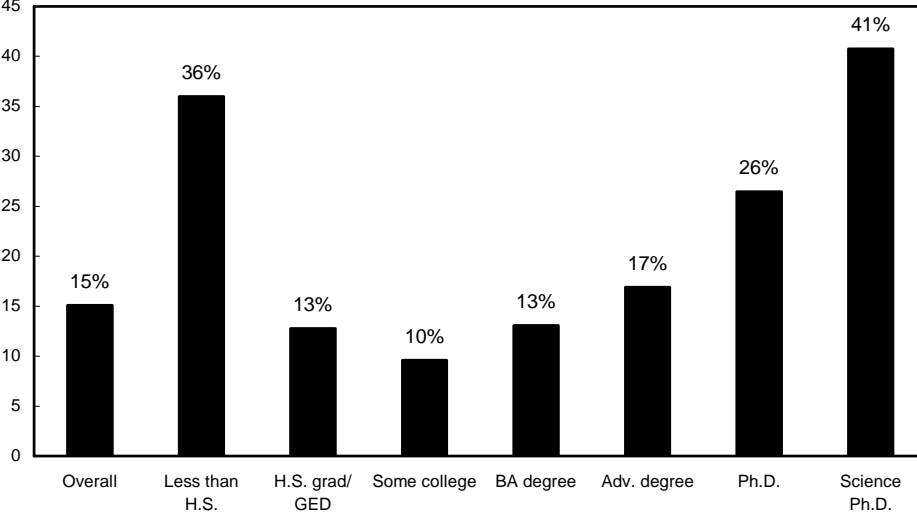
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Chart 1 Foreign-Born Proportion of U.S. Workers by Education Level, 2005

Foreign-born workers are concentrated at the top and bottom of the education distribution relative to native-born workers.

Percent of employed workers



Note: The sample includes all employed persons over the age of 15. "Adv. Degree", "Ph.D.", and "Science Ph.D." are not mutually exclusive categories. The "Science Ph.D." group includes workers in computer, mathematical, architectural, engineering, and life, physical and social science occupations.

Source: American Community Survey.

Table 1.—Median Weekly Earnings by Educational Attainment, 2006

Educational Attainment	Native-born earnings	Foreign-born earnings	Foreign earnings as % of native earnings	Foreign-born unemployment rate
All	\$743	\$575	77	3.6
Less than a high school diploma	462	396	86	5.1
High school graduates, no college	607	507	84	3.5
Some college, no degree	701	613	87	3.4
College graduates	1042	1024	98	2.3

Note: Wage data relate to full-time wage and salary workers aged 25 years and older. Unemployment data relate to those in the labor force aged 25 years and over.

Source: Department of Labor (Bureau of Labor Statistics).