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Spotlight on Immigration: Interdisciplinary Perspectives on Immigrants and Their Children

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The Economic and Fiscal Impacts of Immigration

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The Economic and Fiscal Impacts of Immigration

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Abstract

Immigration is a hotly contested policy issue in the United States. Diametrically opposed advocacy groups exchange counterclaims on immigration's blessings or banes, sometimes with little pretext of objectivity. However, recent decades have also seen a growing body of nonpartisan scholarly analysis of immigration's fiscal and economic impact in the US. An exploration of such study finds that the preponderance of evidence points to positive net fiscal and economic impacts—albeit modest ones—and negligible effects on native wages and employment rates. Immigration may have other economic impacts—positive and/or negative—not yet captured or measured. More research is needed to further our understanding of immigration's fiscal and economic effects.

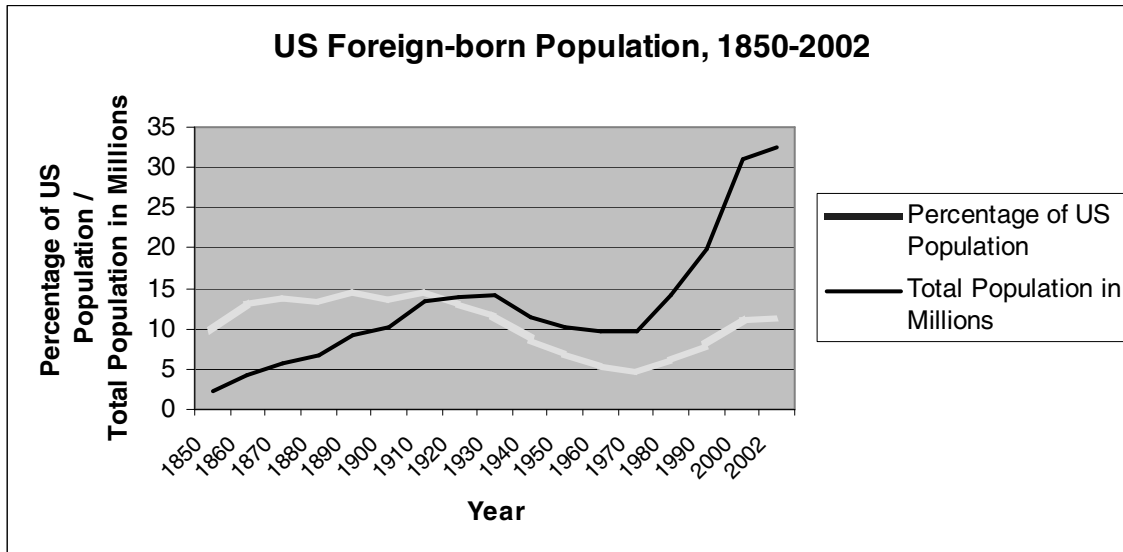
Introduction

Immigration today is the subject of considerable debate in the United States. Fear of terrorism has heightened border security and prompted a broad reorganization of immigration services under the new Department of Homeland Security. Two recent pieces of Californian legislation—one to limit illegal immigrants' access to public education and health care and another to provide them with driver's licenses—made headlines across the country as they were proposed and defeated. The 2000 US Census showed that immigrants were entering the country at a rate not seen since the Great Migration at the turn of the twentieth century, kindling spirited discussion of how many is too many—or not enough.

In 2002, 32.5 million foreign-born persons resided in the US.¹ Over a million were admitted as legal permanent residents,² and, if the trend of the 1990s continued, an estimated 350,000 people either entered illegally or became illegal by violating the terms of their temporary admission.³ The annual number of immigrants to the US at the turn of this century is on par with the number at the turn of the last,⁴ while the proportion of foreign-born as a percentage of the total population went from a high of 14.8 percent in 1890⁵ to 11.5 in 2002.⁶ This has not been a steady decline, however: the percentage has more than doubled since 1970, when the foreign-born made up 4.7 percent of the population.⁷ Under the US Census Bureau's middle-series assumptions, by 2050 the total number of foreign-born people in the US will increase to 53.8 million, or 13 percent of the projected total US population.⁸

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Source: Kramer, 2002.

The number of immigrants now entering the United States each year is thus not without precedent, and the proportion of foreign-born in the US population is still substantially smaller than the record level of 1890. Nevertheless, since 1970, the number of foreign-born in the US has risen dramatically, in terms of both absolute numbers and total population share, and immigration has accounted for an increasing degree of the nation's population growth. Moreover, unlike the Great Migration at the turn of the twentieth century, made up of immigrants from mostly Western European nations, recent immigrants' countries of origin are largely Latin American (predominately Mexico) and Asian. With the burgeoning magnitude of this latest wave of migration and its implications for changing the demography of the US, public interest in and debate upon the issue have intensified.

Strong views on immigration's value—or lack thereof—are nothing new in America. The ebbs and flows of immigration into the US reflect, to a substantial degree, restriction and easement of barriers to entry—i.e., changes in public policy according to the dominant opinion of the period. (Of course, variation over time occurs for other reasons as well, e.g., geopolitical upheavals, market forces, etc.) The Great Migration at the turn of the twentieth century was reduced in the 1920s by legislated caps on that focused on national origins of immigrants, severely limiting immigration from non-Anglo-Saxon countries. Increased immigration followed the passage of the 1965 Immigration Reform and Control Act (IRCA), which eliminated national origin quotas. The caps of the 1920s embodied national concern that the Great Migration included too many of the wrong kinds of people;⁹ the IRCA reflected Civil-Rights-Era sensibilities about overtly race-based policy.

Not least because it is a social concern, US views on immigration are complicated by emotion. It is an issue of deep personal relevance to the vast majority of the populace, who, if not immigrants themselves, can at least trace their ancestry back to some. Feelings on immigration are also entwined with national

history and identity: America has taken pride in being a nation of immigrants, and she has felt shame for shabby treatment of some of the immigrant groups who built her. Immigration policy is a lightning rod for conflict, among those who view the nation's increasing ethnic diversity as boon or bane; those who believe the US should unreservedly welcome the foreign-born and those who hold she should close her borders; those who see immigration as promise of a lustrous new American future versus those who consider it a threat to our national identity. In short, immigration is a controversial subject that excites strong sentiments in its debate.

Perhaps, in part, for this reason, rising levels of immigration have been accompanied by expanding efforts to quantify the costs and benefits of immigration with the detachment of scientific inquiry. Arguments over the cultural integrity of the country or on the morality of granting amnesty to illegal immigrants, as debates on values, are by nature highly subjective. On the other hand, framing the immigration debate in terms of dollars and cents at least pretends to objectivity. Clearly, consideration of the economic and fiscal impacts of immigration is relevant to the development of sound immigration policy. Therefore, it is worthwhile to examine these impacts carefully.

Questions on the Economic Impacts of Immigration

Of particular concern in the public debate on immigration are the following three questions:

- 1) Do immigrants pay their way in the US?
- 2) How do immigrants affect the employment conditions of natives?
- 3) What are the economic benefits of immigration, relative to its economic costs?

While assumptions, methodology, and results often differ, a great deal of scholarly attention has focused on aspects of immigration related to these questions.

1. Do immigrants pay their way in the US?

One contentious question is whether immigrants contribute more or less to the country in taxes than they consume in public services.

The Immigrant as Taxpayer and Consumer of Public Services

The answer appears to depend very much on the age and education of the immigrant at time of arrival in the US. Immigrants (and natives) cost taxpayers the most as children and senior citizens, but they are taxpayers themselves through their working careers. For this reason, age of arrival is an important determinant of fiscal impact. The National Research Council (NRC),¹⁰ in its 1997 study for the US Commission on Immigration Reform, concluded that "Immigrants arriving at ages 10 to 25 produce fiscal benefits for natives under most scenarios, whereas immigrants arriving in their late sixties generally impose a long-term fiscal burden. In fact, most immigrants tend to arrive at young working age, which partly explains why the net fiscal impact of immigration is positive under most scenarios."¹¹ As regards education, immigrants who finish high school contribute more taxes than they consume in services, while

immigrants with little or no education are unlikely to offset their consumption of services with sufficient tax payments. Well educated immigrants tend to earn more and pay higher taxes, thereby making a strongly positive net fiscal impact.¹² Averaging age and education together, the NRC found that each immigrant and his descendants probably save taxpayers a net present value (NPV) of \$80,000 over the long term.¹³ Taken together, immigrants from 1990 through 1996 contributed to natives an NPV benefit of around \$500 billion.¹⁴

Relative to the native population, immigrant households have more children and therefore consume more public education.¹⁵ Although debate often concentrates on the cost of educating immigrant children, the positive net fiscal impact that the NRC reports for immigrants is based largely on their offspring. US-born children of immigrants are usually included in short-term cost analyses of immigrant households, while the long-term tax contribution of these children is not. Young immigrant households are costly for a time after arrival, as their children are educated, but the fiscal impact shifts to positive once these children join the workforce as taxpayers.¹⁶

Immigrants in the Welfare State

There is a common public perception that immigrants receive a disproportionate level of welfare benefits compared to natives. There is even speculation that US welfare programs attract immigrants with specific intent to receive benefits. Economist George Borjas cites welfare's "magnetic effect" as a possible, partial explanation for increasing immigrant use of US welfare programs between 1970 and 1998.¹⁷ However, sociologists Frank Bean and Gillian Stevens note that analyses controlling for the influence of other variables (such as native-born presence in immigrant households, which Borjas does not account for) show that "most immigrants, including Mexicans, are usually *less* likely than comparable natives to receive welfare." These data, in turn, undermine claims that US welfare benefits attract immigrants.¹⁸ The NRC reports that immigrants receive proportionately less, per capita, than natives from some government programs (e.g., Social Security and Medicare) and proportionately more per capita from others (e.g., Supplementary Security Income, Aid to Families with Dependent Children, and food stamps). When all programs are taken together, these distinctions tend to balance out, resulting in only a marginal difference between immigrant and native per capita use of programs.¹⁹ In fact, the per capita cost of social welfare for immigrants and their children is 8 percent less than per capita cost for natives.²⁰

The Short-term View versus the Long-term View

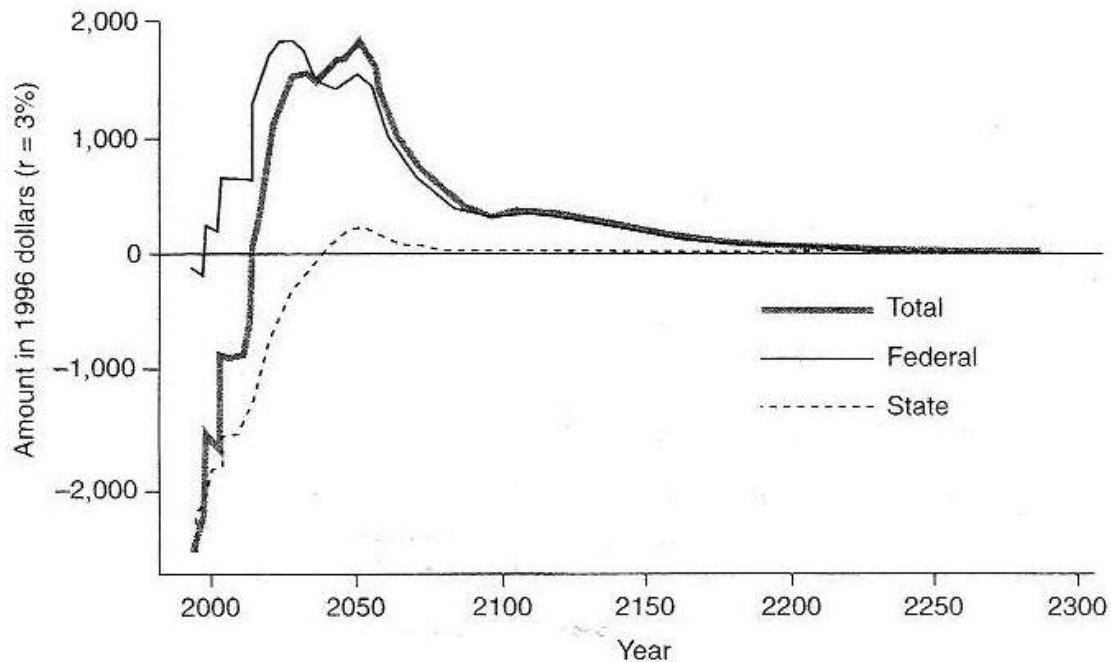
An important consideration in any analysis of immigration's fiscal impact is the time frame. Consider, for example, the short-term view versus the long-term. The NRC determined that over a single fiscal year immigrant households in the US receive more in benefits than they pay in taxes²¹—a finding oft-quoted by anti-immigration groups. However, a single fiscal year does not explain the long-term effect of immigration on public finances, for three reasons. First, immigrant households that are expensive today (e.g., because they have children in public schools) may provide net benefits later (e.g., when their children become working taxpayers). Most recent immigrant arrivals are young, of working age, with more than the

native average of children in public school: they are therefore costly in the short-term but will make net contributions in the future, contributions ignored by static, short-term analyses. Second, the long-term fiscal effect of immigration depends on future government spending and tax rates, meaning long-term fiscal accounting is necessary to understand future consequences of immigration. Third, the economic characteristics of current immigrants are different across generations, and a year's view combines taxes and public expenditures for many different economic profiles, e.g., young newcomers and older, long-time residents.²² For these reasons, a complete picture of an immigrant's receipts from and contributions to the nation must capture her entire economic life, as well as those of her children. Therefore, the NRC's dynamic analysis projects NPVs through the old age of the second generation. While the short-term fiscal impact may be marginally negative, it is outweighed by the larger, positive, long-term effect.

Fiscal Impact by Level of Government

The consensus among most economists²³ seems to be that, over the long term and averaged across all immigrants (including illegal ones, who both pay less in taxes and receive less in benefits), immigrants more than pay their way in the US, in that their tax contribution exceeds public spending on them. However, it seems this benefit is largely realized at the federal level rather than the state or local level.²⁴ State and local governments focus spending on children, whereas the federal government directs most spending to the elderly. The investment in children is not realized until they become taxpaying adults. Only some of this future payback goes to local and state governments, while between two-thirds to three-fourths goes to the federal government. Moreover, future returns have inherently less present value due to discounting of future cash flows, contributing to negative impacts for local and state governments. State and local NPVs for child immigrants, immigrants' native-born children, and natives at birth are negative for these reasons. For the federal government, the opposite is true: it receives a worker's taxes approximately thirty years before paying out his old age benefits. These benefit payments, therefore, have a lower NPV than the taxes, again due to discounting of future cash flows. The fact that most payroll taxes go to the federal government rather than to states and localities, coupled with the lower NPV of old age benefits paid by the federal government, relative to the earlier tax payments it receives, result in an overall positive NPV at the federal level.²⁵ The federal benefit is shared across the country, but the fiscal drain is concentrated in a handful states and localities that are immigration gateways.²⁶ In spite of their negative fiscal impact at the state and local level (where, again, the NPV for natives at birth is also very negative²⁷), immigrants' larger, positive impact at the federal level means a net fiscal gain for the US.²⁸ By state, under the assumption that all immigrants and their descendants—and natives—stay in their state of residence as of a given year's NPV calculation, it appears highly likely that forty-nine of the fifty states experience a positive NPV for every immigrant. Only California, which has the largest immigrant population and therefore bears the most in immigration costs, may experience a negative NPV for its immigrants.²⁹

Present value of annual fiscal impacts: One immigrant arriving in 1994 (discounted at 3%)



Source: Smith and Edmonston, 1997, 341.

2. How do immigrants affect the employment conditions of natives?

Another controversial issue in the immigration debate is the effect of immigrants on natives' employment. A common public perception is that immigrants, who tend to come from countries where wages are lower than in the US, are willing to do the work of the American economy for less compensation than Americans receive. Therefore, the reasoning goes, when immigrants enter a labor market with natives, employers are able to reduce wages, and native employees who will not accept the lower wage are simply displaced by foreign-born workers who will. Thus it is argued that immigrants at least pull down the earnings of American workers and at worst take their jobs. While opponents of immigration may provide anecdotal proof of these ideas, the question of how immigrants affect native employment has attracted considerable scholarly attention in recent decades and yielded a more empirically founded picture.

Do Immigrants Depress Native Wages?

Many economists theorize that competition from immigrants drives down the wages of groups they compete with (though analysts are not unanimous on this point). Immigrants are disproportionately high-skill (i.e., highly educated) and even more disproportionately low-skill (i.e., with less than twelve years' education), compared to the overall US population. Immigrants' average skill level has risen steadily, but it is still declining relative to that of the American workforce, which is becoming better educated at a faster rate.³⁰ Although they make up less than 10 percent of the US population and are declining as a percentage each year, native high school dropouts are a social concern because their low education level generally

entails a more precarious economic situation. There is, therefore, concern over whether low-skill natives' earnings suffer from competition with low-skill immigrants. In addition, because African Americans, compared to the overall native population, continue to be poorly educated and therefore, perhaps, disproportionately in competition with low-skill immigrants, immigration's affect on their economic wellbeing has received special attention.

Some findings suggest that immigrants suppress the wages of low-skill natives. Between 1980 and 1995, immigrants with less than twelve years' education increased the number of U.S. workers with less than twelve years' education by 21 percent. During the same period, these low-skill workers' earnings fell 11 percent. Borjas judges that immigration likely accounted for half this drop,³¹ or about 5 percent, a figure corroborated by the NRC³² and in the 1999 Final Report of the Commission on Immigration Reform.³³ More recently, Borjas has claimed that immigration between 1980 and 2000 drove down the low-skill wage by 8.9 percent.³⁴ A recent research project on native minorities found that immigration has also contributed slightly to the widening wage disparity between black and white native males.³⁵

Most studies, however, have found more modest wage influence. Economist Francisco Rivera-Batiz notes that although immigration has increased the supply of low-skill workers in the US, both theory and empirical evidence suggest very little, if any, wage effects for native high school dropouts.³⁶ In their influential survey of empirical analyses on the wage effects of immigration in the US and other countries, economists Rachel Friedberg and Jennifer Hunt conclude that a 10 percent increase in the fraction of immigrants in the population entails at most a 1 percent decrease in wages. They judge that at most a quarter—likely less—of the 1980s rise in US wage inequality between skilled and unskilled workers was due to immigration.³⁷ The comprehensive NRC study found little effect on native wages by immigrant numbers.³⁸ Sociologist Frank Bean et al. determined that undocumented Mexicans—who are predominately low-skilled—actually have a *positive* (though slight) effect on other workers' wages (emphasis added), while legal immigrants' effects on native whites' earnings are small and negative.³⁹

Some parties have voiced concern that high-skill immigrants drive down earnings of high-skill natives. The NRC has investigated the possibility that foreign-born engineers depress the wage rates of US-born engineers and found “this concept does not appear to be supported by the evidence.”⁴⁰ Borjas holds that college graduates saw wages fall 4.9 percent between 1980 and 2000 because of immigration.⁴¹ Borjas aside, the preponderance of empirical evidence to date provides little support for charges that immigrants cause native wages to drop significantly. Based on results using a range of methodologies, it seems rather that immigrants may have a slight adverse impact on native wages, predominately those of low-skill workers.⁴²

Do Immigrants Increase Unemployment Rates among Native Workers?

As to the question of employment rates, the popular theory, most loudly resurgent in times of high unemployment, is that immigrants take jobs from native workers. Empirical research has addressed this question too. The NRC finds that immigration historically has had a small negative impact on employment

opportunities of competing native groups. The study detects some job displacement among blacks in areas with high concentrations of immigrants but, because blacks generally do not live in such regions, no evidence that blacks suffer from immigration on a national basis.⁴³ Other research has found no impact from immigration on African American employment rates.⁴⁴

Furthermore, displacement can be viewed as a shift in domestic production rather than job loss among natives: “some domestic workers, especially the less skilled ones, who had been working in industry X, may now have to move to industry Y.”⁴⁵ There may be a case, however, where there are no jobs available in industry Y. RAND researchers have found that in California, from 1970 through 1999, “between 1 and 1.5 percent of the state’s adult native population ... left the workforce or became unemployed because of competition from immigrants.”⁴⁶ In sum there are some data indicating a small adverse effect by immigration on native worker employment rates.

Most findings, however, find no or negligible effect. Simon’s review of studies using various methodologies, examining varied time frames, and focusing on a variety of geographical areas finds that “general immigration causes little or no unemployment at large, even in the first year or two; the same is true of low-income Hispanic immigration even among the groups most likely to be ‘displaced’ by them.”⁴⁷ He also points out that such findings may be due to the fact that “Immigrants not only take jobs, they make jobs. They open new businesses that employ natives as well as other immigrants and themselves. And they do so in important numbers.”⁴⁸ Similarly, the Friedberg/Hunt literature review discovers “no evidence of economically significant reductions in native employment.”⁴⁹ Economists Joseph Altonji and David Card use census data from 1970 to 1980 to recreate immigration’s effects on natives’ employment opportunities in metropolitan labor markets. Their analysis uncovers “a modest degree of competition between immigrants and less-skilled natives,” with “some displacement of natives out of low-wage immigrant-intensive industries,” but “little evidence that inflows of immigrants are associated with large or systematic effects on the employment or unemployment rates of less-skilled natives.”⁵⁰ Interestingly, Card has also examined the 1979 Muriel boatlift, which increased Miami’s workforce by 7 percent with an influx of relatively unskilled Cubans, practically overnight. Card finds “no evidence of an increase in unemployment among less skilled blacks or other non-Cuban workers. Rather the data analysis suggests a remarkably rapid absorption of the Muriel immigrants into the Miami labor force, with negligible effects on other groups.”⁵¹ Thus, again, as with immigration’s impact on wages, so with its effect on employment rates: the preponderance of evidence suggests considerably less effect than popular opinion typically attributes to immigration.

Immigration’s Impact on US Labor Markets: The Big Picture

Immigration’s wage and employment rate impacts are only part of the big picture of immigration’s repercussions for the American labor market. At least two other macro-level impacts deserve consideration as well.

First, immigration may benefit US labor markets by helping employers fill gaps in the labor pool, and it may smooth out native employment over the business cycle. Because immigrants are disproportionately low-skill and high-skill, while the great majority of native workers fall somewhere in between, it is argued that immigration largely complements the American workforce and for the most part does not compete with it.⁵² A growing, job-producing economy easily absorbs low-skill immigrants, while high-skill immigrants provide the necessary public services and technological expertise to keep growth going.⁵³ Unfortunately, there is, at present, little systematic research of macro-level labor-market effects of high-skill immigrants and temporary workers.⁵⁴ But there are telling data on influxes of low-skill immigrants. During the 1970s, for example, despite the addition of 220,000 new Mexican immigrants, unemployment rates in Los Angeles actually declined, relative to the national rate, while per capita income rose faster than the nation's. Los Angeles manufacturing jobs grew at four times the national rate during this period.⁵⁵ Furthermore, the influx of Mexican immigrants was also critical to US economic expansion through the 1990s. While absorbing 2.9 million Mexican workers, America saw unemployment fall from 6.3 percent to 3.9 percent. Apparently, the arrival of significant numbers of Mexican immigrants provided needed personnel in a tight labor market.⁵⁶

Second, immigration must be considered in light of the nation's long-term labor needs. The Bureau of Labor Statistics projects that professional-level positions and service occupations—i.e., high-skill jobs and low-skill jobs—will increase the fastest and add the most openings, accounting for more than half of total job growth between 2002 and 2012. Six of the ten occupations with the largest job growth will require short term, on-the-job training.⁵⁷ Meanwhile, the supply of American workers needed to fill such positions is declining, due to rising education levels and an aging population.⁵⁸ As the nation's labor needs evolve, the hourglass-shaped skill profile of today's immigrants—disproportionately high-skill and even more disproportionately low-skill—complements that of native workers, who are mostly and increasingly in the middle-skill range and decreasingly low-skill.

Furthermore, immigrants provide a solution to a serious long-term problem facing first-world economies: their aging populations. As the population ages and the percentage of retirees grows, industrial nations face increasing shortages of workers. Whether purposefully or inadvertently, the US has alleviated this age-driven shrinkage of its labor pool with a large inflow of young immigrant labor. Having visibly helped America deal with the aging workforce issue, immigration has found champions even in traditionally xenophobic countries that face the same problem. The business lobby Nippon Keidanren, headed by Hiroshi Okuda, President of Toyota, has been arguing for policy that would allow foreign professionals (in certain fields) to live in Japan permanently.⁵⁹ Germany recently passed a new immigration law addressing, among other immigration issues, whether and how to recruit foreigners in order to fill out the country's thinning labor force.⁶⁰

3. What are the economic costs of immigrants, and what are the economic benefits?

A final question addresses immigration's affect on the US economy. What are the economic costs of immigration? What are the economic benefits associated with immigration?

The most widely accepted measurement of natives' net, measurable economic gain from immigration is the NRC's: between \$1 and \$10 billion annually.⁶¹ This is a fairly insignificant effect in an economy with a gross domestic product of nearly \$11 trillion⁶² but it is a net gain nonetheless. In addition, there are probably economic advantages and disadvantages associated with immigration that elude accessible measurement. Not until empirical study is able to credibly measure these phenomena will there be a body of evidence on them useful as a basis for determining sound immigration policy. Nonetheless, until that time, they merit at least some speculative attention.

Labor and Production Effects

Immigrants increase both the supply of labor in the US as well as domestic consumer demand for goods and services. Immigrants create jobs as consumers and fill jobs as producers.⁶³ Increased demand and labor can lead to production of more goods and services, boosting the US gross domestic product. Furthermore, to the degree that immigrants specialize in goods and services that would otherwise be unavailable in or imported to the US, residents benefit from access to and lower prices of these goods and services.⁶⁴

Immigration can also increase the productivity of native workers. Depending on labor market demand, low-skill immigrants, by taking low-skill jobs necessary to the US economy, can free higher-skilled workers to work in higher-skilled employment, where they can be more productive.⁶⁵ In effect, immigration allows the nation to specialize in producing what it is best able to produce and consume what it cannot produce itself⁶⁶ A last production impact is that of immigrants' savings, brought into the US: these should contribute to economic output and productivity as well.⁶⁷

The Distribution of Immigration's Economic Impact

Although immigration provides a net economic benefit to the country, the distribution of this benefit is uneven. The winners—apart from immigrants themselves, who generally earn a higher wage and enjoy a better standard of living in the US than they would in their native countries—are owners of productive factors complementary to immigrants,⁶⁸ such as employers of immigrants, purchasers of immigrant-produced goods and users of immigrant services, owners of production capital (e.g., factory owners and agricultural landowners), and native, higher-skilled workers. The losers are groups who compete with newly-arrived low-skill immigrants, i.e., native low-skill workers (who are disproportionately minorities, e.g., African Americans) and recently-arrived low-skill immigrants. Thus complements to immigrants disproportionately enjoy the (larger) economic benefits of immigration, while substitutes for immigrants disproportionately suffer its (smaller) negative impact.

Immigrant Entrepreneurialism

A considerable number of immigrants become entrepreneurs. Immigrants are 10 to 20 percent more likely than natives to start a business.⁶⁹ The American commercial landscape is dotted with Pakistani-American owners of 7/11s, Korean-American drycleaners, Chinese and Mexican restaurants, etc. But immigrant entrepreneurialism is not limited to small retail establishments. In 1999, *The Wall Street Journal* reported that “Chinese and Indian immigrants run nearly 25% of the high-tech companies started in the [Silicon] Valley since 1980.... The 2,775 immigrant-run companies had total sales of \$16.8 billion and more than 58,000 employees....”⁷⁰

Immigrant-founded businesses create employment opportunities for immigrants and natives alike. They also pay taxes and could be an important component of the nation’s economic growth. Unfortunately, we have little more than anecdotal snapshots of these sorts of contributions—e.g., that of Hungarian-born Andy Grove, founder of Intel Corporation, a Fortune 500 company with 78,000 employees and annual revenues over \$30 billion.⁷¹ As yet, there is no systematic measurement of immigrants’ entrepreneurial impact on the US economy.

Diseconomies and Economies of Scale

Immigration may have indirect effects on the American economy through diseconomies and/or economies of scale in production and growth. Diseconomies—or diminishing returns to scale—could occur, for example, due to increased congestion, pollution, and overcrowding, to which immigration may contribute. Theoretically, such diseconomies could reduce the nation’s productivity as it becomes overpopulated. It should be noted, though, that there is no agreed-upon definition of overpopulation and that immigration is only a single component of population growth. Furthermore, congestion, pollution, and overcrowding are driven by many factors and in fact seem more related to political policy decisions—or the lack thereof—than to population per se.

While diseconomies are possible, so too are economies of scale. An increasing population means an ever-larger market. A larger market, in turn,

- Encourages larger production facilities that are likely to be more efficient than smaller ones;
- Allows increased division of labor and specialization of production;
- Supports a wider range of products and services;
- Makes possible major social investments (e.g., hydroelectric dams, public transportation, roads and railways, etc.) that might otherwise be unprofitable; and
- Provides new interactions among companies and workers, which may result in innovation and new products and/or services that might otherwise not be introduced.⁷²

There is also speculation that certain industries require a critical mass in order to take advantage of modern technology. If true, the high technology environment of Silicon Valley may have achieved its critical mass in part because of large numbers of foreign-born engineers and computer experts in the area.⁷³

Impact on Struggling Industries and Inner Cities

Low-cost immigrant labor may sustain American industries under intense competition from cheap imports. Many sectors of the economy—the fruit and vegetable industry in California, the garment industry in lower Manhattan, and the shoe, furniture, poultry, and food-processing industries nationwide—would not survive competition from low-labor-cost countries were it not for a steady supply of low-wage immigrants.⁷⁴ All workers benefit from the lower costs of such industries' goods, produced in the US rather than imported from abroad.⁷⁵

Immigration has offset the migration of workers and businesses out of some US inner cities. As middle-income natives have left these urban centers for the suburbs, immigrants have taken their place, buying homes and starting small businesses. They may face the very problems that the middle class fled: crime, ethnic conflict, overcrowded housing, sweatshops, etc. In the process, though, they often help revitalize these communities. The US Department of Labor notes that “The economic recovery of New York City in the 1980s and the continued vitality of Los Angeles and Miami have been fueled by voluminous increases in small business activity. Immigrants are directly responsible for a substantial share of this activity.”⁷⁶ Thus, some cities appear to reap significant economic benefit from immigrants' investment in urban renewal.

Globalization/Internationalization

Immigrants add to the nation's diversity. Some academic and political leaders hold that the different languages, cultures, ethnicities, races, and religions brought into the US by immigrants fragment American society and foment internal conflict. If true, such conflict among immigrant groups and about immigrant groups could entail economic costs. There is, however, no evidence of such conflicts or costs on a widespread basis.

To the contrary, there is compelling evidence that immigration enriches the US with an internationalism that better equips the nation for an increasingly globalized economy. Immigrants strengthen America's commercial ties with the rest of the world. American employers who do business abroad benefit from their immigrant workers' language skills and cultural expertise.⁷⁷ Immigration meccas such as California and New York tend to export more goods to those countries from which large numbers of their immigrants come.⁷⁸ Thus, immigrants likely provide economic benefit to the country by enhancing US firms' ability to conduct international business.

Engineering and Scientific Prowess

About 25% of immigrants to the US between 1965 and 2002 were highly educated. These highly skilled immigrants benefit the American economy with added production capacity and, perhaps more importantly, knowledge resources. Because the cost of educating them has been borne by another country, the cost to the US for acquiring the services of these unusually gifted people is relatively low—indeed, it is substantially less than that of bringing a US native to the same level of training and performance.⁷⁹ Between 1950 and 1975, immigration of Third World scientists and engineers to the US represented a flow

of human capital worth as much as \$8.6 billion annually.⁸⁰ America's import of highly educated immigrants increases her share of the global talent pool, providing comparative and competitive advantage in the global economy.

American engineering and scientific prowess relative to the rest of the world is partly attributable to the influx of highly talented immigrants over the past few decades.⁸¹ Relative to the native population, American immigrants are overrepresented as members of the National Academy of Engineering and the National Academy of Sciences and as Nobel Prize winners. In 1984, nearly 50 percent of engineering doctorates and 35 percent of physicians in the US were foreign-born. Up to 1995, immigrants won between 26 and 32 percent of Nobel Prizes awarded to Americans, depending on discipline.⁸² American academe, research and development, and industry clearly gain materially from the discoveries and intellectual contributions of these foreign-born engineers, physicians, scientists, and Nobel Laureates.

The NRC states that foreign-born engineers make substantial contributions to US economic wellbeing and competitiveness and that without them universities and industries would find it difficult to staff current education, research and development, and technology programs.⁸³ The National Science Foundation notes that migration of skilled science and engineering workers is increasingly viewed as a major determinant of the quality and flexibility of an industrial country's labor force. Scientific and engineering knowledge transfers across national borders more easily than other skills. The unique sets of skills and knowledge built with cutting-edge research and technology migrate with the physical movement of people. The US has benefited, and continues to benefit, from this flow of knowledge and personnel into its labor pool. However, international competition for science and engineering talent is intensifying. Many countries (e.g., Japan) are actively reducing barriers to high-skill immigrants entering their workforces, while such entry into the US, in the wake of the terrorist attacks of September 11, 2001, has grown more difficult. Should the US become less successful in attracting and admitting immigrant and temporary nonimmigrant scientists and engineers, the growth rate of its science and engineering labor force will diminish significantly. Slowing of science and engineering labor force growth, which has fueled increasing employment and spending in research and development since World War II, would be a fundamental change for the US economy, perhaps with serious repercussions for both technological change and economic growth.⁸⁴ Already, the declining percentage of prizes awarded to US nationals, less research by US scientists in major journals, and other key indicators—balanced by gains in these areas for other parts of the world—point up America's loss of global dominance in critical areas of science and innovation.⁸⁵ One way to increase the US rate of technological advancement and industrial productivity could be to relax barriers against highly skilled immigrants.⁸⁶

Additionally, the children of immigrants may represent economic benefits to the US, because they tend toward high achievement. They make up a disproportionately high number of high school valedictorians, for example.⁸⁷ 60 percent of top US science students and 65 percent of top US math students are the children of immigrants, and foreign-born high school students constituted 50 percent of the 2004 US

Math Olympiad's top scorers, 38 percent of the US Physics Team, and 25 percent of the Intel Science Talent Search finalists.⁸⁸ Like the first-generation immigrants before them, the children of immigrants may become a disproportionate share of America's engineers and scientists, driving technological innovation and economic growth.

Demographic Effects

Immigration has important ramifications for the demographic makeup of the US, which, in turn, has implications for the US economy. As the baby boomer generation retires, it will become an unprecedented drain on federal programs such as Medicare and Social Security. In 1970, there were four workers for every retired person; by 1990, there were three; by 2030, there will be less than two. To provide health care and Social Security benefits to baby boomers will impose significant costs on US workers.⁸⁹ Immigration, however, could ease that burden. Immigrants benefit natives by arriving without generations of parents and grandparents on Medicare or Social Security but paying into these programs anyway throughout their careers.⁹⁰ By the time an immigrant retires, she typically has raised children—or even grandchildren—whose tax contributions more than cover her old age benefits.

The coming retirement of the baby boomer generation is a symptom of a larger trend: the graying of the American workforce. The Bureau of Labor Statistics estimates the working-age population—adults aged 16 to 54 who are not in the military or incarcerated—will jump 6 million between 2002 and 2012. In contrast, the 55-and-over population will increase by 18 million.⁹¹ First-world economies the world over face similar issues, and immigration may be part of the solution. Kenneth Pratt, former head of the US Census Bureau, contends that “in the struggle to find workers to support growing economies, nations that are hospitable to immigrants will have an advantage.” Though the US labor pool is aging, immigrants' youth and high fertility rates are keeping the mean population age fairly static. In 2002, the median age in America was 35.5; in Europe it was 37.7. Demographer William Frey projects that by 2050 it will be 36.2 in America and 52.7 in Europe.⁹² Such a dramatic difference is likely to have significant effects on the two regions' economies. America's younger population is potentially a more productive one. As other first-world economies age, America's relative youth could prove an increasingly powerful advantage in competitive international markets.

Conclusion

The preponderance of empirical findings suggests that popular and politicized anxieties about economic and fiscal drains caused by immigrants in the US are largely unfounded. Indeed, in terms of measurable economic and fiscal effects, immigration provides natives a net benefit of at least \$80,000 per immigrant, or as much as \$10 billion annually. There may be some costs associated with job competition and earnings stagnation among groups in direct competition with low-skill immigrants, but these appear relatively small. It is likely that immigrants contribute to the economic health of the nation in many other ways, e.g., by starting business that pay taxes, employ Americans, and fuel economic growth; by

contributing their engineering and scientific talent; and, simply but importantly, by keeping America's population young.

Economics provides a useful framework for understanding immigration and developing policy alternatives and recommendations. In an economy as complex, dynamic, globalized, and vast as America's, it can be difficult to tease out the full range of a policy's economic consequences. Analysis, not ideology, should inform the immigration debate. The nation's success in developing an economically sound, effective, and fair set of immigration policies requires commitment to and conducting of strategically directed research that can provide the data necessary to fill in analytical gaps and complete the picture of immigration's fiscal and economic effects, today and into the future.

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