

Library of Congress Cataloging-in-Publication Data

Reforming immigration: helping meet America's need for a skilled workforce : a statement on national policy / by the Research and Policy Committee of the Committee for Economic Development.

p. cm.

ISBN 0-87186-140-2

1. United States—Emigration and immigration—Government policy. 2. United States—Emigration and immigration—Economic aspects. 3. Labor supply—United States. 4. Alien labor—United States. 5. High technology industries—Employees—Supply and demand—United States. I. Committee for Economic Development. Research and Policy Committee.

JV6483 .I5534 2001

331.6'2'0973 — dc21

2001017411

First printing in bound-book form: 2001

Paperback: \$15.00

Printed in the United States of America

Design: Rowe Design Group

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RESPONSIBILITY FOR CED STATEMENTS ON NATIONAL POLICY

The Committee for Economic Development is an independent research and policy organization of some 250 business leaders and educators. CED is nonprofit, nonpartisan, and nonpolitical. Its purpose is to propose policies that bring about steady economic growth at high employment and reasonably stable prices, increased productivity and living standards, greater and more equal opportunity for every citizen, and an improved quality of life for all.

All CED policy recommendations must have the approval of trustees on the Research and Policy Committee. This committee is directed under the bylaws, which emphasize that "all research is to be thoroughly objective in character, and the approach in each instance is to be from the standpoint of the general welfare and not from that of any special political or economic group." The committee is aided by a Research Advisory Board of leading social scientists and by a small permanent professional staff.

The Research and Policy Committee does not attempt to pass judgment on any pend-

ing specific legislative proposals; its purpose is to urge careful consideration of the objectives set forth in this statement and of the best means of accomplishing those objectives.

Each statement is preceded by extensive discussions, meetings, and exchange of memoranda. The research is undertaken by a subcommittee, assisted by advisors chosen for their competence in the field under study.

The full Research and Policy Committee participates in the drafting of recommendations. Likewise, the trustees on the drafting subcommittee vote to approve or disapprove a policy statement, and they share with the Research and Policy Committee the privilege of submitting individual comments for publication.

The recommendations presented herein are those of the trustee members of the Research and Policy Committee and the responsible subcommittee. They are not necessarily endorsed by other trustees or by non-trustee subcommittee members, advisors, contributors, staff members, or others associated with CED.

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PURPOSE OF THIS STATEMENT

This assessment of U.S. immigration policy and practice draws on CED's long history of research in the areas of education, worker training, economic growth, and labor market policy reform. In prior policy statements such as *American Workers and Economic Change (1996)*, *Putting Learning First: Governing and Managing the Schools for High Achievement (1994)*, and *New Opportunities for Older Workers (1999)*, CED has emphasized the need for improved education and training of the U.S. workforce. In *America's Basic Research: Prosperity Through Discovery (1998)*, we highlighted the challenges of a global market for highly trained graduates in science and engineering. And in *Fixing Social Security (1997)*, we described the approaching demographic dilemma, when increasing numbers of retirees will have to be supported by fewer active workers.

Immigration issues intersect with each of these policy areas to which CED has addressed its work. In this statement we explore the role that immigration should play in the development of our future workforce and in the continued economic growth and prosperity of our society. We note both the benefits and costs of immigration, examine the current state of immigration policy and administration, and argue that a comprehensive reform of both policy and administration is required to realize immigration's large potential benefits. We offer a set of recommendations that we believe provides a framework for discussion and action in this important area.

We recognize that immigration is a large, complex, and controversial subject. In this report, we have chosen to focus on the area of CED's greatest competence and interest—the relationship of immigration to the workforce and thereby to economic growth and living standards. We acknowledge there are large and important immigration issues that we have not addressed, most notably the social and cultural effects of immigration and the eco-

nomical and social conditions confronting these “new Americans.” These issues present major problems and opportunities regarding their assimilation into our economy and society. This statement is also principally about legal immigration, although we touch on the problem of unauthorized workers insofar as it is an inextricable part of the workforce issues addressed here. Our report is therefore limited in scope, but we believe it provides useful analysis and sound policy recommendations regarding immigration and the workforce.

ACKNOWLEDGMENTS

We would like to thank the dedicated group of CED Trustees, non-Trustee members, special guests, and advisors who comprised CED's Subcommittee on U.S. Immigration Policy (see page vii). Very special thanks go to the subcommittee's co-chairs, Christopher D. Earl, Managing Director of Perseus Capital LLC, and H.V. Jones, Office Managing Director of Korn/Ferry International, Inc., for their leadership and guidance. We would also like to thank CED's staff and others for the research, analysis, and writing they contributed to this statement: project directors B. Lindsay Lowell, Georgetown University, and Scott Morris, formerly CED Vice President and Senior Economist; CED Research Associates Tarek Anandan and Alastair Smith; and project counselor Van Doorn Ooms, CED Senior Vice President and Director of Research.

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EXECUTIVE SUMMARY

Immigration is a dynamic force in our society and economy. For decades, immigration has helped fuel America's entrepreneurial spirit. However, immigration policy has long been a battleground of competing interests, and its administration has been woefully ineffective.

Our current immigration policy does not adequately address our economic future, and its administration is marked by inefficiency, delay, and frustration. The policy fails to meet the demands of a global marketplace that rewards mobility and skills. CED recognizes that increases in immigration are no panacea for the problems of an aging population and cannot replace basic education and training as the source of a skilled workforce. But an efficient and flexible immigration system can help us confront the economic challenges ahead.

FINDINGS

- **The markets for skilled labor have been very tight in recent years, and the demand for skilled workers will grow rapidly.** Due to an extraordinarily robust economy and a rising demand for skills, employers in many industries have faced worker shortages. The relative wages of skilled workers have risen rapidly, and occupations that require at least an associate's degree are projected to grow twice as fast as total employment during 1998-2008. [p. 4]
- **Today's admission system places too little emphasis on meeting the nation's present and future needs for skilled workers.** The current system fulfills our commitment to family and humanitarian principles, but about 80 percent of legal immigrants face no skill requirements. [pp. 7, 18]
- **Highly skilled immigrants provide important benefits to the U.S. economy.** The overall net economic benefit to the United States from immigration is positive but small, but high-skill immigrants produce disproportionately large benefits. Low-skill immigrants contribute economically, but also depress the wages of poor, low-skill native workers and place a significant fiscal burden on some state and local governments. [p.12]
- **Illegal migration presents serious economic and social problems.** Unauthorized workers make major economic contributions in agriculture, services, and other sectors. But they typically have little education, and they and their children face formidable difficulties in assimilating to American society. [pp. 13, 28]
- **Backlogs and delays in admitting foreign workers reveal failures in immigration administration and management.** The full process of approval for a foreign permanent worker now takes two to ten years, and as much as half the annual allotment of such visas is unused due to such delays. There is a backlog of over one million total "green card" applicants attempting to adjust to permanent status. Workers, employers, and the economy suffer from the uncertainty and delay caused by these bottlenecks. [pp. 20, 24]
- **Failures in the administration of the permanent visa system have distorted and burdened the temporary visa system.** The H-1B temporary specialty worker visa has now become the backdoor entry for permanent admission. Rapid increases in the H-1B admission ceilings, while alleviating immediate hiring problems, will place intolerable strains on the system in the future. [p. 21]

INTRODUCTION



Immigrants have become increasingly important to our economy and workforce. Since 1970, the number of foreign-born individuals in the United States has risen from 10 million to 28 million. Twelve percent of the American workforce is now foreign-born, and immigrants comprise fully one-third of its growth. Over one million new immigrants now join the U.S. population each year, about 800,000 legally and more than 100,000-300,000 (net) illegally.

Immigrants are therefore having an increasing impact on the labor force and the society at large. Particularly in the six states with the largest immigrant populations—California, Texas, Florida, New York, New Jersey, and Illinois—the benefits and costs of immigration are vividly apparent in terms of new business growth, education, and demands on social services.

From the perspective of economic output and growth, legal immigration is a net benefit to the U.S. economy. We believe there are less easily measured benefits as well, as immigrants have contributed significantly to the entrepreneurial spirit that has driven American prosperity. We have concluded, however, that raising the skill levels and educational attainment among workers entering the United States can substantially increase these benefits.

U.S. immigration policy has for decades been a battleground, where adversaries often represent narrow interests intolerant of compromise. The impact of these policy debates has been policy gridlock, in which comprehensive policymaking in the national interest is

difficult. As a result, immigration policy and implementation have failed to adapt to changing times and the demands of the global economy.

The implementation and administration of immigration laws are generally considered some of the least effective functions of the Executive Branch. Backlogs of hundreds of thousands of people awaiting permanent visas, inadequate funding of essential immigration functions, and confused and contradictory regulations have combined to create a system with little credibility, or even legitimacy, among its key stakeholders.

Recent events have provided a compelling example of the urgent challenges facing U.S. immigration policy. In October 2000, Congress enacted the American Competitiveness in the Twenty-First Century Act (AC21). This legislation sharply increased the permitted number of temporary immigration visas for high-technology workers (H-1B visas) to 195,000 for fiscal years 2001–2003, after a previous smaller increase from 65,000 to 115,000 for fiscal years 1999–2000. AC21 followed several years of intense discussion of shortages of information-technology (IT) workers generated by both the tightest overall U.S. labor market in decades and the burgeoning of the “new economy” sectors, such as computers, telecommunications, and many new services based on IT. These sectors have recently experienced a very strong demand for high-technology workers, especially in certain occupations and regions.

CED accepts that AC21 is a necessary response to the exploding demand for high-technology workers. But Congress missed an extraordinary opportunity—one which typically arises no more than once a decade in immigration policy—to achieve deeper, essential reforms that AC21 now makes all the more urgent. As this report illustrates, the fundamental and pervasive problems with the entire immigration system extend far beyond the need for temporary high-technology workers. By focusing narrowly on the H-1B issue and only tentatively dealing with other issues, this legislation neglects other fundamental problems.¹

AC21 will intensify strains on the permanent admissions system and generate expectations of transfer to permanent residency among H-1B workers that cannot be met, given existing limitations and backlogs for green cards. In the absence of further reforms, this policy is likely to create an additional backlog of over half a million U.S.-based applicants for permanent residence over the next five years. It is not difficult to envision the administrative crises, economic disruption, and hardship for individuals that will ensue.

CED believes that such stopgap measures also ignore homegrown solutions to the inexorably growing global demand—and competition—for technical and managerial skills that are in short supply worldwide. While immigration can play an important role in providing skilled workers for the U.S. economy, most of our human capital will have to be homegrown. We cannot neglect the urgent need to improve America's basic education and worker training, which are essential to the creation of the next generation of highly skilled native workers.²

A central theme of this report is that the problems of permanent and temporary visa

systems are inextricable. It is essential to address the legal immigration system with a set of integrated proposals. Recognizing this, we have structured this report to yield recommendations for comprehensive reform.

We first asked two questions:

- *How can immigration best improve the quality and productivity of the U.S. workforce?*
- *What policy and administrative reforms are required to achieve those benefits?*

In Chapter 1, we examine the future workforce needs of the nation and ask how well the characteristics of the immigrant population resulting from our current system and policies meet those needs. We conclude that somewhat higher levels of immigration will help to mitigate the age-related decline in the U.S. labor force in coming decades. More immigrants will not offer a panacea for that looming demographic problem. We also find that successive waves of new immigrants have arrived with ever lower education and skills relative to the native population. We conclude that a gradual shift in the composition of the immigrant population towards those with higher skills will be required to meet the needs of the rapidly evolving economy for such skills and to allow these new Americans to assimilate into our national life and share its benefits more fully.

In Chapter 2 we examine our current immigration policy and its implementation. We find that the current permanent visa system, with its predominant emphasis on family unification, fails to address our long-term workforce needs for permanent and higher skilled workers. Administrative backlogs prevent the issuance of as much as half the employment green cards authorized each year, forcing immigrants and employers alike to turn to temporary visas as the makeshift route to eventual permanent status. As a result, both the permanent and temporary admission systems have become dysfunctional. Employers and immigrants alike have strong incentives to “game the system” instead of playing by the rules.

1. AC21 does contain certain provisions directed at permanent employment visas, processing goals, and the clearance of backlogs. However, as explained in Chapter 2, these provisions are at best a first step and do not effectively address these problems.

2. Committee for Economic Development (1994, 1996).

In Chapter 3 we outline our proposals for integrated reform that would produce a more efficient and fairer system of legal immigration that meets our society's long-term needs. We recommend continuing the generous policy towards family-based and refugee admissions, but argue for increasing opportunities for immigrants with higher education and skills. We also call upon Congress for immediate action to reform the administration of immigration and to streamline and rationalize both the permanent and temporary visa systems. We are gratified that the new Bush Administration has indicated that it places a high priority on resolving some of these problems.

Immigration has become one of the most controversial issues facing our society, especially in regions of high immigrant concentration. Yet the importance of immigration, and the controversy surrounding it, will only increase in the future, as the composition of our population changes and our need for skilled manpower grows. It is essential that we honestly and candidly address these issues *now*, despite their inherent difficulty. The longer we wait to address them, the more difficult they will become, and the smaller will be our economic and political capacity to make the necessary changes. We believe the recommendations we make in this report provide the basis for such a discussion and offer a vision of how immigration can help create a more productive and prosperous nation.

Chapter 1

IMMIGRATION AND THE ECONOMY



America's workforce needs will change dramatically during the next several decades. Our domestic labor force will begin to decline in absolute numbers, producing general labor scarcity. At the same time, American business will find itself competing globally for the services of the "best and the brightest" as technological progress continues to raise the demand for skills and foreign employers increase the quality and compensation for their jobs.

These requirements for skilled workers, of course, only intensify the need to improve U.S. education and to increase the supply of highly skilled native workers, including scientists and engineers. But immigration offers the potential to play a supplementary role in meeting these demands and in alleviating the economic and fiscal problems resulting from the decline in the native work force and the growing population of retirees. In this chapter we examine recent trends in the characteristics of immigrants and outline concerns about the increasing number of unskilled immigrants, particularly illegal immigrants, who can reduce wages and opportunity for both earlier immigrants and native workers. We conclude that the economic benefits of immigration can best be secured if we increase the skill levels of new permanent residents.

AMERICA'S FUTURE WORKFORCE NEEDS

In previous reports, CED has explored the projected labor market in the "new economy" with an aging population and concluded that there will be rapidly growing demand in our

technologically oriented society for skilled workers. In this context, CED has also examined the problems of K-12 education and America's failure to educate enough engineers and other technical professionals to meet the economy's needs.³ Our supply of skilled manpower must ultimately be met by training our own citizens. However, immigration can also play an important role in both alleviating skill shortages in rapidly growing industries and mitigating the larger demographic effects of the approaching decline in the size of the native labor force.

The Increasing Need for Skilled Workers. The American economy continues to demand higher skills for an increasing number of jobs, a trend that will likely continue for decades to come.⁴ The best indicator of this trend is the dramatic increase in the "skill premium"—the widening gap between wages paid highly skilled and less-skilled workers. Male college graduates in 1980 earned on average 62 percent more than high school graduates and 82 percent more than high school dropouts; by 1998 these earnings premiums were 161 and 103 percent respectively, in spite of the fact that the relative supply of college graduates increased during this period.⁵ (See Figure 1.)

During the past 20 years, the fastest growth has been in occupations requiring at least some college education. As Figure 2 shows, jobs that require at least an associate's degree are pro-

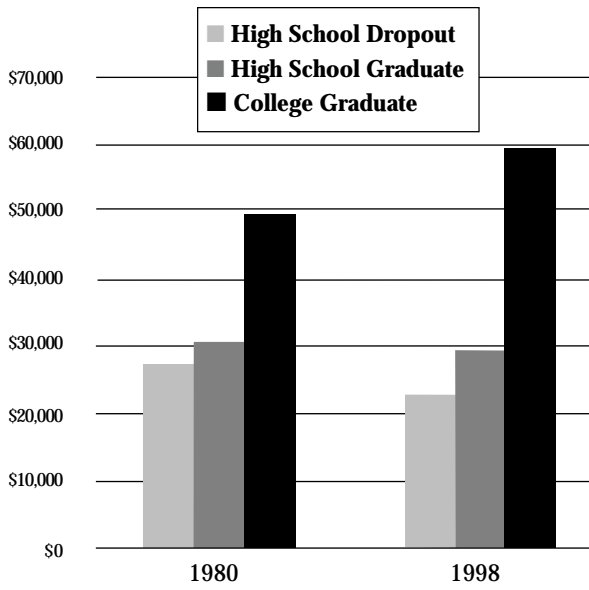
3. Committee for Economic Development (1994, 1996, 1999, 2001b).

4. Bureau of Labor Statistics (1999: Chapter 2).

5. Calculations by CED using Historical Income Tables of the U.S. Census Bureau.

Figure 1

Mean Annual Earnings of Working-Age Population, 1980 and 1998 (in 1998 dollars)



SOURCE: U.S. Census Bureau. Historical Income Tables: People. Tables P-32 and P-34.

jected to grow much faster than total employment during 1998–2008, and jobs requiring a bachelor’s degree will grow about two-thirds faster than overall job growth. Jobs not requiring post-secondary training will grow significantly slower than the average.

Employers in many industries have recently faced worker shortages due both to emerging skill shortages and an extraordinarily robust economy. Especially tight labor markets appear to have developed in the information technology sector (IT), but this experience has by no means been unique. (See box, “Worker Shortages in Information Technology.”)

Tomorrow’s Overall Labor Scarcity. In 1950 there were seven working-age persons for every person 65 and older in the United States. At present there are five, and by 2030 there will be three. Moreover, in only about 15-20 years the working age native population will actually begin to decline. This unprecedented demographic change will create strains on the economy of several

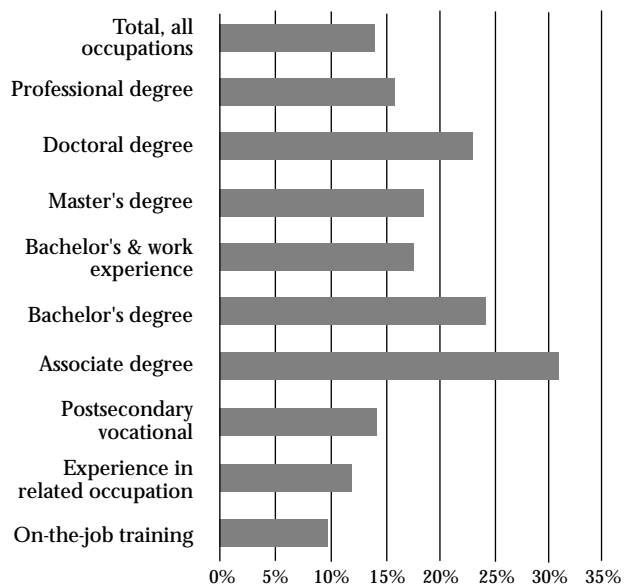
kinds. First, the shortage of workers will in itself require major changes in business planning, investment, and technology to economize on labor, with new patterns of production, consumption, and trade likely to result. Second, the demographic shift is likely to reduce national saving and investment, producing a slowdown in economic growth per capita on the order of 10 percent.⁶ Finally, in spite of the current temporary federal, state, and local budget surpluses, severe economic strains will arise from rapidly rising public expenditures on federal entitlement programs for the elderly (Social Security, Medicare, Medicaid) and related state and local support programs. Current projections suggest the likelihood of large budget deficits and/or extremely high tax burdens on the working population.⁷

6. Committee for Economic Development (1999); Turner (1998: 6).

7. Congressional Budget Office (2000); U.S. General Accounting Office (2000).

Figure 2

Projected Job Growth by Education and Training Required, 1998-2008



SOURCE: Bureau of Labor Statistics, U.S. Department of Labor. *Report on the American Workforce*. Washington, DC: 1999.

WORKER SHORTAGES IN INFORMATION TECHNOLOGY

The U.S. average unemployment rate of 4.0 percent in 2000 was the lowest in 30 years, reflecting a record nine-year economic expansion. As a result, the national labor market was extremely tight, and in particular sectors the market was even tighter. A 1997 study commissioned by the Information Technology Association of America found that the IT industry was facing a shortage of 340,000 workers.⁸ The methodology of this report was criticized, and a recent report from the National Research Council (NRC) noted that attempts to quantify “shortages” might not be the most useful analytical approach. Nevertheless, the NRC also concluded, after considering other indicators, that there has been a very tight labor market in the information technology industry.⁹

Statistical indicators, including unemployment, wage growth, and the demand for immigrant visas, provide some support for this conclusion. In 1999, persons in core IT occupations (U.S. Census classifications) experienced unemployment rates between 1.7 and 2.4 percent, while professional specialty occupations as a whole had a jobless rate of 1.9 percent. At the same time, the national unemployment rate was 4.1 percent.¹⁰ In this context, the labor market for IT workers, like that of specialty professionals in general, appears extremely tight.

Demand in excess of supply in specific labor markets should produce relative wage increases. The NRC report found that average real wage increases for computer programmers and computer systems analysts and scientists rose by 3.8 and 4.5 percent respectively between 1996-1999, only somewhat faster than the 3.2 percent for professional specialty occupations as a whole, while national wage growth averaged 3.4 percent.¹¹ (However, some private compensation surveys, although these also vary consider-

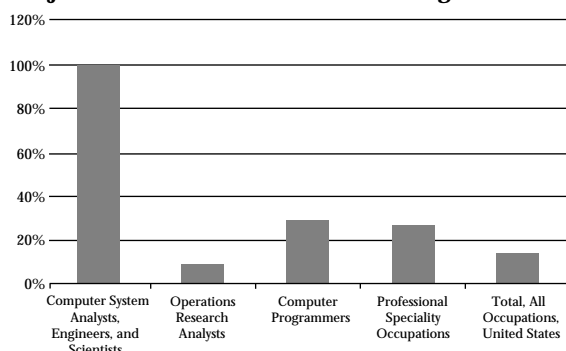
ably, suggest much more rapid IT wage growth, especially in total compensation.¹² Private surveys tend to include select workers and, to some degree, may include stock options and other non-wage compensation.) The evidence suggests that the labor market has been especially tight for certain occupations, such as computer scientists, and in certain locations such as Silicon Valley and Seattle.

What is the Future for IT Workers?

Recent projections for the IT industry do not suggest a slowdown in the demand for workers. The Bureau of Labor Statistics (BLS) expects computer system analysts, engineers, and scientists to be the fastest growing occupations during 1998–2008, increasing by 99 percent. Growth projected for programmers, at 29 percent, is expected to be about twice the average. (See figure below.)¹³

Such projections, of course, are highly uncertain, because the economy will adjust in various ways to such variations in labor demand.¹⁴ Nevertheless, the general conclusion that rapid growth will continue seems warranted.

Projected Growth Rates of IT Jobs through 2008



SOURCE: Braddock, Douglas. “Occupation Employment Projections to 2008”. Monthly Labor Review. Table 2, Employment by Occupation, 1998 and projected 2008. Washington, DC: Government Printing Office, November 1999.

8. Freeman and Aspray (1999: 63).

9. National Research Council (2000: 3.2, 3.8).

10. U.S. Census Bureau (1999).

11. National Research Council (2000: 3.3.4); Bureau of Labor Statistics (2000b).

12. Lerman (1998).

13. Bureau of Labor Statistics (2000); Braddock (1999: Table 2).

14. Bishop (1998).

Immigration, of course, will provide no panacea for these problems. Indeed, it would require roughly a six-fold increase in current immigration levels (assuming the same age structure of immigrants) to maintain today's ratio of workers to retirees—an increase that would be neither socially desirable nor politically viable.¹⁵ Nevertheless, immigration can play an important role in alleviating these strains and will inevitably take on greater importance in the post-baby boomer workforce. In fact, some U.S. states that are experiencing a decline in the working age population (in part due to emigration), such as Iowa, are already urging modifications in immigration policy to mitigate their labor shortages.¹⁶

In the 1950s and 1960s, immigration made no net contribution to the growth of the U.S. working age population. Today, immigrants provide about one-third of this growth, and their contribution will increase dramatically in the future. As Figure 3 shows, assuming that today's levels of immigration continue, immigrants will account for about half of working age population growth during 2006–2015 and for all of this growth between 2016 and 2035, when the native working age population actually declines.

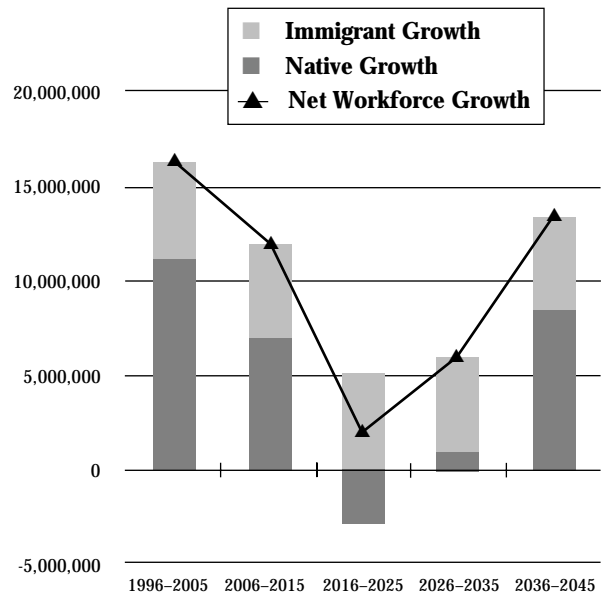
The contribution of immigration to alleviating these economic strains will be determined at least as much by the type of immigrants who arrive on our shores as by their sheer numbers. Dramatically increasing the number of the elderly, children, or unskilled immigrants, who are most likely to be an economic burden, would compound the problems of elderly dependency with other forms of dependency, such as public income support. On the other hand, young skilled immigrants can boost productivity, raise public revenues, and alleviate our demographic problem. The immigrant skill mix not only matters, but probably matters more than the actual immigration levels.

15. CED estimate

16. Strategic Planning Council of Iowa (2000: Goal 1).

Figure 3

Immigration's Contribution to Growth in the Working Age Population (aged 20-64)



SOURCE: U.S. Bureau of the Census and Immigration and Naturalization Service

IMMIGRANTS IN THE ECONOMY TODAY

Although our immigration system is described in the following chapter of this report, a discussion of immigrant characteristics requires a description of the major classes of immigrant admissions.

First, immigrants are either *permanent* or *temporary* residents. In this chapter we are concerned primarily with the former; we return to the latter, and in particular the so-called “skilled, temporary” H-1B workers, in Chapter 2. The major classes of admission, their education and skill requirements, and their proportions of 1998 total admissions, are:

- *family members*, sponsored by previously admitted relatives, have no education or skill requirements (72%),

- *employment* immigrants, sponsored by a U.S. employer, generally must meet certain education or skill requirements (12%),
- *refugees or asylum-seekers*, admitted on humanitarian grounds, have no education or skill requirements (8%),
- *diversity* immigrants, from “underrepresented” countries, must have a high school diploma (8%).

As these data show, 80 percent of legal, permanent 1998 immigrants were subject to no education or skill requirements. However, in addition to these legal immigrants, an estimated 100,000-300,000 (net) illegal immigrants join the permanent U.S. population each year.¹⁷ If these illegal entrants are included, about 84-87 percent of all immigrants are entering without reference to their education or skills.

Education and Skills of Immigrants. Education is the foundation, and a key indicator, of the skills critical to labor market success. And in our increasingly technology-based economy, post-secondary education is increasingly seen as essential for succeeding in the economic life of the middle class.

At the top of the education distribution, immigrants are quite comparable with natives. The proportion of all foreign-born workers with advanced degrees (12 percent) slightly exceeds that of natives (10 percent), and 29-30 percent of immigrant as well as native male and female workers have college degrees. But, at the other end of the educational spectrum, 32 percent of immigrant male workers, and 25 percent of females, have never completed high school, compared with only 8 percent and 6 percent of native-born males and females respectively.¹⁸

17. Warren (2000). Estimates of the unauthorized immigrant population are, by their very nature, subject to great uncertainty. The most recent unofficial estimate is that an annual average of 135,000 (net) unauthorized immigrants joined the U.S. population during 1993–1996. This estimate is approximately one-half of the previous official estimate of 275,000.

18. CED tabulations from Current Population Survey, CPS March Supplement, pooled 1998-2000.

This great disproportion between poorly educated immigrants and natives is a relatively recent development. Over the past three decades there has been a significant decline in the education levels of new immigrants relative to the native population. Whereas in 1960 recently arrived immigrant workers and native workers were about equally likely to have not completed high school, by 1998 new immigrants were almost *four* times as likely as natives to lack a high school diploma.¹⁹

This relative decline in the education levels of new immigrants has resulted from several factors. Family-based admissions, which have dominated immigration numbers since 1965, have no education or skill requirement. As shown in Figure 4, new family-based immigrants average close to 12 years of schooling (high school completion), while those entering on employment visas average 16 years (college graduates). In addition, the education and skills of sponsoring U.S.-resident family members are good predictors of those they sponsor. The personal networks that propel family immigration forward are a powerful force in determining future immigrant characteristics such as education.

Family-based immigration, in conjunction with the removal of national origin quotas, has also produced a substantial shift in the nationality of U.S. immigrants. As more family immigrants from countries with low rates of educational attainment have been admitted, the educational standing of new immigrants has declined relative to natives.²⁰ Forty years ago, 74 percent of U.S. immigrants came from Europe and Canada. During the 1990s, only 14 percent of new immigrants did so, while 30 percent came from Asia and 52 percent from Latin America and the Caribbean, regions with lower education levels on average.

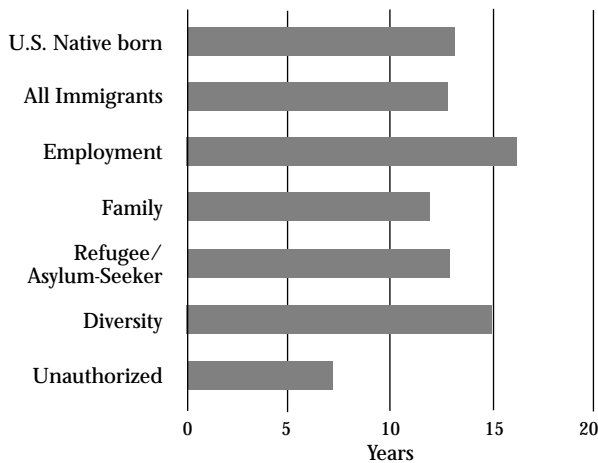
19. Borjas (1999: Table 2-1 and Figure 2-3). The data are for 1998 and refer to civilian salaried workers 25-64 years old.

20. Smith and Edmonston (1997: 185); Betts and Lofstrom (2000: 55).

Yet, while family-based immigrants tend to have less education than employment-based immigrants, the largest source of the poorly educated is found in the illegal population. At five million and growing, illegal immigrants make up nearly one fifth of the foreign-born population. As Figure 4 shows, these unauthorized immigrants are estimated to have only about seven years of education on average.

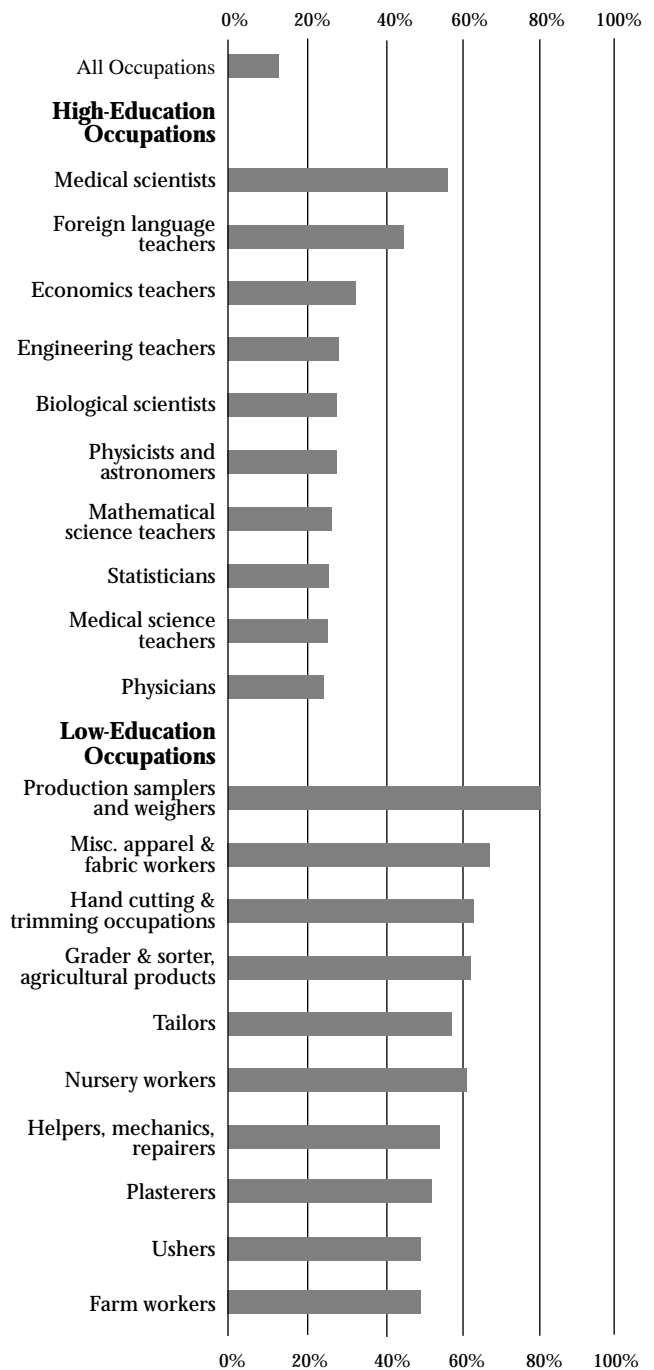
Occupations and Earnings. The education and skills of immigrants, like those of native workers, play a major role in determining the jobs they perform and their earnings from those jobs. While immigrants comprise 12 percent of the labor force, they are highly concentrated in certain occupations—highly skilled jobs requiring advanced degrees and very low-skill jobs requiring little or no formal education. (See box, “Two High-Immigrant Employment Sectors.”) For example, as Figure 5 shows, immigrants make up a greatly disproportionate share of both medical scientists and farm work-

Figure 4
Average Education of New Immigrants by Class of Admission, 1996



SOURCE: Jasso, Gullermina et al. “The New Immigrant Survey Pilot (NIS-P): Overview and new Findings About U.S. Legal Immigrants at Admission.” *Demography*. February 2000; Immigration and Naturalization Service. *Report on the Legalized Alien Population*. Washington, DC: U.S. Department of Justice, 1992.

Figure 5
Immigrants Share of High- and Low-Education Occupations, 1999



SOURCE: Current Population Survey, March 1999 Supplement, Special Tabulations. <http://ferret.bls.census.gov>.

TWO HIGH-IMMIGRANT EMPLOYMENT SECTORS

Immigrants comprise 12 percent of the U.S. workforce, but are found in much higher proportions in certain economic sectors.²¹ This is particularly true in occupations requiring specialized technical skills or advanced degrees in science and engineering. But it is also true for jobs that require very few skills.

University-Based R&D

Foreign graduate students, post-doctoral fellowship recipients, and faculty researchers are critical to many U.S. R&D enterprises. Foreign-born individuals comprised 20 percent of all science and engineering faculty in 1997; 36 percent of engineering professors and 26 percent of math and computer science teachers were foreign-born. Over half of post-doctoral appointments at U.S. universities have gone to non-U.S. citizens in recent years.²² Further, foreign-born recipients of doctorates in science and engineering grew at a rate of over three times that of native-born residents from 1986 to 1997. Today, foreigners account for approximately 40 percent of all science and engineering doctorates earned at American universities.²³

Agriculture

No industry depends more on immigrant labor than agriculture, which employs nearly 2.5 million workers. Nearly 15 percent of all immigrants, most of whom are Mexican, work in agriculture.²⁴ An estimated 600,000 agricultural laborers work in the United States illegally, heavily concentrated in certain crops and states.²⁵

In California, which has the largest number of agricultural jobs, immigrants play a significant role. By some estimates immigrant workers supply nearly all of the farm labor in California. Unfortunately, many rural communities run on a boom-and-bust cycle that follows seasonal demand, and some communities now have large year-round illegal populations with high rates of poverty.²⁶

ers. But immigrants comprise a much larger proportion of the low-skill than of the high-skill occupations. Eighty percent of production samplers and weighers and two-thirds of apparel and fabric workers are immigrants.

This heavy concentration of immigrants in low-skill occupations is reflected, of course, in the distribution of their earnings. In 1998, immigrant males were twice as likely as natives to have earnings in the bottom quintile of the native wage distribution. And, in spite of heavy immigrant representation in certain high-wage occupations, immigrants were less likely than natives to have very high earnings: only about 14 percent of immigrant male workers had earnings in the top quintile of native earnings.²⁷

The earnings of immigrants relative to natives have shown the same deteriorating trend as education levels. In 1960, foreign-born workers as a whole had earnings slightly above those of native workers, while recent male immigrants earned about 13 percent less than natives. During the next four decades, however, the relative earnings of successive new immigrant waves declined sharply and consistently. Male immigrants arriving in the mid-1990s earned 34 percent less than natives. Reflecting this trend, foreign-born males in 1998 earned 23 percent less than natives; for females the earnings gap was 12 percent.²⁸

Although the low earnings of illegal immigrants undoubtedly account for a significant proportion of the immigrant-native wage difference, the earnings and skills of new legal immigrants have also fallen relative to those of natives. Earnings of new non-Mexican immi-

21. Greenhouse (2000).

22. National Science Foundation (2000: Tables 4-45 and 4-46).

23. National Science Foundation (2000: Table 4-41); Bouvier and Simcox (1994: 52).

24. Smith and Edmonston (1997: 149).

25. U.S. General Accounting Office (1997: 5)

26. Taylor and Martin (1997: 855).

27. Borjas (1999: 23 and Figure 2-1).

28. Borjas (1999: Figures 2-1, 2-4 and Table 2-1).

grants, where the illegal component is less important, show much the same pattern during 1960–1998 as the earnings of all immigrants. Similarly, an examination of the reported occupations of three cohorts of legal immigrants admitted in 1977, 1982, and 1994 led the National Research Council to conclude that “...the same general trend of declining relative quality of immigrant cohorts is found using legal immigrants only.”²⁹

Several decades ago, new immigrants, while initially earning less than natives, eventually gained experience and caught up economically. Immigrants typically narrowed the starting wage gap by about 10 percentage points during the first two decades after immigration. As a result of rapid assimilation, immigrants eventually earned on average as much as or slightly more than native-born workers—about 1 percent more in 1970 for example.³⁰

However, this strong convergence of earnings no longer occurs. Today new immigrants with lower skills may never catch up with similar natives.³¹ Mexican immigrants, whose wages at admission were particularly low, experienced *no* convergence of relative wages during 1970–1990, and the gap may have widened.³² Compounding the problem of lower relative earnings is the large increase in the numbers of new immigrants. For both these reasons, upward mobility and middle-class assimilation have become more difficult. Falling education levels have weakened immigrant wage assimilation. Over half the wage gap between today’s immigrants and natives can be attributed to poor immigrant schooling.³³

Differences in earnings are closely related to legal status as a result of the education differences among different classes of admission described above. While there are no data pro-

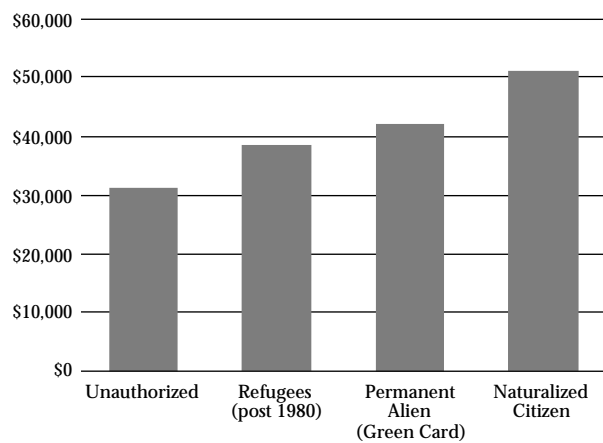
viding earnings of immigrants by detailed class of admission, the sparse evidence available indicates that employment-based immigrants, at the time they are officially admitted into green card status, have earnings that are more than twice those of family-based immigrants and as much as three times those of illegal immigrants.^{34/35} Family immigrants appear to narrow this gap appreciably over time,³⁶ but illegal immigrants do not. As Figure 6 shows, the households of naturalized citizens have earnings on average about two-thirds larger than those of unauthorized workers, and the earnings of permanent aliens are about one-third

34. Some of this difference may be attributable to the fact that many employment-based immigrants have worked in the U.S. for several years on temporary visas prior to obtaining a green card.

35. Jasso, Massey, Rosenzweig, and Smith (2000)

36. Lowell (1997).

Figure 6
Annual Household Earnings
by Legal Status, 1997



SOURCE: Passel, Jeffrey. “A Nation Re-Made: A New Generation of Immigrants to the United States.” Urban Institute Report, Forthcoming. Note: Households are classified according to the legal status of the household head. Earnings represent the sum of all household earnings regardless of an individual’s status within the household. Unauthorized households are, on average, larger and may have more adult earners per household.

29. Borjas (1999: Figure 2-4); Smith and Edmonston (1997: 194 and Table 5-10).

30. Borjas (2000: Table 1.1).

31. Borjas (2000: Chapter 1); Smith and Edmonston (1997: 194-203).

32. Smith and Edmonston (1997: 202).

33. Betts and Lofstrom (2000: 109).

larger. As discussed below, these *average* differences are reflected in much higher rates of poverty among the least-educated immigrant households. Furthermore, since the earnings of immigrants greatly affect the opportunities that their children have, these differences can persist into the next generation.

ECONOMIC EFFECTS OF IMMIGRATION

The economic effects of immigration on the U.S. economy and its consumers, workers, and businesses reflect both the numbers and characteristics of the immigrants, as well as the complex ways in which labor and product markets adjust to immigration. The economic effects on different groups of natives and different regions also vary greatly.

Immigration Produces Positive but Small Net Economic Benefits. Immigration generally provides large economic benefits to the immigrants themselves, whose earnings are usually significantly higher than in their countries of origin, even though they are sometimes very low by American standards. This powerful “job magnet” is why they voluntarily (and eagerly) seek admission and why immigration barriers are so hard to enforce.

There is also general agreement that immigration provides a net economic benefit to U.S. natives *as a whole*. (This benefit excludes possible changes in native tax burdens, as discussed below.) This is because the contribution of immigrant labor to U.S. output and income is greater than just the earnings of the immigrants themselves; this additional income accrues to the U.S. economy in the form of lower prices to consumers, higher wages to workers with complementary skills, and/or higher returns to land and capital. In relation to our \$10 trillion economy, these net gains are quite modest, at least as estimated by conventional economic models. The National Research Council, in reviewing such models, suggested a net economic benefit in the range

of 0.04-0.13 percent of GDP, or roughly \$4-13 billion in today’s economy.³⁷

This calculation, however, masks an important point. Immigration produces both economic winners and losers, and their total gains and losses are substantially larger than the small net benefit found by combining them. As noted below, these gains and losses can be quite important to particular groups of workers, consumers, industries, and regions, even though they also are small in relation to the economy as a whole. Those concerned with the adverse impacts of immigration emphasize the costs to individual groups and regions, as well as the small size of the net benefits. They also argue that important non-economic costs are missing from the equation. Immigration advocates, on the other hand, point not only to the net benefits, but also to the special characteristics of certain immigrant groups and their large contributions to specific sectors, such as scientific research and information technology.

The Benefits of Skilled and Entrepreneurial Immigrants. The U.S. economy benefits most when immigrants complement—that is, differ from and add to—the native-born workforce in terms of abilities, skills, and the willingness to undertake certain jobs.³⁸ Thus both low-skill immigrant workers in agriculture and high-skill specialized scientists make substantial economic contributions.

The economic benefits of highly skilled workers may be significantly understated in conventional economic models. Highly skilled immigrants are very productive and work in high value-added sectors of the economy, and sometimes fill critical gaps for which domestic workers may be unavailable, or available only at much higher cost. In addition, these highly skilled immigrants help produce innovations that put America on the cutting edge of the information age, creating new technologies, products, and exports.

37. Smith and Edmonston (1997: 153).

38. Smith and Edmonston (1997: 136-142).

Immigrant scientists and engineers also contribute disproportionately to research and development (R&D), adding greater value than their numbers alone would suggest. R&D, which has proved to be an important driver of innovation, is critical for a strong U.S. economy.³⁹ Foreign scientists and engineers also garner more patents and citations than their native-born peers.⁴⁰ Technological skill and entrepreneurship have contributed to the success of Silicon Valley, where research and technology-based industries have benefited enormously from immigrant researchers and entrepreneurs (see box, “Chinese and Indian Immigrants in Silicon Valley”).⁴¹

A growing body of evidence suggests that the economic returns from investments in the high technology sector, in which immigrants have played a major role, may be much larger than previously estimated.⁴² There is striking anecdotal evidence of immigrants’ contributions in this sector not only as workers, but also as entrepreneurs and inventors.⁴³ For example, Sun Microsystems reports that immigrant employees created both the Java computer language and the SPARC microprocessor, technological innovations that ultimately created thousands of new jobs for the company.⁴⁴

The United States leads the world in many areas of R&D and technological innovation. Our R&D enterprises attract the world’s best researchers, who want to work in premier universities and corporate labs. Similarly, because the rewards for successful entrepreneurship are very high in the United States, we attract many of the most ambitious entrepreneurs—those who have the best ideas for new products or services, or possess technical or managerial skills that will help build successful businesses.

39. Committee for Economic Development (1998: 10).

40. Levin and Stephan (1999: 1213).

41. Saxenian (1999: Chapter 5).

42. Committee for Economic Development (1998: Chapter 2).

43. Saxenian (1999); Warner (2000); Black (2000).

44. Alvares (1998).

These activities of highly skilled immigrants illustrate a fundamental point—the strong interdependence in our post-industrial economy between skills, new technology, and the capital investments that embody it. Skills enhance the development of technology and the productivity of capital. In line with this relationship, a recent analysis of the impact of skilled and unskilled immigration finds that shifting the composition of U.S. immigrants towards those with higher skills would raise the economic benefits of immigration for the nation.⁴⁵

Two reservations to these generally positive impacts of skilled immigrants should be noted. The first is their potential to hold in check the wages of native workers with similar skills. The NRC recently reported that “the current size of the H-1B [temporary immigrant] workforce keeps...wages from rising as fast as might be expected in a tight labor market.”⁴⁶ In weaker labor markets, such restraining effects on the wages of skilled workers could be problematic, although they also tend to mitigate the recent national increase in earnings inequality. The second concern is the incentive provided to employers to seek new employees, including immigrants, rather than retrain other native workers. Although this view has only anecdotal support, it is held and expressed forcefully by many advocates of IT workers. Recognizing both of these concerns, our recommendations in Chapter 3 are designed to provide flexibility regarding the levels of immigrant admissions, make the “temporary” visa system genuinely temporary, and create incentives to support and retrain domestic workers.

Low-Skilled Immigrants—Benefits and Costs.

The large influx of immigrants with relatively little education and skills during recent decades has added significantly to the U.S. low-skill labor force. For example, immigration increased the number of high school dropouts

45. Borjas (1999: 101-103)

46. National Research Council (2000: 5.5).

CHINESE AND INDIAN IMMIGRANTS IN SILICON VALLEY

Thirty-two percent of Silicon Valley's science and engineering workforce is foreign-born, the vast majority Chinese or Indian. Chinese and Indian engineers run one-quarter of all Silicon Valley high-tech businesses. In 1998, these firms employed 58,282 workers (14 percent of the technology work force) and took in over \$16 billion in total sales (17 percent of all firm sales).⁴⁷ According to *Fortune* magazine, Indian immigrants have "created companies that account for \$235 billion of market value."⁴⁸

The background and development of Silicon Valley's Chinese and Indian immigrant populations is remarkably similar. Both point to education and networks. Many of Silicon Valley's Indian-born workers were educated at one of six Indian Institutes of Technology, while a large proportion of the Chinese are graduates from one of several engineering universities in Taiwan. The level of training in these institutions is regarded as equal to that of America's Ivy League schools.⁴⁹

An array of immigrant-oriented professional organizations in Silicon Valley provides immigrants with professional contacts and information. Groups such as the Silicon Valley Indian

Professionals Association (SIPA) and The Indus Entrepreneurs (TiE) were created as a means of bringing Indian immigrants together for social as well as business reasons.⁵⁰ Similarly, a group of Taiwanese engineers started a branch of the Chinese Institute of Engineers in San Francisco in 1979.

Once established in the United States, these highly skilled immigrants often lend their knowledge and success to others. Kanwal Rehki, an Indian entrepreneur reportedly worth \$500 million, is head of TiE.⁵¹ Formerly the chief technology officer at Novell, Rehki has personally supported more than 45 Indian startups.

Many immigrants also return to their native countries as entrepreneurs and investors, creating contacts that open new markets for their U.S.-based firms. This process of reverse migration and cross-investment may help to explain why exports to the Asia-Pacific region are now nearly four times higher than exports to comparable countries in other parts of the world.⁵² Such activities also help to alleviate concerns about brain drain from these countries, as India and China benefit from the successes of their expatriates in the United States.

by about 21 percent between 1979 and 1995.⁵³ These unskilled workers undoubtedly make substantial economic contributions in the jobs they fill—as farm workers, garment workers, housekeepers and cleaners, cooks and waitresses, child care workers, taxi drivers, and in many other occupations. The benefits to native Americans from their work show up most commonly as lower prices for the goods and services they produce.

These benefits, however, come at the very considerable cost of reducing wages for unskilled workers generally in the U.S. economy, thereby adding to the downward pressure on the earnings of low-income Americans that has become a prominent and problematic feature of a labor market increasingly demanding more

skills. The size of these wage reductions is controversial, since the immigration of low-skill workers gives rise to geographical movements of workers (both native and immigrant) and capital and other changes in their behavior. These changes diffuse the economic effects of immigration from high-immigration localities across the national economy, making them difficult to measure directly. Nevertheless, a re-

47. Saxenian (1999: Chapter 4).

48. Saxenian (1999: 5).

49. Warner (2000).

50. Warner (2000).

51. Saxenian (1999: Table 3.1).

52. Warner (2000).

53. Borjas (1999: 83).

cent careful analysis suggests that immigration increased the wage differential between high school dropouts and other workers by 3-6 percentage points during 1980–1995, accounting for roughly one-quarter to one-half of the large increase in that gap from 30 percent to 41 percent during that period.⁵⁴ The wages of earlier immigrants are likely to be most adversely affected by further immigration to the labor markets where they are concentrated.⁵⁵

Poverty and Fiscal Costs. Another important cost of low-skill immigration pertains to its impact on government revenues and spending. Poor households are more likely to need government assistance than other households, while they contribute less in taxes. Immigrants today make up more than one-fifth of the U.S. population living in poverty, twice their proportion of the total population. Again, education and skills play a significant role. Thirty percent of adult immigrants with less than a high school education live in poverty, compared with just 8 percent of those who are college graduates.⁵⁶

Estimates by the National Research Council indicate that immigrant households as a whole provide a net benefit to the federal government, but are a net burden to certain state and local governments by lowering tax revenues and consuming public expenditures. State and local governments are primarily responsible for the public services used by immigrants and, in particular, the cost of education for their children. For high-immigration states these effects can be dramatic: in the extreme case of California, immigrant households in the mid-1990s had on average a negative “net fiscal balance” (taxes paid less public expenditures received) of almost \$3,500, which raised the tax burden of the average native households by

nearly \$1,200.⁵⁷ Unsurprisingly, illegal immigrant households tend to generate the greatest fiscal costs to local government.⁵⁸ Not only do they earn very little and pay correspondingly little in taxes, but they also tend to be larger than average and send more (often U.S.-born) children to local schools.⁵⁹

Such short-term accounting can be misleading, however. As immigrants assimilate they earn more, pay more in taxes, and draw less heavily on some public services. Expenditures on immigrant children are investments in human capital that can produce future benefits, both in higher productivity and wages and in social assimilation. To reflect such factors, the NRC has also made estimates of the very long-term fiscal impact of current immigration, taking into account the future taxes and public expenditures related to the children and succeeding generations of current immigrants. These estimates show a positive net fiscal balance (as a discounted net present value, for all levels of government) of \$80,000 for an *average* 1994 immigrant. Because this estimate is extremely sensitive to assumptions about future tax rates, the precise value is quite uncertain and of limited interest. More reliable, and of much greater importance in our view, are the dramatic estimated *differences* in fiscal impact between immigrants with different education levels. The NRC finds that a high school dropout would have a (long-term) impact of *negative* \$13,000, compared with \$51,000 for a high school graduate and \$198,000 for an immigrant with more than a high school education.⁶⁰ Clearly education and skills make an enormous difference to the fiscal effects of immigration, as well as to its overall economic effects.

54. Borjas, Freeman, and Katz (1997: Tables 12, 18, pp. 47, 62).

55. Greenwood and Tienda (1997: 251-394).

56. Camarota (1999: Table 3).

57. Smith and Edmonston (1997: Chapter 6)

58. Passel and Clark (1998: Section III).

59. Greenwood and Tienda (1997: 258).

60. Smith and Edmonston (1997: 350).

CONCLUSION: THE NEED FOR MORE HIGH-SKILLED IMMIGRANTS

To meet our impending workforce needs, we require a system that modestly increases legal immigration and places more emphasis on education and skills, both in setting criteria for admission and enforcing them. If immigration policy and enforcement continue, in effect, to favor overwhelmingly immigrants with little education and skills, progressively fewer immigrants, and fewer of their children, will succeed and contribute economically or assimilate socially.⁶¹

Beyond an emphasis on skills, we also need a flexible immigration system that can respond to changing economic conditions. While the broad features of tomorrow's economy are visible, its detailed characteristics and short-term variability will surprise us. During the sustained growth of the 1990s, immigrants were especially valuable in supplying labor to meet ex-

panding demand and, as a by-product, tempering wage inflation. Economic conditions, however, inevitably change. Industrial sectors, and the economy as a whole, will expand and sometimes contract. As the economy cools, a continued influx of immigrants may create significant social and economic problems.⁶² The experience of California during the economic slump of the early 1990s showed how hostile and anti-immigrant the social and political climate can become. While such responses may reflect latent nativist sentiment, they may also result from the competition of newcomers in labor markets with slack demand.⁶³

For the long-term, we must improve the skills of our native-born labor force through education reform and worker training. Immigration cannot and should not be a substitute for those endeavors. But immigration, properly managed, can supplement them in addressing both our short- and longer-term economic and demographic needs.

61. Borjas (1999: Chapter 7).

62. Goldsborough (2000: 89).

63. Bean, Hook and Fossett (1999: 31-64).

MAJOR RECOMMENDATIONS

CED recommends an integrated approach to the reform of immigration policy and administration that places greater emphasis on labor market skills. The recommended actions would increase the efficiency and flexibility of the system, while preserving America's dedication to family reunification and humanitarian admissions. We address five general themes:

(1) Broaden the Skill Base [p. 30]

- Double the current 140,000 limit on skill-based, permanent employment visas.
- Do not reduce the limits on the core family-based classes of admission.
- Impose flexible country limits on visas for permanent employees, giving preference to under represented countries and to graduates of U.S. educational institutions after country limits have been met.
- Require college degrees for admissions of non-immediate family (siblings and adult children) as well as for applicants to the diversity lottery.
- Make authorized work status a basic labor standard, but recognize that the effective reduction of unauthorized employment requires a comprehensive approach that addresses the fundamental causes of the problem.

(2) Restructure the Administration of Immigration [p. 32]

- Congress and the new Administration should act immediately to comprehensively restructure the management of immigration.
- The new administrative structure should separate the enforcement of immigration

laws from the delivery of immigration services, whether in an independent agency or within the Department of Justice. The authority and policymaking capacity of immigration officials should be consolidated and elevated.

- The INS and other agencies should collect user fees that cover at least the cost of services and that can be used only to fund delivery and improvement of those services.

(3) Rationalize the Admission of Permanent Workers [p. 33]

- Replace employer certification for admission of permanent employees with an attestation requirement. Admission should require weeks, not months or years. Small random audits of attestation, as well as of employers and visa holders during the first year of employment, would strengthen accountability.

(4) Rationalize the Admission of Temporary Workers [p.35]

- Reduce the term of the H-1B visa to three years and require that the worker demonstrate intent to return home. This would restore the temporary nature of this program.
- Auction additional H-1B visas if strong demand for temporary foreign labor results in a number of petitions that exceeds the statutory annual cap.

(5) Create Mechanisms for Flexible Policies [p. 37]

- Congress should require its own review of immigration policy and administration at least once every three years.
- Congress should also create a standing Advisory Board to analyze immigration issues and inform congressional review.

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CE	Circulo de Empresarios Madrid, Spain
CEDA	Committee for Economic Development of Australia Sydney, Australia
EVA	Centre for Finnish Business and Policy Studies Helsinki, Finland
FAE	Forum de Administradores de Empresas Lisbon, Portugal
FDE	Belgian Enterprise Foundation Brussels, Belgium
IDEP	Institut de l'Entreprise Paris, France
IW	Institut der Deutschen Wirtschaft Cologne, Germany
経済同友会	Keizai Doyukai Tokyo, Japan
SMO	Stichting Maatschappij en Onderneming The Netherlands
SNS	Studieförbundet Naringsliv och Samhälle Stockholm, Sweden