

Social Security and Immigrant Earnings

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Immigrant cohorts have varied over time in many ways that have important implications for projecting the contributions immigrants make to the Social Security system. Using immigrant cohorts in the 1970, 1980, and 1990 decennial censuses, we find that immigrant men experience faster earnings growth than U.S.-born men; that there has been a large decline in initial immigrant earnings over time; and that there has been an accompanying large increase over time in immigrant earnings growth rates. Thus, recent reductions in immigrant entry earnings are significantly compensated for by faster immigrant earnings growth.

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Acknowledgments: We gratefully acknowledge useful comments on this article from Benjamin Bridges, Dean Leimer, and Michael Leonesio. We also appreciate comments by Steve Goss on an earlier paper concerned with the treatment of immigrants in the Social Security actuarial projections. Finally, we appreciate Patrice Cole's assistance in preparing the tables for publication.

I. Introduction

Immigration, along with fertility and mortality, is one of the demographic components underlying the long-range forecasts of Social Security's financial viability. Since the end of World War II, and particularly since the 1960's, there has been a substantial increase in immigration. From 1941 through 1950, 1.0 million immigrants were given permanent visas for the United States; in 1951-60, 2.5 million; in 1961-70, 3.3 million; in 1971-80, 4.5 million; and in 1981-90, 7.3 million (U.S. Immigration and Naturalization Service 1996).¹ Immigration may be near 10 million in the 1990's, which would make it the decade of the largest number of immigrants in American history (Reimers 1996). The 1980's immigrant flow raised the share of the U.S. work force that is foreign born from 6.4 percent in 1980 to 9.3 percent in 1988. In 1994, immigrants made up 9.7 percent of the work force. With a concurrent slowdown in the growth of the native work force, immigrants accounted for more than one-quarter of new labor market entrants between 1980 and 1988 (Borjas, Freeman, and Katz 1992, 1996).²

The continuing and growing importance of immigration for the U.S. population was highlighted in a Census Bureau population projection, made in 1991, for the years from 1992 through 2050:³

According to the middle series, the U.S. population in the year 2000 is projected to be 8.8 million (3.3 percent) larger than it would have been if there had been no new immigration after July 1, 1991. This figure would increase to 21 million by 2010, and 49 million by 2030. By the middle of the next century, the U.S. population may include 82 million post-1991 immigrants and their descendants, or 21 percent of the population.

As natural increase declines, the compounding impact of immigration on the U.S. population growth would increase each year. In 1992, about 33 percent of the growth in the population would be caused by net immigration. By the turn of the century, net immigration would account for over 60 percent of the post-1991

population increase. Eventually, about 93 percent of the population growth during the year 2050 may be due to post-1991 immigration (Day 1992, p. xxiii).⁴

In addition to the increasing importance of immigration as a source of population growth, there have also been dramatic changes in the composition of immigration. Partly due to changes in legislation and partly in response to changing economic opportunities in Europe relative to the United States, recent immigrants come predominantly from Asian and Hispanic countries in marked contrast to earlier immigration, which was dominated by European immigration. In 1981-89, Asian and Hispanic immigrants made up more than 80 percent of U.S. legal immigration (table 1). In general, the countries currently dominating U.S. immigration are less economically developed than the countries that previously dominated U.S. immigration (Borjas 1992; Reimers 1996). Recent immigrants may also be more likely than earlier immigrants to be admitted to the United States on the basis of kinship ties rather than occupational skills,⁵ and there has been a post-1960 growth in illegal immigrants and refugee admissions.⁶ These changes in immigrant composition could have important effects on the earnings patterns of immigrants and their associated contributions to the Social Security system.

The current country-of-origin composition of U.S. immigration is not expected to change in the foreseeable future. Reimers (1996) writes:

The backlog of persons awaiting an American visa in early 1992 was almost three million, mostly in Third World countries. Thus, unless Congress decides to revamp immigration policy again, we will see continued domination of the immigration from the same nations that prevailed in 1980's.

The expectation that the recent country-of-origin composition will prevail into the future is incorporated in the Census Bureau's projections of immigrant composition:

The middle series project 880,000 net immigrants a year composed of 324,000 Hispanics; 323,000 non-Hispanic Asians; 174,000 non-Hispanic whites; and 60,000 non-Hispanic blacks (Day 1992, p. xxiii).

The corresponding projected percentages for these numbers are: Hispanic immigrants, 36.8 percent; Asian immigrants, 36.7 percent; and combined Asian and Hispanic immigrants, 73.5 percent. The expected constancy in the type of immigrant entering the United States suggests that what we learn about the labor-force behavior of recent immigrants will not only help to project the earnings contributions that today's population of immigrants will make to the Social Security system, but also those of future immigrant populations.

Immigrants affect Social Security by affecting the size and composition of the population contributing to and benefiting from the Old-Age, Survivors, and Disability Insurance (OASDI) programs. Underscoring the importance of immigration to Social Security, the Technical Panel to the 1991 Advisory Council on Social Security (Social Security 1991) recom-

Table 1.—National origin composition of legal immigrant flow: Percent, by immigrant entry period and country of origin

Period	Percent of immigrants originating in—			
	Asia	Europe	Canada	Latin America
1941-50.....	3.6	60.0	16.6	17.7
1951-60.....	6.1	52.7	15.0	24.6
1961-70.....	12.9	33.8	12.4	39.2
1971-80.....	35.3	17.8	3.8	40.3
1981-89.....	41.6	11.0	2.3	41.9

Source: U.S. Immigration and Naturalization Service, 1990, pp. 3-4.

mended establishing a more adequate knowledge base concerning immigration, including ascertaining:

- the relationship between labor-force participation rates and rates of total net immigration;
- the length of coverage and average earnings of immigrants who remain in the country, as well as those immigrants and natives who emigrate; and
- the effect of immigration on the OASDI system, including the extent to which immigrants receive benefits based upon their coverage under the system.

All of these components are vital for understanding how immigration affects the financial status of the OASDI programs; more information on these issues is also needed for comparing how immigrants and natives benefit from the OASDI system. This study responds to these concerns by providing information on immigrant earnings profiles.⁷

We begin by describing issues relevant to modeling the effect of immigrants on OASDI. Following this, we examine how the earnings profiles of working-age immigrant men contrast with those of U.S.-born men. We show this overall and by specific characteristics, such as years of residence in the United States, education, and age, that could be used in modeling immigrant earnings in Social Security models. Given the large changes that have occurred in the composition of immigration, we also examine how immigrant earnings vary by region of origin and whether the earnings of immigrants relative to the native born have changed over time.

To limit the scope of this article's inquiry, we do not examine the earnings of immigrant women. Other research efforts suggest, however, that the labor-force behavior of immigrant and U.S.-born women is distinct (Long 1980; Reimers 1985; Beach and Worswick 1993; Duleep and Sanders 1994). Furthermore, given differences in the labor-force behavior of immigrant women across countries of origin (Reimers 1985; MacPherson and Stewart 1989; Duleep and Sanders 1993), it is likely that important changes have occurred over time in the labor-force behavior of immigrant women relative to that of U.S.-born women as the country-of-origin composition of U.S. immigration has changed. More information on the labor-

force behavior of immigrant women is essential for understanding how immigration affects the financial status of OASDI and, as such, it is an important topic for further research.

II. Modeling the Effect of Immigration on OASDI

Each year, the Social Security Administration forecasts the financial status of the OASDI programs by projecting trends in key variables such as the labor-force participation and earnings of the U.S. population. Estimated trends in economic variables are imposed upon estimated trends in the size of the populations that contribute to and benefit from Social Security.

These projections are based on historical aggregate trends in demographic and economic variables as well as an understanding of underlying factors and informed speculation about the likely direction of future trends. For instance, in the discussion of the long-range assumptions for the annual report of the OASDI Board of Trustees, the increased entrance of women into the labor force and the labor-force entrance of the baby boom generation are cited as two factors underlying the relatively low growth in earnings during the past 30 years; by increasing the proportion of low-paid inexperienced workers in the labor force, these two factors depressed overall real earnings levels. The increasing work experience of women in the labor force and the maturing of the baby boom generation are cited as positive factors in projections of future earnings levels. This is one example of how information about the labor-force behavior of population subgroups may help to inform actuarial projections of Social Security's financial status.

Immigration enters into the Social Security projections both explicitly and implicitly. The explicit treatment of immigrants in the actuarial forecasts is purely demographic. Projections of net immigration are added to demographic projections concerning population size by age and sex. Economic parameters are then imposed on the population projections. Since immigrants are added to the total population, upon which labor-force behavior and earnings behavior is imposed, there is no explicit treatment of potential differences in labor-force variables between immigrants and the native born. Rather, differences between the life-cycle earnings patterns of immigrants and natives are implicitly captured in the modeling process through their effect on overall average earnings levels.

This implicit treatment of immigrant earnings would accurately capture the impact of immigrants on Social Security earnings contributions only if each cohort of immigrants both historically and prospectively is the same in size, entry earnings, and earnings growth relative to that of natives. To the extent that immigrant earnings differ from those of natives, changes in the relative size of immigration will cause problems in the projection methodology even if the relative earnings profiles of immigrant cohorts are constant over time. If the relative earnings profiles of immigrant cohorts change over time, then projection inaccuracies will arise even if the relative size of immigration stays constant. This article examines the relative entry earnings and earnings growth of immigrants.

Knowing more about how immigrant earnings compare with those of natives and whether and how immigrant earnings

have changed over time would help build a more explicit basis for describing the economic relationship of immigrants to the OASDI system. For instance, information on immigrant earnings over the life cycle could be used in conjunction with information on the distribution by year of entry of current and forecasted immigrant populations to better forecast immigrant contributions to the OASDI system. Such an enhancement of the treatment of immigrants (and other subgroups) in the projection methodology is eminently feasible as information on relevant characteristics is available through several regularly updated data sources. Enhancing the modeling process in this way would complement the current purely demographic treatment of immigrants in the explicit assumptions that underlie the actuarial projections. At the very least, it would help build a stronger foundation upon which the implicit assumptions that shape the actuarial forecasts are built.

More information on how characteristics, such as number of years in the United States, country of origin, education, and age affect immigrant earnings could also be used in modeling efforts that are designed to explicitly account for compositional information in their forecasts. Ideally—given readily available information from the decennial census, Current Population Survey, and administrative records on the characteristics of immigrants such as their age, sex, years since migration, education, country of origin, and admissions status—we would like to predict immigrant contributions to and benefits from the OASDI system for the current immigrant population. Projections from such a modeling mechanism could be updated on an annual basis by imputing into the model information on the characteristics of each year's incoming immigrants. This would supplement the long-range actuarial projections and more clearly illuminate the relationship of immigrants to the Social Security system. To do this, the effects of these variables on the labor-force participation, earnings, and emigration of immigrants must be determined through research. The information on the earnings and emigration of immigrants then needs to be incorporated into a modeling methodology that can take distributional factors into account.

Dynamic microsimulation models can accommodate distributional information.⁸ This approach takes a representative sample of the population of interest that has information on characteristics of individuals and, on the basis of these characteristics, simulates behavior on a probabilistic basis over time of each individual in the sample according to the best information available concerning the relationship of the behavior in question to given characteristics. Total and average values are estimated by summing over individual outcomes. In addition to providing a vehicle to predict Social Security contributions and benefit receipts of the current population, dynamic microsimulation modeling can be used for measuring the effects of proposed and actual policy changes on the financial status of the Social Security system (Burtless 1994; Social Security Administration 1995). The validity of such estimates will depend upon how accurately relevant behaviors of various population subgroups are modeled.

Existing microsimulation models with well-developed

OASDI components, such as the Dynamic Simulation of Income Model (or DYNASIM) maintained by the Urban Institute (Orcutt, Caldwell, and Wertheimer 1976; Johnson, Wertheimer, and Zedlewski 1983)⁹ do not differentiate the labor-force behavior and earnings of immigrants from the labor-force behavior and earnings of the native born with similar demographic characteristics. Thus, although microsimulation models are designed to incorporate distributional information, this capability has not, to date, been extended to the treatment of immigrants. This would not be a limitation if immigrants and natives with similar measurable characteristics, such as age and years of schooling, were similar in their labor-force behavior. As will be shown, however, the earnings profiles of immigrants differ dramatically from the earnings profiles of natives of similar age and education.

The information in the sections that follow is a first step towards increasing the informational content that underlies the treatment of immigrant earnings in actuarial forecasts and microsimulation models. By combining research results with appropriate modeling techniques, reliable estimates of how immigrants contribute to and benefit from the OASDI system may be obtained.

III. The Earnings Profiles of Immigrants and Natives

Using 1970-90 decennial census data, part III explores how the earnings profiles of working-age immigrant and U.S.-born men differ and whether the earnings profiles of recent immigrants differ from those of earlier immigrants.¹⁰ Annual earnings are measured for the year before any given census year and include income from wage and salary employment as well as self-employment income. We first use 1990 census data to examine the entry earnings of recently arrived immigrant men. Next, using 1970, 1980, and 1990 census data, we describe how immigrant entry earnings have changed over time since 1965. Finally, by combining data from the 1970 and 1980 censuses and data from the 1980 and 1990 censuses we examine immigrant earnings growth by using the adjacent censuses to follow the earnings of immigrants from their first years in the United States to 10 years later. The focus in all three sections of part III is working-age immigrant men who were aged 25-54 when we examine their earnings during their first 5 years in the United States and aged 35-64 when we examine their earnings 10 years later, after they had lived in the United States for 10-14 years. In all analyses, comparably aged U.S.-born men, also referred to as natives, form the comparison group.

Entry Earnings

The most recent cohort of immigrants for which we have decennial census data, from the 1990 census, are immigrants who entered the United States from 1985 through April 1990, when the census was taken. This group of immigrants will be referred to as the 1985-90 cohort. Their entry earnings, alone

and relative to U.S. natives, are shown in table 2 for males who were aged 25-54 at the time of the census.¹¹

The median earnings of recent male immigrants, as reported on the 1990 census for the preceding year, are 40.6 percent of the median earnings of natives. Although immigrants on average have slightly fewer years of education¹² and are younger than the U.S. natives, these differences are not the major source of their initial earnings disadvantage relative to natives. As shown in the second through fifth data columns of table 2, recent immigrants have low earnings relative to U.S.-born men even when they are compared within age and education levels.¹³ For instance, the initial earnings of young immigrant men with some college or more are only 48.5 percent of the earnings of natives in the same age and education group.

The finding that immigrants initially earn less than natives of similar age and education is consistent with theories of human capital transfer across different labor markets. In particular, Chiswick (1978, 1979) proposed that less-than-perfect international transferability of skills would lead to lower initial earnings for immigrants compared with U.S. natives with similar demographic characteristics. Mincer and Ofek (1982) linked the earnings effect of immigration to the human capital literature on interrupted work careers: Immigrants, like reentering labor-force participants (for example, women returning to work after raising their children), must readapt their previously acquired human capital to the new labor market.

The low initial earnings of immigrants relative to natives, anticipated theoretically and empirically shown in table 2, suggests that increases in the proportion of new immigrants in the work force will have much the same effect as increases in other new entrants, such as with the baby boom generation and women, that have implicitly contributed to lower wage growth in actuarial projections.

A corollary of Chiswick's model of less-than-perfect international transferability of skills is that the smaller the degree to which country-of-origin skills are transferable to the United States, the lower would be immigrants' initial earnings in the United States. Thus, Chiswick's skill transferability theory has implications for differences in immigrant earnings by source region. Chiswick found empirical evidence for the skills transferability hypothesis in the lower initial earnings of immigrants from non-English-speaking countries as compared with immigrants from English-speaking countries (Chiswick 1978, 1979). The level of a country's economic development relative to that of the United States has also been linked to Chiswick's skill transferability model:

Skills attained in advanced, industrial economies are more easily transferable to the American labor market. After all, the industrial structure of advanced economies and the types of skills rewarded by those labor markets greatly resemble the industrial structure of the United States and the types of skills rewarded by American employers. In contrast, the industrial structures and labor markets of less developed countries require skills that are much less useful in the American

labor market. The human capital embodied in residents of those countries is, to some extent, "specific" to those countries and is not easily transferable to the U.S. labor market (Borjas 1985, pp. 428-429).

Thus, immigrants coming from less economically developed countries may have skills that are less transferable to the United States because the formal education and work experience in these countries may be less applicable to the U.S. economy than the formal education and work experience in economically developed countries (Chiswick 1979; Mincer and Ofek 1982). For instance, one might assume that students in Chinese schools have less exposure to computers than students in German schools. However, as evidenced in international comparisons of the mathematical proficiency of students (Rivera-Batiz 1996), the skills acquired at given levels of education in countries with lower levels of economic development than the United States are not necessarily inferior to those acquired in U.S. schools, and may in fact be superior.

Alternatively, or additionally, the education and training in less economically developed countries may be comparable to that received in economically developed countries. However, limited career opportunities in less-developed countries may make it worthwhile for individuals to immigrate even if the best way for them to earn a living in the United States entails substantial post-migration investment in new skills and credentials such as learning English, undertaking a U.S. degree program, or starting a business. Their counterparts in economically developed countries with equivalent years of schooling and training in the same profession are less likely to find it

worthwhile to immigrate because the opportunities in their own countries are similar to those in the United States; it would generally not make sense for them to go through a period of investment that would make their home-country skills transferable to the U.S. labor market. This line of reasoning suggests that in the absence of admission constraints (other things being equal) the largest immigrant populations (proportions of their home-country populations) will be characterized by low entry earnings relative to immigrants from source countries that proportionally contribute less to U.S. immigration. Given the similarity of opportunities in Western Europe and the United States, it would generally only make sense for persons from Western Europe to immigrate who did not have to invest in skills specific to the U.S. labor market. Accordingly, we would expect a much smaller proportional demand for U.S. visas from today's West Europeans, and we would expect the initial earnings of the West Europeans who do immigrate to be much closer to the earnings of demographically comparable natives than would be the case for the initial earnings of immigrants from countries in Asia and Central and South America.¹⁴

As shown in the third through eighth rows of table 2, the entry earnings of immigrants from the source regions that dominate recent U.S. immigration (Asia and Central and South America) are far below the entry earnings of immigrants from Western Europe.¹⁵ In fact, the entry earnings of Western European immigrants are similar to those of U.S.-born men, while the entry earnings of immigrants from Asia and Central and South America are about half or less than half of the earnings of natives.

Table 2.— Median entry earnings in 1989 of immigrant men, aged 25-54, who entered the United States between 1985 and 1990, by region of origin, age, and education (absolute levels and relative to U.S. born)

[1995 dollars, deflated by CPI]					
Region of origin	All	Age and education			
		25-39 years old; 1-12 years of school	25-39 years old; more than 12 years of school	40-54 years old; 1-12 years of school	40-54 years old; more than 12 years of school
All immigrants.....	\$12,367	\$11,062	\$15,977	\$9,833	\$22,122
Relative to U.S. born.....	0.406	0.529	0.485	0.381	0.500
Asia.....	\$13,462	\$12,290	\$14,298	\$8,269	\$19,664
Relative to U.S. born.....	0.443	0.589	0.434	0.316	0.439
Central/South America.....	\$11,062	\$10,570	\$14,748	\$9,833	\$17,949
Relative to U.S. born.....	0.364	0.506	0.447	0.376	0.401
Western Europe.....	\$30,726	\$23,966	\$30,726	\$22,123	\$61,452
Relative to U.S. born.....	1.010	1.147	0.931	0.845	1.372

Note: Estimates based on the 1990 Census of Population, 5-percent and 1-Percent Public Use Samples combined.

Changes in Entry Earnings Over Time

A major change in U.S. admissions policy occurred in 1965. Prior to 1965, U.S. immigration policy was dominated by the national origin system that allocated visas to countries according to the national origin composition of the U.S. population in 1920. This system greatly favored immigration from Western European countries. In addition, there were laws that worked to exclude almost all immigration from Asia.¹⁶

Various changes diminished the importance of the national origin system over time and in 1965, it was replaced by a system that instead of focusing on national origin as the primary determinant of entry, made family reunification the key determinant. To a much lesser extent, the new system also made room for persons to enter the United States on the basis of employer requests for needed occupational skills.¹⁷

The restrictive nature of the pre-1965 admission policy meant that post-1965 migrants from countries whose immigration had been previously severely restricted generally lacked relatives in the United States and were therefore most likely to immigrate under the employment preference provisions. Thus, the initial immigrants from previously restricted regions of the world were likely to have transferable skills to the U.S. labor market as evidenced by their gaining admission to the United States under the occupational skills admission categories. However, as these initial immigrants established a base in the United States, relatives with less transferable skills could enter under the family admission categories, and those relatives could bring in other relatives, and so forth. Given differences in the relative economic opportunities between the United

States and the countries whose immigration had been severely restricted prior to 1965, it is not surprising that the pre-1965/post-1965 country-of-origin composition of U.S. immigration changed radically (table 1). We would also expect that following passage of the 1965 Act, there would not only be an increase in immigration (as documented in the introduction), but also a decrease in the relative entry earnings of immigrants as the proportion of immigrants with less transferable skills increased.

As shown in table 3, there has been a decline in the entry earnings of immigrants, both in real terms and relative to the native born, whose real earnings have also declined since 1969.¹⁸ Male immigrants aged 25-54 in the 1965-70, 1975-80, and 1985-90 entry cohorts, earned a declining proportion of the median earnings of native males aged 25-54. The drop is quite dramatic. In 1969, immigrant men who entered the United States in 1965-70 earned 65 percent of native men's earnings, while in 1989, immigrants who entered the United States in 1985-90 earned only 41 percent of natives' earnings.¹⁹ Comparing the 1965-70 cohort with the 1985-90 cohort, we see that the relative decline in immigrant entry earnings persists even within age and education categories.²⁰

The decrease in relative immigrant entry earnings suggests that the earnings contributions of immigrants to Social Security may have changed fundamentally. The extent to which this is true depends on the earnings growth of recent immigrants relative to immigrants who entered the United States earlier. If the earnings growth of recent immigrant cohorts relative to natives is the same as that for earlier cohorts, or lower, this would suggest that (holding several other factors

Table 3.—Median entry earnings of immigrants over time (absolute levels and relative to U.S. born): 1965-70; 1975-80, and 1985-90 immigrant entry cohorts, by age and education

[1995 dollars, deflated by CPI]

Age and education level	1969 earnings of 1965-70 cohort	1979 earnings of 1975-80 cohort	1989 earnings of 1985-90 cohort
25-54; all education levels.....	\$23,045	\$16,267	\$12,367
Relative to U.S. born.....	0.653	0.500	0.406
25-39; 1-12 years of school.....	\$20,968	\$14,284	\$11,062
Relative to U.S. born.....	0.631	0.486	0.529
25-39; more than 12 years of school.....	\$26,367	\$18,616	\$15,977
Relative to U.S. born.....	0.577	0.463	0.485
40-54; 1-12 years of school.....	\$20,968	\$14,705	\$9,833
Relative to U.S. born.....	0.594	0.417	0.381
40-54; more than 12 years of school.....	\$34,672	\$27,131	\$22,122
Relative to U.S. born.....	0.522	0.479	0.500

constant such as the earnings of immigrant women) the relative per capita earnings contributions of recent immigrants to Social Security will be substantially less than that of previous immigrant cohorts, who represented a smaller percentage of the work force. If earnings growth is inversely associated with entry earnings (low entry earnings are associated with high earnings growth), then the Social Security impact of the dramatic decline in immigrant entry earnings could be significantly lessened.

The Earnings Growth of Immigrants

Since immigrants are categorized by year of entry on the decennial censuses, we can examine how the earnings of particular immigrant cohorts grew with residence in the United States by measuring their earnings during their first years in the United States, and then 10 years later using the subsequent decennial census. Thus, using the 1980 census, we measured the 1979 earnings of immigrants, aged 25-54, who entered the United States between 1975 and April 1980. Using the 1990 census, we measured the 1989 earnings of the same cohort of immigrants—those who entered the United States in 1975-80 and were aged 35-64 in 1990. Similarly, using the 1970 and 1980 censuses, we were able to measure the entry earnings and earnings after 10-14 years of U.S. residence of immigrants who entered the country in 1965-70. The earnings of comparably aged natives were measured to provide estimates of immigrant earnings growth relative to that of the native born.²¹

For both the 1965-70 and 1975-80 cohorts of immigrants, median earnings for the same age cohorts 10-14 years after entry show considerable “catching-up” with the median earnings of similar natives (table 4). For all immigrant males aged

25-54 in the first decennial census after their entry into the United States, around two-thirds of the earnings gap relative to natives was closed in the next 10 years—from 65 percent to 85 percent of native earnings for the 1965-70 cohort and from 50 percent to 84 percent of native earnings for the 1975-80 cohort. A similar pattern is found when calculating median earnings for immigrants and natives by age and education groups. Thus, immigrants have much faster earnings growth rates than similar U.S.-born workers.²²

Despite a 23.4 percent drop in earnings relative to the native born between the 1965-70 and the 1975-80 immigrant entry cohorts, there is very little difference in the relative earnings of each cohort after 10-14 years of U.S. residence—85.4 percent for the 1965-70 cohort and 83.9 percent for the 1975-80 cohort. The cohort with lower relative entry earnings had a much larger growth rate. This effect is even more dramatic when looking at separate age and education groups, where in each case the cohort with lower relative entry earnings surpassed the initially higher earnings immigrant cohort in relative earnings.

This strong inverse relationship between relative entry earnings for an immigrant cohort and its subsequent relative earnings growth rate has been explored theoretically and empirically in a number of recent papers (Duleep and Regets 1992; 1994a,b; 1996a,b,c,d) that build upon the much earlier work of Chiswick (1978, 1979) on the incentives faced by immigrants for human capital investments. The inverse relationship between relative immigrant entry earnings and relative earnings growth rates is robust, appearing not only in aggregate numbers, as shown here, but cross-sectionally across immigrant source countries; across entry cohorts holding the source country constant; and in the lessening earnings effect

Table 4.—Median earnings of immigrants relative to U.S. born, during their first 5 years in the United States and 10 years later: 1965-70 and 1975-80 immigrant entry cohorts, by age and education

Age and education level	1965-70 cohort		1975-80 cohort	
	1969 ratio to U.S. born	1979 ratio to U.S. born	1979 ratio to U.S. born	1989 ratio to U.S. born
25-54; all education levels.....	0.653	0.854	0.500	0.839
25-39; 1-12 years of school.....	.631	.706	.486	.750
25-39; more than 12 years of school.....	.577	.864	.463	.886
40-54; 1-12 years of school.....	.594	.769	.417	.867
40-54; more than 12 years of school.....	.522	.720	.479	.788

with time in the United States of factors, such as admission status and country of origin, that have important effects on immigrant entry earnings.

There are a number of theories about immigrant economic behavior that are consistent with the finding shown in table 4, that as relative immigrant entry earnings decrease (over time or across countries of origin) earnings growth increases. Many factors that may cause immigrants to have low initial earnings also create incentives and opportunities for human capital investment. The inability to initially make use of country-of-origin skills in the U.S. labor market may create added incentives to acquire the U.S. training, education, or experience needed to complement these prior skills. The opportunity costs for human capital investment for immigrants initially lacking U.S.-specific skills are low relative to comparable natives. In addition, the immigrant families and ethnic enclaves that characterize much of the new immigration may also aid investment in new human capital and contribute to a trade off between initial earnings and earnings growth. For instance, Bailey (1987), Waldinger (1986), and Portes and Bach (1985) have documented an immigrant sector in various industries characterized by mutually beneficial arrangements between recent immigrants and longer-term immigrants in which recent immigrants working as unskilled laborers at low wages (or even no wages) in immigrant-run businesses are provided training and other forms of support eventually leading to more skilled positions or self-employment.²³ All of these factors would lead to rapid earnings growth among immigrants initially lacking skills easily transferable to the U.S. labor market.

IV. Conclusion

Immigrant cohorts have varied over time in many ways that have important implications for projecting the earnings contributions immigrants make to the Social Security system. By analyzing immigrant cohorts in the 1970, 1980, and 1990 decennial censuses, we find that the entry earnings of recent immigrants, relative to the native born, are substantially lower than the relative entry earnings of immigrants who entered the United States in 1965-70. Holding other important factors constant, such as the relative earnings of immigrant women,²⁴ the length of work life, and emigration,²⁵ the decline in entry earnings suggests that the per capita earnings contribution of recent immigrants to Social Security is less than that of earlier immigrant cohorts. This would be particularly true if the earnings growth of recent immigrants relative to the native born equaled or was less than the relative earnings growth of previous immigrant cohorts. We find, however, that the relative earnings growth of recent immigrants exceeds that of earlier immigrants. The inverse relationship between relative entry earnings and relative earnings growth is such that after 10-14 years in the United States, the earnings of more recent immigrants relative to the native born equals the relative earnings of earlier immigrants.

The earnings of immigrants vis-a-vis the native born are strongly affected by the number of years of residence in the United States and region of origin. These results could be used in conjunction with information on the distribution by year of entry and country of origin of the immigrant population (available on a regular basis from several sources) to model the impact of immigrants on Social Security earnings contributions. This article provides information that could be used to enhance the primarily demographic treatment of current and future immigrants in models assessing Social Security's financial status.

Notes

¹ U.S. Immigration and Naturalization Service statistics on permanent visas show particularly dramatic increases in immigration in the 1980's. However, a large component of this increase represents newly legalized immigrants under the Immigrant Reform and Control Act of 1986, as well as increases in adjustments from temporary to permanent visas status. In both cases, individuals may have first come to the United States in previous decades and have contributed to Social Security.

² Borjas, Freeman, and Katz (1992, 1996) used Current Population Survey data to estimate the percent of the labor force that was foreign born in 1988 and 1994. Using the 1990 census of the population, Lapham (1993) estimated that 9.3 percent of the work force in 1990 was foreign born. These estimates of the percent of the work force that was foreign born included illegal aliens to the extent that illegals were identified by foreign birth on the Current Population Survey and the census.

³ The census projections discussed here reflect both legal and illegal immigration. The "compounding impact of immigration" on the U.S. population growth includes immigrants and their descendants.

⁴ Net immigration refers to immigration net of emigration.

⁵ Analysis of immigrant earnings and admission on the basis of occupational skills versus family may be found in Duleep and Regets (1992, 1996a, 1996b).

⁶ An analysis of the changing composition of immigration may be found in Reimers (1996).

⁷ A previous paper examined the level and timing of immigrant emigration (Duleep 1994). Also refer to Ahmed and Robinson (1994) for an analysis of immigrant emigration using the 1980 and 1990 censuses.

⁸ This type of modeling is called dynamic microsimulation because it simulates behavior at the level of the individual. Since there is no known way of aggregating nonlinear relationships, summing over individual outcomes to produce aggregate values of interest provides a straightforward method of utilizing microanalytic research to project aggregate values of interest. As the model's operating unit is the individual, cohort and time period effects may be easily incorporated. Publications that present this modeling methodology include Orcutt (1957, 1960); Orcutt, Caldwell, and Wertheimer (1976); and Citro and Hanushek (1991).

⁹ For a description of DYNASIM's immigration component, refer to Orcutt, Caldwell, and Wertheimer (1976, pp. 181-190). Immigrants are not identified in DYNASIM2 (Johnson, Wertheimer, and Zedlewski 1983).

¹⁰ The 1970 census sample is the 1-Percent State Public Use Sample, based on the 5-percent questionnaire. The 1980 census sample is the 1980 Census of Population, 5-Percent "A" Public Use Sample. The 1990 census sample used in our analyses is a 6-percent microdata sample created by combining the 1990 Public Use 5-Percent and 1-Percent Public Use Samples. Technical documentation for these files may be found in the U.S. Bureau of the Census (1977, 1983, and 1992, respectively).

¹¹ The upper age cutoff is 54, since we subsequently follow the 25-54-year-old immigrant and native cohorts for 10 years.

¹² Education refers to the level of education as of April 1990. On the 1990 census, information on educational attainment is given in categories, such as "high school degree" or "some college without a degree." According to these data, the median education level for U.S.-born males aged 25-54 was some college without a degree. The median education level for immigrants, 25-54, who had immigrated in 1985-90 was a high school degree, with 45.4 percent having greater education than a high school degree.

¹³ More detailed age and educational subdivisions than those shown in table 2 do not alter this basic finding.

¹⁴ Consistent with the thesis presented here, recent Japanese immigrants are similar in their earnings patterns to immigrants from Western Europe. Their recent proportional net immigration is also small compared with the net immigration of other Asian countries.

¹⁵ Western Europe refers to all European countries other than countries in the former Soviet bloc, defined as the Warsaw Pact countries with the additions of Yugoslavia and Albania.

¹⁶ There was also a preference system in place that allocated quota visas among applicants on the basis of occupational skills (Hutchinson 1981). Among immigrants from Eastern Hemisphere countries, half of all visas were granted on the basis of occupational skills.

¹⁷ The occupational skills classification included two components: workers, skilled and unskilled, in occupations for which labor was deemed scarce in the United States, and professionals, scientists, and artists of exceptional ability.

The Immigration Act of 1990 increased occupation-based admissions from 54,000 to 140,000 a year. It also placed a ceiling of 10,000 on unskilled workers within the occupation-based admissions and it imposed an education requirement on a lottery program increasing admissions from countries "adversely affected" by the Immigration and Nationality Act Amendments of 1965. These reforms were not sufficient, however, to alter the essentially family-based nature of U.S. immigration (Lowell 1996). Recently proposed immigration reforms would constitute a major break in the 40-year-old U.S. admissions policy favoring family members. Although emphasizing the importance of the nuclear family, the U.S. Commission on Immigration Reform and a House of Representatives subcommittee on immigration recently recommended eliminating immigration preferences to other close relatives, including the brothers, sisters, and adult children of U.S. citizens. Under the proposed system, those relatives could not obtain U.S. visas unless they qualified because of specific job skills.

¹⁸ Also refer to Borjas (1992).

¹⁹ To an unknown extent, the reported annual earnings for the year preceding the census reflect earnings gained abroad or incomplete annual earnings for immigrants who entered the United States during the year. Conclusions concerning changes in the entry earnings of immigrant cohorts will be unaffected if the rate of immigrant entry within the census year-of-migration categories is similar across the entry cohorts considered.

²⁰ Within the age/education categories, there is generally no decline in relative earnings between the 1975-80 and 1985-90 cohorts. Refer to Fix and Passel (1994) and Simon and Akbari (1995) for analyses of trends in the educational attainments of immigrants. Both studies show that although immigrant educational levels have risen in recent years, the increase for immigrants was somewhat less than the corresponding increase for natives.

²¹ Attrition is a problem in all analyses that follow individuals or cohorts over time. Although we can assume that the mortality of the foreign and native born is similar, attrition due to immigration will affect the foreign born far more than the native born. For an analysis of determinants of foreign-born emigration from the United States and reviews of other related research, refer to Duleep (1994) and Ahmed and Robinson (1994).

²² The statistics in table 4 are computed by dividing the earnings of foreign-born men by the corresponding earnings for natives. The speed with which immigrants reduce the earnings gap with natives from our cohort-based estimates is not inconsistent with Chiswick's cross-sectional estimates of a 15-year "crossover" point (Chiswick 1978, 1979).

²³ Other evidence of human-capital investment strategies in immigrant families and communities is presented in Boyd (1988); Fawcett, Carino, Park, and Gardner (1990); Morrissey, Mitchell, and Rutherford (1991); Duleep and Regets (1992); Duleep and Sanders (1993); Beach and Worswick (1993); Baker and Benjamin (1994); Ngo (1994); Duleep and Regets (1996a, 1996b); Gallo and Bailey (1996); Jiobu (1996); and Kim and Hurh (1996).

²⁴ In a study of immigrant women, Duleep and Sanders (1993) find evidence of a family investment strategy in which the labor-force participation of married immigrant women is positively associated with the difference between the entry earnings of immigrant husbands and the husband's estimated potential earnings with time in the United States.

²⁵ Evidence presented in Duleep (1994) and Ahmed and Robinson (1994) suggests that the propensity to emigrate is lower for recent immigrants than for earlier immigrants.

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