

COHORTS

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Table and figure references in angle brackets (< >) refer to data tables that will appear in a number of different chapters in *Historical Statistics of the United States, Millennial Edition*. The format was devised, in collaboration with Cambridge University Press, to meet specialized, technical needs and to facilitate the transmission of over 100,000 files from the Historical Statistics editorial office in the Center of Social and Economic Policy at UC Riverside to Cambridge University Press. The format was not optimized for the uninitiated, general user and does appear awkward in a working paper context. A full list of series developed by Matthew Sobek specifically for the Cohorts Chapter is shown in the appendix.

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A cohort is a group of people born about the same time. Thus, one might speak, as I do here, of the birth cohort of 1951-1960 to refer to people born in that ten-year period. A cohort can also be defined in terms of other significant demographic events. A “marriage cohort” would refer to people married around the same time; a “schooling cohort” would refer to people who experienced some educational milestone such as starting the first grade or graduating from high school or college at the same time (the “Class of 2000”); a migration cohort would refer to people who entered or left a country at about the same time, and so forth. But the most common cohort considered in demographic, social and economic analysis is the birth cohort. See Whelpton (1954); Ryder (1968); and Shyrock, Seigel, and Associates (1976, pp. 550-553).

In technical analyses conducted by demographers, birth cohorts are generally defined in terms of some standardized period of time, such as a decade between censuses, but in the social sciences generally it is more common to define birth cohorts in terms of events that were important enough to have shaped the lives of a generation. Thus the Depression-Era generation refers to those born from about 1910 through about 1925 and who came of age during the Great Depression of the 1930s and fought in World War II. The Baby Boom generation, or “Boomers” are those born in the 10 to 15 years of historically-high fertility beginning in 1946. Generation “X” – sometimes called the “Baby Busters” -- refers to those born during the period of unusually low fertility beginning about 1965 and extending through 1980.¹

It is common to categorize people according to their birth cohort and to identify differences in the attitudes and behavior -- “generation gaps” – of different cohorts. This is because unique events such as war, famine, economic depression, political struggles, legislative change, and even the advent of television seem to have a lifelong impact on those coming of age at the time they occur. Moreover, peoples’ behavior is often influenced by what others are doing at the same time. For example, in the 1950s, employed mothers with young children often had to defend their employment decision to family and friends. In the 1990s, it is the “stay-at-home moms” who more often feel on the defensive. The combination of changed circumstances and the social tendency to adjust one’s behavior to coordinate with that of one’s neighbors means that in our history we sometimes observe radical differences in the behavior of

¹ Here I use the terms “birth cohort” and “generation” interchangeably to refer to people born about the same time. Sometimes, however, the term “generation” is used to refer to people who occupy the same relationship within a family, say, grandchild. According to this usage, members of a single generation may be of many different ages. “Generation” is also a measure of time, thought of as the average age of mothers at the time they give birth, about 25 years.

people born just a few years apart from one another. These radical behavioral differences can show up in a variety of areas including health, educational attainment, marriage and divorce, fertility, employment, and world view. In some cases, such cohort differences in behavior and attitude characterize a lifetime. A number of recent books attempt to highlight generational differences in attitudes and values. For a detailed depiction of the generation that came of age during the Great Depression and World War II see Brokaw (1998). Strauss and Howe (1990, 1993, 1997) and Howe and Struass (2000) propose a larger historical generational cycle, with four generations to a cycle, each of which displays a distinctive world outlook. Bagby (1998) offers a sketch of "Generation X." Schelling (1978) discusses the implications of the fact that in many situations individuals' behavior depends upon the behavior of those around them.

This chapter presents data arranged so as to illustrate some of the major differences in the life experience of different birth cohorts in American history. As such, it is a reworking of data presented elsewhere. There is great value, however, in presenting data in cohort format, because cohort differences are often invisible in conventionally-displayed statistics. Discussion in the other chapters of *Historical Statistics of the United States* is conducted in terms of what demographers call "Period Analysis." Period analysis focuses on some aggregate of the behavior of people of all ages at one particular point in time – daily newspaper circulation per household, for example. One reason for the predominance of period analysis in *Historical Statistics* is that most economic and social statistics are collected and presented as a characterization of the entire population or economy at some point in time. For many issues, period analysis is the appropriate research strategy. For example, the most salient characteristic of the Great Depression of the 1930s was the massive failure of the macroeconomy. The Great Depression lasted a full decade and at its depth nearly a fourth of the labor force was unemployed (See <business_fluctuations_essay>). It had a sizeable and permanent effect on people of all ages and all birth cohorts and it is appropriate to focus on the many differences between this period and the adjacent periods of American history.

But for other issues, period analysis is inadequate. Take the example of newspaper readership. Social observers have commented on the connection between newspaper readership and civic engagement since Alexis de Tocqueville in the early nineteenth-century. Recently, Robert Putnam argued that newspaper readership remains a mark of “substantial civic engagement.” For this reason, it is important to understand the marked decline in newspaper readership shown in <<ajf.c.6.4> and <ajf.c.7.2> that began about 1950. Was the decline the result of some force that affected all age groups, much like the Great Depression, or was it something else? Putnam argues as follows:

Newspaper reading is a lasting habit established early in adult life. If we start young, we generally continue. Virtually none of the precipitous decline in newspaper circulation over the last half century can be traced to declining readership by individuals. Virtually all of the decline is due to the by now familiar pattern of general succession...[T]hree out of every four Americans born in the first third of the twentieth century continue to read a daily newspaper as the century closes just as that generation did decades ago. Fewer than half of their boomer children are carrying on the tradition, however, a fraction that has dwindled to one in four among their X'er grandchildren. Since more recent cohorts show no sign of becoming newspaper readers as they age, circulation continues to plunge as the generation of readers is replaced by the generation of nonreaders (Putnam, 2000, pp. 218-219).

Overall, then, the downward trend in the period data results from successively lower newspaper-readership rates among consecutive birth cohorts. This means that the public policy implications are more serious than they might be if the decline in readership affected all age groups. As Putnam concludes, “Reversing that slump will not be easy, since each year the ground is slipping away beneath our feet.”

In principle, one could observe differences in newspaper readership across birth cohorts by studying “cross-sectional” data with a disaggregation by age. “Cross-sectional” means that data for a single year are disaggregated in a way that allows the user to see differences in the behavior of people of different ages at that one point in time. This cross-sectional data for many different years is another type of data found in many of the chapters in *Historical Statistics of the United States*. Like period data, cross-sectional data are useful for many purposes. Putnam’s story, described above, is one example.

Despite their clear usefulness, however, period and even cross-sectional data may obscure changes in behavior across cohorts. To illustrate this point, consider figures <cohort.fig.1> and <cohort.fig.2> that are derived from the same underlying data (See <sb.c.a.7> and <coh.a.1>). Figure <cohort.fig.1> displays cross-sectional data on the proportion of white women in the labor force, by age, at seven different census years beginning in 1920. It is tempting to view one of these cross-sections as if it represented the experience of a typical

individual as she aged. In this case, a “synthetic cohort” approach would seem to imply one constancy and two dramatic changes in the overall level and lifecycle pattern of white women’s labor force participation over the twentieth century. The constancy is the rising pattern of women’s labor force participation with increases in participation from the teens to the mid-twenties and then a decline into the retirement years evident in every census year. One of the two dramatic changes is an increase in the level of employment at almost every age over the course of the twentieth century. The other dramatic change is the disappearance of a dip in female labor force participation during the key child-rearing years in a woman’s mid-twenties through her mid-forties. In 1920 and 1940, the cross-sectional data seems to imply that women entered the labor force after completion of their schooling, withdrew when they married and had children, and then reentered after their children were in school or had left home. By 1990 the “withdrawal” is virtually eliminated. It seems like those women participating in the labor force in their mid-twenties stick with it for a good 30 years, but begin retiring at a relatively early age (50).

[<cohort.fig.1> and <cohort.fig.2> here]

But as Claudia Goldin (1990) has shown, an entirely different view of change in white female labor force participation across the life-cycle emerges from Figure <cohort.fig.2>, which takes the same data that was used to construct Figure <cohort.fig.1> but rearranges it in a way that highlights the actual experience of different cohorts as they aged. Thus, the labor force experience of the cohort born in 1931-40 was assembled by taking the participation rate of 20 to 29-year olds in 1960, of 30 to 39-year olds in 1970 and so on. The rearrangement of the data conveys a very different picture of how white women’s labor force participation has changed over the twentieth century.

In Figure <cohort.fig.2> it is clear that no group of women born in the twentieth century displayed a consistent decline in participation before age 55. The apparent withdrawal of women’s labor force participation during the peak child-bearing years that is so striking in the synthetic cohort does not represent the actual experience of and true cohort. While the cohorts of 1901 through 1920 exhibited a decline in their middle years, they show the highest participation rates of their lives in their 50s, after their children were grown. With the cohort of 1921-30, the labor force participation withdrawal during the child-rearing years disappears completely. For the cohorts of 1931-40 and younger, there is a clear and pronounced pattern of increasing participation at every with age, up to age 55.

The moral of this story is that in a rapidly changing economy, the synthetic cohort approach based on cross-sectional data may be misleading. Synthetic cohorts give an accurate picture of life course only if cohorts do not differ radically from one another in their behavior. Where cohort effects are strong – that is, where the behavior of one cohort differs substantially from that of earlier and later ones – then cohort effects may confound true life-cycle patterns. In the case of white women’s labor force participation rates, marked increases in labor force participation rates at each and every age across successive cohorts raised the participation rates of young relative to older workers so much so as to make it appear in the cross-section that participation rates were falling at older ages. Cohort data makes it clear that the opposite is the case.

This section presents a small number of data tables arranged so as to draw attention to differences in the experiences of successive cohorts as they age and also to show what cohort data look like. These tables focus on three different areas of life experience: labor force participation; education; and marital status. The essay also points to shifts in the behavior and experience of different cohorts that can be detected in data displayed in other chapters of *Historical Statistics*. These thumb-nail sketches are meant as illustrations of the enormous range of inter-cohort variation in life experience. A full descriptive effort would require the development of many new data series and, as such, is beyond the scope of the *Historical Statistics of the United States, Millennial Edition* project. Fortunately, the technique for translating a cross-sectional data disaggregated by age into cohort data may be applied to many of the series presented in throughout *Historical Statistics of the United States*.² Even where cross-sectional data by age is not available, one can often guess at the cohort patterns by remembering that changed circumstances often have their greatest impact on people who are young adults at the time. For reasons that will become clear, young adults are the ones most likely to change their attitudes and behaviors.

² This method provides a measure of *net* changes in experience of a cohort as it ages. We say net change because some women who leave the labor force at a given age are offset by others who enter at that age. The aggregate statistic thus indicates the net change in labor force participants. This technique is a simplification of the intercensal cohort-component method of measuring net changes, also known as the census survival method. See Shryock, Siegel and Associates (1976, 357-358). Sutch (1975), pp. 199-210 gives an example of the method used to estimate geographical net migration. Sutch’s appendix provides a detailed description of the procedure and discusses the accuracy and sensitivity of the method. Carter and Sutch (1996) use this method to study the retirement behavior of men before the advent of government-sponsored Social Security.

Occupation and Industry

In a dynamic economy such as that of the United States, the demand for labor is constantly shifting across occupations and industries. Technological and organizational changes mean new products (the automobile in the 1920s), new methods of production (the tractor in the 1920s and 1930s), and shifts in the demand for inputs (more college-educated labor in the 1980s and 1990s). Increase in the sheer size of the economy makes it profitable for some to make a full-time occupation out of an activity that in an earlier era was carried out as a sideline. Real estate services are a recent example. Wars, natural disasters, and mineral discoveries are other developments that can alter labor demand in ways that are difficult or impossible to reverse. One example is the destruction of the American merchant marine during the Civil War (1860-1865). The fleet was owned by Northerners, the Confederate Navy conducted successful raids (<rlr.d.1>). As a consequence, shipping business moved to foreign fleets. The American fleet never recovered (<lpc.97> and <lpc.98>). Changing tastes are also a factor. Americans' growing preference for athletic shoes and "dress-down Fridays" in the latter part of the twentieth century reduced the demand for shoeshines. There are many other examples (see <occupations_essay>).

Occupational shifts tend to have strong cohort effects because, just as in the case of newspaper readership, occupational choices tend to be made at young adult ages and to remain fixed for life. There is a good reason for this. Most occupations require costly and specialized training before a novice becomes proficient. Even where this training takes place on the job and involves no out-of-pocket expense, it is often the case that it takes several years of practice to achieve full proficiency. For these reasons, older workers who have already achieved proficiency in some industry or occupation tend to stay with it, even when prospects worsen. While relative returns in the industry itself may have fallen, the first industry to which they are attached may offer superior rewards given the costly learning needed in order to excel at some other occupation. By contrast, new labor market entrants have every reason to select occupations and industries that pay high wages and where future prospects seem good. Thus, shifts in occupational and industrial demand tend to create disjunctures in the experiences of different cohorts.

The decline from cohort to cohort in the share of the workforce engaged in farming is one example. At the beginning of the eighteenth century, agriculture accounted for almost the entirety of the American workforce; at the end of the twentieth century the share is less than two percent (<agriculture_essay> and <sbc.o.1>.) This decline in the agricultural workforce presents one of the great paradoxes in the history of the American economy. While the

industrial side of economic life is widely acknowledged to be dynamic and increasingly productive, the quantitative record suggests that productivity growth in agriculture was even more impressive. It is ironic that agriculture's relative success in this regard was precisely the reason it shrank as a share of the total economy. For the most part, the contraction in the labor market share of farm labor was accomplished by farmers' children refusing to follow in their parents' footsteps and instead taking up careers in industry, services, or the professions.

The cohort-to-cohort change in the occupations of women is another dimension of long-term change that is large enough to be visible even in the aggregate data. In 1870, over 40 percent of both black and white women workers were employed as domestic servants (<sbco.6.10> and <sbco.7.10>). Among white women, improvements in education – in particular the high school movement -- and the expansion of white-collar clerical jobs meant that by 1920, fewer than 10 percent of white women workers were domestics while almost a quarter (23.4 percent) worked as clerks and typists. When educational opportunities for black women expanded following the "Great Migration," they also moved into clerical work and their domestic service work declined proportionately (<sbco.6.6> and <sbco.7.6>).

To glimpse other changes that may have had similar, dramatic impact on the life experience of adjacent cohorts, one needs to take a closer look at the detailed occupational tables presented as <sbco.10x> through <sbco.18y>. It is an exercise that can be both revealing and enjoyable. For example, most people wouldn't be surprised to observe the rise through 1900 and the subsequent decline in the number of blacksmiths <sbco.10x.132>. But not too many people are aware of the fact that there were over a million miners in the 1920 workforce (series <sbco.10x.221>) or that in 1900 over 2.5 percent of the workforce was engaged in the hand production of clothing and hats (series <sbco.10x.185>, <sbco.10x.212>, and <sbco.10x.220>). Today the share is about one-tenth of one percent. No one will be surprised at the meteoric growth in the number of economists over the last half of the twentieth century (<sbco.10x.17> and <sbco.10x.69>), but they may be startled at the rapid increase in occupations associated with security, law enforcement, and legal matters (<sbco.10x.48>, <sbco.10y.260>, <sbco.10y.263>, <sbco.10y.266>), with religious observance (<sbco.10x.12> and <sbco.10x.67>), and with insurance and real estate (<sbco.10x.125> and <sbco.10x.127>). For most workers in these occupations, the occupational shifts at the national level represent a generational shift as well.

International Immigration to the United States

Immigration can affect the size and demographic structure of cohorts. Because the number of immigrants and their characteristics have fluctuated substantially over the course of U.S. history, immigration has had uneven impacts across the different cohorts (<immigration_essay>).

People tend to migrate as young adults. Thus one way to display the relative importance of immigrants across cohorts is to show the share of the foreign-born among those in their twenties. Figures in tables <mrh.a.12a> and <mrh.a.12j> suggest that immigration had a substantial impact on cohorts born in the mid-to-late nineteenth century. For these cohorts, the foreign-born account for about one-sixth of their total when they are in their 20s. The passage of the Quota Acts in the 1920s and then the Great Depression of the 1930s brought immigration to a virtual halt. Indeed, during some years of the Great Depression, more American residents emigrated from the United States than foreigners immigrated into the country. This dramatic cessation of immigration is reflected in an equally dramatic reduction in the impact of immigration on the cohorts born during the early years of the twentieth century. At the nadir, the foreign-born accounted for only about 2 percent of these cohorts when they were in their 20s. The post-World War II Baby Boom cohort was also lightly affected by migration from abroad, but the situation is quite different for the small birth cohorts that followed. For the cohort born about 1965, the foreign-born account for approximately one-tenth of the total. This resumption of immigration after years of relatively small flows partially offsets the effects of the small number of births in the “Baby Bust” generation born after 1965.

The Abolition of Slavery, Reconstruction, and the “Great Migration”

For nearly two-and-a-half centuries, black slave labor had been an integral part of the economic, social, and political life of American South. The most profound consequences of the abolition of slavery were naturally felt by the former slaves themselves – the Freedmen. On the eve of the Civil War, in 1860, there were over four million slaves in the United States. Almost 90 percent of the black population and over a third of the total population of the Southern states was enslaved (<mrh.a.12h> and <mrh.a.12i>). Slaves accounted for almost half of the taxable wealth in the Southern states (<rlr.a.5>).

The Fourteenth Amendment to the Constitution, passed in 1865, made these four million people suddenly free. For the first time in their lives, the Freedmen could retain their labor earnings and dispose of them as they pleased. Following Emancipation, Freedmen dramatically

reduced the labor of young children and women (<sbw.2> and <sbw.5>). Children were enrolled in school (series <cg.a.15.8> and <cg.a.15.9>). For a description of other changes in the lives of Freedmen immediately following Emancipation see Ransom and Sutch (1977).

They became free farmers and farm laborers (<sbco.5> and <sbco.7>). Fertility fell (<vit.3>) and more young children grew up with and were cared for by their own mothers and fathers (<sr.c.1> and <cohort.fig.10>). The improvements were substantial.

At the same time, opportunities for the black population remained far more limited than those for whites. Ransom and Sutch (1977) blame this failure on the character of the economic and social institutions constructed in the years immediately following the Civil War. Further progress required either a change in these institutions or blacks' departure from the South. The "Great Migration" helped to accomplish both. The "Great Migration" refers to the movement of blacks from the rural South and into the urban North during the three decades spanning 1910 and 1950. In the 40 years following Emancipation only slightly more than half a million blacks left the South for the North. In the 40 years beginning in 1910, more than 3.5 million did so. This figure refers to net migration, that is, the excess of out-migration over return migration.

In 1900, fewer than five percent of Blacks born in the South lived in some other region of the country. By 1950, the figure was over 20 percent (Collins 1997, Eldridge and Thomas (1964)) and <jf.1>. Because these migrants were overwhelmingly young adults, the impact on the lives of the cohorts who came of age in those years was far greater than these numbers suggest.

The Great Migration expanded opportunities for Black Americans in two ways. First, by getting out of the relatively impoverished rural South, Blacks gained access to better-paying jobs for themselves and to better education for their children. Virtually all of the decline in the relative importance of farm and farm laborer occupations for Black men and women displayed in Tables <sbco.5> and <sbco.7> are due to the movement of Blacks out of the rural South and into the great cities of the North, Midwest and West. Much of the improvement in the education of Black children over the same years is due to their parents' move away from the South (Margo 1990).

But another consequence of the "Great Migration" is that it forced Southern Whites to improve the quality of the schools and jobs they offered to Blacks. With the onset of the migratory flow, Blacks suddenly had a new option in life. If conditions at home were unattractive, they could move to the North. Margo (1990) documents the substantial improvement in the quality of Black relative to White schools in the South following the initiation of the Great Migration.

Mortality

The size and quality of life of a cohort is affected by its experience of mortality. Across the span of American history, cohorts have had different experiences in this regard. Evidence on mortality experience by cohort is presented in table <vit.14> where we display life expectancy by gender at different ages for successive birth cohorts. This graphical presentation differs from that in table <vit.14>. The presentation in table <vit.14> follows the standard used by demographers which expresses the expected years of life remaining for a person who has reached a given age. Here we added age attained to expected additional years of life so as to facilitate comparison of the various measures and pinpoint the types of developments that have made the greatest difference to extending the overall lifespan.

Three points stand out. One is the huge gulf between life expectancy at birth and life expectancy at age five in the nineteenth and early twentieth centuries, and the much more rapid improvements in life expectancy at birth relative to other measures over time. In the nineteenth century, the United States had exceptionally high child mortality levels – approximately one in five children died before reaching the age of five. Samuel Preston and Michael Haines (1991) show that children of the well-to-do together with those of the poor, suffered this plight. Improvements came from advances in the medical understanding of infectious disease and from better public health efforts such as sewage systems and water filtration plants to control disease spread (<haines_vit_essay>). A second point is that year-to-year fluctuations in mortality are much greater for earlier cohorts. Before the development of detailed knowledge about communicable disease and the ability to control their spread, there were periodic epidemics that killed a large numbers of people (<haines_vit_essay>). People didn't know, from year to year, what risks they might face. Historians have argued that this uncertainty lead to a mindset characterized by "fear and fatalism." The control of disease nourished confidence and optimism. The transition was accomplished in less than 50 years – and was experienced within the lifetime of cohorts born around the turn of the twentieth century.

Military Service

Because the United States maintains a relatively small peacetime army and because it goes to war only infrequently, the United States has had mercifully few veterans in the population relative to the experience of many other countries. Nonetheless the major wars, especially World War II, involved a large share of draft-age males. These circumstances mean that military experience and veterans' status differ dramatically from one cohort to another. One measure of these differences is the ratio of veterans 30 to 39 years of age as a share of all males of that age group according to their year of birth. This measure records only those who survived their military combat and for that reason understates the impact of wartime experience on affected generations (for combat deaths see <ssg.a.2>). Nonetheless, the cohort-to-cohort differences are stark. About half the men born about 1840 experienced military service (in the Civil War); among the cohorts born between about 1850 and 1880, very few did. The experience of their younger brothers and sons was quite different. Survivors of the U.S. involvement in World War I from the cohorts born in the 1890s, represented about a third of this population. Cohorts born in the early twentieth century suffered most of all. Virtually all men born in the years immediately following the conclusion of World War I had some military experience. Although there was a decline from this high peak, a full generation later, among the cohorts born in the early years of the Baby Boom, fully half of all men served in the military. Then it ended. Among the cohorts born after 1960, military experience is the exception. Fewer than 10 percent of men in their 30s had been involved.

The Post-World War II Baby Boom

The "Baby Boom" refers to the temporary reversal in the long-run decline of the crude birth rate following the conclusion of World War II. The Baby Boom is clearly visible in Figure <cohort.fig.14> which plots data for the crude birth rate for two centuries beginning in 1800 (series <vit.2.1>). The crude birth rate dropped well below the long-run trend during the difficult years of the Great Depression and then rose during the 1950s to levels that had not been experienced since the early 1920s. It is the combination of unusually small number of births during the 1930s, unusually large numbers in the 1950s, followed by small numbers again in the 1970s that gives the Baby Boom its name.

The large Baby Boom cohort is easy to spot in table <mrh.a.12a> which displays 10-year age groups as a share of the total population at each of the decennial censuses

beginning in 1850. The substantial long-run decline in fertility (and mortality) reduced the relative importance of successive cohorts at these young ages from almost 30 percent of the total in 1850 to only 16 percent by 1940. As a result of the Baby Boom, the size of this youngest age group rose to almost 22 percent by 1960. The continuing numerical importance of the Baby Boom cohort through the twentieth century is evident in the disproportionate size of the 10 to 19 year age group in 1970, the 20 to 29 year age group in 1980 and the 30 to 39 year age group in 1990. Population projections indicate that the Baby Boom generation will be a distinct feature of the U.S. population structure through the first half of the twenty-first century.

The direct and indirect consequences of the unusually large Baby Boom generation were first and most famously analyzed by Richard Easterlin (1962, 1968, 1980). Many are readily apparent in data series that appear throughout *Historical Statistics of the United States*. For example, the statistics on elementary and secondary school enrollments (<cg.a.2.4>, <cg.a.2.6>, and <cg.b.2>) show pronounced expansions and then contractions as the Baby Boom generation moved through these institutions. Even college and university enrollment (<cg.b.2.2>) reveals the impact of the Baby Boom cohort although in this series the effect is muted because of the rapid rise in college enrollment *rates* among the generations that preceded and followed the Baby Boomers.

Employment measures also reflect the labor force entry of the Baby Boom generation and their maturation over time (<sbcl.2> and <sbcl.3>). Young male and female workers were especially numerous in the late 1960s and the 1970s. In the 1980s and 1990s middle-age workers predominated in the labor force. In the early decades of the twenty-first century it will be older workers, both at retirement age and beyond who will form the largest share. It is especially remarkable that the sheer size of the Baby Boom cohort predominates even in the case of female workers. As noted earlier, successive cohorts of women have exhibited higher labor force participation rates at each and every age. Others things equal, such a trend in participation would have meant that successively younger cohorts would outnumber their older sisters. That's not what happened.

Easterlin analyzed the negative consequences of its own large size for the Baby Boom generation itself. To the extent to which young and older workers are poor labor market substitutes, membership in a large cohort will mean more intense labor market competition, lower wages, and higher unemployment than would otherwise be the case. From the point of view of the economy, however, having a large fraction of the total population in the working age

groups is a good thing since these are the people who support the young and the old. Development economists measure of the relative importance of the population in the working age groups relative to the total population with the “dependency ratio.” The dependency ratio is calculated by putting the sum of people 0 to 14 years of age and those 65 years of age and older in the numerator and the number of people 15 to 64 years of age in the denominator. The dependency ratio for the United States can be calculated from population-by-age data at the federal censuses of 1850 through 1990 (<mrh.a.12a>) and from the annual population-by-age data for the period 1900 through 1998 (<mrh.a.5>). Such calculations reveal a dependency ratio that drops from 0.79 in 1850 to 0.48 by 1940, rises to a local maximum of 0.68 in 1961 after which it falls, reaching a nadir of 0.50 in 1986. Thus some of the increase in per capita income between the early 1960s and the late 1980s was due to reductions in the dependency ratio. With the aging of the Baby Boom generation, the dependency ratio will rise again. Improvements in worker productivity will be required to forestall reductions in per capita income.

Conclusion

Although there are only 15 explicit cohort tables in *Historical Statistics*, the imaginative and industrious user can apply the approach described in this essay to many of the more standard data series and identify cohort differences across a broad spectrum of American life. I chose the examples presented here in part because they illustrate a variety of techniques of analysis. I also think that they are great stories. There are other great stories out there, as well, including some that still await their storyteller.

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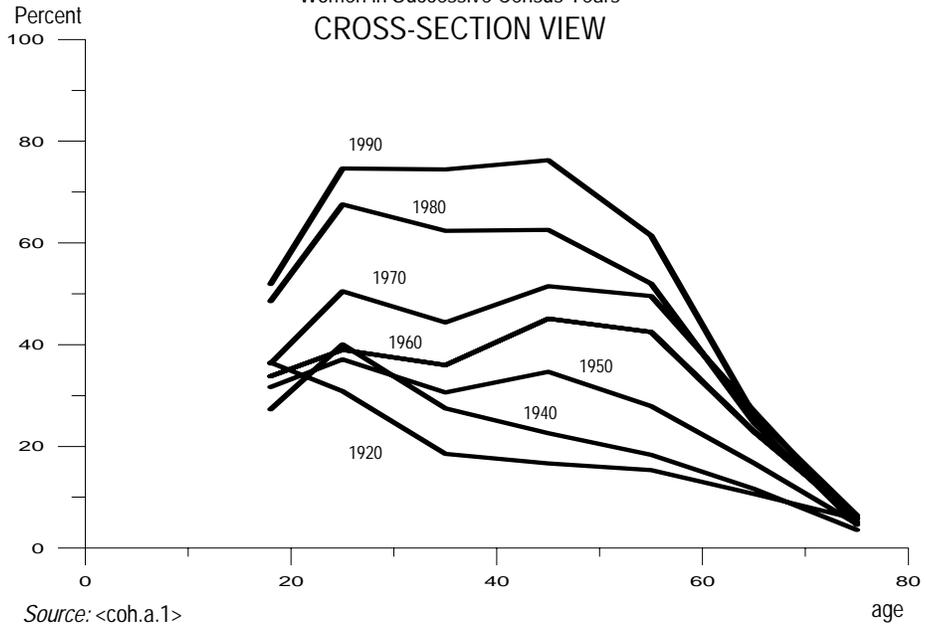
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<COH.C.4.26> High school noncompletion rate, foreign-born males, 30-39, 1801-1980
<COH.C.4.27> High school noncompletion rate, foreign-born males, 40-49, 1801-1980
<COH.C.4.28> High school noncompletion rate, foreign-born males, 50-59, 1801-1980
<COH.C.4.29> High school noncompletion rate, foreign-born males, 60-69, 1801-1980
<COH.C.4.30> High school noncompletion rate, foreign-born males, 70 and older, 1801-1980
<COH.C.4.31> High school noncompletion rate, foreign-born females, 23-29, 1801-1980
<COH.C.4.32> High school noncompletion rate, foreign-born females, 30-39, 1801-1980
<COH.C.4.33> High school noncompletion rate, foreign-born females, 40-49, 1801-1980
<COH.C.4.34> High school noncompletion rate, foreign-born females, 50-59, 1801-1980
<COH.C.4.35> High school noncompletion rate, foreign-born females, 60-69, 1801-1980
<COH.C.4.36> High school noncompletion rate, foreign-born females, 70 and older, 1801-1980

<Cohort.fig.1>

Labor Force Participation Rate by Age Women in Successive Census Years CROSS-SECTION VIEW



<cohort.fig.2>

Labor Force Participation Rate by Age Cohorts of Women by Year of Birth COHORT VIEW

