Natural Population Decrease in the United States

Of the 993 U.S. counties experiencing at least 1 year of natural population decrease (deaths outnumbering births) from 1950-87, 95 percent were non-metro counties. The primary cause of local natural decrease today is out-migration of young adults, not inadequate fertility rates. Counties facing such long-term natural decrease may undergo significant financial stress, due to an erosion of property values and the tax base, and have difficulty in sustaining key services and businesses. Natural decrease is not always a problem, however. Many areas are thriving through in-movement of older people, even though such places have more deaths than births each year.

When an area experiences an excess of deaths over births, demographers describe the area as having a natural population decrease. Although previously rare in U.S. history, natural decrease has become increasingly common in non-metro areas. The rising incidence of natural decrease is a bit surprising, given the surge of births in recent years. Since 1977, the annual number of births in the United States has rebounded from the low levels of the mid-1970's. As a result, the national excess of births over deaths (natural increase) is now 60 percent higher than in the mid-1970's, despite a modest rise in mortality. Yet, such renewed growth at the national level masks the rising incidence of natural decrease in many areas.

In this article, we examine natural population decrease in the United States from 1950-87, and look at the emergence of the phenomenon, its causes, the characteristics of counties experiencing it, and the implications it poses for the future. Following is a summary of our major findings:

• Nearly a third of all U.S. counties had at least 1 year of natural decrease between 1950 and 1987. The county-level incidence of natural decrease rose rapidly after 1982, despite the highest national levels of natural increase since the baby boom.

• Over 95 percent of the counties experiencing natural decrease were in nonmetro areas, and 40 percent of all nonmetro counties have known at least 1 year of natural decrease since 1950.

• Natural decrease results chiefly from outmigration of young adults and/or immigration of elderly. It is not due to exceptionally low fertility rates among women of childbearing age, nor, in most places, to rising mortality rates.

Most of our data are from Census Bureau sources, which include information on the demographic, social, and economic characteristics of each county, as well as annual data on births and deaths. We supplemented these data with decennial age-specific migration estimates. Counties are classified as natural-decrease counties if deaths exceeded births in any year from 1950-87. The counties are divided into metro, nonmetro adjacent to a metro area, and nonmetro not adjacent to a metro area. A 1985 definition of metro areas is used throughout the analysis. Thus, counties that were nonmetro before 1985, but had become metro by 1985, are included among the metro counties.

The Emergence of Natural Decrease

Natural decrease has been unusual in the American experience. It occurred briefly in a few areas near the end of the Great Depression, because of low childbearing rates, but then disappeared as fertility levels rose during the economic recovery accompanying

One way to help rebuild a county going through a period of natural decrease is to improve the area’s amenities. But that may be difficult if the population decrease has already shrunk the county’s tax base.
World War II. Isolated instances of natural decrease occurred again during the 1950's, although the phenomenon remained rare during this era of high fertility (fig. 1).

Natural decrease became more common during the 1960's, particularly near the end of the decade, as fertility dropped to more moderate levels. By 1969, 612 counties, nearly 20 percent of the U.S. total, had experienced at least 1 year of natural decrease.

The annual incidence of natural decrease peaked at 515 counties in 1973 and then subsided. Only 184 counties experienced it in 1979, the fewest in 15 years. The incidence remained low through 1982, but from 1983-87, the number of natural-decrease counties rose by 148 percent to 476. By 1987, 993 counties (32 percent of the U.S. total) had experienced at least 1 year of deaths outnumbering births.

Thus, natural decrease is no longer a rarity, and once it occurs in a county, recurrence is likely. Among counties that first showed natural decrease before 1970, nearly 94 percent have had a recurrence, and nearly 46 percent had experienced at least 10 years of it by 1987. The pattern is similar for counties that first experienced natural decrease during the 1970's. Only among counties where its onset is quite recent do a significant proportion exhibit only a single year of natural decrease as yet. But, if the past is any guide, repeat instances of natural decrease are likely in those counties as well.

Natural decrease is overwhelmingly a nonmetro phenomenon: more than 95 percent of the counties that have experienced it are nonmetro. Therefore, for the remainder of this article, we focus on the 942 nonmetro counties that had at least 1 year of natural decrease during 1950-87.

Distortions in Age Structure the Chief Cause of Natural Decrease

Natural decrease stems mostly from distortions in the age structure. This distortion generally occurs in counties with a small proportion of their population in the 20-45 age group (fig. 2). The greatest shortfall has been consistently among the 20-29 age group, with the deficit becoming progressively greater through time. The shortage of young adults leads to the occurrence of natural decrease by diminishing the number of potential parents and increasing the proportion of elderly people. This relative surplus of older adults has grown larger through time and contributes to an area's developing more deaths than births.

Figure 1
Incidence of natural decrease for all U.S. counties, 1950-87

Natural decrease was rare in the United States until fertility rates dropped in the 1960's. By 1969, 612 counties, 20 percent of the U.S. total, had experienced at least 1 year of natural decrease.

Natural decrease counties

1,000
800
600
400
200
0

Current
First time
Ever

Figure 2
Age structure index, natural-decrease counties, 1930-85

The 1930's typical natural-decrease county had 87% of U.S. average of 25-29 year olds and 122% of those 75 and over.

By 1985, the typical natural-decrease county had 78% of U.S. average of 25-29 year olds and 159% of those 75 and over.

Measure (100 equals U.S. age structure)
Protracted outmigration of young people is the major cause of such age structure distortions. The extent of the loss of young adults through net outmigration is clear when age-specific migration data are examined (fig. 3). In the 1950's, counties destined to experience natural decrease suffered a net loss of over 900,000 young adults, age 20-29. Another 800,000 were lost in the 1960's. The magnitude of this loss is underscored when one considers that among the nearly 2 million 10- to 19-year-olds residing in natural-decrease areas in 1960, fewer than 1.2 million remained as 20- to 29-year-olds in 1970. This represents a loss of nearly 40 percent of the population of prime childbearing age. The volume of this outflow diminished with the nonmetro turnaround of the 1970's, yet even in that exceptional decade, the natural-decrease counties lost nearly 300,000 of their 20- to 29-year-olds.

The migration of young adults of prime childbearing age has a powerful impact on the incidence of natural decrease. For example, far fewer of the young adults born during the baby boom era left natural-decrease areas during the nonmetro turnaround of the 1970's. This increased the pool of potential parents and the number of births in such areas. As a result, natural decrease diminished from the mid-1970's to the early 1980's. Resumed outmigration of young adults in the 1980's, combined with the small size of the post-baby boom cohorts, sharply reduced the number of potential parents. Births declined as a result, leading to a marked rise in the incidence of natural decrease in the 1980's.

The gradual decline of the population of childbearing age through outmigration may take several decades to make a difference, that is, before there are too few births to offset deaths among the larger number of older people who remain in a county. In other areas, the imbalance between the number of older and younger adults results from inmovement of retirees. Nonmetro communities have become increasingly popular as retirement destinations in the last 40 years. In areas such as Florida and the Ozarks, natural decrease is the product of retirement trends, usually accompanied by overall economic growth, rather than the flight of younger people leaving a shrinking economy.

Low Fertility Not a Major Cause of Natural Decrease

Low fertility among women of childbearing age was offered as an explanation for the natural decrease of the 1930's, and has caused the recent onset of natural decrease in some parts of Europe. However, the ratio of children under 5 to women 15-44 was actually higher in the natural-decrease counties than in the United States as a whole during five of seven time points examined from 1930-85 (fig. 4). These counties still had a fertility rate 13 percent above the Nation as a whole in 1980. Thus, it is the small number of individuals of childbearing ages, not exceptionally low fertility rates, that has contributed to the rising incidence of natural decrease since 1980.

Although women of childbearing age in natural-decrease areas have traditionally had children at rates comparable to or higher than their contemporaries elsewhere, the incidence of natural decrease is sensitive to temporal variations in the birth rate. The high fertility of the baby boom era postponed the onset of natural decrease in many areas, while the rapid decline of fertility rates in the late 1960's and early 1970's permitted the rising incidence of natural decrease then. The ebb and flow of natural decrease roughly approximates nationwide trends in fertility from 1950 to 1980.

After 1980, however, national birth patterns and the incidence of natural decrease diverge. The occurrence of natural decrease rose sharply after 1980, despite a higher level of U.S. births. This divergence underscores the distinct nonmetro character of most natural decrease. Although U.S. births rose by 6 percent between 1980 and 1987, nonmetro births declined by 10 percent. Births declined by an even sharper 12 percent in natural-decrease areas. This drop in births has contributed to the rising incidence of natural decrease since 1982, particularly in counties where it is of recent origin. But we stress that women in the natural-decrease counties have

Figure 3
Net migration by age, natural-decrease counties

[Graph showing net migration by age, natural-decrease counties]

Note losses of potential parents, even during the rural turnaround of the 1970's.
generally still been having enough children to replace their generation, although their families are not as large as in the past.

Why did the number of births diminish in nonmetro and natural-decrease areas after 1980? In part, because of the accelerated outmigration of young adults from such areas. Declines in nonmetro age-specific fertility rates also appear to have contributed to the diminished number of births. In addition, the recent decline in nonmetro births may have been influenced by the propensity of nonmetro women to have their children earlier than metro women. This would make the nonmetro areas the first to feel the effect of fewer young adults entering the childbearing years who were born after 1964.

Continued low nonmetro fertility rates have significant implications for the future population of nonmetro areas. Net outmigration is further depleting the numbers of nonmetro young adults. If these initially smaller and currently thinned ranks of young adults also have fewer children than their older nonmetro counterparts, natural decrease is likely to become even more widespread.

Increased Mortality Only a Minor Factor in Natural Decrease

Death rates in natural-decrease counties have been and continue to be higher than national or nonmetro totals (fig. 5). This does not stem from lower life expectancy, but from the higher average age of the population. The death rate in natural-decrease areas exceeded that in all nonmetro counties by 22 percent in 1970, and was 41 percent higher than the U.S. average. These differences have remained fairly constant since 1970, despite an absolute decline in the death rate from 1970-87.

Whereas a loss of young adults results in fewer local births within 3-5 years because fewer potential parents remain, it takes several decades before mortality losses mount among those who never migrated. Increases in the death rate, therefore, rise only gradually. Thus, over the long term, the higher death rate in natural-decrease areas has contributed to the rising incidence of natural decrease. However, short-term variations in mortality rates were not a factor in the sharp rise in natural decrease after 1980. Although changes in the death rate contributed little to the rising incidence of natural decrease since 1980, mortality losses are likely to become more important in the future, as the number and proportion of very old people in natural-decrease areas continue to grow.

Characteristics of Natural-Decrease Counties

Two factors exert a substantial influence on the incidence of natural decrease: adjacency to a metro area and the size of the largest place within the county. Counties not adjacent to a metro area are more likely to have experienced natural decrease than those adjacent to a metro area (fig. 6). And, counties that did not contain an urban place with a population of at least 2,500 were much more prone to natural decrease than those with a large urban place, regardless of whether the county was adjacent to a metro area. The joint effect of those two factors is reflected in the distribution of natural-decrease counties: nearly 66 percent of nonadjacent counties without an urban place of 2,500 had experienced natural decrease, compared with fewer than 13 percent of the adjacent counties with an urban place of 10,000 or more.
The incidence of natural decrease varies widely among types of counties. Nearly 60 percent of farming-dependent counties (as classified by the U.S. Department of Agriculture) had at least 1 year of natural decrease from 1950 to 1987 (fig. 7). Such counties have typically experienced decreasing employment and population over the past 40 years. Natural decrease was also common in retirement areas, while less common in mining and specialized government counties. Counties dependent on manufacturing were the least likely of the economic types to have natural decrease (18 percent), reflecting, at least in part, their greater urbanization.

The incidence of natural decrease also varies in different parts of the country. The largest concentration of natural-decrease counties lies in a broad North-South swath across the middle of the Nation from the Canadian border to the Gulf of Mexico, including the Great Plains, the upper Great Lakes, the Corn Belt, Ozark-Ouachita uplands, and east Texas (fig. 8). Other notable pockets of natural decrease are found on the Florida peninsula and in both the northern and southern Appalachians.

Examples of Natural-Decrease Counties

The charts in figure 9 illustrate some patterns of natural decrease associated with different types of counties.

Harrison County, MO, is typical of many counties in the southern Corn Belt that have lost population in most decades since the turn of the century. This loss resulted from a prolonged adjustment to lower labor needs in farming and from inadequate nonagricultural job growth. The county has had more deaths than births in every year since 1963. Thus, it has lost people from this factor as well as from continued outmigration. The area now has only a third of the population it had at its peak, and with farms continuing to get larger and fewer, the county has little chance to stabilize without new nonfarm employment opportunities to retain people and attract migrants.

Schuylkill County, PA, was once a leading anthracite coal producer, with more than half of its workers employed in the mines. With the near eclipse of the industry, outmovement became very rapid, especially in the 1940's and 1950's, and has continued to a lesser extent through the 1980's. Fertility is also much lower now. Manufacturing and commuting growth offset mining loss to some extent and, despite its long demographic slide, the county remains one of the most populous and densely settled of all nonmetro counties (152,000 people; 195 per square mile). Yet, it has no town of more than 16,000 people. The county is a far cry from the more typical natural-decrease counties of the Farm Belt, but despite its size and the fact that it has net outmovement of retired people, it has had fewer births than deaths in every year since 1968. At least a third of its population decline in the 1980's stemmed from natural decrease.

Pacific County, WA, is a coastal county that in the 1950's suffered a major loss of timber industry employ-
ment, and a decline in births and childbearing population, but not in deaths. Within 15 years, a 2-to-1 surplus of births over deaths vanished. The area began to stabilize in the 1960's, though, and to attract retired people. More people, both retired and of childbearing age, moved in during the 1970's, and the county experienced modest growth in the 1980's. The result is a county in which births and deaths have varied within a very modest range for over 20 years and have differed little from one another. Pacific County does not usually have natural decrease, but does have occasional years in which deaths exceed births.

Where natural decrease stems from distortion of the age structure caused by job loss in the basic industry of the economy, the areas affected are clearly in a transition to some other level of population, whether it involves continued dependence on the old industry (as in the case of Harrison County) or a shift to a new one (as in Schuylkill County). In either case, the transition can be of great length, spanning as it now does in Harrison and similar southern Corn Belt counties, nearly a century, and in Schuylkill, six decades. Presumably, the population will ultimately reach an equilibrium with the economy (as in Pacific County), and as the older generations die, the age distribution may normalize.

Some counties that once had recurring instances of natural decrease have emerged to persistent natural increase again. Clinton County, MO, for example, like Harrison County, is a Corn Belt county with a history of population decline in this century through 1960. But, it is adjacent to what is now the northeastern fringe of the Kansas City metro area, and by 1980 a full third of all Clinton County workers commuted to jobs in the metro area. With such job opportunities for younger people, more childbearing families remained in (or moved to) the county, and deaths have not exceeded births since 1976.

In Charlotte County, FL, we see the classic prototype of a subtropical retirement area in which natural decrease coexists with population increase. By the mid-1960's, deaths consistently exceeded births, and rose from just 55 in 1950 to close to 1,400 in 1987. Deaths now exceed births by about 500 per year. The median age of the population was 54 in 1990. These conditions were created by rapid inmovement of older people, rather than by outmovement of the young. Indeed, the younger population has grown rapidly also, in part through the growth of jobs in businesses providing goods and services to the elderly. The context of natural decrease is thus totally different from that in areas of declining population and loss of younger adults.

Implications

Natural decrease stemming from the evolution of a community into a retirement area can hardly be viewed, on balance, as a problem or as a reflection of one. Indeed, many communities and States are competing to entice retirement settlements as a means of economic development. Such trends are almost always accompanied by growth in population and businesses. The disproportionate increase in the older population in such cases requires additional medical and social services, but these are expected outcomes, accepted in tradeoff for the infusion of transfer payment income.

In contrast, where natural decrease is a product of prolonged outmigration of the young, it is symptomatic of a lack
Figure 9
Patterns of births and deaths

Harrison, MO
Farm county in southern Corn Belt

Clinton, MO
Farm county on a metro fringe

Pacific, WA
Industrial decline (timber), influx of retirees

Schuylkill, PA
Coal mining decline

Charlotte, FL
Subtropical retirement area; natural decrease and population increase
of economic development and of the shrinking of the labor force that has occurred. It is the ultimate demographic consequence of these conditions. There is usually just a difference in degree and duration between conditions in these counties and in the many others without natural decrease that have also lost population. But, an excess of deaths over births is one more negative characteristic and image for an area trying to break out of a downward economic and demographic spiral.

If the population declines to low levels, natural-decrease areas find themselves falling below the population thresholds needed to sustain local public services, such as schools and hospitals, or to retain retail and service competition, or even to retain certain types of businesses at all. Nonfarm property values may erode, and the tax base as well. Because natural-decrease areas depend heavily on local taxes, erosion of the tax base has put many under significant financial stress. Funding for education is likely to be a particular problem, as the number of parents dwindles and the growing older population struggles to make ends meet. The health care system may be hard pressed to provide care to a population that is smaller but, because of its age, has a much greater per capita requirement for care.

The demographic structure of natural-decrease areas may be sufficiently different from that of the general population to warrant different business strategies as well. Older residents do more shopping locally, but they also have lower incomes than younger people. This makes them more sensitive to store location and pricing strategies. It may help explain the success of discount chains, such as Wal-Mart, which originally focused on smaller nonmetro areas and stressed low prices and friendly service, both of which appeal to older customers. The product mix in natural-decrease areas will also devote more floor space to goods for seniors, and less space to goods for young families.

There is little research about the social, economic, and psychological implications of protracted natural decrease and the age structure distortions that contribute to it. Researchers examining the impact of long-term population loss have noted a debilitating pessimism that constrains efforts to improve the local infrastructure, encourage investment in the community, or develop the enthusiastic leadership necessary to improve the area. Instead, attention is more likely to turn to holding the line and preserving what the community has, which may only lead to further decline. Adjustment problems are likely to be more intractable for the individuals, social structures, and institutions remaining when natural decrease, which symbolizes how far the demographic devolution has gone, adds its contribution to the decline.

The rising incidence of natural decrease after 1982, despite the most births nationwide in 25 years, serves to highlight the complexity of the factors that determine the Nation’s demographic structure. And, with the recent sharp decline in nonmetro fertility rates, coupled with an age structure much less supportive of childbearing, natural decrease may become even more common in the future.

For Additional Reading . . .


