Deaths Exceed Births in Most of Europe, But Not in the United States

Kenneth M. Johnson, Layton M. Fields, and Dudley L. Poston, Jr.

With the increased attention to Europe's demographic future stimulated by the on-going immigration crisis, we present important new findings about the diminishing number of births compared to deaths in Europe and the United States from our recent article in *Population and Development Review*. When births fail to keep pace with deaths in a country there is a "natural" decrease in population and a substantial risk of population loss—loss that can often only be avoided by increased migration. Seventeen European nations have more people dying in them than being born, including several of Europe's most populous countries. In contrast, in the United States, births exceed deaths by a substantial margin. See Figure 1.

FIGURE 1. DEATHS EXCEED BIRTHS IN MOST OF EUROPE, BUT NOT IN UNITED STATES

Source: Johnson, K.M., L.M. Fields, and D.L. Poston Jr. 2015. "More Deaths than Births: Subnational Natural Decrease in Europe and the United States." *Population and Development Review* 41(4): 651–680.

Our research focuses on the prevalence and dynamics of natural decrease in subareas of Europe and the United States in the first decade of the twenty-first century using counties (United States) or county-equivalents (Europe). We find that 58 percent of the 1,391 counties of Europe had more deaths than births during that period compared to just 28 percent of the 3,137 U.S. counties. Natural decrease is often intermittent at first with deaths exceeding births in some years, but not in others. Later, it becomes

KEY FINDINGS

58%

Fifty-eight percent of the counties of Europe had more deaths than births in the first decade of the 21st century.

28%

Twenty-eight percent of the counties of the United States had more deaths than births in the first decade of the 21st century.

When births fail to keep pace with deaths in a country, there is a "natural" decrease in population and a substantial risk of population loss.

Natural decrease is more widespread in Europe because its population is older, fertility rates are lower, and there are fewer women of child-bearing age.

Natural decrease is a major policy concern because it drains the demographic resilience from a region, diminishing its economic viability and competitiveness.

more persistent. In Europe, 41 percent of the counties had more deaths than births in every year we studied; 30 percent had it in some years; and in 29 percent births always exceeded deaths. Natural decrease was far less prevalent in the United States, where 11 percent of the counties had natural decrease in each year; 35 percent in some years; and in the majority of counties (53 percent) births always exceeded deaths. See Figure 2.

Low Fertility, Fewer Mothers, and More Seniors Drive Natural Decrease

Though natural decrease is much more prevalent in Europe than in the United States, the demographic factors that cause natural decrease are remarkably similar. Three critical demographic phenomena increased the

FIGURE 2. THE EXCESS OF DEATHS OVER BIRTHS IS MORE WIDESPREAD AND PROTRACTED IN COUNTIES OF EUROPE THAN THOSE OF THE UNITED STATES

Source: Johnson, K.M., L.M. Fields, and D.L. Poston Jr. 2015. "More Deaths than Births: Subnational Natural Decrease in Europe and the United States." *Population and Development Review* 41(4): 651–680.

likelihood of natural decrease. In both the United States and Europe, the likelihood of natural decrease is greatest in counties with a large concentration of older adults, a small proportion of women of child-bearing age, and a low fertility rate. European counties were in a more precarious state on each of the three. Fertility rates in Europe are significantly lower than in the United States. There were only 261 young children per 1,000 women of child-bearing age in the average county of Europe compared to 371 young children in U.S. counties. Deaths are also more likely to exceed births if there is a larger older population at higher risk of mortality. Some 19 percent of the population is 65 or over in a typical European county compared to 15.8 percent in the United States. Natural decrease is also more likely when there are fewer women of childbearing age to have children. Here the difference between the counties of the United States and Europe is modest. Roughly 38 percent of European women in a county are of child-bearing age compared to 40 percent in an average U.S. county.

Natural Decrease Is Spatially Uneven

Natural decrease is spatially widespread in Europe (Figure 3). Deaths exceed births in most counties of Germany, Hungary, Croatia, Romania, Bulgaria, and the Czech Republic, as well as in Sweden and the Baltic states. Further south, natural decrease is also occurring in the majority of the counties of Greece, Portugal, and Italy. Although natural decrease is common in

FIGURE 3. MORE PEOPLE ARE DYING THAN BEING BORN IN BROAD AREAS OF EUROPE

Source: Johnson, K.M., L.M. Fields, and D.L. Poston Jr. 2015. "More Deaths than Births: Subnational Natural Decrease in Europe and the United States." *Population and Development Review* 41(4): 651–680.

much of Europe, it is far from universal. Births exceed deaths in Ireland, Cyprus, Iceland, Lichtenstein, and Luxembourg. It is also evident in broad regions of France, Belgium, the Netherlands, Switzerland, the United Kingdom, and Norway.

There is considerable spatial variation in the incidence of natural decrease in the United States (Figure 4). Natural decrease is largely absent from broad areas of the West, Southeast, and along most of the Atlantic and Gulf Coast. In contrast, natural decrease is especially pronounced in the Great Plains in a north–south band from the Dakotas to central Texas as well as further east in the Corn Belt (Iowa and Illinois). This reflects the historical linkages between agriculture, young adult out-migration, and natural decrease. The natural decrease evident in the retirement areas of Florida, Arizona, and Texas reflects the long-term influence of a substantial inflow of older adults. Natural decrease is also evident in areas long

FIGURE 4. COUNTIES WHERE DEATHS EXCEED BIRTHS ARE MORE SPATIALLY CLUSTERED IN THE UNITED STATES

Source: Johnson, K.M., L.M. Fields, and D.L. Poston Jr. 2015. "More Deaths than Births: Subnational Natural Decrease in Europe and the United States." *Population and Development Review* 41(4): 651–680.

dependent on forestry and mining in the Upper Great Lakes, the Northeast, and the Appalachians. The spatial distribution of natural decrease in both the United States and Europe reflects the fact that it is more pervasive in rural areas in both regions.

Is Natural Decrease an Emergent Phenomenon?

What might the future portend for Europe and for the United States with regard to natural decrease? It certainly will persist. Once natural decrease occurs in an area, it is likely to reoccur. Yet, the future for some U.S. natural decrease counties is not entirely bleak. Hispanic immigration and domestic migration have strong secondary effects on fertility that diminish the likelihood of natural decrease in some U.S. counties by increasing births because the migration stream includes many

young adults of child-bearing age with higher fertility rates. Nevertheless, only some U.S. counties are receiving significant Hispanic in-migration. Overall, the U.S. population is aging and fertility rates are diminishing, so natural decrease is likely to become more prevalent.

Natural decrease looms even larger in Europe's future. There are relatively few young women to produce the next generation of European infants. In a typical European county, only 15 percent of the female population is younger than 15, compared to 20 percent in the United States. In addition, European fertility is expected to remain well below U.S. levels. With a diminishing population in their child-bearing years, low fertility, and a growing older population at high risk of mortality in much of Europe, widespread natural decrease is almost inevitable. Europe has also had little immigration over the past several decades, and this has likely exacerbated the increased incidence of natural decrease.

Ireland's willingness to accept immigrants makes it an important exception to overall European trends and it underscores the potential role of immigration to the European future. No Irish county experienced natural decrease during the period we studied. Immigration to Ireland has been substantial and the large proportion of these immigrants in their child-bearing years with relatively high fertility rates certainly helped Ireland fend off natural decrease. In essence, these Irish immigrants are an analog to the young Hispanic immigrants to the United States that diminished the incidence of natural decrease in many U.S. counties.

Natural decrease is the ultimate demographic consequence of the population aging and low fertility rates that now characterize much of Europe and a growing part of the United States. Natural decrease is likely to become more prevalent in both regions. In fact, it is already on the rise. Preliminary estimates from the post-2010 period suggest that deaths now exceed births in 62 percent of the European counties and in 35 percent of the counties of the United States.

Natural decrease is a major policy concern because of its pronounced spatial clustering and its capacity to drain the demographic resilience from an area. In Europe, worries are already widely expressed in both media and public policy circles about maintaining the region's economic viability and competitiveness in the face of the low birth rates and aging populations that characterize its natural decrease areas. The implications of the recent European immigrant surge for natural decrease are uncertain, but our analysis suggests that natural decrease is likely to remain widespread in Europe for the foreseeable future.

Data and Methods

We use NUTS3 regions developed under the Nomenclature of Territorial Units for Statistics for our units of analysis in Europe. These units take into account existing geographic and political divisions in each European country to produce standard spatial units that permit cross-national comparisons. We refer to the NUTS3 regions in all European countries as "counties." We use the NUTS3 units because they most closely resemble counties, which are our unit of analysis in the United States. Our analysis of Europe uses data from Eurostat. Our United States data come from the U.S. Bureau of the Census and from the National Center for Health Statistics.

For more details on our data and methods as well as a much more comprehensive analysis of these trends, see: Kenneth M. Johnson, Layton M. Fields, and Dudley L. Poston, Jr. 2015, "More Deaths than Births: Subnational Natural Decrease in Europe and the United States," *Population and Development Review* 41(4): 651–680.

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