

## Signs of negative physical change in Greece: from World War II to austerity era

Dear Editor,

Recent evidence suggests a possible economic crisis impact on population dynamics in Greece. In particular, reports from the Greek Statistical Authority indicated that in 2012 and 2013 the number of deaths exceeded the number of births, resulting in a negative natural change (-16,299 and -17,660, respectively)<sup>1</sup>. Since relatively low birth rates are considered to be a typical characteristic of developed economies with ageing populations and lower fertility rates, as is the case in many European countries, one could argue that a negative natural change may not be out of the norm.

However, what is different about Greece's case is the acute and rapid emergence of negative physical change at an unparalleled level, over the past 70 years.

This is the first time since World War II (WWII) that a considerable negative balance between births and deaths has been recorded. Available statistics from 1941, the first year of German occupation, show 34,468 births vs. 52,700 deaths in urban settings with more than 5,000 inhabitants (natural change: -18,232)<sup>2</sup>. During that war, the Greek economy was devastated as a result of plundering of the country's vital resources, as well as reparations paid to the occupying forces. With its national infrastructure in ruin, widespread food shortages plaguing large cities, malnutrition and an ailing population, the severe drop in natural change was an expected and inevitable outcome.

The unprecedented economic crisis and subsequent recession undergoing for the past five years in Greece has caused a plummeting of living conditions, similar to the ones recorded during WWII. The emergence of recession and economic hardship are known to be significant predictors of increased mortality and reduced fertility and birth rates. Spending restrictions in times of economic downturn, especially in countries undergoing interventions from the International Monetary Fund, have been implicated in imposing additional risks on a population's health. Nevertheless, the 'rescue package' for Greece, prescribed by the Troika, imposes stringent and prolonged austerity, including across-the-board cuts to national health and social welfare expenditures. Those budgetary reductions leave very few options to deal with the exponentially growing demands for public health and social welfare services by individuals who lack the basic means and support<sup>3,4</sup>. It appears that Greece has entered a period of considerable negative growth for the first time in its recent post-war history. The emergence of this negative physical trend raises great concern, given the severe social and humanitarian crisis that the country is currently facing. Systematic efforts to assess and override the magnitude effect of negative natural change need to be undertaken by scientists, policy makers and government officials to counteract this disturbing trend.

### References

1. Greek Statistical Authority. Natural movement of the population for the year 2013. Press release, September 2014, available at: [http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A1605/PressReleases/A1605\\_SPO03\\_DT\\_AN\\_00\\_2013\\_01\\_F\\_EN.pdf](http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A1605/PressReleases/A1605_SPO03_DT_AN_00_2013_01_F_EN.pdf), last accessed 01/03/2015.
2. Greek Ministry of National Economy. Monthly Bulletin of General Statistic Service of Greece for the year 1941. National Printing Office, Athens, 1942, 97-99.
3. Karanikolos M, Mladovsky P, Cylus J, Thomson S, Basu S, Stuckler D, et al. Financial crisis, austerity, and health in Europe. *Lancet*. 2013; 381: 1323-1331.
4. Aloumanis K, Papanas N. Greek financial crisis: consequences in the healthcare of diabetes and its complications. *Hippokratia*. 2014; 18: 4-6.

### Conflict of interest

None declared.

**Keywords:** financial crisis, births, fertility, deaths, mortality, negative natural change

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