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## The Great Recession, a cause of health improvement? A reply to my critics

¿La Gran Recesión como causa de mejoras de la salud? Respuesta a mis críticos

**Tapia Granados, José A.**<sup>1</sup>

<sup>1</sup>Physician, PhD in Economics. Associate Professor, Department of Politics, Drexel University, Philadelphia, US. jat368@drexel.edu

**Reply to the debate on:** Tapia Granados JA. The economic crisis and health in Spain and Europe: Is mortality increasing? *Salud Colectiva*. 2014;10(1):81-91.

My affirmation (1) that the economic crisis has paradoxically had a positive effect on health in Europe has provoked responses ranging from qualifications and clarifications (2,3) to the more or less outright rejection of those who suggest that I am irresponsible for saying such a thing (4) or who state that “generalizing a positive effect of the crisis is mistaken” (2). In this text, I will reply to the specific criticisms.

La Parra and Álvarez-Dardet (3) criticize that in my work the possible relation between health and the economic crisis “is not analyzed through any bivariate or multivariate analysis technique,” in spite of which I affirm that there exists a “positive correlation between changes in unemployment and gains in life expectancy at birth.” This criticism is surprising, since my work

(1 p.89) provides the correlations between the increase in unemployment and the increase in life expectancy at birth ( $e_0$ ) in 19 European countries in 2007-2010, 2004-2007, and in both periods considered simultaneously. Since all those correlations are positive and significant, and Pearson's correlation is a technique to analyze statistically the relation between two variables, I provided the results of a "bivariate analysis" showing that higher increases in  $e_0$  are associated with higher increases in unemployment.

La Parra and Álvarez-Dardet (3) also regard as a relevant defect of my analysis the fact that when I speak of the general European situation I employ data for 19 countries, "when the European Union (EU) alone is composed of 28 countries." This is because my analysis was limited to the countries with information in the HFA database for the years I took as reference for my analysis: 2004, 2007 and 2010. To demonstrate that this criticism does not affect my conclusions, I have calculated the correlations between the *annual* (not triannual) change in the unemployment rate and the annual change in several health indicators in 27 European countries in recent years. The sample includes Norway, Switzerland and all EU countries excluding countries with less than one million inhabitants. The correlations (Table 1) are statistically significant in almost all cases. They show that an increase in unemployment is associated with: (a) an increase in  $e_0$ , more intensely in the male population; (b) a decrease in general mortality and mortality due

to myocardial ischemia and traffic-related injuries; and (c) an increase in suicide. As the fluctuation in the unemployment rate is negatively correlated with economic growth, measured as percentage increase of the gross domestic product, these correlations show that greater economic growth is correlated with a smaller decrease in mortality, as has been found in other investigations (6,7).

Facchini and Nunes (2) speculate on the possible negative effects of the economic crisis on mortality in poorer countries or areas or in disadvantaged or marginalized sectors of the population. Something of the kind has been found in Mexico, where economic recessions in recent decades have been associated with declines in mortality rates in the country as a whole and in the more industrialized states, but with increases in mortality in states with low levels of industrialization (8,9). Nonetheless, in China and India, in the autarky and economic stagnation of the 1960s and 1970s, general mortality dropped significantly, while from 1980 onward with accelerated economic growth, mortality slightly decreased or stagnated (10). In Central America, infant mortality decreased in a sustained way between 1980 and 1995, in spite of the economic stagnation and in contrast with the previous two decades, when the economy grew at elevated rates and mortality decreased little (11). In Argentina, provincial mortality worsened during the years of intense economic growth of the 1990s (12). It would not seem therefore that in Latin America and Asia, recessions are associated

Table 1. Correlation (Pearson's coefficient) between the annual fluctuation of the national unemployment rate and the annual fluctuation of several health indicators in 27 European countries in three periods of recent years.

Health indicator	Sample		
	2007-2010	2004-2010	2001-2010
Life expectancy at birth ( $e_0$ )	0.36**	0.37***	0.24***
$e_0$ male inhabitants	0.38***	0.41***	0.30***
$e_0$ female inhabitants	0.23†	0.21*	0.10
<i>Mortality rates standardized by age</i>			
All causes	-0.33**	-0.31***	-0.15*
Ischemic heart disease	-0.24*	-0.11	-0.05
Traffic-related injuries	-0.45***	-0.52***	-0.43***
Suicides	-0.01	0.25**	0.24**
<i>Number of observations</i>	75 o 76	148 a 151	226 a 229

Source: Own elaboration with data from the Health for All Database (HFA DB) of the World Health Organization (WHO) (5).

\*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ ; †  $p < 0.1$ .

with mortality decrease, but rather that quite the opposite can be observed.

But who do these macroeconomic effects on mortality affect the most? In the US, during the 1929-1933 Great Depression, non-white males – the population stratum with the highest mortality (6,13) – benefited the most from the decrease in mortality. In Finland between 1990 and 1994, the unemployment rate rose from 5% to 18%, mortality fell more rapidly than in the previous boom years, and the group with the highest mortality rate – male manual laborers – benefited the most from the mortality decrease (14,15). During the economic stagnation of the 1990s in Japan there was a considerable worsening of health, along with a substantial increase in suicides, among male managers and professionals, but not among male retail workers and manual laborers (16). It seems therefore that recessions tend to reduce the mortality gap among social groups (17). An investigation that may not support this hypothesis involves an analysis performed in recent decades in the US, which revealed that the increase in mortality in expansions and the decrease in mortality in recessions affect especially the black population and males of working age with a middle education level, while in segments of the population with very low education levels, mortality seems to rise during recessions (18).

Borrell *et al.* (4) state that the situation in Spain since the start of the crisis has caused different types of suffering in the population and that data show “the deterioration in the social determinants of health.” They conclude therefore that it is difficult to think that all of this does not harm the health of the population (4). Facchini and Nunes share almost the same reasoning by saying that not finding a negative effect of the crises in general mortality does not imply that such an effect does not exist. Thus, they advocate for dubious “population surveys with a wide scope and capacity for detail that collect information quickly and produce results just as rapidly” (2). But in terms of spending resources, would it not be better to spend them on unemployment benefits or suicide prevention services? Because if the alleged harmful effect of the crises is not observed in the mortality rates of countries with good statistics, from what data can we suspect its existence? In the same way, we could suspect that coffee has carcinogenic effects or that

looking at the moon generates schizophrenia. Or does our omniscience allow us to suspect the existence of something although we are not able to observe it anywhere? Of course I do not question that the population suffers during the crisis, nor do I question that unemployment *for those who experience it* has harmful effects on mental and physical health, nor that the health determinants mentioned by Borrell *et al.* have deteriorated. However, if the mortality rates in 2007-2010 have fallen more than in the previous three years of economic expansion, especially in countries in which the crisis was more severe, there must be other mortality determinants (work schedules, consumption of harmful substances, atmospheric pollution, social solidarity and support, other things we are not aware of?) that have improved during the crisis (and which Borrell *et al.* ignore). Reasoning that since the economy is bad and many people are in a fix, health should have deteriorated, even though data show its improvement, reveals an anti-empirical approach of the kind that criticized Ignaz Semmelweis when he showed that the women in labor treated by physicians died more often due to puerperal fever than women treated by midwives (19,20). “It can’t be so!” cried the outraged physicians. And how can it be so that during the years of scarcity and suffering because of the German occupation during the Second World War, different health indicators could substantially improve in Denmark and Norway (21); or that the general mortality rates would fall during the Great Depression in the US (22,23)? Or that the same would happen in Cuba during the so-called Special Period, when Soviet aid evaporated and the population suffered a significant food scarcity related to an increase in physical activity due to lack of transportation options (24)? These are unexpected and counter-intuitive phenomena. Science searches for regularities in observable phenomena, and based on those regularities, it creates theories — which are often mistaken or valid only in particular circumstances. Science progresses when the predictions of a certain theory are refuted by empirical data, forcing the previous theory to be modified or rejected, putting a new theory in its place. The idea that economic crises are associated with mortality increases is a Malthusian idea (25), typical of agricultural economies such as Sweden’s in the 19th century, where economic crises were basically

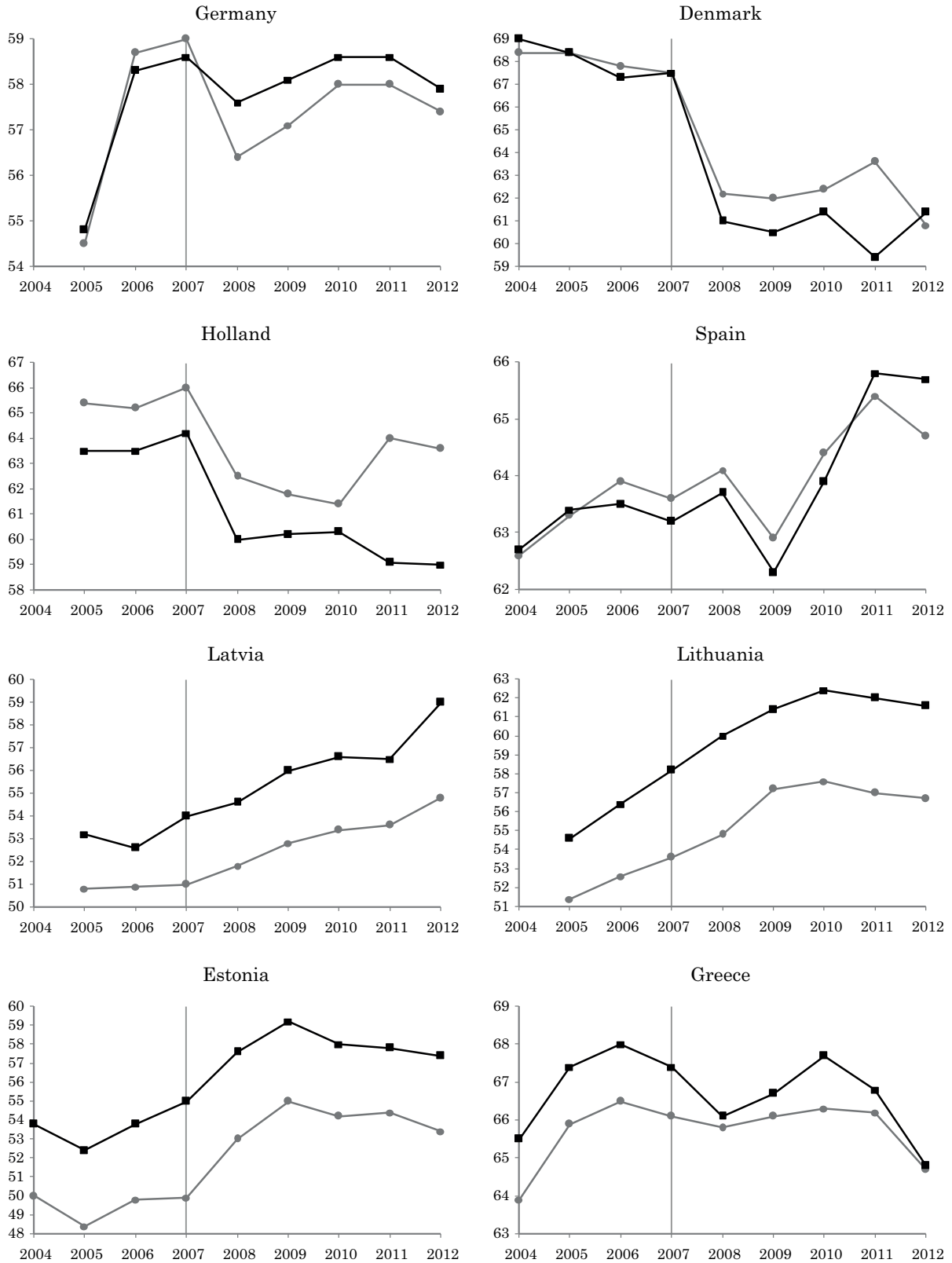


Figure 1. Healthy life years at birth for males (gray circles) and for females (black squares) in twelve countries of the European Union.

Source: Own elaboration from data of the European Commission (32).  
 Note: The vertical line in 2007 marks the start of the Great Recession.

bad harvest years that produced food scarcity, epidemics and peaks in mortality (26). However, data show that, in general, the same no longer happens in today's economies, not even in countries like India. The demographic and public health disaster of Eastern Europe in the 1990s is a completely different case.

Borrell *et al.* (4) claim that health is "much more than mortality" and define it as "a way of living with autonomy, solidarity and joy." I do not doubt that health is "much more than mortality" and I praise their poetic definition of health, but scientific activity requires the prosaic tasks of weighing, counting and measuring, and unfortunately, the degree of "solidarity and joy" experienced in life is not easy to measure. For that reason indicators based on mortality rates, especially  $e_0$ , have long been considered appropriate for developing inter-temporal, cross-group or international comparisons of health levels (27-29).

If mortality is considered a key indicator for measuring population health, it is evident that the crisis in Europe is associated with important health improvements. More and more investigations are proving this to be so (30,31). In my opinion, composite health indicators combining mortality and morbidity have limitations and are questionable, but since Borrell and her collaborators claim that health is "much more than mortality" and accuse me of ignoring recent data (I limited the analyses to the period 2004-2010, for which WHO data is available), I will bring new data to the table. I will place under consideration data on healthy life years (HLY) for 2004-2012, collected in March 2014 from sources of the European Commission (Figure 1). In Spain and the Baltic countries, hit hard by the economic crisis, HLY have significantly increased since the pre-crisis years. In Greece, which according to some people should be sinking into a public health disaster, the trend of this indicator is almost identical to that of pre-crisis years, while in Germany, Denmark and Holland – countries often praised for being able to "keep growing" – HLY have considerably decreased or have stagnated since 2007.

La Parra and Álvarez-Dardet (3) conclude their commentary advocating for predictive caution. Likely heading in the same direction, but using stronger language, Borrell *et al.* (4) affirm that "it is irresponsible to announce that the crisis has no

effect on health or that it improves health." So, then, they accuse me of being irresponsible. I would say that truly irresponsible are those who ignore or deny what the data show and are unaware of investigations demonstrating that in our capitalist economy, recession periods are more favorable to health progress than expansion periods. To admit such phenomenon would allow us, for example, to forecast *irresponsibly* and without predictive caution ("hard" science risks predictions, "soft" science is content with vagueness) that health in the European countries will tend to worsen when the eagerly awaited economic recovery happens. And, if the recovery is intense, so may be the deterioration in health, as it was in Lithuania's pre-crisis boom, when unemployment fell 7.1% and one year of  $e_0$  was lost (1 p.85). In Spain over the last forty years of the 20th century, the smaller the rate of economic growth, the faster the decrease in infant and adult mortality (33). Furthermore, mortality in the provinces between 1980 and 1997 decreased more in years with greater unemployment (34). As I have explained elsewhere (6,7,13,23,35-37), similar patterns have been observed in many other countries. Is it irresponsible to conclude that approximately the same will occur in the future? Would it not be irresponsible to ignore that this is the most likely scenario?

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