Examining cause-specific mortality effects of economic crisis in a country with rapidly declining total mortality

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In his letter1 on our paper2 Tapia Granados suggested that we were obviously looking for increments in mortality. However, looking for mortality upsurges followed by an economic recession was not our mission in the paper. Rather, we were concerned about why all-cause mortality was so reluctant to respond to a powerful economic recession in South Korea.3,4 While South Korea experienced economic recessions in the early 1980s and late 1990s, ‘the momentum’ in the increase in life expectancy was hardly affected. Based on the Korean National Statistical Office’s calculation (Figure 1),5 male life expectancy at birth in South Korea inexorably increased from 59.0 in 1971 to 73.9 in 2003, representing a nearly half year increase in life expectancy per calendar year. Patterns in women were the same. According to the OECD health data,6 South Korea registered the greatest gains in life expectancy among OECD countries during the past 4 decades. Actually, the gain in life expectancy after the 1997 economic crisis was greater than the gain before the crisis as we mentioned elsewhere.7

To understand why mortality was resilient to severe changes in macro-economic conditions we needed to comprehend the cause-specific structure of mortality in the population, the early and later life exposures affecting different causes of death across different birth cohorts, background mortality trends over time, and the specific mechanisms that might link macro-economic conditions with different causes of death. We thought that South Korea’s cause-specific structure, greatly influenced by causes with important early life exposures such as stomach cancer, hemorrhagic stroke, liver cancer and disease (by hepatitis B in South Korea), and tuberculosis, could help explain the mortality patterns during the economic crisis, as well as the rapid mortality decline during the past decades.

In our paper, we found mortality effects of economic recession in two major external causes (suicides and transport accidents) as Tapia Granados did in US.7 However, we could not conclude definitely that mortality trends or fluctuations in several causes were due to the economic crisis because those causes accounted for the relatively small proportion of total mortality, and thus we could not completely exclude the possibility of chance variation or the extension of background trends. Thus, we agree that the application of econometric techniques to longer time series such as Tapia Granados suggests is certainly a useful way to move forward to examining mortality effects of economic recession, because use of limited time series of data may produce questionable results.4 Although long-term mortality data like in the US do not exist in South Korea and the quality of South Korean death certificate data before 1990 would be suboptimal,8 use of longer term mortality data, available after 1983 from National Statistical Office of Korea,5 may provide better evidence for an undetected mortality effect of major changes in the South Korean market economy.

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References


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