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COMMENTARY

Hard times or good times? Inequalities in the health effects of economic change

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The financial crisis in 2007 led to a deepening economic recession with global reductions in economic growth and rising unemployment. This has led to renewed discussions about the effects of economic cycles on population health both in the popular media and in academia. The media coverage tends to speculate on the idea that mortality increases around times of economic downturn, reflecting findings from some research which suggests that mortality trends are 'counter-cyclical' to economic trends. However, there appear to be varying views in the academic literature concerning the relationship between macroeconomic fluctuations and population health. A 'pro-cyclical' relationship has been reported in several studies; i.e. mortality rates get *worse* when the economy is growing and *improve* during periods of economic recession (Gerdtham and Ruhm 2006; Ruhm 2000; Tapia Granados 2005; Tapia Granados and Ionides 2008; Laporte 2004; Neumayer 2004). In other words, economic recession is associated with relatively good population health. Many mechanisms have been put forward to explain this, including an increase in work demands and working hours during periods of growth, heavier traffic generating more accidents, increase in consumption of alcohol (Ruhm and Black 2002) and tobacco (Ruhm 2000), as well as reductions in physical activity levels (Ruhm 2000), leisure time and social interactions. However, in this commentary, we argue that not only do the health effects of the macroeconomic cycle vary in respect to how key factors are measured (i.e. competing measures of the economic cycle, lag effect, variation by health outcome), but they also depend on individuals' characteristics and place of residence.

Probing beneath the surface shows that the relationship between macroeconomic cycles and health is not evenly distributed across the population. Some studies report that men are more affected than women by changes in the economic cycle (Edwards 2008; Gerdtham and Johannesson 2005). For example, a Swedish study observed that mortality increased for men during recession, but this association was not observed among women (Gerdtham and Johannesson 2005). An American study reported that higher unemployment rate at the state level was associated with lower mortality among working age and older men and among older women, but not among women of working age (Edwards 2008). Health inequalities by sex could be explained by differences between men and women according to the type of work and industrial sector of employment. Men are more likely to work in the private sector and in parts of the economy conventionally more vulnerable to economic downturns (such as finance and business services, manufacturing, construction) (Office for National Statistics 2009). There is evidence suggesting that the health impact of economic fluctuations also vary by age groups with, e.g. greater risk of mortality among younger Americans (Ruhm 2000; Tapia Granados 2005) although these studies did not test whether estimates are statistically significant different between age groups (and historically, younger people have had relatively low employment rates compared to 'prime-age' workers). In addition, negative impacts of economic contraction appear to extend beyond those of working age to affect the health of older adults

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(Ruhm 2007; Edwards 2008) but also the health of children (Tapia Granados 2005; Miller et al. 2009) suggesting that the negative effects of economic change are not only attributable to people's employment experiences but also stretch over the life course.

Health inequalities in the impact of a changing economy have been observed among different socio-demographic groups. For example, rising unemployment levels have been linked with health of the least well educated groups (Edwards 2008) and with weight-related and mental health problems among African-Americans (but not among Whites or Hispanics Americans) (Charles and DeCicca 2008). Socioeconomic inequalities have also been observed in Japan where, although overall health improvement was observed during the economic crisis of the 1990's, health inequalities in relation to work occupation widened among men (Kondo et al. 2008).

Most of the studies examining the health impact of economic cycles (often measured using change in employment/unemployment rates) have used aggregated, population level, data on both health and economic indicators. Observing that, at the ecological level, change in employment rates is associated with change in mortality rates does not necessarily imply a similar relationship at the individual level; to make this assumption would be an ecological fallacy. In fact these ecological studies tell us nothing directly about individuals' experiences of economic recession, e.g. job losses, job insecurity, and how these experiences influence health. Findings of reduced mortality rates in recession might be considered inconsistent with findings from epidemiological studies on the long-term relation between work and health, typically demonstrating that, for the individual, being unemployed or experiencing job insecurity is associated with poor physical and mental health (Martikainen and Valkonen 1996; Valkonen and Martikainen 1996).

These ecological associations are most often measured at a broad geographical scale, e.g. at the national (Gerdtham and Ruhm 2006; Tapia Granados 2005) or regional levels (Ruhm 2000; Neumayer 2004). Yet some have examined the impact of local labour market fluctuations on health at the metropolitan area level (Charles and DeCicca 2008) and the cross-sectional impact on health of local labour market conditions, considering individuals' socio-economic circumstances (Cummins et al. 2005; Stafford et al. 2004, 2005; Fone et al. 2007a, b; Bosma et al. 2001; Riva et al. 2010). However, relatively little is known about differential spatial impacts whereby some local areas may experience the impact of an economic crisis more than others.

In deprived urban areas, where lower employment rates typically prevail, decline of employment rates might differ from trends in more affluent areas (Equality and Human Rights Commission et al. 2009), which may affect the degree of national or regional spatial inequality. For economies of rural areas, economic shocks, characterized by significant job losses, reduced income and increased job insecurity for specific sectors of the economy may be especially problematic. Rural, remote and resource-reliant communities might not have a sufficiently flexible economy to alleviate the shock of job and income losses. Limited local skill mix in the workforce, associated with lack of locally accessible education and training may contribute to this vulnerability. From a local perspective, economic crisis result from processes operating 'elsewhere', most often internationally, and cannot be locally controlled. This could also be the case in lower-income countries, where the impact of the current economic crisis are likely to be severe, for example, through reduction in international aid (Horton 2009) and loss of remittances by people working abroad, as well as reduced demand or export of goods. Disempowerment in the face of global economic crisis may heighten the health burden. Changes in the socioeconomic environment of different countries, and of communities within countries, are likely to lead to an increase in geographic health inequalities.

As observed by Stuckler and colleagues, it seems that, in comparison to a 'steady' state in the economy, changing economic conditions are important and potentially hazardous for health, regardless of the direction of economic trends (Stuckler et al. 2009b). As argued above, local impacts of global or national economic changes are variable, resulting in differential effects on the health of populations and individuals within localities. Local interventions may partly buffer and moderate the negative health impacts, within particular communities, of wider economic trends. However, ultimately, these global and national economic changes are not amenable to local control. This implies that action to address health effects of economic determinants should not be considered a solely local responsibility. Social policies and safety nets are important to alleviate the locally variable, negative health impacts of a changing global economy. Examining the relationship between macroeconomic conditions and deaths in countries of the Organisation for Economic Co-operation and Development (OECD), Gerdtham and Ruhm (2006) observed that all-cause and cause-specific mortality increase when labour markets strengthen, but that the fluctuation in mortality is much stronger in countries with lower public social expenditures (Gerdtham and Ruhm 2006). Stuckler and colleagues observed similar findings across the 26 countries of the European Union (Stuckler et al. 2009a). A study of different responses to the Asian economic crisis concluded that social safety nets and public expenditure were important in mitigating the health effects of economic crises (Hopkins 2006).

Thus, given the challenging and unstable economic conditions prevailing in many countries of the world at present, there is also uncertainty, and a lack of consistent evidence on how health might be affected for different socio-demographic groups in differing types of locality. National and international planning to address the impacts of global recession or growth should therefore be flexible enough to be sensitive to local conditions.

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