Commentary

Will the recession be bad for our health? It depends

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Introduction

The recent financial and economic crisis has raised major concerns in the public health community that death, illness and disability will rise in both rich and poor countries across the globe, and that the operation of health systems will be compromised both by increased demand for treatment and reduced health budgets. Such fears are supported by, among others, a wealth of epidemiological evidence on the strong and positive associations at the level of the individual between lower income, unemployment and poor health (Catalano & Bellows, 2005; Clark & Oswald, 1994; McKee-Ryan, Song, & Wanberg, 2005; Murphy & Athanasou, 1999; Gallo, Bradley, & Dublin, 2004). The idea that the financial crisis will harm health also reflects the findings of the Commission on Social Determinants of Health published in 2008 (Marmot, Friel, & Bell, 2008), as argued in a recent article in the British Medical Journal (Marmot & Bell, 2009).

Several researchers, however, argue the opposite: recession might actually improve health, at least in the short run. Research in the USA and Europe finds pro-cyclical worsening of mortality during expansions and improvement during recessions, with recession associated with lower road-traffic injuries and alcohol-related deaths and hospital admissions (Gerdtham & Ruhm, 2006; Ruhm, 2008; Tapia-Granados and Lonides, 2008). These studies have led some commentators to speculate, perhaps slightly with ‘tongue in cheek’, that “Good News: Recession may make you healthier!” (Bougerol, 2009) and that “recession may be a lifestyle blessing in disguise” (Cohen, 2009).

This commentary aims to elucidate this seemingly contradictory evidence with a summary of the existing evidence on the actual and potential impact of recessions on health, in order to distil some lessons as to the expected health effects of the current crisis and as to how policy should respond, if at all. We find that the relationships involved are complex, but that some of the complexity may be reduced by highlighting a set of factors on the causal chain that influence the direction and magnitude of the resulting health effects.

What does the existing evidence tell us?

In order to structure the diverse evidence base, spanning multiple disciplines and limiting potential for a quantitative systematic meta-analysis, we reviewed a limited set of seven factors and interactions putatively on the causal chain, including differential exposure, vulnerability, protective factors, levels, distribution, outcomes and their temporality, that are likely to matter when trying to answer the overarching question of whether and, if so, how recessions affect health.

Individual vs aggregate relationships

According to the International Labour Organization, the global economic crisis had led to an additional 22 million people unemployed worldwide in 2009 alone, with a particularly pronounced increase in developed economies and the European Union (ILO, 2011). Individual level primary epidemiological research that has analysed the health effects of unemployment and country or state...
level 'ecological' research that focuses on the relationship of macroeconomic indicators such as unemployment may inform us about what the health effects of such trends may be.

Both approaches provide seemingly contradictory predictions. At the risk of slight over-simplification, the former suggests health would deteriorate with increasing unemployment (and hence in a recession), while the latter tends to suggest the opposite: if anything, health improves during recessions. We briefly summarise each of the two perspectives in turn and discuss their compatibility.

**Individual level evidence**

A large body of research has documented the detrimental effects of unemployment on health at the individual level. For instance, studies on unemployment and mortality in Britain in the 1970s and 1980s showed that unemployed people had a mortality rate 20%–25% higher than average for people of the equivalent socioeconomic group (Bethune, 1997; Moser, Goldblatt, Fox, & Jones, 1990). Beyond the UK, Sterner (1983), Creed (1998), and Ungváry, Morvai, and Nagy (1999) review the existing evidence of the various pathways through which unemployment affects individual health. They find that unemployment is detrimental to the individual's standard of living and financial resources. Restricted financial resources can lead to poor nutrition and restriction to access to health care when needed. As Martikainen and Valkonen (1996 and 1998) indicate, this may cause increased physical morbidity and mortality. Martikainen and Valkonen (1996) show that individuals who experience unemployment exhibit greater mortality rates compared to their employed counterparts, after controlling for demographic and socioeconomic indicators. Furthermore, Morris, Cook, and Shaper (1994) show that not only unemployment experience, but also the duration of unemployment spells, increase the risk of mortality after controlling for potential confounders such as age, race, marriage, income, and occupational class.

More generally, other individual level analysis has repeatedly shown the detrimental health effects of low socioeconomic status and position, proxied by low income, poor education, lower-skilled jobs or indeed unemployment. Lower socioeconomic status, is associated with worse physical health (Blakely, Lochner, & Kawachi, 2002; Ecob and Davey-Smith, 1999; Grundy & Holt, 2000; Wagstaff, Paci, & Joshi, 2001), lower emotional and psychological health (Eerson, Maty, & Lynch, 2002; Theodossiou, 1998), and increased risk of mortality (Gardner & Oswald, 2004; Goldberg, Kemeny, & Weinstein, 1995; Van Rossum, Van de Mheen, & Mackenbach, 2000).

**Aggregate level analysis**

This entire body of rather robust and consistent individual level evidence would lead one to conclude that a recession that is typically characterised by a significant increase in unemployment would be expected to also harm health at the aggregate, national level. Such a conclusion was drawn from work by Brenner (1975, 1977, 1979) and Brenner and Mooney (1982), who used aggregate time series data.

Brenner's work, however, has been severely criticised (e.g. Wagstaff, 1985), mainly on the grounds of omitted variable bias, structural instability of the relationships, lag-misspecifications and data inconsistencies.

Later work (Gerdtham & Johannesson, 2005; Neumayer, 2004; Ruhm, 2000, 2003, 2006, 2008; Tapia Granados, 2005, 2008) that also used aggregate data over time for a range of high income countries, has effectively turned the Brenner Hypothesis up-side-down by showing that negative deviations from the long term per capita GDP trend are closely associated with reductions in a wide range of cause-specific mortality rates (with the notable exception of suicide rates that consistently accelerate in recessions). So-defined "recessions" would accordingly seem to be ‘good’ for overall health, at least in the short run.

The contrasting results between the individual level and the aggregate level evidence appear puzzling at first sight, but can be reconciled upon closer inspection. They are consistent with a scenario in which those that do fall into unemployment during a recession are indeed likely to suffer worse health. At the population health level, however, this effect appears to be more than compensated by improvements in the average health of the rest of the population.

Ruhm and others argue that during recessions health improves as individuals both improve their dietary habits and reduce lifestyle habits detrimental to health (e.g. Ruhm, 2000). Reasons include an increase in leisure time augmenting the possibility of health enhancing activities such as exercise; a decrease in exposure to hazardous working conditions, physical exertion and in working hours; and a reduction in individuals taking risks and indulging in activities such as smoking drinking and excessive eating of high fat diets due to lower incomes.

However, a minority of recent studies, applying similar techniques to Ruhm (2000), but using Swedish (Gerdtham & Johannesson, 2005; Svensson, 2007) and European data (Economou, Nikolaou, & Theodossiou, 2008), did not find such a pro-cyclical relationship between the business cycle and mortality.

Further below we discuss briefly some of the factors that may help account for part of the observed differential health response across countries.

**Poor countries vs rich countries**

The above discussion has focused on rich countries, characterised (1) by populations whose average level of wealth may serve as a “cushion” against any income shocks and (2) by social safety nets that provide formal insurance mechanisms (if to varying degrees across countries). In poor countries, with large shares of the population living in or close to abject poverty, any aggregate income shock is likely to push many people below subsistence levels. A further cut in available resources and hence in consumption in an under-nutrition setting seems very likely to be health- and possibly life-threatening in poor countries, while the same income shock may be health-enhancing in a rich country situation of ‘over-nutrition’. Thus, health impacts depend crucially on how households cope with sudden losses of income.

Such predictions are indeed widely confirmed by the existing literature. In a recent review of the evidence on the effects of recessions on human capital across a range of income strata, Ferreira and Schady (2009) find that in richer countries (e.g. the US) child health and education outcomes are counter-cyclical: they improve during recessions. In poorer countries, mostly in Africa and low-income Asia, the outcomes are pro-cyclical: infant mortality rises, and school enrolment and nutrition fall during recessions. In the middle-income countries of Latin America, the picture is more nuanced: health outcomes are generally pro-cyclical, and education outcomes counter-cyclical.

However, not all studies on the health effects of economic crises in developing countries detect harmful health effects. When comparing the effects of the East Asian crisis in Indonesia, Thailand and Malaysia, Hopkins (2006) finds that while the crisis was associated with (short-lived) increases in the mortality rate in the former two countries, there was little apparent impact on health in Malaysia. Hopkins attributes this differential impact to the fact that the Indonesian and Thai government followed the World Bank prescription for adjustment, which included a cut-back in...
government spending at a time when there were significant job losses, while Malaysia chose its own path to adjustment. If this is a correct assessment, this already raises the importance of the policy response to a crisis in possibly mitigating (or not) the health effects (see below).

Thus, there do appear to be different aggregate health responses to recessions in the rich vs the poor countries. In the current crisis, overall, those rich countries more deeply integrated in the global banking system’s centres were more exposed to toxic debts and the ensuing financial meltdown, whereas the economies of poor countries, after experiencing an initial export shock, appeared to rebound more rapidly. However, poor countries are more vulnerable to economic shocks overall, so that a crisis of similar magnitude would likely do more economic damage in poor than in rich countries. This means, that for a global recession, health differences between poor and rich countries are expected to widen.

**Average health effects vs health equity effects**

The bulk of the studies on the health effects of recessions (or of economic upturns) has focused on population averages, mainly due to constraints in the available data. This is a potentially important shortcoming, as it is very likely that the health of different subgroups of the population will respond differently to a given economic crisis. If the net effect of those responses is an improvement or no change in health in the population on the whole, this may lead policymakers to infer that no specific intervention is needed to counter the health effects. Upon closer inspection, however, there may well be a good reason for intervention, if the health of specific groups is at risk or if health inequities would be rising during recessions.

Edwards (2008) examined mortality by individual characteristics during 1980s and 1990s using the U.S. National Longitudinal Mortality Survey. Overall, individuals with extremely low education (and presumably very low wages and wealth) were at risk of declining health during periods of rising unemployment. Those with a high school degree or more, who presumably have some buffer-stock savings and better prospects of avoiding long-term unemployment, benefited during recessions, perhaps from working less hard or being exposed to less pollution. Those that made up the middle socioeconomic groups tended not to be affected (health-wise) by the recession. Similar evidence of unequal impacts of recession come from other parts of the world. Kondo, Subramanian, and Kawachi (2008) examined the impact of the long lasting economic crisis in Japan during the 1990s on health inequalities between socioeconomic groups using two repeated cross-sectional surveys: from 1986 to 1989 and from 1998 to 2001. Perhaps surprisingly, self-rated health improved in absolute terms for all occupational groups even after the economic recession. However, disaggregated analyses, controlling for confounding factors, showed health inequalities had widened.

In contrast, other findings caution the extent to which unambiguous predictions can be made. Valkonen et al. (2000) document the evolution of inequalities in mortality (by occupational category) in Finland in the 1980s — a period of economic boom — and in the 1990s — over a severe and prolonged recession. While health mortality inequalities widened in both periods, the increase in health inequalities was markedly smaller during the recession of the 1990s than in the 1980s.

Clearly, more research is needed to understand the health equity implications of recessions (and economic upturns). In order to develop at least a more informed hypothesis as to the expected health equity consequences for the current economic crisis, it is perhaps worthwhile to begin by understanding the past impact of recessions on the distribution of incomes per se, Government policies, such as social protection, appear to make a difference to the income inequality effect of a given recession. For instance, the reason why income inequality remained remarkably stable during the economic crisis that hit the Scandinavian countries in the early 1990s has been partly attributed to those countries’ generous levels of welfare support (Aaberge, Bjorklund, & Janitti, 2000). However Aaberge et al point out that increased welfare benefits during the crisis do not fully account for the stability in the income distribution. Also, a recession such as the one experienced in Scandinavian countries may have adverse long term distributional repercussions. First, many unemployed workers might suffer from human capital losses that will reduce their future earnings. Also, the crises were costly for the public sector and resulted in budget deficits. Perhaps the reductions in transfer programmes that were motivated by these budget deficits will turn out to have larger effects on income inequality than the rise in unemployment per se (Aaberge et al., 2000).

**“Normal” fluctuations vs “severe” crises**

A difficulty with interpreting historical data is that the majority of the existing studies at country level do not actually evaluate “recession” per se, but rather base their analyses on routine fluctuations in gross domestic product (Ruhm, 2003, 2006; Tapia Granados, 2008). Economy-health relationships during ‘steady-state’, or normal, business-cycle peaks and valleys may differ substantially from those occurring under exceptional market circumstances, as in an acute financial crisis. Although studies have evaluated routine “business cycles”, they have yet to test properly the theory that “recession” may adversely affect a society’s health. If the current economic crisis is indeed comparable to the Great Depression, the existing research provides limited relevance for forecasting the effects of the current crisis (Catalano, 2009).

In a first attempt to assess whether a “substantial” economic downturn makes any difference compared to a smaller economic downturn, we have looked at the effects of (1) a 1% increase in unemployment rates compared (see Fig. 1a) to (2) a >3% increase in unemployment (see Fig. 1b) in 26 EU countries over the period 1971–2006. The overall health indicators — all cause-mortality and life expectancy — do not appear to be affected. However, some of the cause-specific mortality rates do appear to be affected by the severity of the crisis. For instance the size and (sometimes) the significance of the increase in suicide rates, homicides, alcohol poisoning, psychiatric disorders, liver cirrhosis and ulcers all tend to be greater in the context of “massive” increases in unemployment.

Evidently, these preliminary conclusions require further examination. One interesting avenue of further research would be to code recessions more properly as well as to distinguish different types of “recessions”.

**Physical vs mental health**

Another important dimension of the health consequences of crisis is physical and mental health. It is unlikely that effects of economic shocks would be similar across disease types. Notably, as shown in the above figures, the main causes linked to significant short-term effects all reflect psychological problems, providing support to the notion that mental health is especially likely to be harmed during the course of a recession. Ultimately the potential differential impact on physical vs mental health should be examined with the help of longitudinal micro data rather than through aggregate mortality statistics.
Short term vs long term effects

It is plausible that there is a difference between the short and the long term effects of a crisis. In particular, one might think that any potentially existing short-term positive health effects of a crisis could be more than outweighed by adverse long term health effects. Risks of cancer from a rise in tobacco use as a coping response to stress would require decades to manifest as lung-cancer, although ischaemic heart disease deaths could rise rapidly. Thus, it is important to identify the links of the economic consequences of recession to specific behaviour changes and the temporality of their effects on specific health outcomes. However, few studies have examined the difference between short and long term effects in great detail, a methodologically challenging task, and those studies that have done so, find mixed results.

Ruhm (2000), for instance, has indirectly provided an answer to the question when he looked at the differential health response to economic booms, which he showed to be health damaging in the short run. At the same time though he points out that if growth is long lasting, then the short-term effect will be partially or fully offset. By contrast, Tapia Granados (2005), after careful analysis finds the closest statistical association between current economic fluctuations and current mortality changes, at least in the US data he examined. In our analysis we found that the bulk of mortality increases linked to crisis occurred in the contemporary period. There is also some evidence from the current crisis that suicide risk increased in anticipation of economic shocks (Stuckler, Sanjay, Suhrcke, Coutts, & McKee, 2011), consistent with evidence that fear of job loss may be worse for health than actual unemployment (Perlman & Bobak, 2009).

Crisis with and without a “welfare state”

It is often assumed that social welfare systems will protect against economic downturn. Our review suggests this hypothesis has not yet been demonstrated universally in the literature.

Gerdtham and Ruhm (2006) looked at the potential role of social expenditures as a way to mitigate possible harmful health effects of economic upturns in OECD countries. They found that the effects are particularly harmful for countries with weak social insurance systems (as proxied by public social expenditure as a share of GDP).

While the overall average health impact of recessions at least in high income countries may be positive, we have earlier pointed out the fairly consistent finding of the adverse mental health effect of economic crises, as evidenced by the surge in suicide rates. Would
there then be a role for some form of welfare policy to alleviate any potentially adverse mental health effects?

According to recent findings by Stuckler, Sanjay, Suhrcke, Coutts, and McKee (2009), such a mitigating effect does appear to exist, in a sample of European Union countries analysed for the time period 1970-2007. The study reported that for every US$10 higher national level suggests that the effects may even be positive on average in the short-term, likely resulting from a reduction in road-traffic fatalities outweighing increases in suicides. Nevertheless, the health of population groups particularly hard hit in economic terms, e.g. through lay-offs, is likely to suffer in absolute and/or relative terms (compared with wealthier groups), potentially leading to widening health inequities. It is also likely that specific diseases and cause-specific mortality rates will rise, such as suicide rates, reflecting a significant harmful mental health effect associated with the recession.

In low-income countries, by contrast, it is likely that the global economic crisis does pose a severe threat to overall population health, as people can hardly cushion themselves through their own accumulated wealth, nor can they expect wide-ranging social protection support. In middle-income countries, there may well be no effect in any direction. However, while several countries remain exposed to volatility in food prices and currency fluctuations, the direct consequences of the economic crisis were mainly borne out in a short-term export reduction and most emerging economies have recovered more quickly than those in the global North. Overall, differences in health between rich and poor countries may

Based on our review, for high-income countries, if past experience is any guide, it appears unlikely that the recession will have major negative effects on overall population health indicators, such as all cause mortality or life expectancy. The majority of evidence at national level suggests that the effects may even be positive on average in the short-term, likely resulting from a reduction in road-traffic fatalities outweighing increases in suicides. Nevertheless, the health of population groups particularly hard hit in economic terms, e.g. through lay-offs, is likely to suffer in absolute and/or relative terms (compared with wealthier groups), potentially leading to widening health inequities. It is also likely that specific diseases and cause-specific mortality rates will rise, such as suicide rates, reflecting a significant harmful mental health effect associated with the recession.

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well increase in the current recession as a result of a differential vulnerability in the latter. Because much of the existing evidence focuses on the health effects of ‘normal’ business cycle fluctuations, the actual transferability of those findings to the current, much more than ordinary fluctuation may indeed be limited. One might speculate that the true negative health effects of a recession only materialise with a time lag, possibly more than compensating any immediate beneficial health effects. This is, however, not widely confirmed by those (few) studies that did consider the issue. To summarise a broad conceptual framework, our findings suggest that economic crises have the greatest potential adverse effects on health when: i) economic changes are rapid; ii) social protection and cohesion are weak; and iii) drugs and alcohol are widely available.

The potential foci of policy could be:

a. In high income countries: to prevent health from deteriorating in groups that are at risk of harm to health, such as the unemployed or other lower socioeconomic groups, and to prevent specific health risks from arising in recessions, e.g. psychological health problems.

b. In low-income countries: to protect the health of the general population health from suffering, particularly among those below or near the poverty line (of which there will be many).

How precisely this could be done is a critical question for further research. Some of the literature argues that social protection and more generally “the welfare state” could be one — admittedly very loosely defined — way of mitigating the harmful effects of recessions (as well as of economic booms).

If it is true that in high income countries, overall mortality behaves pro-cyclically, then an alternative, possibly highly controversial view would be that the average welfare gain resulting from a health improvement during the recession could be seen as a way to compensate the welfare loss associated with the economic decline, in the same way as the welfare loss of worsening health in an economic boom would be compensated by the welfare gains resulting from economic growth. Irrespective of the magnitude of these effects, in the current period of austerity in Europe, there is a need to maintain a focus on the multiple losers of the crisis, not only on those who were recipients of the benefits of fiscal stimulus (mainly the financial sector) (Stuckler, Basu, & McKee, 2010). If there are reasons for interventions in high income countries, they may have to relate to specific health conditions (e.g. mental health) and/or specific socioeconomic groups whose health may suffer disproportionately.

Lastly, our findings help disentangle the effects of economic crises from government responses. In some of the countries that were worst-affected by the ongoing crisis of 2008, it appears that austerity policies may be resulting in a set of independent and much greater adverse effects on health than the economic crisis per se; indications from Greece of significant rises in HIV, homicides, suicides, prostitution, and heroin use are sufficient cause for concern and immediate action (Kentikelenis et al., 2011).

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