

## Alcohol and the financial crisis

### Introduction

The financial crisis which started in 2007 has been described by some as the worst financial crisis since the Great Depression of the 1930s, contributing to the failure of key businesses, declines in consumer wealth and significant declines in economic activity [1]. The OECD-wide unemployment rate has increased at an unprecedented pace during the economic crisis [2]. In September 2009, there were 15.7 million more unemployed people in the OECD area compared with the end of 2007. Unemployment is projected to continue to rise until the end of 2010, albeit at a diminishing pace. By then, the number of unemployed people in OECD countries will be almost 21 million higher than at the end of 2007. It may not be until 2011 that unemployment begins to fall in the Euro area.

It might seem obvious that the economic recession and unemployment would have a negative impact on health and well-being. But, at first sight, a reading of the literature might suggest otherwise. For example, an analysis of life and death during the great depression found that overall mortality decreased for almost all ages and life expectancy increased in the US during the four years 1930-1933 [3]. However, this was also the time of prohibition of alcohol, when alcohol consumption [4] and alcohol-related harm [5] fell. Other analyses also suggest that economic downturns do not have negative effects on health, a procyclical fluctuation<sup>1</sup> [6], with suicides an important exception [7]. However, when potentially confounding factors, such as lifestyle risk factors are controlled, then, contrary to other research, strong positive relationships are observed between adverse economic conditions and mortality. Further, data from the experience of Russia has found very powerful relationships between economic crises and alcohol-related deaths [8].

This fact sheet reviews the evidence for a relationship between economic crises and health and concludes that economic crises and consequent unemployment increase the risk of suicide and deaths from alcohol use disorders. The fact sheet continues to review the evidence of what can be done to mitigate the impact of the economic recession and finds evidence that social protection and active labour market programmes reduce the effect of recession.

### The great depression of the 1930s

Tapia Granados & Diex Roux used historical life expectancy and mortality data to examine associations of economic growth with population health for the period 1920–1940 in the United States [3]. They found that life expectancy generally increased throughout the period of study. However, it oscillated substantially with important drops coinciding with strong economic expansions. During the Great Depression, life expectancy rose from 57.1 years in 1929 to 63.3 years in 1933. Of six causes of death that compose about two-thirds of total mortality in the 1930s, only suicides increased during the Great Depression. Cars became increasingly common during the 1920s, and traffic-related mortality increased markedly until 1931, but dropped sharply in 1932, the worst year of the depression. During this time, changes in mortality are likely to be confounded by changes in alcohol consumption, which were not accounted in the analysis of Tapia Granados & Diex Roux [3]. During the period 1919 to 1933, the sale, manufacture, and transportation of alcohol for consumption were banned nationally as mandated in the Eighteenth Amendment to the United States Constitution. Alcohol consumption fell sharply at the beginning of Prohibition, to

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<sup>1</sup> In business cycle theory and finance, any economic quantity that is positively correlated with the overall state of the economy is said to be 'procyclical'. That is, any quantity that tends to increase when the overall economy is growing is classified as 'procyclical'. Quantities that tend to increase when the overall economy is slowing down are classified as 'countercyclical'.

approximately 30 percent of its pre-Prohibition level [4]. During the next several years, however, alcohol consumption increased to about 60-70 percent of its pre-prohibition level. At the same time, drunkenness arrests [9] and liver cirrhosis deaths [5] fell by between 10% and 20%.

#### **OECD countries during the 2<sup>nd</sup> half of the 20<sup>th</sup> century**

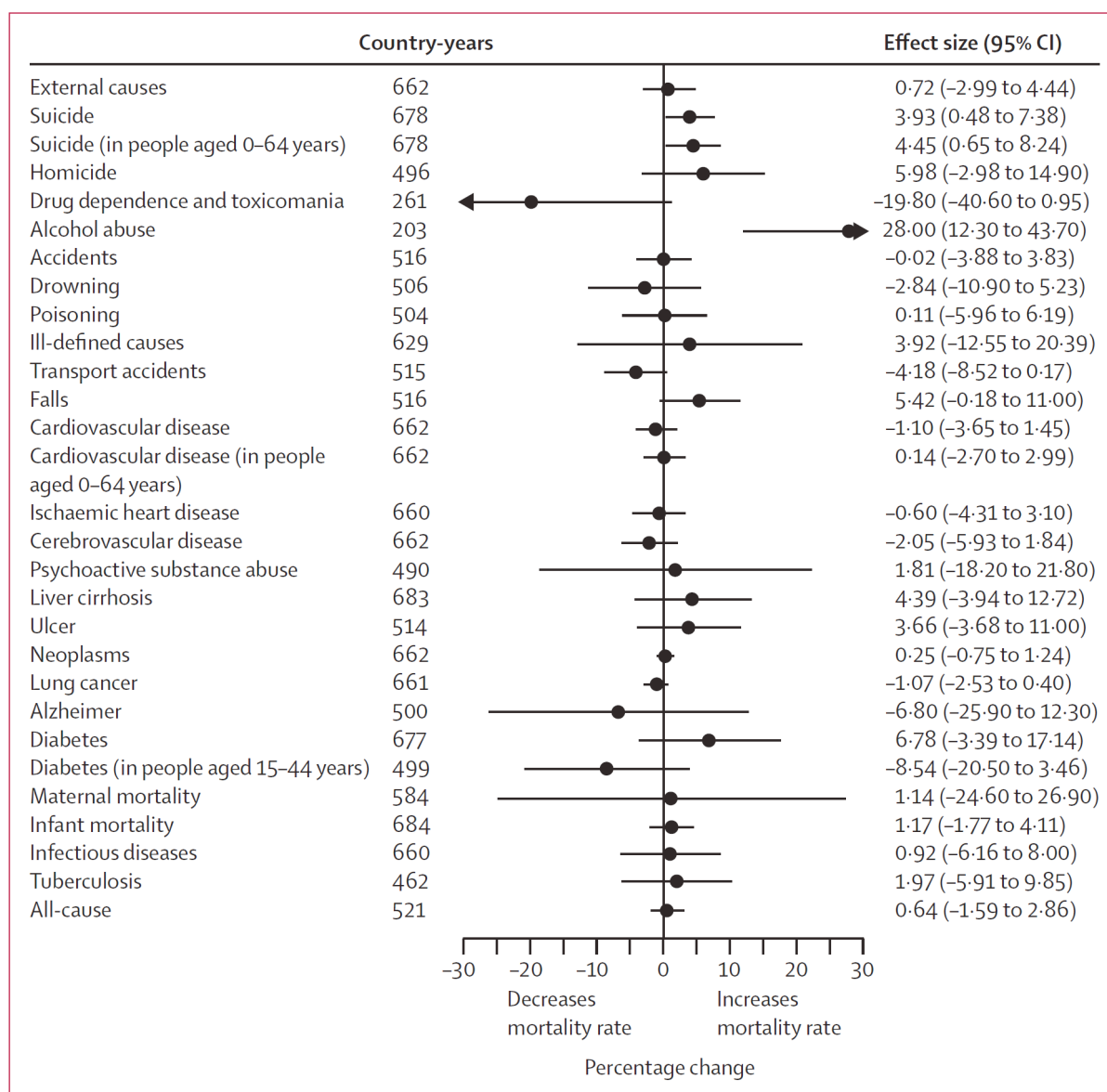
Gerdtham & Ruhm analyzed deaths for 23 OECD countries between 1960 and 1997 [6]. They found that a 1% fall in unemployment was estimated to raise mortality by 0.4%, with increases in liver disease, cardiovascular disorders and respiratory infections. A 1% decline in unemployment was estimated to raise vehicle deaths by 2.1% and mortality from other accidental causes by 0.8% and to lower homicides by 1.1%.

#### **Why might economic upturns worsen health?**

A number of reasons have been proposed why health might worsen with economic upturns [10]. First, healthy lifestyles may deteriorate. Data from the Behavioral Risk Factor Surveillance System (BRFSS) suggests that a strengthening economy is associated with increased smoking and obesity, reduced physical activity, and worse diet [11]. Second, hazardous working conditions, the physical exertion of employment, and job-related stress could have negative effects, particularly when job hours are extended during short-lasting economic expansions [12]. Third, increases in permanent income are expected to have a positive effect on most aspects of health, but income growth, particularly when transitory or occurring in already wealthy countries, may nevertheless be associated with higher risks of some sources of death. For example, individuals drive more when times are good and may be more likely to do so after consuming alcohol, with the result that vehicle fatalities (and possibly other external causes of death) rise when the economy strengthens [13].

#### **European Union studies during the 2<sup>nd</sup> half of the 20<sup>th</sup> century**

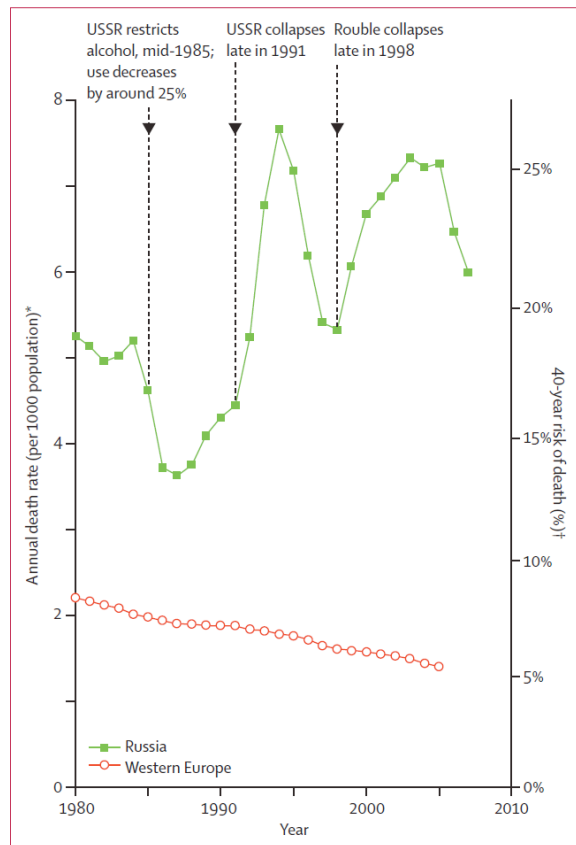
Stuckler and colleagues examined associations between changes in employment and mortality, and how associations were modified by different types of government expenditure for 26 European Union (EU) countries between 1970 and 2007 [14]. They found that a more than 3% increase in unemployment increased suicides at ages younger than 65 years by nearly 5% and deaths from alcohol use disorders by 28%, Figure 1. The analysis found no significant effects of rises in unemployment rates on all-cause mortality rates for any age group, apart from a protective association in men aged 15–29 years, which seemed to accrue from reductions in traffic fatalities that accounted for roughly a third of all deaths in this age group.



**Figure 1** Associations of a >3% rise in unemployment with age-standardized mortality rates by cause of death in European countries 1970-2007. Source: Stuckler et al (2009).

### **Russia in the 1990s**

Russia provides a very interesting, if not dramatic, case study of the impact of economic crises on mortality, particularly deaths from alcohol-related diseases. For example, Figure 2 compares the all-cause mortality rates (averaging male and female) at ages 15-54 years in Russia and western Europe since 1980, with Figure 3 showing that alcohol was responsible for about three-quarters of all male Russian deaths at ages 15-54 years and about half of all female Russian deaths at these ages during the 1990s [8].

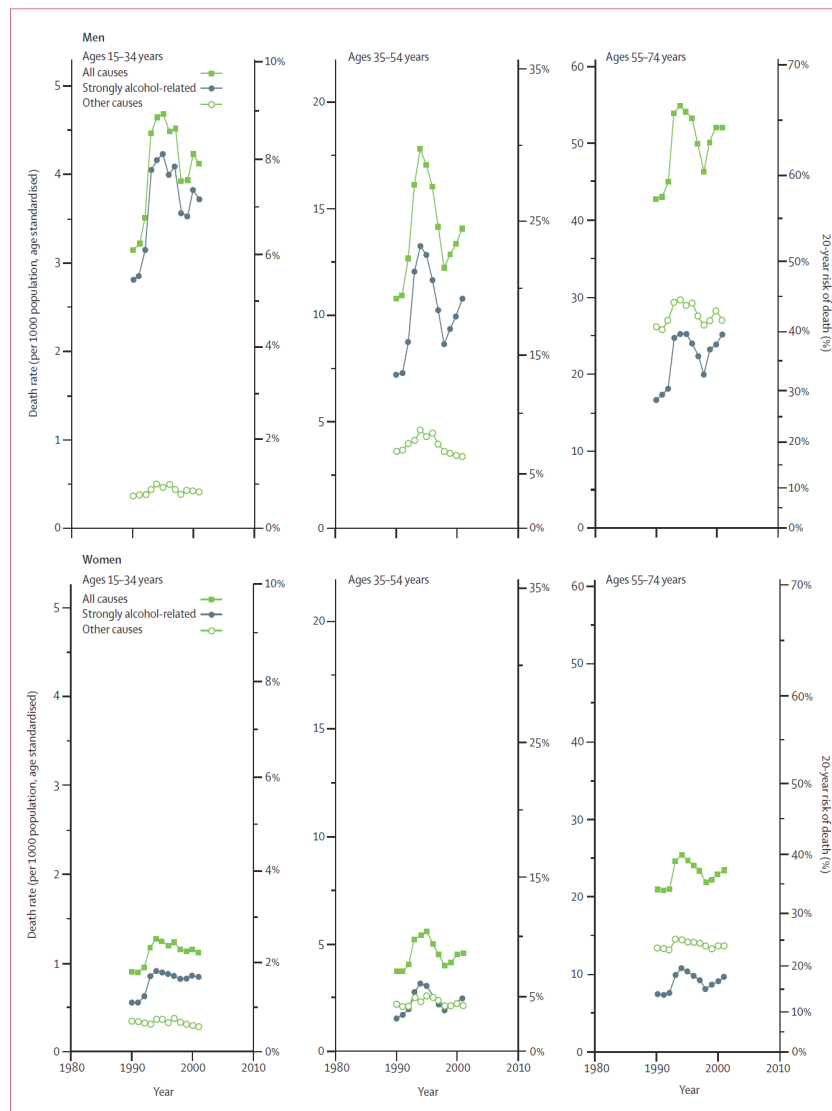


**Figure 1** Mortality from all causes and 40-year risks of death in men and women aged 15–54 years in Russia (1980–2007) and western Europe (to 2005) USSR=Union of Soviet Socialist Republics. Source: [10].

Alcohol consumption had been increasing slowly for many years, then decreased suddenly in mid-1985 as part of the Gorbachev campaign, was minimal during 1986–87 at about three-quarters of pre-1985 levels, increased (slowly, then steeply), and was at a maximum in 1994. During 1992–94, Russian industrial output halved, accompanied by hyperinflation; the rouble then stabilised (1995–98), collapsed (1998–99), and stabilised again.

#### **Why might cyclical downturns worsen health?**

Psychological factors, such as increased levels of stress or depression, are important indirect causes of the excess mortality observed during periods of economic crisis [15]. Such alterations in the psychological status of individuals in periods of economic crisis may derive from uncertainty about the future, as well as from need for adaptation to many changes in life, including work aspects [16]. Moreover, economic crises may be followed by changes in social structure and dissolution of the social safety net, [17] thus contributing to increased psychosocial stress. Such emotional responses may be enhanced within social networks of people having similar concerns. Impoverishment and social instability can also account for increased violence-related mortality during periods of political and economic crisis [18]. On the other hand, accidents related to transportation are expected to decrease because relevant financial restrictions limit the frequency of travel [16].



**Figure 2** Mortality from all causes, from causes strongly related to alcohol, and from other causes in the Altay and Tomsk regions of Russia, 1990–2001.

Multiple factors might interactively mediate the link between the economic crisis and suicide. Stress caused by unemployment and financial problems may lead to depression, a widely documented antecedent of suicide. Furthermore, unemployment itself may contribute to suicide independently of psychiatric illness. A study in Finland showed that as suicide mortality declined during the early 1990s, a period associated with three-fold increases in unemployment, it was felt that declines in suicide were most strongly related to reductions in alcohol consumption [19]. Similarly, rises in suicide rates in the Russian economic crisis in 1998 were attributed in part to increases in alcohol consumption [20].

For the US, Dee examined consumption data from the more than 700,000 respondents who participated in the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS) surveys over the 1984–1995 period [21]. Analysis of the data found that an increase of 5 percentage points in the unemployment rate would reduce drinks per month by roughly 3.5%, and regular drinking participation by roughly 19% showing that cyclical increases in unemployment

are associated with significant reductions in alcohol consumption. In contrast, though, a 5 percentage-point increase in the unemployment rate increased the mean prevalence of binge drinking by roughly 8%.

#### **Social policies that mitigate the impact of recessions**

Stuckler et al (2009) examined how associations between employment and mortality were modified by different types of government expenditure for 26 European Union (EU) countries between 1970 and 2007 [14]. Across countries, the strength of the response of suicide rates to changes in unemployment varied substantially. Although, on average, the correlation between changes in unemployment and changes in the suicide rate was 0.12 ( $p=0.0018$ ), the strength of this relation ranged from  $-0.13$  (Sweden) to 0.59 (Spain). The commitments of the governments of Sweden and Finland to social support during times of crises, for example, through the use of active labour market programmes, could have had a role. One factor modifying the association between unemployment and mortality appeared to be differences in social protection. For every US\$10 higher investment in active labour market programmes there was a 0.04% lower effect of a 1% rise in unemployment on suicide rates in people younger than 65 years. When this spending was greater than US\$190 per head per year (adjusted for purchasing power parity), rises in unemployment were found to have no adverse effect on suicide rates.

#### **The price of alcohol and alcohol-related deaths**

Drinkers respond to changes in the price of alcohol as they do to changes in the prices of other consumer products. When other factors are held constant, such as income and the prices of other goods, a rise in alcohol prices leads to less alcohol consumption and less alcohol-related harm, and vice versa [22]. Increases in the prices of alcohol lead to a reduction in road traffic accidents and fatalities among people of all ages, particularly younger drivers. Increases in alcohol prices also reduce death rates from cirrhosis, intentional and unintentional injuries, workplace injuries and sexually transmitted disease rates. Cirrhosis mortality is responsive to small changes in price: in the United States, increases in taxes have been shown to lead to an immediate reduction, which doubles over the long run. More recent estimates found that a 10% increase in tax in the United States was associated with a 32% decrease in the death rate from cirrhosis [23].

Consistent with this, studies have reported that increases in the price of alcohol result in a reduction in heavy drinking and alcohol dependence. A study of survey data of 43,000 adults in the United States found a price elasticity for heavier drinking of  $-1.325$  ( $p=0.027$ ), for physical and other consequences of drinking of  $-1.895$  ( $p=0.003$ ), and for alcohol dependence of  $-1.487$  ( $p=0.012$ ) [24]. Studies in Alaska found statistically significant reductions in the numbers and rates of deaths caused by alcohol-related disease beginning immediately after alcohol tax increases in 1983 and 2002 [25].

In the United Kingdom, a 10% increase in the price of alcoholic beverages is estimated to lead to a reduction in consumption of 4.4%, with reductions in deaths and hospital admissions, with 12 800 fewer unemployed people and 310 000 fewer sick-days per year [26].

**Conclusions of impact of recessions on death**

In general, the evidence finds that economic recessions either have no impact on or reduce all-cause mortality. They do, however, increase deaths from suicide and alcohol use disorders, sometimes markedly so, but, often, with the number of increased deaths counterbalanced by decreases in deaths from motor vehicle fatalities, simply due to less driving. Although economic recessions seem associated with reductions in the volume of alcohol consumed, there is evidence that particularly risky episodic heavy drinking increases.

Investments in social protection and active labour market programmes can completely mitigate the relationship between economic recession and suicide mortality. Alcohol policy, and particularly policy that increases the price of alcohol, reduces deaths from alcohol use disorders, including deaths from episodic heavy drinking, and reduces unemployment.

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This fact sheet was prepared by Peter Anderson on behalf of the German Centre for Addiction Issues (DHS) as part of the Building Capacity project managed by the Institute of Public Health of the Republic of Slovenia, co-financed by the European Commission.

**With the support of**

Generalitat de Catalunya  
**Departament de Salut**

**Co-financed by**

**European Commission**

