5 UNEMPLOYMENT AND HEALTH

5.1 THE IMPACT OF THE ECONOMIC CRISIS AND JOB LOSS ON HEALTH

PÉTER ELEK, JUDIT KREKÓ & BALÁZS MUNKÁCSY

The impact of economic crises, including that of losing a job, on health indicators is an important subject of the economic literature. The cyclical fluctuations of the economy affect health through several direct and indirect, often conflicting, channels.

The cumulative effect of economic crises – channels and empirical findings

One of the most important channels is unemployment and, in general, the effects of income loss and labour market uncertainty on health. Declining standards of living may directly contribute to deteriorating health, since in poor financial circumstances there are fewer opportunities to live a healthy lifestyle. However, based on the literature, the mental health effects of unemployment and related uncertainties, the so-called "diseases of despair" (*Case–Deaton,* 2020) are likely to be more important than the direct effect of the deterioration of financial standing. Uncertainty about the future, lack of purpose and feelings of futility lead to mental health problems, which may manifest in drug abuse, suicide or alcohol-related liver diseases. *Schwandt–Wachter* (2020) found that cohorts entering the labour market in times of crisis have worse mortality rates even when middle-aged than those entering the labour market during an economic recovery, with diseases of despair playing a key role. *Bíró–Branyiczki* (2020), reviewed in *Subchapter 5.2*, report that the economic transition in Eastern-Europe and the related psycho-social shocks had long-term negative effects on the health of the local populations.

Nevertheless, reductions in economic activity may also improve health. At times of economic downturns, the number of road and occupational accidents and of the resulting deaths declines and health risks related to air pollution also decrease. At times of crisis it is easier to find staff for elderly care, which improves the mortality rate of the elderly. Less work-related stress also boosts health.

What does empirical research say about the overall effect? Aggregate analyses of the year 2008 and earlier economic crises suggest that total mortality is not strongly associated with the economic climate and is rather procyclical (that is, the number of deaths tends to decrease during economic downturns), although the effect strongly depends on the specificities of the crisis. Death rate from accidents is procyclical, while the number of suicides is con-

tracyclical and, among broader health indicators, primarily the deterioration of mental health is found as the result of economic crises.[1] Using Hungarian time series data, *Fountoulakis et al* (2014) found that an increase in unemployment is followed by the increase in suicides in 3–5 years.

Detailed analysis indicates that the slightly procyclical nature of total mortality is primarily due to the death rate of the elderly rather than the death rate of the working age population, implying that it is driven by effects beyond direct labour market factors. These may include a reduction in air pollution during crises or the worsening staff conditions of elderly care during economic recovery (see for example *Stevens et al,* 2015).

The impact of job loss on health

Indeed, the international literature specifically examining the impact of job loss on health mainly finds the increase of mortality and the deterioration of health. Since there may be a two-way causal relationship between changes in health and job loss (on the one hand, deteriorating health may accelerate job loss, on the other hand, job loss itself may impair health), therefore studies on the subject tend to focus on job loss due to plant closures and mass layoffs rather than job loss in general in order to reduce health-related selection (for example *Browning–Heinesen,* 2012). In the basic setup, dismissed workers are matched, using propensity score matching, with employed workers who have similar health and labour market history and then the two groups (treated and control) are followed to compare their mortality and other health indicators. Such analyses confirm the effect of job loss on mental health (for example *Kuhn et al,* 2009, *Schaller–Stevens,* 2015). Analysis of US data typically reveal greater effects than European data (for example *Riumallo-Herl et al,* 2014), which may be due to the fact that job loss in the United States often entails the loss of health insurance.[2]

Hungarian findings

Effect on claiming disability pension. Based on anonymised, linked health and labour market data from 2003–2011 of a 50 percent random sample of the Hungarian population (Admin2), available at the Databank of the Centre for Economic and Regional Studies [CERS (KRTK)], *Bíró–Elek* (2020) used mass layoffs in Hungary to investigate the impact of job loss on mortality and claiming disability pension. In accordance with the international literature, the study found that the mortality rate of those who have lost their jobs in mass layoffs is higher than the mortality rate of the control group, which had similar labour market and health history prior to the time of the job loss. Consequently, this estimate measures solely the impact of job loss on health. Similarly, the probability of claiming disability pension in four years is 1.5 times higher than that of the control group (4.3 per cent versus

1 See for example *Stuckler et al.* (2009), based on data of European countries from the period 1970–2007, the meta-analysis of *Parmar et al.* (2016) on studies exploring the impact of the 2008 crisis in Europe and *Ruhm* (2016), using US data, and the references therein.

2 For example *Schaller–Stevens* (2015) confirmed a reduction in the use of healthcare services among patients with a chronic disease whose employment used to be the primary form of health insurance in the United States.

2.9 per cent). At the time of claiming disability pension, individual inpatient, outpatient and pharmaceutical expenditures nearly triple, then start to diminish but still stay higher than prior to disability retirement. Detailed health data indicate that increased healthcare expenditure is due to the deterioration of physical health, to more frequent diagnoses of chronic diseases (for example hypertension and diabetes) and to the deterioration of mental health (measured by the consumption of medicines of the nervous system, including antidepressants).

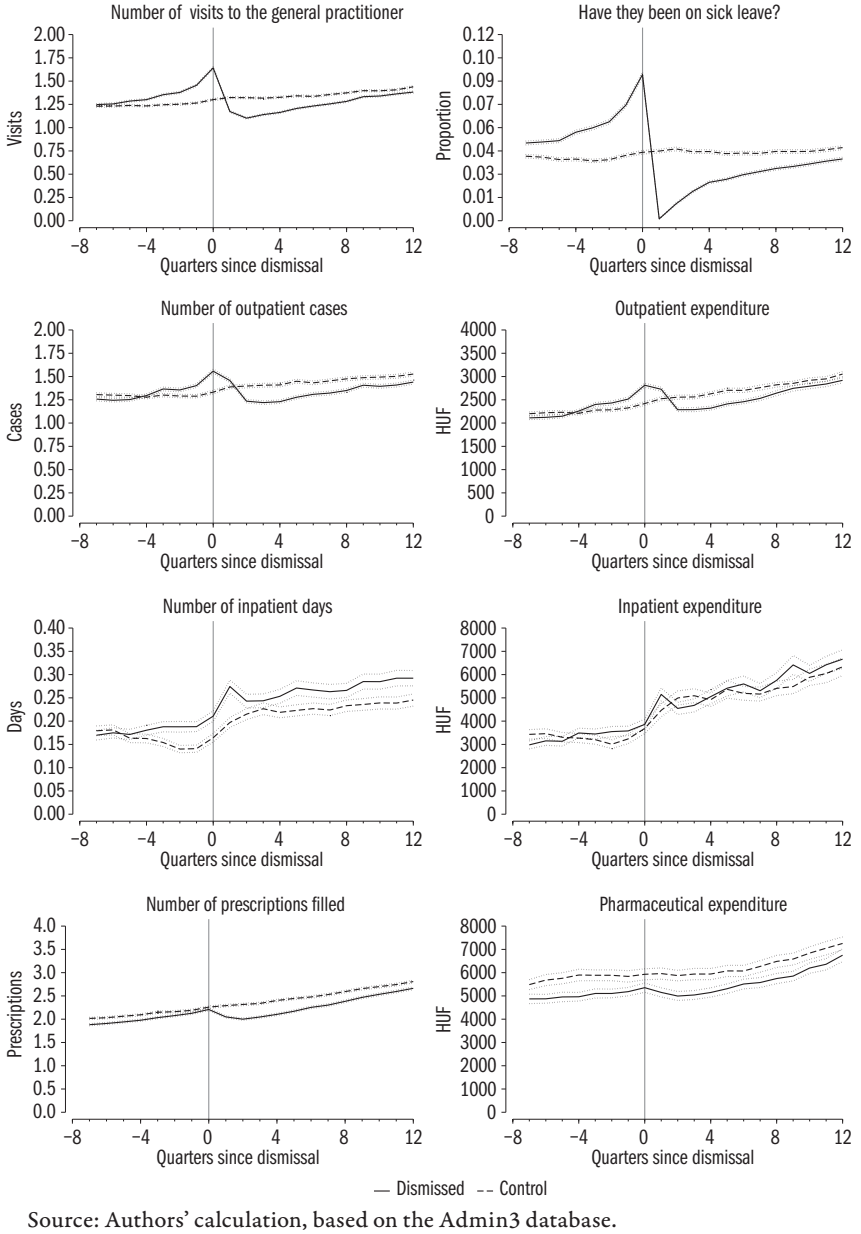
Changes in the health of dismissed workers. The subject of the following analysis is not mass layoffs but individual dismissals, i.e. workers whose employment was terminated during 2011–2014 after a minimum of six months' of continuous employment and who did not start a new job for at least two months but were registered at the local job centre.[3] [We used individual-level labour market and health data from 2009–2017 of the Admin3 database compiled by the CERS (KRTK) Databank.][4] The propensity-matched control group included individuals of the same gender, similar age and employment history (occupational category, size of employer, number of months worked during the past two years and wages). Changes in the health indicators of the two groups over the two preceding years and the next three years were compared. *Figure 5.1.1* presents quarterly usage of the various levels of the healthcare system and the probability of claiming sick pay, *Figure 5.1.2* shows the quarterly proportions of users of four important medicine categories [antihypertensives (medicine for high blood pressure), antidiabetics, psycholeptics (including tranquilizers), psychoanaleptics (including antidepressants)] and *Figure 5.1.3* displays cumulative mortality of the two groups. It must be noted that the majority of dismissed workers find a new job relatively soon: 59 per cent of them are in employment a year later and 75 per cent of them three years later (this proportion is constantly over 90 per cent in the control group).

The Figures show that two years prior to the job loss, dismissed workers are not sicker than the control group: the health indicators of the two groups are similar. Pharmaceutical expenditures (covered by social security and the patients) and the consumption of antihypertensives are lower, while the consumption of psycholeptics and psychoanaleptics is slightly higher among them. Approaching the time of job loss, the number of visits to general practitioners starts to rise steeply (it is 15 per cent higher in the year preceding the job loss than one year prior), the number of workers on sick leave also grows (still only 9 per cent of dismissed workers are on sick leave in the quarter of the job loss) and the use of specialist outpatient care slightly increases. However, those healthcare use variables that better predict health conditions (inpatient and pharmaceutical expenditures) do not change significantly: only the number of days spent in hospital and the consumption of medicines for mental illness increases compared to the control group.

3 The sample excludes those who received old-age or disability pension, parental leave benefit, disability benefit or carer's allowance within two months of dismissal. The age group studied is the 35–54 year-olds, therefore old-age retirement does not play a role in the results.

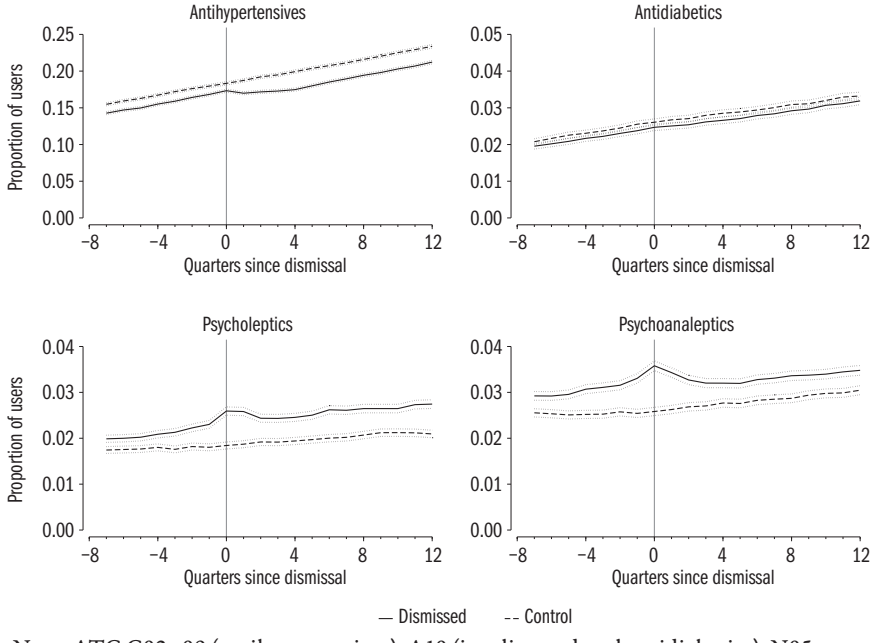
4 For the brief description of the database, see the Annex of *In Focus*, and see *Sebők* (2019) for more detail.

Figure 5.1.1: Quarterly health indicators in the dismissed and the control groups (with 95 percent confidence intervals)



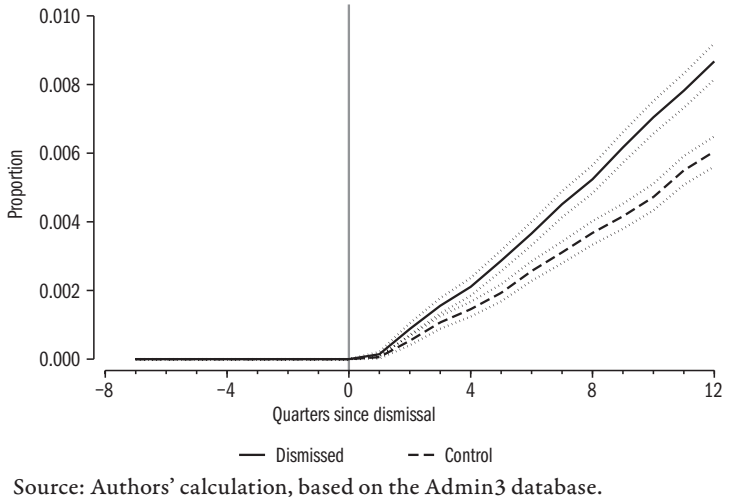
Source: Authors' calculation, based on the Admin3 database.

Figure 5.1.2: Quarterly proportions of users of four medicine categories in the dismissed and control groups (with 95 percent confidence intervals)



Note: ATC C02–09 (antihypertensives), A10 (insulins and oral antidiabetics), N05 (psycholeptics, including tranquilizers), N06 (psychoanaleptics, including antidepressants).
Source: Authors' calculation, based on the Admin3 database.

Figure 5.1.3: Quarterly cumulative mortality rates in the dismissed and the control groups (with 95 percent confidence intervals)



Source: Authors' calculation, based on the Admin3 database.

After job loss, visits to general practitioners and outpatient care as well as pharmaceutical consumption drop. The consumption of antihypertensives decreases permanently by one percentage point and more detailed data (not presented herein) indicate that both the share of newly diagnosed patients starting antihypertensives and the share of those continuing their antihypertensive treatment decline compared to the control group. There is no such drop in the consumption of antidiabetics, which in the age group of 35–54 year-olds are mostly used for type 1 diabetes requiring an extremely precise therapy. At the same time, the consumption of psycholeptics (including tranquilizers) remains permanently higher by 0.3 percentage point. *Figure 5.1.3* shows that at the end of the third year the cumulative mortality of dismissed workers is 1.4 times that of the control group but is still relatively low, below 1 per cent. In accordance with the relevant literature, the differing dynamics of the consumption of various types of medication suggest that unemployment affects health and the use of healthcare through various, sometimes divergent, channels. The increasing consumption of psycholeptics and psychoanaleptics may reflect the negative effect of unemployment on mental health.

Our analysis does not necessarily estimate the pure causal effect of job loss on health because it is possible that some of the dismissed workers, defined above, left employment for health reasons, as opposed to those dismissed in mass layoffs. Nevertheless, the advantage of the approach adopted here is that we were able to investigate the potential selection of dismissed workers based on their health conditions by analysing their health indicators before the job loss. Increases in the visits to general practitioners, sick pay and medication for mental illness prior to unemployment may have several reasons. It is possible that the job loss is anticipated and the fear of dismissal has a detrimental impact on health, especially mental health. Increases in sick leave may be due to the regulation that the notice period of staff on sick leave commences after the end of the sick leave but not later than one year after the first 15 days of the sick leave period. It is also possible that employers are more likely to dismiss workers who take sick leave frequently.

References

BÍRÓ, A.–BRANYICZKI, R. (2020): Transition shocks during adulthood and health a few decades later in post-socialist Central and Eastern Europe. BMC Public Health, Vol. 20, No. 698.

BÍRÓ, A.–ELEK, P. (2020): Job loss, disability insurance and health expenditure. Labour Economics, Vol. 65, No. 101856.

BROWNING, M.–HEINESEN, E. (2012): Effect of job loss due to plant closure on mortality and hospitalization. Journal of Health Economics, Vol. 31, No. 4, pp. 599–616.

CASE, A.–DEATON, A. (2020): Deaths of Despair and the Future of Capitalism. Princeton University Press.

FOUNTOULAKIS, K. N.–GONDA, X.–DÖME, P.–THEODORAKIS, P. N.–RIHMER, Z. (2014): Possible delayed effect of unemployment on suicidal rates: the case of Hungary. Annals of General Psychiatry Vol. 13, No. 12.

KUHN, A.–LALIVE, R.–ZWEIMÜLLER, J. (2009): The public health costs of job loss. Journal of Health Economics, Vol. 28, No. 6, pp. 1099–1115.

PARMAR, D.–STAVROPOULOU, C.–IOANNIDIS, J. P. A. (2016): Health outcomes during the 2008 financial crisis in Europe: systematic literature review. British Medical Journal, Vol. 354, i4588.

RIUMALLO-HERL, C.–BASU, S.–STUCKLER, D.–COURTIN, E.–AVENDANO, M. (2014): Job loss, wealth and depression during the Great Recession in the USA and Europe. International Journal of Epidemiology, Vol. 43, No. 5, pp. 1508–1517.

RUHM, C. J. (2016): Health effects of economic crises. Health Economics, Vol. 25, pp. 6–24.

SCHALLER, J.–STEVENS, A. H. (2015) Short-run effects of job loss on health conditions, health insurance, and health care utilization. Journal of Health Economics, Vol. 43, pp. 190–203.

SCHWANDT, H.–VON WACHTER, T. M. (2020) Socioeconomic decline and death: midlife impacts of graduating in a recession. NBER Working Paper, No. 2663.

SEBŐK, A. (2019): The Panel of Linked Administrative Data of KRTK Databank. Working Papers on the Labour Market (BWP) 2019/2. Institute of Economics, Centre for Economic and Regional Studies, Budapest.

STEVENS, A. H.–MILLER, D. L.–PAGE, M. E.–FILIPSKI, M. (2015): The best of times, the worst of times: Understanding pro-cyclical mortality. American Economic Journal: Economic Policy Vol. 7, No. 4, pp. 279–311.

STUCKLER, D.–BASU, S.–SUHRCKE, M.–COUTTS, A.–MCKEE, M. (2009): The public health effect of economic crises and alternative policy responses in Europe: an empirical analysis. Lancet, Vol. 374, pp. 315–323.