Article

The Global Economic Crisis, Economic Distress, and Mental Health in Poland

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Abstract

Whereas it is well-established that socioeconomic conditions impact self-reported mental health in Central and Eastern Europe, it is less well-known how the Global Economic Crisis and changes to specific features of economic security influence mental health outcomes. I use the 2003, 2008, and 2013 waves of the Polish Panel Survey POLPAN to examine the relationship between economic distress, defined as being unable to provide basic necessities for one's self or family, as well as being unemployed, and two mental health outcomes. I find that, net of other factors, Poles under economic distress reported substantially worse emotional health and greater social isolation. I found that the Global Economic Crisis had a small but not profound effect on mental health, and unemployment had an effect only in 2008. In 2008 and 2013, being unable to provide basic necessities for one's self or family was strongly associated with worsened mental health, other things equal.

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Introduction

It is well-established that socioeconomic conditions impact self-reported mental health (Cutler and Lleras-Muney 2006), even in Central and Eastern Europe (Alvarez-Galvez et al 2013; Kaleta et al 2008). In general, people living in Eastern European countries were more likely to self-report a poor state of health (see also Koziel et al 2010 and Kaleta et al 2008). Alvarez-Galvezet al (2013) found a positive association between socio-economic status and self-rated help using the European Social Survey. Yet, what is less well-known is how a sudden macro-level change in the economy – the Global Economic Crisis – and changes to specific features of economic security influence mental health outcomes in this region of the world. My contribution is to examine the concept of economic distress, defined as being unable

to provide basic necessities for one's self or family, as well as being unemployed, and the extent to which it affects peoples' wellbeing net of other factors. I focus on Poland and use panel survey data spanning the period 2008 -2013.

Theory and Hypotheses

Many studies have been conducted on the relationship between education and health. Cutler and Lleras-Muney (2006) evaluate the different theories and evidence that have surfaced from various studies to give their theory on the relationship between the two variables. From the data they analyzed they were able to draw conclusions. One conclusion being that individuals with higher education were less likely to die within five years from the time they were interviewed in surveys about self-reported health. Along with a lower mortality rate, they were less likely to suffer from common acute and chronic diseases like heart conditions, strokes, cholesterol, diabetes, etc. Another trend found was that those with a higher education were less likely to report poor health, anxiety, or depression. Furthermore, not only did the more educated seem to have better health statuses, it was found that those with more education were less likely to engage in unhealthy behavioral factors like smoking, drinking, obesity, or use of illegal drugs. Additionally, those with more education were more likely to take preventative steps to preserve good health, like getting vaccinated. Overall, Cutler and Lleras-Muney could conclude that more education ultimately correlated with better health status across all groups -men and women, blacks and whites, rich and poor- although sometimes these results varied, on average they were the same.

While there is a clear link between mental health and socioeconomic status (often measured as income and education) scholarship on the impact of economic distress on mental health is mixed. Schmitz (2010) analyzed the effects of unemployment on health using the German Socio-Economic Panel from 1991-2008 as the source of data. Using these panel data, they measured mental health with satisfaction with health, the Mental Component Summary Scale, and the number of hospital stays over the four years. Schmitz (2010) concluded that unemployment does not directly worsen mental health. Country specific effects may influence this relationship. He suggested that Germany has an unemployment insurance system in which those who become unemployed still have health insurance benefits and are better able to maintain a good health status.

The impact of economic distress may be influenced by global economic conditions. Drydakis (2014) analyzed the relationship between mental health and the rates of unemployment before (2008-2009) and during (2010-2013) the economic recession in Greece. Drydakis used the Longitudinal Labor Market Study to test two hypotheses; (1) that unemployment would result in a lower health status, and (2) that during the recession period unemployment would result in higher deterioration of mental health status compared to the time before the recession. Drydakis concluded that both hypotheses received empirical support, and that there is a correlation between unemployment and the unemployed having worse health statuses than those who were employed. Furthermore, Drydakis found that not only do the unemployed have a higher deterioration of mental health, but there was a gender effect: women are more likely to have greater mental health deterioration then men.

Paul and Moser (2009) analyzed how demographics and unemployment are associated with mental health. Paul and Moser (2009) included gender, socioeconomic status, ethnic minority vs. ethnic majority, marital status, age, duration of employment, economic development between different countries, unemployment protection, and labor market opportunities. Overall, they found that those who were unemployed were more likely to have worse mental health than those employed, but when the unemployed became reemployed, they experienced improved mental health.

Koziel, Lopusza´ñska, Szklarska, and Lipowicz (2010) analyzed how unemployment is related to the risk of cardiovascular disease in Poland after the change into a free-market economy. To analyze this relationship, they collected data from participants that included the following: a consultation with a cardiologist, a resting electrocardiogram, an assessment of vital signs, a measurement of body fat, standard laboratory tests (including fasting plasma levels of glucose, total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides) and lastly participants filled out a questionnaire regarding education level, professional career, various actual life-style elements,

and the family's social status. After analyzing the data collected, the study found a relationship between unemployment and cardiovascular disease in which the risk of getting cardiovascular disease was elevated.

Validity of Self-Rated Health

Self-rated health has been shown to be a useful research method for looking into socio-epidemicological studies. Alvarez-Galvez, Rodero-Cosano, Motrico, Salinas-Perez, Garcia-Alonso, and Salvador-Carulla (2013) examined the association between socio-economic status and self-rated health using European Social Survey 2002-2008. Respondents were asked about their personal health and gave ratings on a scale from 1-5 (1 being very bad and 5 being very good). In general, Northern European countries were likely to self-report a better general state of health, and people living in East European countries were more likely to self-report a poor state of health. More specifically, the research indicated that income-related health inequalities had increased in Eastern, Northern and in Central European countries, where in Southern countries there was not a clear difference between people with high and low incomes. Furthermore, the study found that a higher education will ultimately positively impact the self-reported health of individuals in all countries in the earlier years of the survey; but the trend ultimately decreases as the years pass.

Kaleta, Makowiec-Dabrowska, and Jegier (2008) studied the surveys of 460 men and 508 women who self-rated their health on a scale of 0-100, where the higher the score, the better the heath. They also broke down the group into sub categories, including education levels, height, and habits like smoking and drinking. Poles were more likely to report bad health in comparison to citizens of other East European countries and the United States. Overall, the conclusion of the study was that those who were employed tended to be better off health wise as opposed to those who were unemployed.
Drawing on this literature, I pose the following research hypotheses:

Hypotheses

Hypothesis 1: Net of other factors, people under economic distress will report poorer emotional health.
Hypothesis 2: Net of other factors, people under economic distress will report higher social isolation, an indicator of mental health.

Data, Variables, and Methods

In this paper, I use data from the Polish Panel Survey, POLPAN, which was initiated in 1988 on a representative sample of residents of Poland aged 21 – 65 years. Respondents were re-interviewed every five years thereafter, with renewal samples of young Poles (aged 21-25 years) added since 1998 (Slomczynski et al 2015). The latest POLPAN wave is currently in the field. The POLPAN study focuses on changes in the social structure. It contains, among others, measures of socioeconomic status, economic distress, and mental health, along with demographics such as gender, age, marital status and family composition.

For analyses included in this paper, I use data from the 2003, 2008 and 2013 waves of POLPAN. This allows me to measure respondents characteristics prior to, during and after the 2008 Global Economic Crisis.
To measure mental health, I use two types of indicators. In 2003, POLPAN contains information on respondents' self-reported psychological mood. Respondents rated their own psychological mood on a scale of 1=very good, 2=rather good, 3=rather bad, and 4=very bad. Starting with 2008, POLPAN respondents completed the Nottingham Health Profile (NHP), which contains, among others, a battery of survey items evaluating respondents' mental health. I focus on those parts of the NHP scale that deal with two dimensions of mental health: "emotional problems" and "social isolation." Each of these two dimensions contains a set of binary items (response category of "yes," or "no").

Emotional health and social isolation variables for 2008 and 2013 respectively, are constructed such that the higher the score, the greater the reported problems in emotional health and the greater the social isolation. In other words, the higher the score, the worse the mental health. Some argue that items

within the NHP should be differentially weighted (Papsteri and Neagoe 2016: 42). For example, based on the weights reported in Papsteri and Neagoe (2016: 42), a "yes" to the item "I feel that life is not worth living" had a weighted value of 16.21 out of 100. To measure "emotional problems" I added all of the weighted NHP items of emotional health. A value of 0 indicates that an individual has no emotional health problems, and a value of 100 would indicate very bad emotional health. I constructed the indicator of "social isolation" in a similar way.

The main independent variable is economic distress measured at different times in respondents' lives. POLPAN contains the following set of questions related to financial difficulties: "In the last twelve months, were there financial problems in your household such that there was not enough money for: (a) food? (b) utilities – rent, electricity, and other?; (c) culture – press, books, cinema, theater?; (d) leisure time, including vacation?; (e) medical care, including medication?; (f) education?; (g) entertainment in your free time?" From among them, I selected the items dealing with food-related financial problems and financial difficulties in paying for utilities. I used these to construct, for 2003, 2008 and 2013 a new set of variables, 'basic economic distress' that measure whether respondents reported food-related financial problems and financial difficulties in paying for utilities. In addition, I created indicators of medical financial distress.

Next to basic economic distress and medical financial distress, I account for respondents' employment status, marital status, household income, education, gender, and age. The descriptive information for the Dependent Variables, the Independent Variables and Controls are provided in Table 1 and 2.
To examine the extent to which the data support my hypotheses, I use multivariate linear regression analyses. Since the same people are measured repeatedly through time, regression models are estimated with robust standard errors (using the vce(robust) option in STATA).

Results

The first set of analyses pertains to Hypothesis 1, which states that economic distress will lower peoples' emotional health, other things equal. I measured emotional health in two time points, 2008 and 2013, respectively. Results from the regression analyses support the research hypothesis: generally, greater economic distress fosters higher mental health problems, even when other factors that would influence mental health outcomes are controlled for. It is worth remembering that, for any formulation of the dependent variable, its values range from 0 to 100, with higher scores indicating more serious health problems.Table 3 shows the results for the linear regression analysis of respondents' emotional health as they reported it in 2008. I present two regression models. In Model 1, I do not control for respondents' medical financial distress (measured for 2008), while in Model 2 I do. Overall, both models perform well and explain between 24% (Model 1) and 25% (Model 2) of variation in respondents' emotional health problems.

According to both model specifications, people who in 2003 reported being in bad psychological mood, compared to Poles who reported good mood, fared worse in terms of their emotional health five years down the line, other things equal (e.g., in Model 2 we see that bad psychological mood in 2003, as opposed to good mood, triggered an increase of 12.77 points on the emotional problems score in 2008).

The relationships between all economic indicators on one hand, and emotional health problems on the other, are statistically significant, although the strength of this relations vary. In both Models 1 and 2, more economic hardship is linked to greater emotional health problems. To illustrate, looking at Table 3, Model 2, we see that net of other factors, people who in 2003 faced economic distress, in comparison to those who did not, had a 4.20-point increase in their emotional health problems score in 2008. Being unemployed also mattered: respondents who were not working in 2008, in comparison to the employed, had more emotional health problems. People with higher household income (in 2003) scored lower on emotional health problems ($p<0.05$), while being in medical financial distress (as measured in 2008), in comparison to not being under distress, had a higher score on emotional health ($b = 4.38$ points of the scale).

Demographic characteristics of respondents are also important. As amply shown in the literature, people with higher education report significantly fewer emotional health problems, all else equal. Controlling for other factors, respondents who at the time

of the 2008 survey were married or in a long-term relation and living with their partner reported slightly better emotional health than the rest (divorced, never married and not cohabiting, and the widowed). This effect was statistically significant one-tailed, at an alpha level of 0.1. A similarly weak result is present for gender: compared to men, women reported slightly higher emotional health issues, other things equal. The effect of age (older people report more health problems, Model 1) washes out once I control for medical financial distress (Model 2).

Tables 4 and 5 present results for the regression of self-reported emotional health problems in 2013 on selected independent variables and controls. The set-up of the analyses is slightly different than for 2008: for one, I include medical financial distress in both regression models. Second, I take into account basic economic distress measured in 2008 (Table 4), and in 2013 (Table 5) as I control for peoples' emotional health in 2008. It should be pointed out that 2008 emotional health is a powerful predictor of health outcomes in 2013 (the beta coefficient for this variable is the largest in both regression models), and washes out the significance of many of the independent variables and controls (see Appendix 1 for the analyses without 2008 emotional health).

According to results in Table 4 and Table 5, one can see that the impact of gender is robust: net of other factors, women report more health problems then men do, and medical financial distress significantly worsens respondents' emotional health. From Table 5 we see that if basic economic distress is not lagged (i.e. it is measured in 2013, and not 5 years earlier), its detrimental impact for emotional health is present even if characteristics of the respondents, such as their earlier health status, gender, education, age or marital status accounted for.

Next, analyses engage with the second research hypothesis. Hypothesis 2 stated that persons under economic distress should face greater social isolation, other things, emotional health included, equal. I present results for social isolation in 2008 in Table 6, and for social isolation in 2013 in Table 7. Results only partially support this expectation. For the regression of social isolation in 2008 on the selected independent variables, only the impact of unemployment is statistically significant: net of other factors, being unemployed in 2008 increased social isolation by 4.50 points of the scale (see Table 6). The strongest effect (cf. beta coefficients) is that of marital status, as married or cohabiting people report significantly lower social isolation.

For the 2013 model (Table 7), I added medical financial distress, while controlling for respondents' social isolation and emotional health in 2008. Everything else equal, people in medical financial distress in 2013 reported higher social isolation than those not in medical financial distress. The effect is substantial and statistically significant. In this model too, the strongest predictor remains marital status (cf. beta coefficients)..

Conclusion and Discussion

The purpose of this article was to investigate how economic distress is associated with peoples' reported mental health, as reflected in their emotional health and extent of social isolation. I focused on Poland around the time of the 2008 Global Economic Crisis and afterward. Drawing on the literature, I proposed two research hypotheses. The first hypothesis proposed that economic distress would negatively impact a respondent's emotional health, all else equal. There is empirical support for this hypothesis. Taking into consideration a person's economic distress characteristics from the previous wave onto their current emotional health state, gave the perspective of how the economic crisis in 2008 truly affected peoples mental health. Results of the regression of emotional health in 2008 show that people who were under basic economic distress in 2003 reported worse emotional health. Results from the 2013 regression - which took into consideration the respondents being under economic distress in 2008 during the crisis – are similar in this regard, although controlling for earlier emotional health problems clearly matters. Basically, we learn that economic distress operates both directly, and indirectly, though the effects on emotional health measured in 2008.

The second hypothesis, which stated that people under economic distress would have higher degrees of social isolation, net of other factors, received partial support. In 2013, respondents under medical financial distress were socially more isolated than those not under medical financial distress, other things equal.

I note that unemployment did not have a consistently significant association with mental health,

when controlling for other variables. It increased mental health problems only in 2008, but not in 2013.

We now know better how the Global Economic Crisis and changes to specific features of economic security are associated with mental health outcomes in Poland. The Crisis did not have a profound effect. Yet, it is clear that specific indicators of economic distress – food, utilities, and medical financial distresses in particular - do have profound effects on the mental health of Poles.

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Tables

Table 1. Major Independent and Dependent Variables

Variable (Year in POLPAN)	Mean	Standard Deviation	N
Emotional Health (2008)	13.84	20.29	1695
Social Isolation (2008)	5.25	13.21	1760
Emotional Health (2013)	15.50	21.40	1521
Social Isolation (2013)	5.76	14.92	1636
Self-Evaluation of psychological mood (2003)	2.00	0.62	1692
Basic Economic Distress (2003)	0.38	0.49	1699
Unemployment (2003)	0.16	0.37	1699
Basic Economic Distress (2008)	0.19	0.39	1805
Unemployment (2008)	0.05	0.21	1805
Basic Economic Distress (2013)	0.21	0.40	2581
Unemployment (2013)	0.10	0.30	1635

Table 2. Control Variables

Variable (year in POLPAN)	Mean	Standard Deviation	N
Age (2008)	46.76	16.80	1805
Martial Status (2008)	0.33	0.47	1805
Household income (2008)	1128.24	938.92	1460
Education (2008)	11.91	3.65	1805
Age (2013)	47.30	17.27	2581
Household income (2013)	4323.95	4810.91	2021

Table 3. OLS Multivariate Regression of Emotional Health in 2008 on Selected Independent Variables

Emotional Health, 2008 -Model 1			
Independent Variables	B	Robust SE	Beta
Psychological Mood, (1=bad, 0=other) 2003	13.35**	2.32	0.21
Basic Economic Distress, 2003 (yes = 1 else=0)	6.15**	1.40	0.14
Unemployment, 2008 (1=Not working, 0=else)	10.15**	4.00	0.09
Gender (woman=1)	2.08+	1.13	0.05
Age, 2008	0.39**	0.03	0.28
Marital status, 2008 (1=married/cohabit, 0=else)	-1.39+	0.73	-0.06
Education, 2003	-0.84**	0.20	-0.12
Household Income, 2003	-0.002*	0.00	-0.06
Constant	3.38	3.10	
Fit Statistics	F = 33.71 (df =8, 1095) R^2 = 0.241 Root MSE = 18.85		
Emotional Health, 2008 – Model 2			
	B	Robust SE	Beta
Psychological Mood, (1=bad, 0=other) 2003	12.77**	2.36	0.20
Basic Economic Distress, 2003 (yes = 1 else=0)	4.20**	1.60	0.09
Unemployment, 2008 (1=Not working, 0=else)	9.84**	4.01	0.09
Gender (woman=1)	2.02+	1.13	0.05
Age, 2008	0.37**	0.03	0.26
Marital status, 2008 (1=married/cohabit, 0=else)	-1.37+	0.73	-0.06
Education, 2003	-0.77**	0.20	-0.11
Household Income, 2003	-0.001*	0.00	-0.05
Medical Financial Distress, 2008	4.38**	1.61	0.10
Constant	2.69	3.06	
Fit statistics	F = 30.88 (df =9, 1094) R^2 = 0.247 Root MSE = 18.77		

N = 1104; ** p< 0.01; *p < 0.05 ; + p< 0.1

Table 4. OLS Regression of Emotional Health 2013 on Selected Independent Variables

Independent Variables	Emotional Health Problems, 2008		
	b	Robust SE	Beta
Emotional Health, 2008	0.49**	0.06	0.434
Basic Economic Distress, 2008 (yes = 1 else=0)	1.25	2.25	0.02
Unemployment, 2013 (1=Not working, 0=else)	0.75	3.91	0.01
Gender 2013(woman=1)	2.72+	1.56	0.06
Age, 2013	0.03	0.07	0.02
Marital status, 2013 (1=married/cohabiters, 0=else)	0.39	2.10	0.007
Education, 2008	-0.24	0.26	-0.04
Household Income, 2008	-0.00	0.00	-0.02
Medical Financial Distress 2013	13.34**	2.61	0.24
Constant	5.82	5.97	
Fit Statistics	F = 20.30 (df =9, 534) R^2 = 0.353 Root MSE = 17.31		

N = 547; ** p< 0.01; * p < 0.05 ; + p< 0.1

Table 5. OLS Regression of Emotional Health 2013 on Economic Distress and Selected Independent Variables

Independent Variables	Emotional Health Problems, 2013		
	b	Robust SE	Beta
Emotional Health, 2008	0.45**	0.06	0.42
Basic Economic Distress, 2013 (yes = 1 else=0)	6.86**	2.93	0.13
Unemployment, 2013 (1=Not working, 0=else)	-0.64	3.91	-0.01
Gender 2013(woman=1)	2.92+	1.56	0.07
Age, 2013	0.07	0.07	0.04
Marital status, 2013 (1=married/cohabit, 0=else)	0.82	2.12	0.02
Education, 2008	-0.21	0.26	-0.03
Household Income, 2008	-0.00	0.00	-0.01
Medical Financial Distress, 2013	10.48**	3.08	0.19
Constant	2.65	5.88	
Fit statistics	F =23.92 (df =9, 537) R^2 = 0.363 Root MSE =17.38		

N = 547; ** p< 0.01; * p < 0.05 ; + p< 0.1

Table 6. OLS Regression of Social Isolation 2008 on Economic Distress in 2003 and on Selected Independent Variables

Independent Variables	Social Isolation, 2008		
	b	Robust SE	Beta
Psychological Mood (1=bad), 2003	5.03**	1.48	0.12
Basic Economic Distress, 2003 (yes = 1 else=0)	1.20	0.85	0.04
Unemployment, 2008 (1=Not working, 0=else)	4.50+	2.43	0.06
Gender 2008 (woman=1)	-0.19	0.75	-0.01
Age, 2008	0.16**	0.03	0.17
Marital status, 2008 (1=married/cohabit, 0=else)	-5.68**	0.58	-0.35
Education, 2003	-0.36**	0.12	-0.08
House Hold Income, 2003	-0.0001	0.00	-0.02
Constant	9.31	2.18	
Fit statistics	F = 20.91(df =8, 1144) R^2 = 0.21 Root MSE = 12.508		

N = 1153; ** p< 0.01; * p < 0.05 ; + p< 0.1

Table 7. OLS Regression of Social Isolation 2013 on Economic Distress in 2008 and on Selected Independent Variables

Independent Variables	Social Isolation, 2013		
	b	Robust SE	Beta
Social Isolation 2008	0.27*	0.12	0.21
Emotional Health, 2008	0.15*	0.06	0.20
Basic Economic Distress, 2008 (yes = 1 else=0)	0.79	1.68	0.02
Unemployment, 2013 (1=Not working, 0=else)	-2.19	2.96	-0.04
Gender 2013 (woman=1)	0.70	1.18	0.02
Age, 2013	0.00	0.05	0.00
Marital status, 2013 (1=married/long-term cohabiting; 0=else)	-8.37**	2.15	-0.22
Education, 2008	0.04	0.18	0.01
House Hold Income, 2008	0.00	0.00	0.00
Medical Financial Distress, 2013	5.01*	2.07	0.13
Constant	7.11	4.45	
Fit statistics	F = 6.96 (df =10,548) R^2 = 0.26 Root MSE = 13.22		

N = 559; ** p< 0.01; * p < 0.05 ; + p< 0.1

Appendix 1:

OLS Regression of Emotional health 2013 on selected independent variables, without controlling for emotional health in 2008

Independent variables	b	Robust Std. Err.	p	Beta
economic_distress_basic08	7.347	2.399	0.002	0.138
unemployed13	2.108	4.061	0.604	0.024
gender13	4.285	1.688	0.011	0.100
age2013	0.185	0.078	0.018	0.095
marr_coh13	-0.905	2.338	0.699	-0.017
eduyrs13	-0.595	0.282	0.035	-0.093
hhincome08	-0.001	0.001	0.073	-0.058
financial_medical13	16.448	2.818	0.000	0.296
constant	8.443	6.625	0.203	.

N	=	559
F(8, 550)	=	12.98
R-squared	=	0.21
Root MSE	=	19.287