

The Effect of Economic Insecurity on the Mental Wellbeing of New Zealanders



DAWNELLE V. CLYNE, PHD CANDIDATE (JOINT WITH TRENTON G. SMITH)
DEPARTMENT OF ECONOMICS, UNIVERSITY OF OTAGO, DUNEDIN, NZ
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Statistics New Zealand Disclaimer

Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the authors, not Statistics New Zealand.

What is Economic Insecurity?

- ▶ **Economic Insecurity** – The risk of suffering unbuffered economic loss.
- ▶ **How is Economic Insecurity Measured?**
 - ▶ **Economic Security Index (ESI):** An annual index that represents the share of individuals in New Zealand who experience at least a 25 percent decline in their inflation-adjusted household income from one year to the next (except when entering retirement) and who lack an adequate financial safety net to replace this lost income until it returns to its original level (Hacker et al., 2014).

For each household, i , in time, t ,

$$ESI_t = \frac{\sum_{i=1}^{n_t} L_{it}}{n_t}$$

L is defined as:

$$L_{it} = \begin{cases} 1 & \text{if } \left(\frac{y_{it} - M_{it} - D_{it} - H_{it}}{e_{it}} < \left(\frac{3}{4} \right) \frac{y_{it-1} - M_{it-1} - D_{it-1} - H_{it-1}}{e_{it-1}} \right) \cap (W_{it} < W_{it}^*) \cap (1 - R_{it}) \\ 0 & \text{otherwise} \end{cases}$$

Economic Insecurity & Mental Wellbeing

- ▶ **Evidence in the literature shows that economic insecurity is related to several health outcomes including:**
 - ▶ Mental Health: Psychological Distress and Non-Specific Psychological Illnesses (e.g. Ferrie, 2001; Godin et al., 2005; Green, 2011; Houle & Light, 2014; Mucci et al., 2016; Nandi et al., 2012; Rohde et al., 2016; Stansfeld & Candy, 2006; Stuff et al., 2004; Thomas et al., 2005; Watson, 2015; Watson & Osberg, 2017)
 - ▶ Suicide (e.g. (Catalano, 1991; Houle & Light, 2014; Mucci et al., 2016; Nandi et al., 2012)
 - ▶ Heart Disease (e.g. (Ferrie et al., 2013; Lee et al., 2004; Mucci et al., 2016)
 - ▶ Obesity (e.g. Bowers et al., 2009; Offer et al., 2010; Smith et al., 2016; Watson, 2015; Wisman & Capehart, 2010)
 - ▶ Fertility Intentions (e.g. Fiori, 2013; Mansour, 2017)
- ▶ **New Zealand-Specific Studies (mostly relate to suicidal behaviour):**
 - ▶ Keefe et al., 2002; Blakely et al., 2003; Fergusson et al., 2007
 - ▶ Carter et al., 2011 (Food Insecurity and Psychological Distress)

Data

- ▶ **Survey of Family, Income and Employment (SoFIE)** - This longitudinal survey's main purpose is to provide information about changes over time in the economic well-being of individuals and their families, and about the factors that influence these changes. [8 waves from 2002 to 2010]
- ▶ **The Household Labour Force Survey (HLFS)** – This survey shows numbers of people employed, unemployed, and not in the labour force. HLFS includes the **New Zealand Income Survey (NZIS)**, which is the annual income supplement that collects information on actual and usual gross wages and salaries.
- ▶ **Household Economic Survey (HES)** – This survey collects information on household income, savings, and expenditure.

Data

- ▶ **Dependent Variables (From SoFIE Health Supplement – Waves 3, 5 and 7)**
 - ▶ 25 Subjective Indicators of Psychological Distress (5-point Likert scale)
 - ▶ 17 Negative Statements (e.g. Felt Depressed, Felt Cheerless, etc.) & 6 Positive Statements (e.g. Felt Happy, Felt Peaceful, etc.)
 - ▶ Kessler-10 (K10) Psychological Distress Scale: A tool widely used to screen for non-specific psychological distress, including depressive, somatic or anxiety disorders, but not suicidal ideation (Hanlon et al., 2015). K10 score ranges from 10-50.
 - ▶ General Health Indicators: “Health Now” and “Sick Quicker” (5-point Likert scale)
- ▶ **Independent Variable of Interest – Economic Insecurity**

Econometric Analysis

- ▶ **Hypothesis** – Economic insecurity worsens mental wellbeing.
- ▶ Causal estimate of the impact of economic insecurity on mental wellbeing in New Zealand.
- ▶ Random Effects (RE), Instrumental Variables (IV) and IV Ordered Probit econometric models.
 - ▶ **RE Approach**
 - ▶ $Mental\ Wellbeing_{it} = \beta_0 + \beta_1 esi_{it} + \beta_2 X_{it} + \beta_2 H_{it} + u_i + \varepsilon_{it}$
 - ▶ **IV Approach**
 - ▶ *First Stage:* $L_{it} = \beta_0 + \beta_1 esi_{it} + \beta_2 X_{it} + \beta_2 H_{it} + v_{it}$
 - ▶ *Second Stage:* $Mental\ Wellbeing_{it} = \beta_0 + \beta_1 \hat{L}_{it} + \beta_2 X_{it} + \beta_2 H_{it} + \varepsilon_{it}$

Impact of Economic Insecurity on Mental Wellbeing and General Health

	Indicators of Psychological Distress							
	Felt Depressed	Felt Extremely Depressed	Felt Downhearted	Felt Worthless	Felt Hopeless	Felt Very Nervous	Felt Extremely Nervous	Felt Cheerless
Random Effects Models	0.611*** (0.183)	0.303* (0.129)	0.635** (0.205)	0.711*** (0.159)	0.594*** (0.166)	0.361 (0.209)	0.386** (0.119)	0.276 (0.165)
Observations~	18,654	18,648	18,672	18,627	18,636	18,678	17,733	18,678
Instrumental Variables Models	0.779* (0.331)	0.417 (0.234)	1.056** (0.380)	1.268*** (0.323)	1.070** (0.354)	0.777 (0.413)	0.498* (0.226)	0.682* (0.313)
Observations~	11,292	11,292	11,304	11,274	11,280	11,310	10,761	11,307
IV Ordered Probit†	2.522*** (0.690)	2.419** (0.936)	2.117*** (0.590)	3.585*** (0.815)	3.230*** (0.746)	1.507** (0.563)	3.526*** (0.979)	1.811* (0.707)
Observations~	18,654	18,648	18,672	18,627	18,636	18,678	17,733	18,672
Baseline Controls	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□

Robust standard errors in parentheses

† Bootstrap standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

~Observations are randomly rounded (up or down) to the nearest multiple of three given Statistics New Zealand's rounding rule.

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Impact of Economic Insecurity on Mental Wellbeing and General Health

	Indicators of Psychological Distress							
	Mental Less Done	Mental Less Time	Mental Less Careful	Felt Problem Extreme	Problem Interfere Frequency	Felt Fidgety	Felt Extremely Fidgety	Felt Tired No Reason
Random Effects Models	0.897***	0.814***	0.800***	0.856***	1.087***	0.640**	0.580**	0.820***
	(0.213)	(0.196)	(0.196)	(0.200)	(0.240)	(0.235)	(0.182)	(0.231)
Observations~	18,684	18,684	18,672	18,657	18,693	18,648	18,642	18,636
Instrumental Variables Models	1.461***	1.405***	1.103**	1.550***	1.722***	0.961*	0.752*	1.042*
	(0.432)	(0.391)	(0.381)	(0.432)	(0.508)	(0.440)	(0.337)	(0.424)
Observations~	11,316	11,316	11,310	11,301	11,322	11,295	11,286	11,286
IV Ordered Probit†	2.842***	3.112***	3.196***	2.696***	3.037***	1.474**	2.418***	2.147***
	(0.657)	(0.665)	(0.667)	(0.609)	(0.590)	(0.523)	(0.707)	(0.571)
Observations~	18,684	18,684	18,675	18,660	18,693	18,648	18,642	18,636
Baseline Controls	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□

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Impact of Economic Insecurity on Mental Wellbeing and General Health

	Indicators of Psychological Distress							General Health Indicators	
	Felt Effortful	Felt Lively	Felt Peaceful	Felt Energetic	Felt Happy	Felt Confident	Felt Going Well	Health Now	Sick Quicker
Random Effects Models	1.538***	-1.927***	-0.913***	-2.090***	-1.009***	-0.711**	-1.006***	-0.869***	1.121***
	(0.247)	(0.259)	(0.235)	(0.262)	(0.202)	(0.235)	(0.233)	(0.229)	(0.262)
Observations~	18,642	18,654	18,663	18,669	18,666	18,660	18,609	18,702	18,657
Instrumental Variables Models	2.497***	-2.493***	-1.426**	-2.335***	-1.437***	-1.296**	-1.763***	-1.543***	1.156*
	(0.545)	(0.597)	(0.445)	(0.583)	(0.408)	(0.454)	(0.496)	(0.459)	(0.525)
Observations~	11,286	11,292	11,298	11,307	11,304	11,301	11,262	11,331	11,292
IV Ordered Probit†	3.728***	-3.620***	-2.025***	-3.742***	-2.613***	-1.759***	-2.156***	-1.734***	2.745***
	(0.542)	(0.508)	(0.496)	(0.470)	(0.504)	(0.482)	(0.485)	(0.423)	(0.550)
Observations~	18,645	18,654	18,663	18,666	18,666	18,657	18,606	18,702	18,657
Baseline Controls	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□	✓□

Robust standard errors in parentheses

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(4) The Impact of Economic Insecurity on Mental Wellbeing using the K10 Scale

Variables	Kessler-10 Psychological Distress Scale	
	RE Estimation	IV Estimation (G2SLS)
Economic Insecurity	5.545*** (1.241)	9.242*** (2.627)
Baseline Controls	✓□	✓□
Constant	13.176*** (0.479)	12.723*** (0.918)
Observations~	17,628	10,683

Robust standard errors in parentheses

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

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Does Economic Insecurity Affect the Mental Wellbeing of New Zealanders?

- ▶ Evidence in the study support the hypothesis that economic insecurity worsens the mental wellbeing of New Zealanders.
- ▶ Strong evidence from RE and IV models to make a causal inference about the positive relationship between economic insecurity and poor mental wellbeing for at least 20 out of the 23 psychological distress indicators used.
- ▶ Strong evidence to imply a causal relationship between economic insecurity and the likelihood of having a psychological disorder (proxied by each respondents' K10 scores).
- ▶ Economic insecurity leads to deterioration in general physical health and decreased immunity.
- ▶ All results are robust to controlling for observable demographic characteristics and health conditions, and are in line with the majority of the findings in the literature.
- ▶ It is likely that this mechanism is the increased stress that comes about from financial instability.

Policy Recommendations

- ▶ New Zealand Government / Statistics NZ can adapt the use of ESI as a new measure of wellbeing to help inform policy decisions.
- ▶ Empower households with resources to handle economic shocks:
 - ▶ Universal Basic Income with an opt-out option
 - ▶ Mandatory financial Literacy Programs
 - ▶ Increase Wellbeing Support Programs (E.g. virtual mental health services)
 - ▶ Anti-Discrimination Strategies (E.g. education, peer services and mental health literacy campaigns)

Thank You!

Questions?
Comments?

Recommendations?



Dawnelle Clyne, PhD Candidate
Department of Economics
University of Otago, Dunedin, NZ