Economic Insecurity and Individual Behaviour: a Short Review

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Abstract

In this note I will review several measures of economic insecurity both at an individual and at societal level. I will start with the latter, such as the methods developed by Osberg and Sharpe (2002) and Hacker et al., (2010). I will then move on to individual level measures of economic insecurity and review the index of Rohde et al. (2014) and my proposal with Bossert (2016). I will conclude by showing how indices of economic insecurity indices could help to explain the determinants of individual behaviour such as voting.

1. Introduction

The term economic insecurity is very-widely used by the general public and appears frequently in policy debates. The perception that the level of economic insecurity has risen since the 1990s and especially since the 2008 Great Recession is a pervasive one: negative GDP growth rates, increasing job instability and job losses for many, the decline of the middle class, real estate bubbles in many countries have affected the lives of a large number of individuals. As a consequence, household expectations regarding the general economic situation, the distinct danger of future unemployment, their financial situation and savings have dropped sharply. There is by now widespread agreement that a lack of economic security is affecting people's lives considerably. Individuals feel economically insecure, a sentiment which is exacerbated by marked changes in the life cycle and unprecedented demographic changes, particularly those triggered by aging populations and mass migrations.

The negative consequences of economic insecurity on people's well-being are many and diverse. Increased obesity, rising suicide rates, a deterioration of mental health as well as long-lasting serious deficits in child and youth development have all been attributed, at least in part, to the devastating impact of increased economic insecurity (see Bossert and D'Ambrosio, 2016, for references).

Economic insecurity appears also to be a key concept for the measurement of well-being and social progress proposed by the Commission on the Measurement of Economic Performance and Social Progress; see Stiglitz, Sen and Fitoussi (2009).

Despite its widespread use, there is to date no agreement in the social sciences on its exact definition and measurement. Perhaps as a consequence, only a few attempts have been made to design and compute measures of economic insecurity. The difficulties with this task might be intrinsic to the term itself. According to the United Nations Department of Economic and Social Affairs (2008, p. vi), "It is not easy to give a precise meaning to the term economic insecurity. Partly because it often draws on comparisons with past experiences and practices, which have a tendency to be viewed through rose-tinted lenses, and also because security has a large subjective or psychological component linked to feelings of anxiety and safety, which draw heavily on personal circumstances."

There are a few alternative attempts to construct measures of economic insecurity in the literature. In this note I will review some proposals: (i) the measure of Osberg and Sharpe (2012); (ii) the Economic Security Index by Hacker, Huber, Rehm, Schlesinger and Valletta (2010); (iii) the index of Rohde, Tang and Rao (2014); and (iv) the index of Bossert and D'Ambrosio (2016). I refer the reader interested in other approaches to the excellent surveys on insecurity of Rohde and Tang (2018) and Osberg (2018). I will conclude presenting the results of Clark, D'Ambrosio and Lepinteur (2018) on insecurity as a determinant of political preferences in Germany and the UK. In my opinion, the rise in economic insecurity is one of the factors behind the clear victory for Lega and Cinque Stelle in the recent Italian political elections of March 2018, the election of Trump as President of the USA in January 2017 and the UK Brexit decision of June 2016.

2. Measuring Economic Insecurity

Osberg and Sharpe (henceforth OS, 2012) see insecurity as the inability to obtain protection against significant potential economic losses, following an earlier proposal by Osberg (1998). As such, an individual is insecure when he experiences lack of safety in case of unemployment, sickness, widowhood and old age. The Index of Economic Security of OS is a weighted sum of the scaled values of four components related to those risks. As such it is an aggregate index at the country level. The weights are based on the relative sizes of the populations deemed to be subject

to each risk. For each of the four risks, OS discuss their conceptual drivers and propose their empirical approximation.

Insecurity in the event of unemployment is attributable to the probability of unemployment and the size of financial loss unemployment produces. As their proxies, OS propose to use the unemployment rate and the average proportion of earnings that are replaced by unemployment benefits. Insecurity in the event of sickness is the financial risk imposed by illness and is estimated by the percentage of disposable household income spent by households on health care services that is not reimbursed by any type of health insurance. Insecurity in the event of widowhood is due to the loss of access to male earnings due to family breakup and is measured by combining the probability of divorce, the poverty rate among single female parent families, and the average poverty gap ratio among single female parent families. Insecurity due to old age is proxied by the intensity of poverty (the poverty rate multiplied by the average poverty gap ratio) experienced by households headed by a person of over 65.

A second index based on population percentages is the Economic Security Index (ESI). ESI is the result of the 2008 Rockefeller Foundation's initiative, the "Campaign for American Workers", with the objective to improve economic security among American workers and their families. The index was proposed by Hacker together with a team of experts (see Hacker, Huber, Rehm, Schlesinger and Valletta, 2010) with the aim to improve knowledge and understanding of the dimensions of American economic security. The ESI is a measure specific to the USA society. It captures three major risks to economic well-being that US citizens believe are difficult to anticipate and about which they express deep concern. These are: major income loss, large out-of-pocket medical spending, insufficiency of liquid financial wealth to deal with the first two risks. The ESI is equal to the share of US citizens who experience at least a 25 percent decline in their inflation-adjusted available household income from one year to the next and who lack an adequate financial safety net to replace this lost income until it has returned to its original level. The inflation-adjusted available household income is obtained from after tax income by deducing the amount of medical out of pocket spending. The adequate safety net is liquid financial wealth defined as all wealth holdings besides the primary home, personal vehicles, and earmarked retirement savings. This amount is considered adequate if it is equal to or greater than the cumulative loss for the median individual with their socio-demographic characteristics who also experienced such a loss.

Rohde at al. (2014) and Bossert and D'Ambrosio (2013, 2016) focus on individual measures of insecurity. The advantage of an individual insecurity index is that it allows to study the distribution of insecurity over the entire population and analyze changes over time. In addition, it allows us to identify covariates of the index so that the individuals most exposed to economic insecurity can be identified and their behaviour monitored. An aggregate measure is obtained in a second stage and it is generally chosen to be the (generalized) mean of the distribution.

Rohde at al. (2013) focus on volatility associated to declining incomes (x_t) as a source of insecurity. Using panel data, they propose to estimate a time series regression of the form $x_t = a + bt + e_t$ for each individual and only consider volatility for incomes that have lost ground relative to the individual's overall trend. As Obserg (2018) noticed, behind this measure is the assumption that a downward deviation from a descending trend is assumed equivalent to a downward deviation of the same size from an ascending trend – which could be questioned.

With Bossert (2013, 2016) we are interested in modelling how an individual is able to deal with economic changes that may lie ahead. Clearly, past gains and losses in resources determine the confidence an individual has today regarding his ability to get by in the future. The measure we characterize in 2016 has two basic properties. The first of these ensures that a gain (a loss, respectively) from the earliest period under consideration to the following period is associated with a lower level (a higher level, respectively) of insecurity when compared with a situation where no such change occurs. This requirement captures the importance of gains and losses in resources. As a second fundamental property, we demand that a gain (a loss, respectively) of a given magnitude reduces (increases, respectively) economic insecurity to a larger extent the closer to the present this gain (loss, respectively) occurs. This axiom ensures that more recent experiences carry a higher weight than those observed farther in the past. The measure we propose, together with other properties, is based on geometrically discounted resource differences, such as income differences:

$$I^T(x) = l_0 \sum_{\substack{t\in\{1,\ldots,T\}:\\ x_t>x_{t-1}}} \delta^{t-1}(x_t - x_{t-1}) + g_0 \sum_{\substack{t\in\{1,\ldots,T\}:\\ x_t<x_{t-1}}} \delta^{t-1}(x_t - x_{t-1})$$

where $x = (x_T,\ldots, x_0) \in \mathbb{R}_+(T)$ is the individual stream of income, where 0 is the current period and T is the past periods taken into consideration. l_0 and g_0 are respectively the weights assigned to income losses and gains and δ imposes a higher weight to recent periods than those farther in the past.

According to this index, the income streams in the following figures are listed in decreasing order of insecurity:

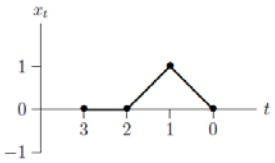

Figure 1: The resource stream $x^1 = (0, 0, 1, 0)$.

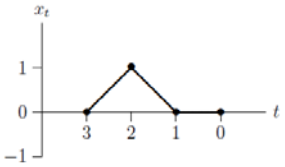

Figure 2: The resource stream $x^2 = (0, 1, 0, 0)$.

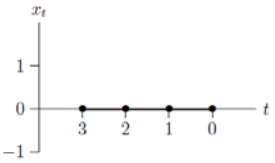

Figure 3: The resource stream $x^3 = (0, 0, 0, 0)$.

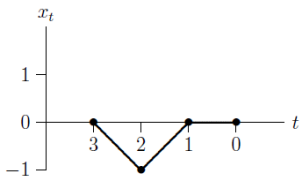

Figure 4: The resource stream $x^4 = (0, -1, 0, 0)$.

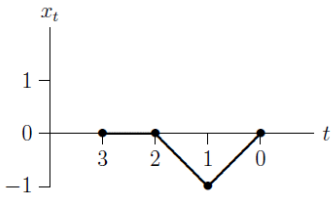

Figure 5: The resource stream $x^5 = (0, 0, -1, 0)$.

3. Insecurity and political preferences

With Clark and Lepinteur (2018) we relate the measure of insecurity proposed with Bossert (2016) to political preferences in two of the longest-running large-scale panel datasets, the British BHPS and the German SOEP. We analyse the years 1991-2008 for the UK and 1985 (1992 for East)-2013 for Germany. We set $l_0 = 1$, $g_0 = 15/16$ and $\delta = 0.9$. We use the stream of annual household equivalized incomes over 5 years as empirical counterpart of x.

The questions on political preferences asked in the two surveys are the following: in BHPS respondents are first asked: "*Now I have a few questions about your views on politics. Generally speaking do you think of yourself as a supporter of any one political party?*", and "*Do you think of yourself as a little closer to one political party than to the others?*". If they reply "*Yes*" to one of these two questions, they are then asked to mention which political party they support. But if respondents say "*No*" to both questions, the interviewer asked: "*If there were to be a General Election tomorrow, which political party do you think you would be most likely to support?*". Our measure of political preference is based on the combination of the answers to these questions, and individuals are considered as having no political preferences if they reply "*No*" to the first two questions and "*None*" or "*Don't know*" to the hypothetical election question. We exclude individuals who answered "*Can't vote*". We then create a categorical political-preference variable,

Party$_{it}$, with the following categories: "*Conservative Party*", "*Liberal Party*", "*Labour Party*", "*Other Parties*" and "*No Political Preferences*".

In the SOEP respondents are asked "*Many people in Germany lean towards one party in the long term, even if they occasionally vote for another party. Do you lean towards a particular party?*". If respondents answered "*Yes*", they were then asked: "*Toward which party do you lean?*". Our political-preference variable in Germany has the following categories: "*CDU/CSU*", "*FDP*", "*SDP*", "*Other Parties*" and "*No Political Preferences*".

The general model of economic insecurity and political preferences we estimate with multinomial logit regressions is the following:

$$Party_{it+1} = \beta_1 HHincome_{it} + \beta_2 Insecurity_{it} + \beta_3 X_{it} + \lambda_t + \epsilon_{it} \qquad (1)$$

where $Party_{it+1}$ is the party supported by individual i at time $t+1$, $HHincome_{it}$ the equivalized annual household income of i at time t and $Insecurity_{it}$ the measure of economic insecurity of i at time t. We standardize both economic insecurity and equivalized household income in the regressions so that the estimated coefficients refer to a one standard-deviation change. The vector X_{it} includes a set of individual covariates (age, gender, years of education, marital status, employment status, dummies for past unemployment, homeownership, and region fixed effects) while λ_t controls for year fixed effects. Economic insecurity is calculated using information on household real equivalized income, as such we cluster the standard errors at this level.

Table 1: Economic Insecurity and Probability of Supporting a Party: logit results

	BHPS	SOEP
Standardized Economic Insecurity	0.017***	0.019***
	(0.004)	(0.003)
Standardized eq. HH income (log)	0.029***	0.041***
	(0.002)	(0.004)
Homeowner (dummy)	0.021***	0.028***
	(0.005)	(0.007)
Observations	76003	197539
Log Likelihood	-43653	-126312

Notes: The figures are marginal effects. *, ** and *** stand for p<0.1, p<0.05 and p<0.01.

We have two main findings. First, economic insecurity significantly increases the probability of supporting a political party (and so reduces abstention) both in both the UK and in Germany. Second, this rise in support is not equally shared out: economic insecurity produces greater support for Right-wing parties (the Conservatives in the UK and the CDU/CSU in Germany) and to a lower

lesser extent Centre parties (the Liberal Democrats in the UK and the FDP in Germany). On the contrary, support for Left-wing parties falls as economic insecurity rises.

Table 2: Economic Insecurity and Voting Behaviour: multinomial results - BHPS and SOEP

	BHPS					SOEP				
	Conserv.	Liberal	Labour	Other Party	No Party	CDU CSU	FDP	SDP	Other Party	No Party
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Insecurity	0.022***	0.008***	-0.010**	-0.003	-0.017***	0.017***	0.003***	-0.001	-0.000	-0.019***
	(0.004)	(0.003)	(0.004)	(0.002)	(0.004)	(0.002)	(0.001)	(0.002)	(0.002)	(0.003)
Income (log)	0.033***	0.007***	-0.007***	-0.005***	-0.029***	0.038***	0.008***	0.000	-0.005**	-0.041***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.004)	(0.001)	(0.003)	(0.003)	(0.004)
Homeowner	0.049***	0.018***	-0.049***	0.003	-0.021	0.068***	0.003***	-0.025***	-0.018***	-0.028***
	(0.004)	(0.003)	(0.005)	(0.003)	(0.006)	(0.006)	(0.001)	(0.006)	(0.004)	(0.007)
Obs			76003					197539		
Log Likel.			-94611					-223962		

Notes: The figures are marginal effects and sum up to zero *, ** and *** stand for p<0.1, p<0.05 and p<0.01.

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