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## ECONOMIC INSECURITY AND INDIVIDUAL WELL-BEING

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The perception that the level of economic insecurity has risen since the 1990s and especially since the 2008 global crisis is a pervasive one. Insecurity is a source of fear and anxiety for individuals, and living in an insecure world has negative consequences for quality of life.

The term economic insecurity is very-widely used by the general public. 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."

The paper I presented at the Waseda Conference, joint with Walter Bossert is the only contribution available in the literature which allows the measurement of economic insecurity at the individual level.

Economic insecurity is a multi-faceted issue and a comprehensive formal definition that subsumes all possible aspects of it is likely to remain difficult to be agreed upon for some time to come. In the paper with Bossert (2009), we define economic insecurity as the anxiety produced by the possible exposure to adverse events and by the anticipation of the difficulty to recover from them. Past, present and future are all involved. We are insecure about a future event and the anticipation of some difficulty in recovering generates anxiety to an individual. The resources we have today are important: the wealthier we are, the bigger the buffer stock we can rely on in case of an adverse future event. Our past experiences play a role in shaping our self-confidence on how well we can do in case of an adverse event. We remember gains and losses in our resources over time. Of course, the more recent these variations are, the more vivid our memories. Evidence from psychology and economics supports this view.

The way we model insecurity is similar to the formation of adaptive expectations

(Cagan, 1956). What we are interested in is the subjective forecast of how well someone can handle a loss in the future. Past gains and losses determine the confidence an individual has today. We focus on wealth variations in the past and the current wealth level as the basic determinants of insecurity. Thus, the measures of individual insecurity we propose have as their domain wealth streams of varying lengths. The length of these streams is not assumed to be fixed because individuals are of different ages in a given time period and, moreover, the availability of data may impose restrictions on how far back in the past we can go when assessing economic insecurity.

We propose a set of properties that we think a measure of economic insecurity should possess and use them to characterize specific linear measures of insecurity. According to these indices, insecurity is given by the current wealth level multiplied by minus one plus weighted sums of the wealth gains (losses) experienced in the past. Two sequences of coefficients are employed, one applies to gains, the other to losses. The coefficients are such that recent experiences are given higher weight than experiences that have occurred in the more distant past. A subclass of these measures is obtained by giving higher weights to the absolute values of past losses than to those of past gains, thereby reflecting an attitude that we may label loss aversion in analogy to risk aversion in models of individual decision making under uncertainty.

The class of measures characterized is inspired by the single-series Gini measures of inequality. The Gini index is one of the most established and well-known measures of income inequality. The generalized Ginis measures retain the linear structure of the Gini in rank ordered subspaces of the space of income distributions but allow for alternative degrees of inequality aversion by generalizing the coefficients to any rank ordered sequence of parameters. A subclass of the generalized Ginis is given by the single series Ginis, characterized in Bossert (1990). They are generalized Ginis such that the sequence of coefficients is the same for all population sizes.

With Nicholas Rohde, we estimate the distribution of economic insecurity in Italy and the USA using data from 1994 to 2010 using the individual index proposed with Walter Bossert. The results confirm that the great recession has had a dramatic effect on the distribution of economic insecurity in both countries with the effect being much stronger in the USA. The USA distribution has undergone a negative translation with a mean reduced below zero, an increase in variance and an increase in heaviness of the left tail indicating the development of a substantial frequency of very low security households. Similar results hold for Italy with a reduction in the mean but much less dramatic than for the USA and an increase in the variance. In both countries there is little evidence of change in the far upper tail of the distributions which suggests that the proportion of highly secure households has been relatively unchanged over time, although the households that comprise this group may have changed. Age, income and household size are significant determinants of security and households with high educated head are more secure. Female heads have lower security in the USA with insignificant differences between female and male heads in Italy.

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