Survival Under Uncertainty in an Exchange Economy[1]

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Abstract

The paper explores a number of issues related to economic survival in market economies. An individual agent may fail to survive (may be ruined) if it faces a collapse of endowment or unfavorable terms of trade. The role of "intrinsic" and "extrinsic" uncertainty in triggering unfavorable terms of trade is examined in detail. In the presence of intrinsic uncertainty affecting the endowments, an important issue is the nature of stochastic dependence among the agents, particularly in a large economy.

1 Introduction

The last twenty years have witnessed a significant growth of the literature on the "survival problem" ([25], p.436), primarily in the context of the causes and remedies of famines. Once a subject essentially of empirical development economics, economic survival became an issue of analytical economics and, most recently, of general equilibrium theory. Considerable progress has been achieved in the theoretical analysis and empirical investigations of the causes of famines and policy measures to combat famines (see the collection edited by Drezè [10] and the detailed list of references). There has been a recognition that a partial equilibrium model, focusing on the food market, is unable to capture the complexity of events that result in famines, and may indeed render misleading policy prescriptions. It is better to turn to general equilibrium models with an explicit treatment of survival, for a better understanding of the relevant issues.

Cast in a market economy framework, a formal analysis clearly indicates that an agent may fail to survive due to an "endowment failure" and/or "an adverse movement of the terms of trade" As Sen puts it in [25], " ... starvation is a matter of some people not *having* enough food to eat, and not a matter of there *being* not enough food to eat. While the latter can be a cause of the former, it is clearly one of many possible influences."[2] The Ethiopian famine in 1972-74 and the famine in Bangladesh in 1974 provide striking examples of the "terms of trade" effect, examples in which a particular group of agents got "decimated by the market mechanism." (Sen [26]) The famine victims often belonged to the groups of non-food producers. These individuals had to acquire food in the market in exchange for their output (or labor), and, thus, were more vulnerable

[1]The paper is dedicated with affection and respect to Professor Rabi Bhattacharya. Thanks are due to Kaushik Basu, Steve Coate, David Easley, James Mirrlees, and Karl Shell for discussion and comments. All remaining errors are ours.

[2]As a matter of fact, "Some of the worst famines have taken place with no significant decline in food availability per head." ([26], p.17)