

Dynamics of Learning and the Financial Instability Hypothesis

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The financial instability hypothesis advanced by Minsky (1975, 1982, 1986) is not compatible with the rational expectations hypothesis in that firms persist in adopting liability structures which give rise to outcomes which in turn violate the assumptions on the basis of which those liability structures were chosen. This occurs both in the case of excessive caution following a period of instability, and excessive boldness following a long expansion. However, within the context of a formal model, it is shown that such behavior need not result from irrationality or myopia, but may arise instead from the fact that agents do not have sufficient information to compute the RE magnitudes, and must therefore rely on a learning process that makes use of publicly observable data. The dynamics of two commonly used learning processes are examined, one of them Bayesian. Both generate trajectories which differ sharply in their qualitative properties from the RE trajectory, and are in fact quite consistent with the predictions of the FIH.

1. Introduction

The rational expectations (RE) hypothesis asserts that the subjective probability distribution of outcomes, on the basis of which agents make decisions pertaining to uncertain future payoffs, is identical to the “objective” probability distribution which governs those outcomes. In situations where the objective distribution is itself dependent upon individual expectations, the RE hypothesis is in effect a statement of

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the collective consistency of individual plans: decentralized actions give rise to outcomes which, on average, reinforce the expectations on the basis of which those actions were taken.

Although the RE hypothesis is a simple and elegant way to close a model with respect to the determination of expectations, it is a considerably stronger assumption than the standard postulate of rational behavior. Its application to any given model could be made considerably more appealing if it could be shown that learning behavior on the part of agents gives rise, within the context of the particular model in question, to trajectories which converge fairly rapidly to an RE trajectory over time. In order to address such questions of dynamic stability, it is necessary to conceive adjustment processes which characterize the behavior of agents in disequilibrium situations in which collective plans are *not* consistent. These adjustment processes must take into account the rules which govern disequilibrium expectation formation. One approach consists of postulating Bayesian or Least Squares decision rules for agents attempting to learn the parameters of the model which, in their opinion, generates the data which is relevant to their decisions. A large number of such models now exists, some of which are characterized by locally unstable rational expectations equilibria.¹

If an RE trajectory is not sufficiently well approximated by the trajectory generated under a suitable learning hypothesis, then it will be an unsatisfactory guide to the behavior of the economy; individuals will appear to be violating the RE hypothesis even while forming expectations in an optimal manner. One of the implications of this is that theories which are inconsistent with the RE hypothesis may nevertheless be quite consistent with individually rational forecasting if it can be shown that the RE trajectories of the model in question differ sharply from those implied by learning.

The purpose of this paper is to focus attention on Hyman Minsky's financial instability hypothesis (FIH) in the light of the above considerations. The FIH has attracted and intrigued a number of commentators during the three decades which have elapsed since its first comprehensive statement (Minsky, 1964) was made.² A major reason for this

¹ The relationship between individual rationality and collective consistency is extensively discussed in Frydman and Phelps (1983). Investigations into the stability of RE equilibria are numerous; Blume, Bray, and Easley (1982) provide a comprehensive survey. Rational expectations equilibria are interpreted as Nash equilibria by Simonsen (1987) who explores conditions in which individual rationality may not lead to the choice of Nash strategies.

² Guttentag and Herring (1984, p. 1359) state that "(u)ntil recently, the postwar literature on financial disorder has consisted almost exclusively of