Speculative bubbles, speculative attacks, and policy switching. By ROBERT P. FLOOD AND PETER M. GARBER. Cambridge and London: MIT Press, 1994. Pp. xi, 493. $50.00. ISBN 0-262-06169-4. *JEL 95-0071*

What would the world be like if every time you ate an onion of unknown provenance you had to worry about incurring an unthinkably large liability? Is there something about the very nature of dynamic economic equilibrium that allows for the possibility of an inefficient allocation of resources? Flood and Garber have spent the better part of two decades studying these questions, and this book presents the answers they have given in 22 previously published papers.

The study of speculative bubbles has long fascinated economists, and hoary tales about the Tulipmania, the South Sea bubble, and the Mississippi Scheme form a part of the received wisdom of our profession. Flood and Garber subject these stories to the rigors of empirical testing. They have found, by and large, that there is little hard evidence for speculative bubbles in the data they have analyzed.

The book is divided into three parts. The first discusses speculative bubbles, the second studies speculative attacks, and the third analyzes the effects of anticipated switching of policy regimes. Each part consists of an attractive mix of articles in applied econometrics, macroeconomic theory, and economic history. These authors take data seriously, and their careful historical analyses, compilation of data, and econometric tests form the strongest aspect of their work.

In "Market Fundamental versus Price-Level Bubbles: The First Tests" the authors use a simple model of money demand to derive testable implications about inflation rates and real balances in an economy with forward-looking agents. Flood and Garber use data from the Weimar Republic to examine whether the accelerating prices during the hyperinflation suggested that Germany had indeed experienced a price bubble. The essence of their test is the inclusion of a geometrically increasing term in the money demand equation. They show convincingly that there was no evidence of a bubble even during this extraordinary period in monetary history.

In "Tulipmania" Garber combs through three centuries of scholarship in Dutch, Spanish, German, and English to construct time series on tulip and hyacinth prices in the seventeenth and eighteenth centuries. He concludes tentatively that there was little evi-

dence of a bubble in the pricing of tulips from 1634 to 1637, the classic period of Tulipmania.

"Collapsing Fixed Exchange-Rate Regimes" explores a simple model of the exchange rate. Assuming continuous time and a positive rate of increase of domestic credit, the authors show that the central bank's reserves are not continuous in a perfect foresight equilibrium. Hence, a fixed exchange rate regime implies that the central bank will eventually lose reserves at an infinite rate if it expands domestic credit. The authors use an analogous argument in a model with discrete time and uncertainty to show that a weak currency's forward rate may exceed its fixed par value for long periods.

"The Linkage Between Speculative Attack and Target Zone Models of Exchange Rates: Some Extended Results" shows that the recent literature on exchange rate target zones is intimately related to the earlier work on speculative attacks. An exchange rate in a target zone is a form of regulated Brownian motion. The exact behavior of this stochastic process can be derived from the policy rules determining interest rates at the upper and lower bounds of the exchange-rate bands. Flood and Garber show that these "smooth-pasting" conditions are actually a special case of more general policies that might involve large discrete interventions by the monetary authority. This chapter presents a heuristic synthesis of the new and growing literature on exchange rates as stochastic processes.

"A Model of Stochastic Process Switching" examines the behavior of a floating exchange rate when the monetary authority is committed to an eventual peg. The authors' analysis is appealing, not because it derived a closed form solution describing the exchange rate, but because it has spurred other economists' later research. Thus Flood and Garber stake out an important question whose answer has led us to see more fully the connection between market fundamentals and exchange rates.

"An Economic Theory of Monetary Reform" is a practical implementation of the authors' theoretical ideas on regime switching. Flood and Garber turn their attention again to the Weimar Republic's inflation. Recognizing that monetary reform must have been anticipated, they estimate a money demand equation with two regimes: maintaining the status quo and enacting a monetary reform. By computing the posterior probability of reform, they show their measure reaches its peak when the change in regime probably did occur.

Flood and Garber have convinced me that there is little evidence for bubbles in their data. But speculative bubbles are a robust phenomenon in the laboratory, and I have seen them time and again in my own exchange rate experiments, leading me to believe that tests based on representative-agent models cannot fully describe all asset markets. Indeed, general equilibrium theory has shown that the essence of sunspot equilibria concerns incomplete market participation. Thus I would have liked this volume better if it had explored the microeconomic foundations of assets markets in economies with heterogeneous information. Still, this collection of papers is a masterful example of how far one can push the theoretical and empirical implications of simple monetary models. Financial and international economists owe these authors a great intellectual debt.

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