Abstract

Although volatility clustering has a long history as a salient empirical regularity characterizing high-frequency speculative prices, it was not until recently that applied researchers in finance have recognized the importance of explicitly modeling time-varying second-order moments. Instrumental in most of these empirical studies has been the Autoregressive Conditional Heteroskedasticity (ARCH) model introduced by Engle (1982). This paper contains an overview of some of the developments in the formulation of ARCH models and a survey of the numerous empirical applications using financial data. Several suggestions for future research, including the implementation and tests of competing asset pricing theories, market microstructure models, information transmission mechanisms, dynamic hedging strategies, and the pricing of derivative assets, are also discussed.
An earlier version of this paper by T. Bollerslev, R. Chou, N. Jayaraman and K. Kroner was entitled: "ARCH Modeling in Finance: A Selective Review of the Theory and Empirical Evidence, with Suggestions for Future Research." We would like to thank our colleagues who helped supply the references cited in this survey. Among many others, we would especially like to thank Buz Brock, John Campbell, Ray DeGennaro, Frank Diebold, Rob Engle, Martin Evans, Gikas Hardouvelis, Ravi Jagannathan, Narayanan Jayaraman, J. Huston McCulloch, Tom McCurdy, Dan Nelson, Adrian Pagan, Peter Robinson, Bill Schwert, Stephen Taylor, participants at the Conference on Statistical Models of Financial Volatility at UCSD on April 6, 1990, and an anonymous referee for very helpful and detailed comments on an earlier draft. Tim Bollerslev, Ray Chou, and Ken Kroner would like to acknowledge financial support from NSF #SES90-22807, the Georgia Tech Foundation, and the Karl Eller Center at the University of Arizona, respectively.
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