Extracting information from trading volume

Dominique Y. Dupont †

April 2002

Abstract:
This paper introduces a method to extract information about the true value of a traded asset using the market price and the equilibrium trading volume when the joint distribution of the traders’ demands, the market price, and the asset value is known and the market clears. The paper applies the method to a chosen noisy rational-expectations model. We first condition only on the trading volume and then on volume and price. Results from the multivariate conditioning contrast with those of the univariate conditioning. Conditioning on volume alone seems to yield little information on the true value of the asset. Still, the volume-based conditional distribution of the true asset value has slightly fatter tails than the unconditional distribution when volume is high, and thinner tails when volume is low.
In contrast, in the multivariate conditioning, when the market price is above its mean, a surge in volume can lower the conditional likelihood in the upper tail. Indeed, the conditional value of the traded asset can be decreasing in trading volume for a given price. It can even be decreasing in price when volume is high. Finally, we apply the method to a market-making context using the Kyle (1985) model.

JEL Classification: G12, G13, C63. Key words: Trading volume, information

†University of Twente, School of Management and Technology, Department of Finance and Accounting, Postbus 217, 7500 AE, Enschede, The Netherlands, Tel: +31 53 489 44 70, Fax: +31 53 489 2159, Email: d.dupont@sms.utwente.nl. Formerly at Eurandom-TUE, P.O. Box 513 - 5600 MB Eindhoven. The author thanks seminar participants at the Federal Reserve Board, Erasmus University, ESSEC, the 1998 French Finance Association Meeting, and at Eurandom, in particular Johan Segers. The usual disclaimer applies.