TRANSACTION SIZES AND SPREADS: AN INFORMATIONAL APROACH

By

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Abstract. We introduce an informational approach (IA) for exploring association between variables, an alternative to the prevalent parametric, thus restrictive, regression analysis. The IA uses data to (non-parametrically) construct the joint distribution of variables. Then, it uses theory to develop restrictions on the joint distributions. These restrictions will typically be orderings of functions of conditional distributions induced by the joint distribution. Finally, it attempts refuting the restrictions. We implement IA examining the relation between trading sizes and spreads, a main concern. Following insights and results of Milgrom (1981), Feldman (2004), and Feldman and Winer (2004), we use NYSE data and kernel estimation methods to construct the distributions. To avoid spurious results, we first confirm that transaction sizes and effective spreads are "significantly" correlated. Then, upon splitting the sample in all practical cutoff points below a rather large transaction size into "high" and "low" transaction sizes, we find that if we exclude the zero spread/midpoint/crossing trades, ordering by first order stochastic dominance, a necessary condition for a "separating signaling equilibrium," always holds. It never holds for all cutoff points above. The monotone likelihood ratio property, a necessary and sufficient condition for a separating signaling equilibrium, does not hold everywhere but is never significantly violated, thus cannot be ruled out considering estimation errors. Our results confirm the findings regarding the informativeness of medium-size transaction sizes. We identify informational relationships between mid-size transactions and spreads but not for zero spreads and large transactions. That is, we identify two regimes: an informational one where transaction sizes signal private information and where spreads match these signals and a non-informational/liquidity one.

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