Information and the Value of Execution Guarantees

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In many markets, uncertainty about whether a trade is executed can be removed by paying a price premium. We use financial markets as a particular setting in which to study this trade-off. In particular, we assess the role of information in the choice between certain trade at a price premium in an intermediated dealer market and contingent trade in a dark pool. Our setting consists of intrinsic traders and speculators, each endowed with heterogeneous fine-grained private information as to an asset’s value, that endogenously decide between these two venues. We solve for an equilibrium in this setting, and address three main questions: First, how does the level of information of a trader and her competitors affect their behavior—i.e., how does the choice between certain and contingent trade depend on information structure? Second, how does the level of premium for certain trade over contingent trade affect the strategic behavior of traders? And finally, how should market makers intermediating certain trade set transaction costs to maximize profit, in the presence of an option for contingent trade? Through a combination of theoretical analysis and numerical experiments, we derive the following implications from our model:

(1) Information and the choice between certain and contingent trade. We find that, in general, the dark pool is utilized by uninformed or mildly informed traders, whereas highly informed traders will trade in the open market so as to be guaranteed profitable executions. Furthermore, there is adverse selection in the dark pool, in the sense that buy (sell) orders are more likely to be filled when the dark pool price is above (resp., below) the true value.

(2) The impact of transaction costs on adverse selection. Surprisingly, in the partial equilibrium setting where the transaction costs in the open market are exogenously specified, the fill rate in the dark pool (and therefore adverse selection) is not monotonically related to the bid-offer spread: for example, when the dark pool price is above true value, the fill rate for buyers in the dark pool falls (and adverse selection is stronger) at lower transaction costs, and the fill rate rises (and adverse selection is weaker) at higher transaction costs.

(3) Market making in the open market. We find that a dark pool lowers a monopolist’s choice of transaction cost in the open market. Further, we find the surprising insight that the monopolist’s profit also increases as traders become more informed.