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"Essays in Financial Economics

On Trading, Risk and Incentives"

This Ph.D. thesis consists of three self-contained papers. The thesis is focused on agency conflicts that arise in relation to institutional trading and market making.

The first paper aims to analyse the design of rules that a financial institution must put in place to enforce risk appetite. Enforcing risk appetite by constraining risk takers is complicated by the fact that the risk takers often hold important private information about risk. While there is an extensive literature on how risk takers should be compensated, little is known about how risk management should reduce discretion for traders and the implications for firm welfare. I show that when risk preferences are "sufficiently aligned" the firm will optimally enforce its risk appetite by imposing risk limits that are calibrated to the individual risk taker's preferences. The risk limits trade off the discrepancy in risk aversion with the informational advantage in order to optimally exploit the available information.

In the second paper, I study the implications of agency frictions for inventory considerations of institutional market makers. I suppose that a market maker cannot observe the actions of an employed trader, but observes only the customer transactions and profits and losses on inventory holdings. For a setting in which outside buy and sell orders depend on the market maker's pricing policy, I derive the optimal bid-ask prices and compensation structure. Optimal bid-ask spreads are set according to inventory risk as well as the trader's level of continuation utility. The model derives a direct link between endogenous incentive compensation and the inventory-based price policy of institutional liquidity providers. In particular, I show that letting trader compensation be optimally sensitive to fluctuations in inventory will benefit customers by minimizing the bid-ask spread.

In the third paper, I build a dynamic agency model of financial intermediation in an over-the-counter market. An employed sales-trader must actively generate order flow and hedge residual risk from customer transactions. The market maker dictates the pricing policy and structures the sales-trader's compensation based on observed profits from market making. Bid-ask spreads are set such that the marginal cost of order flow equals the marginal revenue from a transaction. I find that prices where the market maker takes on new risk are generally higher than the prices at which risk is subsequently laid off. In the optimal contract, compensation is deferred and later forfeited if the trading book is subject to losses. The pool of deferred compensation is thus effectively acting as a capital buffer.