

DISSERTATION PROPOSAL

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“Essays on the Liquidity of Financial Markets”

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Liquidity is a central feature in the research of financial markets. Broadly speaking, liquidity describes the ease with which an asset can be traded both quickly and without deviating very far from the current market price. In this collection of essays, I investigate three aspects of liquidity -- one affecting stocks in the context of a limit order book market, and two in the context of the over-the-counter market governing U.S. Corporate bonds.

In the first chapter, I propose a novel estimator for the presence of asymmetric information among market makers in limit order book markets. Model parameters are structurally estimated using a continuously-updated simulated method of moments regression on historical Nasdaq TotalView-ITCH high-frequency data, which include every order sent to the exchange. I find statistically significant evidence that market makers are able to anticipate the presence of informed traders in the near future, and allocate their provision of liquidity accordingly.

In the second chapter, I attempt to create an estimation procedure for measuring the liquidity available in the US Corporate bond market as a whole. The procedure is split into two primary components: First, for each bond, using a Hidden Markov Model framework, I estimate the ex-ante probability that the issue will trade on a particular day, given its trade history up to that time and various bond characteristics. Next, I estimate the liquidity of those bonds which trade throughout the day in question, and perform a “smart” interpolation on the non-traded bonds to estimate what the liquidity for those bonds would have been had they traded. The interpolation is performed using an improved nearest-neighbor type matching algorithm, matching bonds on the previously identified ex-ante propensity to trade, as well as various other bond characteristics. Preliminary work demonstrates strong external predictive validity with respect to my estimate of the propensity for a bond issue to trade.

In the final chapter, I seek to better understand how the Volker Rule has affected the provision of liquidity in the market for US corporate bonds by conducting various natural experiments on the observed trading patterns, as reported by TRACE. I propose using fire sales caused by credit rating downgrades to test the differential impact of liquidity shocks before and after the Volker Rule went into effect. Moreover, I show that after the implementation of the Volker Rule, new “investment grade” bond issues which are on the cusp of “junk” ratings are priced as if they are already junk bonds due to the increased costliness of fire sales. In this way, the cost of capital for the affected firms increased substantially -- ostensibly as a result of the Volker Rule.