

# Dynamic Thin Markets<sup>1</sup>

Marzena Rostek<sup>2</sup> and Marek Weretka<sup>3</sup>

December 15, 2008

**Abstract.** Extensive empirical research has shown that in many markets institutional investors have a significant impact on prices and mitigate its adverse effects through their trading strategies. This paper develops a dynamic model of such thin markets, in which the market structure is one of bilateral oligopoly. The paper demonstrates that market thinness qualitatively changes equilibrium properties of prices and dynamic trading strategies, compared to the existing theories of asset pricing. The predictions match a number of empirical facts that are hard to reconcile with the competitive or Cournot-based models. The paper further establishes that the nonstrategic general-equilibrium approach and the strategic approach to trade via Nash in demands are dual representations of a model with endogenous price impact. The proposed approach yields an analytical framework that can be used to study dynamic markets with bilateral market power.

JEL CLASSIFICATION: D43, D53, G11, G12, L13

KEYWORDS: Thin Markets, Mispricing, Price Impact, Nash in Demands.

---

<sup>1</sup>We would like to thank William Brock, Zhiwu Chen, Peter DeMarzo, Steven Durlauf, Frank Fabozzi, Christian Ghiglino, Ananth Madhavan, Antonio Mello, Matthew Pritsker, Larry Samuelson, Elu Von Thaden, and especially John Geanakoplos and Dimitri Vayanos for very helpful conversations. We are also grateful for the comments and suggestions offered by seminar participants at Chicago, Johns Hopkins, Mannheim (Finance), Oxford (Nuffield), Penn State, Princeton, Queen's, Southampton, UCL, Warwick (CRETA) and Wisconsin-Madison, and conference participants at the 2009 Caress-Cowles Conference at Yale, the 2008 AFA Annual Meeting in New Orleans, the Essex Economics Workshop '2008, the 2007 ES Winter Meeting in Chicago and the 2007 ES Summer Meeting at Duke. All errors are ours.

<sup>2</sup>University of Wisconsin-Madison, Department of Economics, 1180 Observatory Drive, Madison, WI 53706, U.S.A.  
E-mail: mrostek@ssc.wisc.edu.

<sup>3</sup>University of Wisconsin-Madison, Department of Economics, 1180 Observatory Drive, Madison, WI 53706, U.S.A.  
E-mail: mweretka@ssc.wisc.edu.

<sup>4</sup>See, e.g., Kraus and Stoll (1972); Holthausen, Leftwich, and Mayers (1987); Chan and Lakonishok (1993, 1995); Keim and Madhavan (1995, 1996, 1998).