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# Trading your neighbor's ETFs: Competition or fragmentation?

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## Abstract

On July 31, 2001, for the first time in its history, the New York Stock Exchange (NYSE) began trading three unlisted securities. The DIA, SPY, and QQQ are the most actively traded Exchange Traded Funds (ETFs) and are listed on the American Stock Exchange. On April 15, 2002 another 27 ETFs followed. These two events provide a unique experiment for studying the impact of a new entrant on market quality. In contrast to recently revived concerns about the adverse impact of market fragmentation, we document that the NYSE entry leads to a dramatic improvement in liquidity that we attribute to the elimination of market-maker rents. © 2003 Elsevier B.V. All rights reserved.

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## 1. Introduction

In recent years, there has been a strong regulatory interest in the question whether fragmentation of order flow is beneficial or not. During the past two decades, certain order types for securities listed on the New York Stock Exchange (NYSE) have increasingly migrated to alternative trading venues including NASDAQ, Electronic Communication Networks (ECNs), and regional exchanges. This development was aided by the establishment of the National Market System (including the InterMarket Trading System) by the SEC, the elimination of NYSE Rule 390 which restricted off-board trading for some exchange-listed stocks (SEC Rule 19c-3), and

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the increasing availability of innovative electronic crossing and trading networks.<sup>1</sup> The proliferation of alternative trading venues and practices such as internalization and payment for order flow have led to concerns raised by the Securities and Exchange Commission (SEC) about the attendant fragmentation of stock markets.<sup>2</sup> The issue is whether increased competition among market centers has beneficial effects on trading costs and price discovery, or detrimental effects because order flow is dispersed across several locations without much interaction. We contribute to this discussion by examining the entry of the NYSE into the trading of Exchange Traded Funds (ETFs).

On April 6, 2001, the NYSE announced that it seeks regulatory approval for trading the three most active ETFs, the Nasdaq-100 Trust Series I (the “QQQ”), the Standard and Poor’s Depository Receipt Trust Series I (the “SPY”), and the Dow Jones Industrial Average Trust Series I (the “DIA”).<sup>3</sup> In early 2001, these three securities together generated an average daily trading volume of about \$5 billion.<sup>4</sup> The event was expected to pose a major challenge for the American Stock Exchange (AMEX), the main listing and trading venue for ETFs.<sup>5</sup> Prior to the NYSE entry on July 31, 2001, ETFs traded on AMEX (constituting most of its equity-related trading volume), the Nasdaq InterMarket, the regional exchanges, and the Island ECN. On April 15, 2002, the NYSE began trading 27 additional AMEX-listed ETFs.

These two events mark the first time in its history that the NYSE is trading unlisted securities under Unlisted Trading Privileges (UTP).<sup>6</sup> We believe that the simultaneous presence of three characteristics make these events a unique experiment to study the effect of order fragmentation on competition, liquidity, trading volume, and price discovery. First, and most importantly, our experiment controls for the trading protocol: the NYSE uses virtually the same protocol as the dominant incumbent, the AMEX. Second, it does not involve a new competitor who focuses only on a narrow segment of order flow. While analyses of competitors such as Madoff (Battalio, 1997), crossing networks and ECNs (Conrad et al., 2001; Huang, 2002) and regional exchanges (Lee, 1993) provide valuable inferences on relative market quality, it is possible that their results reflect different types of order flow. If traders endogenously choose among these markets, it may be difficult to control for differences

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<sup>1</sup> See Blume (2000) for a discussion of the National Market System and its limitations.

<sup>2</sup> As pointed out, for example, by SEC Chairman Arthur Levitt in a speech at Northwestern Law School, March 16, 2000. See also US SEC (2000a,b), where the SEC requested comments on the issue, soliciting opinions on the extent of fragmentation, whether fragmentation has isolated orders, hampered quote competition, reduced liquidity, increased short-term volatility, and on possible solutions. Empirical evidence suggests that the practice of internalization of and payments for order flow magnify the negative effects of market fragmentation. See, for example, Easley et al. (1996) and Huang and Stoll (1996).

<sup>3</sup> Wall Street Journal, 4/6/2001, p. C9.

<sup>4</sup> Across all US market centers, see Goldman Sachs Derivatives and Trading Research Report on Exchange Traded Funds, 06/29/2001.

<sup>5</sup> The Wall Street Journal, 07/12/2001.

<sup>6</sup> Rule 12f of the Securities Exchange Act of 1934.

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