

The effect of price tests on trader behavior and market quality: An analysis of Reg SHO[☆]

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Abstract

Using data from Regulation SHO's pilot program, we examine how price tests affect trader behavior and market quality, which are areas of interest given by the US Securities and Exchange Commission in evaluating these tests. After comparing sampled matched pairs of pilot and control stocks, we find that the removal of price tests benefit traders by allowing them to trade more aggressively by placing orders that receive quicker execution. Furthermore, concerns about the suspension of price tests leading to a degradation of market quality are unfounded. The evidence therefore suggests unambiguously that such tests should be removed.

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1. Introduction

In this paper we use recently published data from a pilot program under the US Securities and Exchange Commission's (SEC) Regulation SHO (Reg SHO) in order to evaluate the effects of *price tests* on trader behavior and market quality on the New York Stock

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Exchange (NYSE) and Nasdaq. These tests apply to short sales and are known individually as the *uptick rule* on the NYSE and the *bid test* on Nasdaq.¹ The SEC had three objectives in mind when it introduced the tests: “(i) allowing relatively unrestricted short selling in an advancing market; (ii) preventing short selling at successively lower prices, thus eliminating short selling as a tool for driving the market down; and (iii) preventing short sellers from accelerating a declining market by exhausting all remaining bids at one price level, causing successively lower prices to be established by long sellers” (SEC, 2004a, pp. 50–51). More simply, the SEC sought to prevent short sellers from participating in market manipulation that forces prices downward, often referred to as bear raids.²

The pilot program temporarily suspends price tests for a subset of the stocks that are members of the Russell 3000 index, referred to hereafter as *pilot stocks*. The stated motivation for the suspension was to allow an examination of “the extent to which a price test is necessary to further the objectives of short sale regulation [and] to study the effects of relatively unrestricted short selling on market volatility, price efficiency, and liquidity” and “to monitor trading behavior” (SEC, 2004a, pp. 4, 12; SEC, 2004b, p. 2). Ultimately, such examinations could lead the SEC to either amend or remove price tests.

In this paper we examine how price tests affect trader behavior and market quality as measured by market volatility, price efficiency, and liquidity.³ We do not examine whether price tests further the stated objective of short sale regulation as this was done previously by Alexander and Peterson (1999) who had the benefit of having order data (such data are not publicly available under Reg SHO). Importantly, their study shows that, relative to similar regular sell orders, short sell orders: (1) take longer to execute, (2) are more frequently cancelled or not filled, and (3) if not executed immediately, frequently become part or all of the inside ask, thereby leading to narrower quoted spreads and greater depth at the ask relative to the bid. Interestingly, the uptick rule was found to impede short selling in an advancing market, thereby failing to achieve the first objective of the rule.

Using Reg SHO data for the NYSE, we find that the costs associated with delays in execution due to the uptick rule come with the benefit of price improvement. More specifically, we find that executed short sales of pilot stocks relative to a matched sample of *control stocks* have lower price locations (i.e., trade prices) relative to the quotes.⁴ This is expected since market and marketable limit orders (i.e., limit sell orders with limit prices equal to or less than the bid) of pilot stocks are now more likely to be executed immediately instead of being held up by the uptick rule for possible future execution. Consistent with this observation, we also find that pilot stock short sales that execute below the midpoint have greater price impact, indicating that they contribute more to price discovery when the rule is suspended. Thus, the removal of price tests for all NYSE stocks

¹These price tests are described more fully later in the paper. While the uptick rule also applies to AMEX-listed stocks, we do not analyze such stocks.

²See, e.g., <http://www.investorwords.com/444/bear_raid.html> for a description of bear raids.

³Our examination assumes that traders do not shift their short selling from other stocks in order to focus on pilot stocks and that abusive short sellers are not currently avoiding pilot stocks in the belief that SEC is looking closely at these stocks, as pointed out by Larry Harris and Bruce Lehmann, respectively, at a Roundtable on Reg SHO held on September 15, 2006 at the SEC (SEC, 2006b, pp. 94, 108–109).

⁴Less than 2.1% (3.8%) of the short trades of NYSE (Nasdaq) stocks executed at prices below the national best bid. Stoll and Schenzler (2006) examine why trades outside the quotes are observed. Their explanations include: (1) delays in reporting of trades; (2) execution delays because of the use of look-back options by Nasdaq dealers; and (3) large trades that exceed the quoted depth.

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