



Margin regulation and market quality: a microstructure analysis

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Abstract

We find that trading volume increases and market liquidity remains unchanged, while the adverse selection and order-processing cost components of the spread increase and decrease, respectively, after margin levels decline when stocks become margin-eligible. This evidence indicates that the information content of trades has increased, thereby improving market quality. However, no changes were detected after the 1997 regulatory reforms. These results have implications across a broad swath of corporate finance dimensions, including the (1) cost of capital, (2) public vs. private financing decision, (3) form of managerial compensation, (4) type of ownership structure, and (5) degree of shareholder monitoring.

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1. Introduction

The Board of Governors of the Federal Reserve System (hereafter, the “Fed”) is empowered to set the percent of a security transaction’s value that can be financed by a

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lender such as the initiating broker.¹ For example, if the margin level is set at $m\%$, an investor can borrow up to $(100 - m)\%$ from the broker when purchasing stock, with the stock serving as collateral for the loan. The effectiveness of margin regulation, in general, and its alleged influence on a stock's volatility, in particular, have been extensively examined with conflicting results.²

In this study, we analyze the relation between margin levels and market quality, which we define as the liquidity and the informativeness of stock prices. We investigate links between margin levels and liquidity—namely, spreads, depths, and number of market-makers—and relate these links to a number of corporate finance issues.³ Seguin (1990) shows that lower margin levels are associated with lower return volatility and larger trading volume. His findings suggest that lower levels of m should lead to some combination of lower spreads, greater depths, and more market-makers, thereby improving market liquidity. According to, for example, Amihud and Mendelson (1986, 2001), greater liquidity should lower the cost of capital for a firm.⁴ In contrast, Hardouvelis and Theodossiou (2002) find that lower margin levels are associated with greater return volatility during bull and normal markets. Under their paradigm, lowering the level of m can lead to a deterioration in market liquidity, thereby raising the firm's cost of capital.

We document that lower margin levels lead to a significant increase in daily trading volume, but detect no significant changes in liquidity.⁵ Specifically, after considering the impact of certain control variables, we find no significant changes in quoted and effective spreads or in the number of market-makers, but we do find a significant decrease in depths. However, this decrease is economically immaterial. These results indicate that lower margin levels do not change a stock's liquidity. Consequently, the first corporate finance implication of our results is that a lower margin level does not materially affect the firm's cost of capital.

We next investigate possible links between margin levels and the informativeness of stock prices by estimating the components of the spread using the decomposition model of Madhavan et al. (1997). We find that lower margin levels are associated with significant increases in the proportion of the spread attributable to adverse selection. Combining this result with our findings that spreads and depths do not change while trading volume increases, we conclude that the information content of trading and, therefore, the informational environment of the firm and the efficiency of the firm's share price improves when the margin level is lowered.

Because our period of analysis runs from 1993 through 1998 and involves a sample of Nasdaq Small Cap stocks, we investigate the impact of two major market regulatory reforms that were instituted in 1997 on our results. The first reform, the implementation of

¹ Regulation T ("Reg T") covers margin credit granted by broker-dealers; Regulations U and G cover margin credit granted by banks and other lenders, respectively.

² Chance (1990) provides a comprehensive review much of the early literature, while Hardouvelis and Theodossiou (2002) provide a review of the more recent literature.

³ Lee et al. (1993) and Goldstein and Kavajecz (2000) show that changes in both spread and depth are needed to unambiguously infer changes in quoted liquidity.

⁴ Also see Brennan and Subrahmanyam (1996), Amihud et al. (1997), Datar et al. (1998), Benveniste et al. (2001), Hasbrouck and Seppi (2001), Pastor and Stambaugh (2002), and Amihud (2002).

⁵ Whenever we refer to a change as "significant" (or "insignificant"), we mean statistically significant (or insignificant).

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