



Information precision, transaction costs, and trading volume

Orie E. Barron^a, Jonathan M. Karpoff^{b,*}

^a *Pennsylvania State University, University Park, PA 16802, USA*

^b *University of Washington, Box 353200, Seattle, WA 98195-3200, USA*

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Abstract

Most theoretical models of trade (Pfleiderer, 1984; Grundy and McNichols, 1989; Holthausen and Verrecchia, 1990; Kim and Verrecchia, 1991; Blume et al., 1994) imply that the trading volume prompted by a public announcement is positively related to the announcement's precision. Relying upon this notion, empirical researchers interpret high trading volume as an indication that an announcement is highly informative. We argue that such interpretations are not, in general, correct. In a world with transaction costs, the relation between information precision and trading volume is ambiguous and can be negative. This explains why, in empirical tests using data from actual markets, the relation between announcement precision and trading volume is not monotonically positive, even though in laboratory experiments it is. Our results imply that trading volume reactions to public announcements are most sensitive to announcement precision among low-transaction cost securities and in low-cost trading regimes.

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1. Introduction

Can we tell when a public announcement conveys meaningful information to investors? And just what can be inferred from a trading volume reaction to new

* Corresponding author. Tel.: +1-206-685-4954; fax: +1-206-221-6856.

E-mail address: karpoff@u.washington.edu (J.M. Karpoff).

information? For nearly 25 years, researchers have had answers to these questions. Beaver (1968), Morse (1981), Bamber (1986), and Bamber and Cheon (1995), for example, all interpret earnings announcements that are accompanied by high trading volume as conveying more information to investors than announcements that generate low trading volume. Supporting such interpretations, several rational expectation models demonstrate that trading volume increases with the precision of investors' information.¹ The notion that high volume accompanies informative announcements has taken roots in both the theoretical and empirical literature. Blume et al. (1994), for example, use it to advance a rationale for using trading volume in technical analysis. Hence, the conventional wisdom holds that meaningful news generates trading volume, and that trading volume is a useful measure of a public announcement's information content.

Unfortunately, however, this conventional wisdom is incorrect. In this paper we demonstrate that one should not expect, as a matter of course, a monotonically positive relation between announcement precision and the corresponding trading volume. As a result, the interpretation of trading volume reactions to public announcements, and our understanding of which types of announcements convey the most information to investors, are more complicated than recognized in most empirical research.

The key to our argument is the cost of trade. Consider as an example Kim and Verrecchia's (1991) model. In this model precise public announcements cause investors to agree more about the asset's value, homogenizing investors' private valuations of the risky asset. Precise public announcements also increase each investor's confidence about his or her private valuation. Bolstered by such confidence, investors become more willing to take speculative positions. In a world of costless trading the net result of these effects is to increase trade. At the extreme, a very precise public announcement could leave investors' valuations differing by only a penny, but each investor would be virtually certain that he or she was correct. Betting on their precise beliefs, investors would take extremely large speculative positions, thereby generating large trading volume.

If transactions are *costly*, however, investors will noticker over the last penny. Informative announcements will homogenize valuations, but many potential gains from trade will be outweighed by the transaction costs. At the extreme, a very precise and informative announcement will generate *no* trade, because investors' valuations will converge to such an extent that they lie within the bid–ask spread. In general, when transactions are costly, the most precise and informative announcements will trigger the fewest trades.

The effect of transaction costs can explain the available empirical evidence regarding trading volume and information precision. When transaction costs are zero, our model predicts that highly informative public announcements cause investors' beliefs to converge and simultaneously generate large trading volume – the same prediction

¹ See, for examples, Pfleiderer (1984), Grundy and McNichols (1989), Holthausen and Verrecchia (1990), and Kim and Verrecchia (1991).

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