THE EFFECTS OF DECIMALIZATION ON RETURN VOLATILITY COMPONENTS, SERIAL CORRELATION, AND TRADING COSTS

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Abstract

We examine the composition of return volatility, serial correlation, and trading costs before and after decimalization on the New York Stock Exchange. We decompose the variance of price changes into components associated with public news, rounding errors, and market-making frictions. We find that when stocks move from a fractional to a decimal trading system, the variance components due to market-making frictions and rounding errors decline significantly, whereas the component due to public news remains unchanged. The serial correlation of price changes weakens substantially after decimalization. The uninformed component of bid-ask spreads decreases significantly whereas the informed component has no significant change.

JEL Classification: G1

I. Introduction

Market microstructure theory suggests that private information induces trades and moves security prices. This private information signal is typically contained in the order flow. Prices also respond to public news announcements. Furthermore, prices are subject to the influence of market imperfections and trading frictions. In examining transaction price changes, the empirical model must capture all the effects of these elements. Understanding how much price volatility is determined by public information shocks, private information signals, and market frictions is important to policy makers, traders, and portfolio managers.

The recent conversion to decimal quotes in the U.S. stock markets offers an opportunity to study the effect of decimalization on the elements of variance and trading costs. Stocks in the U.S. markets had traditionally been traded on fractions.