ELSEVIER Journal of Banking & Finance 24 (2000) 1767–1785

Journal of BANKING & FINANCE

www.elsevier.com/locate/econbase

The components of bid–ask spreads on the London Stock Exchange

Kojo Menyah [a], Krishna Paudyal [b,*]

[a] *Department of Accounting and Financial Services, London Guildhall University, 84 Moorgate, London, UK*

[b] *Department of Economics and Finance, University of Durham, 23-26 Old Elvet, Durham DH1 3HY, UK*

Received 18 February 1999; accepted 29 July 1999

Abstract

The objective of this paper is to estimate the cost components of the bid–ask spread on the London Stock Exchange using intraday data. The findings are unambiguous in isolating the three cost components of quoted spreads. They are, therefore, consistent with the earlier work of Stoll based on the quote driven Nasdaq market (Stoll, H., 1989. Journal of Finance 44, 753–776). Additionally, the three spread components vary with the liquidity of the stocks measured by the minimum number of shares market makers are obliged to trade.

JEL classification: D82; G14

Keywords: Bid–ask spread; Order-processing cost; Inventory cost; Asymmetric information cost; Normal market size

1. Introduction

The market microstructure literature identifies the cost components which should be encapsulated in the bid–offer spread when analysing the supply price

* Corresponding author. Tel.: +44-191-3747523; fax: +44-191-3747289.
E-mail address: K.N.Paudyal@durham.ac.uk (K. Paudyal).

0378-4266/00/$ - see front matter
PII: S0378-4266(99)00102-8

of market making services. Demsetz (1968) and Tinic (1972) argued that spreads arise to compensate market makers for carrying and managing inventories to meet the requirements of investors who demand immediacy. Stoll (1978) and Amihud and Mendelson (1980), among others, formally modelled the inventory cost component of spreads. Bagehot (1971) offered the practitioner insight that dealers lose when they transact with traders with superior information. This encouraged the modelling of the asymmetric information cost component by Copeland and Galai (1983) and Glosten and Milgrom (1985). The cost of processing orders, involving labour, communication, clearing and record keeping expenses was also conceptualised as a component of spreads by Benston and Hagerman (1974, p. 355) and Stoll (1978, p. 1144). [1]

In spite of this theoretical and analytical literature, a number of empirical papers tend to estimate only two cost components. Glosten and Harris (1988), Hasbrouck (1988), George et al. (1991) (hereafter GKN) and Kim and Ogden (1996) use models which decompose spreads into a combined inventory and order processing cost component – transitory costs, and an asymmetric information cost component. GKN and Kim and Ogden, additionally argue that their estimate of the transitory costs should be interpreted as an estimate of order processing costs thus excluding inventory related costs. [2] The only UK study to attempt a decomposition of realised spreads into asymmetric information and inventory cost components by Neuberger (1992) was unsuccessful, because his estimates were based on the model of Glosten and Harris (1988) which implicitly assumes a zero inventory cost. Stoll (1989) on the other hand, decomposes the quoted spread into its three components. This is accomplished by using a covariance model to estimate the realised spread attributable to order processing and inventory holding cost from transaction and quote data. He then develops an analytical and empirical model for separating the order processing and inventory cost components. The asymmetric information cost component is then calculated as one minus the realised spread. This approach is consistent with the theoretical model of Garman (1976) which demonstrates that spreads should be inventory-dependent if the market maker is to avoid failure.

GKN (1991) criticised the Stoll estimator on the grounds that time variation in expected returns induces positive autocorrelation that leads to a downward bias in the estimation of the realised spread. They correct for this bias by using

[1] Even though Demsetz (1968) recognised the order processing cost of providing specialist (market making) services, he did not indicate that such costs should be recovered through the spread.

[2] GKN's (1991, p. 649) argument is based on their finding of a positive first-order autocorrelation in bid-to-bid returns rather than the expected negative autocorrelation implied by the analytics of the problem. Kim and Ogden's (1996, p. 144, footnote 2) conclusion is based on their claim of the empirical difficulty of separating order processing and inventory costs.