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### An empirical analysis of the supply of liquidity by locals in futures markets: Evidence from the Sydney Futures Exchange

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#### **Abstract**

Contrary to the received view of market makers in theoretical literature, this study provides direct evidence that locals on the Sydney Futures Exchange (SFE) do not trade exclusively as passive market participants. In fact, rather than act purely as market makers, locals as a group are almost as likely to demand as supply liquidity. Further, locals trading on the floor of the SFE are less likely to supply liquidity when bid—ask spreads, trading frequency and price volatility are high, as well as around information announcements. These findings are consistent with aggressive trading by locals on the basis of a short-lived information advantage. This study also documents considerable diversity in the propensity of locals to supply liquidity, finding that it is related to the quantity, frequency and average size of their trading activity. © 2000 Elsevier Science B.V. All rights reserved.

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#### 1. Introduction

Trade on most of the world's leading futures exchanges takes place on a floor by open outcry. The Chicago Board of Trade (CBOT), Chicago Mercantile Exchange (CME) and Sydney Futures Exchange (SFE) are examples of leading

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international futures exchanges which operate floor-trading systems. In the typical futures floor-trading environment, transactions are executed by floor members and local members (herein locals). Floor members are typically institutions who trade both on their own account and on behalf of clients, whereas locals are individuals who trade on their own account. Exchanges have traditionally assumed that trading by locals enhances market liquidity. <sup>1</sup>

This study (1) examines the extent to which locals supply liquidity in futures markets and (2) determines the conditions under which they are most likely to supply liquidity. This study is important for several reasons. The findings have a number of policy implications. Locals were introduced by the SFE for the explicit purpose of enhancing market liquidity. This paper provides evidence of whether locals fulfil this role. This issue also extends to the ongoing screen trading debate surrounding futures markets as locals (and therefore any liquidity they supply) are unlikely to migrate from open outcry to a screen trading environment.<sup>2</sup> In this respect, the paper is particularly timely given that the SFE and London International Financial Futures and Options Exchange (LIFFE) intend to move to fully automated trading during 1999.<sup>3</sup>

This study also has implications for theoretical literature on the economics of market making. The dominant theoretical model describing how market makers set bid and ask quotes is Stoll (1976), which predicts that the bid—ask spread is set to recover order processing, inventory holding and asymmetric information costs. A later version of this model by Ho and Stoll (1983), developed in a competitive framework, predicts that market makers seek to manage inventory levels around an optimal level, and recoup these costs, through offering a price concession (or discount) for inventory decreasing trades.<sup>4</sup> In effect, long (short) inventory positions are managed by inducing sales (buys) through shifting both buy and sell quotes downward (upward). In apparent contradiction to Ho and Stoll (1983), Manaster and Mann (1996) find that inventory reducing trades by locals in futures markets are typically realised at better prices relative to other traders, than inventory-increasing trades. Such behaviour is inconsistent with the prediction that

<sup>&</sup>lt;sup>1</sup> For example, in an application form and information memorandum for temporary local membership on the SFE, the following statement appeared "locals provide liquidity to the market" (Sydney Futures Exchange, 1994, p. 3).

<sup>&</sup>lt;sup>2</sup> Massimb and Phelps (1994) found that the ability of locals to operate effectively is significantly impaired in a screen-trading environment. Consistent with this, locals at MATIF protested against the planned introduction in April 1998 of NSC-VF, MATIF's new screen-based trading system (Financial Times, 4 February 1998).

<sup>&</sup>lt;sup>3</sup> Between the time of writing and publication of this paper, the LIFFE and SFE did in fact move to screen trading. The SFE implemented fully automated screen trading between October and December 1999

<sup>&</sup>lt;sup>4</sup> Inventory control articles include Demsetz (1968), Garman (1976), Stoll (1976), Amihud and Mendelson (1980), Zabel (1981), Ho and Macris (1985), Ho and Stoll (1980, 1981, 1983), Mildenstein and Schleef (1983), O'Hara and Oldfield (1986), Biais (1993), and Laux (1995).

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