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The value of liquidity: Evidence from the derivatives market

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Abstract

This paper documents the systematic overpricing of warrants relative to options. Models are developed in order to explain the cross-sectional variation in the relative pricing of these securities. Results indicate that relative pricing differences (RELDIFF) are related to various proxies of liquidity including days-to-maturity, relative trading volume and the mandated presence of market makers in the options market. The identity of warrant-issuers is also found to be significant in explaining relative pricing, possibly reflecting disparate levels of credit risk or it may be a manifestation of the different characteristics relating to the underlying shares upon which the warrants are issued. The paper also documents the impact that the change from floor trading to electronic trading had on the price formation process in the Australian Options Market. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

Throughout this century the importance of liquidity to securities markets has been well recognised by academics and practitioners alike. There have been many

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papers, both empirical (Glosten and Milgrom, 1985; Amihud and Mendelson, 1986; Glosten, 1987; Brock and Kleidon, 1992; McInish and Wood, 1992; Eleswarapu and Reinganum, 1993; Datar et al., 1998) and theoretical (Adamati and Pfleiderer, 1988; Pagano, 1989), that have considered the effect of market structure on the liquidity of the market. Many of these papers have also examined the relationship between liquidity and the price formation process.

In Australia, a unique opportunity has arisen to investigate the relationship between liquidity and market structure, in particular to investigate the effects of changes in the method of trading in the options market and the price formation process in derivatives markets. In 1991, the Australian Stock Exchange (ASX) permitted trading to commence in equity warrants.[1] Equity warrants have an identical payoff structure to standard exchange-traded options, but have been subject to a different trading mechanism. Prior to the introduction of the screen-based Derivative Trading Facility (DTF) in November 1997, options were floor-traded whilst warrants have always been screen-traded via the Stock Exchange Automated Trading System (SEATS). Other differences that may influence the relative pricing of these securities include the levels of credit risk associated with the securities, the influence of market-making services and differences in short-selling restrictions.

The paper has two major aims. First, the paper tests for any systematic difference in the pricing of equity warrants and options. This analysis will also consider whether any systematic pricing differences have been affected by the switch from floor-based to screen-based option trading. Second, the paper seeks to model the relative pricing difference (RELDIFF) between the two securities. Different empirical specifications are developed to examine whether the RELDIFF may be explained by differences in the way in which these securities are traded and regulated.

Section 2 reviews some of those factors that have been found to influence market liquidity. The institutional settings that may influence the relative pricing and/or the level of trading in the two securities are discussed in Section 3 whilst

[1] Equity warrants are issued by parties other than the company upon whose shares the warrants are issued. There is no effect on the capitalisation of the company if the warrants are exercised, therefore, the securities are in fact long-dated options rather than bona-fide warrants. Traditionally, a warrant is a security issued by a company that permits the holder to convert the warrant into shares in the company at the holder's option, according to the terms of the warrant contract. If the warrant is exercised, additional shares are issued by the company resulting in a dilution in the ownership of existing shareholders. The equity warrants considered in this paper are not issued by the company upon whose share the warrants are written, but instead are issued by a third party with no effect on existing ownership levels.