

The volatility effect of futures trading: Evidence from LSE traded stocks listed as individual equity futures contracts on LIFFE

Khelifa Mazouz^{a,*}, Michael Bowe^{b,1}

^a Finance, Accounting and Law Group, Aston Business School, Birmingham, UK

^b Division of Accounting and Finance at Manchester Business School, Manchester, UK

Received 4 October 2004; accepted 14 July 2005

Available online 4 November 2005

Abstract

This study investigates the impact of LIFFE's introduction of individual equity futures contracts on the risk characteristics of the underlying stocks trading on the LSE. We employ the Fama and French three-factor model (TFM) to measure the change in the systematic risk of the underlying stocks which arises subsequent to the introduction of futures contracts. A GJR-GARCH(1,1) specification is used to test whether the futures contract listing affects the permanent and/or the transitory component of the residual variance of returns, and a control sample methodology isolates changes in the risk components that may be caused by factors other than futures contract innovation. The observed increase (decrease) in the impact of current (old) news on the residual variance implies that futures contract listing enhances stock market efficiency. There is no evidence that futures innovation impacts on either the systematic risk or the permanent component of the residual variance of returns.

© 2005 Elsevier Inc. All rights reserved.

JEL classification: C22; G12; G14

Keywords: Individual equity futures; Three-factor model; GJR-GARCH(1,1)

1. Introduction

The impact of innovation in equity derivatives contracts on the volatility of the underlying stocks has become a particular focus of attention for observers of the stock market. Although the

* Corresponding author. Tel.: +44 121 359 3611x3041.

E-mail addresses: K.mazouz@aston.ac.uk (K. Mazouz), Mike.Bowe@manchester.ac.uk (M. Bowe).

¹ Tel.: +44 161 200 3407.

hedging activities of large institutional investors account for a major component of the market volume, stock index futures trading has also attracted speculators and small traders. Some commentators (see, for instance, [Chatrath, Ramchander, & Song 1998](#)) argue the participation of such traders may enhance underlying volatility in the stock market.² One result of this concern has been the imposition of regulations designed to control potentially destabilising trader behaviour. These include increasing the level of margin requirements, halting trading subsequent to large movement in the value of index futures contracts and prohibition of program trading when market movements exceed some pre-determined daily interval.

This study examines the market stability and efficiency impact of introducing individual equity futures trading based upon a number of different volatility estimators for the securities trading in the underlying market.³ The data sample consists of the equity futures contracts which were introduced on the LIFFE (London International Financial Futures and Options Exchange) beginning in January 2001. The analysis makes the following central contributions. First, our empirical specifications explicitly account for (i) the fact that firm systematic risk is time varying and (ii) high frequency financial return series are characterised by conditional heteroscedasticity. Failure to correct for these phenomena is likely to generate inconsistencies when measuring the impact of futures listing on the riskiness of the underlying stocks ([Mazouz, 2004](#); [Skinner, 1989](#)). Our use of both the single factor CAPM and the three factor model of [Fama and French \(1992\)](#) in conjunction with the GJR-GARCH (1,1) process to model total (time varying) risk helps ensure that our results are robust across alternative model specifications. Second, our use of a carefully constructed control sample helps alleviate the potential endogeneity bias which characterises much existing research. Futures exchanges act to maximise member revenue from futures trading, and choose to innovate contracts on underlying instruments that rate highly on attributes such as price volatility. In turn, these attributes may reflect changes in market and industry-wide conditions. As such, volatility in the underlying stocks may be measured to coincide with futures listing even if the listing event itself has no impact upon volatility in the underlying market. We would argue that the paper's use of a control sample, complimented by an individual stock approach focussing on the sign and statistical significance of any risk changes, helps to mitigate the potentially severe empirical impact of such endogeneity bias.⁴

A review of both the theoretical arguments and existing empirical evidence on the impact of futures listing on the volatility of the underlying instrument generates no clear consensus. Theoretical analyses often focus upon the relationship between the observed price and intrinsic value of a traded security. Any manifest distinction between the two is customarily attributed to both trading noise and market-microstructure related noise, the latter manifest in the bid–ask spread ([Amihud & Mendelson, 1987](#); [Black, 1986](#)). In the context of the present paper the issue is how the introduction of derivatives trading on LIFFE is likely to impact on these two “noise” components of the return variance of the underlying LSE traded stocks.

[Figlewski \(1981\)](#) adopts a liquidity perspective on this issue, claiming that listing futures contracts contract should enhance the underlying instrument's liquidity, and that the information released by new derivative traders may stabilise prices on the underlying market. The

² Arguments along these lines were especially popular in the media after the 1987 stock market crash.

³ Only a few papers, such as [Lee and Tong \(1998\)](#) and [Chatrath et al. \(1998\)](#), examine the volatility impact associated with the introduction of individual equity futures contracts which currently trade in only four countries, namely Australia, Sweden, Hong Kong and the United Kingdom.

⁴ A similar “control sample” methodology is also used by [Mazouz \(2004\)](#), but that is in the context of option not futures listing on a different (US) dataset.

Download English Version:

<https://daneshyari.com/en/article/5085447>

Download Persian Version:

<https://daneshyari.com/article/5085447>

[Daneshyari.com](https://daneshyari.com)