ELSEVIER

Journal of Empirical Finance 8 (2001) 55–81

Journal of EMPIRICAL FINANCE

www.elsevier.com/locate/econbase

Coskewness and cokurtosis in futures markets

Rohan Christie-David [a,*], Mukesh Chaudhry [b]

[a] *Department of Economics, Finance, and International Business, College of Business Administration, University of Southern Mississippi, Hattiesburg, MS 39406, USA*

[b] *Marshall University, Huntington, WV 25755, USA*

Accepted 2 February 2001

Abstract

The contribution of the third and fourth moments in explaining the return-generating process in futures markets remains unresolved. This study attempts to resolve this issue by using a four-moment model and by sampling 28 futures contracts and nine market proxies. Such sampling provides wide representation of futures markets and lends a high degree of robustness to the results. Our results show that the second, third and fourth moments are all important in explaining futures returns. Evidence from regression tests show increases in explanatory power as the third and fourth moments are included. The results are robust to the market proxy used. © 2001 Elsevier Science B.V. All rights reserved.

JEL classification: G12; G14

Keywords: Return-generating process; Coskewness; Cokurtosis; Asset pricing

1. Introduction

The nature of the return-generating process in futures markets remains an unresolved issue. Although the distribution of futures returns is well known, empirical tests that examine risk premia in futures markets yield conflicting results. Many studies in the past fail to detect evidence of risk premia in futures markets. For instance, studies that employ a traditional Capital Asset Pricing

* Corresponding author. Tel.: +1-601-266-6612; fax: +1-601-266-4639.

E-mail address: Rohan.Christie-David@usm.edu (R. Christie-David).

0927-5398/01/$ - see front matter © 2001 Elsevier Science B.V. All rights reserved.
PII: S0927-5398(01)00020-2

Model (CAPM) or an Arbitrage Pricing Framework (APT), often fail to detect significant risk premia in futures prices (see, e.g., Dusak, 1973; Baxter et al., 1985; Ehrardt et al., 1987), and those that use a pricing framework that departs from traditional models provide mixed results. For example, Raynauld and Tessier (1984) and Chang (1985) detect significant risk premia while Junkus (1991) does not. To shed new evidence on the return-generating process in futures markets, we examine 28 futures contracts and use nine different proxies for the market. The wide sampling of futures contracts ensures comprehensive representation of all futures markets, while the use of different market proxies ensures the results are robust.

Early tests of the return-generating process were mainly confined to equity markets. Such tests followed the development of the widely accepted two-moment CAPM, developed by Sharpe (1964), Lintner (1965), Mossin (1966), and later Black (1972). Tests of the CAPM are conducted by Friend and Blume (1970), Black et al. (1972), and Basu (1977), among others. These tests provide much insight into the functioning of financial markets. However, violations of the linear pricing kernel proposed by the CAPM found by some (see, e.g., Chen et al., 1986; Fama and French, 1992, 1993), prompted the search for alternative pricing models. Suggestions included modifications to the CAPM, such as the addition of higher moments (e.g., Arditti and Levy, 1975).

This study provides a four-moment extension to the two-moment CAPM, much in the spirit of Kraus and Litzenberger's (1976) three-moment extension to the standard CAPM. Fang and Lai (1997) and Dittmar (1999) present four-moment extensions in other contexts. The basic inferences of our model are consistent with these models.

2. Asset pricing, coskewness, and cokurtosis

The literature has noted the importance of higher moments for some time. For instance, Levy (1969) suggests that expected utility depends on all of the distribution's moments and that higher moments cannot be neglected. He notes that higher moments should be added even if they add little information about the shape of the distribution. Studies in equity markets address the importance of higher moments. Badrinath and Chatterjee (1988) using the g and h and $g \times h$ distributions proposed by Tukey (1977), as they provide a more general framework, find complicated forms of skewness and elongation (kurtosis) in the Center for Research in Security Prices (CRSP) value-weighted and equally-weighted indexes. They conclude that the estimation of skewness and kurtosis must be carried out in concert.

More recent studies in equity markets have refocused attention on higher moments. Harvey and Siddique (2000) make a strong case for the inclusion of

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
✓ امکان دانلود نسخه ترجمه شده مقالات
✓ پذیرش سفارش ترجمه تخصصی
✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
✓ دانلود فوری مقاله پس از پرداخت آنلاین
✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات