The Empirical Distribution of UK and US Stock Returns

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1. INTRODUCTION

The distribution of equity returns plays an important role in both the theory and application of financial economics. A particularly convenient assumption, and one that is central to much finance theory, is that equity returns are normally distributed.[1] However, despite its prevalence in financial economics, the assumption of normality is inconsistent with the empirical evidence on the distribution of equity returns. While long horizon returns are often found to be approximately normally distributed, there is now a large body of evidence that finds that over short horizons, equity returns are far from normal, but instead display significant leptokurtosis, and in many cases, skewness.[2]

The finding that equity returns are not normally distributed has led to a sustained search for alternative statistical distributions that adequately capture their empirical characteristics. Empirical studies have modelled equity returns using a wide range of distributions, some of which are based on theoretical models of investor behaviour, while others have been chosen *ad hoc*. These distributions include the stable Paretian (Mandelbrot, 1963; Fama, 1965; Officer, 1972; and Clark, 1973), the student-*t* (Praetz, 1972; Blattberg and Gonedes, 1974; Kon, 1984; Gray and French, 1990; Peiro, 1994; Aparicio and Estrada,