ELSEVIER

Idiosyncratic volatility and equity returns: UK evidence[☆]

Timotheos Angelidis [a,b,*], Nikolaos Tessaromatis [b,1]

[a] *Department of Economics, University of Crete, Gallos Campus, 74100 Rethymno, Greece*
[b] *Athens Laboratory of Business Administration, Athinas Ave. and 2a Areos street, Vouliagmeni GR-166 71, Greece*

Abstract

The proposition that idiosyncratic volatility may matter in asset pricing is currently a topic of research and controversy. Using data from the UK market we examine the predictive ability of various measures of idiosyncratic risk and provide evidence which suggests that: (a) it is the idiosyncratic volatility of small capitalization stocks that matters for asset pricing and (b) that small stocks idiosyncratic volatility predicts the small capitalization premium component of market returns and is unrelated to either the market or the value premium. The predictive power of the aggregate idiosyncratic volatility of small stocks remains intact even after we control for the possible proxying effects of business cycle fluctuations and liquidity and is robust across time and different econometric specifications.
© 2007 Elsevier Inc. All rights reserved.

  * Corresponding author. Department of Economics, University of Crete, Gallos Campus, 74100 Rethymno, Greece. Tel.: +30 210 8964 736.
    E-mail addresses: taggelid@alba.edu.gr (T. Angelidis), ntessaro@alba.edu.gr (N. Tessaromatis).
  [1] Tel.: +30 210 8964 736.

1. Introduction

Standard asset pricing models predict that only systematic risk is priced in equilibrium. Accordingly most of the empirical work on the validity of asset pricing models was focused on whether one or multiple systematic factors are incorporated in asset prices and command a risk premium. The possibility that idiosyncratic risk (which in theory can be eliminated through diversification) maybe priced in equilibrium and therefore investors might demand a systematic risk premium to bear it, has been largely neglected[2].

The recent paper by Campbell, Lettau, Malkiel and Xu (2001) on the statistical properties of idiosyncratic volatility has rekindled interest in the role of idiosyncratic volatility in asset pricing and stock return prediction. Campbell et al. (2001), using monthly data over the 1962–1997 period, show that average idiosyncratic risk is the most important component of total volatility, has increased noticeably over the period (while market volatility shows no significant trend), is countercyclical and helps forecast future economic activity.

The possibility that idiosyncratic risk might be priced in equilibrium has been studied in two recent papers. Xu and Malkiel (2001) build an equilibrium model, on the assumption that some investors might not be able to hold the market portfolio, which includes idiosyncratic risk as one of the systematic determinants of future stock returns. They study empirically the cross sectional relation between idiosyncratic volatility and firm returns and find a positive relation between idiosyncratic risk and future returns. Ang, Hodrick, Xing, and Zhang (2006) reach the opposite conclusion; stocks with high idiosyncratic risk deliver abysmally low returns.

The other strand of the literature, more relevant for this paper, studies the inter-temporal relationship between lagged aggregate idiosyncratic volatility and market stock returns. Goyal and Santa-Clara (2003) find that the equally weighted stock volatility is a significant predictor of subsequent returns of the value-weighted market portfolio. This result persists even after controlling for other variables that are known to predict future equity returns. Bali, Cakici, Yan and Zhang (2005) argue that the positive relation uncovered by Goyal and Santa-Clara (2003) is not robust across different stock portfolios, disappears if the sample includes the more recent history of returns[3] and is partially driven by a liquidity premium. Guo and Savickas (2003a), using quarterly data to measure volatility, reach the conclusion that value-weighted idiosyncratic stock volatility is negatively related to future stock returns. Finally, Brown and Ferreira (2004) create two measures of idiosyncratic risk: one based on large capitalization stocks and another based on small capitalization stocks. Their evidence suggest that only the small capitalization based measure of idiosyncratic risk is significantly and positively related to future returns of the market portfolio as well as portfolios of large and small stocks.

The existing evidence on the relationship between idiosyncratic volatility and future stock returns based on US data are conflicting and confusing. On the one hand the evidence by Goyal and Santa-Clara (2003) point to a positive relation between market returns and the lagged equally weighted idiosyncratic volatility. On the other hand, Wei and Zhang (2005) and Bali et al. (2005)

---

[2] Early papers by Lintner (1965) and Douglas (1969) suggested that idiosyncratic risk measured as the standard deviation of the error term from the market model explains the cross sectional average of stock returns. This finding was criticized by Miller and Scholes (1972) and Fama and MacBeth (1973) for inappropriate econometric methodology. Later Tinic and West (1986) and Lehmann (1990) in a careful econometric study, reaffirmed the significance of idiosyncratic risk.

[3] Wei and Zhang (2005) also find that the relation between returns and idiosyncratic risk disappears if the sample used by Goyal and Santa-Clara (2003) is extended by three years to 2002.