The Persistence of Abnormal Return on Assets: An Exploratory Analysis of the Differences between Industries and Differences between Firms by Country and Sector

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Abstract : This study offers an exploratory statistical analysis of the persistence of annual profits across a sample of firms from different European Union (EU) countries. To this end, a hierarchical Bayesian dynamic model has been used which enables the annual behaviour of those profits to be broken down into a permanent structural and a transitory component, while also distinguishing between general effects affecting the industry as a whole to which each firm belongs and specific effects affecting each firm in particular. This breakdown enables the relative importance of those fundamental components to be more accurately evaluated by country and sector. Furthermore, Bayesian approach allows for testing different hypotheses about the homogeneity of the behaviour of the above components with respect to the sector and the country where the firm develops its activity. The data analysed come from a sample of 23,293 firms in EU countries selected from the AMADEUS data-base. The period analysed ran from 1999 to 2007 and 21 sectors were analysed, chosen in such a way that there was a sufficiently large number of firms in each country sector combination for the industry effects to be estimated accurately enough for meaningful comparisons to be made by sector and country. The analysis has been conducted by sector and by country from a Bayesian perspective, thus making the study more flexible and realistic since the estimates obtained do not depend on asymptotic results. In general terms, the study finds that, although the industry effects are significant, more important are the firm specific effects. That importance varies depending on the sector or the country in which the firm carries out its activity. The influence of firm effects accounts for around 81% of total variation and display a significantly lower degree of persistence, with adjustment speeds oscillating around 34%. However, this pattern is not homogeneous but depends on the sector and country analysed. Industry effects depends also on sector and country analysed have a more marginal importance, being significantly more persistent, with adjustment speeds oscillating around 7-8% with this degree of persistence being very similar for most of sectors and countries analysed.

Keywords : dynamic models, Bayesian inference, MCMC, abnormal returns, persistence of profits, return on assets
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