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Country and size effects in financial ratios: A European perspective☆

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Abstract

Harmonised aggregate financial statements are published by the European Commission in the BACH database. This information is organised by country, size of firm, and year. Financial ratios obtained from this database are analysed using multivariate statistical techniques in order to explore country and size effects. The data relates to three size groups, eleven countries, fourteen years, and fifteen financial and economic ratios. It is found that ratios reflect the size of the firm, but that the way in which this is reflected varies between the different countries. It is also found that there are no significant size related differences in financial profitability, but that such differences appear when countries are compared.

JEL classification: M4; F360; G320
Keywords: BACH database; Firm size; Financial ratios; Central balance sheet; Three-way scaling; INDSCAL; Financial statement analysis

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1. Introduction

Does size matter? Small firms have long been found to differ from large firms in many respects. The study of size effects and the way these are reflected in the financial structure of the firm, has a long pedigree; Hall (1987). Size effects have been found in capital markets; Rees (1995), Cooke (1992); and in bankruptcy prediction; Ohlson (1980), Peel, Peel, and Pope (1986). Small firms have higher probability of failure than large firms. In the small-firm sector approximately 50% of firms can be expected to fail in a five year period; Storey, Keasey, Watson, and Wynarczyk (1987). Chung (1993) studied the debt structure of small and large firms. The relationship between size and export behaviour has been studied by Calof (1994) and Pierre-Andre (1997). Archer and Faerber (1966) study the relationship between firm size and cost of equity. The financial structure of manufacturing companies in relation to size is studied by Gupta (1969). Small firms have limited access to debt markets, something that does not happen to large firms, which can resort to issuing bonds or equity. Banks restrict the credit available to small firms to a larger extent that they restrict credit to large firms; Gatward and Sharpe (1996).

A way of acknowledging the importance of size, and to control for it, is to work with ratios. This is done in the present paper. Ratio analysis relies on the principle of proportionality. There has been much debate about proportionality in the literature; Lev and Sunder (1979), Whittington (1980), McLeay and Fieldsend (1987), and Fieldsend, Longford, and McLeay (1987). If proportionality applies, no size effect should be found when working with ratios. However, it will be shown that size is important in the financial structure of European firms. But it will be shown that, in Europe, a country effect exists, and that the effect of size can only be understood in the framework of data for individual countries.

This paper studies size effects in European firms, as reflected in the BACH database. Other studies of financial structure of European firms, which also use this database are Rivaud-Danset, Salais, and Dubocage (2001), Serrano-Cinca, Mar-Molinero, and Gallizo (2001, 2002), and Gallizo and Salvador (2002). The main issues are very well discussed in Rivaud-Danset et al. (2001) who give a review of the literature since 1990 (page 10). They point out that different results have been found by different researchers, and explain this by the fact that studies which concentrate on size effects tend to ignore country effects, while those studies that study country effects tend to ignore the different proportions of large and small enterprises that exist in the various countries. In conclusion, the study of firm size in Europe cannot be divorced from country effects.

The Directorate General for Economic and Financial Affairs of the European Commission collects and harmonises annual company accounts statistics for European countries. This is published in the BACH (Bank for the Accounts of Companies Harmonised) database. Data for BACH is provided by the institutions that form part of the European Committee of Central Balance Sheet Data Offices (ECCB); European Commission (2000). A list of these institutions can be seen in Table 1. The BACH database is a very rich data source, freely available through the Internet. It contains information by year, country, industrial sector, and size. From the original data, 15