University of Zurich

Faculty of Business, Economics and Informatics

Department of Banking and Finance

Prof. Dr. Kjell G. Nyborg

Bachelor Thesis

Supervisor: Lilia Mukhlynina

Tax and leverage: Comparative evidence through time.

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Executive summary

Problem statement

A survey by Graham and Harvey (2001) finds that chief financial officers of large American companies think a lot about their firms' capital structures. They complain that even though there is a large academic literature dealing with capital structure related questions clear and actionable advice is hard to find. The vast majority of publications analyzing taxes and leverage focus on US firms. This problem is even more accentuated for firm specific marginal tax rate data. For example, empirical data regarding the determinants of capital structures for Swiss corporations can be found in Gaud, Jani, Hoesli, and Bender (2005). However, they do not take into consideration the value of debt tax shields.

Research objective

The objective of this thesis is to develop an easy to use marginal tax rate proxy which is based solely on publicly available financial statement data. Further, this proxy should work well for different countries and tax regimes with only small adjustments required. In particular, the thesis reviews and analyzes the tax hypothesis which predicts that firms with higher marginal taxes will use more debt. A further research objective is to analyze what kind of tax rates firms actually pay relative to what the official headline tax rate implies.

Methodology

The selected sample includes firms covered by the Compustat North America and Global database based in the United States, Germany, United Kingdom, and Switzerland in the time period ranging from 2005 to 2016. Additionally, data from 1995 till 2005 is used for the calculations related to the marginal tax rate proxy. Firms with less than one Million of revenues as well as all financial services and real estate firms were excluded from the sample as recommended by the literature. Commonly used control variables are described and added to the leverage regressions to control for competing explanations of capital structure. Regression analysis is performed using a fixed-effects model following the estimation method guidelines of Peterson (2009) and Verbeek (2012) regarding empirical capital structure research.

Results

The results indicate that the tax status proxy developed in this thesis works well for European firms. It finds a positive and significant relationship between the corporate marginal tax rate and the amount of leverage firms use. This result is robust for all three different measures of leverage used. Regarding the individual countries as subsamples the results are less robust. Only the book value leverage measure is positively associated with the marginal tax rate in Germany, the UK, and Switzerland. the thesis finds large differences between European firms and their American peers. The marginal tax rate proxy used is only able to find a significant positive relation between taxes and leverage for market value based leverage.

Comparing statutory tax rates to effective average tax rates I find that firms pay significantly less taxes than what they should according to headline tax rates. Further, this thesis finds that between country differences in the effective tax rates are much smaller than the differences in the statutory tax rate. While the US has by far the highest statutory tax rate at 40%, it also shows the largest difference between what firms actually pay and what firms should be paying according to the statutory tax rate. The average US effective tax rate was only 22.36% and has been falling even though the statutory tax rate remained steady at 40%.