



# The effects of government borrowing on corporate financing: Evidence from Europe



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## ABSTRACT

This study investigates the relationship between government borrowing and corporate financing decisions in 15 developed European countries for the period of 1989–2014. We find a robust negative relationship between government borrowing and corporate debt in developed European countries. However, we do not identify any significant relation between government debt and equity. The more important finding of our study is that long-term debt of large credit-worthy companies is more sensitive to government debt in comparison to that of small financially constrained companies. In addition to government borrowing, firm-specific factors and other macroeconomic control variables are statistically significant for corporate financing decisions.

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## 1. Introduction

Government borrowing and its consequences have been a debatable topic all over the world, especially in the Eurozone, after the global financial crisis. Actually, government debt can play an important role to cope with economic crisis in the short-term, but in the long-term it may crowd out private investment. The current Eurozone sovereign debt crisis experience has indicated that level of government debt can affect behaviour of all economic units including financing activities of corporations. At microeconomic level, determining capital structure is one of the most important decisions in corporate finance practice and theory, because capital structure can affect the firm value. The early capital structure literature focused on the firm-specific determinants of corporate financing by ignoring macroeconomic factors. Trade-off, pecking order and market timing theories are the widely accepted capital structure theories in the literature. A detailed discussion of classical capital structure theories is presented in Frank and Goyal (2008). Recently, one of the most significant topics in capital structure literature is to add macroeconomic variables as independent variables into econometric models. Little is known about the impact of government borrowing on the corporate financing structures of non-financial companies, except findings of Graham et al. (2014a, b) and Fan et al. (2012).

The main purpose of this study is to investigate the impact of government borrowing on corporate financing decisions for data set of 15 developed European countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom). Furthermore, we aim to examine sensitivity of corporate leverage to government borrowing for both financially good and bad companies. Specifically, this study seeks

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to address the following research questions: (a) Are corporate debt of non-financial firms and government debt inversely associated in developed European countries? (b) Is there a relationship between equity and government borrowing for non-financial firms in developed European countries? (c) Are financial leverage policies of more credit-worthy non-financial firms more sensitive to changes in government debt in comparison to policies of less credit-worthy firms in developed European countries?

We use both country-level aggregate panel data and firm-level microeconomic panel data in our econometric analyses. We find a statistically significant inverse relationship between corporate debt level and government debt level. Similarly, we also identify a statistically significant inverse connection between corporate debt issuance and government debt issuance. These relationships are robust for different corporate debt measures, additional control variables and different sample periods. However, we do not identify any relationship between equity and government borrowing. The most important finding of our study is that long-term corporate debt of large credit-worthy companies is more sensitive to changes in government debt level in comparison to that of small financially constrained companies. Our findings are consistent with studies of [Graham et al. \(2014a and b\)](#) and [Fan et al. \(2012\)](#). While [Graham et al. \(2014a and b\)](#) have examined a long U.S. historical data set and discussed the impacts of government debt on corporate financing and investment, [Fan et al. \(2012\)](#) have considered international data set covering developed European countries.

The remainder of our paper is structured as follows. [Section 2](#) explains theoretical backgrounds of our motivation, reviews the literature critically and proposes our main hypotheses. [Section 3](#) presents our sample, data set and research methodology. [Section 4](#) reports the results of our study and presents some implications. Lastly, [Section 5](#) concludes this study.

## 2. Theoretical background and hypothesis development

There are three main theories of capital structure which emphasize the importance of firm-specific factors in determining corporate financial policies. These are trade-off, pecking order and market timing theories. Trade-off theory combines tax benefits of using corporate debt and bankruptcy costs ([Kraus and Litzemberger, 1973](#)) and agency costs ([Jensen and Meckling, 1976](#)) of debt financing. Pecking order theory argues that adverse selection, agency conflicts and taxes have significant effects on capital structure decisions of firms ([Myers, 1984; Myers and Majluf, 1984](#)). The most important implication of pecking order theory suggests a specific ranking rule for new fund issuance of firms such that retained earnings is preferred to debt financing and corporate debt is preferred to equity financing ([Myers, 1984](#)). Third strand in the literature is market timing theory which asserts that managers try to time new fund issuances according to time-varying costs of equity and corporate debt. A comprehensive survey conducted by [Graham and Harvey \(2001\)](#) for the U.S. companies presented strong evidence that managers try to time changes in interest rates by issuing new debt when they think that interest rates are low, this phenomenon is more valid for larger companies because they have more sophisticated treasury departments. [Brounen et al. \(2006\)](#) conducted a similar survey for detecting capital structure practices in Europe. They also presented evidence of market timing activities for European managers, but these activities are lower in comparison to their U.S. counterparts.

The recent cross-country studies have been considering macroeconomic factors which have effects on corporate financing ([De Jong et al. 2008; Fan et al., 2012 and Öztekin, 2015](#)). [Graham et al. \(2014a and b\)](#) have shown that government borrowing have significant effects on corporate financing decisions of the U.S. firms over the last century. Based on theoretical backgrounds of [Miller \(1977\); McDonald \(1983\); Taggart \(1985\) and Friedman \(1986\); Graham et al. \(2014a\)](#) explain aggregate corporate debt equilibrium that is reached at intersection between imperfectly inelastic demand and supply curves. The most important implication of an imperfectly inelastic demand curve of aggregate corporate debt is to motivate a negative association between government debt and corporate debt. As long as government debt is imperfect substitute to other securities in the financial markets, changes in government debt issuance can have effects on relative returns of other securities. In the same vein, [Graham et al. \(2014b, p.3\)](#) claim that changes in supply of government borrowing can affect the relative returns of competing securities in such a way that supply of closer substitutes (corporate debt) is more sensitive to variations in government debt than that of poorer substitutes (equity). Depending on this reasoning, we propose the following two hypotheses:

- H1. There is a negative relationship between government borrowing and corporate debt for data set of developed European countries.
- H2. There is no significant relationship between government borrowing and equity for data set of developed European countries.

Recent empirical studies of [Greenwood, Hanson, and Stein \(2010\)](#) and [Badoer and James \(2015\)](#) focus on the connection between maturity structures of government debt and corporate debt. Results of [Badoer and James \(2015\)](#) imply that sensitivity of long-term debt issuances of highly rated firms to supply shocks in long-term government bond issuances are higher than other securities, because they are closer substitutes. [Badoer and James \(2015\)](#) have also found strong evidence that increase in supply of government debt lowers only long-term corporate debt of large credit-worthy firms, not that of small financially constrained firms, in addition, they have not identified any significant relationship between short-term corporate debt issuance and government debt supply. Similarly, [Graham et al. \(2014b\)](#) have found that long-term debt of credit-worthy companies is more sensitive to government borrowing in comparison to that of small financially constrained companies. In line with this theoretical reasoning and recent empirical findings on the U.S. data set, we propose the following hypothesis:

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