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Article

# Determinants of sub-central European government debt

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ABSTRACT

The aim of this paper is to analyze the determinants of sub-central government debt in Europe (Italy, France, Austria, Germany, Belgium and Spain) through estimation for each State based on corresponding panel data from 1996 to 2010. Furthermore, we estimate the debt model using a joint sample, consolidating conclusions on the most influential variables in terms of public debt. A comparative analysis of institutional frameworks in Europe shows that relationships between central and sub-central tax authorities have common traits, although the extent of change in each country remains unknown. In sum, this study shows that sub-sovereign government budgets are counter-cyclical, that economies of scale are present, which the golden rule of public finance is followed, that population growth and lower per capita financing lead to higher debt levels, and that regions characterized by higher debt/GDP ratios tend to have lower future deficits.

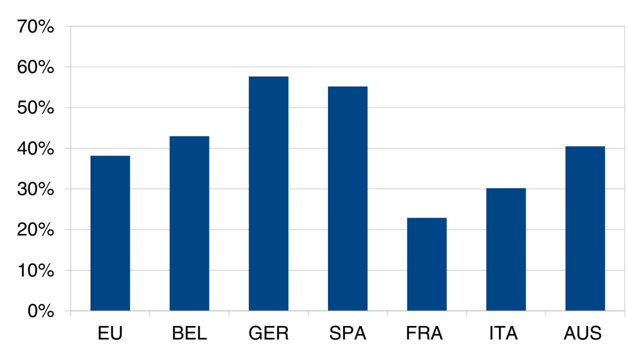


## 1. Introduction

In recent decades in Europe, political and administrative decentralization processes have been carried out, partly driven by the European Union itself. These processes have not been uniform and have depended on the internal institutional reforms put in place from different countries. While Germany and Austria have a federal nature following constitutions set out after World War II, there are other traditionally more centralized countries in Europe such as Spain, France, Belgium or Italy that have been experiencing very dynamic decentralization processes and have not yet concluded.

In the most centralized states, these processes began in the 1970s, with the last reforms of the institutional frameworks being implemented as from the year 2000. The common denominator of these processes has been to devolve to regions mainly welfare state responsibilities. The degree of decentralization has depended on each country, with Germany, Austria, Belgium and Spain achieving the highest decentralization level (Table 1).

It is obvious that there must be a relationship between the number of responsibilities managed by local and regional governments and their weight within total public expenditure. If we consider the weight of local and regional expenditure in relation to total public expenditure, the most decentralized countries are Germany (57.6%) and Spain (55.18%), while France and Italy, the most centralized (Graphic 1).




**Graphic 1.** Regional and local public expenditure (%).
*Source: Own elaboration with Eurostat data.*

Debt has been a useful instrument to carry out sub-sovereign new responsibilities, taking into account indebtedness should always be linked to capital expenditures (golden rule). Likewise, debt is used in many countries due to the high sensitivity between GDP growth and operative revenue.

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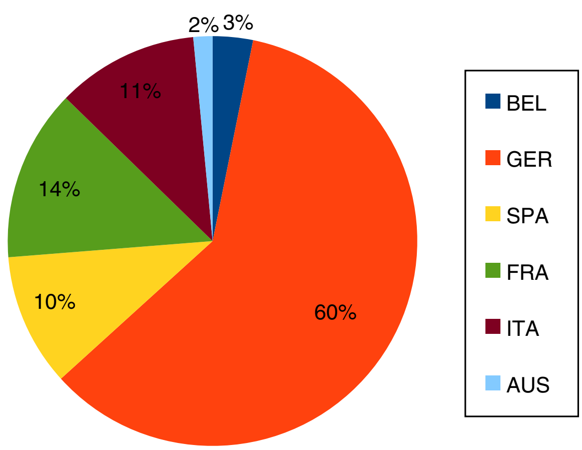
**Table 1**
European regions responsibilities.

| Germany | Austria | Belgium | Spain | France | Italy Ordinary | Italy Special |
|---|---|---|---|---|---|---|
| Education | Education | Education | Education | Education | | Education |
| Healthcare | Healthcare | Healthcare(P) | Healthcare | | Healthcare | Healthcare |
| Transportation | Transportation | | Transportation | Transportation | Transportation | Transportation |
| Economy | Economy | | Economy | Economy | Economy | Economy |
| Justice | Justice | | Justice | | | |
| Universities | | | Universities | | | |
| Police | | | Police | | | |
| Infrastructure | Infrastructure | | Infrastructure | | | Infrastructure |
| | Environment | | Environment | Environment | Environment | Environment |
| | Housing | | Housing | | Housing | Housing |
| | Local entities | | Local entities | | | Local entities |
| | | Culture | Culture | Culture | | |
| | | | Tourism | Tourism | | |
| | | | Industry | | | |
| | | | Commerce | | | |
| | | | Agriculture | | | |
| | | | Employment | Employment | | |
| | | | Social services | | | |

Source: Own elaboration.




**Graphic 2.** European subsovereign debt.

*Source: Own elaboration.*

Broadly, local and regional debt in the period 2002–2009 has followed high-growth path for the European countries analyzed. In Spain, the volume of debt almost doubled, as it grew 90.93% while in Italy (61.7%) growth was somewhat more moderate.

German local and regional entities are undoubtedly the most indebted. German local and regional entities as a whole have a debt-to-GDP ratio in 2009 (29.08%), which is almost, double that of Spanish (11.55%) or Belgian (10.91%). In addition, the local and regional German debt is 39.32% of German public debt, while Spanish debt accounts for 20.05% of the Spanish public debt.

Likewise, German local and regional government debt is altogether much higher than that of the other countries considered. More than half (60.07%) of the local and regional debt of the European countries analyzed is German (Graphic 2), followed by France (13.55%), Italy (11.21%) and Spain (10.48%). German local and regional governments are the main issuers in capital markets (40.97% of outstanding debt). In second place are the Spanish local and regional governments (35.99%).

Regarding the institutional framework of the sub-sovereign countries in the six countries considered (Table 2), there is no bail-out clause and the golden rule is fulfilled, i.e., debt is only for investments. In addition, in most countries there is a national stability pact that tries to convey them the strict rules that countries have to fulfill within the European Union.

In most of the countries studied, there are equalization systems to correct the budget revenue differences between the richest and poorest regions. The equalization occurs from the central government to the regional (vertical), except in Germany that there are both a vertical and horizontal equalization (transfers between landers).

The economic literature in this area is still scarce and rather concentrated in the case of the US, Germany and Spain. In Spain, studies have been oriented mainly to verify the effect of fiscal co-responsibility, the existence or not of soft restraint, market discipline. The contribution of this article is twofold: On the one hand, to deal comprehensively with all aspects that may influence indebtedness; and secondly, to apply the specification for the regions of six European countries both individually by Country (Austria, Belgium, France, Italy, Germany and Spain) and in aggregate terms, comparing simultaneously with the same variables and criteria. Authors have been mainly inspired by Ellis and Schansberg (1999) and Jannone (2001) specifications for US states and Spanish regions respectively.

Potential implications in economy policy are also relevant to guide changes in the institutional framework that allow better compliance with fiscal targets and improve the sustainability of public finances. That is, to introduce changes in fiscal co-responsibility, changes in financing taking into account demographic and/or size factors, the establishment of additional budgetary restrictions or even changes in electoral laws which allow a greater probability of fiscal objectives fulfillment.

In this context, the aim of this paper is to analyze the determinants of sub-sovereign government debt in Europe through estimation for each State based on corresponding panel data from 1989 to 2010, with differences identified by country depending on data availability. European sub-sovereign governments in Italy, France, Austria, Germany, Belgium and Spain are studied. Furthermore, we estimate the debt model using a joint sample, consolidating conclusions on the most influential variables in terms of public debt.

The paper is organized as follows. In Section 2 presents a literature review about determinants of government debt. In Section 3, explains a methodology and the explanatory variables. In Section 4, provides a discussion of the results. Section 5 concludes.

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