



Interregional redistribution and budget institutions under asymmetric information [☆]

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ABSTRACT

Empirical evidence from the U.S. and the European Union suggests that regions which contribute to interregional redistribution face weaker borrowing constraints than regions which benefit from interregional redistribution. This paper presents an argument in favor of such differentiated budget institutions. It develops a two period model of a federation consisting of two types of regions. The federal government redistributes from one type of regions (contributors) to the other type (recipients). It is shown that a fiscal constitution with lax budget rules for contributors and strict budget rules for recipients solves the self selection problem the federal government faces in the presence of asymmetric information regarding exogenous characteristics of the regions.

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1. Introduction

Constraints on public borrowing are widespread among U.S. states. The [National Association of State Budget Office \(1992\)](#) reports that all states but Vermont have statutory or constitutional balanced budget requirements or debt limits. But there is a large variation in the stringency of such budget institutions. For instance, some states are allowed to issue short term debt and some states may borrow on the behalf of a public referendum. [Poterba \(1996\)](#) argues that anti-deficit rules are usually more stringent in small (low income) states than in large (high income) states. Furthermore, it is well known that federal taxes and transfers in the U. S. redistribute resources from high income to low income states (e.g. [Bayoumi and Masson, 1995](#); [Mélitz and Zumer, 2002](#)). Taken together these two observations we may conclude that, ceteris paribus, states which contribute to interregional redistribution are subject to weaker borrowing constraints than states which benefit from interregional redistribution.

There is a similar budget institution in the European Union. The Stability and Growth Pact restricts the annual deficit of member states to 3% of GDP. If a country violates this requirement, the Council of the European Union may initiate the so-called Excessive Deficit Procedure which induces the country to bring down its deficit. In 2005, the Council enacted a regulation on reforming this procedure. One important change is that in identifying an excessive deficit "... special consideration shall be given to budgetary efforts towards increasing or maintaining at a high level financial contributions to fostering international solidarity and to achieving European policy goals, notably the unification of Europe ..." ([Council of the European Union, 2005](#)). This amendment inter alia aims

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at the member countries' (net) payments to the budget of the union. Since one of the main purposes of the budget is to redistribute between member states, contributors face weaker borrowing constraints than recipients.

While such a weakening of deficit limits is usually seen problematic from a monetary point a view (e.g. Feldstein, 2005), the present paper argues that a fiscal constitution with strict borrowing rules for recipient regions and lax borrowing rules for contributing regions of a federation may nonetheless be beneficial, if considered in the realm of fiscal federalism. Our main argument in favor of differentiated budget rules is that it can solve the self selection problem a federal government faces in the presence of asymmetric information. We develop a two period model of a federation in which the federal government (center) redistributes from one type of regions (contributors) to the other type (recipients). The regions differ in their time preference. They may have a high or low discount factor (patient or impatient regions). The model is analyzed under the assumptions of full and asymmetric information. In the latter case, the time preference is private information of the regions and cannot be observed by the center.

We characterize the welfare optimum under the two alternative informational assumptions. Impatient regions basically perceive a lower cost to borrowing and, thus, borrow more and have more resources in the first period than patient regions. In the welfare optimum under full information, this incentive is offset by the central government redistributing resources from impatient to patient regions. However, this full information optimum is not incentive compatible. Impatient regions wish to imitate patient regions since by doing so they get a transfer from the center instead of paying a transfer. In the welfare optimum under asymmetric information, the central government therefore wishes to deter the mimicking behavior of impatient regions by distorting the intertemporal choice of patient regions. In particular, for patient regions the marginal utility from borrowing a dollar and spending it on first period public consumption has to be higher than the marginal utility from spending this dollar in the second period. This implicit restriction on borrowing is more costly for impatient regions and thereby deters mimicking. It can be implemented by a redistribution scheme consisting of a positive (negative) transfer to patient (impatient) regions, combined with a ceiling on borrowing of patient regions, whereas impatient regions face no borrowing constraint. As patient (impatient) regions are the recipient (contributors) of interregional redistribution, this latter result gives an economic justification for the differentiated budget institutions mentioned above.

The driving force of our result is the assumption of asymmetric information. Such imperfections in federations have been recognized in the economic literature at least since the famous Decentralization Theorem of Oates (1972). This theorem implies that local public goods should be provided by local governments as they possess better information on local conditions than the central government. Oates (1999, p.1123) argues that "... local governments are presumably much closer to the people and geography of their respective jurisdictions; they possess knowledge of both local preference and cost conditions that a central government is unlikely to have." Due to the Decentralization Theorem, the assumption of asymmetric information is therefore at the core of fiscal federalism since it represents one (if not the) main justification of decentralization. This is probably the reason for the large number of studies on asymmetric information in federations, for example, Cremer et al. (1996), Raff and Wilson (1997), Bucovetsky et al. (1998), Lockwood (1999), Bordignon et al. (2001), Cornes and Silva (2002, 2003), Huber and Runkel (2006) and Breuillé and Gary-Bobo (2007).

A frequently used assumption in the previous literature is that regions possess private information with respect to the local preference for public consumption. Our analysis considers a variant of this assumption. The central government is not able to observe the regions' discount factor which can be interpreted as the preference for *future* consumption. We think that this assumption is even more relevant than assuming asymmetric information with respect to the preference for *current* consumption. It is usually rather easy for the center to observe today's consumption from which it may gather information on the regions' preference for current consumption. This is not possible for the preference for future consumption (even if future and current consumption are the same), since today's valuation of future consumption is influenced by discounting. Moreover, the discount factor can be interpreted as a political parameter reflecting the degree to which regional governments take into account the well-being of future generations. Even though there are some indicators for this parameter, for example, the regions' education or environmental policy, the true plans for future periods are better known by the regional governments than by the center. Finally, the discount factor of a regional government is to a large extent determined by the reelection probability. This, too, is a parameter for which regional governments possess better information than the center. All these arguments show that asymmetric information with respect to the regions' discount factor is relevant in real world federations.²

The paper is organized as follows. As a further motivation, in Section 2 we discuss the evidence from the European Union and the U.S. in more detail. Section 3 describes the basic theoretical model. In Sections 4 and 5, we derive the welfare optimum and show how this optimum can be implemented by a suitable federal redistribution scheme. Section 6 presents some extensions and modifications. In Section 7, we discuss in detail the relation of our analysis to the previous literature. Section 8 concludes.

2. Empirical evidence

The evidence for differentiated budget institutions is the strongest for the European Union. The above mentioned change from the common 3% deficit criterion to differentiated deficit limits is part of an official regulation enacted by the Council in 2005. Thus, if in the future a member state violates the 3% criterion and if this member state belongs to the net contributors of income redistribution, it can refer to this official regulation in order to issue more debt than 3% of GDP. This is not possible for a member state that benefits from redistribution. Hence, in Europe lax borrowing rules for net contributors and strict borrowing rules for net recipients are implemented *by law*.

² The difficulties of figuring out the rate of time preference is documented by Evans and Sezer (2004).

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