



# Vertical tax competition and consumption externalities in a federation with lobbying

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## ABSTRACT

We consider a federation with two layers of government, in which Leviathan policy makers levy an excise tax on a consumption good that generates a negative externality and that is produced in an imperfectly competitive market. When both layers of government are allowed to tax, policy choices are affected also by vertical tax competition. In this setting, tax policy in general is not efficient. We then examine how special interest groups may influence tax policy by lobbying the policy makers. We find that, depending on market structure and on the level of the externality, lobbying can improve efficiency, and that tax-base sharing by two layers of government can be more efficient than taxation by a single layer.

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## 1. Introduction

The introduction of political factors into the traditional fiscal federalism models is the distinctive feature of the so-called second generation theory of fiscal federalism (Oates, 2005; but also Weingast, 2009). Following this line of research, in this paper we re-examine the issue of vertical tax externalities in a federation (Flowers, 1988; Wrede, 1996; Boadway and Keen, 1996; Keen, 1998; Boadway et al., 1998; Keen and Kotsogiannis, 2002, 2003; Dahlby and Wilson, 2003) by adding to the analysis the possibility that special interest groups lobby the policy makers with the aim of influencing tax policy towards their own objectives.<sup>3</sup>

The analysis is framed in the context of excise taxes, which are specific indirect taxes levied on tobacco products, mineral oil products and alcoholic beverages. In fact, excise taxation represents a natural setup for examining the interaction between vertical tax externalities and lobbying. In some federal countries, such as the US and Canada, excise taxes are levied by different layers of government.<sup>4</sup> It is also evident that tax policy in this area is subjected to the influence of powerful interest groups. On one side, the companies operating in the tobacco and in the oil sectors have strong incentives to lobby the policy makers at all levels to keep the taxation of their products as low as possible, because taxation has a negative impact on their profits. On the other side, there are influential non-profit organizations that lobby for higher taxation of products that are deemed harmful for the environment and for individual and public health.

Our theoretical analysis is also rooted on what happens in practice in countries like the US, in which special interest groups can transparently offer financial contributions to political parties and candidates. As reported by the *Center for Responsive Politics*, the lobbying activity of firms in the tobacco and in the oil and gas industries is very important at the federal level: in the 11 election cycles running from 1990 to 2010, campaign contributions to federal candidates and political

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<sup>3</sup> The interplay between lobbying and the horizontal tax competition among US states is the focus of a recent empirical work by Chirinko and Wilson (2010). Our approach is instead theoretical and focused on vertical tax competition.

<sup>4</sup> For empirical analysis on vertical and/or horizontal interactions in cigarettes and gasoline taxation in the US or Canada, see Besley and Rosen (1998), Rork (2003), Devereux et al. (2007), Fredriksson and Mamun (2008), Rizzo (2008, 2010), Esteller-Moré and Rizzo (2011).

parties totalled \$255 million from the oil and gas industry and \$63 million from the tobacco industry.<sup>5</sup> In addition to campaign contributions to candidates and political parties, these companies devote considerable financial resources to lobby Congress and federal agencies by means of lobbying firms or in-house lobbyists. From 1998 to 2010, lobbying expenditures amounted to \$1003 billion for the oil and gas industry and to \$309 million for the tobacco industry.<sup>6</sup> Interestingly, four important *clients* (i.e., companies hiring an outside group to perform lobbying activities) of the oil and gas industry (Exxon Mobil, Chevron Corp, Koch Industries, American Petroleum Institute) overall reported that in 2009 their lobbying activity was related to ‘taxation’ issues in 68 cases. In the same year, lobbying by Altria group, the biggest client in the tobacco industry, occurred 37 times on taxation issues.<sup>7</sup> At the state level, Moore (2007) reports that from 2003 through 2006 the oil and gas, electric utilities and coal mining industries contributed \$58.3 million to candidates and party committees. From 2000 to 2010, total contributions to all candidates and committees at the state-level equalled \$270.6 million for the oil and gas industry and \$0.498 million for the tobacco industry.<sup>8</sup> Givel and Glantz (2001), and Morley et al. (2002), by closely examining documents and lobbying expenditures of the Tobacco Institute,<sup>9</sup> find that in the 1990s its efforts to lobby US state legislatures included the objective of minimizing tax increases, and that spending was higher in states with higher taxation rates on cigarettes. Also anti-tobacco and environmental groups are very active in lobbying policy makers at all levels, although with much smaller financial resources than those available to the industries companies. During the period 1989–2010, contributions by environmental organizations totalled about \$57 million, 76% of which at the federal level and the rest at the state level. In the period 1998–2010, lobbying expenditures on behalf of the environment amounted to more than \$154 million.<sup>10</sup> The Campaign for tobacco free kids organization spent only \$24,580 on campaign contributions in the period 1999–2008, but devoted more than \$4 million on lobbying expenditures from 1997 to 2010.<sup>11</sup>

In our theoretical analysis, we consider a federation composed of an upper level (federal) and a lower level (state) of government. Since we are not interested in analyzing the impact on tax policy of direct interactions among sub-national governments due to tax-base mobility, we assume, without loss of generality, that there is only one state government. Depending on the institutional setting, either both layers of government, or only one of the two, could be allowed to levy an excise tax on an externality-generating consumers’ good that is produced in an imperfectly competitive market. In both tax regimes, two types of pressure groups seek to influence tax policy by offering the policy makers monetary contributions for the finance of electoral campaigns: a group representing firms interest for high profits, and a group representing citizens interest for low consumption externalities. As for policy makers, they are assumed to care both for tax revenue collected (i.e., Leviathan behavior) and for campaign contributions cashed from the lobbies.

As the traditional literature has shown, the sharing of an elastic tax base by two layers of government generally leads to an excessively high level of taxation. This is not necessarily true in our framework, since tax policy is driven by Leviathan behavior in a market with two sources of inefficiency: imperfect competition and a consumption

externality. Our purpose is then twofold. The first is to characterize the conditions under which, in a given tax regime, tax policy subjected to lobbying determines a Pareto improvement over the corresponding tax policy in its absence. The second goal is the comparison, in the presence of lobbying, of taxation by a single layer of government with taxation by both layers, in order to identify whether the dispersion of taxing powers may improve efficiency. To address these issues, we proceed by analyzing first the case in which there is a single lobby group, that of producers, and then by extending the model by introducing a second lobby group with conflicting interests.

None of the players are hurt by lobbying when there is a single pressure group. While producers take advantage from lobbying in all tax regimes, policy makers take advantage as well only when both layers of government are allowed to tax. When only one layer of government is allowed to tax, the policy maker neither loses nor gains from being lobbied. Vertical tax externalities explain the different outcomes for policy makers in the two tax regimes. The picture is different when there is a second lobby group with opposed interests to the first one. In this case, policy makers take advantage from the fight undertaken by the two lobby groups to win their favors, also when taxation is in the hands of a single taxing authority. The more distant are the objectives of the lobby groups, the larger is the gain for policy makers. As a result, there are no circumstances in which both groups gain from lobbying. Either one of the two gains while the other one loses, or both lose.

In the one lobby group case, we also examine how the timing of tax setting and lobbying influences the outcomes under tax-base overlapping. This leads to the comparison of three tax regimes: taxation by a single layer of government, simultaneous taxation by both layers, and sequential taxation by both layers. We find that the lobby of producers always prefers to deal with a single policy maker. Instead, the preferred tax regime by policy makers depends on the market structure of the taxed good. If the market is concentrated, it is better for policy makers to spread the taxing power between the two layers of government, because producers are strong lobbyists. If, instead, the market is sufficiently competitive, which implies that producers have weak incentives to lobby, politicians are better off when the taxing power is on a single level of government.

Lobbying by special interest groups has already made its appearance in the theoretical literature on fiscal federalism, though focusing on different issues than the one studied in this paper. Persson (1998) examines the impact of lobbying on the provision of local public goods that are financed out of a common pool of resources. Bardhan and Mookherjee (2000) study how lobbying by special interest groups may influence the outcomes of local elections. Bordignon et al. (2008), Ruta (2010) and Redoano (2010) focus on the role of lobbying on the choice between centralization and decentralization of public policies. Brusco et al. (2010) examine how taxpayers’ lobbying affects the optimal degree of tax autonomy that should be granted to a local government.

The rest of the paper is organized as follows. Section 2 sets up the model. Section 3 characterizes the equilibrium tax policies in the presence of a single lobby group. Tax regimes are compared in Section 4. The model is extended in Section 5 with the introduction a second lobby group. Section 6 concludes. Appendix A contains the proofs of Propositions 1–3 and an outline of the proofs of Proposition 4 and of Results 1–5; the complete proofs are in Appendix B (in the Supplementary material).

## 2. The framework

Consider a federation composed of the central (or federal) government and one regional (or state) government. Both layers of government might be entitled to levy an excise tax on a consumption good that is produced in an oligopolistic market.<sup>12</sup> Both the federal and

<sup>5</sup> <http://www.opensecrets.org/industries/totals.php?cycle=2010&ind=E01> for the oil and gas industry, A02 for the tobacco industry. (This web page, like those quoted in footnotes 6–8, were accessed on September 7, 2010).

<sup>6</sup> <http://www.opensecrets.org/lobby/top.php?indexType=i>.

<sup>7</sup> <http://www.opensecrets.org/lobby/issuesum.php?year=2009&iname=Taxes&id=>.

<sup>8</sup> <http://www.followthemoney.org/database/IndustryTotals.phtml?f=0&i%5B%5D=33>.

<sup>9</sup> The Tobacco Institute, which was disbanded in 1998, was an industry trade organization governed and funded by US tobacco manufacturers.

<sup>10</sup> <http://influenceexplorer.com/industry/environment/72c7c89ba4ce406d99152105c08ccedf> (accessed on May 31, 2011).

<sup>11</sup> <http://influenceexplorer.com/organization/campaign-for-tobacco-free-kids/f79ef506bbd34c25b7e6af8f966d1dae> (accessed on May 31, 2011).

<sup>12</sup> In terms of tax incidence, *specific* (or *excise*, or *unit*) taxes are not equivalent to *ad valorem* taxes in imperfectly competitive markets (see, e.g. Myles, 1995, chapter 11, for a throughout survey). We explained in the Introduction why we focus on excise taxes.

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