PRINCIPLES OF TAXATION, SIZE OF JURISDICTIONS AND TAX INEFFICIENCIES IN FEDERAL SYSTEMS

by

Rania Karakosta\textsuperscript{a} and Christos Kotsogiannis\textsuperscript{b}

May 16, 2006

Extended abstract submitted to CRETE 2006.

\textsuperscript{a}Athens University of Economics and Business, 76, Patission Str., 104 34 Athens, Greece. E-mail: rkarakosta@aeub.gr

\textsuperscript{b}Department of Economics, University of Exeter, School of Business and Economics, Streatham Court, Rennes Drive, EX4 4PU, England, UK. E-mail: c.kotsogiannis@exeter.ac.uk; and Athens University of Economics and Business, Athens, Greece.
Extended abstract: Recent work (see, for instance, Keen and Kotsogiannis (2002, 2003, 2004)) has emphasized that the commonality of capital tax base between the central and lower-level governments creates horizontal externalities (that arise when each lower-level government ignores the benefit a rise in its tax rate has on the revenues of the others) but also vertical externalities (that arise when lower-level governments unduly discount the reduction in federal revenues). These externalities are moving towards opposite directions: Horizontal towards lower-level government taxes that are too low, from an efficient point of view, whereas vertical towards taxes that are, in the same sense, too high. The main message of this work is that the direction of inefficiency in the lower-level government tax rates critically depends on the balance of these two externalities. This conclusion is, typically, reached within models where the (mobile) factor of production is capital. Naturally, then, the following questions arise: Do these results extend to models of commodity tax competition between lower-level governments and between them and the federal government? And do these results depend on the way commodities are taxed, and so on the tax principle that is in place? Although there is some work dealing with the first question (Keen (1998), Rizzo (2003), and Devereux, Lockwood and Redoano (2004)) there is, to the best of our knowledge, no work that makes an explicit comparison of tax inefficiencies between alternative commodity-tax principles. Keen (1998), focusing on commodity taxes, studies only vertical tax competition and so assumes that lower-level governments do not interact with each other. Rizzo (2003), and Devereux, Lockwood and Redoano (2004) emphasize (and empirically estimate the direction of) both types of inefficiencies but they do so in a commodity taxation framework with cross-border shoppers where there is no explicit production of the tradeable good, there are no public goods provided by both levels of government, lower-level governments are symmetric (in terms of size), and taxation is based on the destination principle (taxes are set and collected by the country where the good is consumed).

The objective of this paper is to investigate the set of questions outlined in the preceding paragraph. To do so we take a model of oligopolistic competition—familiar enough from Kotsogiannis and Lopez Garcia (forthcoming)—appropriately modified to deal with issues of vertical commodity tax competition. The model features a central (‘federal’) government and two lower-level governments (‘states’). Consumers in both jurisdictions are identical but the population size of the jurisdictions may differ. In each country there is a perfectly competitive firm that uses a single factor of production to produce, under conditions of constant return to scale, a tradeable good. This good is taken as the numeraire in both countries. The tradeable good may be supplied by a firm from either the home or the foreign country and so either country can be an exporter or importer of the tradeable good. Both levels of government (federal and states) tax either consumption (under the destination principle of taxation) or production (under the origin principle of taxation). The revenues obtained from taxing at both levels in each jurisdiction is used to provide a non-tradeable local public good and a non-tradeable federal public good.

Within this framework it is shown that the direction of inefficiency (when jurisdictions are of equal size) critically depends on the marginal valuation of the federal and lower-level government public goods. In particular, if consumers value the federal public good more than the local public good then the vertical externalities dominate the horizontal and thus lower-level government taxes are too high in equilibrium. And this is true under both tax principles. Things become more complicated, however, when jurisdictions are of unequal size. In this case there is a cutoff level of (relative) population size such
that the horizontal (vertical) externalities dominate the vertical (horizontal). Specific examples show that switching from one tax regime to the other (for given population size) changes the direction and magnitude of the tax externalities. A consequence of this indeterminacy is that a precise evaluation of the magnitude and direction of fiscal externalities in federal systems, and a direct welfare comparison between the two tax regimes, requires an explicit consideration of the underlying preferences for private and public goods and well as the oligopolistic sectors’ relative cost structures.

*Keywords: Origin principle; destination principle; fiscal externalities; fiscal federalism*

*JEL classification: H1; H21; H23; H41; H7.*


