Is there a Weak Double Dividend?

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Until recently taxes were only a marginal instrument of environmental regulation, however, over the last decade they have become more important in a number of European countries (EUROSTAT, 1996). Though this is presumably improving regulatory cost effectiveness (at least one review of evaluation studies, EEA (1996) indicates this) much of the policy debate is focussing on the potential »double dividend« to be reaped by »Green Tax Reform«. The underlying assumption is that there is an extra welfare dividend to be reaped by increasing the share of tax revenues from (presumably) non-distorting environmental taxes and reducing the share from price distorting revenue raising taxes.

The strong double dividend argument postulates that green taxes carry a double dividend (in addition to gains from Pigovian price signal corrections) because the implied broadening of the tax base in itself is welfare improving. With a strong double dividend the introduction of green taxes will be welfare improving (for purely fiscal reasons) even when their environmental effect is negligible. The existence of a strong double dividend has, however, been questioned in the literature. A number of papers show that when plausible price spillovers between markets are taken into account then the broadening of the tax base implied by green taxes turns out to be welfare reducing (see e.g. Goulder, 1995 for a good review). In other words it is not clear that green taxes carry a double dividend if the alternative to their introduction is not to regulate the environmental problem in question.

The weak double dividend argument says that allocating revenue from green taxes to reduce other distorting fiscal taxes is a welfare improvement on returning revenues in a lump-sum fashion to taxpayers. The weak double dividend argument is generally accepted by economist since tax systems generally are distorting. The argument implies that there is a welfare gain if
revenue from those green taxes that are imposed is allocated to general expenditures/tax cuts rather than earmarked for recycling to polluters or for environmental expenditures. The argument also implies that when an environmental problem is going to be regulated (i.e. it has been decided that market price signals are to be distorted) then tax regulation will carry a double dividend compared to non-revenue raising regulatory instruments if revenue is allocated to general expenditures/tax cuts.

Given this, it is noteworthy that earmarking of revenues from environmental taxes actually is being applied to some extent in most OECD countries, and it is in accordance with accepted theory when the OECD warns against this practice (OECD, 1996 and 1997). In Denmark (one of the countries that has experienced the largest increase in the role of environmental taxes) earmarking of revenues has also expanded substantially, and increased use of earmarking is on the political agenda. This despite the fact that Denmark is also one of the countries with the highest tax burden in the world and thus an obvious candidate for green tax reform.

Theories of agency capture from the political science literature have in the past inspired explanations of the apparently inoptimal design of environmental regulation 1. These theories also seem relevant for understanding the observed earmarking of revenues today, and may off hand make a ban on earmarking (e.g. in the form of a constitutional amendment or an institutionalised parliamentary practice) appear attractive. The purpose of this paper is to develop a formal model of the policy process in which earmarking is explained as a rational policy choice and to use this model to derive normative policy prescriptions to address this apparent problem.

Interpreted as a positive theory the model presented here turns out to offer an explanation of the reluctance to use environmental taxes and of why we often see earmarking of revenues when they are used. Mirroring this we find that allowing or in some cases mandating earmarking for transfers to the polluters is welfare improving vis à vis mandatory allocation of revenues for general expenditures/tax cuts. This is surprising and has implications for the double dividend discussion, i.e. drawing into doubt the existence of even the weak double dividend and the universal soundness of warnings against earmarking.

In the following section the methodological starting point (agency capture theories from political science) is discussed, and the model is developed. In section 3 effective lobbying under both policy formulation and policy implementation is considered, and in section 4 we consider the case where lobbying only is effective during policy formulation. In section 5 the scope of the model is expanded and ad hoc empirical evidence illuminating the key assumptions is referenced. Finally, in section 6 results are summarised and implications drawn.

Notes

1 Buchanan and Tullock (1975) is a classical paper explaining the then almost complete absence of environmental taxes as the result of agency capture by the regulated industry.