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Tax compliance by firms and audit policy

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ABSTRACT

Firms are usually better informed than tax authorities about market conditions and the potential profits of competitors. They may try to exploit this situation by under-reporting their own taxable profits. The tax authority could offset firms' informational advantage by adopting "smarter" audit policies that take into account the relationship between a firm's reported profits and reports for the industry as a whole. Such an audit policy will create an externality for the decision makers in the industry and this externality can be expected to affect not only firms' reporting policies but also their market decisions. If public policy takes into account wider economic issues than just revenue raising what is the appropriate way for a tax authority to run such an audit policy? We develop some clear policy rules in a standard model of an industry and show the effect of these rules using simulations.

1. Introduction

Should a tax authority take into account the "real-economy" effects of its compliance policy? The actions of tax authorities are often perceived in purely financial terms, perhaps as a kind of tax farmer that seeks to maximise the revenue for the government or as a fiscal police officer that seeks to ensure enforcement of the law as effectively as possible. However, just as a conventional police force may properly have objectives other than simple law enforcement (fostering good community relations for example) the tax authority may be required to have concern for a broader range of economic objectives than simple revenue-raising and compliance. Although it is convenient as a modelling device to assume that an agency has a single financial target it would be unreasonable to insist that the government's different policy objectives were located in separate watertight compartments. In this paper we suppose that a sensible tax authority is concerned about issues of productive efficiency in the economy and about equitable treatment of taxpayers. We develop a model of tax compliance by firms and show how their activity in product markets is connected with the design and implementation of enforcement policy by a tax agency.

Some aspects of the real-economy issues associated with tax compliance are already well known. For example in the case of the personal income tax and decisions made in the labour market the conventional Allingham and Sandmo (1972) model can be extended to incorporate labour supply. The conventional welfare-economic analysis of deadweight loss as applied to income taxes and commodity taxes can be extended to take tax noncompliance into account (Cowell, 1990). However the further considerations that apply in the case of the taxation of firms have not been worked out. The case of firms is special in terms of both the efficiency and equity objectives.

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First, the efficiency considerations arise from the interaction among firms within an industry as well as interaction of firms with the tax authority. Bayer and Cowell (2009) have demonstrated that the effectiveness of compliance policy depends on whether there is effective competition or collusion among the firms in the industry.[1] The interrelation between market organisation and the design of compliance policy raises several policy questions. Should audit rules be designed in such a way that firms will be induced to act more efficiently in product markets? Should a change in industry competitiveness change the design of compliance policy?

Second, the equity considerations arise precisely from the tailored audit rules that the tax-authority might employ to induce the behaviour in product markets that might be desirable on efficiency grounds. A "smart" compliance policy may give the appearance of treating equals unequally in a way that does not arise in compliance models involving the personal income tax. This implies that in evaluating the desirability of compliance policy one needs to go beyond the conventional individualistic welfare model in order to deal with questions of tax equity.

The paper is organised as follows. Section 2 explains our approach and relates it to the literature and Section 3 sets out the formal model. Section 4 develops the simple welfare-analytics of this model that examines its workings using a simulation; Section 5 discusses the special issues of equitable treatment that occur in the audit model with firms; Section 6 draws the policy implications from this. Section 7 concludes.

2. The approach

2.1. Setting

Before we specify the precise model that we shall use to establish results and to simulate behaviour let us describe the economic agents and their interrelationships.

Firms: In some treatments of the economics of tax compliance firms are treated as no more than profit centres which can be tapped by the tax agency. More sophisticated approaches take some account of the firms' role as producers but in a naive fashion that does not yield much economic insight. The standard assumption is either that each firm is a price-taker without market power or that there is a perfectly informed monopolist with almost complete market power. However, under conventional treatment of risk and taxation, each of these idealised market forms turns out to produce an analysis of tax evasion in which the firms' characteristics are effectively absent[2]: because each firm is assumed to be in a particularly simple market environment, particularly simple results emerge.

To make the analysis interesting we need to think of the firm also as an information processor. This involves analysing the behaviour of the firm under uncertainty. The uncertainty comes from three sources:

1. exogenous uncertainty, such as demand shocks, cost shocks and assessment errors,
2. uncertainty as to whether the firm will be audited for tax purposes,
3. uncertainty about the behaviour of other firms in a similar position to itself.

All three types of uncertainty will be seen to have a role within our model. The third type makes it clear that it is important to consider the firm within the context of an industry where the behaviour of other firms is important in determining its own behaviour.

Industry: What is an industry? Our model of an industry focuses not so much on the physical characteristics of the outputs of the member firms but on the relationship among them. In the light of the exogenous uncertainty mentioned as point 1 in the list above it makes sense to suppose that members of the industry are better-informed than other economic agents about market events that may affect their profits: they intimately know the economic conditions that apply to their industry and could, if they wanted to, make reasonable estimates of the performance of other industry members. In a sense the industry is an information network in which the insiders have an advantage over an outside observer such as the tax authority. If there were no information advantage then the tax authority could work out the profit-maximising decisions and the associated industry equilibrium for itself and audits would become virtually irrelevant. To keep the problem manageable we assume that the industry has a fixed number of firms: we do not attempt to account for entry into or exit from the industry. In our formal model it is sufficient to let the number of firms be 2, although this simplification is not essential to the main point of the argument.

Tax authority: We suppose that tax policy is entrusted to an agency that has the responsibility for enforcement, control over audit policy and, possibly, over tax design, but not over the structure or level of penalties for illegal non-compliance (evasion). Its objectives may be wider than simple revenue raising: this is important in our discussion of efficiency and policy design in Section 4. The tax authority will expect to find that different types of audit policy will have different types of impact on the firms' behaviour. Once again the role of information is crucial because, although the tax authority will not

[1] See also Besfamille et al. (2009) who show that with imperfectly competitive firms increased enforcement of an output tax will reduce output and may reduce revenue.

[2] What happens is that under these special market conditions the production decisions can effectively be separated out from the tax compliance decisions, reducing the tax-compliance problem to a minor elaboration of the Allingham and Sandmo (1972) model (Cowell, 2004; Lee, 1998). For alternative approaches see Etro (1998) and Bayer and Cowell (2009).