Optimal Enforcement of Optimal Income Taxes

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Aim and policy relevance

This research project will incorporate non-compliance of taxpayers and tax enforcement of government into the standard framework on optimal income taxation with the aim of providing guidance on the following questions:

How many resources should society devote to tax enforcement and what is the relationship between optimal tax rates and optimal enforcement levels across the income distribution?

These questions are key for practical tax policy. As a case in point, the Danish politicians decided a historical increase in spending on tax enforcement in 2020, while they in the recent annual national budget law decided to reduce this spending. Related to the distributional aspect, many resources have been used in recent years in Denmark and internationally to build up a new enforcement system (FATCA in the US and CRS in Denmark and other countries) targeting tax evasion of wealthy people who hide their wealth in tax havens.

As described in greater detail in the literature review below, the existing academic literature does not have a well-developed framework to jointly analyze optimal taxation and optimal enforcement. A note by Kreiner (2010) – underlying some of the reasoning in the Spring 2011 report of the Danish Economic Council – includes a baby model with a first attempt to provide guidance on the above questions and similarly a note by Frederiksen (2022) – made for work inside the Danish Ministry of Taxation – also include a very stylized model with this goal. The theoretical frameworks in the two notes are simplistic, for example, by considering only two or three income groups rather than a full income distribution, by not accounting for both mechanical and behavioral effects of enforcement,[1] by not accounting for potential interaction between enforcement and labor supply etc.

[1] Repayment of evaded tax and fines due to audits are mechanical transfers from taxpayers to the government while behavioral responses in the form of less evasion reduces the efficiency loss of taxation. Hence, they should be treated differently in a welfare analysis.

Existing literature

The canonical theory on optimal income taxation (Mirrlees 1971; Diamond 1998; Saez 2001, 2002; Kleven, Kreiner and Saez 2009) takes tax enforcement for granted. The theory highlights the trade-off involved in marginal taxation between equity and tax distortions on labor supply, while assuming that all individuals report their *true* income to the tax authorities.

This clashes with evidence on non-compliance and the importance of tax enforcement. Economic history offers countless examples of how weak enforcement erodes the revenue-generating and redistributive potential of taxes (Keen and Slemrod 2021),[2] and in developing countries, limited tax capacity continues to constrain revenue generation (Keen et al. 2015; Gordon & Li 2009). Advances in tax enforcement, particularly the introduction of third-party information reporting and withholding systems, are key reasons why OECD countries today can maintain high government revenues with marginal tax rates often exceeding 50% (Kleven, Kreiner and Saez 2016; Bagchi and Dusek 2021; Jensen 2022).[3] However, even in countries with modern tax enforcement, non-compliance challenges persist, with significant underreporting of income where third-party verification is unavailable (Kleven et al. 2011; Slemrod 2019). This issue is also pronounced among the very wealthy, which reduces redistribution of the tax system (Alstadsæter et al. 2019).

Effects of taxation on evasion behavior can be partly incorporated in the optimal income tax theory by replacing the labor supply elasticity with the elasticity of taxable income (ETI) measuring the percentage change in reported income in response to a percentage change in the net-of-tax rate. As shown by Feldstein (1999), this elasticity is a so-called sufficient static capturing all relevant behavioral responses to taxation – including tax avoidance and evasion – that cause an efficiency loss and is therefore a sufficient statistic to measure the relevant equity-efficiency trade-off. Because the ETI is larger than the labor supply elasticity, this in isolation calls for lower marginal tax rates in a social optimum.

However, the ETI is not a structural parameter as emphasized by Slemrod and Kopczuk (2002). Without any tax enforcement, tax revenue would rely on voluntary tax payments which, with

[2] A notable example is the introduction of the window tax in 17th-century UK, intended to shift the tax burden onto wealthier individuals using a verifiable tax base. Instead, it led to unintended consequences, such as bricked-up windows and new houses designed with few windows (Oates and Schwab 2015).

[3] For example, the marginal tax rate of an average production worker without children exceeds 50% for twelve OECD countries (computed as income tax plus employee and employer contributions less cash benefits, but excluding consumption taxes, for a single without children as a share of labor costs in 2023; see Table 3.6 in OECD 2024).

standard economic agents, would imply an infinite ETI and no taxation in an optimum. In the opposite extreme case, with large spending on enforcement, it could in principle be possible to prevent tax evasion in which case the ETI becomes equal to the labor supply elasticity leading to smaller distortions of taxation. The lower tax distortions imply, ceteris paribus, that tax rates are higher in a social optimum. At the same time, higher tax rates generate larger revenue gains from detecting evasion, thus making tax enforcement more beneficial. Hence, optimal enforcement levels and optimal tax rates across the income distribution are interlinked, which is one of the reasons why it is difficult to analyze the jointly optimal system. Standard optimal income tax problems are solved using optimal control theory with one control variable and one state variable, while the problem of interest here becomes multidimensional in both control and state space.

Our study

No study exists on the jointly optimal tax and enforcement system in the general income tax framework,[4] probably because of the technical complexities involved in such analysis. However, we have a found a way to overcome this hurdle and incorporate noncompliance and tax enforcement in a tractable way in the modified Mirrlesian optimal income tax framework due to Diamond (1998).

Our first goal is to achieve sufficient statistics formulas (op.cit.) for tax rates and for enforcement efforts across the income distribution and ideally include in the framework:

- That tax enforcement – audits and third-party reporting – affects taxpayers through higher effective tax payments (repayment of evaded tax and fines) and through increases in private resources needed to conceal income from the tax authorities.
- That enforcement increases government tax revenue through both mechanical and behavioral responses in line with empirical evidence (Kleven et al. 2011; Advani et al. 2023; Boning et al. 2024)
- That taxpayers may react to taxes and enforcement through adjustments in both labor supply and compliance.
- That taxpayers differ not only in earnings capacity but also in their capabilities and willingness to evade in accordance with empirical evidence (Christiansen 2024).

[4] There exists a smaller theoretical literature on tax evasion and tax enforcement starting with the classical contribution by Allingham and Sandmo (1972) and developing parallel with the optimal income tax literature (see e.g. the surveys by Andreoni, Erard and Feinstein 1998 and Slemrod 2019), but this literature takes the tax system for granted. A notable exception is Keen and Slemrod (2017), which study the jointly optimal tax and enforcement system, but within a simple representative agent model.

Our second goal is to study the quantitative importance by structurally estimating and simulating the model. This will allow us to analyze how optimal enforcement levels and optimal tax rates depend on behavioral elasticities, social preferences, relative importance of mechanical and behavioral responses to enforcement, and heterogeneity across taxpayers. The simulations will yield tangible predictions of the effect of audit policy on the ETI and thus on the degree of complementarity between enforcement policies and tax rates.

With this analysis we hope to make progress in answering central questions on the socially optimal level of resources to use on tax enforcement and on the relationship between optimal tax rates and optimal enforcement levels across the distribution of income.

Expected output and publication potential

The output of the project is expected to be at least one academic paper to be published in a top journal. Theoretical breakthroughs on important tax problems with policy relevance have previously been published in the top-five journals in Economics, e.g., Kleven, Kreiner and Saez (2009). Hence, we expect to have a publication chance in these journals if we are able to carry out all the analyses described above. We expect to have a first working paper draft ready for circulation by the end of 2026.

Budget

The main input in this project is research time. The empirical part will draw on existing data. We apply for three months of research time for ME and one month for CTK as well as funding to present the work at an international conference.

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