4.2 What makes taxpayers comply? Lessons from a tax audit experiment in Denmark

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4.2.1 Background

How big a problem is tax evasion? Why do people evade taxes? What is the optimal tax enforcement strategy to fight tax evasion? How many resources should be devoted to tax enforcement? Academic researchers are trying to provide answers to these fundamental questions but it is notoriously difficult to measure evasion behaviour, tax enforcement policies are secret, and researcher access to tax agencies' data on evasion is normally limited. Reviews of the academic literature on tax evasion and tax enforcement, including discussions of these measurement problems and statistical problems that plaque existing empirical studies, have been provided by Andreoni et al. (1998) and Slemrod and Yitzhaki (2002). A way forward to avoid many of the problems faced by the existing literature is to carry out controlled experiments as often done in many other disciplines such as Medicine, Biology and Physics. Unfortunately, experiments dealing with important economic questions are often difficult, or even impossible, to carry out.

In 2007 and 2008 the Danish tax collection agency (SKAT) carried out a large-scale tax audit experiment, involving more than 40 000 individual tax filers, in collaboration with three academic researchers from the London School of Economics, University of California at Berkeley and the University of Copenhagen, respectively. This type of collaboration between tax authorities and researchers working on tax issues was quite unique and has provided important new results that enhance our understanding of tax evasion behaviour and the impact of tax enforcement policy. The construction and the design of the experiment are described in Kleven et al. (2011).

4.2.2 Overview of main results

The different results obtained from the experiment are described in detail in SKAT (2009), Kleven et al. (2011), the Danish Economic Council (2011), and Boserup and Pinje (2010). Below I present a short overview of some of the main results.

Size of the tax gap

The total income reported on the individual tax returns is too low for 9% of the taxpayers, while 2% of the taxpayers seem to 'cheat themselves' by reporting too high income. However, the total amount overreported is only 0.1% of total net income (measured as the sum of all income components minus all deductions), while the amount underreported is 2.3% of net income, implying that taxpayers on average underreport 2.2% of net income. The corresponding loss of tax revenue is 2-3%, which is reasonably low, in particular when taking into consideration the high marginal tax rates in Denmark compared to most other countries.

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It should be noted that these numbers only reflect 'detectable' tax evasion, i.e., how much would tax revenue increase if all tax returns were scrutinised very carefully. On the other hand, 'detectable' tax evasion is the type of input you need for a policy analysis of how many resources to give to the tax agency.

Tax evasion determinants and the importance of information

Table 5 below shows the evasion rate on different income components. It shows that evasion rates are very low on personal income, which is primarily earnings, while high noncompliance rates are associated with self-employment income and stock income. This compliance pattern across income components has also been found for the US and other countries, and it has been suggested that information reporting of income from third-parties might be a main reason behind this difference in compliance rates (Slemrod, 2007). Nearly all earnings are third-party reported by the employer in Denmark, while third-party information of self-employment income is more or less impossible to obtain. The analysis of Kleven et al. (2011) used the third-party information data obtained by the Danish tax authority on the different items on the individual tax return to shed further light on this hypothesis. As shown in the last two rows of Table 5, tax evasion rate is close to zero for income subject to third-party reporting, but substantial for self-reported income (around 40%). Thus, attempts at declaring less income than third-party reported income are extremely rare, while failures to self-report income that are not subject to third-party reporting are quite common. This indicates that third-party information is a very effective instrument to reduce tax evasion, and that the overall evasion rate is modest in Denmark because most income (95%) is subject to third-party reporting. The results also indicate that tax evasion is low, not because taxpayers are unwilling to cheat (i.e. good tax morale), but because taxpayers are unable to cheat because of third-party reporting.

Table 5. Evasion rate on different income components

	Share of total net income (%)	Evasion rate (%)
Total net income	100	2,3
Personal income	102	1,1
Deductions	-4	2,2
Capital income	-5	2,6
Stock income	3	5,0
Self-employment income	5	15,7
Third-party reported income	95	0,3
Self-reported income	5	41,5

In general, women and members of the church evade less than others, and non-compliance is more common for persons working in small companies and in construction, fishery and agriculture. These results confirm the received perception on cheating behaviour. More interestingly, the results show that these factor and, more generally, socioeconomic factors have only little power in predicting evasion behaviour compared to factors reflecting existence and size of income that is difficult to detect. This shows that the optimal audit selection strategy 'follows the money' rather than the characteristics of the individual, which is also the strategy pursued by the Danish tax agency.

The results also show that marginal tax rates have a positive impact on tax evasion of self-employed, but that this effect is small in comparison with other responses such as legal tax avoidance and behavioural responses.

Impact of tax enforcement on evasion behaviour
In an evaluation of the effectiveness of tax enforcement policy, it is important to take into consideration that audits not only raise tax revenue through the income detected but potentially also through its effect on the compliance behaviour of the taxpayers. The results from the experiment indicate that knowledge of a high audit probability has a positive, but rather small, effect on compliance behaviour.[21] Much more important is the detection of evasion/mistakes conditional on audit. In the experiment, an audit adjustment gives rise to a change in compliance behaviour the year after and raises thereby tax revenue the year after by around 40% of the original audit adjustment.

Effect of tax evasion and enforcement policy on the distribution of income
The main reason that taxes depend on income is to achieve redistribution from high-income individuals to low-income individuals. An important result of the theoretical literature is that the tax system becomes less redistributive because of tax evasion, the so-called regressive bias hypothesis. On the other hand, with third-party reporting this is not necessarily the case (Scotchmer, 1987). Using the data from the Danish audit experiment, Boserup and Pinje (2010) show empirically that the Danish tax system is not characterised by regressive bias, exactly because of the systematic use of third-party information reporting.

A cost-benefit analysis of the Danish audit strategy
The Danish Economic Council (2011) used the data from the tax audit experiment to carry out a cost-benefit analysis of the resources used on audits. The results from such type of analysis should be interpreted with caution. It is difficult to measure marginal costs and benefits of audits. Moreover, a revenue-maximising level of audits does not necessarily coincide with the socially optimal level of resources spent on audits (Slemrod and Yitzhaki, 1987).[22] Nevertheless, a cost-benefit may provide an important input for the practical policy decision on the level of resources spent on audits.

The overall conclusion from the cost-benefit analysis is that the current level of audit resources in Denmark does not seem far away from the revenue-maximising level. A comparison of audit resources used on self-employed and wage earners shows that the benefit per tax return is much higher for self-employed (as expected) but it turns out that the costs of auditing the tax return of a self-employed is also much higher, implying that an hour spent on the tax return of a self-employed does not give a higher revenue than an hour spent on the return of a wage earner. Finally, the cost-benefit analysis revealed that the net-benefit of those with an audit flag is large, while it is negative for those without an audit flag. This shows that the Danish audit selection system works as it is supposed to.

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[21] It was not possible to carry out this part of the experiment for the self-employed. The result that knowledge of a high audit probability (e.g. 100%) does not spur large increases in tax revenue because of behavioral effects is in line with the results from a similar experiment carried out in Minnesota (Slemrod et al. 2001).

[22] In an economy with both tax compliers and tax non-compliers, it is possible to show under certain assumptions that the revenue-maximising audit level coincide wit the socially optimal level of audits if the marginal Euro obtained by non-compliers is assigned no social value.

4.2.3 Lessons for tax administration

A main conclusion from the experiment is that the widespread use of third-party information by the Danish tax agency has been very successful in increasing tax compliance. Denmark has expanded third-party information even more after the experiment was carried out. The 2009 Danish tax reform introduced full third-party reporting of stock income, i.e. reporting of buying/selling prices in addition to the current reporting of dividends, and introduced also third-party information on certain fringe benefits. With the current widespread use of third-party information, it is difficult to go much further in that direction in Denmark.

An expansion of third-party information seems to be a way forward to enhance tax compliance in many other countries. However, a word of caution is in order. According to the theory in Kleven et al. (2009), third-party information is very effective in modern economies with sophisticated production and large or medium-sized firms but not necessarily in less developed countries with small firms and/or simple production. The reason is that employers and employees may jointly decide to misreport information to the authorities and share the gain from a lower taxation. This type of collusive behaviour is difficult to sustain in a modern economy where many individuals/tasks are involved in the production process, implying that firms will need to keep book records that may be used to prove that tax evasion has taken place, and also because it becomes difficult to maintain information about evasion within a small group of individuals.

Another broad lesson from the experiment concerns the audit strategies of tax agencies. The results indicate that audit selection strategies should focus on income/wealth information variables, i.e. 'follow the money', rather than socioeconomic characteristics of taxpayers. Moreover, in deciding on how many resources to use on audits, it is important to take into account that audits also have strong positive behavioural effects that increase future tax compliance and tax revenue. Finally, it is important to take into account the large differences in the costs of audits. In the Danish experiment, the average increase in tax revenue generated by an audit of a self-employed was nearly twenty times higher than the revenue increase from a wage earner but the audits costs were more than twenty times higher.

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