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Fiscal Illusion and Fiscal Obfuscation: An Empirical Study of Tax Perception in Sweden

Tino Sanandaji and Björn Wallace

Research Institute of Industrial Economics
P.O. Box 55665
SE-102 15 Stockholm, Sweden
info@ifn.se
www.ifn.se

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An Empirical Study of Tax Perception in Sweden*

Tino Sanandaji[1] and Björn Wallace[2]

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Abstract: In this paper we present survey evidence suggesting that there exists a sizeable fiscal illusion amongst the general public in Sweden. Respondents in a nationwide and representative survey systematically underestimate the share of an ordinary worker's income that is transferred to the public sector. Furthermore, we make a theoretical distinction between tax illusion and fiscal obfuscation, a proposed novel type of fiscal illusion. It has previously been assumed that fiscal illusion derives from a fragmentized tax system with many small, and largely invisible, taxes which tend to be ignored or underestimated by the tax payers. We hypothesize that this systematic bias could in addition emanate from misapprehensions of the real incidence of a tax. Evidence is presented that this could apply even when taxes are few and large, contrary to the tax complexity hypothesis. When this misperception derives from seemingly deliberate tax design and tax labeling, as appears to be the case with the payroll taxes in Sweden, we call it fiscal obfuscation.

JEL Codes: H11; H22; H24; H3

Keywords: fiscal illusion; fiscal obfuscation; tax illusion; tax labeling; tax structure; personal income taxation.

[2]Harris School of Public Policy
University of Chicago
1155 East 60th Street
60637 Chicago IL

tino@uchicago.edu

[2]Department of Economics
Stockholm School of Economics
P.O. Box 6501
SE-113 83 Stockholm
Sweden
bjorn.wallace@hhs.se

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1. Introduction

Fiscal illusion refers to "the notion that systematic misperception of key fiscal parameters may significantly distort fiscal choices by the electorate" (Oates 1988, p. 65). The premise is that the tax system design could lead to underestimation of the costs of public expenditure, with the public not being fully informed of the total costs of taxation. Fiscal illusion is an example of a collective action problem in public policy, where the benefits of individual voters gathering and processing information are shared by many, while the costs are solely placed on the individual (Caplan 2001; Congelton 2001). In this paper we attempt to investigate the extent and nature of fiscal illusion in Sweden, through a nationwide survey of approximately one thousand randomly selected Swedish adults.

Sweden constitutes an unusually suitable testing ground of fiscal illusion. For one, it has the highest tax rate as share of national income in the world, raising the question of how public support for high tax rates is maintained. Second, in Sweden the majority of tax revenue is collected through indirect taxation rather than direct taxes, which increases the likelihood of the presence of fiscal illusion. Lastly, the Swedish tax system is both flat and simple. There are few deductions, and taxes are collected on an individual rather than household level. Consequently fiscal illusion can more easily be separated from other systematic misperceptions about taxes and income.

2. Previous research on fiscal illusion

John Stuart Mill suggested that the burden of indirect taxes would be systematically underestimated (Mill 1848). Italian economist Puviani contributed to the field with more substiantial work on fiscal illusion in 1903 (Baker 1983). Puviani argued that the ruling authorities attempt to create a 'fiscal illusion', i.e., an underestimation of the real tax burden among the taxed subjects, by means of various fiscal instruments. The notion of fiscal illusion was thereafter left largely unexplored until Buchanan (1960) renewed attention to this hypothesis. Developing Puviani's original intuition Buchanan distinguished three main strategies that authorities adhering to the notion of fiscal illusion would ideally employ in order to hide the collection of revenue. One is to use state-owned property to produce income, thus preventing the individualization of net opportunity costs. The second is to use indirect rather than direct taxation, which makes appreciation of the private part of consumption expenditures more dif-

ficult for the taxpayer/consumer. Finally, the authorities can raise revenue by means of inflation.

On the opposite end, the expenditure side of fiscal illusion has been used to reach the conclusion that the size of the public sector is in fact too small. In particular Downs (1961) addresses the potential results of the complexity inherent in the tax system, where information costs cause rational individual voters to be ignorant of specific aspects of public spending. Downs argued that remote government benefits will tend to be less apparent than indirect taxation. As a result a vote maximizing government will keep public expenditures at a 'sub-optimally low' value, as assessed against public preferences under perfect information. Similar arguments have been put forth by Galbraith (1958). Fall and Morin (2001) in contrast find that the Swedish public overestimated the share of public spending that went to more popular core services (such as health care and schooling), compared to public programs with less measured popularity. The results suggest limited knowledge not only about the level of taxation but also of the distribution of public spending, overestimating the share spent on the activities that the voters value the most.

Empirical work on determining the extent of tax illusion has attempted to link the size of the public sector with measures of fiscal complexity, based on the so called *revenue complexity hypothesis* where taxes are underestimated by the voters in fragmented tax systems. The first test of whether fiscal complexity influences the size of the public sector was undertaken by Wagner (1976), who applied the Herfindahl index to empirical investigations of fiscal illusion. According to this index, perfect concentration where all tax revenue comes from one source corresponds to a value of unity, with higher dispersion of tax sources resulting in lower values. Hence, a fiscal system is conceived of as being more complex if its revenues derive from a greater number of tax sources. Wagner then regressed total public expenditures for 50 large U.S. cities on the Herfindahl index, controlling for a set of socio-economic variables. He finds that more dispersed tax sources were indeed associated with higher spending, i.e. evidence in favor of the fiscal complexity hypothesis. Following these results, a number of authors (Clotfelter 1976, Munley and Greene 1978, Pommerehne and Schneider 1978, Baker 1983) have attempted to replicate Wagner's findings using more sophisticated techniques and other data sets, with varying degrees of success. [1]

[1] Henrekson and Lybeck (1988) and Henrekson (1988) test the fiscal illusion hypothesis on Swedish time-series data. No significant effect is found.

Oates (1988) and Dollery and Worthington (1996) survey the empirical results on fiscal illusion, finding mixed results. In a carefully designed recent experiment, Chetty et al. (2009) demonstrate that tax salience has economically significant behavioral implications, indicating that tax visibility matters both for consumer choice and for public policy. Other studies on fiscal perception includes Dornstein (1985), Schokkaert (1988), Williamson and Wearing (1996), Gemell et al. (2002), Melo (2002), Chu (2003), Campbell (2004) and Sausgruber and Tyran (2005).

3. The Swedish tax system

In 2003, the year of our survey, taxes constituted 55% of Sweden's National Income[2], the highest in the world (OECD 2010). From an international perspective the Swedish tax system is set apart by its high levels of taxes, relatively high taxes on labor compared to capital, and by the low progressivity. Unlike the American tax system, the Swedish system is quite simple and straightforward. Most people face the same tax rates, there are few deductions, and taxes depend on individual income, rather than household income. A similar survey in the United States would be more problematic, as the response hinges on the perception of "typical" earner, on the family status, on various deductions and exemptions.

In our survey we investigate people's perceptions of the *average* taxes on labor income paid by an *ordinary worker*, which we define as someone earning median income. An ordinary worker in Sweden at the time of the survey faced largely three taxes, summarized in Table 1.[3] The first is a payroll tax of 32.8% on nominal wages paid entirely by the employer, and never reported to the employee. Someone earning $30.000 in nominal wages in fact earns about $40.000, with $10.000 going directly to the state. The second is a flat, visible income tax collected at the municipality level, of on average 32.4%. Lastly consumers pay VAT and other consumption taxes, amounting to 22.0% of an average consumption basket (Nordling et al. 2003). The median wage-earner pays 63% of earned wages in total taxes. In contrast the visi-

[2] In 2003 taxes constituted 48% of GDP. Net National Income, which excludes capital deprecation (generally not taxed) is closer to the typical tax rate on individual income, which is the focus of this paper.
[3] Since 2003 the tax system in Sweden has become more complicated through the introduction of a large deduction for work earnings. Interestingly there seems to have been issues of tax perception associated with this complex deduction, with half of the public unaware of the invisible tax cut (Braunerhjelm and von Greiff 2008; Norgren and Antelius 2009).

ble tax rate on nominal income is only 32% on average.[4] The average tax rate on labor differs slightly from taxes as a share of national income, largely because taxes on capital in Sweden are lower than taxes on labor.

A potential source of bias is that the respondents may confuse average and marginal taxes, or have a mistaken view of the income of the typical worker. This effect should not be too pronounced in Sweden, as the Swedish tax system is only mildly progressive. In 2003, the year studied, the difference between average income taxes paid by persons in the 10th and 90th income percentiles respectively were no more than four percent, 62% vs. 66% (Nordling 2003).

Table 1 Taxes on labor income of typical earner, Sweden 2003[5]

Tax	Percentage
Local Government income tax	32.4%
General contributions to pensions	1.8%
Payroll taxes on employers	32.8%
Average effective consumption taxes	22.0%
Average total taxes for median earner consuming average basket	63.0%

Many public programs in Sweden are income/means tested, and some benefits depend on payments made. For this reason a part of the payroll taxes accrue to the individual who paid for it, especially through the pension system. Quantitatively most of the payments are not linked to the individual payer (Du Rietz 2009). Means tested programs and benefits based on previous payments complicate the calculations of tax rates for individual workers. Since in this paper we have a public choice perspective rather than a labor supply perspective, we define taxes by legal status rather than through the individual budget set.

[4] This is the number obtained after some deductions and other smaller taxes are included in the calculation (Nordling et al. 2003). Note that the VAT and consumption taxes in Sweden are baked into the price of the goods, unlike the United States where sales taxes are added on the price in the store and thus more visible to the consumer.

[5] The numbers given in the paper relies on Nordling (2003) and Nordling et al. (2003). Local government tax refers to weighted average for all Swedish municipalities. The differences across municipalities are small, varying between 28.9 percent and 33.7 percent.

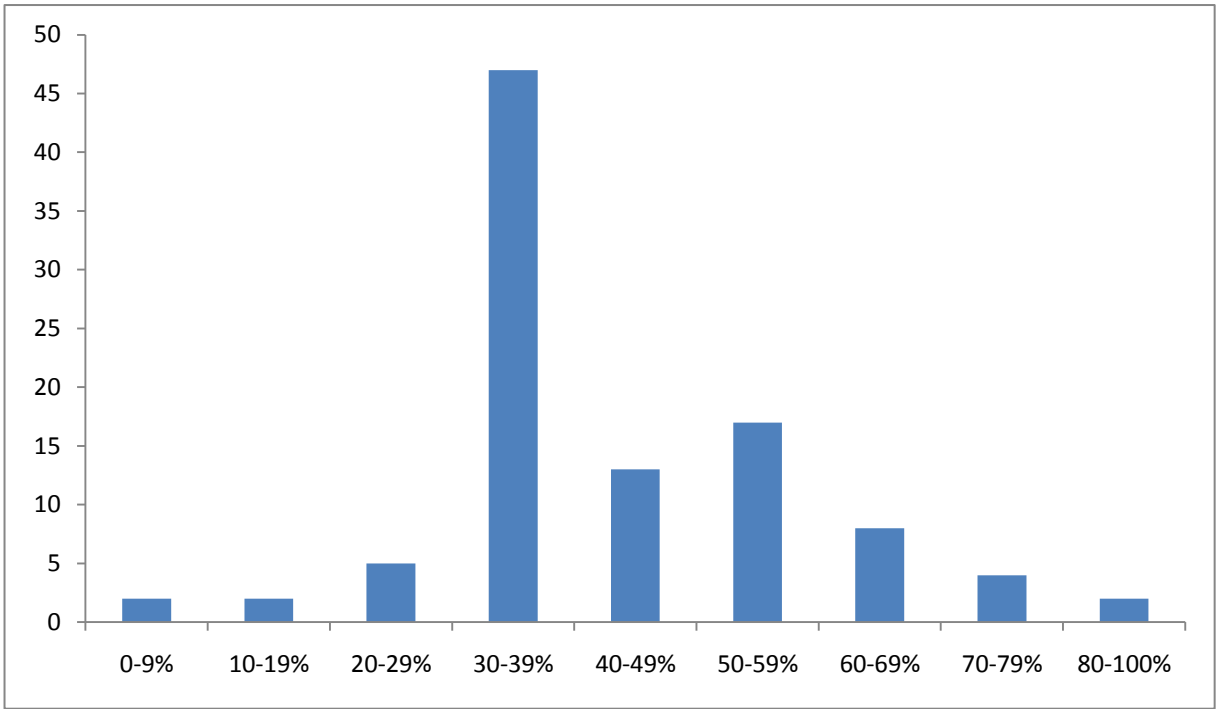
4. The Survey

The study was conducted by the private polling institute TEMO during the Spring of 2003 as part of their weekly phone survey containing a multitude of questions. The sample constituted 1009 randomly selected, nationally representative individuals.

Question 1[6]***:*** *Here are some questions about taxes. Let me start by asking approximately how many kronor you think that the state, county councils and municipality in total collect in taxes for every one hundred kronor that an ordinary employee earns?*

The responses show that there are signs of considerable tax illusion among the Swedish public, who on average believe that an ordinary worker pays *40%* of her earnings in taxes. The total tax burden is thus underestimated by about *23 percentage points*, i.e. by more than one third. The median answer was even lower, at 35%. Only 8 percent had a correct estimate of the total tax level, while some 6 percent overestimated the tax rate. The strong concentration around 30–39% (half the respondents) is illustrated in Figure 1 and suggests that many respondents only included the direct income taxes.

Figure 1 Estimated tax rate for ordinary worker



[6] The original questions were given in Swedish. We have attempted to follow the original wording as closely as possible. At the time of the survey one hundred kronor was about 13 dollars.

Question 2: *Here is a question about taxes. Let me ask approximately how many kronor you think that the state, county councils and municipality in total collect in taxes on every one hundred kronor that you earn?*

Lewis (1979) finds that individuals have a better understanding of their own tax rates, and that they anchor their estimates of other peoples' tax rates on their own tax levels. For this reason we also asked about own taxes to respondents reporting as employed. As expected given the construction of the Swedish tax system, where most workers earn similar income and face the same tax rate, the answers are very similar to those in question 1. The average estimated tax rate was *41%*, with a median of *36%*, again confirming the existence of fiscal illusion.

Question 3: *Approximately how many kronor are paid as employer's fee for every one hundred kronor that an employee earns?*

The Swedish payroll tax is referred to as the "employer's fees", and constitutes the second largest source of public revenue. Due to its low visibility it is one of the taxes where the scope for fiscal illusion is the greatest. While there was sizeable variation in the responses, the average answer was quite close to the actual level, both median and mean being at *30%*. There was no systematic bias, with three fifths of the respondents being within ten percentage points of the correct answer. The respondents show no fiscal illusion regarding the actual size of the payroll taxes.

Question 4: *Those that hire employees must pay an employer's fee for the wages paid to them. In your opinion, are such employer's fees...*

...Primarily a tax on the employee (24% of the respondents)
...Primarily a tax on the employer (56% of the respondents)
...Do not know (16% of the respondents)

It is striking that less than one quarter of the respondents were aware of the incidence of payroll taxes, especially since, on average, the public demonstrated an impressive knowledge on the size of the tax. Given the size of the payroll taxes, the misperception of the payroll taxes goes a long way in accounting for the underestimation of the total tax burden on labor.

While the employer has the formal responsibility to make the actual payment of the taxes, economic theory strongly suggests that this is of no importance (e.g., Atkinson and Stiglitz 1980). What matters is the incidence of the tax, which depends on demand and supply elasticity. The labor supply elasticity for married men in Sweden has been estimated to be close to

zero, while those for married women are probably a bit higher (Agell 1996). Due to this relationship, labor will shoulder all, or nearly all, the burden of the payroll tax. This view has also received substantial empirical support (e.g., Gruber 1997; Bohm and Lind 1988 for Sweden). The misperception on the incidence of the tax is particularly telling considering the labeling of the payroll tax as the "employer's fee". The term itself suggests that it is not a tax, but a fee, and not a burden on the employee, but on the employer.

Question 5: *In your opinion, what is a reasonable total tax level for an ordinary employee working in Sweden?*

In the responses to this question, there is a strong concentration to the range between 20-40%, which contained 74% of all respondents. Both the mean and median answer is *30%*, implying that the respondents on average wanted to reduce the taxes paid by an ordinary worker by 10 percentage points (from 40% to 30%) even after accounting for the original underestimation of the aggregate tax. These results should be interpreted with caution. Lewis (1982) concludes that people typically support increased or maintained spending on public budget items related to health and welfare, while simultaneously expressing dissatisfaction with the high level of taxes. In other words, what is generally termed the *fiscal connection* between revenues and expenditures is not always made.

5. Fiscal obfuscation

In much of the earlier empirical work on tax illusion, it has been assumed that the source of misperception is the complexity that arises when taxes are spread out over several sources of income according to the 'revenue complexity hypothesis'. The revenue complexity hypothesis suggests that the more varied sources of tax there are the more difficult it is for taxpayers to know their liability. (e.g., Gemmell et al. 2002). The Herfindahl index, the most important empirical tool for measurement of tax illusion, is directly based on this assumption.

We would instead emphasize that tax illusion may also emanate from misperception of the incidence of taxation, even regarding taxes that are large. The voters may thus be well aware of both the existence and the size of a certain tax, but simply not realize that they are the ones paying for it. This implies that taxes may be systematically underestimated even in a tax system with only a few taxes. In this view the revenue complexity hypothesis should be seen as a sub-category of tax illusion, with fiscal obfuscation as another possible form of tax illusion.

Today the revenue complexity hypothesis and tax illusion are often used as interchangeable terms.

In fact, Puviani himself commented on this possible way of inducing fiscal illusion. Buchanan (1960, p. 62) states that:

> *"A final form of fiscal illusion involved on the levy of taxes comes about in the uncertainty concerning the actual incidence of the tax. Government will try not to levy taxes for which the incidence is known. The aim will rather be to induce as much uncertainty as possible thus keeping the individual in the dark concerning the actual amount of tax which he does pay in real terms."*

Somewhat puzzling, this line of thought has been neglected in later empirical work on tax illusion. We find that only one quarter of the respondents identify the incidence of the second largest source of government revenue, the payroll taxes. Even more interesting, this misperception appears to be intentionally created, which is indicated by the labeling of the tax "employer's fee", by not including it on paychecks, and by the use of language where "income" almost always refers to nominal income, as opposed to the actual income derived from labor. Finally, and most importantly, the mere fact that the taxes on labor are divided (quite evenly) between the direct income taxes and payroll taxes can be taken as an indication that the incidence of the taxes are deliberately hidden, as there appear to be no efficiency reason for doing so.

When the incidence of income taxes is intentionally concealed, we introduce the term *fiscal obfuscation.* The word 'obfuscation' is borrowed from development economics, where it refers to the deliberate hiding of the costs of rent-seeking redistributive policies by employing indirect manners of wealth transfer (Magee et al. 1989). Obfuscation relates to the politicians exploiting the public's rational ignorance by hiding information from them through indirect policies. The public perception of the Swedish payroll taxes seems to be an example of fiscal obfuscation, contributing to tax illusion detected in this survey.

The implications from misperception of incidence and lack of knowledge of the size of taxes need not be the same. For example, the costs of informing people of the size of taxes may be

higher if the underestimation is due to misperception of incidence. In this case it is not sufficient just to "point out" the taxes; more extensive education may instead be needed.

6. Conclusions

In a large survey of a representative sample, we have established the presence of significant fiscal illusion among the Swedish general public. Our findings indicate that tax illusion may not only result from tax invisibility, as has often been assumed. An individual may well be aware of the existence, and even the size, of a particular tax and yet fail to recognize the incidence of its burden, thereby underestimating the individual total tax burden. In our survey the size of payroll taxes were well assessed at the same time as a majority of the respondents misplaced the burden of the tax. There is reason to believe that this misperception is not coincidental, but intentionally induced. Deliberate fiscal obfuscation can be suspected from the labeling, indicating that the costs are born by the employer, and even more so from the mere design of the tax system, with no obvious efficiency reasons behind the separation of the income and payroll taxes.

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