

# Tax evasion in Sweden 2002–2013: interpreting changes in the rot/rut deduction system and predicting future trends

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**Abstract** In this article we report on the effects of recent changes in tax policy in Sweden as a case study of tax evasion. We use situational crime prevention principles and insights drawn from situational action theory to construct an analytical framework to assess how changes in tax policy affect individuals' and companies' motivations for tax evasion; first decreasing motivations and then increasing them. The analysis relies mostly on secondary data from reports published by the Swedish Tax Agency. We then make specific predictions regarding future trends in tax evasion. We analyse how buyers and providers of certain services that are taxed might be affected by changes in the tax deduction system and we predict that an increasing percentage of them will consider engaging in tax evasion. We conclude by discussing actions that the tax authorities might take to prevent increases in tax evasion.

## Introduction

The term “tax gap” refers to the difference between the taxes that were actually paid to the government in a particular reporting period and what should have been paid according to the rules determined by the Tax Agency controls. In Sweden, several indicators suggest that the tax gap decreased starting in the late 2000s. Evidence for this reduction comes from a number of independent surveys on individuals and companies, as well as calculations based on national accounts and the international exchange of information (for a review, see Skatteverket [1]). This change in behaviour (reduction of

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tax avoidance or greater tax compliance) has been accompanied by changes in people's attitude towards tax compliance; for instance, fewer people would consider employing illegal labour (The Swedish Tax Skatteverket [1]). The drop started in 2007, one year after tax reforms were introduced. In effect, these reforms reduced the amount of taxes that individuals and businesses had to pay when they hired labourers for particular kinds of work called in Swedish, *Rot/Rut avdrag*. Rot work covers repairs, conversions, and extensions while Rut includes cleaning, maintenance and laundry. In January 2016, the tax rules were changed again but in the opposite direction, making taxes higher and the cost of labour more expensive.

In this article, we argue that tax reforms have had a direct impact on individuals' and businesses' motivations in regard to paying taxes and on their overall attitudes towards compliance to the tax laws. We use situational crime prevention principles and insights drawn from situational action theory to construct a theoretical framework to assess how changes in tax policy at two moments in time (2006 and 2016) affect individuals' and companies' motivations for tax evasion; first decreasing motivations and then increasing them. We start first by describing how the system of tax deductions on labour costs affected the attractiveness of tax fraud in a negative direction (that is, made tax compliance more likely), then we speculate how the change in the tax system that came into force in January 2016 will affect both buyers and providers of these services, making them more willing to consider cheating the system. We then predict that tax evasion will increase as a result of changes in tax policy that make tax evasion more attractive.

## Predicting tax evasion

Like rational choice theory [2] and routine activities theory [3], situational crime prevention theory [4] is part of what has been called the "opportunity" perspective on crime. The opportunity perspective first appeared on the criminological landscape four decades ago [5]. In a nutshell, the opportunity perspective holds that opportunity is a fundamental cause of crime [6]. The perspective assumes that individuals make choices to engage or not engage in crime based on the availability and attractiveness of criminal opportunities. Situational crime prevention theory seeks to identify the factors that influence the distribution and attractiveness of criminal opportunities and then to suggest ways in which attractiveness might be reduced. The theory predicts that reducing the attractiveness of criminal opportunities will lead to reductions in crime. This approach has since been tested and explored in a large number of studies with generally positive results [4, 6].

However, research on situational crime prevention theory suffers from two unfortunate deficiencies. First, it has been applied almost exclusively to various forms of street crime, ranging from minor vandalism to serious interpersonal crimes of violence. With very few exceptions, almost no attempt has been made to explore its applicability to white-collar type crimes (but see [7–9]). Second and more importantly, tests of situational crime prevention theory have almost always focused on demonstrating that particular forms of crime can be prevented by reducing opportunities in various ways (for example, by increasing the effort needed to complete the crime or increasing the risk of detection). But this logic should be reversible. If reducing opportunities prevents crimes, then it is to be expected that increasing the attractiveness of opportunities will

lead to more crime. The present case study of tax fraud in Sweden provides an opportunity to test this prediction and to explore the applicability of situational crime prevention theory to a form of crime that it has heretofore largely ignored.

Situational Action theory (SAT) can also provide complementary insights in the interpretation of the dynamics of tax evasion by framing individual's perception-choice process in two periods of time, before and after changes in taxation rules (e.g. [10]). Here we are particularly interested in the types of interaction between types of individuals (that would consider crime as an alternative) and the extent to which societies moral rules are enforced in that place and time.

The structure of this article is as follows. We first discuss the problem of tax evasion placing Sweden in an international perspective; then we review why we think both situational crime prevention theory and situational action theory can support this analysis of tax evasion. This section is followed by a description of the empirical material and methods. In the final section we use our theoretical framework to describe changes in attitudes and tax behaviour from 2002 to 2015, and then, after 2016. The article concludes with a summary of the case, specific predictions, new research questions, and policy recommendations.

## Theoretical background

### *The problem of tax evasion: Sweden in an international perspective*

Tax evasion is a fuzzy concept and needs to be distinguished from the concept of tax avoidance. Sandmo [11] defines evasion as a violation of tax law whereby the taxpayer refrains from reporting income or some other type of financial activity which is, in principle, taxable. Tax avoidance, on the other hand, refers to situations in which taxpayers arrange their financial affairs so as to legally reduce their taxes. In the United States, tax evasion refers to a case in which a person, through commission of fraud, unlawfully pays less tax than the law mandates ([12], p. 26). In Sweden, tax evasion is one of the causes of the tax gap, which is the difference between the tax that would have been collected—if all taxpayers had reported all their activities and transactions correctly—and the tax collected in practice (Skatteverket [13], p. 16). The problem of tax misreporting encompasses a number of behaviours that range from unintentional errors (due to ignorance of or confusion about the tax law) to wilful noncompliance. Tax evasion can take a variety of different forms. For example, the size of an allowable deduction may be overstated or an item of income may be left unreported. Evasion can be achieved by under reporting income (business or non-business income, such wages and salaries) or by over reporting credits, such as by claiming unwarranted deductions or exemptions. The problem of defining tax evasion becomes even more problematic when illegal actions involve big corporations that operate in a global context. Tax avoidance in a cross-border context may be accomplished through a network of stakeholders and the legality or illegality of their actions may be difficult to determine from the outside ([14], see also [15, 16] in this Special Issue).

How big is the problem? The answer to that question is elusive. In Sweden, the Swedish Tax Agency estimated the total tax gap as a percentage of taxes to be 9 % in

late 1990s and 8 % in 2000s [13]. Compared to other Scandinavian countries, Sweden has an average tax avoidance score [17]. According to Slemrod [12]), there are speculations that the “United Kingdom has a tax gap of a similar magnitude to that of Sweden and the United States” [18]. Buehn and Schneider [19]) found a declining trend for the size and development of tax evasion over the period 1999 to 2010 when studying 38 countries across the world, partially associated with the variation of self-employment and its impact on the total shadow economy.

Whether people pay their taxes correctly or not depends on both individual characteristics and contextual conditions. The concept of tax morale refers to person’s sense of moral obligation or their intrinsic motivation to pay taxes. Lago-Peñas and Lago-Peñas [20]) show that tax morale in European countries varies systematically with socio-demographic characteristics, personal financial experiences, political attitudes, and also with regional GDP and tax arrangements. At the individual level, tax morale rises with age and religiosity and is higher among women compared to men, but it is lower for the self-employed and for upper-class individuals [20, 21]. Research has also investigated what influences tax avoidance across countries. Tsakumis et al. [17]) found that noncompliant countries are characterized by high uncertainty avoidance, low individualism, low masculinity, and high power distance after looking at a sample of 50 countries.

The penalty for tax evasion depends of the seriousness of the offence. In Sweden, penalties range from fines to imprisonment. The penalty for reckless tax accounting is a fine or imprisonment of up to six months, but someone who intentionally or by gross negligence does not make tax deductions in the manner specified by criminal tax law can face imprisonment up to one year. The penalty for accounting fraud and tax evasion of the normal degree is imprisonment up to two years, while aggravated accounting offenses and serious tax evasion can bring penalties of up to 6 years. The average length of punishment for those who were in jail for accounting fraud or tax evasion in 2007 was 6 months and 4 months respectively. For serious accounting fraud and serious tax offenses prison sentences averaged 21 and 19 months, respectively [22].

### **Theoretical perspectives on tax evasion**

Traditionally, situational crime prevention theory (SCPT) has focused on identifying ways to make criminal opportunities less attractive to potential offenders. SCPT is always applied to highly specific forms of crime because opportunities vary dramatically from crime to crime. Consider, for example, the differences between a violent interpersonal crime, such as robbery, and a minor property crime, such as writing graffiti on a wall. According to SCPT, criminal opportunities are structured by five dimensions or characteristics [23].

1. The effort required to carry out the offense.
2. The risk of detection while committing the offense.
3. The rewards to be gained from the offense.
4. Provocations that may encourage criminal behaviour (e.g. bystanders pointing out that someone has been disrespected).
5. Excuses offenders can use to justify their actions (e.g. everybody else does it).

The attractiveness of a criminal opportunity can be reduced by altering any one or more of these dimensions. For example, the effort required to carry out an offense can be increased by hardening the target, or the risk of detection could be increased by installing surveillance cameras at potential crime locations (for an extensive list of techniques, see [23]).

SCPT can be applied to economic crimes and specifically tax evasion, but to do so requires that we rethink the concept of opportunity structure as it applies to economic crime [9]. For example, in regard to tax evasion, the process by which taxes are collected influences the opportunity to evade paying taxes. In the United States, over 80 % of all income reported on tax forms is subject to some form of third party verification (e.g. income is reported by an employer on a W-2 form). The rate of tax evasion on this sort of income is much lower than it is on income that is not subject to verification by other parties [24].

Opportunities for economic crimes almost always involve the intersection of two processes. The first is a legitimate process that is typically followed in economic transactions, and the second is an illegitimate process that is parasitical on the first process. For example, in the United States, the procedures through which health care providers submit claims to the Medicaid program can be perverted so that providers get paid much more than they are due [25, 26]. In the case of health care fraud and in most cases of economic crime, offenders have legitimate access to the target of the offense by virtue of their occupational or organizational positions [27] and their actions have a superficial appearance of legitimacy because they mimic the legitimate process [9]. SCPT suggests that to reduce economic crimes, such as tax evasion, legitimate processes need to be developed that (1) are difficult to mimic (e. g., third party verification of income), (2) raise the likelihood of detection, or (3) reduce the rewards associated with the offense.

But what would happen if the reward for a particular offense was increased, but all other factors, especially the risk of detection, remained the same? According to SCPT, that particular offense should become more attractive to potential offenders and its rate of occurrence should increase. As we describe below, this is exactly what may be happening in regard to tax evasion in Sweden. Recent changes in Swedish tax policy have effectively raised certain taxes (or at least reduced discounts), and therefore, they have made tax evasion more attractive to potential tax evaders.

Although initially developed in relation to criminal behaviour by groups of young people, Situational Action Theory (SAT) is relevant to the study of tax evasion. SAT, by offering a process based explanation of offending, identifies the sufficient conditions for an offence to occur. Exposure to criminal opportunities involves two sets of factors: (1) the individuals own moral rules and (2) the extent to which societies moral rules are enforced in that place. The interaction between these two sets of factors leads to what SAT calls a perception-choice process on the part of the individual. This refers to how the individual perceives their options as to how they might act and then makes a decision either to commit a crime or not.

Tax evasion requires convergence in time between an individual's criminal propensity (based on their morality and ability to exercise self-control as well as that of any group the individual is with) and their exposure setting (the moral rules of the environment they are in). Thus, changes in the tax system may affect an individual's exposure setting by altering, for example, how permissible or excusable tax evasion is

seen by the individual's reference group. SAT suggests that criminal acts are the outcome of a perception–choice process initiated by the interaction between the individual's crime propensity and the discouragements to crime that are present ([10], p. 56). The time dimension of SAT is fundamental to interpret why situational conditions become more (or less) favourable to crime. Yet, 'time' cannot be assessed independently of individual factors. What is actually relevant here is the socio-political context in which actions take place. According to SAT, the socio-political context is important because it is part of the moral context in which people develop and apply their personal morals. Wikström and Treiber [28], p. 428) argue that acts of crime happen because individuals "perceive them as a morally acceptable action alternative given the circumstances (and there is no relevant and strong enough deterrent) or fail to adhere to personal morals (i.e. fail to exercise self-control) in circumstances when they are externally incited to act otherwise". For instance, even if the reward for a particular offense changed over time (rewards were reduced at a particular time and the risk of detection remained the same), some individuals would never consider crime as an alternative because they are less crime prone. Of those who would consider committing crime, some would do so out of habit and others as an outcome of a rational deliberation. Wikström and Treiber [28]) suggest that "when people commit crime out of habit, controls play no role in the process of choice" (p. 433). In SAT, these individual-environment interactions at particular times are central to our understanding of many crimes, including, we argue, tax evasion.

In regard to crime proneness, we assume that most tax evaders are not serious predatory criminal offenders, and they most likely do not commit crime out of habit as suggested by SAT. Rather, those who evade taxes can be categorized as what Cornish and Clarke [23]) call "mundane offenders." Mundane offenders commit mainly minor offenses of ambiguous criminality, that is to say, the criminal status of the act is contested (e.g. occasional use of marijuana) or the act is petty and widespread among ordinary people (e.g. "borrowing" office supplies from a workplace). Unlike serious predators, mundane offenders are sensitive to moral considerations and are not unabashedly devoted to a criminal life-style. Most of the time, they are normal law-abiding people who have some stake in social conformity. Their offenses tend to be committed intermittently and they tend to be committed in situations that lack clear moral markers of their wrongfulness.

Cornish and Clarke [23] theorize that criminal decision-making by mundane offenders is carried out differently than it is for predatory offenders. When predatory offenders evaluate criminal opportunities, they focus almost exclusively on instrumental concerns and the risk versus reward ratio with little consideration of the morality of their actions. In contrast, when mundane offenders contemplate criminal activity, they have to consider more than just the benefit to be gained and the likelihood of getting caught. They must also take into account the moral probity of committing a criminal act to attain some desired end, and they have to have some reason or justification for their crimes. Thus, mundane offenders are dependent on the availability of techniques of neutralization [29] or mechanisms of moral disengagement [30]. Morally ambiguous offenses are easier to neutralize and easier to disengage from. We suggest that tax evasion is the epitome of a morally ambiguous offense as discontent over taxes seems to be an endemic feature of civilized societies [31], though one that varies from one country to the next and that also oscillates over time based on particular socio-political

contexts. Survey research indicates that one of the strongest determinants of tax compliance is moral beliefs about tax compliance [32]. Thus, in addition to the situational contingencies that surround opportunities for tax evasion, the rate of any particular type of tax evasion also depends on citizen perceptions of the legitimacy of the tax [32].

### **The case study: tax policy in Sweden from 2006 to 2016**

Skatteverket [1] identifies several factors that influence the likelihood of tax evasion. The first set of factors involves the individual as a citizen and their view of the tax system. From this perspective, as noted above, the tax gap is a function of the trust that citizens have in the legitimacy of public authorities and institutions. Both citizens and businesses have a mutual interest in the efficient functioning of society. The second group of factors involves the individual as taxpayer and their perception of and experience with the tax system, namely the conditions for ‘doing the right thing’, scope for errors, and perceived risk of detection. Accordingly, tax evasion is in part determined by factors that the Swedish Tax Agency can influence through its various activities and by other external factors that are out of the control of the tax authorities.

In the Swedish constructions sector, for example, undeclared work is estimated at between 10 and 20 billion SEK annually. Typical offenses in this industry include tax avoidance (unreported income, undeclared VAT and unrecognized employer contributions), accounting crime (a range of laws governing various forms of grants to hire staff), breaking of other laws governing employment (for the unprivileged illegal worker), false records (fictional identities in the labour force, false monitoring data) and bribery (for public contracts, bribes to managers). How much is paid in “illegal wages” (undeclared work) is likely to vary but it is generally assumed that compensation for undeclared work is equivalent to at least 50 % of the value of the false invoices. In medium-sized companies in construction, a mix of legal and illegal labour forces is used. In smaller companies the risk of illegal labour being used is higher. From the contractor’s perspective, there are two reasons to use illegal labour: (1) to make more profits by hiring cheaper labour and not paying social security taxes, and (2) to avoid losses. Contracts in construction projects often have strict terms of performance, and failure to meet the terms is often associated with large penalties. It is therefore tempting for entrepreneurs to bring in illegal workers in order to avoid the risk of delays, particularly when the penalty amounts can be more severe than the cost of being found using illegal labour (Skattverket [1]). The modus operandi of undeclared work in construction industry can be relevant to interpret tax evasion in Rot and Rut services as they may share some parallels, and we will return to these issues in the next sections.

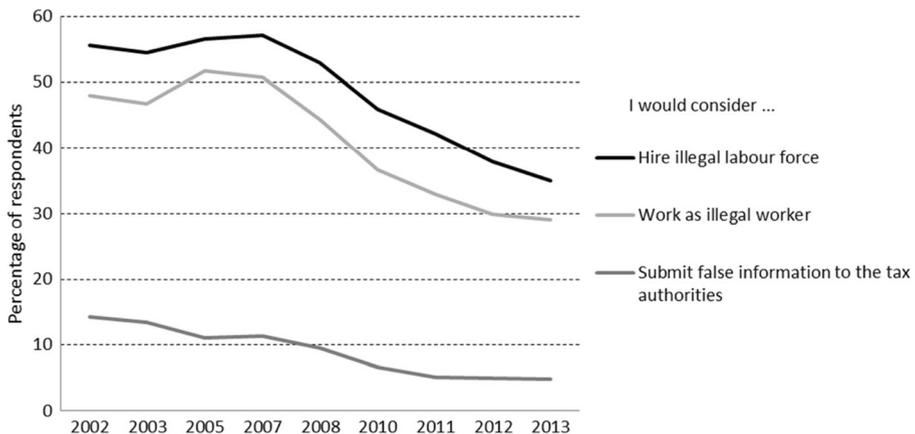
### **Measuring tax compliance and evasion**

Data on tax evasion is exceedingly difficult to collect. Because they are personally sensitive and potentially incriminating, truthful and accurate self-reports of tax evasion are challenging to obtain [12]. Thus, to assess changes in tax compliance in Sweden, we rely on secondary data from reports published by the Swedish Tax Agency that

were based on two types of surveys. Skatteverket [1] reports on a survey that was focused on perceptions among citizens and businesses of the prevalence of tax evasion and unreported labour. Surveys directed to citizens were conducted annually between 2006 and 2012 while those directed to businesses were conducted between 2007 and 2013. The questions in the surveys were formulated as statements to which the respondent was asked to indicate their level of agreement or disagreement, on a five digit scale. The response rate ranged between 50 % and 55 % in the various citizen surveys. The 2006 survey sampled a random selection of 3000 individual, but in later surveys the sample size was increased to 5000. A different survey was sent annually to businesses and had a response rate ranging between 40 % and 45 %. We report on these surveys in the next section. However, in order to gain deeper insight into the modus operandi of Rot/Rut tax evaders, we approached experts at tax authorities in Sweden using a set of questions over email. The qualitative analysis of the information was supplemented with information from published reports and other relevant documentation. All these data are presented in the next sections.

## General trends in tax evasion in Sweden

Between 2002 and 2013 attitudes towards compliance with tax laws regarding illegal work fluctuated substantially (Fig. 1). Between 2002 and 2007, the percent of respondents who reported they would hire labourers in the illegal market if they knew there would be no penalty was well above 50 %, but the percentage began to drop after that and by 2013, only 35 % would consider doing it. Similar trends were found for “working as illegal labour force” or “submitting false information to the tax authorities”. The biggest drop occurred among those respondents who would consider working illegally in the country, which decreased from over 50 % in 2005 to under 30 % in 2013. The information shown in Fig. 1 is important for our argument since we are not only interested in people’s willingness to submit false information to the authorities but

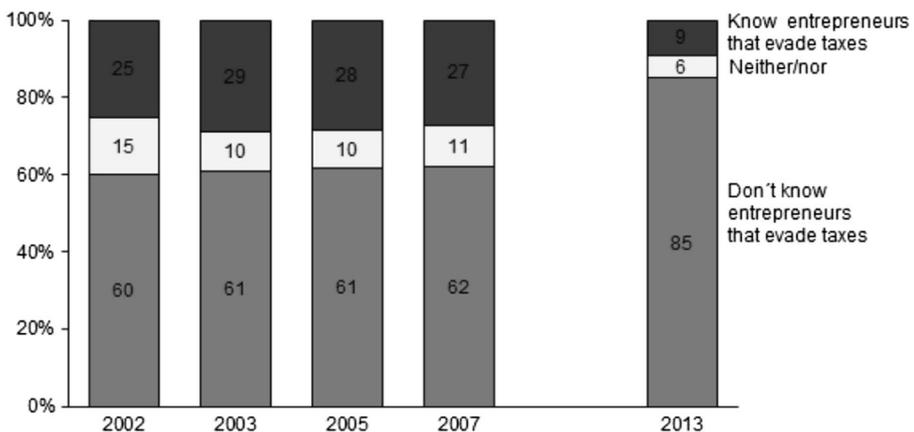


**Fig. 1** Expectations on compliance to the tax laws, 2002–2013. Data source: Demoskop Panel 2015

also (because of the nature of tax deductions—Rot and Rut), in whether people would be willing to work or be employed illegally because this would affect rates of tax evasion.

Although there is scepticism regarding whether changes in attitudes translate into changes in behaviour (see e.g. Skatteverket [1]), recent survey data on entrepreneurs provide provocative evidence that the changes are real. As shown in Fig. 2, the percentage of respondents who declared knowing someone (another entrepreneur) who evades tax decreased significantly from 2002 to 2013. Mirroring the pattern in Fig. 1, the percentage who report knowing entrepreneurs who evaded taxes is stable between 2002 and 2007, but decreases sharply between 2007 and 2013. However, the picture varies depending on the branch of the economy that is considered. It is notably higher for the hotel/restaurant (43 % of businesses declare that “Illegal wage arrangements are paid in our industry”), transport (33 % of businesses) and construction industries (25 % of businesses) than for other sectors. The survey also indicates that hotel/restaurant, transport and construction industries are branches that declare experiencing more often unfair competition from other companies as a result of tax evasion.

Although tax avoidance has internationally shown signs of reduction (see e.g. [19]), the international trends do not correspond with trends in Sweden. Specifically, the declining trend internationally started around 2002 and then began to show signs of increase in 2009 (perhaps because of the Global financial crisis), but the Swedish declines did not commence until after 2007 and continued after 2009. This suggests that the pattern observed in Sweden between 2002 and 2013 were not part of general international trends in tax compliance. We suggest instead that there are internal causes for the national trends. Although there are potentially other causes that may have affected people’s attitude towards law compliance, we suggest that this decrease was affected primarily by changes in tax deduction system in 2006. In the next section we present examples of two tax deductions systems—Rot and Rut deductions—and describe how changes in these systems may have affected the perception of individuals’ both as citizens and taxpayers.



**Fig. 2** Percentage of respondents who declared “I personally know entrepreneurs who evade tax”, 2002–2013. Data source: Skattverket (2014) The development of the tax gap in Sweden 2007–2012, page 55

## Changes in tax deductions and tax compliance: the case of rot/rut services

The Rot reduction is an incentive program for the construction industry in Sweden that provides a form of tax relief. It has existed since at least 1993, but in the mid-2000s it was expanded to allow a discount of 50 % on labour costs of these services. Rot covers the expenses for maintenance, repairs and renovations and additions. The tax reduction is applied to those who own villas, townhouses, cottages, condominiums and apartment buildings. The Rut reduction came into force in 2007 and it provides tax credit for the use of household services, such as cleaning, maintenance and laundry [33]. However, tax policy in regard to both Rot and Rut services changed on 1st January 2016. The allowable deduction for Rot was reduced from 50 % to 30 % of labour costs, with a maximum discount of SEK 50000 per year. These changes will be further discussed in the next sections.

### How Rot/Rut affected positively tax compliance between 2006 and 2015

Although there are potentially multiple causes that may have affected people's attitude towards law compliance after 2006, we suggest that the decrease in tax evasion resulted primarily from changes in tax deduction system, following the implementation of Rut and Rot deductions directed to sectors of construction/renovation and households' services. As Figs. 1 and 2 indicate, tax evasion started to decrease after 2007, which was right after the implementation of Rut and Rot deductions.

There are other indicators that the tax policies introduced in 2006 affected people's attitudes and behaviour in regard to tax compliance. Skatteverket ([34], p. 11) found, based on a survey conducted in November 2010 and directed to general population, that the general attitude towards Rot/Rut deduction was positive: 86 % and 72 % declared that the tax deduction "was a good thing", for Rot/Rut deduction, respectively. The same report also shows that the acceptance of Rot/Rut increased over time from 58 % in 2008 to 78 % in 2010, while the acceptance of illegal work decreased, from 33 % to 20 % in the same period of time. Individuals started making more use of these tax deductions too. Figures showed that the payment of the Rot and Rut deductions steadily increased since these changes came into force: an increase in 210 % for Rut deduction from 2008 to 2010 and 40 % in Rot between 2009 and 2010 (Skatteverket [34], p. 8). More interestingly, the report showed that 19 % of buyers of these services declared that they would not have done the work if these tax deductions were not in place (p. 41). For cleaning services, for example, before the changes, more than half of respondents reported doing the work themselves, around 10 % bought illegal labour force and about the same percentage said they would return to illegal labour force if deductions were abolished. If the deduction were to be reduced to 25 %, then a third of the respondents would buy less and a quarter would stop buying Rut services altogether. If the reduction were to be completely abolished, only a quarter would still buy the same amount of services, 19 % would buy less and 55 % would no longer buy these Rut services. Based on these results, we draw from SCPT and SAT to suggest that the increase in tax compliance with regards changes in Rot/Rut deductions that occurred between 2006 and 2013 was caused by the following mechanisms:

- a) *Reduced rewards, less motivation* - A more generous tax deduction meant that a series of situational conditions 'favorable' to tax avoidance disappeared. Since the

- cost of compliance went down when the tax policy was changed, non-compliance became less permissible [23]. In addition, the changes in tax policy reduced rewards associated with evasion, and thus from the perspective of a potential tax evader the reward versus risk equation was altered. In other words, the new policies changed the motivational structure of tax evasion and stimulated compliance.
- b) *Mundane offenders are sensitive to the moral implications of tax evasion* - By themselves, the objective conditions that constitute a criminal opportunity (size of reward, degree of effort, and risk of detection) cannot cause crime unless there is a potential offender present. In regard to tax evasion, potential offenders are likely to be ‘opportunistic, mundane offenders’ [23] or less ‘prone to crime’ [10]. Unlike serious predators, this type of individual is sensitive to the subjective elements of criminal opportunities, especially their moral implications. If compliance is made less costly than the moral consequences of violation become greater for potential offenders, because they have less reason to justify an offense.
- c) *Tax compliance coincides temporally with changes in Rot/Rut systems* - The start of the reduction in tax avoidance coincides with the period of changes in Rot/Rut tax deduction system. As suggested by SAT, the particular criminogenic interactions at particular times are central to our understanding of crime occurrence. If they fail to be in ‘place’ at the ‘right time’, crime does not happen. In the case of Swedish tax policy, less reward for tax evasion created the “right conditions” for greater tax compliance.

### **How Rot/Rut shall affect tax compliance negatively after 2016**

On 1st January 2016, tax policy in regard to both Rot/Rut services changed. The allowable deduction for Rot was reduced from 50 % to 30 % of labour costs, with a maximum discount of SEK 50000 per year. To illustrate the financial implications of this change consider this example: If the labour costs for a project equal SEK 50000 the employer receives SEK 10000 less in tax credit as a result of the new rules. Prior to December 2015, the employer would have been able to deduct SEK 25000 of the labour costs for the project and would have had to pay taxes on only the remaining SEK 25000, but starting in 2016, the employer will only be able to deduct SEK 15000 and will have to pay taxes on SEK 35000. For Rut services, the changes in policy are different. From 1 January 2016, a lower ceiling for tax reduction was imposed. The maximum amount the tax deduction for routine services was reduced from SEK 50000 to 25,000 for those individuals who have not yet turned 65 years old (both Rut and Rot for those above 65 years old is unchanged). Thus, individuals under 65 would have to pay taxes on Rut for any labour that cost over SEK 25000. This change and its effect have been questioned sharply by both politicians and representatives of the industry in the Swedish media (SvD [35]) but for other reasons than tax evasion. Critics of the new policy contend that the creation of new jobs will disappear with the new tax system. Of course, it is difficult to know exactly how the tax increases will affect the willingness to pay for these services primarily because we have little information at this stage regarding whether the higher tax rate will simply shift people from hiring out for these services to doing them themselves.

Assuming that other factors remain basically the same, we argue that these changes will have the effect of making tax compliance more costly, and thus, they will also make the rewards of tax evasion greater. This will affect both buyers and providers of Rot/Rut services. According to Skatteverket (2015), the practice of undeclared work relies on an organized system that is dependent on three components: (1) real demand for work (orders from customers) in the legal economy, (2) procurement of (illegal) labour and (3) methods for monetary masking (methods to bring untaxed funds from a company at the same time hiding the recipients of these). Below we discuss how the supply and demand of these services may take shape:

*From the demand side*, there are two types of buyers of these services; the first group is composed of individuals who have enough financial resources that they can afford services regardless of Rot/Rut discounts (for them, taxation change will not make any difference). In theory, this group should be less likely to consider buying services illegally (or if they buy labour illegally, the affluent have greater opportunities to avoid detection because they can hire accountants to hide their transactions). The second group consists of those who in the past bought services using the Rot/Rut deductions, but now find these services less affordable. They must either limit their consumption or buy the services illegally. These individuals evade taxes because they “do not have another choice,” (or “are forced into it”) and they find excuses that allow them to evade taxes by accepting false invoices from companies or buying services in the illegal labour market by paying for services in cash. This group may be composed of those who cannot afford to regularly buy services without the deduction (as they did in the past) and those who bought services up to deduction limit (note that the deduction ceiling is now lower than it was before, e.g. for Rut services the ceiling is SEK 25000 year). Regardless the reason, this creates a demand for illegal work that is supplied by a share of service providers.

*From the supply side*, service providers are likely to experience less demand for their services as a result of the changes in tax policy regarding Rot/Rut deductions in 2016. The new tax policies regarding Rot/Rut deductions has reduced the size of the deductions that businesses and individuals can take for using this kind of labour. Thus, complying with the law makes labour more expensive for those who provide it and accordingly they must charge their customers more for their services. This is likely to reduce demand. To provide services at the same cost as in the past, companies must either hire illegal labourers or only report part of salaries. There are two ways to hide the payments for work that is not declared: (1) not reporting incomes accurately or (2) introducing false invoices in the accounting. These invoices state the services were purchased from another company, often a one-man company that has a limited scale of activities or none at all but that is registered with the tax authorities. This company submits fraudulent paperwork to the tax authorities that understates the cost of the labour that was used on a particular project, permitting the buyer of the services to evade paying the proper tax on labour.

As discussed above, complying with the tax laws for Rot and Rut services has become more costly. And there are other factors which also may raise costs. For instance, recent statistics from the Confederation of Swedish Enterprise indicate that hourly wages increased 27 % from 2007 to 2014 and costs of labour per hour increased 23 % [36]. Thus, even without the new tax policies, hiring legal labour has become more expensive, and the new policies only compound these costs. As SCPT would

predict, this makes the rewards of tax evasion greater, and hence it is likely to increase motivations in both individuals and companies to cheat on their taxes. Accordingly, if all other factors remain the same, the tax gap is expected to increase again because of increases in tax evasion related to Rot and Rut.

## Conclusions and recommendations

It is certainly not customary at the end of an empirical article in the social sciences to make predictions about future events, but we think that this case study presents an appropriate opportunity to do so. We have argued that changes in tax policy in the mid-2000s contributed to greater tax compliance. Drawing from situational crime prevention theory, we predict that recent changes in tax policy will lead to less tax compliance over time. The advantage of making this prediction now as opposed to waiting for time to pass is that it will avoid or at least reduce the possibility of contriving ex-post facto interpretations of whatever happens in the future. It will also permit us to be wrong, and as philosophers of science have long noted, the possibility of having a prediction falsified is a hallmark of good science [37]. On the other hand, if our predictions are correct, this will provide particularly strong evidence for our interpretations of SCPT and SAT.

Specifically, we predict that (1) if the Swedish Tax Agency does nothing except enforce the Rut/Rut tax as it has in the past and (2) if it continues to conduct the same surveys that it did between 2002 and 2013, then (3) a decrease in the indicators of tax compliance will be observed. The decrease will be more pronounced in some industries than in others, in particular construction, transportation, and hotels/restaurants. It is difficult to say how quickly tax compliance will fall and how great the decrease will be. Because the recent changes in tax policy allow for more generous deductions than were permitted before 2006 levels, we expect that tax compliance will not fall all the way to pre-2007 levels. Instead, it will stabilize somewhere between the 2007 and 2013 levels.

Note our prediction does not of course take into account other factors that may also affect responses to the new tax policies, including tax evasion. For instance, changes in costs for labour or raw materials, or the structuring of contracts to gain economic efficiencies, all could affect the overall costs for Rot/Rut services and hence the attractiveness of tax evasion. Also, it is important to determine the proportion of the Swedish population that would be affected by these changes, especially because we have little information regarding the overall demand for these services, which certainly could affect how people will respond to the new tax policies. As we see it, there are three possible responses: (1) tax compliance (individuals and businesses could simply pay the higher taxes); (2) tax evasion (individuals and businesses could make greater use of illegal labour or falsify labour costs); or (3) demand reduction (individuals and businesses could forego construction projects or in the case of Rut services, people could do the work themselves rather than hiring it out). It may be possible to determine whether the new tax policies affected demand for Rot services by looking at how building projects fluctuate over time (e.g. new housing starts, construction of corporate buildings, fluctuations in relevant commodities, such as construction related materials). This would provide a gauge for the building landscape and some indication of potential terrain for tax evasion. While recognizing that both compliance and demand reduction

are possible responses to the new tax policies, we predict that increased tax evasion is also likely to occur for the reasons suggested by SCPT.

To avoid this outcome, SCPT and SAT offer two recommendations. First, according to the assumptions of SCPT, the attractiveness of tax evasion opportunities can be reduced if the risk of detection is raised. If the risk of detection is raised, it would presumably deter potential offenders. Indeed, according to survey research the perceived probability of detection is one of the key determinants of tax compliance [32]. Second, the attractiveness of tax evasion can be reduced if its moral costs are raised. Both SCPT and SAT emphasize the moral dimensions of criminal behaviour as potential causative factors particularly in the case of mundane or occasional offenders who have low crime propensity. Unlike serious criminal predators, mundane offenders are assumed to have a stake in conformity and a positive self-image. Committing a criminal offense is likely to have a moral cost for such offenders unless the offense is somehow justified through the use of neutralizations or moral disengagement. This possibility suggests that the Swedish Tax Authority should publicize the positive and pro-social outcomes that will be accomplished by the change in tax policy and the additional revenue that it generates. In other words, the tax authorities should attempt to create a moral environment around tax compliance that will influence the perception-choice process of potential tax evaders in such a way as to make tax evasion less likely. If the additional tax revenue is going to be put to “good use,” then it will be harder for potential offenders to justify evading taxes.

**Acknowledgments** The authors would like to thank Pia Bergman and Stig Wahroos (Swedish Tax Agency) for providing some of the materials and information for the research, and Jay Kennedy (Michigan State University) for helpful comments on the paper.

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