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3 REWARDING HONEST TAXPAYERS

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1. INTRODUCTION

Why do people pay taxes? This question has attracted increased attention in the tax compliance literature over the last few years. Allingham and Sandmo (1972) presented a formal model, showing that the extent of tax evasion is negatively correlated with the probability of detection and the degree of punishment. However, this seminal model has been criticized by many authors (see e.g., Graetz and Wilde 1985; Alm, McClelland and Schulze 1992; Frey and Feld 2002). An important point connected to the empirical and experimental findings is that these deterrence models predict far too little compliance and far too much tax evasion (for an overview, see Alm 1999 and Torgler 2002). In many countries the level of deterrence is too low to explain the high degree of tax compliance. Moreover, there is a big gap between the amount of risk aversion that is required to guarantee such compliance and the effectively reported degree of risk aversion. For the United States, the estimated Arrow-Pratt measure of risk aversion is between one and two, but only a value of 30 would explain the observed compliance rate (see Graetz and Wilde 1985; Alm, McClelland and Schulze 1992). Similarly, in Switzerland the

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relative risk aversion varies between 1 and 2, but a value of 30.75 would be necessary to reach the observed level of tax compliance of 76.52% (see Frey and Feld 2002).[2]

Elffers (2000) shows that it is a long way before a person becomes a tax evader. He defines three steps in the staircase to tax evasion: (1) taxpayers have to have the will not to comply, (2) not everyone with the inclination to evade taxes is able to translate the intention into action, and (3) individuals inclined to evade taxes check for the opportunity to do so. In the third step, standard economic theory comes into play and individuals evaluate the expected value of evasion. Similarly, other researchers argue that many individuals do not even think of tax evasion. Pyle (1991) criticizes the assumption that individuals are amoral: 'Casual observation suggests that not all individuals think quite like that. Indeed, it seems that whilst the odds are heavily in favor of evaders getting away with it, the vast majority of taxpayers behave honestly' (p. 173). Frey (1999) uses the expression *ipsative possibility set* (p. 196) and shows that there are taxpayers who do not even search for ways to cheat on taxes. Long and Swingen (1991, p. 130) argue that 'some individuals are simply predisposed *not* to evade'. Experiments indicate that there are individuals who always comply, that is, a certain compliance exists even without (low) penalties and audits (Feld and Tyran 2002).

In general, Elffers (2000) suggests reducing the significance of coercive instruments to resolve the social dilemma of tax payments. His conclusion (policy advice) is to try to prevent people from reaching the final step of the staircase. Thus, the instrument of deterrence is not the only instrument to make individuals comply. The theoretical models of individual choice, using the economics of crime approach, are too simple. There are numerous factors that affect the reporting decision of individuals. The Internal Revenue Service (1978) listed 64 potential factors that could affect tax compliance. Governments and tax administrations have an incentive to search for tax policy strategies that generate additional revenues, especially in times with large and persistent deficits. There is a persistent theme in the tax compliance literature in the last few years to move away from deterring non-compliance toward positive encouragement for compliance and therefore emphasizing 'the *carrot* for compliance rather than the *stick* for non-compliance... This insight is especially important because, from the tax collection standpoint, it is extraordinarily expensive to arrange an enforcement regime so that, from a strict cost-benefit calculus, non-compliance does not appear attractive to many citizens' (Slemrod 1992, p. 7).

2. Risk aversion can be defined as the reluctance to accept a bargain with an uncertain payoff to one with a more certain but possibly lower expected payoff. A common measure of risk aversion has been introduced by Pratt (1964) and Arrow (1965), asking the question: What payment would a risk-averse agent make to avoid or accept a fair gamble?

This paper focuses on rewards, which may influence individuals' compliance behaviour like a *carrot*. Instead of raising the relative cost of not paying taxes, the instrument of rewards raises the benefits of paying taxes. Currently, there is limited amount of empirical and experimental evidence that investigates the impact of positive rewards on tax compliance in detail. Section 2 introduces the concept of positive rewards and provides an overview of the current literature. Section 3 discusses possible instruments that allow us to investigate the impact of rewards on tax compliance and Section 4 finishes with some concluding remarks.

2. The importance of rewards

Under many circumstances in daily business activities, we can observe different kinds of prerogatives. People get special treatment, such as being given fast-lane treatment for having been a good customer in the past. Good clients often have the chance to obtain special and more flexible treatment. Businesses use such prerogatives to improve and cultivate their relationship with good clients.

However, it is a relatively novel approach to investigate the impact of rewards on tax compliance. Some previous studies have stressed the possibilities of indirect rewards through, for example, a system of discounts that are given if someone refrains from applying for deductions (see Elffers 1992; Elffers and Hessing 1997). There is also some anecdotal evidence about the implementation of rewards to enhance tax compliance, especially in Asian countries. For example, Japan offers the possibility of having your picture taken together with the Emperor if you were found to be honest. The Philippines put your name into a lottery if you were found to be compliant with the VAT. South Korea considers access to airport VIP rooms, certificates or awards, and discusses the possibility of free parking in public parking facilities.[3]

Instead of rewarding honest taxpayers, it's our observation that governments around the world use tax amnesties more and more often. Tax amnesties offer the opportunity of paying previously unpaid taxes without being subject to penalties. The idea is to get evaders 'back on the route to honesty'. However, the financial success of countries is very diverse and amnesty revenues are seldom more than a small percentage of total tax revenues. Honest taxpayers are informed about the existence of tax evasion, because of the probability that other taxpayers are less compliant (Alm and Beck 1993). Thus, previously honest taxpayers often view an amnesty as unfair, and feel less motivated to comply in the future. They interpret the amnesty as a signal

3. We are thankful to Jim Alm and Hyung-Wook Kang for providing us with these anecdotes.

that tax evasion is a forgivable and insignificant *peccadillo* (Leonard and Zeckhauser 1986). This might increase their feeling that they paid too much in the past, compared to other taxpayers. Therefore, the psychological costs of not complying are reduced when observing others' opportunistic behaviour, which results in a crowding out of the intrinsic motivation to comply (Torgler and Schaltegger 2005a). In many cases, the government expected higher revenue to be gained from tax amnesties. Furthermore, the long-run impacts of tax amnesties are often disregarded in the political process. The tax compliance literature indicates a tendency that no long-term tax revenue effects can be expected (see Torgler and Schaltegger 2005b).

Rewards could be more effective than punishments or allowing tax evaders to come *clean* by eliminating undesired behaviour or by motivating desired behaviour because it is perceived as supporting (see e.g. Nuttin and Greenwald 1968). Indeed, the role of rewards in shaping human and also animal behaviour has long been a topic among social psychologists (see e.g. Thorndike 1911, 1932; Postman 1947; Skinner 1953; Nuttin and Greenwald 1968). Early exchange theorists excluded punishment from the scope of social exchange relations (see e.g. Blau 1964; Homans 1974). Punishment seemed to be less effective than reinforcement (Estes 1944; Skinner 1938; Thorndike 1932).

Molm (1988) criticizes that these forms of power have been studied largely by separate scientific disciplines in such a way that little is known about how they interact with one another and what their strengths and weaknesses are under equivalent conditions. Molm (1994) reports that in a series of experiments that compared reward-based power with punishment-based power in not negotiated exchange relations, in which all actors have the capacity to reward and punish their exchange partners, the effects of punishment-based power are consistently weak: 'The distribution of exchange is almost entirely a function of reward power; actors with greater power to punish do not receive increased benefits from their exchange partners' (p. 75). Sims (1980, p. 136) summarized the literature on punishment in organizations focusing on cross-sectional and longitudinal psychometric research studies undertaken in both laboratory and field settings, stating that some preliminary conclusions indicate that, in most studies, rewarding behaviour tends to have a much stronger effect on subordinate performance. Several areas of psychology and organizational behaviour suggest an asymmetrical effect of rewards and punishment; they are therefore not equally efficient at influencing workers' behaviour, such as, for example, reducing loafing (see, George 1995). Such an asymmetrical effect of rewards and punishments is supported by neuroscience. Studies suggest that rewards and punishments are processed in different parts of the brain and therefore have differential effects on behaviour (Gray 1981, Larsen and Katelaar 1991).

To the authors' knowledge, there is only one detailed theoretical study in economics (Falkinger and Walther 1991) that analyzes the possibility of pecuniary rewards as an economic incentive for taxpayers to be honest. In their model, a taxpayer under investigation has to pay a penalty for the evaded tax and receives a reward for the paid tax. The authors show that, on the one hand, a mixed penalty-reward system improves the taxpayer's position and, on the other hand, does not lower the tax revenues of the government. Thus, introducing rewards, together with an increase in the penalty, constitutes a welfare improvement. This study shows that the analysis of rewards might be an important topic in the tax compliance literature. A rational choice approach would take the impact of both rewards and sanctions into consideration. However, investigations on illegal activities solely emphasize deterrence through sanctions. For example, it can be argued that sanctions can be problematic and damaging, even when dealing with terrorism (Frey 2004). It is highly relevant to consider the possible effects of rewards on tax compliance behaviour and thus move beyond standard theories of tax evasion.

In psychology and behavioural economics, *crowding out* and *crowding in* effects have received considerable attention (Frey 1997; Le Grand 2003; Bénabou and Tirole 2003; Fehr and Rockenbach 2003; Falk and Kosfeld 2006). On the one hand, the theory suggests that outside interventions that are perceived to be controlling, such as deterrence, tend to crowd-out intrinsic motivation. On the other hand, actions that are perceived to be supporting tend to crowd-in intrinsic motivation. Punishment for not acting as a *good* taxpayer is felt to be controlling, in particular if the charges brought do not fully apply (Feld and Frey 2002). Taxpayers who are falsely accused of cheating with their taxes may perceive the intervention by the tax office as controlling. Thus their tax morale lessens or is even completely erased. Similarly, by increasing monitoring and penalties for non-compliance, individuals notice that extrinsic motivation is increased, which in turn crowds out intrinsic motivation to comply with taxes. Thus, the net effect of a stricter tax policy is unclear. If intrinsic motivation is not recognized, taxpayers get the feeling that they can just as well be opportunistic. This places the relevance of policy instruments, which encourage or discourage intrinsic motivation, in the fore. Intrinsic motivation depends on the application of policy instruments. Tax morale is not expected to be crowded out if the honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations, which prevent free riding by others and establish fairness and equity, help preserve tax morale. In contrast, receiving certain types of rewards for being a good taxpayer may be perceived as supporting and tend to bolster and raise tax morale. This motivational effect thus works in the same direction as the relative price effect, and strengthens the attractiveness of rewarding *good* taxpayers. In the case of the punishment normally applied for failing to pay the

taxes due, the relative price effect and the motivational crowding-out effect work in opposite directions. This may explain why the empirical evidence on the effect of punishment on tax evasion is inconclusive, and the respective econometrically estimated parameters are often not statistically significant, or are even the wrong sign. If the crowding-out effect is stronger than the relative price effect of punishment, tax evasion is raised rather than lowered.

According to standard economic theory, rewards are expected to change the relative prices in such a way that paying taxes becomes a more attractive alternative to evading taxes. However, this does not necessarily mean that the effect is big enough that it can be *identified empirically*. This applies even if the reward given is *small* in size. The tax administration faces a trade-off between the costs and benefits of giving rewards and the costs and benefits of other incentives, in particular the costs involved with punishment. To be cost effective, rewards must raise *net* tax revenues, i.e. the gross revenues after deducting the cost of rewards.

There are various ways of giving rewards for paying taxes. They may range from direct payments, like participating in a lottery offering a sizeable sum of money, to getting various kinds of gifts. It is to be expected that the reward structure systematically affects tax compliance. In general, a reward given for correctly fulfilling one's duty changes the relative prices in favour of paying taxes and against evading them. However, it requires that the income effect induced by a higher wealth position does not work in the opposite direction. In general, the effect of income on tax compliance is difficult to assess, as it depends, for example, on risk preferences and the progression of the income tax schedules. However, the reward is very small in relation to the tax liability, so that any possible income effect tends to be small.

Alm, Jackson and McKee (1992) investigated four different forms of positive inducements in their laboratory experiment. The lottery had the highest average compliance rate of all the sessions (0.513), followed by the fixed reward session (0.448) and the audit reduction session (0.369). In all cases, compliance was statistically significant and higher than the baseline case of 0.332. Interestingly enough, the lottery mechanism led to a higher compliance than the fixed reward session, even though their expected returns were identical. Two aspects are essential for rewarding taxpayers via random allocation, which induces the *chance* of getting rewarded and allows for relatively *high rewards*. Both factors can be encouraging. Uncertainty and unpredictable rewards are attention catching, which is enforced by the size of the rewards being larger. A large prize with low probability of success is more attractive than a smaller, more certain prize. Such an effect recently gained support in the form of evidence from neuroscience, showing that a reward schedule, in which subjects knew the outcome in advance, produced only modest dopamine transmissions (which are responsible for behavioural responses),

while an unpredicted financial reward produced significant dopamine transmissions (see Zald et al. 2004).

We may also observe differences between direct payments and the non-financial rewards. Direct payments may be proportional to the size of the tax payment (i.e. a percentage rebate), or, at the other extreme, may be the same size for all *good* taxpayers. The relative price effect is larger in the first case, but this beneficial effect may easily be overcompensated by a crowding-out effect. A reward proportional to the tax payments is likely to be discounted by the taxpayer as a *claim*, and then does not positively influence tax compliance. In contrast, a reward deliberately separate from the taxes due tends to be perceived as a sign of acknowledgement. If this is indeed the case, it is even better to provide a reward in another form than the financial. The idea of a gift may emphasize the exchange relationship between taxpayers and the state, and thereby enhance reciprocity, which affects social exchanges in a positive way (e.g. Falk and Fischbacher 2006; Fehr and Gächter 2000). It is a sign of appreciation that may work more powerfully than a mere reduction in taxes. Gifts can take different forms, including better and cheaper access to public services (in the case of private taxpayers, it could be the receipt of a voucher for public transport), free entry to cultural activities in the neighbouring area, more favourable access to government services (entering public museums and similar institutions), free access to recreation areas, or food coupons for local festivities etc. The *way* rewards are handed out to *good* taxpayers is essential for their effect on taxpayer behaviour and therefore different treatments should be included in a field experiment.

However, rewards can induce strategic behaviour on the taxpayer's part. For example, if rewards are provided due to behavioural *changes* (e.g. depending on the reduction of evasive behaviour), it might be rational to increase tax evasion in a first step in order to reduce it in a second step in order to generate higher benefits from the rewards. Thus, it is relevant to make the rewards dependent on whether a taxpayer is completely honest or not. This would reduce the incentives for behaving strategically. On the one hand, it should be noted that rewards have the tendency to increase compliance primarily by altering the frequency of extreme behaviour, possibly shifting individuals from a very low to a very high compliance rate (Alm, Jackson and McKee 1992). On the other hand, there are taxpayers who do not look for ways to cheat on taxes. Their behaviour does not respond to changes in the tax policy parameters or to the relative price effect, and is therefore not subject to a marginal, but rather absolute evaluation (see Frey 1997 and Long and Swinger 1991). Thus, relative price changes as a reason for higher punishment or higher rewards are only considered by taxpayers with relatively low tax morale, who want to cheat the system.

A key aspect is to know how to recognize a *good taxpayer*. The use of a system of rewards depends strongly on the tax administration's assessment of a good taxpayer. The reputation of the tax administration may suffer, if (notorious) tax evaders are rewarded by mistake because of not being detected. A lack of adequate assessment therefore reduces the strength of a system of rewards.

3. Instruments to investigate the impact of rewards

Whereas much work in the tax compliance literature has concentrated on standard factors, such as audit, penalty and tax rate, it is useful to evaluate alternative policy instruments. Laboratory and field experiments might be useful approaches to investigate the relevance of such instruments.

3.1. *Laboratory experiments*

During the last 20 years, economists have increasingly used experiments to analyze various topics (for a survey see e.g. Roth 1995). More than 20 years ago, it could be argued that economics wasn't an experimental science. Now, experimental papers have been published in all the leading international economic journals. The Nobel Prize awarded to Vernon Smith indicates that experiments are an important instrument in economics and have acquired a significant degree of recognition and legitimation. The strong point of this approach is the possibility of controlling and manipulating the variables of interest. This allows the reduction of causality problems, and thus gives good information, not only about the relationship between two variables, but also about the direction of the effect.

Currently, two experiments have investigated the impact of rewards for tax compliance. To a certain extent, both allow for an analysis of the impact of positive rewards relative to other tax policy strategies. Both cases support the idea that rewards are a very powerful policy instrument to enhance tax compliance. Alm, Jackson and McKee (1992) use experiments to analyze the effects of positive inducements upon tax compliance behaviour. They designed: (1) a lottery treatment where those subjects who were checked and found to be fully compliant for the current and the previous four rounds, could take part in a lottery in which the chances of winning were 1 in 25, with a lottery prize roughly equal in size to the average earnings of a subject for the entire session (50 tokens), (2) a fixed reward session where those subjects, who were in full compliance, received a reward of 2 tokens, which was equal to the expected value of the lottery, (3) an audit reduction scheme, where individuals, who had been audited and found to be in compliance, would

have their future probability of audit reduced from 0.04 to 0.027 the first time and from 0.027 to 0.013 the next time. In addition, they introduced a public good session, where the public good is determined by adding up the taxes collected from the group in a given period, multiplying this sum by 2 to reflect the consumers' surplus generated by the public good, and then dividing the amount equally among the five people in the group. The results indicate that positive inducements have a significant and positive impact on compliance. However, although (1) and (2) have the same expected value, the lottery session had the largest impact on compliance.

Torgler (2003a) conducted an experiment in Costa Rica with taxpayers, keeping traditional factors, such as the probability of detection and the fine rate, constant and thus analyzing to what extent other factors, such as fiscal exchange, moral suasion and positive rewards systematically influence tax compliance. The findings indicate that these factors increase the compliance rate ceteris paribus. In the positive reward session, a subject who was audited and found to be totally honest, received a monetary reward. Such a reward can also be seen as a compensation for the burden of investigation which the taxpayer has to pass if he or she is audited (see Falkinger and Walther 1991). Interestingly enough, the highest tax compliance rate was found in the positive reward session, followed by the moral suasion session and the fiscal exchange treatment. It seems that the norm of reciprocity in the degree of tax compliance is followed by taxpayers where the government creates positive rewards or a fiscal exchange. The more the governments provide public services corresponding to taxpayers' preferences in exchange for an adequate tax price, and the more they honour honesty, the more taxpayers are willing to comply. These results support the previous findings of Alm, Jackson and McKee (1992) that positive incentives seem to be a good instrument to enhance tax compliance.

In sum, laboratory experiments enable a good research design to continue the investigation on rewards for tax compliance. Alternatively, as we will discuss next, the research design of field experiments is also an interesting tool to investigate the impact of rewards on compliance.

3.2. *Field experiments*

Using controlled field experiments has many advantages. Compared to laboratory experiments, real tax authorities instead of experimenters are involved, which evokes real processes in the usual environment outside of a laboratory setting. It helps provide a better test for the effects of different instruments on taxpayers in the real-life situation of filling out the tax form and paying taxes. This helps with formulating practical advice on tax policy, based on a scientific test. Certainly, compared to lab experiments, field exper-

iments allow social and economic interactions, and are thus less controlled, but causality can be determined better in experimental studies than in other studies (see Burtless 1995, and Harrison and List 2004 about the advantages and disadvantages of field experiments).

There is no observable effect of an artificial experimental environment, as subjects were completely unaware of having taken part in the field experiment. The experiments are thus conducted in the usual environment where social and economic interactions occur (see Burtless 1995). This has the advantage that the subject pool is more representative than in laboratory experiments. The results have a strong policy implication and might be relevant for policymakers. However, it is surprising that there are hardly any field experiments in the tax compliance literature. The higher transaction costs involved in organizing cooperation between the tax administration and the researchers, compared to laboratory experiments, as well as the sensitivity of the tax filing data, according to privacy protection laws, might be valid reasons why field experiments are used less frequently. Field experiments use a great deal of real resources. First, cooperation between tax authorities must be established. It is difficult to develop and implement a treatment, as it has to be approved by the tax administration and other government authorities. Thus, it may be supposed that sensitive or unorthodox treatments cannot be developed. Secondly, compared to laboratory experiments, such experiments are costly in terms of time. The experiment has to be prepared before individuals receive their tax forms. It takes almost a year until all tax forms are returned to the tax administration and are then ready to be evaluated. Moreover, field experiments have a limited duration. While experiments can analyze inter-temporal aspects, field experiments are normally conducted only once. For some questions, it might be interesting to analyze to which extent a policy instrument works over time. A short-duration intervention might have an immediate effect, but long-term effects are unknown. Furthermore, questions as to what might happen if a policy instrument, such as moral suasion, was used regularly, remain unanswered.

To our knowledge, this instrument has only been used in a few studies. Slemrod, Blumenthal and Christian (2001) use a controlled field experiment in Minnesota to analyze taxpayer response to an increased probability of audit. Over 1,724 randomly selected taxpayers were informed by letter that the return they were about to file (state and federal) would be closely examined. They used 2 years' income return data from the same taxpayers, which enabled them to compare changes in reported income, deductions and tax liability between those taxpayers who received the treatments and similar groups of taxpayers who were not subject to any treatment. They found that the treatment effect varies according to income. In the treatment group, low and middle income taxpayers increased their reported income between 1993

and 1994 relative to the control group. The effect was much stronger for those with a higher opportunity to evade. In 1994, the reported income of high income taxpayers dropped dramatically in relation to the control group. According to the authors, the perception that tax evasion will not be detected and punished automatically, could be a reason for these results, and thus they propose that 'heightened audit threat should be carried out simultaneously with a rethinking of how the audits themselves are carried out' (p. 482). As the authors state, the analysis had a comparably small sample size of high-income taxpayers, which reduces the inference to be drawn. Follow-up experiments should start the field experiment at the beginning of the tax year to analyze avoidance behaviour as well.

Similarly, Blumenthal, Christian and Slemrod (2001) worked together with the Minnesota Department of Revenue to analyze the impact of moral suasion on voluntary income tax compliance in a field experiment. They used the difference-in-difference approach with data for the tax years 1993 and 1994. Compliance behaviour was measured by the income reported, or tax paid, and was compared with the reference group (no communication). They found that the average compliance rate of those in the treatment group was $220 higher compared to the control group (0.08% of average income). However, the coefficient was not statistically significant. Hence, this study did not find a significant effect of moral appeals. In a second step, Blumenthal et al. (2001) conducted a multiple regression, in which they used the treatments as dummy variables to check other variables. The results indicate that people with more opportunities to evade or avoid taxes (e.g. the self-employed) are less susceptible to normative appeals.

Using a similar approach, Torgler (2004) analyzes the effects of moral suasion, focusing on two different compliance variables: filling out the tax form and timely paying. In cooperation with a local tax administration in Switzerland, a controlled field experiment was undertaken, together with taxpayers. Contrary to the previous controlled experiment done by Blumenthal et al. (2001), which found little or no evidence of a positive effect of normative appeals on tax compliance, Torgler (2004) chose to cooperate with a *local* tax administration, because moral suasion efforts might be more effective at the lower government level. The results show that the moral suasion treatment group has a higher compliance rate than the reference group. The findings also indicate an increasing effect over time in the treatment groups. In general, the strongest treatment effect was observed for the variable that measured taxpayers' payment morality. However, the difference-in-differences approach and the multivariate regressions indicate that the treatment effect was not statistically significant. Thus, results are in line with the Blumenthal et al. (2001) findings, indicating that moral suasion hardly has any effect on taxpayers' compliance behaviour.

Compared to previous experiments, field experiments offer the great opportunity of observing taxpayers' behaviour in a natural environment, using a representative sample of taxpayers and working with relatively large samples. However, there are specific aspects that are challenging when the instrument of field experiments is used to investigate the impact of rewards. A field experiment requires cooperation between the tax administration and the researchers. Using a field experiment in the tax compliance area faces many restrictions. First of all, the sensitivity of the tax filing data reduces the incentives of the tax administration to cooperate in such a project. Contrary to a lab experiment, a field experiment has to be realistic. It is, for example, highly problematic to develop treatment designs that do not correspond to official (tax) law. This reduces the possibility of conducting experiments. Thus, traditional parameters, such as the tax rate, are hardly an instrument to investigate in a field experiment. However, alternative tax policy strategies, such as positive incentives, might be more attractive for a field experiment to investigate, as they are less affected by the restrictions the tax administration encounters. On the other hand, unequal treatments between different taxpayers (e.g. experimental and control group) is also against the law. Moreover, it is to be expected that taxpayers discuss this issue amongst themselves. Individuals in the control group may become quite emotional if they detect that they are not treated equally. Thus, compliance may decrease in the control group, which leads to biases when comparing the treatment group with the reference group (stronger reward effects).

Alm, Jackson and McKee (1992) stress that rewards must be both immediate and salient to have a quantitatively significant effect. The reward sessions indicate that compliance tends to decrease over time. Thus, long-term effects should be taken into account, which suggests the relevance of observing the panel of taxpayers over a certain time period. There is the danger that taxpayers will get used to the chance of obtaining rewards. A one period field experiment may catch a certain *surprise effect* that will disappear over time. Furthermore, a random audit selection system induces additional problems. If only a limited amount of good taxpayers are evaluated and rewarded, it is possible that previously rewarded taxpayers are not rewarded in the future. What sort of reaction can be expected from these taxpayers? Additionally, what happens if the reward system is not established after the controlled field experiment? Tax administrations could fear possible negative effects and oppose such a field experiment in advance. It is also interesting to check whether some sub-groups of taxpayers react differently across time.

4. Conclusions

This paper analyzes the impact of rewards on tax compliance as an additional instrument to punishments. While social psychologists and neuroscientists have investigated the impact of rewards in detail, the topic is novel in the area of tax compliance. We suggest that experimental and field experiments are highly relevant to investigate a variety of strategies that governments and tax administrations can pursue to increase tax compliance. Rewards could be an effective tool to increase compliance. Two previous laboratory experiments show that compliance increases significantly when individuals who were found to be compliant are rewarded for their honesty. We propose to investigate the impact of rewards on compliance in field experiments as well.

Different subject groups may react differently to a reward system. Similar behavioural responses could be expected in firms, because individuals in firms also decide about the level of tax compliance (Fehr and List 2004). However, firms are subject to important additional constraints, due to the competitive environment they are acting in. This produces incentives among the individual decision makers to quickly discount a monetary reward into total tax liability. In such a case, only the relative price of rewards would work. Nevertheless, rewards other than the monetary ones may also be highly attractive to firms. It might be useful to generate a reward to the firm as a whole rather than to specific leaders. Especially in a complex firm structure, it is difficult to find an adequate reward system that considers the value of the individuals in a firm. Providing some with a relative advantage to others may lead to different kinds of emotions. One useful form of reward could be that the tax office issues a *certificate* indicating that the taxes, to the best of their knowledge, have been declared correctly, that the firm has been cooperative, and that the taxes due have been paid on time. Such a certificate demonstrates that the firm acts as a *good* taxpayer. The firm's reputation and image will increase. Shareholders may respond in a positive way by raising share prices; the firm may get more favourable conditions on the capital market; and the customers' trust in the firm's products may increase. Field experiments, for example, would allow for the generation of additional insights, as they have the advantage of differentiating between individual taxpayers and firms.

In sum, we believe that future tax compliance studies should pay more attention to the impact of rewards, taking tools such as laboratory and field experiments into account.

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