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psychological tax contract: The role of
incentives and responsive regulation

Lars Feld & Bruno Frey



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PSYCHOLOGICAL TAX CONTRACT:
THE ROLE OF INCENTIVES AND
RESPONSIVE REGULATION**

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THE CENTRE FOR TAX SYSTEM INTEGRITY WORKING PAPERS

The Centre for Tax System Integrity (CTSI) is a specialised research unit set up as a partnership between the Australian National University (ANU) and the Australian Taxation Office (Tax Office) to extend our understanding of how and why cooperation and contestation occur within the tax system.

This series of working papers is designed to bring the research of the Centre for Tax System Integrity to as wide an audience as possible and to promote discussion among researchers, academics and practitioners both nationally and internationally on taxation compliance.

The working papers are selected with three criteria in mind: (1) to share knowledge, experience and preliminary findings from research projects; (2) to provide an outlet for policy focused research and discussion papers; and (3) to give ready access to previews of papers destined for publication in academic journals, edited collections, or research monographs.

Abstract

In this paper, we develop the notion of a psychological tax contract by looking on the conditions that shape tax morale and confronting it with empirical evidence. Based on crowding theory, the asymmetric impact of negative (deterrence) and positive incentives (rewards) on tax morale is discussed. As a contractual relationship implies duties and rights for each contract partner, sticking to a reciprocity norm among citizens as well as to the fiscal exchange paradigm between citizens and the state increase tax compliance. Citizens may also perceive their tax payments as contributions to the '*bonum commune*' such that they are willing to honestly declare income even if they do not receive a full public good equivalent to their tax payments as long as the political process is perceived to be fair and legitimate. The contractual relationship has additional implications for the procedural level: a friendly treatment of taxpayers by the tax office in auditing processes increases tax compliance.

Tax compliance as the result of a psychological tax contract: The role of incentives and responsive regulation

Lars Feld¹ and Bruno Frey²

There should be no place in our organization for brusqueness, discourtesy, or arrogance. We want the bureau representative to meet the taxpayer and discuss his problems sympathetically, understandingly, frankly and fairly ... (Secretary of the Treasury, 1929).

I. Introduction

The puzzle of the economic theory of tax compliance is why people pay taxes. According to the seminal study by Allingham and Sandmo (1972), which is based on Becker's (1968) economic theory of crime, the extent of deterrence, as the product of the probability of being detected and the size of the fine imposed, determines the amount of income evaded. However, in view of the low deterrence applied in most countries, because of a low intensity of control or small penalties, taxpayers should evade more than they actually do, that is, compliance is too high. For the United States, Alm, McClelland and Schulze (1992, p. 22) argue:

A purely economic analysis of the evasion gamble implies that most individuals would evade if they are 'rational', because it is unlikely that cheaters will be caught and penalized.

Arrow-Pratt measures of risk aversion of more than 30 (!) must exist in order to account for the present compliance rate in the United States Graetz and Wilde (1985) or Alm, McClelland and Schulze (1992) report however, a range of between one and two for the US.

For Switzerland, Pommerehne and Frey (1992) calculate that a coefficient of relative risk aversion of about 8 would be necessary for achieving the compliance rate of 82.5 percent in their sample of Swiss cantons. This coefficient is computed on the basis of the Allingham-Sandmo-model with the mean values for the probability of detection, the fine

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and the marginal tax rate. According to these authors field evidence for Switzerland suggests that relative risk aversion varies between 1 and 2 like in the US. Using the mean values for the same variables from an extended sample of the Swiss cantons, an Arrow-Pratt measure of risk aversion of even 30.75 is necessary in order to achieve the compliance rate of 76.52 (Frey & Feld, 2002). It looks as if the standard tax evasion model explains compliance less and less satisfactorily.

Two strands of arguments are brought forward in order to close the gap between theory and facts (see the surveys by Andreoni, Erard & Feinstein, 1998; Slemrod & Yitzhaki, 2002; and Torgler, 2003). One line of thought argues that the probability of being detected is subjective, implying that individual perceptions of being caught when cheating on the tax code are much higher than objective probabilities of detection. While misperceptions of risk by individuals are unsustainable over a longer time horizon where people can infer control intensities from friends and relatives, subjective probabilities of being caught exist in the sense that the individual ability to evade taxes varies among subgroups of the population. For example, withholding taxes strongly reduce auditing costs of tax administrations because auditing of firms suffices to obtain information on employees' labour incomes. Moreover, it can be conjectured that incomes generated in the industrial sector can be less easily evaded than those in the services sector; that capital income is more easily evaded than labour income and so on. Adding socio-demographic structure is fully in line with the traditional tax compliance models that only abstract from such variables for analytical convenience in order to focus on the main economic arguments. Empirical analyses necessarily have to control for socio-demographic variables in order to be more realistic. However, the empirical evidence implies that the standard economic model augmented by socio-demographic control variables is not able to explain the extent of tax compliance in a satisfactory way (Frey & Feld, 2002).

A much more fundamental critique of the standard economic approach is provided by another line of research according to which tax morale serves as an explanation for compliance rates.³ Frey and Feld (2002) argue that tax compliance is driven by a

³ See for example Schwartz and Orleans (1967), Roth, Scholz and Witte (1989), Alm, McClelland and Schulze (1992), Cullis and Lewis (1997), and Torgler (2003).

psychological tax contract between citizens and tax authorities. For that contract to be upheld, incentives like rewards or punishments need to be provided, but loyalties and emotional ties that go well beyond transactional exchanges (see for example Williamson, 1985) must be considered additionally. These loyalties and emotional ties provide for the core of individual tax morale. However, this tax morale interacts with incentives such that no simple tax policy guidelines can be proposed. In the approach of Allingham and Sandmo (1972), tax morale explains the level of tax compliance only residually and independent from tax policy and the behaviour of state authorities which is consistent with the view that fundamental social norms, like religion or civic duty, shape tax morale.⁴ In contrast to these supposedly policy-independent norms, the psychological tax contract is influenced by government policy, tax authorities' behaviour and state institutions. Tax morale becomes endogenous instead of serving as a residual explanation.

In this paper, we develop the notion of a psychological tax contract by looking more closely on the conditions that shape tax morale and confronting it with the empirical evidence found in the literature. In *Section 2*, the theoretical basis of the psychological tax contract is provided by drawing on crowding theory (Frey, 1997). It particularly helps to emphasise the interactions between incentives and the intrinsic motivation to pay taxes. Positive (rewards) or negative incentives (deterrence) may reduce tax morale. The evidence on the impact of deterrence on tax compliance is summarised in *Section 3*, while the hypothesised impact of rewards on tax compliance is discussed in *Section 4*.

A contractual relationship implies duties and rights for each contract partner. This may be looked at from a pure exchange perspective (*Section 5*), according to which it could be contended that citizens pay their taxes if their fellow citizens contribute their fair share (Feld & Tyran, 2002). If a person expects the others to cheat on the tax code, it will cheat on the tax code as well. It could also be argued that the government should provide public services to citizens in exchange for their tax payments. If the benefit principle of taxation that implies a fiscal equivalence between public goods and tax prices is violated by setting

⁴ Moreover, informal social control independent from state auditing efforts might increase compliance rates. By commenting on a survey on Swiss taxpayers by Strümpel (1965) according to which Swiss citizens demand a punishment of tax cheaters, Keller (1966/67, p. 245) argued that this demand might as well be interpreted as envy instead of a sense of civic duty.

those prices too high, citizens think they have a justification for evading taxes.⁵ However, citizens may perceive their tax payments as contributions to the '*bonum commune*' such that they are willing to honestly declare their income even if they do not receive a full public good equivalent to their tax payments. For example they might be net contributors to the welfare state. Income redistribution is the more accepted by affluent citizens the more the political process is perceived to be fair and the more policy outcomes are legitimate.⁶

The contractual relationship has additional implications for the procedural level (*Section 6*): the way the tax office treats taxpayers in auditing processes plays a role. As Frey and Feld (2002) and Feld and Frey (2002, 2002a) argue, the psychological tax contract presupposes that taxpayers and the tax authority treat each other like partners, that is, with mutual respect and honesty. If tax administrations instead treat taxpayers as inferiors in a hierarchical relationship, the psychological tax contract is violated and citizens have good reason not to stick to their part of the contract and to evade taxes. In *Section 7*, we draw some conclusions as to the policy implications of such a contractual view of tax compliance. It implies that simple policy proposals are inadequate to shape the psychological tax contract successfully. The right mixture of (negative and positive) incentives and a respectful treatment of taxpayers by tax officials needs to be found.

II. The psychological tax contract

In their basic model of tax evasion, Allingham and Sandmo (1972) follow along a traditional economic line of reasoning. In order to prevent individuals from free riding on public goods, coercive taxation has to be used. The tax code is enforced by a system of fines and audits. The authors assume that individuals decide by maximising expected utility such that a risk-averse individual, who earns a certain amount of money, chooses the share of income he/she wants to declare to the tax authority. The incentives for rational and

⁵ See Spicer and Lundstedt (1976) Spicer and Becker (1980) and Becker, Büchner and Slesking (1987). Alm, McClelland and Schulze (1992) and Alm, Jackson and McKee (1993) find that the introduction of a public good in exchange for the taxes paid increases compliance rates in experiments.

⁶ Tyler (1990) analyzes procedural fairness in an experimental context. A broader survey is given by Frey, Benz and Stutzer (2004). For an analysis which political institutions shape the perception of procedural

selfish individuals to voluntarily pay taxes are pretty low because undeclared income is not taxed. Therefore the individual needs to face a certain threat of punishment if he/she does not truthfully declare his/her income. He/she is audited with a certain probability of detection and fined by a penalty tax rate when tax evasion has been detected. The sum of revenue obtained from taxation of declared income, detected income evaded, and the fines, less the administrative costs to conduct auditing of taxpayers, is used to provide a certain amount of public goods. In this model, tax evasion can therefore be mitigated if expected fines are sufficiently high to deter taxpayers from cheating. According to the majority of the literature (Andreoni, Erard & Feinstein, 1998, p. 826), the objective of the tax authority in this environment is to maximise expected net revenue, that is, tax revenue less administration costs.

However, the administrative costs should not solely consist of audit costs. Rather, the tax officials must take into account that the way they treat taxpayers systematically affects the latter's tax morale, and therefore their willingness to pay taxes, which in turn affects the cost of raising taxes. Nobody likes paying taxes, not least because it involves a public good and there are incentives to free ride. Therefore, incentives are needed to enforce taxation. At the same time, there is a voluntary component to paying taxes. Several scholars have established that selfish individuals would be rational not to pay taxes, because the probability of being detected and the size of the fines are so low that it is advantageous to evade.⁷ Tax payment is therefore taken to be a 'quasi-voluntary' act (see Levi, 1988) and the tax authority optimally chooses a way of dealing with taxpayers by acknowledging that external interventions in the form of rewards or sanctions may crowd out the intrinsic motivation to pay taxes.

The idea of intrinsic motivation is largely attached to psychology. A group of cognitive social psychologists have identified that, under particular conditions, monetary (external)

fairness, see Pommerehne, Hart and Frey (1994), Pommerehne and Weck-Hannemann (1996), Frey (1997a), Pommerehne, Hart and Feld (1997), Feld and Frey (2002) and Feld and Tyran (2002).

⁷ See again Alm, McClelland and Schulze (1992), Graetz and Wilde (1985), Skinner and Slemrod (1985) or Pommerehne and Frey (1992).

rewards undermine intrinsic motivation.⁸ Giving of rewards for undertaking an activity has indirect negative consequences. For that reason the effect has been termed ‘*The Hidden Cost of Reward*’ (see Lepper & Greene, 1978) or, more recently, ‘*Cognitive Evaluation Theory*’ (Deci, Koestner & Ryan, 1999). The basic idea that external interventions, in the form of rewards or sanctions, may crowd out intrinsic motivation has been introduced into economics as ‘*Crowding Theory*’ (Frey, 1997; Le Grand, 2003; Bénabou & Tirole, 2002; Fehr & Rockenbach, 2003; Falk & Kosfeld, 2004; Janssen & Mendys-Kamphorst, 2004) and is supported by much empirical evidence (Frey & Jegen, 2001). At the same time it has been generalised in three ways:

- (a) All types of external interventions may negatively affect intrinsic motivation, that is, not only offering rewards but also issuing commands, imposing rules and regulations as well as punishments. Thus, *deterrence* imposed by the tax authority, may undermine individuals’ intrinsic willingness to conform to tax laws.
- (b) The intrinsic motivation affected by external intervention is broadly conceived. It comprises actions undertaken for their own sake, that is, without expectation of external reward (see Deci, 1975, p. 105), as well as *internalized norm guided behaviour*. The latter is the relevant concept as far as taxpaying is concerned.
- (c) External interventions undermine intrinsic motivation when they are perceived to be intrusive by the individuals concerned (‘crowding out effect’), and they maintain or raise intrinsic motivation when they are perceived to be supportive. The underlying psychological processes depend on how self-determination and self-esteem are affected (see Deci & Ryan, 1985; Deci & Flaste, 1995). Tax audits as intrusion by tax authorities can be hypothesised to undermine tax morale more strongly if the taxpayers’ sense of self-determination is high.

Tax officials are assumed to be aware of the effects on taxpayers’ behaviour suggested by crowding theory. In order to maximise net tax revenue, they aim to keep down the cost of

⁸ Headed by Deci (1971, 1972). Extensive surveys are given for example in Pittman and Heller (1987), and Lane (1991, chap. 19). For meta-analyses see Cameron and Pierce (1994), Eisenberger and Cameron (1996), Cameron, Banko and Pierce (2001) and Deci, Koestner and Ryan (1999).

collecting taxes. They know that a disrespectful treatment of taxpayers undermines their tax morale and therewith raises the cost of raising taxes. Tax authorities will only behave in a respectful way towards taxpayers when there is a substantial extent of tax morale to begin with. Tax officials are at the same time well aware that tax payments do not solely depend on tax morale but that extrinsic incentives play a major role. In particular, incentives are used to prevent taxpayers with low or lacking tax morale from exploiting the more honest taxpayers and to escape paying their due share. A combination of respectful treatment and incentives is possible and widely practiced. The sole reliance on incentives, as suggested by a large part of the tax compliance literature based on subjective expected utility maximisation, represents a special case which only applies under restrictive conditions. Such a special case occurs when the tax officials are convinced that individuals' tax morale is low or does not exist at all. In general, however, it is optimal to simultaneously use both respectful treatment as well as incentives. The higher the initial level of tax morale, and the stronger the crowding effect, the less weight is put on incentives, and the more respectfully taxpayers are treated.

Thus, the relationship between taxpayers and tax authorities can be modelled as an implicit or relational contract (see Akerlof, 1982) which also involves strong emotional ties and loyalties (see for example Williamson, 1985). Social psychologists (Schein, 1965; Rousseau & McLean Parks, 1993) have been using this concept for a long time, calling it a 'psychological' contract to set it clearly apart from formal contracts, which are obeyed because the parties respond to the explicit and material sanctions previously agreed upon. Psychological contracts have been successfully used to analyse relationships within the firm (for example Osterloh & Frey, 2000). They could also be used in tax compliance analysis where they suggest that incentives and respectful treatment are important determinants of tax compliance.

III. The impact of deterrence on tax compliance

In general, incentives could be positive or negative. Holländer (1990) argues indeed that a social exchange relationship in the provision of collective goods involves benefits in the form of social approval for cooperation and costs in the form of social disapproval for

cheating. When the impact of incentives on tax compliance is studied, the focus is however nearly exclusively on deterrence measured by the product of fines and the probability of being detected which in turn is influenced by the intensity of control. According to the surveys by Andreoni, Erard and Feinstein, (1998) and Slemrod and Yitzhaki, (2002), an overwhelming majority of theoretical studies predicts a positive impact of deterrence on tax evasion. The higher the fines, the lower is tax evasion – *ceteris paribus*; the higher is the intensity of control, the lower is tax evasion – *ceteris paribus*. However, the empirical evidence looks less convincing.

In a meta-analysis on results from tax compliance experiments published between 1978 and 2001, Blackwell (2002) still reports an exclusive positive impact of the audit probability on compliance and finds only one study with a negative impact of the fine rate on compliance. However, having a closer look at experimental as well as field studies a much more diverse picture emerges. For example, Dubin, Graetz and Wilde (1987), Dubin and Wilde (1988), Beron, Tauchen and Witte (1992), and Slemrod, Blumenthal and Christian (2001) find a significant positive impact of the probability of detection on tax evasion at least for some income groups. While Schwartz and Orleans (1967), Friedland, Maital and Rutenberg (1978), Klepper and Nagin (1989), De Juan, Lasheras and Mayo (1994), Alm, Sanchez and De Juan (1995) report a positive impact of fines on tax compliance, Spicer and Lundstedt (1976), Friedland (1982), Elffers, Weigel and Hessing (1987), Webley and Halstead (1986), and Varma and Doob (1998) present ambiguous evidence. Scholz and Lubell (2001) find a crowding out of tax compliance when penalties are introduced. Feld and Frey (2002) provide support for the ambiguous impact of deterrence on tax compliance. For a panel of Swiss cantons, they find that a higher intensity of control increases tax evasion while fines and penalties reduce tax evasion.

The mixed evidence can be explained on the basis of crowding theory. Higher control intensities increase deterrence and thus tax compliance on the one hand, but may be perceived as intrusive by taxpayers and thus reduce tax compliance on the other hand (Kirchler, 1999). Fines and penalties could be part of a non-linear punishment schedule that allows for low levels of fines in the case of minor offences against the tax code, even a standing tax amnesty in the case of self-denunciation, but requires high penalties in cases

of tax fraud or major convictions. Depending upon which fine rate is chosen in an empirical study, a positive or negative impact on tax compliance might result. If the fine for minor offences is used, a higher fine increases tax evasion because it is perceived to be too intrusive. If the penalty for tax fraud or major offences is chosen, a higher fine reduces tax evasion because it makes clear that the psychological tax contract is at stake. Put differently, nobody is perfect, and to cheat a little bit on taxes is a common and minor human weakness, and should be considered as such, while basic violations of the tax code undermine the basic contractual relationship between citizens and the state and must therefore be punished more heavily.

Deterrence has thus two different aspects. On the one hand, in order to keep up a psychological tax contract between the tax office and the taxpayers, honest taxpayers must be confident that they are not exploited by dishonest tax cheaters. Thus, deterrence for major violations of the tax code reduces tax evasion. On the other hand, each taxpayer may make a mistake, so that minor offences can be penalised less, without undermining the psychological tax contract. A non-linear punishment schedule with low fines for minor tax evasion and high penalties for tax fraud, will thus serve the purpose of shaping tax morale. All in all, the evidence suggests that an exclusive reliance on deterrence is not a reasonable strategy to increase tax compliance. The evidence is more in line with crowding theory such that it is useful to consider the additional possibilities to raise tax morale suggested by that theory.

IV. Rewarding taxpayers

In contrast to the standard model of tax evasion which raises the relative cost of *not paying* taxes, rewards raise the benefits of *paying* taxes. A reward given to taxpayers for correctly fulfilling their duties changes the relative prices in favour of paying taxes, and against evading them. For this result to take place two conditions must be met:

- (1) The income effect induced by the higher wealth position must not work in the opposite direction. But this is unlikely to be the case. The reward is small compared to the tax liability (see below) so that the income effect

also tends to be small. Moreover, there is little reason to expect that higher wealth should induce more, rather than less, tax evasion.

- (2) The reward may induce strategic behaviour by the taxpayers. This would be the case if the reward depends on the reduction of evasive behaviour. In that case it may be rational to first increase tax evasion in order to thereafter reduce it and to benefit from the rewards offered. But the rewards here considered depend on *being* a ‘good’ taxpayer. Strategic behaviour is no longer a rational option.

Based on standard economic theory it may be expected that rewards change the relative prices such that paying taxes becomes more attractive than evading taxes. This does, however, not necessarily mean that the effect is so large that it can be identified empirically. This holds in particular if the reward given is of small size. The cost of giving rewards has to be compared with the cost of other incentives, in particular with the cost involved with punishment. To be cost effective, rewards must raise *net* tax revenues, that is, gross revenues after deducting the cost of rewards. As a consequence, optimal rewards are likely to be of small size.

It is crucial to consider effects of rewards on behaviour going beyond those analysed by standard theory. From the perspective of crowding theory, receiving certain types of rewards for being a good taxpayer is perceived as supporting and tends to bolster and raise tax morale, quite in contrast to deterrence. This motivational effect thus works in the same direction as the relative price effect, and strengthens the attractiveness of giving rewards to ‘good’ taxpayers. In the case of the normally applied punishment 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 of the wrong sign. If the crowding-out effect is stronger than the relative price effect of punishment, the net effect on tax evasion is positive rather than negative. The *way* rewards are handed out to ‘good’

taxpayers is essential for its effects on taxpayer behaviour. Three dimensions are of particular importance:

Type of reward. The reward may take the form of a *direct monetary* payment. It may be proportional to the size of the tax payment (that is, a percentage rebate), or in the other extreme may take 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 received in the same monetary dimension as the tax payments is likely to be discounted by the taxpayers as a ‘right’, and then does not positively influence tax morale. In contrast, a reward on purpose distinguished from the taxes due tends to be perceived as a sign of acknowledgment. If this is indeed the case, it is even better to give the reward in *non-monetary* form. To provide ‘good’ taxpayers with better and less costly access to public services is likely to raise tax morale more strongly than money. Such a ‘gift’⁹ also emphasises the exchange relationship between the taxpayer and the state based on reciprocity¹⁰. There are many possibilities to reward ‘good’ taxpayers in these terms. For instance, they can be offered free entry to museums, exhibitions and other cultural activities undertaken by the state. Or they can be given a reduction (say, 50%) on all public transport. Most taxpayers receiving a reward in these terms take it as a sign of appreciation rather than simply a reduction in taxes (which would quickly be taken as a matter of course).

Certain or random allocation. The reward can be awarded to every ‘good’ taxpayer or each may receive a ticket to a lottery with a certain chance of getting a (high) reward (Alm, Jackson & McKee, 1992). Both forms may produce the desired supportive effect on tax morale. However, it may be argued that the reward is likely to be discounted by the taxpayers more fully and quickly if ‘automatically’ received. Participation in a lottery may more effectively bolster tax morale because it leads to an uncertain and unpredictable reward getting more attention also because of its larger size.

⁹ In most cultures gifts are on purpose not given in monetary form.

¹⁰ The importance of reciprocity to facilitate social exchange has been well established by laboratory experiments, see Falk and Fischbacher (1999), Fehr and Gächter (2000).

Persons or firms. The discussion has so far implicitly assumed that the taxpayers are private persons. Even in firms it is, of course, individuals who decide the extent of tax payment or tax evasion. The considerations so far discussed are therefore to some extent also relevant for firms (see Fehr & List, 2004). But firms are subject to important additional constraints, in particular the competitive situation in which they act. Decision makers in firms acting under such conditions would certainly immediately discount a monetary reward into total tax liability. Only the relative price of rewards would then work. But non-monetary rewards may also have a high attraction to firms. One form would be that the tax office issues a *certificate* indicating that the taxes, to the best of their knowledge, have been correctly declared, that the firm has been cooperative, and that the taxes due have been paid in time. Such a certificate demonstrates that the firm acts as a ‘good’ taxpayer. Shareholders may respond in a positive way, 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.¹¹

It is well known from psychological research that punishment and rewards lead to different behavioural outcomes. Indeed, it appears to be common knowledge among psychologists that rewards lead to better outcomes than punishment. Already Skinner (1948, 1953) emphasised the importance of positive incentives. In the literature on social loafing (‘cheating’ in group work) (see Latané, Williams & Harkin, 1979; Diehl & Stroebe, 1987; and Witte, 1989), the impact of rewards and punishments are emphasised and it is shown that rewards help to solve the problem of ‘hiding in the crowd’ (Davis, 1969) while punishments are necessarily disadvantaged in such a setting. George (1995) provides additional quasi-experimental evidence that rewards and punishment differently affect social loafing and significantly so. In addition, research on the effects of leader reward and punishment behaviour in organisational psychology suggests asymmetrical behavioural responses to rewards and punishments. Sims (1980) reviews the empirical literature in psychology and concludes that ‘the relationship between reward behaviour and subordinate performance is much stronger than the relationship between punitive behaviour and performance’ (p. 134). Podsakoff et al., (1984) provide supportive evidence that leader

¹¹ Similar effects have been noted for firms receiving an environmental certificate.

contingent reward behaviour is positively associated with subordinate performance while contingent punishment does not significantly affect subordinate performance.

The most convincing arguments that punishment and rewards lead to different behavioural outcomes stem however from work on brain structure and subsequent interdisciplinary research of psychologists and neuroscientists. Gray (1971, 1981, 1987) argues that rewards and punishment can be linked to different types of brain activity and neuronal systems. According to Gray's work, the behavioural inhibition system influences responses in the case of punishments while the behavioural activation system regulates responses to rewards (George, 1995). More recent studies by Knutson et al. (2001) on the impact of anticipated rewards and punishments on 'nucleus accumbens blood oxygen level-dependent contrast (activation)' (p. 1) provide evidence that anticipation of increasing rewards significantly increased self-reported happiness and nucleus accumbens activation while anticipation of increasing punishment did neither. Reynolds and Berridge (2002) support these findings by focusing on 'GABAergic neurotransmission' (p. 7308). The evidence from neuroscience has recently become pretty differentiated such that reward responses could be distinguished according to learned experiences, context, timing and the reward dimension (see McClure, York & Montague, 2004 for a review). As mentioned above, the predictability of rewards is particularly important in our context of the study of tax evasion. The evidence from neuroscience strongly supports the conjecture that unexpected rewards more strongly affect behaviour in the predicted directions (Schultz, Dayan & Montague, 1997; Berns et al., 2001; Zald et al., 2004).

Traditional economics interprets rewards only as a substitute to punishments (Falkinger & Walther, 1991) which basically provides the same incentives such that both instruments should be viewed as symmetric. In contrast, the current state of research in psychology and neuroscience points to the asymmetric responses of human beings to rewards and punishments and even provides evidence that two distinct neurological transmission channels are responsible for the signals that translate rewards and punishments subsequently into behaviour. It could thus be expected that rewards and punishments lead to different outcomes in tax compliance behaviour. An exclusive reliance on deterrence is not warranted.

V. Tax compliance and social exchange

From the perspective of a standard economic theory, a much more direct incentive for tax compliance than deterrence or rewards consists in the goods and services that the state provides to citizens in exchange for their tax payments (Mackscheidt, 1984; Smith & Stalans, 1991). If the analogy to private contracts is considered, the goods or services purchased provide the foremost incentives to pay the price for these goods and services. The incentives from private law to stick to the duties fixed by the contract mainly serve as an insurance if the individuals' desire to get a product is insufficient or the conditions for a *do ut des* are unfavourable. Similarly, rewards in the form of gifts for loyal customers serve as a positive means to bind them. Rewards can however not substitute for the basic incentives from the goods and services. Because the state supposedly provides public goods, services and infrastructure, which are not necessarily traded in private markets, or redistributes income and wealth, the fiscal exchange relationship poses additional difficulties.

From the perspective of a psychological tax contract, respectful treatment occurs at two different levels of action, the fiscal exchange and the procedural level. The fiscal exchange between the state and its citizens requires that citizens' tax payments are met by public services provided by the government. According to the benefit principle of taxation, taxes are prices for certain public goods. However, the benefit principle does not necessarily imply that income redistribution becomes impossible and only infrastructural goods as well as public consumption goods are provided by the state. Citizens may perceive their tax payments as contributions to the '*bonum commune*' such that they are willing to honestly declare their income even if they do not receive a full public good equivalent to their tax payments. Income redistribution is the more accepted by affluent citizens the more the political process is perceived to be fair and the more policy outcomes are legitimate.

Establishing social exchange between citizens and the government

Non-standard theories of tax evasion (and public good provision) have considered the fact, that individual actions are led by social norms. Bordignon (1990) analyses voluntary public good provision under the norm of unconditional commitment. In his model, individuals

behave according to the Kantian categorical imperative: Each person behaves in a way it likes to be treated by others. Consequently, many people do not free ride, but voluntarily contribute to a public good, such that an efficient level of the public good can be provided. Similar commitment rules exist in business relationships. Each entrepreneur commits to a contract perceiving that this commitment enforces moral behaviour in trade without the permanent threat of being punished by the courts: Honesty is the best policy. Cowell (1987) discusses similar kinds of honesty in a tax evasion framework on the basis of fairness considerations. In contrast to unconditional commitment, individuals who follow a reciprocity norm are responding to their partners' friendly or hostile behaviour (Fehr & Gächter, 2000, p.160). According to Sugden (1984), individuals treat their partners in social exchange in a friendly way if they expect or anticipate that they are as well treated in a friendly way by their partners. They behave in an unfriendly way if their partners are unfriendly. Thus, reciprocity may obtain in the relationship between different taxpayers. A taxpayer complies with the tax law if he/she perceives or anticipates that his/her fellow citizens declare their incomes truthfully.

The norm of reciprocity in tax evasion can also be established if taxpayers perceive fiscal exchange to take place to a large extent: The more governments follow the benefit principle of taxation and provide public services according to the preferences of taxpayers in exchange for a reasonable tax price, the more taxpayers comply with the tax laws. Spicer and Lundstedt (1976), Porcano (1988, Alm, McClelland and Schulze (1992), and Alm, Jackson and McKee (1992, 1992a, 1993) present experimental evidence that governments which stick to the principle of fiscal exchange achieve more tax compliance. Pommerehne, Hart and Frey (1994) use a simulation study design to analyse the impact of fiscal exchange on tax compliance. They show that the more the citizens' optimal choice of a public good and the actual provision level and quality deviate from each other, the higher is tax evasion. Tax compliance also increases with reductions in government waste. However, following the reciprocity argument, the more other citizens cheat on the tax code, the higher the probability that a person evades taxes.

In these experimental papers, the proposed fiscal exchange relationship is based on the provision of a public good financed by taxes. Several authors have used this analogy to

public good games in order to analyse additional variables that influence tax evasion (see for example Feld & Tyran, 2002). According to the benefit principle of taxation such a restricted view of government action could be rationalised. However, in real world settings the state undertakes many activities that cannot be subsumed under the heading of a public consumption good or public infrastructure. In particular, any kind of pure redistribution is not covered by such a design. Whenever redistribution of income is at stake, problems of tax evasion are however pertinent. There are indeed a few studies that consider the relationship between tax evasion and redistribution in a fiscal exchange setting. In their experiments, Güth and Mackscheidt (1985) chose a simple tax-transfer-scheme to come as close as possible to the principle of vertical equity, that is, take from the rich and give it to the poor. They found that subjects had a compliance rate of 93 percent. Becker, Büchner and Slesky (1987) report however that evasion rises if taxpayers believe to lose from redistribution.

There is also historical evidence for Switzerland supporting the positive impact of fiscal exchange on tax compliance and underlining the problems with income redistribution (Schanz, 1890). It is interesting to note that a voluntary school tax in the canton of Glarus provided sufficient revenue to finance education services over a longer period (Schanz, 1890, III, p. 98), while a voluntary welfare tax to redistribute income in the canton of Appenzell i. Rh. had to be quickly turned into coercive taxation (Schanz, 1890, III, p. 10). Moreover, new taxes were more easily introduced in Swiss cantons when the additional revenue could be justified by financing needs from new public goods or services. This was the case in Appenzell i. Rh. in 1804 where it was argued that the additional revenue was needed to finance law enforcement measures – and a visit of the bishop of the Roman-Catholic church (Schanz, 1890, III, p. 3). Similarly, Basel-County received the popular consent to levy direct taxes again in 1871 in order to finance cantonal investments. However, the tax increase in 1876 that was supposed to cover budget deficits politically failed. Another attempt in 1887 was finally adopted in order to finance the cantonal hospital (Schanz 1890, II, p. 116).

Obviously, the satisfaction with what the government provides in exchange for tax payments strongly depends on the experimental setting or, in the real world, on the

environmental conditions. It appears that notions of fairness or justice shape the extent to which the fiscal exchange paradigm increases tax compliance in particular. Kinsey and Grasmick (1993) report evidence that horizontal equity plays a role. If an individual's tax burden is of about the same magnitude as that of comparable others, tax compliance increases. The results by Spicer and Becker (1980) and De Juan, Lasheras and Mayo (1994) point in the same direction. Kinsey and Grasmick (1993) and Roberts and Hite (1994) report that vertical unfairness of the tax schedule (the progressivity of the income tax) increases tax evasion. Wenzel (2001) has generalised the idea of perceived fairness by different income groups in a categorisation approach where income is not the exclusive category for group evolution. Wenzel (2002) presents additional evidence that identification with a group strongly affects fairness perceptions. In particular, deterrence appears to be ineffective for high identification levels and thus conditional on identification. This is in line with the results by Scott and Grasmick (1981) who report evidence that deterrence was more effective for taxpayers who perceived the tax system to be unfair. Finally, Wenzel (2002a) presents evidence that the effects of deterrence are reduced for individuals with strong personal tax ethics.

Moreover, Scholz and Lubell (1998) emphasise the importance of trust in government for tax compliance. In contrast to their definition (1998, p. 411), trust in government is more than a 'rough measure of the net benefits from governing institutions'. It also involves the effectiveness of the government to conduct the policies and programs promised to citizens. In particular, trust in government can be eroded if government waste is high. Braithwaite (1998, 2003) underlines the delicate nature of a loss of trust when taxpayers are not confident that the tax authority is able to regain its trustworthiness. Ahmed and Braithwaite (2004) report empirical evidence on a significantly higher non-compliance among those that have lost hope, that is, who believe that trustworthiness of the government is low.

Establishing fiscal exchange by political decision-making procedures

The fiscal exchange relationship between taxpayers and the state therefore depends on the politico-economic framework within which the government acts. According to Alm, McClelland and Schulze (1999, p. 149), rational egoists should vote for the lowest control

intensities and fines that are necessary to ensure compliance. However, voting may also serve as a signal by the government or by the other taxpayers that the taxpayer is treated in a friendly way in the tax evasion game and that the norm of reciprocity is followed. According to Kidder and McEwen (1989), the participation of a higher number of people in tax policy decisions increases the overall sense of obligation to comply. Moreover, the possibility for voters to vote directly on matters of content increases the legitimacy of policies and serves as an insurance against exaggerated government waste. Tyler (1990) argues that people comply with the law in general if they perceive as fair the process that leads to this law. Direct political participation therefore particularly activates public spiritedness of taxpayers.

In an experimental study, Feld and Tyran (2002) find that tax compliance is higher on average in an endogenous fine treatment in which subjects are allowed to approve or reject the proposal of a fine as compared to an exogenous fine treatment where the fine is imposed by the experimenter.¹² The main explanation why people show a higher tax morale if they are allowed to vote on a fine is legitimacy. Subjects who approve the fine in the endogenous fine treatment have considerably higher tax compliance than subjects in the exogenous fine treatment. Compliance rates are higher if the fine is accepted than in the case the fine is rejected. Subjects who reject the proposal of the fine show a higher compliance rate than subjects in the exogenous fine treatment even if they know that the dominant strategy under the existence of the low fine is non-compliance. Finally, individuals who vote against the fine contribute effectively more if the fine is adopted than individuals voting for the fine contribute in the case the symbolic fine is rejected.

Field studies by Weck-Hannemann and Pommerehne (1989), Pommerehne and Weck-Hannemann (1996), Pommerehne and Frey (1992) and Frey (1997a) provide additional support for the experimental findings. Focusing on tax evasion in the Swiss cantons between 1965 and 1978, they find that the more direct democratic the political decision-making procedures of a canton are, the lower is tax evasion according to those studies. These results are replicated by Feld and Frey (2002) and Frey and Feld (2002) by extending the sample to period 1985 to 1995. Torgler (2003a) uses an alternative approach

to study tax morale in the Swiss cantons by investigating two micro data sets, the World Value Survey and the International Survey Programme, that contain questions about tax morale of respondents. His results provide evidence that direct democracy shapes tax morale. According to his estimates, tax morale is significantly higher in direct democratic cantons. Distinguishing between different instruments of direct democracy, he finds that the fiscal referendum has the highest positive influence on tax morale. Moreover, tax morale of respondents is higher if they have a higher trust in government, or in the courts and the legal system. Since studies for the US. (Gerber, 1999) and Switzerland (Pommerehne, 1978) show that policies in direct democratic jurisdiction are more strongly in line with citizens' preferences, institutions of direct democracy can be seen as a means to establish a relationship of fiscal exchange between taxpayers and the government. Feld and Kichgässner (2000) argue that the higher tax compliance is evidence for citizens' higher satisfaction with the public sector in direct democracy.

In addition, Torgler (2003a) reports evidence that local autonomy as an indicator of fiscal federalism has a marginally significant positive impact on tax morale. Güth, Levati and Sausgruber (2005) find a stronger effect of fiscal decentralisation on tax compliance in an experimental setting. Subjects show a higher tax morale if public goods are provided and financed regionally or locally because their taxes are spent on their own regional or local public goods. The fiscal equivalence of the theory of fiscal federalism then holds more strongly. Moreover, the group identification emphasised by Wenzel (2002) is supposedly enhanced at the local or regional compared to federal or central level of government.

VI. The treatment of taxpayers

Fiscal exchange and the political procedures enhancing the perception of fiscal policies to be fair are not the end of the story. The psychological tax contract as outlined in Section 2 is supposed to reach beyond pure exchanges and involving loyalties and ties between citizens and the state. Tyler (1990) has argued that the way people are treated by the tax authorities affects cooperation levels. Again the analogy to private contracts is useful. If you can purchase a product from two different suppliers, would you choose the one who is

¹² See also Alm, McClelland and Schule (1999).

friendlier and more respectfully treating his customers? For sure, if the price differential is not too high. In a similar fashion, the way the tax office treats taxpayers plays a role.

At this procedural level, respectful treatment can be split into two different components. First, the procedures used by auditors in their contact with taxpayers are to be transparent and clear. In the case of arbitrary procedures, taxpayers feel helpless and get the impression that they are not taken seriously. Such behaviour reduces their perception of being obliged to pay taxes. Second, respectful treatment has a direct personal component in the sense of how the personality of taxpayers is respected by tax officials. If they treat taxpayers as partners in a psychological tax contract, instead of inferiors in a hierarchical relationship, taxpayers have incentives to pay taxes honestly. Two opposite cases of treating taxpayers can be distinguished:

- (1) A respectful treatment supporting, and possibly even raising, tax morale;
- (2) An authoritarian treatment undermining tax morale.

The tax officials can choose between these extremes in many different ways. For instance, when they detect an error in the tax declaration, they can immediately suspect an intent to cheat, and impose legal sanctions. Alternatively, the tax officials may give the taxpayers the benefit of the doubt and inquire about the reason for the error. If the taxpayer in question indeed did not intend to cheat but simply made a mistake, he or she will most likely be offended by the disrespectful treatment of the tax authority. The feeling of being controlled in a negative way, and being suspected of tax cheating, tends to crowd out the intrinsic motivation to act as an honourable taxpayer and, as a consequence, tax morale will fall. In contrast, if the tax official makes an effort to locate the reason for the error by contacting the taxpayer in an informal way (for example by phoning him or her), the taxpayer will appreciate this respectful treatment and tax morale will be upheld.

In order to investigate the relationship between taxpayers and tax authorities, Feld and Frey (2002) have sent a survey to the tax authorities of the 26 Swiss cantons which asked detailed questions about the legal background of tax evasion, like the use and size of fines, whether an explicit link is established between tax payments and the provision of public

services, the perceived feedback effect of tax evasion on the level of public services, the intensity of control by tax authorities, the existence of tax amnesties, and whether the tax register is published in a jurisdiction. The survey also included questions on the treatment of taxpayers by tax authorities in day-to-day audits, in particular when a taxpayer is suspected of not declaring his or her true taxable income.

In particular the extent of *respectful treatment* of the taxpayers is captured by (1) Fully observing procedures based on formal and informal rules, that is, what happens typically if a taxpayer does not declare taxable income at all (procedures, fines), if a tax declaration is mistakenly filled out or, in a second stage, if taxpayers do not react?; (2) Acknowledgment of individual citizens' rights and personality, that is, what does the tax administration do if taxpayers declared taxable income by mistake too high? Are there any differences in the treatment whether these mistakes are formally wrong, for example mistakes in adding up columns of figures, or possibilities for legal tax avoidance, for example tax deductions, are not used? Are there attempts to find out whether taxpayers intentionally or mistakenly declare too low a taxable income? Are mistakes in the tax declaration to the advantage or to the disadvantage of *taxpayers*?

The way taxpayers are treated by tax authorities reveals interesting differences between the Swiss cantons. Only 58 percent of Swiss cantonal tax authorities believe that mistakes in reported incomes are, on average, in favour of taxpayers. 31 percent believe that mistakes are neither to the advantage nor to the disadvantage of taxpayers, and 12 percent believe that mistakes are to the disadvantage of taxpayers. These answers indicate a general lack of distrust towards taxpayers. If a taxpayer does not report his or her true taxable income, tax authorities can contact her in several ways. 54 percent of the cantons phone the person concerned and ask how the mistake(s) occurred in the tax reporting form and what explanation the taxpayer has. All of the cantons send a letter to the taxpayer, half of them with a standard formulation. Nearly 85 percent ask the taxpayer to visit the tax office, but only half of the cantons mention the possibility of punishment. Thus, tax authorities rarely adopt the strategy of explicit deterrence, but rather seek to gain additional information. Ninety six percent of the cantonal tax authorities correct reported incomes that are too high, that is, reduce taxable incomes when taxpayers commit mistakes that are to their

disadvantage. Twenty seven percent of the tax authorities correct reported taxable income even if taxpayers fail to profit from legal tax savings.

The impact of the treatment of taxpayers on tax evasion is studied more thoroughly in a regression analysis by Frey and Feld (2002) and Feld and Frey (2002). With a sample of 26 Swiss cantons in the years 1970-1995, they show that the tax authorities in Switzerland do indeed behave *as if* they were aware of the reaction of taxpayers to being treated with respect or not. According to the empirical findings, tax evasion is lower, the more fully the tax office observes formal and informal procedural rules. The observation of procedural rules is indicated by a distinction between friendly treatments, for example a respectful procedure, and unfriendly treatments, like an authoritarian procedure or the tax authorities' direct deterrence to fine. It can be shown that the friendly treatment has a stronger dampening effect on tax evasion particularly in cantons using referendums and initiatives in political decision-making, while the authoritarian procedure, the threat of deterrence, is particularly reducing tax evasion in representative democracies, but counter-productive in direct democracy. Moreover, Swiss citizens are the more respectfully treated by the tax authority the more strongly developed citizens' participation rights (Feld & Frey, 2002a). In addition, tax authorities in more direct democratic cantons appear to give taxpayers more frequently the benefit of a doubt. Feld and Frey (2002a) report evidence that tax authorities in more direct democratic cantons believe to a significantly lesser extent that mistakes in the tax declaration are in favour of taxpayers.

That a friendly and respectful treatment of taxpayers by the tax authorities is an important means to reduce tax evasion has been recognised for a long time in Switzerland. Again the historical account by Schanz (1890) indicates that citizens are frequently given the benefit of a doubt. If deterrence measures were increased, additional measures to reduce the administrative interference in the private sphere of individuals were taken. Schneider (1929) strongly argues in favour of a respectful treatment of taxpayers. In form of the tax administrator the state is personalised to the citizens. A too strong emphasis on deterrence would accordingly lead to a distrust of citizens and finally crowd out tax morale. Moral suasion does however not lead to increases in tax morale as Torgler (2003b) finds in a controlled experiment in a Swiss community. The simple normative appeal by the tax

commissioner in a letter did not have any significant impact on tax morale. These results corroborate those for the U.S. provided by Blumenthal, Christian and Slemrod (2001) while Wenzel and Taylor (2004) obtained more favourable evidence in a different field experiment.

VII. Conclusion for economic policy

A fundamental result of the tax evasion literature is that it remains a mystery why people actually pay taxes, given the rather low levels of fines and auditing probabilities. The deterrence model of tax evasion cannot explain the high tax compliance rates without referring to an exogenously given tax morale. In this paper, we have argued that tax compliance results from a complicated interaction of deterrence measures and responsive regulation. Citizens and the state develop their fiscal relationships according to a psychological tax contract that establishes fiscal exchange between taxpayers and tax authorities. It reaches however beyond pure exchanges and involves loyalties and ties between the contract partners. Tax morale is therefore a function of (1) the fiscal exchange where taxpayers get public services for the tax prices they pay, (2) the political procedures that lead to this exchange and (3) the personal relationship between the taxpayers and the tax administrators.

The tax authority takes into account that the way it treats the taxpayers systematically affects the latter's tax morale, and therefore their willingness to pay taxes, which in turn affects the costs of raising taxes. When the auditors detect incorrectly reported income in the tax declaration, they can immediately be suspicious of an intent to cheat, and impose legal sanctions. Alternatively, the auditors may give the taxpayers the benefit of the doubt and inquire into the reasons for the mistake. If the taxpayer in question did not intend to cheat but simply made a mistake, he or she will most likely be offended by the disrespectful treatment of the tax authority. The feeling of being controlled in a negative way, and being suspected of tax cheating, tends to crowd out the intrinsic motivation to act as an honourable taxpayer and, as a consequence, tax morale will fall. In contrast, when the auditor makes an effort to locate the reason for the error by contacting the taxpayer in an

informal way (for example by phoning him or her), the taxpayer will appreciate this respectful treatment and tax morale is upheld.

These arguments are in line with recent legal thought that has focused on the importance of social norms in studying the effects of law (Ellickson, 1991).¹³ In addition to the direct deterrent effects of legal sanctions emphasised by the economic analysis of law, legal scholars have suggested various indirect ways how lawmaking may affect behaviour (Cooter, 1998, 2000; McAdams, 2000; Posner, 1998, 2000a; Posner & Rasmusen, 1999; Sunstein, 1996, 1999). Posner (2000b) studies the role of social norms for tax compliance. According to his analysis, good governance and fair procedures lead to higher tax compliance by taxpayers. The government can shape tax morale by following these behavioural norms in order to signal citizens that they can reply to such a treatment by themselves trusting in government.

In this paper, we have summarised evidence supporting such a view of responsive regulation. It moreover shows that the interaction between taxpayers and tax authorities is shaped by direct democratic decision-making. Responsive regulation is particularly successful and significantly more frequently employed in direct democratic cantons. Direct democracy, as such, leads to lower tax evasion and higher tax morale. In addition, deterrence occurs in a complicated fashion such that smaller offences are only punished lightly. Taxpayers are often given the benefit of a doubt. It is necessary to create a system that shapes the emergence of trust between citizens and between citizens and the state. This creates an environment in which it pays for citizens to follow their civic duty. This is likely to be relevant in all democracies. Tax commissioners should be well aware of the existence of such a contract just as the Secretary of the US Treasury stated in 1929: *'We want the bureau representative to meet the taxpayer and discuss his problems sympathetically, understandingly, frankly and fairly.'*

¹³ See also the special issue on Social Norms, Social Meaning, and the Economic Analysis of Law in the *Journal of Legal Studies* 27 (June 1998). However, the relevance of norm-mediated effects of lawmaking ('expressive law') is contested (Adler, 2000, Anderson & Pildes, 2000).

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