Trust in Authorities and Power to Enforce Tax Compliance: An Empirical Analysis of the "Slippery Slope Framework"

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Tax payments are enhanced by taxpayers' trust in authorities or by authorities' power leading to voluntary or enforced tax compliance, respectively. A laboratory experiment and an online experiment examined these assumptions, manipulating trust in and power of authorities. In Experiment 1, participants paid taxes in twenty periods. Results showed that trust and power positively influence tax payments. Trust increases and power decreases voluntary compliance, whereas power increases and trust decreases enforced compliance. Experiment 2 analyzed the impact of trust and power with self-employed taxpayers' intentions to pay taxes. The overall pattern of the findings of Experiment 1 were replicated and expanded with strategic behavior; strategic behavior was higher in the case of low trust and high power when compared to that of high trust and high power.

INTRODUCTION

Paying taxes is a relevant civic duty that allows governments to provide public goods and to distribute wealth. Taxpayers often take their taxpaying responsibilities with a pinch of salt, however. To grant public welfare, governments have to employ different approaches of collecting taxes. Kirchler (2007) summarizes economic, sociological, and psychological approaches of tax compliance. His broad review includes taxpayers' rational decisions under uncertainty (Allingham and Sandmo 1972; Srinivasan 1973); taxpayers' attitudes (e.g., Hessing, Elffers, and Weigel 1988; Kirchler 1999; Vogel 1974); social representations of taxes, tax evasion, and avoidance (e.g., Kirchler, Maciejovsky, and Schneider 2003); feelings of reactance (e.g.,

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Kirchler 1999); taxpayers' social identity and fairness perceptions (e.g., Wenzel 2002); social norms and personality characteristics (e.g., Hessing, Elffers, and Weigel 1988), and motivational postures (e.g., Braithwaite 2003).

Kirchler (2007) and Kirchler, Hoelzl, and Wahl (2008) integrate and illustrate these different approaches in the "slippery slope framework." Beside exogenous economic factors, such as income, tax rate, audit probability, and fine rate, individual and social variables also expand into the framework, fostering the two main framework dimensions *trust in authorities* and *power of authorities*. According to the framework, tax payments can be increased using two paths: (1) by increasing trust in tax authorities and/or (2) by increasing deterrence power of tax authorities. Although the behavioral outcomes are honest tax payments in both cases, the quality of tax compliance differs, and is either voluntary or enforced.

The present study provides the first empirical analysis of the main hypotheses of the "slippery slope framework." The framework's assumptions are that both trust in authorities and power of authorities increase tax compliance. The obtained quality of compliance differs, however. A laboratory and an online experiment were conducted to investigate whether trust in authorities increases voluntary tax compliance and whether power of authorities increases enforced tax compliance. Voluntary tax compliance was operationalized as motivational posture "commitment," whereas enforced tax compliance was operationalized as "resistance" (Braithwaite 2003). Two different samples were used: students and self-employed taxpayers. This allowed us to resolve well-known shortcomings of student sample laboratory experiments.

RELATED LITERATURE

THE SLIPPERY SLOPE FRAMEWORK

The slippery slope framework (Kirchler 2007; Kirchler, Hoelzl, and Wahl 2008) consists of three dimensions: (1) trust in tax authorities, (2) power of tax authorities, and (3) tax payments. Tax payments are assumed to be influenced by trust and power of authorities: if both trust and power are at a minimum level, tax payments are assumed to be low; taxpayers are acting egoistically through maximizing their profit by evading taxes. If trust in authorities increases, however, taxpayers' tax payments are also assumed to increase. Furthermore, if the power of authorities increases, tax payments are expected to increase as well.

TRUST IN AUTHORITIES

Kirchler, Hoelzl, and Wahl (2008) define trust as "a general opinion of individuals and social groups that the tax authorities are benevolent and work beneficially for the common good" (212). They refer to relational

aspects of trust (Eberl 2003) and to the concept of "social trust," distinguishing it from calculative trust (Tyler 2003).

Findings from prior research on national and international survey data show that trust in tax authorities is positively related to tax compliance (e.g., Torgler 2003; Torgler and Schneider 2005). As a noteworthy example, Murphy (2004) analyzed survey data from 2,292 Australian tax avoiders and found that high trust resulted in low resistance to tax authorities and emphasized the key role of trust in enhancing tax compliance. Fjeldstad (2004) found that trust in the government, as well as perceived procedural fairness, affects compliance of paying service charges in South Africa. Results from Swedish survey data highlight the importance of politicians' trustworthiness for maintaining tax compliance (Hammar, Jagers, and Nordblom 2009). Furthermore, comparisons between forty-seven different countries revealed a negative relation between trust in governments and tax evasion (Richardson 2008). In Argentina and Chile, commitment and willingness to comply was found to be related to satisfaction with public services (Bergman 2002). Differences between tax compliance in Botswana and South Africa were found to be due to differences in perceived tax administration and taxpayers' attitudes towards the government (Cummings et al. 2005). Also, experimental research found that trust in the state has a positive impact on social representations of taxes (e.g., Pitters, Hinterhofer, and Kirchler 2007). In a recent review of tax compliance studies, Lavoie (2008) emphasizes the important role of trust in authorities (as well as trust in other taxpayers' willingness to cooperate) to foster tax compliance. Similarly, Feld and Frey (2007) highlight the importance of how taxpayers feel they are treated by tax authorities and refer to a "psychological contract" and a relationship of mutual respect that leads taxpayers to behave loyally and to pay taxes honestly.

According to Kirchler, Hoelzl, and Wahl's (2008) demonstration, mutual trust between the authorities and taxpayers leads to a synergistic tax climate. In a synergistic climate the authorities trust that taxpayers pay their taxes honestly, and therefore the authorities treat them with courtesy and respect. In turn, the taxpayers trust that authorities provide good services for them, and thus they pay their fair share of taxes.

POWER OF AUTHORITIES

Power of authorities is defined as taxpayers' perception of tax authorities' capacity to detect and punish tax crimes (Kirchler, Hoelzl, and Wahl 2008). Rational models of tax evasion can be allocated on this dimension of the framework. Empirical findings regarding power of authorities include findings on the effect of income, tax rates, audit probabilities, fines, repeated audits, as well as on the withholding phenomenon and the related framing effects (for an overview see Kirchler 2007). The deterrent effects of these enforcing factors appear to be inconclusive in the literature, however, with some studies confirming their positive effect, while others report contrary

results (Andreoni, Erard, and Feinstein 1998; Fischer, Wartick, and Mark 1992; Frey 2003). In line with the definition of power given by Kirchler, Hoelzl, and Wahl (2008), Fischer, Wartick, and Mark (1992) emphasized the importance of taking into account the subjective rather than the objective probability of detection. Therefore, authorities' power might not have an objective deterrent effect on tax compliance, but it is moderated by taxpayers' perceptions and subjective evaluations of authorities' abilities to detect tax frauds and to deter evasion (Fischer, Wartick, and Mark 1992).

Following Kirchler, Hoelzl, and Wahl (2008) the perception and execution of too much power leads to mutual distrust between the authorities and taxpayers, which represents an antagonistic tax climate. In an antagonistic climate, the authorities act on the assumption that taxpayers evade taxes whenever they have a chance to do so. Therefore, the authorities use extensive audits and severe punishment to coerce taxpayers' honest tax payments. In response, taxpayers feel persecuted by the authorities and therefore try to get away from them.

DYNAMIC EFFECTS OF TRUST AND POWER

Contrary to previous research of tax behavior, the slippery slope framework also takes into account dynamic effects of power on trust and of trust on power. Trust and power not only determine the amount of tax payments but are also interrelated insofar as a change of one parameter can affect the second parameter (Kirchler 2007; Kirchler, Hoelzl, and Wahl 2008). Let us assume that through a change of government policies, fines for tax evasion are amplified. On the one hand, honest taxpayers could perceive this change in power as a sign that dishonest taxpayers will be punished with good cause. Accordingly, their trust in authorities will increase and initiate an upward pull of tax payments. The resulting tax climate is more synergistic than the previous. On the other hand, taxpayers may perceive this change as an increase in severity and as a signal of distrust. As trust is inherently reciprocal in nature, taxpayers might lose trust in authorities accordingly, and a downward pull of tax payments might result. The now-prevailing tax climate will be perceived as more antagonistic. In the first scenario the increased power is perceived as fair and thus as legitimate, whereas in the second scenario, the increase in power is experienced as unfair and therefore as coercive. It is necessary, then, to distinguish between legitimate power and coercive power (Turner 2005). While legitimate power can be seen as a positive evaluation of authorities' power that is connected with positive attitudes towards tax authorities, coercive power describes tax authorities' abilities to detect tax crimes and to carry out severe punishment. As long as power of authorities is perceived as legitimate, it is not necessarily regarded as negative but instead is perceived as having positive effects on citizens' trust (Lavoie 2008).

Legitimacy of authorities' actions is deeply connected with procedural fairness (Tyler 1990a, 1990b). For example, in Switzerland, if taxpayers are

called to participate in decision-making processes through referenda, authorities' power is likely to be perceived as legitimate, and actions against evasion serve the maintenance of law and order (Bohnet and Frey 1994). In contrast, if citizens have no voice, authorities' power may be perceived as coercive, and actions to control citizens are likely to be judged as "cops fighting robbers." Therefore, the prevailing tax climate influences the perception of changes in power. In a synergistic climate, increased power is perceived as legitimate, whereas the same increase is perceived as coercive in an antagonistic climate. Accordingly, Sheffrin and Triest (1992) found that taxpayers' attitudes towards authorities and social norms shape the effect of increased audit probabilities on tax compliance. Falk and Kosfeld (2004) found that being controlled and thus feeling distrusted reduces trust and consequently cooperation.

An opposing effect is possible, however, as governments lacking legitimate power are hardly trusted by citizens. In this case, the missing enforcement of dishonest taxpayers could undermine a synergistic climate and trusting per se and honest taxpayers could start to distrust the authorities. Consequently, authorities need to exert power in an appropriate way in order to be judged as acting fairly and serving the community by enforcing cooperation from evading taxpayers (Lavoie 2008). Richardson (2008) found that trust and legal enforcement strategies were connected with lower tax evasion in different countries. In such a situation, a robust synergistic climate is perceived, by the authorities and by the taxpayers, which could lead to tax payments at the highest stage.

ENFORCED VERSUS VOLUNTARY COMPLIANCE

Based on the assumptions of the slippery slope framework, tax payments are assumed to be at a high level in cases of trustworthy authorities as well as in cases of draconic deterrence and fines (Hypothesis 1). The resulting quality and motivation to comply differs, however (Kirchler 2007; Kirchler, Hoelzl, and Wahl 2008). In cases of high trust in authorities, taxpayers perceive a synergistic climate. They feel morally motivated to contribute to the community and pay their taxes spontaneously, abstaining from extensive decision making and aiming to optimize their individual profit. Therefore, tax payments originating from trust correspond to a more voluntary character, and taxpayers fulfill their duties because they are committed to the law (Hypothesis 2; Forest 2000; James and Alley 2002). If the power of authorities increases and authorities are perceived as acting in an untrustworthy manner, taxpayers perceive the prevailing climate as antagonistic. They are likely to weigh up gains against the costs of evasion and pay their taxes (if costs of detection and fines for evasion exceed the gains). In this case, tax payments are enforced through authorities' power to efficiently control and fine noncompliance (Hypothesis 3; see also Forest 2000; James and Alley 2002). The perception of excessive power could be interpreted by taxpayers as an antagonistic climate. Taxpayers could feel constrained by the authorities, which is likely to elicit taxpayers' reactance (Brehm 1966). Taxpayers could consequently be motivated to compete against tax authorities and engage in exploiting loopholes in the surveillance system to minimize their taxes (i.e., strategic taxpaying behavior). Therefore, we assume that high power of authorities increases strategic taxpaying behavior (Hypothesis 4). Taxpayers who behave strategically are calculative decision makers who comply when the probability of an audit is high and fines for evasion are severe. When detection of evasion is unlikely, however, they will evade taxes, irrespective of audits and fines.

To fully map the compliance process, certain connections between tax payments and the different forms of compliance and strategic taxpaying behaviors are suggested. Kirchler and Wahl (2010) found a positive link between tax payments and voluntary compliance. They also expected to find a positive link between tax payments and enforced compliance. Furthermore, they found a negative relationship between tax payments and forms of tax evasion that are hard to detect.

The difference between voluntary and enforced tax compliance is mirrored in the underlying motivation to comply. In the present experiments, we used Braithwaite's (2003) motivational postures "commitment" and "resistance" to operationalize the underlying motivational structure of voluntary and enforced compliance. In the case of high trust and resulting voluntary tax compliance, the motivational orientation is explained by the motivational posture "commitment" (Braithwaite 2003). Committed taxpayers feel a moral obligation to contribute to the community and pay their tax share with good will. We assume that commitment is higher if taxpayers trust their authorities-in particular, when the power of authorities is perceived as legitimate. In the case of low trust and high power with resulting enforced tax compliance, the motivational posture is "resistance" (Braithwaite 2003). Resistant taxpayers distrust tax authorities' intentions of benevolent and cooperative behavior towards them and call on other taxpayers to stand up to and challenge authorities. Also, French and Raven (1959) state in their seminal work on social power that coercive power leads to resistance. We expect that resistance is higher if taxpayers are enforced through high (coercive) power, especially if they do not trust tax authorities. As a consequence, we assume that taxpayers experiencing powerful authorities evade more when detection is unlikely (i.e., strategic taxpaying behavior) than taxpayers who trust the authorities. Two experiments were conducted to test these hypotheses. First, a computer-aided laboratory experiment (Experiment 1) was designed to analyze the influence of trust and power on actual tax payments and to differentiate between voluntary and enforced tax compliance at the motivational level. Experiment 2 constitutes an online experiment using a sample of self-employed taxpayers, aiming to replicate findings of the first experiment and extending them by also focusing on strategic taxpaying behavior.

EXPERIMENT 1

METHOD

Participants

Overall, 124 students participated in the laboratory experiment. Four participants failed to complete the example task described below and were therefore excluded from further analyses. The final data set included 120 participants (64 females, 56 males, aged between 18 and 49, M = 23.66 years, SD = 3.96, Md = 23.00). A net income equal or below EUR 500 was indicated by 39.20 percent of the participants. Most participants reported a net income between EUR 501 and EUR 1,000 per month (50.80 percent), 9.10 percent stated an income above EUR 1,001, and 0.80 percent of the participants did not indicate their monthly salary.

Material and Experimental Procedures

The experiment was computer-aided, and programmed with z-Tree (Fischbacher 2007). Instructions were given on the computer and provided in printed form. Participants were told that they should imagine living and working in a country called Varosia, and paying taxes over several filing periods. They were told to imagine being self-employed, earning their income in Varosia, and paying taxes.

Participants were informed about (1) their income in each tax filing period (ECU 3,500), (2) their tax liability in each period (ECU 1,400 = 40 percent), (3) the audit probability (10 percent), and (4) fines in case of detected evasion (one times the evaded amount). In each period, participants decided how much tax to pay, from ECU 0 to ECU 1,400. In each period in which no audit occurred, participants' profit was their income minus taxes paid. In each period in which an audit did occur, participants' profit consisted of their income minus taxes due and minus one times the evaded amount (as a fine).

To ensure that all participants understood the instructions, they had to solve an example task. When they faced problems in solving the task, further explanations were provided by the experimenter. Data from participants who had problems understanding the task were excluded from the analyses.

After solving the example task, participants read the description of the fictitious country, Varosia, and imagined, as vividly as possible, living there and paying their taxes to authorities that were either trusted, or not, and powerful, or not (see Appendix A; cf. vignettes; Alexander and Becker 1978). Participants were randomly assigned to one of the four experimental conditions (low versus high trust in authorities, and low versus high power of authorities).

In the *low trust* condition, the text stated that Varosia's tax authorities are highly untrustworthy. One statement was that the authorities are not service-

oriented and that many politicians embezzle tax money. The text of the *high trust* condition stated that Varosia's tax authorities are highly trustworthy, that authorities act in service-oriented ways, and that few politicians embezzle tax money. In the *low power* condition, tax authorities were described as highly ineffective in detecting tax evasion. For example, participants were told that due to the prevailing tax law, auditing taxpayers is difficult and not very effective, and that the audit rate is low. In the *high power* condition, tax authorities were described as working efficiently. Participants read that the tax law supports the application of audits, that audits are effective, and that the audit rate is high. For comparability of results, however, audit probabilities and fine rates of the tax simulation experiment were held constant. As parameters were described as low or high without a benchmark in the power conditions, participants had to rely on the description to get an idea of the authorities' power.

Participants were asked to read the description of Varosia and to imagine living there before the tax filing periods, after ten filing periods, and after twenty filing periods. After every reading of the description, self-designed manipulation check items were presented on perceived trust in Varosia's authorities (MC1_{trust}, MC2_{trust}, MC3_{trust}), and on power of authorities (MC1_{power}, MC2_{power}, MC1_{power}; answering format 1 = strongly disagree to 7 = strongly agree), combined with three distraction items. As perceived fairness is one of the main components of perceived trust, the manipulation check items on trust were designed to investigate different aspects of perceived fairness. Audits were randomly set over the twenty filing periods before the experiment and were fixed for all participants after period three and fifteen.

After filing taxes, motivational postures were assessed: participants answered eight items on commitment (e.g., "Paying tax is the right thing to do" or "I feel a moral obligation to pay my tax"; 1 = strongly disagree to 7 = strongly agree; Braithwaite 2003) and six items on resistance (e.g., "If you don't cooperate with the tax office, they will get tough with you" or "The tax office is more interested in catching you for doing the wrong thing, than helping you do the right thing"; 1 = strongly disagree to 7 = strongly agree; Braithwaite 2003). Finally, participants were paid their average profit (conversion rate EUR 1 = ECU 700; M = EUR 3.70, SD = 0.54) and were dismissed. Items used in Experiment 1 are depicted in Appendix B.

RESULTS

Manipulation Check

Manipulation of trust in Varosia's authorities and power was checked at the beginning of the filing periods, after period ten, and at the end. A two-way MANOVA was calculated, with trust and power as independent factors, along with answers on trust and power as dependent variables. The three

		Low Trust		High Trust	
Dependent Variable		Low Power	High Power	Low Power	High Power
Trust					
MC1 _{trust}	The governmental authorities in Varosia act fair towards their citizens.	1.77 (1.22) ^a	1.88 (1.34) ^a	5.74 (1.03) ^b	5.93 (1.02) ^b
MC2 _{trust}	In Varosia the interests of a few are considered stronger than the interests of the community. (r)	1.77 (1.01) ^a	2.06 (1.41) ^a	5.71 (1.63) ^b	5.77 (1.33) ^b
MC3 _{trust}	The governmental institutions of Varosia act upon their citizens' interests.	1.83 (1.51) ^a	1.52 (0.83) ^a	5.97 (1.02) ^b	5.53 (1.48) ^b
Power					
MC1 _{power}	Chances that tax evasion will be detected in Varosia are high.	1.97 (1.13) ^a	5.82 (1.36) ^b	1.68 (0.75) ^a	5.50 (1.74) ^b
MC2 _{power}	It is easy to evade taxes in Varosia. (r)	1.93 (1.01) ^a	4.91 (1.89) ^b	1.87 (1.23) ^a	4.73 (2.07) ^b
MC3 _{power}	The governmental institutions are very effective in the suppression of tax criminality.	1.37 (0.67) ^a	4.36 (2.23) ^b	1.94 (1.77) ^a	4.57 (2.18) ^b

 Table 1. Means and Standard Deviations of Manipulation Check Items as a

 Function of Trust and Power

Note: Higher scores indicate higher acceptance of the statement. Standard deviations are given in parentheses. (r) indicates recoded items. Means with differing letters in the same row differ at p < .05.

items on trust, as well as the three items on power were highly reliable ($\alpha = .90$ and $\alpha = .85$, respectively). As expected, the multivariate analysis reveals no interaction effect, F(2,115) = 0.11, p = .90, but a main effect for trust, F(2,115) = 388.50, p < .01, $\eta^2 = .87$, and for power, F(2,115) = 122.28, p < .01, $\eta^2 = .68$.

Table 1 shows the means and standard deviations of each manipulation check item. For the question of trust, the univariate results show that participants who were told that Varosia's politicians are trustworthy trust the authorities more than the participants who were told that the politicians are untrustworthy (F(1,116) = 762.91, p < .01, $\eta^2 = .87$; low trust: M = 1.78, SD = 0.76; high trust: M = 5.81, SD = 0.82). The power manipulation does not affect the reported trust in the authorities (F(1,116) = 0.15, p = .70; low power: M = 3.82, SD = 2.21; high power: M = 3.70, SD = 2.14). Similarly, for the power items, univariate results show that participants who were told that authorities are powerful perceive Varosia's authorities as more powerful than participants who were told that authorities' power is weak (F(1,116) = 239.45, p < .01, $\eta^2 = .67$; low power: M = 1.75, SD = 0.75; high power: M = 4.99,

SD = 1.42). The trust manipulation does not affect the reported power of Varosia (F(1,116) = 0.21, p = .65; low trust: M = 3.44, SD = 1.93, high trust: M = 3.29, SD = 2.05). According to these results, the manipulation of trust and power proves to be successful.

Tax Payments

In the following, analyses of tax payments by trust and power are presented. Table 2 shows the estimated means and standard errors of mean tax payments over twenty taxpaying periods, per condition. A repeated ANCOVA (with trust and power as independent factors; tax payments as dependent variables; and gender, age, and income as covariates) reveals no interaction effect between trust and power, F(1,112) = 1.32, p = .25; but it does reveal two significant main effects: Participants contribute more if authorities are described as trustworthy rather than untrustworthy, F(1,112) = 3.71, p = .06, $\eta^2 = .03$. Contributions are also high if authorities are described as powerful rather than weak, F(1,112) = 8.10, p < .01, $\eta^2 = .07$. As expected, tax payments are highest when trust and power are high (estimated mean = 1.042.58; SE = 80.60) and lowest when trust and power are low (estimated mean = 655.83; SE = 80.87). Tax payments are equal in the latter condition, in the case of high trust and low power (*estimated mean* = 718.74; SE = 81.20), and in the case of low trust and high power (estimated mean = 795.97; SE = 78.22). The covariate gender significantly affects mean tax contributions, F(1,112) = 16.18, $p < .01, \eta^2 = .13$; women contribute more taxes than men. Age and income

	Low Trust		High Trust		
Dependent Variables	Low Power $n = 30$	High Power $n = 31$	Low Power $n = 30$	High Power n = 29	
Mean tax payments	655.83 (80.87) ^a	795.97 (78.22) ^a	718.74 (81.20) ^a	1,042.58 (80.60) ^b	
Voluntary tax compliance (i.e., "commitment"; Braithwaite 2003)	2.81 (0.22) ^a	2.59 (0.22) ^a	4.49 (0.22) ^b	5.21 (0.22) ^c	
Enforced tax compliance (i.e., "resistance"; Braithwaite 2003)	3.78 (0.16) ^a	4.81 (0.16) ^b	2.93 (0.16) ^c	3.37 (0.16) ^{ac}	

Table 2. Estimated Means and Standard Errors of Mean Tax Payments during the
Experiment, Enforced Tax Compliance, and Voluntary Tax Compliance as a
Function of Trust and Power When Controlling for Gender, Age, and Income

Note: Higher scores indicate higher tax payments and higher acceptance of the items. Means are corrected for covariates gender = 0.54, age = 23.68, and income = 1.71. Standard errors are given in parentheses. Estimated means with differing letters in the same row differ at p < .05.

have no influence on tax contributions, F(1,112) = 1.02, p = .31 and F(1,112) = 0.14, p = .71, respectively.

Voluntary Tax Compliance Versus Enforced Tax Compliance

In order to test the influence of trust and power on voluntary and enforced tax compliance, a two-way MANCOVA was calculated with trust and power as independent factors and voluntary tax compliance and enforced tax compliance as dependent variables and gender, age, and income as covariates. Table 2 contains the estimated means and standard errors of the scales for voluntary tax compliance (i.e., "commitment"; $\alpha = .92$) and enforced tax compliance (i.e., "resistance"; $\alpha = .61$). Multivariate analyses reveal a significant interaction effect of trust and power, F(2,111) = 3.47, p = .04, $\eta^2 = .06$, as well as a significant main effect for trust, F(2,111) = 63.41, p < .01, $\eta^2 = .53$, and for power, F(2,111) = 11.37, p < .01, $\eta^2 = .17$.

For voluntary tax compliance, the univariate results reveal a significant interaction of trust and power, F(1,112) = 4.49, p = .04; $\eta^2 = .04$. This indicates that voluntary compliance is highest when authorities are trustworthy and powerful (*estimated mean* = 5.21; SE = 0.22) compared to when authorities are trustworthy and powerless (*estimated mean* = 4.49; SE = 0.22), untrustworthy and powerless (*estimated mean* = 2.81; SE = 0.22), or untrustworthy and powerful (*estimated mean* = 2.59; SE = 0.22). For trust, a significant main effect was found, F(1,112) = 94.17, p < .01, $\eta^2 = .46$, showing that participants are generally more voluntary compliant to trustworthy authorities than to untrustworthy authorities. Furthermore, no significant main effect of power was revealed when controlling for gender, age, and income, F(1,112) = 1.28, p = .26. Also for the covariates gender, age, and income, no significant effects were found, F(1,112) = 0.41, p = .52; F(1,112) = 0.35, p = .55, and F(1,112) = 0.01, p = .91, respectively.

For enforced tax compliance, the univariate results reveal an interaction tendency between trust and power when controlling for gender, age, and income, F(1,112) = 3.45, p = .07, $\eta^2 = .03$. This indicates that enforced tax compliance is lowest when authorities are trustworthy and powerless (estimated mean = 2.93; SE = 0.16), and when authorities are trustworthy and powerful (estimated mean = 3.37; SE = 0.16). Enforced compliance is equally high in cases of trustworthy and powerful authorities, and untrustworthy and powerless authorities (*estimated mean* = 3.78; SE = 0.16); however, when authorities are untrustworthy and powerful (estimated mean = 4.81; SE = 0.16), the highest enforced compliance overall results. The significant main effect of trust indicates that participants who encounter untrustworthy authorities generally feel more enforced than participants who are told that the authorities are trustworthy, F(1,112) = 50.02, p < .01, $\eta^2 = .31$. The significant main effect of power shows that powerful authorities provoke more enforced compliance than powerless authorities, F(1,112) = 19.87, p < .01, $\eta^2 = .15$. The covariates gender and income are not significant, F(1,112) = 1.93, p = .17 and F(1,112) = 0.16, p = .69, respectively, whereas age approaches significance F(1,112) = 3.59, p = .06, $\eta^2 = .03$.

The overall results of Experiment 1 support the assumptions of the slippery slope framework, which indicates that both high trust and high power lead to increased tax payments. Furthermore, motivational orientations of tax payments differ. On the one hand, high trust fosters voluntary tax compliance. In addition, results indicate that a combination of high trust and high power evoke the highest voluntary tax compliance. On the other hand, high power leads to enforced tax compliance. A combination of low trust and high power fosters the highest enforced tax compliance, however.

Experiment 1 suffers from two shortcomings: (1) Participants were students who are not familiar with paying taxes. (2) Albeit repeated-measure laboratory experiments are well established in tax compliance research, the artificiality of the setting might be criticized. Therefore, a further experiment was conducted to replicate the above presented results with self-employed taxpayers reporting their intended behavior in an online study. Additionally, Experiment 2 distinguishes between voluntary and enforced tax compliance by taking into account strategic taxpaying behavior.

EXPERIMENT 2

METHOD

Participants

In the present experiment, only self-employed taxpayers (N = 186) participated because self-employed people have more opportunities to evade taxes and thus occupy a unique position compared with white-collar and blue-collar workers (Kirchler 2007). Furthermore, self-employed taxpayers have more experience of declaring taxes and of the tax law. In total, 186 participants accessed the online questionnaire. Data of 127 participants (41 females and 86 males; ages ranging between 22 and 69 years, M = 38.54, SD = 10.50, Md = 36.00) were found suitable for further analyses. A monthly average net income below EUR 1,000 was indicated by 16.50 percent. An income between EUR 1,001 and EUR 2,000 was indicated by 26.00 percent of the participants. Most participants reported an income between EUR 2,001 and EUR 3,000 (26.80 percent). Only 15.70 percent reported an income between EUR 3,001 and EUR 4,000 and 15.00 percent above EUR 4,000. One-third of the participants (32.30 percent) had experienced at least one tax audit during their business life.

Material and Experimental Procedures

Experiment 2 was conducted using an online questionnaire. Self-employed taxpayers known to the authors received an e-mail in which they were asked

to complete the questionnaire and send the e-mail to acquainted selfemployed taxpayers (i.e., snowball sampling). In addition, the questionnaire link was posted in an online forum for local, self-employed taxpayers on a business platform (http://www.xing.com). The resulting sample might not be entirely representative for the real population of taxpayers, as not all taxpayers had the same chance to receive the e-mail, and the participating taxpayers might have been more motivated than the nonparticipating taxpayers. Therefore, the obtained results should be interpreted with caution. No incentives were provided for participation.

When participants began the questionnaire, they had to indicate their type of employment. Those who indicated they were self-employed continued to answer the questionnaire, whereas those who only indicated other types of employment were thanked and dismissed from participation because they had no present experience with tax declarations. To prevent participants from retrying to fill in the questionnaire, their IP addresses were saved and they were denied further access to the questionnaire. Participants who declared themselves as self-employed were randomly assigned to one of the four descriptions representing the four conditions of the between subjects' 2 (low trust vs. high trust) by 2 (low power vs. high power) factorial design, which were used in Experiment 1. They were asked to read the descriptions of Varosia and to imagine they lived, worked, and paid taxes in this country. After reading the description, they answered three items on their general intention to pay taxes in Varosia (e.g., "How likely will you pay your taxes completely honestly?"; 1 = very unlikely to 7 = very likely). Furthermore, participants answered the same items regarding voluntary and enforced tax compliance as in Experiment 1 (1 = strongly disagree to 7 = strongly agree;Braithwaite 2003). To assess strategic taxpaying behavior, participants were asked to indicate how they would behave in situations in which they had the possibility to evade taxes with an extremely low detection probability (e.g., "Several times you had dinner with friends. Now you think about claiming those restaurant bills as business meals in your income tax return. How likely would you be to declare those restaurant bills as business meals in your income tax return?"; 1 = very unlikely to 7 = very likely). These five short items represent tax evasion, which is obviously illegal. It was assumed that strategic taxpaying behavior is highest when taxpayers do not trust their authorities and when they feel enforced by authorities' coercive power. Items included in the questionnaire are shown in Appendix B.

RESULTS

Intended Tax Payments

As in Experiment 1, in all analyses we controlled for gender, age, and income. Table 3 shows the estimated means and standard errors of the scale measur-

	Low Trust		High Trust	
Dependent Variables	Low Power $n = 32$	High Power $n = 31$	Low Power $n = 36$	High Power $n = 28$
Intended tax payments	4.16 (0.28) ^a	5.02 (0.29) ^b	4.96 (0.27) ^b	5.84 (0.30)°
Voluntary tax compliance (i.e., "commitment"; Braithwaite 2003)	4.29 (0.20) ^a	3.60 (0.20) ^b	5.45 (0.19)°	5.43 (0.21) ^c
Enforced tax compliance (i.e., "resistance"; Braithwaite 2003)	4.39 (0.14) ^a	5.26 (0.14) ^b	3.64 (0.13) ^c	3.94 (0.15) ^c
Strategic taxpaying behavior	4.12 (0.30) ^{ab}	$4.70 \ (0.30)^a$	4.31 (0.28) ^{ab}	3.58 (0.32) ^b

Table 3. Estimated Means and Standard Errors of Intended Tax Payments, Voluntary Tax Compliance, Enforced Tax Compliance, and Strategic Taxpaying Behavior as a Function of Trust and Power When Controlling for Gender, Age, and Income

Note: Higher scores indicate higher acceptance of the items. Means are corrected for covariates gender = 0.32, age = 38.54, and income = 2.87. Standard errors are given in parenthesis. Estimated means with differing letters in the same row differ at p < .05.

ing the intention to pay taxes ($\alpha = .84$). We calculated a two-way ANCOVA with trust and power as independent factors and intended tax payments as a dependent variable and controlled for gender, age, and income. No interaction between trust and power was found, F(1,120) = 0.00, p = .96. The main effects of trust and power were significant, however. Participants who were instructed that authorities are untrustworthy also reported less intention to pay taxes than participants who were told that authorities are trustworthy, $F(1,120) = 7.96, p < .01, \eta^2 = .06$. Furthermore, participants who read about powerless authorities indicated less tax compliance than participants who read about powerful authorities, F(1,120) = 9.38, p < .01, $\eta^2 = .07$. As in Experiment 1, the highest tax compliance was observed for trustworthy and powerful authorities (estimated mean = 5.84; SE = 0.30). Similar to Experiment 1, the lowest intended tax payments were found when authorities were described as untrustworthy and powerless (*estimated mean* = 4.16; SE = 0.28), although results in Experiment 1 did not reach significance. In cases of high trust and low power of authorities (*estimated mean* = 4.96; SE = 0.27), and low trust and high power of authorities (*estimated mean* = 5.02; SE = 0.29), intended tax payments did not differ. The covariate age had a significant influence on the intention to pay taxes, F(1,120) = 7.32, p < .01, $\eta^2 = .06$; older taxpayers indicated a higher intention than younger taxpayers. Gender and income did not influence intended tax payments significantly, F(1,120) = 2.03, p = .16 and F(1, 120) = 0.00, p = 1.00, respectively.

Voluntary Versus Enforced Tax Compliance

To test if trust and power influence voluntary and enforced tax compliance, a two-way MANCOVA was conducted with trust and power as independent factors; voluntary tax compliance and enforced tax compliance as dependent variables; and gender, age, and income as covariates. Table 3 contains the estimated means and standard errors for the scales of voluntary tax compliance (i.e., "commitment"; $\alpha = .93$) and enforced tax compliance (i.e., "resistance"; $\alpha = .63$). Multivariate results revealed a slightly significant interaction effect of trust and power, F(2,199) = 2.86, p = .06, $\eta^2 = .05$, as well as significant main effects for trust, F(2,119) = 44.72, p < .01, $\eta^2 = .42$, and for power, F(2,119) = 9.25, p < .01, $\eta^2 = .14$.

Univariate results of voluntary compliance revealed a tendency of an interaction between trust and power, F(1,120) = 2.86, p = .09, $\eta^2 = .02$. This suggests lowest voluntary compliance when authorities are untrustworthy and powerful (*estimated mean* = 3.60; SE = 0.20), compared to when authorities are untrustworthy and powerless (*estimated mean* = 4.29; SE = 0.20), trustworthy and powerless (*estimated mean* = 5.45; SE = 0.19), or trustworthy and powerful (*estimated mean* = 5.43; SE = 0.21). A significant main effect of trust, F(1,120) = 54.97, p < .01, $\eta^2 = .31$, indicates that participants are more voluntary compliant when authorities are trustworthy than when authorities are untrustworthy. Furthermore, participants who perceived authorities as powerless tended to report slightly more voluntary tax compliance than participants who perceived the authorities as powerful, F(1,120) = 3.12, p = .08, $\eta^2 = .03$. Again, age significantly influences voluntary tax compliance, F(1,120) = 14.83, p < .01, $\eta^2 = .11$, whereas gender and income do not, F(1,120) = 0.70, p = .41 and F(1,120) = 1.17, p = .28, respectively.

For enforced tax compliance, a significant interaction between trust and power was found when controlling for gender, age, and income, F(1,120) =4.14, p = .04, $\eta^2 = .03$. This result suggests that enforced tax compliance is highest when authorities are untrustworthy but powerful (estimated mean = 5.26; SE = 0.14), compared to when authorities are untrustworthy and powerless (*estimated mean* = 4.39; SE = 0.14), trustworthy and powerless (estimated mean = 3.64; SE = 0.13), or trustworthy and powerful (estimated mean = 3.94; SE = 0.15). The significant main effect of trust indicates that participants feel less enforcement and less resistance when facing trustworthy (compared to untrustworthy) authorities, F(1,120) = 54.71, p < .01, $\eta^2 =$.31. Furthermore, the significant main effect of power indicates that participants are more enforced when they are told about powerful authorities than when they are told about powerless authorities, F(1,120) = 17.89, p < 100.01, $\eta^2 = .13$. The covariates, gender, age, and income were not significant, F(1,120) = 0.00, p = .98; F(1,120) = 0.20, p = .65, and F(1,120) = 0.25,p = .62, respectively.

Strategic Taxpaying Behavior

One aim of this second study was to test whether strategic taxpaying behavior is especially pronounced in cases of low trust in authorities and high tax authorities' power. In this case, a "cops-and-robbers" attitude is assumed,

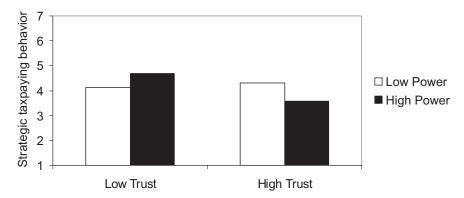


Figure 1. Extent of Strategic Taxpaying Behavior as a Function of Trust and Power When Controlling for Gender, Age, and Income.

and taxpayers could feel constrained, which might cause reactance (Brehm 1966). Therefore, under the condition of low trust and high power, taxpayers should evade as soon as they perceive a possibility to do so. Therefore, a two-way ANCOVA was calculated with trust and power as independent factors; strategic behavior as a dependent variable; and gender, age, and income as covariates. Table 3 shows the estimated means and standard errors of the scale measuring strategic taxpaying behavior ($\alpha = .83$).

According to our assumptions, we found a significant interaction between trust and power on strategic taxpaying behavior, F(1,120) = 4.86, p = .03, $\eta^2 = .04$, indicating that strategic behavior is highest when authorities are untrustworthy but powerful (*estimated mean* = 4.70; SE = 0.30). Strategic behavior is lowest when authorities are trustworthy and powerful (*estimated mean* = 3.58; SE = 0.32). If tax authorities are trustworthy but powerless (*estimated mean* = 4.31; SE = 0.28), or if they are perceived as untrustworthy and powerless (*estimated mean* = 4.12; SE = 0.30), strategic behavior does not differ. The interaction effect of power and trust on strategic taxpaying behavior is depicted in Figure 1. No significant main effects for trust and power were found, F(1,120) = 2.37, p = .13 and F(1,120) = 0.06, p = .81, respectively. Again, the covariate age significantly influences strategic behavior, F(1,120) = 23.23, p < .01, $\eta^2 = .16$, whereas gender and income do not influence strategic behavior significantly, F(1,120) = 1.41, p = .24 and F(1,120) = 0.20, p < .65, respectively.

Although some of the results did not reach significance, Experiment 2 replicated the general pattern of results found in Experiment 1 with selfemployed taxpayers. It was shown that trust and power influence the intention of paying taxes and that voluntary and enforced tax compliance differ regarding trust in authorities and power of authorities. Furthermore, participants indicated that they wanted to evade taxes strategically—in particular, when authorities are untrustworthy and powerful.

GENERAL DISCUSSION

The aim of the present article was to analyze whether trust in authorities and power of authorities increase tax payments. First, both experiments evidence the positive effects of trust and power on taxpayers' (intended) tax payments. Second, it was found that trust in authorities and the power of authorities differently affect the motivation to comply on a voluntary or an enforced basis. Additionally, Experiment 2 shows that taxpayers exploit loopholes in the tax surveillance system, preferably when authorities act in an untrustworthy way and exert much power over them. Strategic behavior is instead significantly lower when tax authorities are perceived as trustworthy and powerful.

The experimental results of both studies support the positive effect of trust on tax payments found previously in survey data and in experimental research (Bergman 2002; Murphy 2004; Pitters, Hinterhofer, and Kirchler 2007; Torgler 2003; Torgler and Schneider 2005). Furthermore, both studies show that audits and fines foster (intended) tax payments, which is also consistent with prior empirical and theoretical findings (Allingham and Sandmo 1972; Andreoni, Erard, and Feinstein 1998; Fischer, Wartick, and Mark 1992). Although the effects of trust and power were examined previously, this is the first article to integrate trust in authorities and the power of authorities into one, to employ an experimental design, and to investigate possible differences in tax payments resulting from trust and power, as stated by the slippery slope framework (Kirchler 2007; Kirchler, Hoelzl, and Wahl 2008).

Results of both experiments reflect the basic assumptions of the slippery slope framework (Kirchler 2007; Kirchler, Hoelzl, and Wahl 2008), suggesting that tax authorities can achieve tax payments through increasing taxpayers' trust in them and through demonstrating their power to monitor and fine tax cheaters. In Experiment 1, a combination of high trust and high power yielded the highest voluntary compliance; whereas in the case of low trust, voluntary compliance was lowest, independent of power. In Experiment 2, high trust resulted in the highest voluntary compliance, independent of power, whereas a combination of low trust and high power revealed the lowest voluntary compliance. Nevertheless, trust in authorities had a positive effect on voluntary compliance in both experiments. Also, enforced tax compliance was influenced most by a combination of power and trust. Both experiments show that the high power of authorities and low trust encourages the highest enforced compliance. Furthermore, the finding that taxpayers' strategic taxpaying behavior was highest in a punishing environment in which taxpayers distrusted the authorities and lowest when taxpayers trusted the punishing authorities reveals the important role that trust plays in the decision to pay taxes. This result resembles the differing consequences and the differing qualities of voluntary and enforced tax compliance. In line with the slippery slope framework, we conclude that voluntary compliant

taxpayers contribute their fair share to the common good, without hesitation. However, enforced compliant taxpayers pay taxes because they are audited and fined and might act strategically, as soon as they find a way to evade taxes undetected.

According to the slippery slope framework, tax payments are at 100 percent when trust is at its maximum, when power is at its maximum, and when both trust and power are at a maximum, whereas tax payments are at 0 percent when both trust and power are at a minimum. In the manipulation of both experiments, however, trust and power did not reach their extremes as suggested by the slippery slope framework. Although the scenarios used were more extreme than real life, they only ranged in the high and low areas of the concepts. Therefore, we did not expect to find the above-stated interaction effect of trust and power on tax payments but the two obtained main effects. Furthermore, as the extreme areas of trust and power were not reached, the model would rather predict the found additive positive effect of high trust and high power on tax payments. This finding supports the assumption that exerted power is likely to be perceived as legitimate in a trusting and synergistic tax climate, which can boost tax payments further. Thus, although the assumptions of the slippery slope framework suggest highest tax payments for maximum trust and/or power, the found main effects still support the stated assumptions of the framework. Future research should also examine the extreme areas of trust and power and their effect on tax payments, however.

The positive effects of trust and power concerning (intended) tax payments, as well as on voluntary and enforced tax compliance, were tested on two different samples using different measuring methods. Experiment 1 generated behavioral data from students filing taxes in a laboratory simulation, and Experiment 2 gained data from self-employed people who reported their reactions to a hypothetical situation in an online experiment. As both experiments prove that trust, as well as power, increase (intended) tax payments, these effects seem to be quite robust. Neither of the two experiments examines actual tax behavior, however, and therefore implications for actual tax compliance behavior remain untested. Also, the impact of trust and power on voluntary and enforced tax compliance was found to be quite similar in both experiments and might therefore be generalized.

To assess voluntary and enforced tax compliance, Braithwaite's (2003) motivational postures were used. Although the posture "commitment" reflects voluntary compliance and the posture "resistance" resembles enforced compliance quite well, neither totally corresponds with the underlying motivations of voluntary and enforced tax compliance. Therefore, future research should develop and apply new methods, especially aiming to measure and differentiate between voluntary and enforced tax compliance.

The present results suggest that governments should try to gain their citizens' trust. This could be achieved through emphasizing fair procedures (e.g., citizens' participation in the legislation) or through employing citizen-

friendly and service-oriented behavior of tax authorities (e.g., offering help in filling in forms correctly). In return, the trusting citizens will be voluntarily compliant and abstain from evasion when detection is unlikely, whereas they would evade in the case of distrust. Therefore, boosting citizens' trust in authorities would maximize tax payments and thus the public revenue.

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APPENDIX A: DESCRIPTION OF FICTITIOUS COUNTRY VAROSIA

All descriptions began as follows:

Please read the following description of a country:

Varosia is located in Europe and the territory of Varosia occupies 83,871 km². The official language is German.

In the last census of population in August 2007 Varosia had 16,336,000 inhabitants. The unemployment rate is at an average. Between the citizens of Varosia no large differences of income exist.

Afterwards relevant information for the manipulation of trust ([low] high) was varied between conditions:

Since Varosia's autonomy in 1949 it has been marked with a **[low] high** political stability and **[an oligarchic (authority of few)] a democratic** government. **[Seldom] Regularly** referenda are held, in which the citizens of Varosia can co-decide in the legislation.

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The government enjoys a **[bad]** good reputation in the population. It can be concluded from opinion polls that 70% of the citizens are **[not]** satisfied with the current government.

The tax load is **[not]** equitably distributed among the different occupational groups and income groups. Varosia's citizens do **[not]** have the opinion that everyone has to contribute her/his share on taxes.

Varosia's legislation is [not] transparent and the government offers [no] the opportunity of free counselling on judicial subjects and tax issues in information centers. Furthermore, Varosia's public authorities are [little] very service-oriented and [not] interested in supporting Varosia's citizens.

The budget expenditures of the state are **[not]** traceable for Varosia's citizens, because they are **[not] regularly** informed **by means of a clear official gazette** about the use of tax money. In an opinion poll in October 2007 78% of Varosia's citizens indicated to have the impression that their tax money is **[not]** used reasonable.

Besides [a lot of] little tax money is embezzled by politicians. According to an international corruption index (CPI) Varosia is one of the European countries with the [highest] lowest perceived corruption.

All these factors cause that the citizens of Varosia trust their country a [little] lot.

Furthermore, the descriptions were adapted to the manipulation of tax authorities' power (**[low] high**):

The prosecution of tax evaders is **[not]** very effective. Because of the tax legislation it is **[difficult] easy** for the government to conduct audits on its citizens and therewith to chase tax evaders.

The government assigns a **[low] high** budget to the tax office to punish tax evasion. With the means at hand it is **[not]** possible for the tax office to employ qualified tax inspectors. In addition the members of the tax office of Varosia are perceived as **[little] very** present.

The chance to be audited for self-employed people is very [low] high. This is to say that self-employed are **not** audited **very** often. Therefore, [not] very many of the committed tax offences can be detected. Moreover, the fines for tax evasion are [not] very severe in Varosia. When tax evaders are detected, they do [not] have to anticipate severe fines. The tax office does [not] exercise benignity.

All these factors cause that the citizens of Variosia assess their government as **[little] very** powerful.

APPENDIX B: ITEMS USED IN EXPERIMENT 1 AND EXPERIMENT 2

Strategic taxpaying behavior

- Two months ago you have been on a business trip to the US. The flight was paid for by your business partners; you still have the plane tickets, however. You could claim those plane tickets on your income tax return. How likely would you be to claim the plane tickets?
- You had several meals with friends. Now, you think about declaring the restaurant bills as business meals in your income tax return. How likely would you be to declare those restaurant bills as business meals?
- Recently you took part in a project in an acquaintance's company. Now you could conceal this taxable additional income on your income tax return. How likely is it that you would conceal this additional income?
- An acquaintance sold you his recently bought notebook for half of the purchase price. You will use the notebook in your work. He also gave you the original invoice of the notebook, which does not show the name of the purchaser. You have the possibility to declare this invoice in your income tax return. How likely would you be to declare your acquaintance's original invoice in your income tax return?
- Some time ago you had a presentation at a college in a neighbouring country of Varosia. You have the possibility not to declare the received income in your income tax return. How likely would you be not to declare this income?

Note: (r) recoded items.