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Voluntary versus enforced tax compliance: empirical evidence for the "slippery slope" framework

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Abstract The "slippery slope" framework is an alternative approach for research in tax compliance that suggests two key variables to obtain taxpayers' compliance: trust and power. Furthermore, two forms of compliance are distinguished. It is hypothesized that voluntary compliance depends primarily on trust in authorities, whereas enforced compliance is a function of the power attributed to authorities. Using a large data set (N = 3,071) on taxpayers from Austria, the United Kingdom, and the Czech Republic, these hypotheses could be confirmed. Furthermore, whereas voluntary compliance seems to be positively related to age and education, enforced compliance is negatively related to education.

Keywords Taxation · Tax compliance · Power · Trust · Age · Education

JEL Classification H20 · H24 · H26 · G28 · K34

1 Introduction

The publication of the formal model for income tax evasion (Allingham and Sandmo 1972; Srinivasan 1973) stimulated a bulk of empirical studies. Based on Becker's (1968) economic approach to criminal behavior, the model describes tax compliance as a decision under uncertainty with a safe option of an honest tax report and a risky option of evading all or part of the tax due. The decision is determined by four parameters overall: income, tax rate, audit probability, and penalty rate. The empirical findings on the impact of the models' parameters, however, are contradictory (for an

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overview see Kirchler et al. 2008). For instance, in an experiment by Webley et al. (1991) an effect of audit probability was observed but the level of fines had no impact on the reported income. In contrast, Alm et al. (1992) report an effect of fines in their experiment, although the effect was very weak. Similarly, psychological research on tax behavior reports inconsistent effects of non-economic variables (for an overview see Kirchler 2007). For example, Wenzel (2002) reports that the evidence for the impact of distributive justice on taxpayers' decisions is quite mixed. He demonstrates that justice concerns are relevant only if taxpayers identify themselves highly with the group within which an unequal distribution of outcomes occurs.

Besides the hunt for determinants of tax compliance a discussion has also emerged on how the dependent variable should be conceptualized. Andreoni et al. (1998) put forward that given the low probability of detection and the rather mild penalties in most countries, the question arises of why so many taxpayers are honest and do not evade as much as the Allingham and Sandmo (1972) model would predict. Braithwaite (2003) differentiates five motivational postures for (non-)compliance, ranging from the feeling of a moral obligation to pay one's fair share to enjoying the tax evasion "game" with authorities. In her study most taxpayers expressed positive motivational postures on taxpaying. Frey (1997) distinguishes between intrinsic and extrinsic motivation to pay taxes. Whereas the former encompasses the moral aspect of compliant behavior, the latter is determined by regulation measures.

The "slippery slope" framework (Kirchler et al. 2008) is an attempt to integrate the puzzling findings and concepts. It is suggested that the effectiveness of economic and non-economic factors depends on the relationship between taxpayers and tax authorities. In a trustful climate, confidence-building measures may be more important than in a relationship that is based primarily on the power of authorities, where deterrence may be the right policy. Moreover, two different forms of tax compliance are assumed in this framework: voluntary and enforced compliance.

In the following we will give a brief introduction to the slippery slope framework and test its main hypotheses with a large data set from Austria, the United Kingdom, and the Czech Republic.

2 The "slippery slope" framework: a framework for tax compliance

The importance of the interaction between tax authorities and taxpayers, and of the resulting climate among the two parties, has frequently been pointed out in the tax literature (e.g., Adams and Webley 2001; Braithwaite 2003, 2009; Cullis and Lewis 1997; Schmölders 1970). Accordingly, the "slippery slope" framework distinguishes between a synergistic and an antagonistic climate.

A synergistic climate is denoted by a respectful and trusting relationship between authorities and citizens. The work of tax authorities would resemble a customer-oriented service being provided to help and support taxpayers to fulfil their duties. Feld and Frey (2005), for instance, attribute the relatively high tax morale of Swiss taxpayers to the synergistic form of cooperation prevailing in their country. A marker variable for a synergistic variable is mutual trust, i.e., tax authorities trusting

in the good will of the major part of taxpayers, and taxpayers trusting in the benevolence and efficiency of *their* authorities.

An antagonistic climate, on the other hand, can result in a "cops and robbers" situation: if tax authorities assume that citizens are basically inclined to evade taxes and approach them accordingly, taxpayers will likewise perceive them as aiming to pursue, criminalize, and punish taxpayers—regardless of whether an offence has actually been committed or not. A marker for an antagonistic climate is the degree of coercive power that is assigned to the tax authority. Rigid controls and punishment enforce taxpayers to comply, but may also yield negative attitudes towards taxes.

Tax compliance can be achieved in either way, by encouraging voluntary action or by enforcing compliance. Accordingly, the "slippery slope" framework differentiates voluntary from enforced compliance. Whereas voluntary compliance is assumed to depend on trust in authorities, enforced compliance is assumed to depend on the (perceived) power of authorities.[1] Maximum tax compliance, regardless of whether voluntary or enforced, can therefore be achieved by high trust and/or high power.

Though for the tax revenue it may seem irrelevant whether taxes were paid voluntarily or not, the differentiation between voluntary and enforced compliance is important with respect to the approach of responsive regulation (Ayres and Braithwaite 1992; Braithwaite 2007, 2009). Tax authorities are required to treat taxpayers according to their behavior. Whereas payment by non-compliant taxpayers should be enforced by the full rigor of the law, the voluntary compliant should be treated with respect and be supported.

It should be noted that power may influence trust and vice versa. For instance, exerting coercive power may corroborate trust, as Cialdini (1996) suggests in a discussion of the effectiveness of surveillance in organizations. He argues that monitoring employees communicates the distrust of the employer. A similar mechanism can be assumed for the situation of honest taxpayers who are rigorously audited. Infrequent and slack tax audits, on the other hand, might raise doubts about the effectiveness of the authorities' work. As Tenbrunsel and Messick (1999) demonstrate, a weak sanctioning system may yield even less cooperation than no sanctioning system at all. Likewise, an increase in trust might also affect power, if trusting taxpayers support their authorities' work, e.g., by whistle-blowing other tax evaders.

The two main hypotheses that can be derived from the "slippery slope" framework are as follows. First, trust in tax authorities is a predictor of voluntary tax compliance. Second, the power attributed to tax authorities determines enforced compliance. Voluntary compliance may also be affected by power, and enforced compliance may also be connected to trust, but these linkages should be weaker and/or with a different sign.

[1] Similar differentiations can be found in the psychological concept of intrinsic and extrinsic motivation by Heckhausen (1989), which Frey (1997) has also applied to willingness to cooperate.

3 Method

3.1 Participants

Data were collected in Austria, the United Kingdom, and the Czech Republic by a market research institute via online questionnaires. These countries were selected because they differ in various aspects regarding taxation and other economic issues (c.f., Hartner et al. 2009). Whereas Austria and the UK are among the countries with the highest top personal income tax rates (50%), the Czech Republic has one of the lowest tax rates on income (15%). Austria and the UK have progressive tax rates; the Czech Republic has a flat tax system. Regarding their economic situation, prognoses on economic growth for 2009, the year after the data were collected, were +0.60% for Austria, +3.60% for the UK, and −1.00% for the Czech Republic.

The participants were recruited from a representative data pool and were remunerated for their participation in the survey. The bases for the analysis presented here were n = 1,011 Austrians, n = 1,000 citizens of the UK, and n = 1,060 citizens of the Czech Republic. The socio-demographical composition of the data mirrors relatively well the distribution in the basic population of these countries. For a detailed overview of the data's representativeness see Hartner et al. (2009).

The socio-demographical variables collected were nation, gender, age, level of education, and income. The participants' educational degrees were categorized into three groups (compulsory education, A-level, academic education). Their income was split into three categories (low, medium, high) according to the percentiles per country. The distributions of these variables in our sample are shown in Table 1.

3.2 Material

A questionnaire was used that consisted of several different scales; the ones we have used in the current study are presented here in detail. The complete questionnaire can be found in Hartner et al. (2009). The questionnaire was carefully translated from German into English and Czech, and retranslated into German to check the validity of the translations.

The four variables of interest—perceived trust in authorities, perceived power of authorities, voluntary compliance, and enforced compliance—were measured by four Likert-type scales. The participants were asked to indicate their degree of agreement with two or three statements in each scale (1 = "completely disagree" to 7 = "completely agree"; additionally, a "don't know" option was provided, which was defined as a missing value for the statistical analyses).

Trust was measured by participants' agreements with three statements on the trustworthiness of tax authorities ("The Austrian/UK/Czech Tax Office treats taxpayers in a respectful manner"; "The Austrian/UK/Czech Tax Office is fair in collecting tax"; and "The Tax Office is trustworthy in Austria/the UK/the Czech Republic"; Austria: $\alpha = 0.89$; United Kingdom: $\alpha = 0.91$; Czech Republic: $\alpha = 0.90$).

The power scale consisted of three statements on the efficiency of tax authorities' work ("The Austrian/Czech/UK Tax Office has extensive powers to force citizens to

Table 1 Demographic composition

Comparative groups	Austria n = 1,011		United Kingdom n = 1,000		Czech Republic n = 1,060	
	M	SD	M	SD	M	SD
Age	40.82	10.58	40.78	11.99	38.32	11.20
	n	%	n	%	n	%
Sex						
Male	644	63.7	534	53.4	550	51.9
Female	367	36.3	466	46.6	510	48.1
Education						
Compulsory education	472	46.7	380	38.0	156	14.7
A-levels	307	60.4	186	18.6	558	52.6
Academic education	228	22.6	385	38.5	323	30.5
Missing	4	0.4	49	4.9	23	2.2
Income						
Low income	279	27.6	435	43.5	324	30.6
Average income	258	25.5	213	21.3	328	30.9
High income	283	28.0	257	25.7	347	32.7
Missing	191	18.9	95	9.5	61	5.8

be honest about tax"; "The Austrian/UK/Czech Tax Office is able to uncover more or less any tax evasion that occurs because of its expert knowledge"; "The Tax Office fights tax criminality in Austria/the UK/the Czech Republic efficiently"; Austria: $\alpha = 0.70$; United Kingdom: $\alpha = 0.77$; Czech Republic: $\alpha = 0.73$).

The original scale for measuring voluntary compliance consisted of three items. Reliability analysis, however, suggested dropping one, resulting in a two-item scale ("I pay my tax as a matter of course"; "I would also pay my tax when there are no tax controls"; Austria: $\alpha = 0.74$; United Kingdom: $\alpha = 0.50$; Czech Republic: $\alpha = 0.68$).

Similarly, the enforced tax compliance scale was shortened by one item as suggested by reliability analysis. Thus, enforced tax compliance was also measured by two items ("I feel that I am forced to pay tax"; "I pay tax because the risk of being checked is too high"; Austria: $\alpha = 0.58$; United Kingdom: $\alpha = 0.61$; Czech Republic: $\alpha = 0.47$).

All the variables were z-transformed for the following regression analyses.

4 Results

To test our hypothesis on voluntary tax compliance a stepwise linear regression model was estimated. In step 1 we included trust, power, and the interaction term as predictors. In step 2 socio-demographic variables were also included. The results are

Table 2 Regression results—dependent variable: voluntary tax compliance

Comparative groups	Step 1			Step 2		
	B	SE (*B*)	*β*	*B*	SE (*B*)	*β*
Trust	0.293	0.021	0.293***	0.294	0.021	0.295***
Power	0.059	0.021	0.059***	0.067	0.021	0.067***
Trust × power	0.039	0.017	0.045**	0.038	0.017	0.044**
Austria				−0.219	0.049	−.101***
United Kingdom				−0.155	0.047	−.073***
Sex				0.026	0.039	0.013
Age				0.009	0.002	0.107***
Education				0.038	0.021	0.037*
Income				−0.011	0.020	−.011

$R^2 = 0.11$ for step 1; $\Delta R^2 = 0.02$ for step 2 ($p < 0.01$). Variables sex, Austria, and United Kingdom are dummy-coded with 1 = female, 1 = being Austrian, and 1 = being from the United Kingdom

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Table 3 Regression results—dependent variable: enforced tax compliance

Comparative groups	Step 1			Step 2		
	B	SE (*B*)	*β*	*B*	SE (*B*)	*β*
Trust	−0.190	0.021	−.190***	−0.190	0.021	−.190***
Power	0.312	0.021	0.312***	0.280	0.022	0.279***
Trust × power	0.007	0.017	0.008	0.003	0.017	0.003
Austria				0.054	0.050	0.025
United Kingdom				0.203	0.048	0.096***
Sex				0.062	0.039	0.031
Age				0.002	0.002	0.025
Education				−0.081	0.022	−.079***
Income				−0.022	0.021	−.022

$R^2 = 0.09$ for step 1; $\Delta R^2 = 0.02$ for step 2 ($p < 0.01$). Variables Sex, Austria, and United Kingdom are dummy-coded with 1 = female, 1 = being Austrian, and 1 = being from the United Kingdom

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

depicted in Table 2. As expected, voluntary compliance depends primarily on trust in authorities. Perceived power and the interaction of trust and power are further significant predictors, though the impact of these variables is weaker. The findings remain invariant when controlling for sex, age, education, income, and country of data origin. Age and education are positively related to voluntary compliance, though the impact of the latter is only marginally significant. A similar regression analysis was conducted with enforced tax compliance as the dependent variable. As shown in Table 3, enforced compliance depends on power attributed to tax authorities. Interestingly, trust is negatively related to this form of compliance. The

results remain stable when controlling for participants' socio-demographics in step 2. Education is negatively related to enforced tax compliance.

It should be noted that due to the different languages of the questionnaires differences between the participating countries cannot be interpreted unambiguously.

5 Discussion

As suggested in the "slippery slope" framework, trust in tax authorities was the strongest predictor of voluntary tax compliance, whereas power attributed to the authorities predicted enforced tax compliance. Furthermore, enforced compliance was negatively related to trust. It seems that trust induces voluntary tax compliance, and reduces the feeling that one is forced to pay taxes. These results also hold when controlling for the socio-demographic variables age, sex, education, income, and country of data origin.

Our findings are consistent with the results reported by Fischer (2008), who showed that the quality of government is positively related to tax morale, and experimental results by Wahl et al. (2010), who found that trust mediates the impact of procedural fairness on tax compliance. If the power attributed to tax authorities mirrors the strength of deterrence measures, our results on enforced compliance are supported by the empirical literature on the effects of audits and fines (for a recent overview see Kirchler et al. 2008).

Our findings provide evidence of the importance of a tax policy beyond deterrence. Although taxpayers may also be enforced to comply by the increasing power of authorities, a policy based on trust-building measures might be more effective and less costly. Increasing transparency in governmental decisions and expenditures, for instance, may be a way to increase taxpayers' trust in authorities. A necessary precondition for establishing voluntary compliance seems to be fair treatment of taxpayers, as suggested by the responsive regulation approach (Ayres and Braithwaite 1992; Braithwaite 2007, 2009). As trust breeds trust (Feld and Frey 2002), tax authorities are required to trust their clients, and the "cops and robbers" game should be avoided.

However, our emphasis of the importance of trust should by no means be misinterpreted as a naïve approach towards a taxpayers' petting zoo. In fact, by referring to Braithwaite (2003), we propose that taxpayers should be treated fairly, according to their behavior: committed taxpayers should be supported by authorities, whereas persistent tax evaders should be prosecuted with the full rigor of the law.

For designing efficient auditing strategies the effects of the socio-demographic variables on the two forms of compliance might be of interest. Voluntary compliance was positively related to age, so auditing younger taxpayers might be more successful in detecting evaders. Enforced compliance, however, seems to be independent from age. The results from previous studies on age effects were inconsistent. Part of the literature reports no age effects (Hotaling and Arnold 1981; Minor 1978; Song and Yarbrough 1978), whereas others report a positive correlation (Kirchler 1999; Tittle 1980; Vogel 1974). Tittle (1980) argues that

younger taxpayers may be more prone to taking risks and are less intimidated by sanctions. This would mean for our conception that enforced compliance should be more strongly affected by age than by voluntary compliance. However, the opposite is true, which calls for an alternative explanation. Vogel (1974) suggests that on average younger people are better educated than the older generation and hence perceive their opportunities for tax evasion as more likely. The negative correlation of education and enforced compliance we observed in our study supports Vogel's view. For voluntary compliance, however, we found a (marginally significant) positive impact of education. This positive correlation can be explained by a study by Eriksen and Fallan (1996), who showed that knowledge about taxes leads to a better attitude towards the tax system. Hence, it is likely to assume that with education and age knowledge about taxes and understanding of their necessity also increase, which in turn yield voluntary tax compliance.

To summarize, it seems that a tax policy that is solely based on deterrence falls short of the difference between voluntary and enforced compliance and non-compliance. Besides audits and fines, trust-building measures are needed to increase voluntary compliance. Once established, maintaining voluntary compliance seems not only to be more cost-effective than maintaining enforced compliance, but also necessary to establish a synergetic climate in which authorities and citizens interact in a mutually accepted and productive way.

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