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Center for Research in Economics, Management and the Arts

Moral Suasion:
An Alternative Tax Policy Strategy?
Evidence from a Controlled Field Experiment in
Switzerland

Benno Torgler

Working Paper No. 2004 - 01

Moral Suasion: An alternative tax policy strategy?

Evidence from a controlled field experiment in Switzerland

by

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Abstract. In a controlled field experiment in Switzerland this paper analyses the effects of moral suasion on the timely paying and filling out of the tax form 2001, and the honesty regarding the declaration of domestic income from capital gains, lottery winnings, and certain insurance benefits. Comparisons of different tax filling years and multiple regression estimations have been done using these three factors as dependent variables to check if there is a significant difference between the control group and the treatment group, controlling for additional factors that might influence compliance behaviour. In February 2002 the treatment group received a letter signed by the commune's fiscal commissioner containing normative appeals. Results indicate that moral suasion has hardly any effect on taxpayers' compliance behaviour. The strongest effect can be observed for the variable tax payments.

Key words: tax compliance, morale suasion, field experiment

JEL classification: H260; H710

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1. Introduction

Tax compliance seems to depend upon numerous factors and is not only affected by deterrence and economic factors (for a survey, see Torgler, 2001, 2002a). Many studies have been focussed on the effect of deterrence factors as, e.g., fine and audit rate. Recently, researchers have started to put more weight on letting these deterrence factors constant and analysing to which extent other determinants matter (e.g., Bosco and Mittone, 1997). Taxpayers might be driven by moral rules and sentiments, and might bear moral costs if they do not pay the taxes and act as free-riders. Elffers (2000) shows that it is a long way before a person becomes a tax evader. He defines three steps in the staircase to tax evasion: (i) taxpayers must conceive the idea of not complying, (ii) they must be able to translate their intention to evade taxes into action, and finally (iii) if inclined to evade taxes, they must check for the opportunity to do so. In this staircase three standard economic theories come into play and individuals evaluate the expected value of evasion.

Similarly, other researchers have argued that many individuals do not even think of tax evasion. Pyle (1991) criticises the assumption that individuals are amoral utility maximisers:

“Casual observation suggests that not all individuals think quite like that. Indeed, it seems that whilst the odds are heavily in favour of evaders getting away with it, the vast majority of taxpayers behave honestly” (p. 173).

Frey (1999) uses the expression ‘ipsative possibility set’ (p. 196) and shows that there are taxpayers who do not even search for ways to cheat at taxes. Long and Swingen (1991, p. 130) argue that ‘some individuals are simply predisposed NOT to evade’. Experiments indicate that there are individuals who always comply, that is, a certain compliance exists even without (low) penalties and audits.

The presented model of Elffers (2000) reduces the significance of coercive instruments to resolve the social dilemma of tax payments. His conclusion (‘policy advice’) is to try to prevent people from reaching the final step of the staircase. Thus, the instrument of deterrence is not the only instrument to make individuals comply. It can even be counterproductive, as Frey (1997) points out. When monitoring and penalties for noncompliance are intensified, individuals notice that extrinsic motivation has increased, which on the other

hand crowds out intrinsic motivation to comply with taxes. If the intrinsic motivation is not recognised, taxpayers might get the feeling that they can as well be opportunistic.

In this study we are going to analyse the effects of moral suasion on tax morale in a controlled field experiment in cooperation with the local tax administration in Trimbach (Switzerland, Canton SO). Section 2 presents theoretical considerations about the effects of moral suasion on tax morale and tax compliance and gives an overview on the related literature. Section 3 introduces the design of the field experiment, before the results are presented in Section 4. The paper finishes with some concluding remarks in Section 5.

2. Moral Suasion

Economists are generally sceptical about the effects of moral suasion. We find some studies in the field of monetary or environmental economics. Many years ago, Breton and Wintrobe (1978) analysed the relationship between central and commercial banks. They point out that the techniques of moral suasion “allow the central and commercial banks to exchange views on the current economic situation and develop a common view of the economy” (p. 214). And Baumol and Oates (1979) stress that “voluntary compliance does have several significant and useful roles to play and (...) some of our colleagues have been a bit too ready to reject it out of hand” (p. 283).

Experiments can be used to analyse rather undeveloped areas as moral and social sentiments, social norms etc. In the early stages, Schwartz and Orleans (1967) carried out an interesting field experiment. Their approach was to determine the effects of moral appeals and threats of punishment on behavioural compliance with the tax laws. They found that moral appeals had a much stronger influence than punishment threats. These findings were important to focus the attention on different potential compliance factors. However, since then, little work has been done to analyse the relevance of moral appeals. In line with Schwartz and Orleans, McGraw and Scholz (1991) analysed the effects of moral suasion on tax compliance. People watched a video where it was applied to social responsibility. Researchers could not find a larger increase in income reporting compared to the control group.

In the last years we find tendencies in the tax compliance literature that researchers stress moral considerations. Andreoni, Erard and Feinstein (1998) argue in their tax

compliance survey that adding moral factors to tax compliance models is an undeveloped area, and Erard and Feinstein (1994a) have integrated honesty in a tax compliance model. In Erard and Feinstein (1994b) they formalised the impact of guilt and shame and incorporated it into taxpayers' utility function. Roth, Scholz and Witte (1989) identify moral commitment as important determinants that affect tax compliance. Erard and Feinstein (1994b) point out:

“One important reason why the conventional expected utility model of tax compliance overpredicts the prevalence and extent of tax evasion is that compliance behavior is assumed to be motivated solely by financial considerations, whereas in reality many taxpayers are influenced by a variety of other feelings, which we will call moral sentiments” (p. 74).

If moral sentiments or moral commitments play an important role in the degree of tax compliance, it might be interesting to analyse to which extent moral suasion can influence moral sentiments and thus the degree of co-operation. Surprisingly, tax compliance literature has rarely analysed the effects of moral suasion on tax compliance. What we find is an analysis of the effects of information and complexity on tax compliance (for a survey, see Torgler 2002b). However, there is a lack of economic models incorporating information that do not start from the assumption that individuals have well defined preferences. Even Gary Becker (1996) argues that values can no longer be treated as exogenous preferences and stresses the power of endogenous preferences as an extension of the utility-maximising approach, serving to unify often neglected aspects as habitual, social or political behaviour, addiction, emotions as love and sympathy etc. And Bowles (1998) states:

“If preferences are affected by the policies or institutional arrangements we study, we can neither accurately predict nor coherently evaluate the likely consequences of new policies or institutions without taking account of preference endogeneity” (p. 75).

One policy might be to influence individuals' preferences using moral suasion. In the political process this instrument is often used. Frey and Kirchgässner (1994) point out that politicians often try to create an anti-inflation-mentality to reduce the expectations about inflation and thus to reduce the costs of disinflation. In general, economists are rather cautious regarding the effects of moral suasion. Frey and Kirchgässner (1994) give two examples (p. 404). In the 70s petrol enterprises, as Shell (e.g., in Switzerland and in the United States, see also Baumol and Oates 1979, p. 289) ran large marketing campaigns for using unleaded gasoline despite its slightly higher price. However, after a short time a drop in

sales of unleaded petrol has been observed. Shell's unleaded gasoline "Shell of the Future" reached only 5 percent of sales (Baumol and Oates 1979). The governor of Oregon used large propaganda expenses as well as his personality to reduce the electricity consumption. After a reduction of two percent in the first month, no reaction was observed in the following months. The authors point out that moral suasion does not work in situations where individuals or institutions such as firms are under strong competitive pressure. Frey and Kirchgässner (1994) are more optimistic about the effects of moral suasion in a state of emergency, as were Baumol and Oates (1979). In many countries moral appeals for voluntary blood donating in an emergency situation were very successful." Happily, experience suggests that, in these instances, circumstances for effective voluntary cooperation are likely to be the most favorable" (Baumol and Oates, 1979, p. 283).

De Alessi (1975, p. 127) points out that individuals are more generous toward each others after a disaster. Such a situation shifts the individual utility function toward more "community feeling". Baumol and Oates (1979) mention two examples from New York City. In September 1970 hospitals had a blood shortage. The response to an urgent appeal for voluntary donations was so high that donors were willing to stand in line up to 90 minutes to donate blood. The appeals during a period of water shortage in the 60s achieved a reduction of water consumption between 4 and 6 percent. Frey (1997) points out that such a behaviour is a manifestation of intrinsic motivation. He states:

'Economists should acknowledge that the motivation structure of individuals is more complex than in their traditional model. Once they accept that behaviour is not solely motivated by extrinsic motivation, they must become aware that their cynicism has considerable cost by damaging environmental moral (...) What is proposed is a partial rehabilitation of moral appeals in environmental policy – without giving up incentive instruments' (p. 65).

Baumol and Oates (1979) stress that moral suasion should be used under specific circumstances, otherwise it can undermine voluntarism. It is interesting to notice that India's tax amnesty 1997 was quite successful (additional revenue of 100 billions of rupees), as the state had engaged two private marketing enterprises to conduct a marketing campaign (based on moral suasion) to increase tax compliance.

However, some researchers have seen the importance of clarifying this topic. Hasseldine (2000) stresses that moral appeals could help frame tax compliance as a positive act. Blumenthal, Christian and Slemrod (2001) worked together with the Minnesota Department of Revenue in a field experiment and analysed the impact of moral persuasion on

voluntary income tax compliance . The authors focused on whether taxpayers who were subject to moral appeals changed their reports more than taxpayers who were not, as the authors did not have access to audits of taxpayers' returns. They used the difference-in-difference (DID) approach (treatment minus control after (tax year 1994) and before (tax year 1993)). Compliance behaviour has been measured by the income reported or the tax paid and was compared with the reference group (no communication). They found that the average compliance rate of those in the treatment group was 220\$ higher compared to the control group (0.08 percent of average income). However, the coefficient was not statistically significant. Similarly, the percentage of income reporting was not statistically significant with letter two. Thus, this study did not find a significant effect of moral appeals. In a second step, Blumenthal et al. (2001) conducted a multiple regression in which they used the treatments as dummy variables to check other variables. The results indicate that people with greater opportunities to evade or avoid taxes (e.g., self-employees) are less susceptible to normative appeals.

3. Field Experiment Design

3.1. General aspects

Tax laws in Switzerland allow citizens to declare their own income and to make generalised deductions. The commune Trimbach has 3497 taxpayers (date January 2003). Out of these individuals, around 580 individuals have been selected randomly before sending the tax form 2001. We divided the people into two groups. The experimental treatment group received a letter just after the tax form (for a copy of this letter, see *Appendix*). To simulate real effects, taxpayers were not informed that they were part of the experiment.

Compared to the study of Blumenthal, Christian and Slemrod (2001) our analysis looks at two other compliance factors: timely filling and timely paying. According to the author no study has analysed this aspect in a controlled field experiment with real taxpayers.

It could be argued that moral suasion might be more efficient at a local level. Due to the federal structure of Switzerland, the competence of collecting the tax forms is mostly held by the communities. There is a clear division of competences between communities and the cantonal government. In Trimbach, where the experiment has been conducted, the tax administration has the autonomy to collect the tax forms and to remind taxpayers of filling

them in. We were careful to choose a small village, as there is an intensive contact between the tax administration and the taxpayers. Closeness might play an important role in how well moral suasion works. It means physical proximity, as all households are not more than around one kilometre away from the tax administration. However, there might even be a certain mental closeness and connectedness, based on strong interaction with each others. In small communities everyone can actually come to know everyone else. In local areas certain social norms are likely to emerge and give rise to social identification (see Taylor 1996). Small structures have the advantage that citizens' preferences can be met better. Politicians are informed about the preferences of the local population. They are elected at the local level, and have an incentive to put citizens' preferences into account. There is a strong every-day interaction between taxpayers and local politicians and bureaucrats, which moves the government closer to the citizens. Thus, if there is a moral suasion effect, it might be more common at the local level than at a much more centralised level as in the experiment conducted by Blumenthal et al. (2001).

We have information regarding the timely filling and timely paying for the tax years 1999, 2000 and 2001. This helps to analyse the impact of moral suasion on compliance comparing the treatment group with the control group for different years.

3.2. Design of the letter

The treatment group received a letter signed by the commune fiscal commissioner in February 2002. The letter has been sent just after the tax form 2001 in a separate envelope to increase the probability that taxpayers who use professional assistance read the letter. We chose a pink sheet so that individuals get better aware of it (see *Appendix*). Furthermore, the chief tax administrator in person signed the letter. The style (easy to read and to understand) and an adequate letter length (not too long) have been chosen to make it easier to capture the taxpayers' attention .

To reduce biases individuals were not informed that they had been selected randomly for a tax compliance study. The letter had the following moral suasion part in the first paragraph:

If the taxpayers did not contribute their share, our commune with its 6226 inhabitants would suffer greatly. With your taxes you help keep Trimbach attractive for its inhabitants.

Similar to the design of the letter in Blumenthal et al. (2001), the message points out the importance to pay the taxes voluntarily to guarantee the provision of public goods in an attractive manner. Contrary to Blumenthal et al. (2001) we have done our experiment at the communal level; we integrated the number of inhabitants (6226) in the message to stress how “close” people are with each others. In the second paragraph we signalise that citizens are trusted. The relationship between taxpayers and government can be seen as a relational contract or psychological contract, which involves strong emotional ties and loyalties (see, e.g., Feld and Frey 2002a). If the local tax administration acts trustworthily, taxpayers might be more willing to comply with the taxes. Such a psychological tax contract can be maintained by positive actions, based on trust.

In Switzerland, contrary to other countries, the citizens have the opportunity to actively participate in the legislative procedure. This advantage is also reflected in the tax legislation, which stipulates self-declaration by the taxpayers. This Swiss system presupposes that citizens have a sense of responsibility and are ready to maintain the functioning of municipalities, cantons, and the state. With your conscientious tax declaration you contribute to preserving this democratic and liberal structure.

A letter covering more than one sentence helps to catch better moral suasion factors, focussing on different aspects. It enhances the probability that normative appeals used in our letter have an effect on taxpayers’ attitudes and thus might change compliance behaviour. It leaves the question open to which extent the behaviour is going to be adjusted because of attitudinal shifts. On the other hand, the more sentences are used the higher the “noise” or “interpretation difficulties” and the lower the chance to know which sentence finally resulted or not in shifting attitudes. Furthermore, it increases the possibility that individuals do not read the letter to the end. Letters should not be too long or complicated, but rather understandable, so that subjects become neither bored nor confused and therefore get the incentive to read the whole letter.

4. Results

4.1. Descriptive analysis

Tax compliance researchers have paid substantial attention to tax evasion and thus to the decision how much income to report in a tax return. Almost nothing is known about individuals' compliance behaviour regarding the timely filling out of the tax form (*TF*) and to which extent individuals pay their taxes on time (*TP*). This field data analysis tries to overcome these shortfalls. *TF* and *TP* are coded as follows:

TF: 3= no submission delay, extension of time
 2= first reminder
 1= second reminder
 0= no submission

TP: 3 = payments on time, remission of taxes
 2= first request for payment
 1= debt collection
 0= not paid the taxes

Thus, a higher value goes in line with a higher tax compliance. The value 0 for the *TF* variable covers a group that according to Erard and Ho (2001, pp. 25-26) have been neglected by tax compliance research: the non-filers, also known as the 'ghosts'. With a sample from the 1988 U.S. federal individual income tax return file based on a 25 percent random subsample survey they show that non-filing is more current among self-employed individuals, especially in those professions where income is easier to hide. Furthermore, they point out that a reduction of the burden of filling and programs educating individuals about the filling procedure help reduce non-filing as for taxpayers near the threshold of filling, the burden serves as a filling restriction: 'Once a ghost is brought into the system, he is likely to remain in the system' (p. 48).

Table 1 shows the percent of non-filers in our field experiment: 4.8 percent in the control group and 3.1 in the treatment group. Looking back on the years 2001 and 2000, the

values vary between 2.1 and 4.8 percent. These results are in line with the estimated cantonal level (Solothurn: 2.4 percent of the taxpayers, Swiss average: 2.85 percent, year 1999¹).

In general, *Table 1* indicates that a great amount of taxpayers send their tax forms back on time (control group: 91.3 percent, treatment group: 92.1 percent). Thus, we cannot observe a strong variance among the degree of compliance for both variables. For both compliance variables we can observe that the moral suasion treatment group has a higher compliance rate than the reference group. The mean values for the variable *TF* (*TP*) are 2.813 (2.878) for the control and 2.859 (2.923) for the treatment group. The strongest effects can be observed for the variable *TP*.

Table 1. Timely filling out 2001

Timely Filling Out (TF)	Degree	Control Group	Treatment Group	Total
	0			
	Count	14	9	23
	% within Groups	4.8	3.1	4.0
	1			
	Count	1		1
	% within Groups	0.3		0.2
	2			
	Count	10	14	24
	% within Groups	3.5	4.8	4.1
	3			
	Count	264	268	532
	% within Groups	91.3	92.1	91.7
Total	Count	289	291	580
	% within Groups	100.0	100.0	100.0
Mean		2.813	2.859	

Table 2. Timely paying 2001

Timely Paying (TP)	Degree	Control Group	Treatment Group	Total
	0			
	Count	1		1
	% within Groups	0.3		0.2
	2			
	Count	32	22	54
	% within Groups	11.1	7.6	9.3
	3			
	Count	256	267	523
	% within Groups	88.6	92.4	90.5
Total	Count (N)	289	289	578
	% within Groups	100.0	100.0	100.0
Mean		2.878	2.923	

¹ This data has been collected by the University of Zurich, Institute for Empirical Research in Economics with a survey. Thanks are due to Alois Stutzer for giving me these information.

However, to get a real picture to which extent such a behaviour is the consequence of a moral suasion effect, TF and TP values for the years 1999 and 2000 are included. As random assignments to treatment and control groups have been done, one can simply compare the change in compliance across the treatment and control groups to estimate the treatment effect. For time 1 (before) and 2 (after the experiment), groups A (treatment) and B (control), compliance (TC), $[TC(2,A) - TC(2,B)] - [TC(1,A) - TC(1,B)]$, or equivalently $[TC(2,A) - TC(1,A)] - [TC(2,B) - TC(1,B)]$, is the difference-in-difference. *Table 3* and *4* presents the results. To calculate the difference-in-differences, we also take the averages of two time periods before the experiment. The change in compliance regarding the timely paying suggests a successful moral suasion effect with a mean increase of 0.048 respectively 0.046. We can observe the strongest increase in the highest compliance scale (2.1, respectively 2.3 %). On the other hand, a positive treatment effect regarding the timely compliance is only observable taking the average of the years 1999 and 2000 into consideration. Looking only at 2000 and 2001 we even observe a small negative treatment effect. In general, we observe an increase in the compliance scale 2 (2.1 respectively 1.8 %). A mixed picture is observed in the highest scale, a decrease (1.4 %) looking at the 2001-2000 and a small increase taking into consideration 2001-(average between 1999 and 2000) (0.3 %).

Table 3. Change in compliance “timely paying”

		Control	Treatment	Treatment-Control
Mean	before (year 1999)	2.823	2.823	0.000
	before (year 2000)	2.808	2.804	-0.004
	after (year 2001)	2.879	2.923	0.044
	2001-2000	0.071	0.119	0.048
	2001-average(1999&2000)	0.063	0.110	0.046
Compliance Degrees (in %)				
0	before (year 1999)	2.9	3.6	0.7
	before (year 2000)	2.3	3.0	0.7
	after (year 2001)	0.3	1.0	0.7
	2001-2000	-2.0	-2.0	0.0
	2001-average(1999&2000)	-2.3	-2.3	0.0
1	before (year 1999)	1.7	1.2	-0.5
	before (year 2000)	1.9	2.6	0.7
	after (year 2001)	0.0	0.0	0.0
	2001-2000	-1.9	-2.6	-0.7
	2001-average(1999&2000)	-1.8	-1.9	-0.1
2	before (year 1999)	6.2	4.4	-1.8
	before (year 2000)	8.7	5.5	-3.2
	after (year 2001)	11.1	7.6	-3.5
	2001-2000	2.4	2.1	-0.3
	2001-average(1999&2000)	3.7	2.7	-1.0
3	before (year 1999)	89.3	90.7	1.4
	before (year 2000)	87.2	88.9	1.7
	after (year 2001)	88.6	92.4	3.8
	2001-2000	1.4	3.5	2.1
	2001-average(1999&2000)	0.3	2.6	2.3

Table 4. Change in compliance “timely filling out”

		Control	Treatment	Treatment-Control
Mean	before (year 1999)	2.866	2.830	-0.036
	before (year 2000)	2.826	2.881	0.055
	after (year 2001)	2.813	2.859	0.046
	2001-2000	-0.013	-0.022	-0.009
	2001-average(1999&2000)	-0.033	0.003	0.036
Compliance Degrees (in %)				
0	before (year 1999)	2.8	3.8	1.0
	before (year 2000)	3.9	2.1	-1.8
	after (year 2001)	4.8	3.1	-1.7
	2001-2000	0.9	1.0	0.1
	2001-average(1999&2000)	1.5	0.2	-1.3
1	before (year 1999)	0.4	0.8	0.4
	before (year 2000)	1.1	1.4	0.3
	after (year 2001)	0.3	0.0	-0.3
	2001-2000	-0.8	-1.4	-0.6
	2001-average(1999&2000)	-0.5	-1.1	-0.7
2	before (year 1999)	4.4	4.2	-0.2
	before (year 2000)	3.6	2.8	-0.8
	after (year 2001)	3.5	4.8	1.3
	2001-2000	-0.1	2.0	2.1
	2001-average(1999&2000)	-0.5	1.3	1.8
3	before (year 1999)	92.4	91.3	-1.1
	before (year 2000)	91.5	93.7	2.2
	after (year 2001)	91.3	92.1	0.8
	2001-2000	-0.2	-1.6	-1.4
	2001-average(1999&2000)	-0.7	-0.4	0.3

We are going to use an independent-samples t-test to compare the mean values for the reference and the treatment group in the year 2001. This test can be applied as subjects have been randomly assigned to the two groups, so that any difference in response is due to the treatment effect. The results indicate that there is a significant difference between the groups for the coefficient of the variable *TP* (sig. 2-tailed, 0.086), but not for the variable *TF*. In a next step, the paired-sample t test (Wilcoxon) has been done. It allows comparing the mean values of a group in different time periods. It computes the differences between values and tests whether the average differs from 0. In our study, taxpayers' *TF* and *TP* are measured in 2000 and 2001. Thus, each subject has two measures, before and after the field experiment.

Table 5 presents the results. For the variable *TF* there is no significant difference between the years 2000 and 2001 for both groups. On the other hand, for the *TP* variable there is a significantly higher compliance in the year 2001 compared to 2000. *Table 5* shows that the mean coefficient and the t-value are higher for the treatment group than for the control group.

Table 5. Paired samples statistics

Pairs	Mean	Std. Error Mean	t-value
<i>Treatment Group</i>			
TP 2000 - TP 2001	-0.12***	0.03	-3.57
TF 2000 - TF 2001	0.02	0.03	0.53
<i>Control Group</i>			
TP 2000 - TP 2001	-0.07**	0.03	-2.46
TF 2000 - TF 2001	-0.4E-02	0.03	-0.12

Notes: number of observations treatment group: 281, control group: 286.

Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$.

However, the findings of the paired sample t-statistics alone cannot determine whether there is a significant *treatment effect*. Thus, in line with *Tables 3* and *4*, we analyse whether those in the treatment group changed their payment timeliness more than did those in the control group. A regression framework using time and treatment dummy variables can calculate such a treatment effect. Consider the model: $TC_{it} = \beta_0 + \beta_1 treatment_{it} + \beta_2 after_{it} + \beta_3 treatment_{it} * after_{it} + \varepsilon_{it}$. The estimated β_3 will also show the treatment effect like in *Table 3* and *4* but also indicating to which extent those differences are statistically significant. *Table 6* presents the results. While the previous result in *Table 3* suggested a successful moral suasion effect for the variable *TP*, the coefficient for both interaction terms is not statistically significant. Similar result can be found for the *TF* treatment effect.

Table 6. Difference-in-difference test

Compliance	Coef.	t-value
compliance timely paying		
Treatment group	-0.31E-02	-0.08
year 2001	0.07*	1.77
<i>Treatment group * year 2001</i>	0.05	0.85
compliance timely filling out		
Treatment group	0.06	1.11
year 2001	-0.01	-0.25
<i>Treatment group * year 2001</i>	-0.01	-0.14
Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.		

4.2. Multivariate analysis

The results in the descriptive analysis indicate that morale suasion seems not to have a strong effect on compliance. The paired-sample t test indicated a significant difference between the control and the treatment group for the variable *TP*. However, it is questionable whether such a result remains stable using a multivariate analysis. Thus, we are only going to analyse the variable *TP* as a dependent variable. A dummy variable MORAL SUASION has been built to compare the control with the treatment group (1=treatment group).

4.2.1. Model estimation

Ordered probit models are used to analyse the determinants of *TP*. An ordered probit estimation helps analyse the ranking information of the scaled dependent variables TP^2 . As the equation has a non-linear form, only the sign of the coefficient can be directly interpreted and not its size. Calculating the marginal effects is therefore a method to find the quantitative effects of the variable *TP*. In all estimations we present the marginal effect for the *TP* values 1 and 2. The basic estimation equation has the following structure:

² TP: three point scale from 0 to 2.

$$TP_i = \beta_0 + \beta_1 \cdot AGE_i + \beta_2 \cdot CULTURE_i + \beta_3 \cdot GROUP_i + \beta_4 \cdot MARITAL_i + \beta_5 \cdot TF_i + \beta_6 \cdot ECONOMIC_i + \beta_7 \cdot TAXRATE_i + \varepsilon_i$$

The independent variables are specified as follows:

AGE_i: Dummy variables in the first estimations for the following groups: 20-29, 30-49, 50-64, 65+, with 20-29 as the reference group and a continuous variable in further estimations. Predicted sign: (+). Elderly people are more experienced in tax matter and know the consequences of not paying the taxes and not sending the tax form on time. Furthermore they are more strongly attached to their community, which might be important in our case.

CULTURE_i: We are going to differentiate between Swiss and foreigners (dummy variable: 1= Swiss citizens and 0=foreigners). It should be noticed that a married couple with one foreign person has been coded as foreigners. It is difficult to develop a clear prediction of the effects on compliance. Due to their status, foreigners might have an incentive to be honest and to avoid conflicts with the state. On the other hand, they might be less affected by the second paragraph in the letter, as they gain less from direct democracy being excluded from the participation rights.

GROUP_i: Is a dummy variable with the value 1 for the treatment group and 0 for the control group. We are going to see in a multiple regression analysis if the small differences between the control and the treatment group are significant controlling for additional variables.

MARITAL STATUS_i: In the first estimations dummy variables: (SINGLE, LIVING TOGETHER, MARRIED, DIVORCED, SEPARATED, WIDOWED, reference group: SINGLE). In further estimations we use only one dummy variable (MARRIED). It should be noticed that married couples fill out a joint tax return. Marital status might influence legal or illegal behaviour. Tittle (1980) states:

“A long tradition in sociology, extending back to Durkheim, postulates that proneness toward rule breaking varies inversely with the extent to which individuals are involved in social networks with constraining content” (p. 111).

This would imply that married people are more compliant than others, especially compared to singles because they are more constrained by their social network. In the tax compliance literature we do not find many studies which systematically analyse marital status. Some studies have found that noncompliance is more common and of greater magnitude among married taxpayers (see Clotfelter 1983, Feinstein 1991). Similar to the argumentation before, couples might have a lower compliance being taxed in a higher bracket than two separate incomes. Thus, we would predict that married people have a lower compliance than singles.

TF_i : We are going to analyse whether people who are more compliant regarding the timely filling out of the tax form have also a better payment behaviour.

$TAX\ RATE_i$ (amount to be paid to the tax administration divided by the taxable income): The individual tax rate has been included, as it is the central variable in the standard tax compliance/evasion models. However, as we now consider another dependent variable, the effect of the tax rate is difficult to assess theoretically. In previous tax compliance studies, the effect depends on the risk preference, the progression of the income tax schedule, and the penalty structure (see Andreoni, Erard and Feinstein, 1998, Yitzhaki, 1974).

$ECONOMIC_i$: Some of the variables analysed are proxies for the economic situation of a taxpayer:

- INCOME (individuals' self-declared total taxable income)
- HOUSE OWNER (dummy variable)

To check the sensitivity of these variables we mostly integrate them separately into the estimations. Being a house owner might increase the incentive to act in line with the law to maintain society "stakes". Homeowners have higher costs to leave the community compared to a person who rents an apartment. The person might have chosen to buy a house, as he/she likes the region and the people. Thus, we would predict that house owners are more compliant than other individuals. As there is a strong correlation between income and having an own house in our data, we integrate them separately into the estimations.

4.2.2. Results

In the first two estimations we try to optimise the number of observations. Contrary to estimations 3 and 4, non-filers are included in estimations 1 and 2, as the tax administration collects socio-demographic variables of non-filers. *Table 7* and *8* present the results. We first look at the variable MORAL SUASION. Although the marginal effects are relatively high, indicating that being in the moral suasion group increases the probability of being in the most compliant group by around 3 percentage points, the coefficients are not significant. Eq. 2 to 4 indicate that a higher compliance regarding the timely filling out of the tax form is correlated with a higher payment compliance. Being at the age 65+ rather than 20-29 increases the probability of being totally compliant between 9 and 14 percentage points. Using age as a continuous variable also indicates a statistically significant positive correlation between age and compliance. There is the tendency that Swiss citizens are less compliant than foreigners. However, the coefficient is only on the border of statistical significance in Eq. 3 (see *Table 8*). Being married rather than single reduces the probability of being at the highest TP-scale between 5.9 and 7.9 percentage points. Eq. 4 indicates that having an own house has a significantly positive effect on compliance. This significant positive impact is compatible with the theoretical considerations. Finally, income and tax rate have no statistically significant impact on *TP*. In general, *Table 8* shows that the reduced number of observations has no effect on the equal distribution between the control group and the reference group. However, based on the lower number of observations, the results should be treated with caution.

Table 7. Determinants of the variable TP

<i>Ordered Probit</i>								
<i>Dependent Variable: TP</i>								
<i>(timely paying)</i>	<i>Eq. 1</i>				<i>Eq. 2</i>			
	Coeff.	z-Stat.	Marg. TP=1	Effects TP=2	Coeff.	z-Stat.	Marg. TP=1	Effects TP=2
a) Groups								
MORAL SUASION	0.244	1.422	-0.034	0.034	0.209	1.139	-0.026	0.026
b) Demographic Factors								
AGE 30-49	0.099	0.395	-0.014	0.014	-0.109	-0.407	0.014	-0.014
AGE 50-64	0.485	1.541	-0.067	0.068	0.263	0.807	-0.033	0.033
AGE 65+	0.993***	2.678	-0.138	0.140	0.718*	1.871	-0.089	0.090
c) Culture								
SWISS	-0.056	-0.254	0.008	-0.008	-0.127	-0.524	0.016	-0.016
d) Marital Status								
MARRIED	-0.509**	-2.199	0.071	-0.072	-0.468**	-1.990	0.058	-0.059
DIVORCED	-0.302	-0.922	0.042	-0.043	-0.166	-0.472	0.021	-0.021
SEPARATED	-0.289	-0.609	0.040	-0.041	-0.051	-0.084	0.006	-0.006
WIDOWED	0.207	0.399	-0.029	0.029	0.446	0.495	-0.055	0.056
e) Timely filling out					0.496***	4.659	-0.062	0.062
Observations	572				572			
Treatment Group	288				288			
Control Group	284				284			
Prob(LM-statistic)	0.000				0.000			

Notes: Dependent variable: TP on a three point scale (0-2). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, SINGLE. Significance levels: * 0.05 < p < 0.10, ** 0.01 < p < 0.05, *** p < 0.01.

Table 8. Results of further estimations

<i>Ordered Probit</i>								
<i>Dependent Variable: TP</i> <i>(timely paying)</i>	<i>Eq. 3</i> Coeff.	z-Stat.	Marg. TP=1	Effects TP=2	<i>Eq. 4</i> Coeff.	z-Stat.	Marg. TP=1	Effects TP=2
a) Groups								
MORAL SUASION	0.297	1.522	-0.031	0.032	0.309	1.607	-0.034	0.035
b) Demographic Factors								
AGE	0.014*	1.834	-0.002	0.002	0.017**	2.367	-0.002	0.002
c) Culture								
SWISS	-0.445*	-1.761	0.046	-0.047	-0.273	-1.057	0.030	-0.031
d) Marital Status								
MARRIED	-0.738***	-3.579	0.077	-0.079	-0.519**	-2.433	0.057	-0.059
e) Timely filling out								
	0.220	1.307	-0.023	0.023	0.248	1.601	-0.027	0.028
f) Economic Situation								
OWN HOUSE	0.584**	2.425	-0.061	0.062				
LOG (INCOME)					-0.022	-0.424	0.002	-0.003
g) Individual Tax Rate								
					0.342	0.123	-0.038	0.039
Observations	502				505			
Treatment Group	252				253			
Control Group	250				252			
Prob(LM-statistic)	0.000				0.006			

Notes: Dependent variable: TP on a three point scale (0-2). In the reference group are: CONTROL GROUP (without moral suasion), AGE 20-29, FOREIGNER, and WITHOUT AN OWN HOUSE. Significance levels: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Marginal effect = highest TP score (2).

5. Conclusions

Governments and tax administrations have an incentive to search for tax policy strategies that generate additional revenues, especially in times with large and persistent deficits. Raising taxes and increasing enforcement strategies are only two of the possible instruments. In the tax compliance literature we find evidence for the difficulties of traditional factors to increase tax compliance. Turning away from deterrence strategies offers the possibility to check the effects of alternative factors as, e.g., moral suasion. With this field experiment we analysed the effects of moral suasion on tax compliance. Tax compliance researchers have paid substantial attention to tax evasion and thus to the decision how much income to report in a tax return. But almost nothing is known about individuals' compliance behaviour regarding moral suasion focusing on the variables *timely filling out of the tax form* and *paying individual taxes on time*. This field data analysis tries to overcome these shortfalls. Contrary to a previous controlled experiment done by Blumenthal et al. (2001), which found little or no evidence of a positive effect of normative appeals on tax compliance, we chose to cooperate with a *local* tax administration, because moral suasion efforts might be more effective at this lower level. Our results are in line with previous findings indicating that moral suasion has hardly any effect on taxpayers' compliance behaviour. Those in the treatment group did not significantly change their payment timeliness more than did those in the control group.

Using controlled field experiments has many advantages. Compared to laboratory experiments, one of the main advantages is the implementation of tax authorities and not experimenters, which evokes real processes in the usual environment outside a laboratory setting. It helps to better test the effects of different instruments on taxpayers in the real situation of "filling out the tax form" and "paying the taxes". This helps formulate practical advice on tax policy, based on a scientific test. Certainly, compared to lab experiments, this kind of experiments allows social and economic interactions and is thus less controlled, but causality can be better determined than in non-experimental studies (see Burtless 1995 about the advantages and problems of randomised field trials).

Our field experiment has been done in a specific commune in Switzerland. Future research could expand the analysis integrating different communes in different cantons. This is especially interesting in Switzerland (or in the United States), as among the cantons (states) it covers a certain variation of institutional components as direct democracy and federalism. Feld

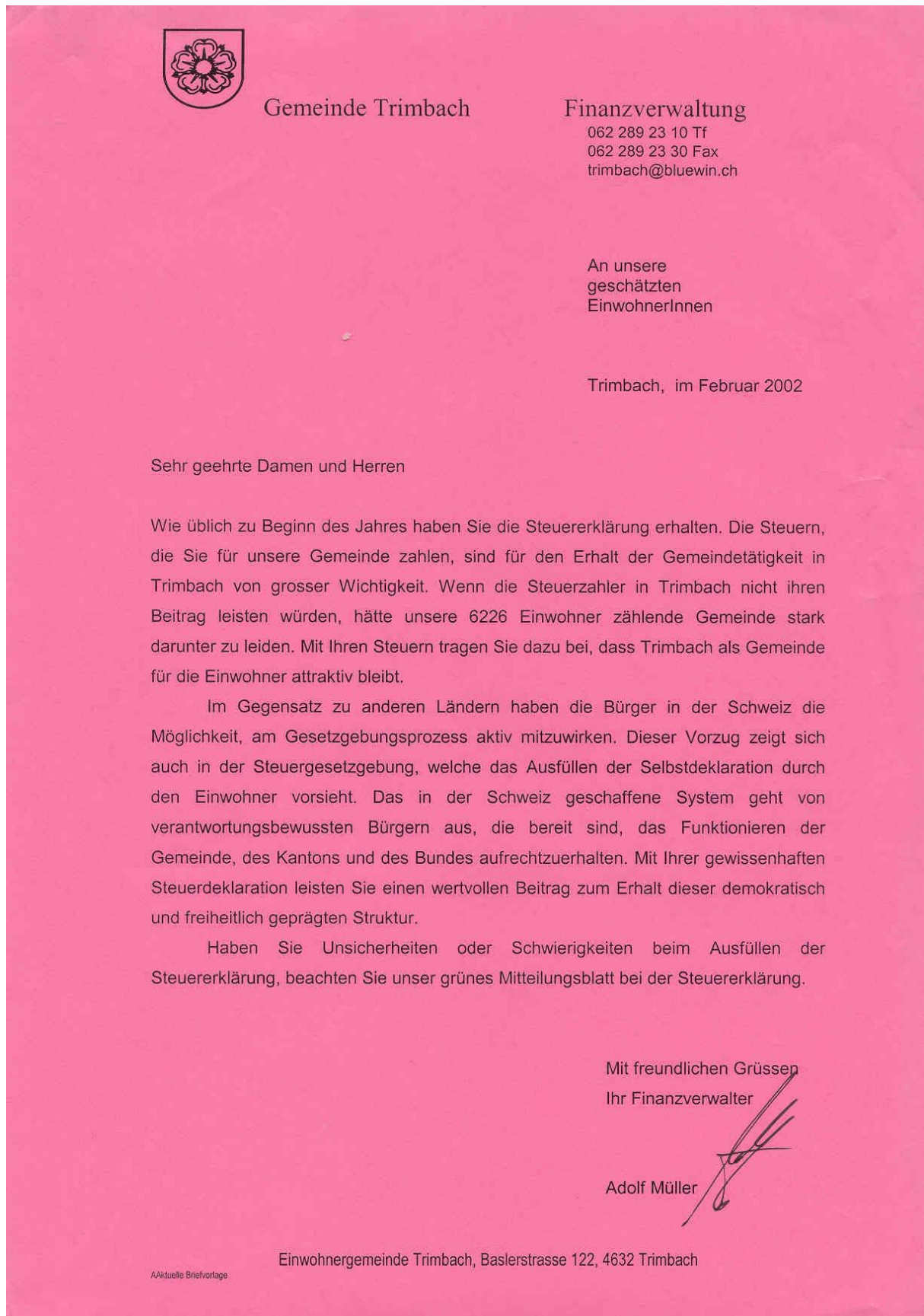
and Frey (2002a) found, for example, that tax authorities of cantons with more direct participation rights, compared to cantons with less direct democracy, treat taxpayers more respectfully and are less suspicious. Furthermore, Feld and Frey (2002b) show in their empirical analysis that a respectful treatment of taxpayers by the tax administration reduces tax evasion. Thus, including further communes, it can be analysed whether taxpayers are more sensitive to moral appeals when the tax administration treat taxpayers with more respect.

Furthermore, in this controlled field experiment we only analysed possible short-term effects of moral suasion on compliance, as individuals in the treatment group have received only once a moral suasion letter. It might be interesting to observe in a panel what happens if moral suasion is used regularly. In addition, as our study works with newest data, we did not analyse the long-term effects (several time periods) after the treatment letter.

Finally, referring to the advertising research Blumenthal et al. (2001) point out that “Communications of a different sort, delivered in a different way, or with greater frequency might still produce a compliance effect” (p. 135). Thus, more field experiments could analyse whether more communication canals, including, e.g., local newspapers, radios, information events affect compliance behaviour. Positive effects of moral suasion have been observed, e.g., looking at tax amnesties. In India, a successful amnesty was accompanied by intensive media activities organised by a marketing company and integrating sport and film celebrities. Geneva collected the highest per capita amount among the cantons in an amnesty in Switzerland having made an intensive effort, such as using educational advertising or press conferences (see Torgler, Schaltegger and Schaffner 2003).

APPENDIX

A1. Sample of the letter



Translation

Dear Madam, dear Sir

As in the beginning of every year, you have just received the tax form. The taxes you pay are vital for maintaining the municipal tasks in Trimbach. If the taxpayers did not contribute their share, our commune with its 6226 inhabitants would suffer greatly. With your taxes you help keep Trimbach attractive for its inhabitants.

In Switzerland, contrary to other countries, the citizens have the opportunity to actively participate in the legislative procedure. This advantage is also reflected in the tax legislation, which stipulates self-declaration by the taxpayers. This Swiss system presupposes that citizens have a sense of responsibility and are ready to maintain the functioning of municipalities, cantons, and the state. With your conscientious tax declaration you contribute to preserving this democratic and liberal structure.

If you encounter any difficulties or doubts when filling in your tax declaration, please refer to the green sheet enclosed with the form.

Yours sincerely,

Your tax administrator

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