

Torgler, Benno; Schaffner, Markus

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**Causes and Consequences of Tax Morale:  
An Empirical Investigation**

Benno Torgler  
Markus Schaffner

Working Paper No. 2007 - 11

# CAUSES AND CONSEQUENCES OF TAX MORALE: AN EMPIRICAL INVESTIGATION

Benno Torgler\* <sup>a,b,c</sup> and Markus Schaffner<sup>a</sup>

<sup>a</sup> *The School of Economics and Finance, Queensland University of Technology, GPO Box  
2434, Brisbane, QLD 4001, Australia*

<sup>b</sup> *CREMA – Center for Research in Economics, Management and the Arts, Gellertstrasse 18,  
CH-4052 Basel, Switzerland*

<sup>c</sup> *CESifo, Poschingerstrasse 5, D-81679 Munich, Germany*

*Abstract:* Many taxpayers truthfully declare their income to the tax administration. Why? In this paper we have found a significant correlation between tax morale and tax evasion, controlling a variety of factors. Furthermore we have analysed tax morale as dependent variable and studied the determinants that shape it. The results indicate that factors such as the tax administration, tax system, tax awareness, compliance perceptions, trust in officials and others, and the willingness to obey have a relatively strong impact on tax morale.

JEL classification: *H260*

Keywords: *tax morale, tax compliance, tax evasion, tax system, tax administration, social capital*

## I. INTRODUCTION

Adams' book (1993) starts with the inscription over the entrance to the Internal Revenue Service building: "Taxes are what we pay for a civilized society". An essential question is to which extent individuals are willing to pay this price. The probability of being audited by the tax administration is rather low. Elffers (2000) points out that "the gloomy picture of massive

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\* Corresponding author.

tax evasion is a phantom” (p. 185). A big share of revenues is collected without a draconian enforcement system. Co-operation in tax compliance experiments is higher than neoclassical models would predict. What are the reasons? Is tax compliance influenced by tax morale? What are the determinants that shape tax morale? The main purpose of this paper is to give answers to these important questions.

To get empirical insights we are going to work with the *Taxpayer Opinion Survey (TOS)*. In general, surveys give the opportunity to study a variety of factors, especially attitudes. It is even possible to integrate questions about taxpayers’ behaviour. On the other hand, we find many critical aspects, as, e.g., possibly biased samples that are not representative. Tax evasion is a sensitive area, and low response rates can create biases. Thus, a certain response rate is essential to get good data. The problem with delicate questions is to obtain honest answers. Jackson and Milliron (1986) point out that the technique used to solicit responses and the way questions are framed have an effect on the respondents’ answers. One way to deal with this problem is to conduct and to evaluate a variety of surveys to get a *general picture* of the main variables. An excellent method would be to conduct panels or to do regular surveys in different countries, similar to the structure of the TOS. In the last years, social researchers have intensively used surveys to investigate the causes and consequences of social capital or compliance behaviour. One reason might be that survey research uses more sophisticated statistical techniques and design compared to early years.

## II. TAX MORALE AND TAX EVASION

Can we find a link between tax morale and tax evasion? Spicer and Lundstedt (1976) pointed out that the choice between tax compliance and evasion is not only made on the grounds of sanctions but also on the grounds of a set of attitudes and norms. According to Ajzen and Fishbein (1980) and Lewis (1982) behaviour can be predicted from attitudes and subjective norms. This might indicate that there is a connection between tax morale and tax compliance behaviour. The tax compliance literature has shown the relevance of going beyond a neoclassical approach when trying to understand why citizens pay taxes. Allingham and Sandmo’s (1972) groundbreaking model which assumes that the extent of tax evasion is negatively correlated with the probability of detection and the degree of punishment has been widely criticized (e.g., Graetz and Wilde, 1985; Alm, McClelland, and Schulze, 1992). In many countries, the level of deterrence is too low to explain the high degree of tax

compliance. To resolve this puzzle of tax compliance, many researchers have argued that tax morale can help explain the high degree of tax compliance (for an overview see Torgler, 2007). Lewis (1982) points out that “it could be that tax evasion is the only channel through which taxpayers can express their antipathy ... we can be confident in our general prediction that if tax attitudes become worse, tax evasion will increase” (p. 165, 177).

An increase in tax morale enhances the moral costs of behaving illegally and therefore reduces the incentives to evade taxes. It is a relevant issue to investigate whether differences in tax morale across countries are reflected in any differences in real, or observed, behaviours in these countries. Torgler and Schneider (2007) extend the previous empirical models of the shadow economy by showing that tax morale matters quite significantly in the determination of the size of the shadow economy providing strong robustness tests using international and within country panel data. Frey and Schneider (2000) point out that moral costs could act as a disincentive to be active in the underground economy: “A good citizen has moral qualms to undertake a forbidden activity. These moral costs are closely related to ‘tax morale’ which motivates citizens to pay their dues to the state” (p. 6).

Another possibility could be to compare the tax compliance results from experiments with a post-experiment questionnaire that helps to get information about subjects’ attitudes (e.g., Bosco and Mittone 1997). The main disadvantage of such a method is that behaviour during the experiment might influence people’s answers to the questions. Thus, such questionnaires are not used in many experiments. Furthermore, in the case of tax compliance we can not be certain whether subjects make the same choices in the experiment as they would in the actual situations. On the other hand, researchers have done a great job in improving the realism of the experiments and tried to analyse cognitive processes that might be similar in reality (see Torgler 2002).

Other researchers use scenarios involving actions taken by federal income tax return filers. People have to follow the scenarios and answer questions. Validated scales measure respondents’ ethical perceptions, moral intensity, and behavioural intentions (see, e.g., Hays 2000). Compared to experiments, the subject samples are normally higher, which makes the results more generalisable. On the other hand, it is difficult to isolate the effects of a variable in the way experiments can do.

However, there is still a lack of empirical evidence on the link between attitudes and behaviour in the tax compliance literature. Why is this so important? The state and the tax administration have different possibilities to influence tax compliance. Traditional methods are deterrence factors as, fines, audits, and the variation of the tax rates. But tax compliance

literature has shown the limitations of such instruments. Even researchers are not entirely sure about the effects of lowering tax rates. Graetz and Wilde (1985) point out that lowering tax rates is supported neither by theory nor by empirical evidence. Lower tax rates, for example, have also the effect of reducing the costs of underreporting. It seems that taxpayers are more compliant than traditional models would predict. Thus, knowledge about tax morale could lead to a better income tax policy.

We are going to work with the *Taxpayer Opinion Survey*, collected in the United States in 1987 and providing a broad set of taxpayers' opinions and evaluations of aspects as, the tax system, the Internal Revenue Service, tax evasion, cheating on taxes etc. The *TOS* offers the possibility to separately analyse two determinants of tax evasion, overstating of deduction or expenses and underreporting income, as dependent variable. From these considerations the following hypotheses can be derived:

*Hypothesis 1: The lower tax morale, the more individuals overstate deductions or expenses.*

*Hypothesis 2: The lower tax morale, the more individuals under-report their income.*

### III. EMPIRICAL EVALUATION

#### *1. Main Variables*

Surprisingly, the *TOS* has not been used by many researchers (see, e.g., Smith 1992, Sheffrin and Triest 1992). Even if the data set is relatively old, the huge amount of questions and the fact that not many papers have used the data set, makes it also attractive for newer research projects (see, e.g., Forest and Sheffrin 2002, using the 1990 *TOS*). Furthermore, after 1990, the *TOS* has not been conducted any more. The sample of 2003 observations is reduced by the fact that taxpayers had sometimes the possibility to answer "not sure" or not to answer at all.

Tax morale can be defined as the attitude towards tax evasion. The advantage of the *TOS* data set is that we find quite a few questions. We are going to use the following questions (scale from 1 to 6, where 6 means not at all acceptable and 1 means perfectly acceptable):

1. Trading or exchanging goods or services with a friend or neighbour and not reporting it on your tax form (**TM 1**).
2. Reporting your main income fully, but not including some small outside income (**TM 2**).

3. Being paid in cash for a job and then not reporting it on your tax form (**TM 3**).
4. Not reporting some earnings from investments or interest that the government would not be able to find out about (**TM 4**).
5. Stretching medical deductions to include some expenses which are not really medical (**TM 5**).

Furthermore, the following questions have been asked (6=strongly disagree, 1=strongly agree)

6. With what things cost these days, it's okay to cut a few corners on your tax form just to help make ends meet (**TM 6**).
7. It's not so wrong to hold back a little bit of taxes since the government spends too much anyway (**TM 7**).
8. The chances of getting caught are so low that it is worthwhile trying to cut corners a little on (**TM 8**).
9. When you're not really sure whether or not you deserve a tax deduction, it makes sense to take a chance and take the deduction anyway (**TM 9**).
10. It is not so wrong to underreport certain income since it does not really hurt anyone (**TM 10**).
11. There is nothing wrong with interpreting the ambiguous or grey areas of the tax law to your own advantage (**TM 11**).

The literature strongly uses the justifiability of evasion as proxy for tax morale (Torgler 2007). The advantage of these questions compared to other studies is a stronger realism due to concrete examples, focusing on the income reporting process and the over-deduction possibilities.

Tax evasion is measured with the following two questions:

1. Within the past five years or so, do you think you might have overstated any deductions or expenses – like medical, charitable or business deductions, and so forth – even by just a small amount? Would you say you definitely have, probably have, probably have not, or definitely have not overstated any (**OVERDEDUC**)? (1. Definitely have not, 2. Probably have not, 3. Probably have, 4. Definitely have)
2. Within the past five years or so, do you think you might have left some reportable income off your federal tax return – even, just a minor amount (**UNDERREP**)? (1. Definitely have not, 2. Probably have not, 3. Probably have, 4. Definitely have)

There are pros and cons on using such tax evasion measurements. Looking at the empirical data, the advantage is that we hardly find data that tries to measure the extent of tax evasion in a survey. So, little empirical evidence is available. Lewis (1982) points out: "But why not just ask respondents whether they evade tax or not? If they admit it, ask them how much this amounts to and perhaps even why they do it? What could be simpler? (...) Maybe it is worth a try. But some traditional wisdom (and a smattering of social psychology) recommends a tempering of enthusiasm" (p. 140).

On the other hand, Lewis (1982) is aware of problems with such a procedure. People might refuse to answer or to take part in such a survey or moderate their views to reduce the possibility that information are used non-confidentially as, for example, to prosecute taxpayers. As a consequence, such an approach would generate a tendency to overestimate tax compliance. Lempert (1992) criticises the scale used in the *TOS* to catch over-deduction and under-declarations. Using terms such as 'probably' and 'minor amount' encourages individuals to state that tax evasion has been done. Finally, it is difficult to ask people about their behaviour five years ago.

## 2. *Estimation Results*

### 1. Over-Deductions

First a basic model with mostly demographic variables is estimated. We are going to estimate 11 equations with different tax morale variables. This helps check the sensitivity of the relationship between tax evasion and tax morale. Ordered probit equations are estimated to analyse the ranking information of the scaled dependent variables tax evasion/tax morale. In a second step additional variables are integrated into the analysis. Only one additional variable has been added to control the problems of missing values, as we have decided not to replace missing values with a sequence of regression estimates or with mean values. We used the weighting variable provided by Harris and Associates to get a representative population size.

*Table 1* presents the results using over-deduction as the dependent variable. *All* regressions estimation results are consistent with our hypothesis 1 that the lower tax morale, the more individuals overstate deductions or expenses. In all equations tax morale is significant at the 1 percent significance level with a negative sign. To represent the quantitative effects of the variables, *Table 2* indicates the marginal effect for the score 3 (probably overstated) and 4 (definitely overstated). The marginal effect indicates the change in the share of taxpayers (or the probability) belonging to a specific tax evasion level, when



the independent variable increases by one unit. Only the marginal effects for the two highest tax evasion values are shown (in *Table 2*). As we can see, the marginal effect for score 3 is higher than for score 4. An increase in tax morale by one point reduces the share of persons indicating that they probably (definitely) have overstated deduction by around 2 (0.7) percentage points.

Looking at the control variables we can see that females report a lower rate of tax evasion than males. However, the coefficient is not significant and the marginal effects are very small. On the other hand, a higher education has a positive effect on tax evasion. An increase in the education by one unit increases the share of persons indicating that they probably (definitely) have overstated deductions by around 1.4 (0.5) percentage points. Better educated taxpayers are supposed to know more about tax law and the possibilities to overstate deductions or expenses. Elderly people evade taxes significantly less than younger individuals. Furthermore, another reason might be, e.g., that estate taxes are likely to have smaller tax compliance disincentive effects on older people than on younger, as the tax burden has partly to be paid by the heirs. Tittle (1980) argues that older people are more sensitive to the threats of sanctions and over the years have acquired greater social stakes, as material goods and status, and depend on others' reactions, so that the potential costs of sanction increase. They have lived for a certain time in the same place and thus are more attached to the community (see Pommerehne and Weck-Hannemann 1996). There is no significant difference between races. Married people evade taxes significantly more often than singles. Being married rather than single increases the share of persons indicating that they probably (definitely) have overstated deductions by around 4 (1.6) percentage points. This result is in line with some studies in the United States which found that noncompliance is more common and of greater magnitude among married taxpayers (see Clotfelter 1983, Feinstein 1991). One reason could be that in the U.S., dual incomes are treated as one, being thus taxed in a higher bracket than two separate incomes (Hays 2000). Similarly, a higher income leads to significantly higher tax evasion. An increase of the income increases the share of persons indicating that they probably (definitely) have overstated deduction. However, the marginal effects are quite low. Finally, there is no significant difference between the employment types, but the marginal effects indicate a higher tax evasion among part-time employees, unemployed and retired people compared to full-time employees.

*Table 1*  
The Effect of Tax Morale on Tax Evasion (Over-deduction)

<i>weighted ordered probit</i>	1		2		3		4		5		6		7		8		9		10		11	
<i>Variable</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>
<b>a) Demographic Factors</b>																						
AGE	-0.012***	-3.479	-0.011***	-3.241	-0.010***	-2.911	-0.009***	-2.686	-0.011***	-3.304	-0.010***	-2.761	-0.009***	-2.693	-0.011***	-3.031	-0.010***	-2.945	-0.008**	-2.278	-0.008**	-2.222
FEMALE	-0.022	-0.249	-0.004	-0.041	0.004	0.044	0.001	0.006	0.006	0.063	0.003	0.031	0.024	0.279	0.018	0.205	-0.011	-0.121	0.045	0.509	0.092	1.003
EDUCATION	0.096***	4.669	0.093***	4.460	0.091***	4.407	0.102***	4.852	0.103***	4.930	0.103***	5.049	0.101***	5.035	0.089***	4.318	0.073***	3.523	0.099***	4.743	0.073***	3.362
BLACK	0.124	0.779	0.023	0.150	0.028	0.181	0.027	0.172	0.023	0.148	-0.014	-0.093	-0.003	-0.022	0.006	0.036	0.016	0.099	-0.012	-0.080	0.079	0.509
INDIAN, ALASKAN N.	-0.078	-0.153	-0.148	-0.309	-0.071	-0.136	-0.021	-0.039	-0.162	-0.300	-0.139	-0.270	-0.263	-0.515	-0.269	-0.580	-0.226	-0.415	-0.170	-0.341	-0.070	-0.137
ASIAN	0.388	0.526	0.507	0.875	0.342	0.473	0.331	0.501	0.209	0.260	0.264	0.290	0.248	0.315	0.489	0.917	0.717	1.350	0.582	1.069	0.555	0.635
<b>b) Employment Status</b>																						
PART TIME EMPLOYED	0.208	1.200	0.277	1.625	0.224	1.306	0.177	1.053	0.201	1.148	0.229	1.365	0.261	1.465	0.186	1.000	0.138	0.801	0.105	0.587	0.057	0.305
UNEMPLOYED	0.270	1.376	0.298	1.534	0.309	1.584	0.291	1.485	0.323*	1.674	0.256	1.293	0.339*	1.700	0.205	1.024	0.283	1.439	0.180	0.921	0.240	1.172
RETIRED	0.106	0.764	0.106	0.771	0.078	0.568	0.036	0.261	0.099	0.718	0.077	0.554	0.066	0.479	0.079	0.562	0.048	0.342	0.032	0.234	0.034	0.228
AT HOME	-0.268	-0.953	-0.223	-0.801	-0.135	-0.541	-0.030	-0.124	-0.034	-0.132	-0.109	-0.460	-0.056	-0.225	-0.065	-0.276	-0.113	-0.414	-0.051	-0.210	-0.149	-0.533
STUDENT	-0.161	-0.375	-0.123	-0.296	-0.180	-0.437	-0.134	-0.341	-0.119	-0.297	-0.213	-0.520	-0.217	-0.533	-0.144	-0.349	-0.213	-0.539	-0.187	-0.465	-0.228	-0.546
<b>c) Marital Status</b>																						
MARRIED	0.300**	2.549	0.329***	2.747	0.333***	2.803	0.362***	3.043	0.324***	2.764	0.294**	2.469	0.327***	2.614	0.285**	2.262	0.281**	2.421	0.291**	2.438	0.277**	2.269
SEPARATED	0.382*	1.724	0.444**	2.035	0.431	1.972	0.437**	2.058	0.399*	1.898	0.358	1.624	0.409*	1.865	0.399*	1.742	0.285	1.279	0.300	1.329	0.334	1.490
DIVORCED	0.247	1.546	0.257	1.628	0.213	1.351	0.255	1.594	0.307*	1.945	0.214	1.362	0.266	1.628	0.214	1.317	0.209	1.340	0.174	1.083	0.178	1.066
WIDOWED	0.267	1.391	0.223	1.149	0.261	1.292	0.274	1.357	0.237	1.086	0.283	1.435	0.267	1.244	0.172	0.837	0.290	1.466	0.210	1.055	0.184	0.904
<b>d) Economic Variables</b>																						
INCOME	0.059***	3.419	0.063***	3.667	0.064***	3.631	0.055***	3.180	0.056***	3.268	0.061***	3.564	0.062***	3.666	0.057***	3.250	0.060***	3.480	0.061***	3.513	0.057***	3.179
<b>e) Tax Morale</b>																						
TM 1	-0.068***	-3.326																				
TM 2			-0.076***	-3.818																		
TM 3					-0.104***	-5.228																
TM 4							-0.141***	-6.677														
TM 5									-0.142***	-5.865												
TM 6											-0.142***	-5.830										
TM 7													-0.152***	-6.496								
TM 8															-0.140***	-5.280						
TM 9																	-0.157***	-6.694				
TM10																						
TM11																				-0.158***	-5.801	
Observations	1182		1200		1197		1184		1190		1205		1205		1183		1176		1196		1142	
Prob(F-statistic)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax evasion on a four point scale. In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01.

*Table 2*  
Marginal Effects (Over-deduction)

<i>weighted ordered probit 1</i>	2		3		4		5		6		7		8		9		10		11				
<i>Variable</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>			
<b>a) Demographic Factors</b>																							
AGE	-0.002	-0.001	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.005	-0.002	-0.001	-0.001	-0.001	-0.001	-0.002	-0.001	-0.001	-0.001	-0.001	0.000	-0.001	0.000	
FEMALE	-0.003	-0.001	-0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.003	0.001	0.003	0.001	-0.002	-0.001	0.006	0.002	0.013	0.005
EDUCATION	0.013	0.005	0.013	0.005	0.013	0.005	0.014	0.005	0.014	0.005	0.014	0.005	0.014	0.005	0.013	0.005	0.010	0.004	0.014	0.005	0.010	0.004	
BLACK	0.017	0.007	0.003	0.001	0.004	0.002	0.004	0.001	0.003	0.001	-0.002	-0.001	-0.001	0.000	0.001	0.000	0.002	0.001	-0.002	-0.001	0.011	0.004	
INDIAN, ALASKAN	-0.011	-0.044	-0.020	-0.008	-0.099	-0.004	-0.003	-0.001	-0.023	-0.008	-0.019	-0.007	-0.036	-0.014	-0.038	-0.015	-0.031	-0.012	-0.024	-0.009	-0.010	-0.004	
ASIAN	0.053	0.022	0.070	0.028	0.047	0.018	0.046	0.017	0.029	0.010	0.036	0.014	0.034	0.013	0.069	0.027	0.098	0.038	0.081	0.031	0.077	0.029	
<b>b) Employment Status</b>																							
PART TIME EMPL.	0.028	0.012	0.038	0.016	0.031	0.012	0.025	0.009	0.028	0.010	0.031	0.012	0.034	0.013	0.026	0.010	0.019	0.007	0.015	0.006	0.008	0.003	
UNEMPLOYED	0.037	0.015	0.041	0.017	0.043	0.016	0.040	0.015	0.045	0.016	0.035	0.014	0.036	0.014	0.029	0.011	0.039	0.015	0.025	0.010	0.033	0.013	
RETIRED	0.015	0.006	0.015	0.006	0.011	0.004	0.005	0.002	0.014	0.005	0.011	0.004	0.047	0.018	0.011	0.004	0.007	0.003	0.005	0.002	0.005	0.002	
AT HOME	-0.037	-0.015	-0.031	-0.013	-0.019	-0.007	-0.004	-0.002	-0.005	-0.002	-0.015	-0.006	-0.008	-0.003	-0.009	-0.004	-0.015	-0.006	-0.007	-0.003	-0.021	-0.008	
STUDENT	-0.022	-0.009	-0.017	-0.007	-0.025	-0.010	-0.019	-0.007	-0.017	-0.002	-0.029	-0.011	-0.030	-0.011	-0.020	-0.008	-0.029	-0.011	-0.026	-0.010	-0.032	-0.012	
<b>c) Marital Status</b>																							
MARRIED	0.041	0.017	0.045	0.018	0.046	0.018	0.050	0.019	0.045	0.016	0.040	0.016	0.045	0.017	0.040	0.016	0.038	0.015	0.040	0.016	0.038	0.015	
SEPARATED	0.052	0.022	0.061	0.025	0.060	0.023	0.061	0.023	0.056	0.020	0.049	0.019	0.056	0.022	0.056	0.022	0.039	0.015	0.042	0.016	0.046	0.018	
DIVORCED	0.034	0.014	0.035	0.014	0.030	0.011	0.035	0.013	0.043	0.015	0.029	0.011	0.037	0.014	0.030	0.012	0.029	0.011	0.024	0.009	0.025	0.009	
WIDOWED	0.037	0.015	0.031	0.013	0.036	0.014	0.038	0.014	0.033	0.012	0.038	0.015	0.037	0.014	0.024	0.010	0.040	0.015	0.029	0.011	0.026	0.010	
<b>d) Economic Variables</b>																							
INCOME	0.008	0.003	0.009	0.004	0.088	0.003	0.008	0.003	0.008	0.003	0.008	0.003	0.009	0.003	0.008	0.003	0.008	0.003	0.009	0.003	0.008	0.003	
<b>e) Tax Morale</b>																							
TM 1	-0.009	-0.004																					
TM 2			-0.010	-0.004																			
TM 3					-0.014	-0.006																	
TM 4							-0.020	-0.007															
TM 5									-0.020	-0.007													
TM 6											-0.019	-0.008											
TM 7													-0.021	-0.008									
TM 8															-0.020	-0.008							
TM 9																	-0.021	-0.008					
TM10																				-0.022	-0.009		
TM11																						-0.022	-0.008

## 2. Under-Declaration

In the next step we are going to analyse under-reporting as dependent variable, using the same control variables. *Table 3* presents the findings. Similar to *Table 1*, all regression estimation results are consistent with hypothesis 2 that the lower tax morale, the more individuals under-report their income. In all equations tax morale is highly significant. In *Table 4* we are going to present the marginal effects of the robust significant coefficients. We can see that the tax morale marginal effects are greater compared to the equations using over-deduction as dependent variable, especially for the extreme value “definitely done under-declaration”.

An increase in tax morale by one point reduces the share of persons indicating that they probably (definitely) have under-declared their income between 1.2 and 2.6 (0.8 and 1.6) percentage points. Contrary to the findings above, females report a significantly lower tax evasion than males. Being female rather than male reduces the probability of a person stating that under-declaration has probably (definitely) been done by more than 4 (2.4) percentage points. On the other hand, a higher education has again a positive effect on tax evasion. An increase in the education by one unit increases the share of persons indicating that they probably (definitely) have under-reported income by around 1.0 (0.6) percentage points. The coefficient of the variable married has lost its significance. Other variables are in line with *Table 1* and have not a significant impact on tax evasion.

In general the results indicate that there is a statistically significant correlation between tax morale and tax evasion, identifying 11 proxies of tax morale and distinguishing between over-deductions and under-declaration. In all 22 equations the coefficients are highly significant. Thus, tax morale seems to be a key determinant to understand tax compliance.

*Table 3*  
The Effect of Tax Morale on Tax Evasion (Under-declaration)

<i>weighted ordered probit</i>	1		2		3		4		5		6		7		8		9		10		11	
<i>Variable</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Coeff.</i>	<i>z-Stat.</i>
<b>a) Demographic Factors</b>																						
AGE	-0.014***	-4.093	-0.013***	-3.894	-0.011***	-3.421	-0.012***	-3.553	-0.014***	-4.273	-0.013***	-3.810	-0.012***	-3.737	-0.013***	-3.913	-0.015***	-4.004	-0.010***	-2.898	-0.012***	-3.570
FEMALE	-0.320***	-4.034	-0.276***	-3.513	-0.298***	-3.728	-0.307***	-3.902	-0.308***	-3.906	-0.300***	-3.786	-0.273***	-3.442	-0.282***	-3.543	-0.330	-4.065	-0.263***	-3.306	-0.267***	-3.211
EDUCATION	0.068***	3.111	0.067***	3.087	0.073***	3.353	0.077***	3.556	0.071***	3.246	0.077***	3.602	0.078***	3.622	0.064***	3.025	0.064	2.880	0.074***	3.428	0.043*	1.897
BLACK	0.001	0.008	-0.075	-0.542	-0.070	-0.502	-0.084	-0.614	-0.047	-0.333	-0.108	-0.757	-0.077	-0.546	-0.091	-0.655	-0.037	-0.263	-0.088	-0.662	-0.088	-0.619
INDIAN, ALASKAN N.	-0.633	-1.009	-0.790	-1.326	-0.647	-0.978	-0.621	-0.987	-0.767	-1.179	-0.707	-1.226	-0.792	-1.466	-0.756	-1.500	-0.712	-1.230	-0.792	-1.269	-0.765	-1.209
ASIAN	-0.096	-0.149	0.364	1.223	-0.163	-0.243	-0.106	-0.174	-0.253	-0.367	-0.230	-0.312	-0.254	-0.364	0.302	0.983	0.502	1.639	0.350	1.193	-0.084	-0.109
<b>b) Employment Status</b>																						
PART TIME EMPLOYED	0.300*	1.874	0.281*	1.728	0.243	1.394	0.183	1.061	0.236	1.435	0.213	1.274	0.171	1.035	0.204	1.241	0.130	0.754	0.007	0.041	0.147	0.861
UNEMPLOYED	-0.015	-0.073	0.062	0.306	0.144	0.708	0.109	0.523	0.128	0.602	0.047	0.233	0.138	0.656	0.078	0.367	0.139	0.670	0.022	0.099	0.075	0.352
RETIRED	0.025	0.206	0.082	0.699	0.053	0.440	0.013	0.108	0.040	0.338	0.025	0.210	0.062	0.517	0.043	0.357	0.079	0.603	-0.008	-0.065	-0.018	-0.141
AT HOME	-0.213	-0.856	-0.131	-0.536	-0.016	-0.082	0.009	0.043	-0.044	-0.204	-0.071	-0.337	0.000	0.000	-0.074	-0.343	0.026	0.115	-0.001	-0.007	-0.163	-0.641
STUDENT	0.293	0.894	0.369	1.171	0.313	0.992	0.345	1.069	0.342	1.045	0.257	0.750	0.266	0.762	0.314	0.923	0.290	0.919	0.272	0.778	0.241	0.735
<b>c) Marital Status</b>																						
MARRIED	0.092	0.785	0.110	0.921	0.129	1.088	0.129	1.081	0.128	1.100	0.086	0.736	0.112	0.958	0.072	0.623	0.104	0.895	0.092	0.786	0.082	0.695
SEPARATED	-0.082	-0.340	-0.057	-0.250	-0.057	-0.257	-0.077	-0.327	-0.035	-0.152	-0.076	-0.330	-0.040	-0.167	-0.085	-0.341	-0.093	-0.382	-0.163	-0.694	-0.206	-0.817
DIVORCED	0.179	1.170	0.161	1.058	0.173	1.129	0.174	1.135	0.235	1.555	0.158	1.042	0.212	1.396	0.147	0.983	0.167	1.087	0.139	0.932	0.142	0.912
WIDOWED	-0.156	-0.688	-0.167	-0.729	-0.081	-0.364	-0.104	-0.470	-0.053	-0.237	-0.093	-0.415	-0.154	-0.665	-0.158	-0.707	-0.143	-0.584	-0.237	-1.023	-0.165	-0.720
<b>d) Economic Variables</b>																						
INCOME	-0.024	-1.353	-0.016	-0.922	-0.020	-1.079	-0.027	-1.516	-0.023	-1.267	-0.022	-1.240	-0.023	-1.271	-0.025	-1.368	-0.025	-1.313	-0.025	-1.378	-0.036*	-1.942
<b>e) Tax Morale</b>																						
TM 1	-0.101***	-5.149																				
TM 2			-0.122***	-6.530																		
TM 3					-0.146***	-7.636																
TM 4							-0.125***	-5.917														
TM 5									-0.100***	-4.310												
TM 6											-0.127***	-5.481										
TM 7													-0.143***	-6.159								
TM 8															-0.103***	-3.889						
TM 9																	-0.085***	-3.801				
TM 10																			-0.174***	-7.103		
TM 11																					-0.140***	-6.491
Observations	1235		1254		1254		1238		1245		1262		1263		1237		1226		1250		1200	
Prob(F-statistic)	0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax evasion on a four point scale. In the reference group are MALE, WHITE, FULL TIME EMPLOYED, SINGLE. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01.

*Table 4*  
Marginal Effects (Under-declaration)

<i>weighted ordered probit</i>	1	2	3	4	5	6	7	8	9	10	11												
<i>Variable</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>	<i>Marg. 3</i>	<i>Marg. 4</i>											
<b>a) Demographic Factors</b>																							
AGE	-0.002	-0.001	-0.002	-0.026	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001	-0.002	-0.001											
FEMALE	-0.047	-0.031	-0.040	-0.026	-0.044	-0.027	-0.046	-0.029	-0.046	-0.030	-0.044	-0.028											
EDUCATION	0.010	0.007	0.010	0.006	0.011	0.007	0.012	0.007	0.010	0.007	0.011	0.007											
RACE (included)																							
<b>b) Employment Status</b>																							
(included)																							
<b>c) Marital Status</b>																							
(included)																							
<b>d) Economic Variables</b>																							
(included)																							
<b>e) Tax Morale</b>																							
TM 1	-0.015	-0.010																					
TM 2			-0.018	-0.012																			
TM 3					-0.022	-0.013																	
TM 4							-0.019	-0.012															
TM 5									-0.015	-0.010													
TM 6											-0.019	-0.012											
TM 7													-0.021	-0.013									
TM 8															-0.015	-0.010							
TM 9																	-0.012	-0.008					
TM10																			-0.026	-0.016			
TM11																						-0.0209	-0.013

### 3. Tax Morale

Having found a significant correlation between tax morale and tax evasion we are going to analyse tax morale as dependent variable, thus analysing the factors that shape tax morale. Although many researchers have pointed out that tax morale influences tax compliance rates, we hardly find any empirical evidence that specifies which characteristics shape tax morale. To use weighted ordered probit models and for simplicity we are going to specify tax morale as dependent variable with the following question: *Trading or exchanging goods or services with a friend or neighbour and not reporting it on your tax form* (scale 1 to 6, where 6 means not at all acceptable and 1 means perfectly acceptable). We believe that this question compared to others catches tax morale pretty well as it integrates friends' and neighbours' services which are almost impossible for a tax administration to control<sup>1</sup>. As we have some missing values for each factor, we decided to analyse each determinant separately, based on the same control variables used in *Table 1 and 3*. The following factors are analysed:

- Tax authority
- Tax system
- Perception and experiences with deterrence factors and tax evasion
- Awareness of tax issues
- Trust in government, social capital and obedience

#### 1. Tax Authority

Taxpayers' estimation of the tax authority might have an effect on tax morale. It depends on how they are treated by the administration. As Smith (1992) argues, "cycles of antagonism between the tax administration and the taxpayer might begin to break with a positive concession by the administrator" (p. 226). He points out that a respectful and fair treatment of taxpayers induces respect for the tax system and thus leads to co-operation. Feld and Frey (2002a) see the relationship between these two actors as a psychological contract:

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<sup>1</sup> However, it should be noticed that in many countries this question is the grey zone and often not taxed.

“Tax authorities must acknowledge and support the contract with the taxpayers by acting in a respectful way towards them, but also by preventing honest taxpayers from being exploited in the process” (p. 4).

Using a data set of tax authorities’ behaviour in Switzerland (26 cantonal tax authorities), they find that tax authorities of cantons with more direct participation rights treat taxpayers more respectfully and are less suspicious if taxpayers report too low incomes than the authorities in cantons with less direct democracy. On the other hand, not submitted tax declarations are more heavily fined. In a recent paper, Feld and Frey (2002b) continue on this framework and argue that tax morale is supported or even raised when tax officials treat taxpayers with respect and on the other hand is reduced when the administration considers taxpayers as individuals who have to be *forced* to pay the taxes: “The feeling of being controlled in a negative way, and being suspected of tax cheating, tends to crowd out the intrinsic motivation to act as an honorable taxpayers and, as a consequence, tax morale will fall. In contrast, if the tax official makes an effort to find out the reason for the error by contacting the taxpayer in an informal way, the taxpayer will appreciate this respectful treatment and tax morale will be upheld” (p. 4). They divide respectful treatment, by the tax administration into two components (p. 5): (i) transparent and clear procedure, (ii) respecting taxpayers’ character. Their empirical analysis shows that treating taxpayers respectfully reduces tax evasion.

With the same data used by Smith (1992) we expand the analysis, focusing on tax morale and using more variables to catch attitudes towards the tax administration:

1. JOB OF THE IRS (*Internal Revenue Service*). The respondents were asked to rate the job that IRS does (excellent=4, pretty good=3, only fair=2, poor=1) regarding:
  - processing returns
  - issuing refunds
  - answering questions
  - auditing returns
  - collecting taxes due

Cronbach’s  $\alpha$  for the items is 0.74, giving the possibility to put them as one index (average of the items).

2. HONESTY AND FAIRNESS. The respondents were asked to agree or disagree with eight statements about the IRS (Cronbach’s  $\alpha = 0.83$ ).



- The IRS employees are honest – you could never bribe them (6=strongly agree, 1=strongly disagree)
- IRS employees are just as knowledgeable as any private tax expert
- I am confident that the IRS would never try to take more money from me than they should
- You can depend on the IRS to keep accurate tax records
- That the IRS automatically withholds some of my income and even get copies of my W-2 forms and interest statements sometimes makes me feel they are always nearby and watching
- When it comes to investigating their own people, the IRS is as thorough as they are with everyone else
- IRS employees have an unusual amount of honesty and integrity
- IRS procedures and practices are fair and reasonable ones that respect the rights of taxpayers

3. **HELP AND INFORMATION.** The respondents were asked to place the IRS on a scale from 1 to 6 based on the following subjects:

- Information easy to understand (value 6), information difficult to understand (value 1)
- IRS employees extremely knowledgeable (6), not at all knowledgeable (1)
- Very easy to find right person to talk to (6), impossible to find right person to talk to (1)
- Consistent from one IRS employee to another (6), different IRS employees give you different answers (1)
- Got the information (6), took forever to get the information from the IRS (1)
- Employees very willing to help (6), employees not at all willing to help (1)
- Employees willing to act in taxpayer's best interest (6), employees always act in government's best interest (1)
- Overall, employees highly professional (6), overall, employees very unprofessional (1)

Cronbach's  $\alpha$  for the addition of the eight items is 0.91, indicating a high correlation between the items and thus offering the possibility to take them as one index.

*Table 5* presents the results. In general, all three variables have a highly significant positive effect on tax morale. An increase in the index of how good the IRS works by one point raises the share of persons indicating the highest tax morale by 2 percentage points; for the honesty and fairness of the IRS and the provision of help and information, the proportion of persons indicating the highest tax morale increases by 1.4 percentage points.

## 2. Fairness of the Tax System

A tax system must be fair in the view of the taxpayers. If a taxpayer feels that she/he is in a sort of unfair contract she/he will probably be less likely to comply. Taxpayers are more inclined to comply to the law if the exchange between the paid tax and the performed government services are found to be equitable. A number of survey research studies have reported a positive correlation between perceptions of fiscal inequity and tax evasion (Spicer 1974, Song and Yarbrough 1978). We are going to use the following variables to consider the perceived fairness of the tax system:

1. How do you feel about the federal income tax system as it applies to the 1986 tax return – do you feel it is quite fair to most people (4), or reasonably fair (3), or somewhat unfair (2), or quite unfair to most people? (1) (**first tax fairness variable**).
2. The present tax system benefits the rich and is unfair to the ordinary working man or woman (1= strongly agree, 6= strongly disagree) (**second tax fairness variable**).

*Table 5* presents the results of the estimations. We find that tax fairness has a significant positive effect on tax morale. An increase in the perception scale of tax fairness by one unit raises the share of persons indicating the highest tax morale by 3 for tax fairness 1 and 2.4 percentage points for tax fairness 2.

## 3. Tax Complexity

Complexity may result in unintentional non-compliance if taxpayers have problems filing the tax form. Furthermore, complexity can reduce the moral costs of evading taxes. Such noncompliance differs from other crimes, because it can be argued that unintentional errors have been made due to misinterpretation of the rules. Honest persons will have higher filling costs and thus higher compliance costs. On the other hand, individuals who want to reduce these costs may either fail to take legitimate credits or may even claim credits without

ascertaining eligibility. Krause (2000) states that when rules are complex, compliance and enforcement will be imperfect. Costs are imposed on the taxpayers and the tax administration, undermining the effectiveness of the tax policies. Tax examiners in the tax administration will have greater problems to identify a case of noncompliance and to discern whether the violation was deliberate or unintentional (Erard 1997). This can increase tax collection costs. Furthermore, complicated tax laws are subject to a broad variety of interpretations (Krause 2000). However, other studies have failed to document a negative relation between complexity and compliance (e.g., Yankelovich and Skelly 1984).

Complexity may affect taxpayers' perceptions of the equity of the tax system. It can be argued that tax complexity and equity are positively related. A more complex tax law can help determine taxpayers' ability to pay and could stop those who would be able to exploit tax rules. On the other hand, additional compliance and administration costs incur (see Kaplow 1996) and taxpayers could be frustrated. A simpler tax law would reduce taxpayers' expenditure in time and money to comply with the tax law (see Blumenthal and Slemrod 1992). Increasing tax complexity may move taxpayers' trade-off between costly compliance either by using own effort or external help (tax practitioners) and evading taxes towards the "exit" decision. Smith (1992) found that complexity significantly reduces the perceived IRS procedural fairness. On the other hand, Forest and Sheffrin (2002) did not find a systematic link between perception of complexity and perception of unfairness, using data from the 1990 *TOS* with similar questions. Contrary to Smith (1992) we only took one item to measure the complexity of the tax system:

Thinking about how easy or difficult it is to fill out your tax form, how complicated do you think our federal income tax laws and rules are for your particular income situation (1= not at all complicated/very easy to understand, 6 = extremely complicated/very difficult to understand).

*Table 5* presents the results. We can see that complexity has the tendency to reduce tax morale. However, the marginal effects are small and the coefficient is not statistically significant.

#### 4. Perception regarding Tax Evasion

The intensity of moral constraints might depend on how widespread evasion behaviour is in a group. The social constraint might be very small if individuals are aware that they are part of a minority who pays taxes. People who used to pay taxes might get angry, which reduces the

moral costs of evasion and increases the incentive to engage in tax evasion. Individuals could react emotionally and very strongly to such perceived attitudes. If a taxpayer believes that tax evasion is common and notices that many individuals evade taxes, this could crowd out intrinsic motivation to comply with taxes. Evasion is a signal that intrinsic motivation is not recognised. Thus, taxpayers get the feeling that they can as well be opportunistic. Lewis (1982, p. 144) argues for the possible existence of a “tax subculture, with its own set of unwritten rules and regulations. Thus I am more likely to evade not only because I have friends who, I know, have got away with it (so why shouldn’t I?) but also because evasion is ethically acceptable among my friends ... Furthermore, ‘no friends of mine can be criminals’ ... ‘What’s good enough for fine, upstanding citizens like Fred Bloggs, John Doe, Donald Campbell, Herman Schmitt and Hans Anderson is good enough for me’”. Frey and Torgler (2007) find using data for Western and Eastern European countries that taxpayers are strongly influenced by their perceptions of the behaviour of other taxpayers. If taxpayers believe tax evasion to be common, tax morale decreases. Alternatively, if they believe others to be honest, tax morale increases. We would hypothesise that the higher the percentage of taxpayers someone perceives to cheat on taxes, the lower his/her tax morale will be. The *TOS* has asked the respondents the following question:

As you may know, an audit is when you have to go to an IRS office or they come to your house or business or they may correspond with you, and you are asked to prove your deductions or answer questions about your tax return. The question I have is: out of every 100 taxpayers at your income level, how many or what percent do you think were audited last year.

*Table 5* indicates that this hypothesis cannot be rejected. The findings indicated that there might be a crowding out effect of tax morale.

#### 4. Awareness of Tax Issues

It might be interesting to analyse to which extent the awareness of tax issues has an impact on tax morale. Information acquirement and discussion depend on individuals’ incentives. Gaining information and discussing this topic with other people imposes time costs on taxpayers. In a discussion people have the opportunity to exchange arguments which raises the level of information of the participants. It also enhances the incentive to participate and to incur additional information costs. People interact in a face-to-face situation and are able to identify the others’ preferences. It could be argued that dissatisfaction with government or generally negative attitude towards the tax system might increase the incentives to talk to

individuals to get a better idea about the opportunities to evade and the probability of getting caught.

A low awareness is linked with a higher uncertainty regarding the IRS process. Scholz and Pinney (1995) argue that the uncertainty about the probability of getting caught imposes sufficient difficulties for citizens to make them rely on heuristics to behave honestly. Tax compliance experiments have analysed the role of fiscal uncertainty by comparing the compliance behaviour when key fiscal parameters are known with certainty to the behaviour when these parameters are made uncertain. Alm, Jackson and McKee (1992) found in an experiment that introducing uncertainty in the fiscal parameters, the fine rate and the probability of detection increases tax compliance. Thus, better information and awareness of the IRS activities might have a negative effect on tax morale.

We have used the following questions to catch the awareness of the IRS:

Do you ever talk about IRS and its activities with your family? (TALK WITH FAMILY)

Do you ever talk about IRS and its activities with your friends and co-workers? (TALK WITH FRIENDS)

How much attention did you pay to discussions on the radio about IRS and its activities (a lot, quite a bit, some, very little, or no attention)? (RADIO INFORMATION)

*Table 5* presents the results. People with a higher awareness of IRS issues tendentially have a lower tax morale. Talking with friends rather than with the family has a stronger negative effect on tax morale. One reason might be that talking inside a family about all different kinds of topics and thus also IRS issues is common practice, but it is not at all common to discuss such a sensitive topic with friends. Thus, someone who discusses IRS issues with friends does so with specific intentions. The coefficient for the effects of RADIO INFORMATION is not significant. A radio is a medium that in general informs about different topics, and there is a low probability that it informs regularly about the IRS. Sensitive and specific topics are rather treated in a discussion among people than on the radio. We have also estimated equations looking at other media like TV and newspaper. The results are in line, not showing a significant effect on tax morale.

## 5. Trust and Obedience

### 5.1 Trust in Public Officials

In the last equations the relevance of trust and obedience to tax morale are analysed. In the tax compliance literature economists have recently started to pay attention to the determinant of trust (Slemrod 2002, Torgler 2007). However, the concept of trust is not new. John Locke has already pointed out the relevance of trust in the interaction between citizens and the government. Trust in public officials might tend to increase taxpayers' positive attitudes and commitment to the tax system and tax-payment, which has finally a positive effect on tax compliance.

Taxes can be seen as a price paid for government's positive actions. Thus, if taxpayers trust the public officials, they are more willing to be honest. If the government acts trustworthily, taxpayers might be more willing to comply with the taxes. Similar to the tax administration, the relationship between taxpayers and government can be seen as a relational contract or psychological contract, which involves strong emotional ties and loyalties. Such a psychological tax contract can be maintained by positive actions, based on trust.

The variable has been developed from the following question:

Public officials can usually be trusted to do what's right (strongly agree=4, mildly agree=3, mildly disagree=2, strongly disagree=1).

The results are in line with our hypothesis that there is a significantly positive correlation between trust in officials and tax morale. An increase in the trust scale by one unit increases the share of subjects indicating the highest tax morale by 3.5 percentage points.

## 5.2 Trust in other People

The *TOS* measures trust in a general way, asking respondents if they trust other people. Paldam and Svendsen (2000) point out that this might be the best available measure of social capital. Slemrod (1998) stresses that "in high-trust societies, individuals need to spend less to protect themselves from being exploited in economic transactions" (p. 29).

Thus, a high level of social capital facilitates a high level of government. People who trust each other are in a closer interaction, which might produce a positive attitude towards contributing to the public good and paying the taxes. The results in *Table 5* indicate that higher social capital leads to a significantly higher tax morale. An increase in the scale of trust by one unit increases the share of subjects indicating the highest tax morale by 2 percentage points.

## 5.3 Obedience

Rule obedience can be defined as the disposition of the members of a society to follow certain rules. Obligation can be seen as a sort of internal institution. People have learnt the rules by education and experience to a degree where they have developed an obligation to fulfil. The rules are obeyed spontaneously without resourceful reflections. Taxpayers have turned the rules into personal preferences and apply them consistently (for an analysis of internal rules see Kasper and Streit 1999). Lindenberg (2001) explains obligation-based behaviour from a framing point of view as the goal to act appropriately, which is acquired through socialisation.

Table 5: Determinants of Tax Morale

Key Independent Variables	<i>Coeff.</i>	<i>z-Stat.</i>	<i>Marg.</i>
<b><i>Tax Administration</i></b>			
JOB OF THE IRS	0.078***	3.850	0.02
HONESTY AND FAIRNESS	0.055**	2.545	0.014
HELP AND INFORMATION	0.055***	2.920	0.014
<b><i>Tax System</i></b>			
Overall Tax System Fairness	0.120***	3.725	0.03
Fairness of the Tax System (Does not benefit the rich and is not unfair to the working man or woman)	0.099***	5.365	0.024
Tax Complexity	-0.026	-1.344	-0.007
<b><i>Perception regarding Tax Evasion</i></b>			
Conditional Cooperation	-0.006***	-4.093	-0.001
<b><i>Awareness</i></b>			
TALK WITH FAMILY	-0.116*	-1.913	-0.029
TALK WITH FRIENDS	-0.307***	-4.909	-0.077
RADIO INFORMATION	-0.015	-1.551	-0.004
<b><i>Trust and Obedience</i></b>			
TRUST OFFICIALS	0.139***	4.446	0.035
TRUST OTHERS	0.078**	2.266	0.02
OBEDIENCE	0.097**	2.309	0.024

Notes: Summary results of 13 regressions. N between 953 (conditional cooperation specification) and 1304 (tax administration specifications). Significance levels: \*  $0.05 < p < 0.10$ , \*\*  $0.01 < p < 0.05$ , \*\*\*  $p < 0.01$ . Marg. = marginal effect for the highest tax morale score.

Rules are like restrictions that reduce the individuals' possibility set. When people pay taxes, they obey the laws with respect to rules. Thus, one would predict that people with a higher rule obedience have a higher tax morale. Respondents in the *TOS* were confronted with the following question:

The most important thing a child should learn is obedience and respect for authority (strongly agree =4, mildly agree=3, mildly disagree=2, strongly disagree=1).

*Table 5* shows that a higher obedience and respect for the authority leads to a significantly higher tax morale.

#### IV. CONCLUSIONS

First of all our intention was to verify the correlation between tax compliance and tax morale. A central question in the tax compliance literature is why so many people pay their taxes although fines and audit probability are low. One key determinant might be tax morale, the intrinsic motivation to pay taxes. With data from the *TOS 1987* we have found a significant correlation between tax evasion and tax morale. To check the sensitivity of the results, we used over-deduction and under-declaration of the income as dependent variable. Furthermore we used a broad variety of proxies to measure tax morale. In all cases, the coefficient was significant, controlling for a variety of factors.

Furthermore, in the tax compliance literature tax morale is rarely discussed and mostly as a residual explanation without referring to factors that shape tax morale. Although the data from the *TOS* are not new, it offers almost the only possibility to study a large variety of tax context factors. We provide evidence on the impact of factors that shape tax morale. Positive attitudes towards tax authority and tax system significantly increase tax morale. On the other hand, complexity has not a significant effect on tax morale. The awareness of tax issues correlates with a lower tax morale. However, the coefficient was not significant in all the cases. Trust in public officials and other people on the contrary had a highly significant positive effect on tax morale. Finally, a higher sense of obedience leads to a higher tax morale.

According to the results, tax morale seems to be a key determinant in enhancing tax compliance. There are a variety of policies beside coercion that help to increase tax morale and thus tax compliance. More empirical work is needed to better understand tax morale. Similar to this paper, most of the empirical insights in the tax compliance literature have been gained with data sets from the United States. It remains the question to which extent the empirical findings from the United States can be generalised. The lack of empirical evidence in the tax compliance literature integrating regions as Europe, Africa, Latin America and Asia has to be reduced in the future. It could be hypothesised that the effects found in this paper with U.S. data might be similar for the European countries, as many institutional components



are comparable to the United States. However, it would be interesting to check the robustness of these results in developing countries where noncompliance and tax morale seem to be real problems (Torgler 2003, Alm, Martinez-Vazquez and Torgler 2007). In general, an excellent method would be to conduct panels or to do regular surveys in different countries, similarly designed as the *TOS*.

In general, results and conclusions obtained in tax morale research are of considerable importance. First, it can provide insight in a more efficient way of raising revenues since the interaction between the taxpayer and the tax authority is taken into account. Second, this research points to a broader understanding of tax compliance where aspects of deterrence (audits and penalties), government regulation, opportunity costs (migration costs and employment status), the quality of publicly provided goods, the tax system (complexity, progressivity and incidence), treatment of taxpayers by the tax authority (transparency, partnership and generosity) and the homogeneity or heterogeneity of the society should be systematically evaluated.

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