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**Does Culture Influence Tax Morale?  
Evidence from Different European Countries**

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# Does culture influence tax morale?

## Evidence from different European countries

by

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### Abstract

There is considerable evidence that enforcement efforts cannot fully explain the high degree of tax compliance. Previous studies have found differences in compliance behaviour across cultures. Novel in this paper is to investigate the impact of culture differences *within* a country rather than *between* countries. Thus, the main purpose of the paper is to see how culture affects tax morale, using World Values Survey (WVS) and European Values Survey (EVS) data. The empirical findings focus individually on Switzerland, Belgium and Spain, countries with a certain cultural variety. In general, the results indicate that the cultural background seems not to have a strong effect on tax morale within a country. However, there is evidence that there is a strong interaction between culture and institutions, which has a strong impact on tax morale.

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*Keywords:* Tax Morale; Tax Compliance; Tax Evasion; Culture

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## 1. Introduction

Tax compliance and tax evasion literature has strongly expanded. However, there is still a lack of empirical evidence. This might not be surprising as tax evasion is a sensitive topic where it is difficult to get useful data. Researchers have tried to gain insights with experiments (for a survey, see, e.g., Torgler, 2002). The results indicate that the high level of tax compliance cannot be explained *entirely* by the level of enforcement (Graetz and Wilde, 1985). Elffers (2000) points out that it is important to see the process of tax evasion as a staircase with different steps. Thus, it is a long way before a person becomes a tax evader. First, taxpayers have to be seized by a will not to comply. Some researchers have argued that many individuals do not even think of tax evasion. Frey (1999) uses the word ‘ipsative possibility set’ (p. 196) and shows that there are taxpayers who do not even search for ways to cheat at taxes. Long and Swinger (1991, p. 130) argue that some taxpayers are ‘simply predisposed not to evade’. Experiments indicate that there are individuals who always comply. In a second step, Elffers (2000) argues that not everyone with ‘an inclination to dodge his taxes is able to translate his intention into action’ (p. 187). Many individuals have not the opportunity or the knowledge and resources to evade. And in a third step, you can find individuals that feel inclined not to comply and check for the opportunity to evade taxes. Elffers states that this is the phase where standard economic theory comes into play, where individuals evaluate the expected value of evasion.

Thus, it might be interesting to focus on the “willingness step” where attitudes regarding tax evasion play an essential role. Thus, the empirical analysis in this paper focuses on tax morale. Torgler (2001) finds a significant correlation between tax morale and the size of shadow economy based on data from more than thirty countries. We are going to use the World Values Survey (WVS 1995-1997) and the European Values Survey data (1999-2000). One advantage of this survey is that it includes many socio-economic, demographic, and attitudinal variables which help to investigate value-driven factors. It is important to do empirical work as tax morale literature is still in its childhood.

Previous studies have found differences in compliance behaviour across cultures (see, e.g., Alm et al., 1995; Cummings et al., 2004; Alm and Torgler 2004). The studies point out that differences in compliance behaviour across cultures is driven by differences in tax administration, citizen attitudes toward governments. Thus, cross-cultural differences in behaviour have foundations in these institutions. However, to better isolate the impact of

culture, it may be worthwhile to focus on culture differences *within* countries rather than between countries. Many economic and institutional factors are constant within a country, which might be difficult to isolate in a *cross-country* analysis. Thus, the main purpose of this paper is to focus on tax morale in different European countries offering a variety of culture influences within countries such as Switzerland, Belgium or Spain. This gives the possibility to check the effects of culture differences on tax morale in specific countries with a certain culture variety. First we are going to analyse Switzerland, a land with three main ethnic groups: German, French, Italian speaking individuals. To better investigate if there is an effect of culture in Switzerland we have to control for specific Swiss institutions, as direct democracy. In a second step we analyse Belgium, a country with two main regions (Flanders and Walloon). In a third step we look at Spain and control for regions with a strong identity such as the Basque Country, Catalonia, Galicia, and Navarre.

## 2. Culture effect

In the recent years culture studies have received more attention in economics. Culture is a difficult term to define. Heinrich et al. (1999) define culture as:

‘information stored in people’s heads, which can be transmitted among individuals. This information can be thought of as the ideas, values, beliefs, behavioural strategies, perceptual models and organizational structures that reside in individual brains, and can be learned by other individuals through imitation, observation (plus inference), interaction, discussion and/or teaching’ (p. 2).

According to Kasper and Streit (1999, p. 162) culture bridges the tension between individuals and the social group and hinges on learned institutions. Similar to Heinrich et al. (1999), they see culture as a kind of language, which is based on rule systems, as ideas, values, internal institutions as customs and conventions, and external institutions. It covers the tools, techniques, works of art, rituals, and symbols. They point out:

‘We may thus see culture as a largely implicit rule system that is underpinned by symbols and other reminders of its institutional content’ (p. 162).

Triandis (2000) argues that shared culture can be found among those people who speak

‘a language dialect, in a certain historic period, and in a defined geographic region’ (p. 13).

This definition is our starting point. The surveys offer the possibility to isolate in a cross-section analysis individuals living in specific language regions. An important question in the tax compliance context is whether culture influences cooperation, solidarity, or tax morale. We will analyse the latter with survey data. Kasper and Streit (1999) emphasise that a common culture produces predictability and an orderly evolution of the corresponding institutions. The shared values act as a filter and serve as ‘the cohesive cement for the evolving internal rules of society’ (p. 393). Heinrich et al. (1999) argue that culture transmission mechanisms provide a means to solve the problem of cooperation, building a mechanism similar to conformism, which creates a force that maintains common behaviour and thus cooperation. It speeds up learning by reducing individual information costs, as, e.g., experimentations. Familiarity with the culture institutions saves costs (Kasper and Streit, 1999). On the other hand it limits choice sets. Thus, if culture acts as a restriction influencing individual’s probability set, it may also influence tax morale. However, focusing on culture differences within a country may lead to a lower impact of culture differences, as institutional factors are relative stable within a country. Focusing on Switzerland we will also need to control for institutional differences as a strong variety can be observed.

Not surprisingly, in economics there is a lack of empirical and experimental evidence on the effects of culture. Cross-culture studies are relatively new in the tax compliance literature. The existing work is mainly to be found in the experimental literature. Laboratory experiments have the advantage to hold tax-reporting factors constant, to better isolate possible culture differences. Cummings, Martinez-Vazquez, McKee, and Torgler (2004) combine experimental and survey data from the United States, Botswana, and South Africa and found that the observed differences in tax compliance behaviour and tax morale can be explained by differences in the fairness of tax administration, in the perceived equity of the fiscal exchange, and in the overall attitude towards the respective governments across the countries. Alm, Sanchez, and De Juan (1995) compared compliance experiments conducted in Spain and the United States. They found differences in the level of and the change in compliance (response to changes in the experimental settings). In line with these results, Alm and Torgler (2004) find with survey data a significantly higher tax morale in the United States than in Spain. Torgler, Schaltegger and Schaffner (2003) found in a compliance experiment done in Switzerland and Costa Rica significant differences among the countries, taking into

account the time factor using random-effects Tobit estimations and controlling for additional factors.

In other economic research areas, especially behavioural economics, cross-culture experiments have also been conducted. Ockenfels (1999) has done public good and solidarity experiments in Eastern and Western Germany (see also Ockenfels and Weimann 1999) and found differences in cooperation and solidarity, with East Germans less cooperative than West Germans. In contrast, Torgler (2003) compares tax morale of inhabitants of East and West Germany after the post-reunification period and finds that inhabitants of East Germany have a higher tax morale than those of West Germany, but that tax morale in the East seems to erode over time. Similarly, Mummert and Schneider (2002) report a significantly lower share of shadow economy labour in East Germany than in West Germany.

Heinrich et al. (2001) undertook a large cross-cultural study of behaviour using ultimatum, public good, and dictator games. Subjects were recruited from 15 small-scale societies. The authors found a large variation across the different cultural groups and argue that preferences and/or expectations are affected by group-specific conditions such as institutions or cultural fairness norms. Botelho, Harrison, Hirsch and Ruström (2001) reconsidered previously conducted experiments on bargaining behaviour in different cultures and found that there are differences among cultures, but that the differences strongly interact with demographic characteristics of participants. Ashraf, Bohnet and Piankov (2004) analyse trust and run investment games, dictator games and risky choice tasks in Russia, South Africa and the United States and found that in America reciprocity drives Americans' trustworthiness, while in Russia and South Africa trustworthiness is related to kindness. On the one hand, experimental findings of Brandts, Saijo and Schram (2003) studying the voluntary contribution to public goods in different countries such as Japan, the Netherlands, Spain and USA did not find any cultural differences.

In general, the different findings in the studies indicate the difficulties to isolate the influence of culture and the relevance of continuing to work on that topic empirically and experimentally to get a broader picture.

### **3. Empirical analysis**

#### *3.1. Model and Predictions*

The World Values Survey (WVS, 1990-1993 and 1995-1999) and the European Values Survey (EVS 1999-2000) allow to analyse many factors, giving the possibility to isolate the influence of culture. Thus, personality and demographic factors should be integrated into a multiple regression analysis. In general, previous studies using the World Values Survey mostly investigated the effects of values, norms and attitudes on *economic behaviour* (see, e.g., Knack and Keefer 1997). This paper differs from these studies analysing how culture affects attitudes and not economic behaviour. Similarly, instead of analysing tax evasion or tax compliance as most of the recent studies, the paper analyses tax morale as dependent variable and searches for factors that systematically influences tax morale. To assess the level of tax morale we use the following question: *'Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between: (...) Cheating on tax if you have the chance'*. The question leads to a ten-scale index of tax morale with the two extreme points 'never be justified' and 'always justified'. The ten-point scale has been recoded into a four-point scale (0,1,2,3), with the value 3 standing for 'never justifiable'. 4-10 have been integrated in the value 0 due to a lack of variance.

To analyse possible cultural differences it is essential to use models that integrate several factors. Our model for predicting tax morale has the following structure<sup>1</sup>:

$$TM_i = \beta_0 + \beta_1 \cdot TS_i + \beta_2 \cdot DEM_i + \beta_3 \cdot ECON_i + \beta_4 \cdot REL_i + \beta_5 \cdot INST_i + \beta_6 \cdot ATIT_i + \beta_7 \cdot CULT_i + \varepsilon_i$$

- *Culture Differences (CULT<sub>i</sub>)*: Three countries are analysed independently. For Switzerland, we build dummies based on the three main official languages (German (reference group), French and Italian). Culture differences might be explained by the Swiss institutional structure. Thus, we will control for institutional differences and we will check the interaction between culture and institutions. Taking into consideration the previous theoretical section we would predict that there is a strong interaction between culture and institutions. For Belgium, we differentiate between the language spoken by respondents without including the German-speaking individuals (Flemish and the reference group Walloon). Finally, the data of Spain allows to build dummies for the Basque Country, Navarre, Catalonia, Galicia, regions with own cultural identity. The other Spanish regions are in the reference group. We would predict

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<sup>1</sup> The variables are described in the APPENDIX *Table A1*.

that regions with strong separatist tendencies (observed especially in Basque Country and Navarre) have a negative impact on tax morale. However, in general, we would predict that the culture differences *within* in a country may be less strong than cross-country differences observed in previous tax compliance studies, as, e.g., differences in the tax administration and institutional differences in general are lower.

- *Properties of the tax system (TS<sub>i</sub>):* individual tax rate, audit probability and fine rate (the last two variables only for Switzerland)) and *economic variables ECON<sub>i</sub>* (class status: dummy variables; income: continuous variable, substitute variable; financial satisfaction: continuous variable)

- It is difficult to predict the effects of DETERRENCE FACTORS on tax morale. Deterrence imposed by the tax authority might crowd out taxpayers' intrinsic motivation to pay their taxes and thus crowd out tax morale. On the other hand, deterrence factors might prevent taxpayers with a low tax morale exploiting the more honest taxpayers. Tax morale is therefore not expected to be crowded out if the honest taxpayers perceive the stricter policy to be directed against dishonest taxpayers. Regulations, which prevent free riding by others, reducing the possibility to escape from their tax payments, may help preserve tax morale (see Frey, 1997). However, looking at tax evasion, the economics-of-crime approach would predict that the extent of tax evasion depends negatively on the probability of being caught and the size of punishment in case of being caught. Many empirical and experimental studies indicate that a higher audit and fine rate leads to more compliance (for an overview see, e.g., Alm 1999, Torgler 2002). Only the Swiss data will allow to include deterrence variables, as we observe cantonal differences.
- The effects of the TAX RATE and the INCOME on tax evasion are difficult to assess theoretically. It depends on the individual's risk preference and the progression of the income tax schedule (see Andreoni, Erard and Feinstein, 1998). A higher marginal tax rate makes tax evasion marginally more profitable, but a contrary effect works depending on the risk aversion of taxpayers. The results are influenced by the tax schedule (proportional, progressive, regressive) (see Frey and Feld, 2002). Furthermore, the relationship between tax evasion and tax rate depends also on the penalty structure. In case the penalties are proportional to the

amount of evaded income and taking into consideration a decreasing absolute risk aversion and constant tax rates than the sign is ambiguous (Allingham and Sandmo, 1972). On the other hand, an increase in the tax rate will encourage individuals to declare more income, if fines are proportional to the amount of evaded taxes (Yitzhaki, 1974).

- *Demographic variables (DEM<sub>i</sub>)*

- AGE (four groups are built, 16-29 (reference group), 30-49, 50-64, 65+)

Predicted sign: +. Older people may have acquired more social capital (see Tittle, 1980). They are often strongly attached to the community (see Pommerehne and Weck-Hannemann, 1996). Thus, they have a stronger dependency on others' reactions, which may act as a restriction imposing higher potential (social) costs of sanctions. Thus, we would predict that there is a positive correlation between age and tax morale.

- GENDER (WOMAN, in the reference group man)

Predicted sign: +. Social psychological research suggests that women are more compliant and less self-reliant than men (e.g., Tittle, 1980). In the past decade, experimental research findings have shown that gender may influence aspects as, e.g., charitable giving, bargaining and household decision making (see Andreoni and Vesterlund, 2001; Eckel and Grossman, 2001). In public good games, the results are not clear. Some have found men to be more cooperative (see Brown-Kruse and Hummels, 1993), others have found that women are more cooperative (Nowell and Tinkler, 1994). Using dictator games, Andreoni and Vesterlund (2001) observed individuals taking decisions with different budgets and interestingly found that in expensive giving-situations, women are more generous than men and when the price of giving decreases, men start to give more than women. Evidence from the tax compliance literature shows the tendency that men are less compliant than women (for survey studies see, e.g., Vogel, 1974; Minor, 1978; Aitken and Bonneville, 1980; Tittle, 1980; for experiments, Spicer and Becker, 1980; Spicer and Hero, 1985; Baldry, 1987).

- EDUCATION (continuous variable)

Predicted sign: +/- . More educated individuals are more likely to know more about tax law and fiscal connections and thus are better aware of the benefits and services the

state provides than uneducated taxpayers, but they may also be more critical how the state acts and especially spends the tax revenues. Furthermore, they better understand opportunities for evasion and avoidance, which negatively influences tax morale. Thus, a clear prediction is difficult to make.

- **MARITAL STATUS** (dummy variables): Marital status might influence legal or illegal behaviour depending on the extent to which individuals are constrained by their social networks (see Tittle, 1980). Such a constraint might have an impact on tax morale. Thus, we would predict that individuals with stronger social networks (e.g., such as married people) would have a higher tax morale than singles (predicted sign: +).

- **EMPLOYMENT STATUS** (dummy variables): In the tax compliance literature there is the strong argument that self-employed persons have higher compliance costs than employees (see, e.g., Lewis 1982). Taxes are more visible for self-employed people and a higher opportunity to evade or avoid taxes leads to the prediction that self-employed people have a lower tax morale than employees (full-time employees are in the reference group) (predicted sign: -).

- **RELIGIOSITY ( $REL_i$ ): CHURCH ATTENDANCE** (continuous variable)

Predicted sign: +. This variable is a proxy for religiosity. It has the advantage to measure the approximation of how much time individuals devote to religion, instead of asking directly the degree of religiosity. The church as an institution induces behavioural norms and moral constraints among their community. Some papers in the criminology literature found a negative correlation between religious membership and crime (see, e.g., Hull, 2000; Hull and Bold, 1989; Lipford, McCormick and Tollison, 1993). Religiosity seems to affect the degree of rule breaking. Religiosity can thus be a restriction on engaging in tax evasion.

- **Institutions ( $INST_i$ )**

Predicted sign: +. Switzerland allows to check whether direct democracy has an impact on tax morale. The degree of institutionalised rights of political participation strongly varies between the 26 Swiss cantons. We would predict that direct democracy has a strong impact on tax morale. In direct-democracy cantons, voters have the

possibility to influence tax law indirectly or directly. As discussion is taking place before the election, people have the opportunity to exchange arguments, which raises the level of information of the participants (see Bohnet and Frey, 1994). They interact in a face-to-face situation and are able to identify the others' preferences. Taxpayers get thus involved with the topic. Such an active role helps them to better monitor and control politicians and thus to reduce the asymmetric information between them and their agents (government), which reduces the discretionary power. Frey (2001) states that it is important that the 'classe politique' is not able to block the referenda. Swiss taxpayer can participate in the political process<sup>2</sup>. Thus, referenda gives decision power to taxpayers who are on average outside the group of politicians (see Frey and Stutzer, 2002). The referendum is a strong restriction for the politicians or the legislature to act in their personal interest (see Feld and Kirchgässner, 2000). As a consequence, it can be hypothesised that tax revenues are spent more in accordance with the preferences of the taxpayers, which increases tax morale. Contrary to a referendum, with an initiative taxpayers are in the position of "agenda setters" (see Feld and Kirchgässner, 2000). An initiative helps to express the taxpayers' preferences on what should be done with the taxes. It reduces politicians' costs of not following taxpayers' preferences.

- *Attitudes (ATIT<sub>i</sub>)*: National pride, trust in legal system, trust in government and the parliament, continuous variable, predicted sign: +)

- National pride: Pride is a widespread phenomenon. However, according the authors' knowledge, the effect of pride on tax cheating and even on other aspects has not been documented in the economic literature intensively so far. Boulding (1992) states:

'The dynamics which governs the creation, destruction, and distribution of various forms of pride and shame in society are very little understood, yet nothing perhaps is more crucial to the understanding of the overall dynamics of a particular society than the marked differences which exist among societies in this regard' (p. 93).

An individual could be proud of her/his country. Pride produces a sense of group identification. Such group identification can be found, for example, in international

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<sup>2</sup> The WVS data set includes only Swiss citizens. Of course, foreigners and companies have to pay taxes, but cannot vote in Switzerland.

soccer games as the Fifa World Cup. Tyler (2000) argues that pride influences people's behaviour in groups, organizations and societies. It gives a basis for encouraging cooperative behaviour. Thus, the more someone is proud of his/her country, the higher tax morale might be.

- Trust in state's institutions. We are also going to analyse the effects of trust in the government, the parliament and the legal system on tax morale. Although the concept of trust is not new, economists have just started to pay attention to the determinants of trust in the last few years. John Locke has already pointed out the relevance of trust in the interaction between citizens and the government. Trust in the legal system might intend to increase taxpayers' positive attitudes and commitment to the tax system and tax-payment and which has finally a positive effect on tax compliance. Positive actions by the state are intended to increase taxpayers' positive attitudes and their commitment to the tax system and tax-payment and thus their compliant behaviour (e.g., Smith, 1992; Smith and Stalans, 1991). If the government acts trustworthily, taxpayers might be more willing to comply with the taxes. On the other hand, perceived unfairness increases the incentive to act against the tax law as psychological costs are reduced. The relationship between taxpayers and government can be seen as a relational or psychological contract, which involves strong emotional ties and loyalties. Taxes can be seen as a price paid for government's actions and their maintenance of a fair legal system. Thus, if taxpayers trust the government they are more willing to be honest.

We will use weighted ordered estimations to correct the samples and thus to get a reflection of the national distribution. The weighted ordered probit models are relevant in such an analysis insofar as they help analyse the ranking information of the scaled dependent variable tax morale. However, as in the ordered probit estimation the equation has a nonlinear 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 effect of a variable on tax morale (see, e.g., Frey and Stutzer, 2002). In all tables, only the marginal effect for the highest tax morale value ("tax evasion is never justified") are shown. In the following three sections we are going to analyse tax morale in the countries Switzerland, Belgium and Spain.

### 3.1. Switzerland

Switzerland is a good country to analyse as its culture and institutions are not homogeneous. This small country in the heart of Europe is like a mosaic of different cultures. Four languages are spoken in Switzerland: German, French, Italian, and Romansh. The different languages are strongly linked with the neighbouring states: the German speaking part with Germany, Austria, Liechtenstein, France with the French speaking part in western Switzerland and Italy with the Italian speaking region in the southern part of Switzerland. We build dummy variables based on the language the interview was conducted in. As only Swiss citizens have been asked, the languages mostly correspond to the three main languages (Romansh speaking are not included). Switzerland is characterised by a constitution, which combines direct democracy elements as initiative and referenda with a high degree of federalism, which means that cantons and local authorities have far reaching competences. The World Values Survey in 1996 offers the possibility to control for cantonal differences in the empirical analysis<sup>3</sup>. The degree of institutionalised rights of political participation strongly varies between the 26 Swiss cantons. This study uses a six-point scale index developed by Frey and Stutzer (2000, see Appendix *Table A2*), which reflects the extent of direct democratic participation (1 = lowest and 6 = highest degree of participation)<sup>4</sup>.

The cantons in Switzerland not only differ with respect to the direct democratic rights but also with respect to the tax system and the way taxpayers are treated. To take into consideration such differences, we add the individual tax rates, the fine rates and the audit probability into the estimations. It is essential to control for the properties of the tax system to better isolate the influence of culture on tax morale. Moreover, without including such variables, the effect claimed to reflect direct democratic rights might be confounded with cantonal tax structure, as people in Switzerland can vote on tax issues. As an approximation for the probability of detection, the number of tax auditors per taxpayer (in ‰) in each canton  $c$  is used. The penalty tax rate is approximated by the standard legal fine as a multiple of the

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<sup>3</sup> However, it should be noticed that the Swiss World Value Survey was not random-random but quota-random, based on a random sample of communes and then on quotas in terms of sex, age, etc. in the selected communes. Thus, the smallest cantons are not necessarily represented (not represented are: Appenzell a. Rh., Glarus, Jura, Nidwalden, Uri, and Zug). On the other hand, the ISSP data set contains all 26 cantons.

<sup>4</sup> The index includes the four legal instruments : the popular initiative to change the canton's constitution, the popular initiative to change the canton's law, the compulsory and optional referendum to prevent new law or changing law and the compulsory and optional referendum to prevent new state expenditure. The index is based on the degree of restrictions in form of the necessary signatures to use an instrument, the time span for collecting

evaded tax amount (in percent) in a canton  $c^5$ . The individual tax rates take into consideration differential tax treatments of married and non-married individuals. Otherwise, the significant findings related to the marital status may have nothing to do with differences in the degree of tax morale.

The results are presented in *Table 1* and *2*. *Table 1* shows that the culture variables are not statistically significant. However, the different culture variables do not show an equal picture. French speaking individuals have a lower tax morale than German speaking individuals, while Italian speaking ones have a higher tax morale. The marginal effects are relatively high, but the coefficients are not statistically significant. A higher direct democracy leads to a higher tax morale. An increase in the index of direct democracy by one point raises the share of persons indicating the highest tax morale by more than 4 percentage points.

However it is a common observation that in Switzerland the more direct democratic institutions are in the German speaking part and the less ones in the Latin regions (LATIN, French and Italian part). Thus, we introduce in *Table 2* an interaction variable (DIRECT DEMOCRACY \* LATIN). The product term is statistically significant with a negative sign, so we may conclude that there is an interaction between culture and the institutional structure in Switzerland. This means that the effect of culture depends on the level of direct democracy and vice versa. To check whether a correction regarding the standard errors has an effect on the significance level of the interaction term, we present in *Table 2* also estimations with standard errors adjusted to clustering over cantons. No changes are observable regarding our interaction term. We even observe that the coefficients get more significant. Thus, it can be concluded that there is a strong effect of the so far measured culture variables.

((Table 1 and Table 2 about here))

Trust in government has also a significantly positive effect on tax morale. The control variables indicate that individuals between 50 and 64 have a higher tax morale than the reference group. An increase in the trust in government scale by one unit increases the share of subjects indicating the highest tax morale by 7.5 percentage points. As *Table 1* shows, we included the trust in the government variable in the Eq. 3 and 5. This allows to investigate whether the positive correlation between direct democracy and tax morale is largely driven by

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the signatures, and the level of new expenditure which allows to use the financial referendum (for a detailed discussion see Stutzer, 1999).

a higher trust or not. The results show that the effect of direct democracy on tax morale remains robust. Furthermore, the findings in Table 1 indicate that there is the tendency that a higher pride value leads to a higher tax morale. However, the effect decreases after including the trust variable into the estimations.

The deterrence factors have not a strong impact on tax morale. The marginal effects are very low and the coefficient of the variable audit probability is not statistically significant. The variables INDIVIDUAL TAX RATE and INCOME were not included in all the estimations, as compared to other control variables more values were missing. In the first three estimations, the economic class has been used as a proxy for the economic situation. The income and the tax rate, developed according to the income information of the individuals, have been included in the estimations 4 and 5. The results in Table 1 indicate that both variables have not a statistically significant impact on tax morale.

In all estimations financial satisfaction has been included. Financial dissatisfaction might create a sense of distress, especially when taxes have to be paid and there is a discrepancy between the actual and the desired financial situation. Thus, taxes might be perceived as a strong restriction, which increases the incentives to reduce tax honesty. Furthermore, human beings do not make absolute but rather relative judgements (see Frey and Stutzer, 2002). They draw comparisons with the past, with expectations about the future or with the financial situation of other individuals. Dissatisfaction increases with the gap between aspiration and actual situation. The results indicate that financial satisfaction has a positive effect on tax morale.

Looking at further control variables we observe the tendency that women report a significantly higher tax morale than men. Furthermore, individuals between 50 and 64 have a higher tax morale than the reference group (lowest age group). Married people have a significantly higher tax morale than singles. This result remains robust after including the individual tax rate, which takes into consideration differences in the tax treatment. The share of part-time employees reporting the highest tax morale is by more than 8 percentage points higher than that of full-time employees. Finally, our findings indicate that religiosity has a significantly positive effect on tax morale with marginal effects around 3 percentage points.

In general, it could be argued that the extent of direct democratic rights is endogenous in the long run. In Switzerland people can not only vote on aspects of the tax structure, but also on the extent of direct democratic participation rights. It can be stated that values and

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<sup>5</sup> The information about the probability of detection and the fine for tax evasion has been collected by Lars P. Feld and Bruno S. Frey with a questionnaire. The following contributions are based upon this data set: Feld and Frey (2002a), (2002b) and Frey and Feld (2002).

attitudes, which may partly differ across cantons, determine the extent of political participation rights in the long run. Thus, the effect of the direct democratic variable may partly reflect values. Or in other words, do taxpayers with a higher tax morale choose direct democratic institutions? In general, direct democratic institutions have a long tradition in Switzerland and are quite stable over time (see *Table A3* in the Appendix), which might suggest that the causality runs from direct democratic rights to tax morale and not the other way round. However, based on this kind of data set it is not possible to fully rule out the causality problem.

### 3.2. Belgium

Gérard (2001) defines Belgium as:

‘a hodgepodge resulting from the assembly, through marriage, conquest and treaty, of a series of geographic entities, vassals of the king of France or the German emperor, dotted with cities jealous of their privileges’ (p. 3).

In Belgium we can observe a transformation from a centralised state into a federation after several constitutional reforms between 1970 and 1993. For our analysis the main different culture communities (Dutch and French) and thus the regions Flanders and Wallonia are interesting. The Francophone’s elite ruled Belgium after the independency in 1830. The Flemish movements for cultural autonomy gained importance at the end of the 19<sup>th</sup> century (van Houten, 1999). They obtained the permission to use Flemish in the justice system (1873), in the administration (1878), education (1883) and the universities (1932) (Gérard, 2001).

In the 1950s and 1960s the Flemish movements were very active, resulting in the important step of the state reform in 1970 (van Houten, 1999). The concepts of Community and Region were introduced in the Constitution (Gérard, 2001). One step in building Belgium’s federalism was the introduction of a language boundary in the 60s with the French part in the South, the Flemish part in the North and the bilingual area of Brussels. An important reform which gave subnational institutions a higher degree of autonomy has been done in 1988, transferring many competencies and thus raising the share of subnational public expenditures to over 40% of the total public expenditures (van Houten, 1999). In 1988 it was decided to change the personal income tax into a tax shared, where the amount is

predetermined and its allocation among the regions is based on the relative regional revenue of the personal income tax (Gérard 2001). In a ten-year transition process (till 1999) regions received shares of personal and corporate income taxes. However, the rates of the taxes are still set by the federal government and autonomous taxes constitute less than 10% of subnational's institutional budgets. One advantage in the income tax system is that regions can put surcharges or discounts on the federal level rates on the personal income tax (van Houten 1999). However, the Regions have not actually made use of this possibility. The Lambermont or Saint-Polycarpe agreements in 2001 indicate that the power of Regions to establish additional taxes or rebates has been broadened. However, regions have not the possibility to modify the tax base or tax calculations by the federal government or to reduce the progressive graduation of the tax. Regions still operate on the margins (Gérard, 2001, p. 36). In general, Gérard states that the 'Belgian federalism is the outcome of an 'anti-French-speaking bourgeoisie' social movements' (p. 5). If regional fiscal autonomy increases, Wallonia will be worse off as economic performance and fiscal capacity are lower compared to Flanders (van Houten, 1999). The per-capita GDP is higher in Flemish Regions in 1996 than in Walloon Regions (see Capron, 2000).

The recent European Values Survey indicates that Francophone inhabitants have a stronger attachment to Europe than the Flemish (Doutrelepoint, Billiet and Vandekerke, 2001). Using the European Values Survey (EVS) 1999 we differentiate by the main languages spoken by respondents without including the German speaking individuals (Flemish and Walloon (reference group)). We are going to integrate the individual marginal tax rates. In Belgium, there are no differences in marginal tax rates among the regions. But, similarly to Switzerland, the differential tax treatment of married and non-married couples is considered. Furthermore, instead of trust in the government, we are going to analyse trust in the parliament. This allows to analyse the robustness of the impact of trust on tax morale.

*Table 3* presents the results. As the income variable has some missing observations, we start with estimations where people had to classify themselves into different classes (see equations 1, 2, 3). After that, the estimations 4, 5 and 6 consider the income variables and the marginal tax rate. The results indicate the tendency that there is no statistically significant difference among the cultural groups. In general, the Flemish population has a lower tax morale the Francophone inhabitants. A stronger preference for autonomy, a strong historical power by the Francophone's elite after the independency and the awareness that a higher autonomy would benefit Flanders (higher economic performance and fiscal capacity) could

explain possible differences. However, a lower degree of institutional difference compared to Switzerland may be the reason for lack of statistical significance.

Similarly to the results in Switzerland, pride and trust have a positive impact on tax morale. An increase in the pride scale by one unit raises the share of subjects indicating the highest tax morale by more than 2 percentage points. Similarly, trust in the parliament is positively correlated with tax morale showing marginal effects of more than 6. An increase in the trust in the legal system by one unit also increases the share of individuals stating that tax evasion is never justifiable by 2 percentage points. The EVS allows to investigate offers the possibility to integrate a further variable: the attitude regarding democracy<sup>6</sup>. *Table 3* indicates that pro-democratic attitudes have a highly significant positive effect on tax morale. An increase in the pro-democracy scale by one unit raises the proportion of persons indicating the highest tax morale by 4 percentage points.

In line with the empirical results in Switzerland, the tax rate has not a significant impact on tax morale. The economic variables indicate the tendency that an increase in the economic class and a higher income lead to a lower tax morale. Looking at the demographic variables we observe the tendency that age has a positive impact on tax morale. The age group 50-64 seems to have a particularly high tax morale. Furthermore, women report a higher tax morale than men. There is the tendency that married people have a higher tax morale than singles, without showing statistically significant coefficients in all estimations. Finally, church attendance is related to a significantly higher tax morale, which is in line with the results obtained in Switzerland.

((Table 3 about here))

### 3.3. Spain

Moreno (2001) states that Spain is lacking of a single state identity. We have now the opportunity to analyse if we find a difference between the Spanish 'historical nationalities'. During the era of Franco (1939-1975) Spain was a strongly centralized state. After that there is a shift from dictatorship to a certain federalisation, with a pre-autonomy process. Based on the Spanish Constitution of 1978, Spain is now divided into 17 Autonomous Communities

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<sup>6</sup> The question was: Would you say it is a very good, fairly good, fairly bad or very bad, way of governing this country: Having a democratic political system (scale 1 to 4).

(AC), 53 provincial governments and 8.098 municipalities. Molero (2001) defines this structure as ‘cooperative federalism’ (p. 506). Three years after the Constitution in 1978, regional governments managed 2.9 percentage of the total public expenditures. Twenty years later, an increase in the local autonomy can be found. The regions managed 24.3 percent of the total expenditure. However, local autonomy has only increased from 9.7 to 12.9 percentage (Toboso, 2001). Furthermore, in the years just after 1978, Communities could not levy their own taxes and thus were financially dependent on transfers from the central government. During the late 80s some communities established new taxes, which central government did not always accept (see Almendral, 2002). The 1988 Law on the Financing of the Autonomous Communities defined the structure of revenues. Until 1996 the communities received 15 percent of the total tax yields of the central personal income tax, a contribution considered as a grant (Toboso, 2001). The fiscal reform between 1996 and 2001 was intended to bring peace with the central government, which before had not been willing to give up the taxation sovereignty. However, with the Autonomous Regions Finance Act approved in 1980, the central government has the power to limit regions’ autonomy, e.g., the creation of new taxes, the prohibition of double taxation (Almendral, 2002).

We are going to use dummy variables for the Basque Country, Navarre, Catalonia, and Galicia, regions with own cultural identity. The other Spanish regions are in the reference group. Moreno (2001) argues that Franco’s dictatorship provided the atmosphere for Spanish regionalism, autonomism and nationalism, despite the separatism with its longer tradition.

The Basque Country and Navarre are self-governing communities that have a financial system with the possibility to regulate and collect their own taxes. A certain amount of the collected revenue has to be transferred to the central government (fixed). The movement of financial autonomy has a certain tradition in both regions. The first written law resolution to manage some central taxes date from 1878 and 1841 (Toboso, 2001). Moreno (2001) reports the results from a periodical survey conducted by the newspaper *País* that indicate that the Basques had a stronger feeling of an own identity compared to other regions. 23 percent of the Basques declared themselves to feel “only Basque”.

Despite the strong sense of identity in Catalonia, separatism is weaker. In Catalonia, for example, only 12.5 of the individuals defined themselves as only Catalan (Moreno et al., 1997). The language Catalan is understood by the majority of the population (see Keating, 1999). Galicia is also a ‘historical region’ with an own language (Galego) and a strong sense of identity. Galicia has a similar autonomy status as Catalonia based on the *Article 151* of the Spanish Constitution, which gives this region a high degree of self-ruling (see Rodriguez-

Pose 2000). Keating (1999) points out that in Galicia the movement towards more autonomy is less strong than in Catalonia. Villadangos (1999) stresses that there is a consensus to consider Catalonia, the Basque Country, and Galicia as own nationalities. However, another distinction which we somehow can also find in the *Table A4* (see Appendix) is to speak of two classes of nationalities:

‘One first class or ‘business class’ occupied by Catalonia, Basque Country and Galicia. And, a tourist class, whose occupants would be Andalusian, Valensian, Canarian and Aragon’s people’ (p. 10)

Navarre and the Basque Country are so-called *Charter*<sup>7</sup> region, having the highest financial autonomy among Spanish regions (see Rodriguez-Pose, 2000). This can be seen in *Table A4*, which indicates the level of financial autonomy measured as the size of Spanish region’s budget in per capita terms. Molero (2001) argues that regions based on the *Article 143* have low levels of responsibilities and a shorter historical background than regions based on the *Article 151*. The central government in these regions still retains the main broad-based taxes. In the 90s Spain has made various reforms, which increased regions’ autonomy. Based on the Law 14/1996, regional governments’ share in the personal income tax was defined as ceded, creating a tendency of decreasing the degree of financial dependency of regional governments (see Toboso, 2001). However, Almendral (2002) criticises that Communities have failed to use the power and room to create new fiscal benefits and an own taxation policy and still rely on transfers from the central government representing around 60% of their total revenues. In general, public expenditure patterns and inter-governmental transfers shift from centralisation to the so-called Autonomous Communities since the 1980s (see Heywood, 2000).

We are going to analyse the data from the World Values Survey (1995-1997). The survey for Spain has been conducted in 1995. It is important to integrate a proxy of the tax structure in the estimations as we observe differences in the marginal tax rates between the Charter regions and the other regions. Besides the Charter regions, in 1995, there were no differences between the Autonomous Communities in the setting of the statutory tax rates (see Esteller-Moré, 2003). Furthermore, similar to the other estimations done before, we also differentiate between married and non-married subjects calculating the marginal tax rates based on the income information.

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<sup>7</sup> Navarra and the Basque Country are also defined as *foral regime communities*. Thus, the other 15 regions are defined as *common regime communities* with a general but fundamental dependency on the central government system (see Suárez-Pandiello, 1999).

((Figure 4 about here))

*Table 4* presents the results of the multivariate analysis. We can see that beside Navarre all culture variables do not have a significant influence on tax morale. In general it somehow a surprise that we cannot observe a statistically significant coefficient for the variable BASQUE. It might be interesting to observe tax morale in a previous World Values Survey wave. Thus, in Figure 1 and Table 5 we take a look at the World Values Survey 1990. To get a better idea of what happens between the different tax morale scales, we present in Figure 4 a histogram, which refers to the distribution of tax morale scores in these two different years. The results indicate a strong increase in the Basque Country between 1990 and 1995. Tax morale at the lowest level (score 0) has strongly decreased over time. We observe especially higher values for the tax morale scores 2 and 3. In 1995, more than 45 percent of the individuals stated that tax evasion is never justifiable, compared to around 30 percent in 1990. In a next step we test the hypothesis whether our different samples have the same distribution using the Wilcoxon rank-sum test (Mann-Whitney). The results in Table 5 indicate that there is a significant difference between 1990 and 1995 in the Basque Country. Thus, tax morale has significantly increased over time in Basque Countries. We also observe a statistically significant lower tax morale in the Basque Country compared to the other Spanish regions. In general, this inter-temporal improvement in the Basque Country may be based on observed and planned institutional changes (decentralization process) in Spain.

((Figure 1 and Table 5 about here))

However, the findings in Navarre indicate that a higher autonomy does not lead to a significantly higher tax morale. This result is not in line with the findings in Switzerland. Compared to Switzerland the fiscal decentralisation process in Spain is still not finished. Suárez-Pandiello (1999) criticises the decentralisation process in Spain:

‘For instance, the Spanish system gave little incentive to fiscal co-responsibility, above all at the level of ACs. Without doubt, the possibility that these had to relate their tax demands to their needs of expenditure were minimal. The regulation of ceded taxes was therefore carried out at central level (not even the rates could be changed) and the requirement of non-

assessment of taxable factors already subject to central taxation greatly limited the possibilities of creating new taxes' (p. 251).

Looking at other variables we observe that similar to Switzerland and Belgium, pride and trust (here trust in the legal system) have a significantly positive impact on tax morale. In line with Belgium we investigate the impact of attitudes regarding democracy. The two used coefficients show that an increase in the pro democracy attitude score by one unit raises the share of persons indicating the highest tax morale by more than 6 percentage points. Looking at the control variables there is the tendency that women are more compliant than men. Married people have a higher tax morale than singles, but contrary to previous findings the coefficient is not significant. Contrary to the previous findings, church attendance has not a statistically significant impact on tax morale.

#### **4. Conclusions**

The intention of the paper was to check if culture differences have an impact on tax morale *within* a country. Thus, the paper offers a novel framework in the tax compliance literature as previous studies focused in a *cross-country* analysis on how culture affects tax compliance. Thus, many economic and institutional factors are constant within a country, which might be difficult to isolate in a cross-country analysis. Furthermore, this paper investigates tax morale rather than tax evasion using multiple regressions with the help of the World Values Survey and the European Values Survey. We focus on Switzerland, Belgium and Spain, all European countries with a cultural variety within countries. Major results are summarized in *Table 6*.

#### TABLE 6 ABOUT HERE

In Switzerland we observed a strong interaction between culture and institutions. In Belgium only small differences between Flemish inhabitants and Walloons have been observed. However, the negative coefficient of the variable FLEMISH was not statistically significant. In Spain, the lowest tax morale has been found in Navarre and not in the Basque country. However, tax morale has strongly increased in the Basque Countries between 1990 and 1995. In 1990, Basques had a lower tax morale than all other Spanish inhabitants.

Direct democracy has a strong impact on tax morale in Switzerland. Not only observable institutions in Switzerland but also pro democratic attitudes in Belgium and Spain have a positive effect on tax morale. Interestingly, national pride and trust, measured as trust in the legal system, the government and the parliament, have a consistent positive effect on tax morale. Trust at the constitutional (trust in the legal system) and the current politico-economic process level (trust in the government and the parliament) seem to be essential to a well-functioning taxpayer society. Thus, governments' and tax administration's strategy aimed at creating confidence in their credibility and their capacity might be honoured with a higher tax morale. Furthermore, the strong effect of national pride on tax morale is interesting as to the authors' knowledge it has not been empirically documented so often in the economic literature. On the other hand, the findings in Switzerland reduces the emphasis of the significance of coercion for resolving the social dilemma of tax payments.

Looking at the different results in the case studies, we observe that in Spain, contrary to Switzerland, more autonomy does not necessarily lead to more support for government taxation. Separatist tendencies and an unfinished fiscal decentralisation process might be reasons for such differences.

In general, it is very difficult to disentangle cultural effects from the economic and institutional environment. However, based on these difficulties, it is not surprising that experimental and empirical evidence show mixed results. It seems that a substantial body of evidence is needed to get a general idea of the impact of culture in economics (see also Brandts, Saijo and Schram, 2003). Compared to experiments, a survey analysis has the disadvantage, that causality problems cannot be fully solved. Furthermore, culture studies are faced with the problem that culture might pick up several effects that might affect tax morale and tax compliance or cooperation in general. Thus, it is difficult to isolate "culture" in a proper manner. However, a multivariate analysis allows to control in a multivariate analysis with a high number of observations for many factors and thus helps to better isolate the effect of culture. In this paper we have also tried to control for the properties of the tax system as far as possible. In Switzerland and Spain, the individual tax rates reflect differences among the cantons or regions and among married and non-married people. In Belgium, there is no difference among regions, but differences between married and non-married subjects have been considered. Without such a consideration, the obtained result that married people had a higher tax morale than singles might have nothing to do with values but with a differential in the tax treatment, as the tax structure interacts with particular socio-demographic characteristics. However, not all such effects can be isolated in this study. For example, the

positive effect of age (being retired) and the differences between men and women may be due to different tax treatments or lower female labour participation rates. Furthermore, there might be a two-way interaction of the tax structure and tax morale. Structural features of the political and economic environment such as the tax system may shape tax morale. On the other hand, the political and economic system also is affected by values and attitudes in the long run. We found that direct democracy had a strong significant impact on tax morale in Switzerland. But, it can be argued that direct democratic rights are endogenous in the long run. As people can also vote on the extent of direct democratic rights, it may be that the effect of the direct democracy variable reflects values, including tax morale. However, *Table A3* in the Appendix indicates that the degree of direct democracy has been quite stable in the long run, which might indicate that the causality runs from direct democratic rights to tax morale and not the other way round.

All in all, a within country analysis done in this study helps to get new insights about the impact of culture on tax morale and tax compliance. This and recent studies have shown that a government compliance strategy that goes beyond using the instruments of detection and punishment can reasonable help to improve tax morale and tax compliance.

## APPENDIX

Table A1

### Derivation of Some Variables

Variable	Derivation
TAX MORALE (dependent variable)	Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between. Cheating on tax if you have the chance (3=never and 0=always)
CHURCH ATTENDANCE	Apart from weddings, funerals and christenings, about how often do you attend religious services these days? More than once a week, once a week, once a month, only on special holy days, once a year, less often, never practically never. (7= more than once a week to 1=never, practically never)
CLASS	<p>People sometimes describe themselves as belonging to the working class, the middle class, or the upper or lower class. Would you describe yourself as belonging to the:</p> <p><b>WORLD VALUES SURVEY</b></p> <ol style="list-style-type: none"> <li>1. Upper class</li> <li>2. Upper middle class</li> <li>3. Lower middle class</li> <li>4. Working class</li> <li>5. Lower class</li> </ol> <p><b>EUROPEAN VALUES SURVEY</b></p> <ol style="list-style-type: none"> <li>1. upper, upper middle class</li> <li>2. middle, non-manual workers</li> <li>3. manual workers, -skilled, semi-skilled, -unskilled, unemployed</li> </ol>
INCOME	<p>Here is a scale of incomes (1-10). We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions.</p> <p><b>Switzerland 1996</b></p> <ol style="list-style-type: none"> <li>1. Less than 20'000 Swiss Francs</li> <li>2. 20,000-26,999</li> <li>3. 27,000-31,999</li> <li>4. 32,000-37,999</li> <li>5. 38,000-44,999</li> <li>6. 45,000-51,999</li> <li>7. 52,000-59,999</li> <li>8. 60,000-69,999</li> <li>9. 70,000-89,999</li> <li>10. More than 90,000</li> </ol> <p><b>Spain 1995</b></p> <ol style="list-style-type: none"> <li>1. 45.000 or less ptas</li> <li>2. 45-75.000 ptas</li> <li>3. 75-100.000 ptas</li> <li>4. 100-150.000 ptas</li> </ol>

	<ol style="list-style-type: none"> <li>5. 150-200.000</li> <li>6. 200-275.000</li> <li>7. 275-350.000</li> <li>8. 350-450.000</li> <li>9. 450-1.000.000</li> <li>10. More than 1.000.000</li> </ol> <p>Belgium 1999</p> <ol style="list-style-type: none"> <li>1. less than 25,000 Belgian francs per month</li> <li>2. 25,000-34,999 francs</li> <li>3. 35,000-44,999 francs</li> <li>4. 45,000-54,999 francs</li> <li>5. 55,000-64,999 francs</li> <li>6. 65,000-74,999 francs</li> <li>7. 75,000-89,999 francs</li> <li>8. 90,000-104,999 francs</li> <li>9. 105,000-149,999 francs</li> <li>10. 150,000 francs per month and over</li> </ol>
EDUCATION	<p>SPAIN 1995</p> <p>What is the highest educational level that you have attained?</p> <ol style="list-style-type: none"> <li>1. No formal education</li> <li>2. Incomplete primary school</li> <li>3. Completed primary school</li> <li>4. Incomplete secondary school: technical/vocational type</li> <li>5. Complete secondary school: technical/vocational type</li> <li>6. Incomplete secondary: university-preparatory type</li> <li>7. Complete secondary: university-preparatory type</li> <li>8. Some university-level education, without degree</li> <li>9. University-level education, with degree</li> </ol> <p>SWITZERLAND 1996</p> <ol style="list-style-type: none"> <li>1. Never went to school</li> <li>2. Incomplete primary school</li> <li>3. Primary school (up to 12 years of age)</li> <li>4. Apprenticeship</li> <li>5. Lower secondary school (up to 16 years of age)</li> <li>6. Secondary school without diploma (16-19 years)</li> <li>7. Technical school</li> <li>8. Secondary school with diploma</li> <li>9. University or Federal Polytechnical School without degree</li> <li>10. University or Federal Polytechnical with degree</li> </ol> <p>BELGIUM 1999</p> <ol style="list-style-type: none"> <li>1. Inadequately completed elementary education</li> <li>2. Completed (compulsory) elementary education</li> <li>3. (Compulsory) elementary education and basic vocational qualification</li> <li>4. Secondary, intermediate vocational qualification</li> <li>5. Secondary, intermediate general qualification</li> <li>6. Full secondary, maturity level certificate</li> <li>7. Higher education – lower-level tertiary certificate</li> <li>8. Higher education – upper-level tertiary certificate</li> </ol>
FINANCIAL SATISFACTION	How satisfied are you with the financial situation of your household? (scale 1 = dissatisfied to 10=satisfied)

PRIDE	How proud are you to be .....? (substitute your own nationality for 'French') 1. Not at all proud 2. Not very proud 3. Quite proud 4. very proud
TRUST IN GOVERNMENT	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
TRUST IN LEGAL SYSTEM	Could you tell me how much confidence you have in the legal system: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? (4= a great deal to 1=none at all)
PRO DEMOCRACY	Would you say it is a very good, fairly good, fairly bad or very bad way of governing this country? Having a democratic political system (4=very good, 1=very bad)
FINE RATE (SWITZERLAND)	Standard legal fine (in percent) as a multiple of the evaded tax amount based on questionnaire data of Frey and Feld (2002) and Feld and Frey (2002a, 2002b)
PROBABILITY OF DETECTION (SWITZERLAND)	Number of tax auditors per taxpayer (in %) based on questionnaire data of Frey and Feld (2002) and Feld and Frey (2002a, 2002b).
INDIVIDUAL TAX RATE (SWITZERLAND)	Calculations based on the average weighted value (in percentage) using the WVS income groups. The differentiation between singles and married people has been included.
INDIVIDUAL MARG. TAX RATES (BELGIUM)	Calculations based on WVS and EVS income groups. The differentiation between singles and couples (average of 1 and 2 earners has been used).

Source: Inglehart et al. (2000), European Values Study (1999).

Table A2

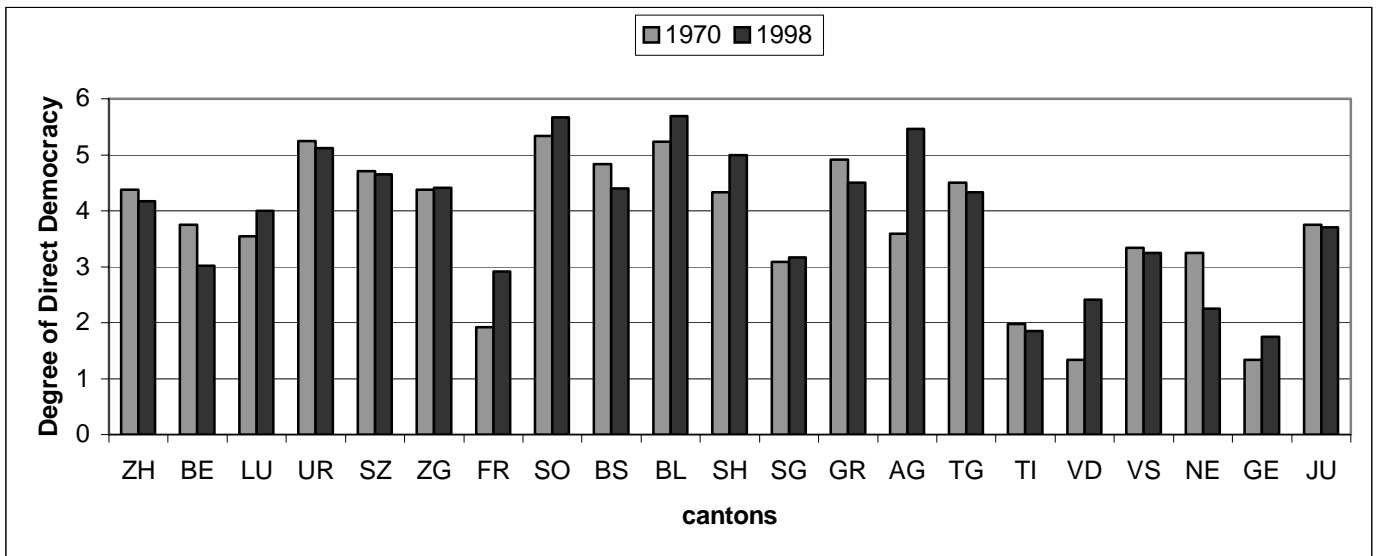
## Direct Democratic Rights in Swiss Cantons

<i>Canton</i>	<i>Index for constitutional initiative</i>	<i>Index for Legislative Initiative</i>	<i>Index for Legislative Referendum</i>	<i>Index for financial referendum</i>	<i>Composite Index for Direct Democratic Rights</i>
Aargau	5.67	5.67	6.00	4.50	<b>5.46</b>
Appenzell I. Rh.	6.00	6.00	6.00	3.00	<b>5.25</b>
Appenzell a. Rh.	6.00	6.00	6.00	4.00	<b>5.50</b>
Bern	2.67	2.67	3.67	5.00	<b>3.50</b>
Basel-Landschaft	6.00	6.00	6.00	4.75	<b>5.69</b>
Basel-Stadt	4.67	4.67	4.00	4.25	<b>4.40</b>
Fribourg	2.67	2.67	2.33	2.00	<b>2.42</b>
Genève	2.00	2.00	2.00	1.00	<b>1.75</b>
Glarus	6.00	6.00	6.00	4.00	<b>5.50</b>
Graubünden	4.00	5.00	6.00	4.00	<b>4.75</b>
Jura	4.67	4.67	3.00	2.50	<b>3.71</b>
Luzern	4.67	5.33	3.67	4.25	<b>4.48</b>
Neuchâtel	2.67	2.67	1.67	1.50	<b>2.13</b>
Nidwalden	2.67	6.00	6.00	5.00	<b>4.92</b>
Obwalden	5.33	6.00	6.00	5.00	<b>5.58</b>
Sankt Gallen	3.33	4.00	3.00	3.25	<b>3.40</b>
Schaffhausen	5.33	5.33	5.17	4.50	<b>5.08</b>
Solothurn	5.33	5.33	6.00	5.00	<b>5.42</b>
Schwyz	5.33	5.33	4.67	4.38	<b>4.93</b>
Thurgau	3.67	3.67	4.33	4.50	<b>4.04</b>
Ticino	1.33	2.67	1.67	2.75	<b>2.10</b>
Uri	5.67	5.67	5.33	5.00	<b>5.42</b>
Vaud	2.33	2.33	2.00	3.00	<b>2.42</b>
Valais	3.00	3.67	6.00	1.00	<b>3.42</b>
Zug	5.00	5.00	3.67	4.00	<b>4.42</b>
Zürich	3.33	3.33	6.00	4.00	<b>4.17</b>

Source: Frey and Stutzer (2000, p. 937).

Table A3

Degree of Direct Democracy Between 1970 and 1998



Notes: The cantons, which have or had until recently the 'Landsgemeinde' (town meeting) (Appenzell I. Rh., Obwalden, Glarus, Appenzell A. Rh. and Nidwalden), have not been included in these estimations. Source: calculations based on the index developed by Frey and Stutzer (2002) on the basis of the data of Trechsel und Serdült (1999).

Table A4

Degree of Fiscal Autonomy (Regional budgets in relation to the population, in thousands of Spanish Pesetas per capita)

<i>REGIONS</i>	<i>1990</i>	<i>1994</i>
Autonomy based on		
<i>ART. 151</i>		
<i>Andalusia</i>	<i>175.8</i>	<i>255.3</i>
Canary Is.	130.2	187.5
<b><i>Catalonia</i></b>	<b><i>169.9</i></b>	<b><i>256.8</i></b>
<b><i>Galicia</i></b>	<b><i>127.7</i></b>	<b><i>267.3</i></b>
<i>C. Valenciana</i>	<i>145.0</i>	<i>218.1</i>
<i>CHARTER REGIONS</i>		
<b><i>Basque Country</i></b>	<b><i>203.1</i></b>	<b><i>306.3</i></b>
<b><i>Navarre</i></b>	<b><i>240.0</i></b>	<b><i>440.9</i></b>
<i>ART. 143</i>		
Aragon	49.5	143.5
Asturias	60.6	92.6
Balearic Is.	35.4	62.3
Cantabria	94.7	90.1
Castile-La Mancha	75.7	166.4
Castile and Leon	58.9	125.4
Extremadura	80.4	171.4
Rioja	88.7	102.5
Madrid	50.4	67.3
Murcia	59.8	74.4

Source: Rodriguez-Pose (2000, p. 103).

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## TABLES

Table 1: Tax Morale in Switzerland (WVS 1996)

<i>weighted ordered probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>	
<i>Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<b>a) Deterrence Factors</b>										
FINE RATE	-0.003***	-0.001	-0.003***	-0.001	-0.003***	-0.001	-0.002***	-0.001	-0.002*	-0.001
AUDIT PROBABILITY	0.001	0.000	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.000
<b>b) Tax Rate</b>										
INDIVIDUAL INC. TAX RATE							0.002	0.001	0.3E-03	0.000
<b>c) Demographic Factors</b>										
AGE 30-49	0.012	0.005	-0.010	-0.004	-0.020	-0.008	-0.006	-0.002	0.014	0.006
AGE 50-64	0.218**	0.087	0.228*	0.091	0.214*	0.085	0.327**	0.129	0.351***	0.139
AGE 65+	0.129	0.051	0.079	0.032	0.031	0.012	0.203	0.080	0.188	0.075
WOMAN	0.186***	0.074	0.156**	0.062	0.115	0.046	0.244***	0.097	0.224**	0.089
EDUCATION	-0.021	-0.008	-0.025	-0.010	-0.047**	-0.019	0.007	0.003	-0.014	-0.006
<b>d) Marital Status</b>										
MARRIED	0.204**	0.081	0.183*	0.073	0.228**	0.091	0.325**	0.129	0.340**	0.135
LIVING TOGETHER	-0.116	-0.046	-0.106	-0.042	-0.059	-0.023	0.070	0.028	0.098	0.039
DIVORCED	0.304*	0.121	0.287*	0.114	0.303*	0.120	0.245	0.097	0.221	0.088
SEPARATED	0.178	0.071	0.192	0.076	0.155	0.061	0.309	0.123	0.256	0.101
WIDOWED	-0.107	-0.043	-0.126	-0.050	-0.091	-0.036	-0.135	-0.054	-0.145	-0.058
<b>e) Economic Variable</b>										
UPPER CLASS	0.015	0.006	-0.190	-0.076	-0.266	-0.106				
UPPER MIDDLE CLASS	-0.184	-0.073	-0.358*	-0.142	-0.403	-0.160				
LOWER MIDDLE CLASS	-0.095	-0.038	-0.239	-0.095	-0.265	-0.105				
WORKING CLASS	-0.140	-0.056	-0.326	-0.129	-0.316	-0.126				
INCOME							-0.036	-0.014	-0.038	-0.015
FINANCIAL SATISFACTION	0.050***	0.020	0.051***	0.020	0.046***		0.047***	0.019	0.040**	0.016
<b>f) Employment Status</b>										
PART TIME EMPLOYED	0.207**	0.082	0.269***	0.107	0.274**	0.109	0.287**	0.114	0.263**	0.104
SELFEMPLOYED	0.074	0.029	0.139	0.055	0.103	0.041	0.199	0.079	0.155	0.062
UNEMPLOYED	0.162	0.065	-0.011	-0.004	0.090	0.036	-0.316	-0.125	-0.189	-0.075
AT HOME	0.364***	0.145	0.381***	0.151	0.376***	0.149	0.250**	0.099	0.220*	0.087
STUDENT	0.055	0.022	0.101	0.040	0.026	0.010	0.095	0.038	0.002	0.001
RETIRED	0.638	0.254	0.661	0.262	0.666***	0.264	0.517**	0.205	0.511**	0.203
OTHER	0.261	0.104	0.276	0.110	0.348	0.138	0.539*	0.214	0.597*	0.237
<b>g) Religiosity</b>										
CHURCH ATTENDANCE	0.093***	0.037	0.091***	0.036	0.082***	0.033	0.083***	0.033	0.074***	0.030
<b>h) Institutional Variable</b>										
DIRECT DEMOCRATIC RIGHTS	0.116***	0.046	0.111***	0.044	0.109***	0.043	0.157***	0.062	0.161***	0.064
<b>i) Culture</b>										
ITALIAN	0.290	0.115	0.229	0.091	0.218	0.086	0.353	0.140	0.333	0.132
FRENCH	-0.187	-0.074	-0.174	-0.069	-0.173	-0.069	-0.145	-0.057	-0.141	-0.056
<b>j) Further Variables</b>										
PRIDE			0.082***	0.033	0.039	0.016	0.102**	0.040	0.063	0.025
TRUST IN GOVERNMENT					0.190***	0.075			0.185***	0.073
Observations	1070		1010		980		858		831	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four point scale (0 to 3). In the reference group are AGE 16-29, MAN, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, GERMAN SPEAKING. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01. Marginal effect = highest tax morale score (3).



Table 2: Direct Democracy and Culture (WVS 1996)

WVS 1996 weighted ordered probit Dependent variable: tax morale	Eq. 6	Eq.7 Clustering over Cantons	Eq.8	Eq.9 Clustering over Cantons
Variables	Coeff. z-Stat. Marg.	Coeff. z-Stat. Marg.	Coeff. z-Stat. Marg.	Coeff. z-Stat. Marg.
<b>a) Deterrence Factors</b>	INCLUDED	INCLUDED	INCLUDED	INCLUDED
<b>b) Tax Rate</b>	"	"	"	"
<b>c) Demographic Factors</b>	"	"	"	"
<b>d) Marital Status</b>	"	"	"	"
<b>e) Economic Variable</b>	"	"	"	"
INCOME	"	"	"	"
FINANCIAL SATISFACTION	"	"	"	"
<b>f) Employment Status</b>	"	"	"	"
<b>g) Religiosity</b>	"	"	"	"
<b>h) Institutional Variable</b>				
DIRECT DEMOCRATIC RIGHTS	0.193*** 3.04 0.077	0.193*** 3.680 0.077	0.189*** 2.800 0.075	0.189*** 3.260 0.075
<b>i) Culture</b>				
LATIN (ITALIAN AND FRENCH ORIGIN)	0.692 1.52 0.261	0.692* 1.850 0.261	0.671 1.390 0.253	0.671* 1.830 0.253
<b>j) Interaction</b>				
DIRECT DEMOCR. RIGHTS * LATIN	-0.290* -1.83 -0.115	-0.290*** -2.880 -0.115	-0.283* -1.700 -0.112	-0.283*** -2.960 -0.112
<b>k) Further Variables</b>				
PRIDE	NOT INCL.	NOT INCL.	NOT INCL.	NOT INCL.
TRUST IN GOVERNMENT	NOT INCL.	NOT INCL.	NOT INCL.	NOT INCL.

Notes: Dependent variable: tax morale on a four-point scale (0 to 3). In the reference group are AGE 16-29, MAN, SINGLE, FULL TIME EMPLOYED, LOWER CLASS, and GERMAN SPEAKING. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01. Marginal effect = highest tax morale score (3).

Table 3: Tax Morale in Belgium (EVS 1999)

<i>weighted ordered probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>		<i>Eq. 6</i>	
<i>Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<b>a) Tax Rate</b>												
INDIV. MARG. TAX RATE							0.001	0.000	0.002	0.001	-0.001	0.000
<b>b) Demographic Factors</b>												
AGE 30-49	0.141	0.052	0.103	0.038	0.145	0.054	0.232**	0.088	0.192**	0.073	0.248**	0.093
AGE 50-64	0.229*	0.084	0.217*	0.080	0.221*	0.082	0.272**	0.103	0.247**	0.093	0.277**	0.104
AGE 65+	0.026	0.010	-0.035	-0.013	0.033	0.012	0.218	0.083	0.176	0.067	0.179	0.068
WOMAN	0.339***	0.125	0.359***	0.132	0.326***	0.120	0.238***	0.090	0.262***	0.099	0.248***	0.094
EDUCATION	0.010	0.004	-0.001	0.000	-0.003	-0.001	0.008	0.003	-0.005	-0.002	-0.012	-0.004
<b>c) Marital Status</b>												
MARRIED	0.077	0.029	0.058	0.022	0.058	0.021	0.221*	0.084	0.257***	0.097	0.164	0.062
DIVORCED	0.100	0.037	0.104	0.038	0.090	0.033	0.150	0.057	0.148	0.056	0.120	0.045
SEPARATED	-0.710*	-0.262	-0.714*	-0.264	-0.672*	-0.248	-0.607	-0.230	-0.589	-0.223	-0.659	-0.248
WIDOWED	0.125	0.046	0.110	0.041	0.032	0.012	0.159	0.060	0.143	0.054	0.071	0.027
<b>d) Economic Variables</b>												
UPPER CLASS	-0.190**	-0.070	-0.234	-0.087	-0.198	-0.073						
MIDDLE CLASS	-0.240***	-0.089	-0.270	-0.100	-0.252	-0.093						
INCOME							-0.040	-0.015	-0.052**	-0.020	-0.030	-0.011
<b>d) Employment Status</b>												
PART TIME EMPLOYED	-0.176	-0.065	-0.186	-0.069	-0.121	-0.045	-0.176	-0.067	-0.182	-0.069	-0.122	-0.046
SELFEMPLOYED	-0.152	-0.056	-0.144	-0.053	-0.112	-0.042	-0.235	-0.089	-0.242	-0.092	-0.172	-0.065
UNEMPLOYED	-0.131	-0.048	-0.118	-0.044	-0.080	-0.030	-0.143	-0.054	-0.143	-0.054	-0.089	-0.033
AT HOME	-0.233*	-0.086	-0.227*	-0.084	-0.200	-0.074	-0.116	-0.044	-0.115	-0.043	-0.085	-0.032
STUDENT	-0.006	-0.002	-0.048	-0.018	0.003	0.001	0.072	0.027	0.074	0.028	0.079	0.030
RETIRED	0.330***	0.122	0.334***	0.123	0.327	0.121	0.266**	0.101	0.234*	0.089	0.311**	0.117
OTHER	0.121	0.045	0.172	0.063	0.189	0.070	0.285	0.108	0.315	0.119	0.387	0.146
<b>e) Religious Variable</b>												
CHURCH ATTENDANCE	0.033***	0.012	0.027**	0.010	0.038***	0.014	0.031***	0.012	0.027**	0.010	0.036***	0.013
<b>f) Culture Variables</b>												
FLEMISH	-0.070	-0.026	-0.065	-0.024	-0.057	-0.021	-0.014	-0.005	-0.014	-0.005	-0.006	-0.002
<b>g) Further Variables</b>												
PRIDE	0.075**	0.028	0.053	0.020	0.076**	0.028	0.100***	0.038	0.084**	0.032	0.091***	0.034
TRUST IN THE PARLIAMENT			0.194***	0.071					0.163***	0.062		
PRO DEMOCRACY					0.091**	0.034					0.106**	0.040
Number of observations	1308		1262		1234		1256		1216		1191	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four-point scale (0 to 3). In the reference group are AGE 16-29, MAN, SINGLE, FULL TIME EMPLOYED, WORKER, and WALLOON. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01. Marginal effect = highest tax morale score (3).

Table 4: Tax Morale in Spain (WVS 1995)

<i>weighted ordered probit</i>	<i>Eq. 1</i>		<i>Eq. 2</i>		<i>Eq. 3</i>		<i>Eq. 4</i>		<i>Eq. 5</i>		<i>Eq. 6</i>	
<i>Variables</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>	<i>Coeff.</i>	<i>Marg.</i>
<b>a) Tax Rate</b>												
INDIV. MARGINAL TAX RATE							-0.003	-0.001	-0.001	0.000	0.000	0.000
<b>b) Demographic Factors</b>												
AGE 30-49	-0.054	-0.019	-0.066	-0.023	-0.074	-0.025	-0.094	-0.033	-0.093	-0.032	-0.071	-0.026
AGE 50-64	0.029	0.010	0.011	0.004	-0.033	-0.012	-0.021	-0.007	-0.034	-0.012	-0.015	-0.005
AGE 65+	0.065	0.023	0.028	0.010	0.018	0.006	-0.083	-0.029	-0.114	-0.039	-0.149	-0.032
WOMAN	0.164*	0.057	0.174*	0.060	0.209	0.072	0.157	0.054	0.192	0.066	0.227*	0.078
EDUCATION	-0.013	-0.004	-0.014	-0.005	-0.023	-0.008	-0.032	-0.011	-0.031	-0.011	-0.037	-0.013
<b>c) Marital Status</b>												
MARRIED	0.116	0.040	0.115	0.040	0.129	0.044	0.086	0.030	0.010	0.034	0.110	0.038
LIVING TOGETHER	0.113	0.039	0.103	0.036	0.161	0.056	0.302	0.104	0.305	0.105	0.362	0.125
DIVORCED	0.066	0.023	0.032	0.011	0.075	0.026	0.046	0.016	-0.081	-0.028	-0.051	0.018
SEPARATED	0.180	0.062	0.162	0.056	0.207	0.071	0.237	0.082	0.195	0.070	0.232	0.080
WIDOWED	0.398	0.138	0.369*	0.128	0.483	0.166	0.385	0.133	0.388	0.133	0.523	0.181
<b>d) Employment Status</b>												
PART TIME EMPLOYED	-0.140	-0.049	-0.173	-0.060	-0.175	-0.060	-0.153	-0.053	-0.218	-0.075	-0.247	-0.085
SELFEMPLOYED	0.061	0.021	0.065	0.023	0.051	0.018	-0.044	-0.015	-0.065	-0.022	-0.043	-0.015
UNEMPLOYED	-0.068	-0.024	-0.063	-0.022	-0.102	-0.035	0.031	0.011	0.040	0.014	-0.023	-0.010
AT HOME	0.039	0.014	0.027	0.009	-0.008	-0.003	0.096	0.033	0.032	0.011	0.006	0.002
STUDENT	0.008	0.003	0.043	0.015	-0.036	-0.012	-0.145	-0.050	-0.010	-0.034	-0.020	-0.070
RETIRED	-0.125	-0.044	-0.126	-0.044	-0.127	-0.044	-0.063	-0.022	-0.045	-0.015	-0.113	-0.039
OTHER	6.778	2.352	6.764	2.340	6.756	2.326	6.252	2.157	6.297	2.164	6.136	1.120
<b>e) Economic Situation</b>												
UPPER CLASS	-0.527	-0.183	-0.505	-0.175	-0.517	-0.178						
UPPER MIDDLE CLASS	-0.290	-0.101	-0.315	-0.109	-0.237	-0.082						
LOWER MIDDLE CLASS	-0.086	-0.030	-0.095	-0.033	-0.084	-0.029						
WORKING CLASS	0.047	0.016	0.034	0.012	0.078	0.027						
FINANCIAL SATISF.	0.028	0.010	0.033	0.012	0.028	0.010	0.000	0.000	0.000	0.000	0.000	0.000
INCOME							0.010	0.003	0.006	0.001	-0.015	-0.005
<b>f) Religious Variable</b>												
CHURCH ATTENDANCE	0.011	0.004	0.002	0.001	0.014	0.005	0.030	0.103	0.018	0.006	0.032	0.011
<b>g) Culture Variables</b>												
BASQUE	-0.248	-0.086	-0.237	-0.082	-0.152	-0.052	0.108	0.037	0.105	0.036	0.111	0.038
CATALAN	0.154	0.054	0.140	0.048	0.221*	0.076	0.122	0.042	0.102	0.035	0.197	0.068
GALICIA	-0.004	-0.001	-0.083	-0.029	0.004	0.001	-0.003	-0.001	-0.069	-0.024	-0.462	-0.002
NAVARRRE	-0.880**	-0.305	-0.926**	-0.321	-0.810**	-0.279	-0.790**	-0.273	-0.849**	-0.292	-0.696*	-0.240
<b>h) Further Variables</b>												
PRIDE	0.135**	0.047	0.130**	0.045	0.108*	0.037	0.185***	0.060	0.172**	0.059	0.156**	0.054
TRUST IN LEGAL SYSTEM			0.120**	0.042					0.185***	0.064		
PRO DEMOCRACY					0.192***	0.066					0.243***	0.084
Number of observations	1056		1027		1033		832		808		797	
Prob(LM-statistic)	0.000		0.000		0.000		0.000		0.000		0.000	

Notes: Dependent variable: tax morale on a four-point scale. In the reference group are AGE 16-29, MALE, SINGLE, FULL TIME EMPLOYED, WORKING CLASS, and OTHER SPANISH REGIONS. Significance levels: \* 0.05 < p < 0.10, \*\* 0.01 < p < 0.05, \*\*\* p < 0.01. Marginal effect = highest tax morale score (4).

Figure 1: Tax Morale Distribution in Basque Country over Time

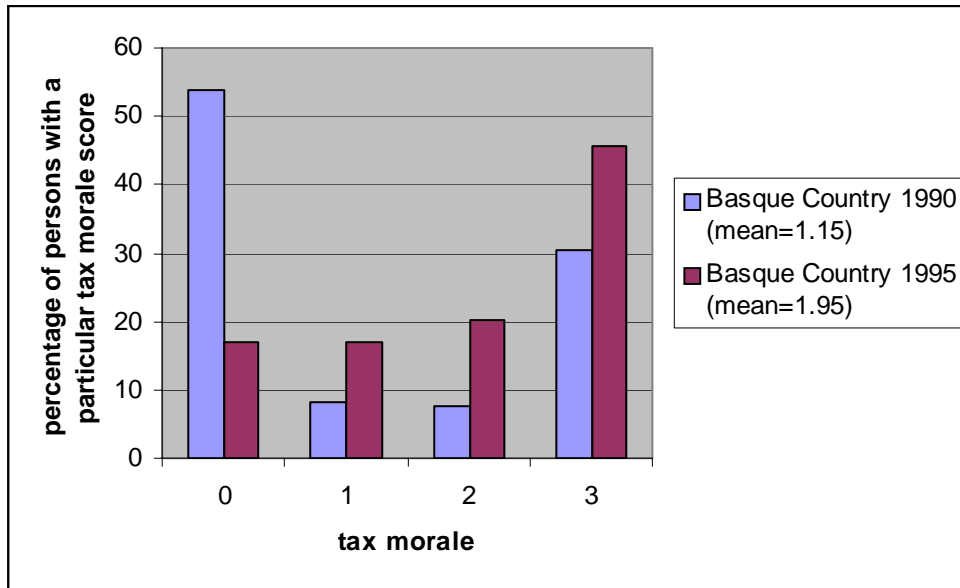


Table 5: Two-Sample Wilcoxon Rank-Sum (Mann-Whitney) Test

Hypothesis	z-value	Prob >  z
<b><i>OVER TIME</i></b>		
$H_0$ : TM Basque Country 1995 = TM Basque Country 1990	4.020	0.000
<b><i>BASQUE COUNTRY IN COMPARISON SPAIN WITHOUT BASQUE COUNTRY IN 1990</i></b>		
$H_0$ : TM other Regions in Spain 1990 = TM Basque Country 1990	7.837	0.000

Note: TM= Tax morale.

Table 6: Overview of the Results

Variables	Countries		
	Switzerland	Belgium	Spain
<i>CULTURE AND INSTITUTIONS</i>			
Culture	Strong interaction between culture and direct democracy (coeff. Latin cantons * direct democracy is negative and highly statistically significant)	Flemish individuals have a lower tax morale than Walloons (not statistically significant)	Lowest tax morale in Navarre  Strong increase of tax morale in the Basque Country between 1990 and 1995.
Institutions (direct democracy)	+		
<i>TAX SYSTEM</i>			
Deterrence	Fine Rate: -; (+): Audit probability: (+)		
Tax rate	(+)	(+/-)	(+/-)
<i>SOCIO-DEMOGRAPHIC AND SOCIO-ECONOMIC VARIABLES</i>			
Age	Tendency: + (robust and statistically significant for AGE 50-64, reference group: age < 30)	Tendency: + (robust and statistically significant for AGE 50-64, reference group: age < 30)	(+/-)
Gender (women versus men)	+	+	(+), not in all estimations statistically significant
Education	(+/-) +	(+/-) (+), not in all estimations statistically significant	(-) (+)
Marital status (married versus single)			
Income/economic class	Tendency: (-)	-	(+/-)
Financial satisfaction	+		+
Employment status (self-employed versus full-time employed)	(-)	(-)	(+/-)
<i>ATTITUDES</i>			
National pride	Tendency: +	+	Tendency: +
Trust in state's institutions	+	+	+
Pro democratic attitudes		+	+

Notes: Dependent variable: tax morale. +: significant positive coefficient, (+), (-), positive, respectively negative coefficient sign without being significant, (±) positive and negative sign of the coefficient without being statistically significant.