

THE DETERMINANTS OF TAX MORALE IN COMPARATIVE PERSPECTIVE: EVIDENCE FROM A MULTILEVEL ANALYSIS

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ABSTRACT

Applying a multilevel econometric model, we argue that tax morale is a function of individual and contextual-level variables. Evidence presented in this article, based on the 2004-2005 *European Social Survey* and information on institutional settings, shows that tax morale in European countries varies systematically with socio-demographic characteristics, personal financial experiences, political attitudes, on the one hand, and regional GDP and tax arrangements on the other hand. In contrast, cross-national differences in tax morale are not related to ethnic and linguistic fractionalizations.

Key words: tax burden, tax compliance, tax morale, tax payers fiscal equalization.

JEL codes: H26, H73.

I. INTRODUCTION¹

All modern contemporary societies are grounded on the compulsory payment of taxes. Hence, enforcement efforts are made everywhere to encourage tax compliance. However, empirical research has repeatedly demonstrated that compliance is not fully explained by the rewards and punishments imposed through tax rates, fines and other penalties² or the probability of audits³. Observed high levels of tax compliance would involve unlikely high risk-aversion values. As Alm, McClelland and Schulze (1992) show, the estimated Arrow-Pratt measure of risk aversion in the United States is between 1 and 2, when it should be around 30 to reach the observed tax compliance level. Similar results have been obtained for Switzerland (Frey and Feld, 2002).

According to Feld and Frey (2007), an explanation for this gap might be that the subjective probability of being caught was much higher than the objective probability of detection. But as they also posit, it is difficult to argue sustainable individual misperception of risk in the long run because of flows of information on control intensities from friends and relatives. Furthermore, unlikely cross-sectional disparities in risk aversion are required to satisfactorily explain cross-country differences in tax compliance. In sum, the level of enforcement does not provide a compelling explanation of tax compliance.

A widely accepted alternative explanation for the inconsistency between enforcement and tax compliance is tax morale, synthetically defined as a “moral obligation” or an “intrinsic motivation” to pay taxes (Torgler and Schneider, 2006). Neglected for decades (see Andreoni, Erard, and Feinstein, 1998), tax morale has turned into a key issue in the most recent empirical research on tax compliance.

In this paper, we examine the determinants of tax morale in European countries. This goal is both theoretically and politically relevant. On the one hand, it involves opening an analytical black box (Feld and Frey, 2002). On the other hand, understanding individual and national heterogeneity in tax morale is crucial for implementing policies to improve tax morale and then tax compliance⁴.

¹ Financial support from the Instituto de Estudios Fiscales (www.ief.es) is gratefully acknowledged.

² Dubin (2007) finds that incarceration and probation (rather than fines) have the most influence on taxpayer compliance.

³ Andreoni, Erard and Feinstein (1998) provide an exhaustive survey on this literature since the seminal work by Allingham and Sandmo (1972) up to the most recent contributions that are focused on the interactions between taxpayers and tax authorities.

⁴ Empirical results by Scholz and Pinney (1995) for a sample of US taxpayers show that tax morale also biases self-interest beliefs in the direction of enhancing compliance. Citizens reporting greater commitment to obeying tax laws overestimate the subjective probability of being detected for cheating. Hence, tax morale would have not only a direct effect on tax compliance but also an indirect effect insofar as it interacts with the subjective probability of being caught. However, the critique by Feld and Frey (2007) on the unsustainable individual misperception of risk in the long run also applies to this argument.



Furthermore, given that persecution of tax evasion is not only far from being perfect, but also expensive, opening the black box of tax morale may contribute to the effort of designing alternative mechanisms of enforcement to reduce tax evasion.

To better understand differences in tax morale, we conduct an extensive comparative analysis in seventeen European countries (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Luxembourg, Norway, Poland, Portugal, Spain, Slovenia, Sweden, Switzerland, and the United Kingdom) to determine the sources of heterogeneity in tax morale and seek to identify to what extent individual and contextual-level variables account for systematic differences at the individual and aggregate levels. We make three contributions. First, we use the second wave (2004-2005) of the European Social Survey, which provides a wide range of relevant data on social trust, politics, subjective well-being, economic morality and socio-demographic characteristics. By using the *ESS*, we are able to explore more sophisticated individual level models of tax morale than if we were to use the *International Social Survey Program (ISSP)*, the *World Values Survey (WVS)* or the *European Values Survey (EVS)*. Given that the *ESS* is designed to provide methodological consistency, cross-national comparisons are particularly precise. Second, we show that individual-level differences in tax morale also reflect the impact of institutional or contextual arrangements. Two macro-micro mechanisms are crucial: the “tax fatigue” generated by high national tax burdens and significant increases in the recent past, and interregional fiscal redistribution within countries.

Third, our analysis is based on multilevel methods. As we hypothesize that tax morale reflects individual-level determinants and contextual or supra-level determinants, the most appropriate way of analyzing it is through a multilevel model (Goldstein, 2003; Rabe-Hesketh and Skrondal, 2005). As is well known, multilevel approaches are particularly appropriate for analyzing multi-stage samples, as they allow for estimation of robust standard errors and clustering of the sample. They also allow us to measure country-level or regional-level variation in relation to individual-level variation and to control for country-level or regional-level influences. In our case, by taking a multilevel approach, we are able to ask whether tax morale among people across Europe reflects different individual characteristics in different countries, whether it reflects the different contextual characteristics in each country or whether it is a mixture of these two features. As far as we know, this is the first application of multilevel models to the explanation of tax morale.

The rest of the paper proceeds as follows. The second section discusses the previous literature on the topic. The third section presents our theoretical arguments. The fourth section describes the data and methods, as well as discusses the results of the empirical analysis. Section five concludes.

2. PREVIOUS LITERATURE

In Table I the recent empirical research on the determinants of tax morale is summarized. All the studies are based on international survey data: the *ISSP*, the *WVS*, the *EVS*, or the *Afrobarometer*. Roughly speaking, this literature can be divided into two categories. First, are those studies focused on one country only, but then analyze regional differences and changes over time. This is the case for the papers by Torgler (2005), Martínez-Vázquez and Torgler (2005), and Prieto, Sanzo and Suárez-Pandiello (2006). Second, are those papers using cross-national data. Papers by Torgler and Schneider (2006), Alm and Torgler (2006) and Cummings, Martínez-Vázquez, and McKee and Torgler (2007) are focused on two or three countries. On the contrary, research by Torgler (2006) and Alm and Torgler (2006) use a dataset with a wide sample of countries. Given that tax morale is an ordered categorical variable, measured with survey questions, the methods used are very similar in all these studies; ordered probit or logit regression models are the rule. Although individual and contextual-level variables were simultaneously considered in some cases, multilevel models were not used.

The theoretical specifications contain four major themes. First, socio-demographic characteristics, such as gender, age, marital status, education, employment status, religiosity, and social class are considered. Personal financial experiences (i.e. income) and the size of municipalities are occasionally included. As can be seen in the last column of Table I, age, religiosity, and employment status are the variables with the most robust effects: tax morale rises with age and religiosity and tends to be lower among those individuals who are self-employed. On the contrary, gender, marital status and social class are sometimes statistically significant; tax morale is higher among women and married people and lower among those individuals belonging to the upper-classes. Finally, the effect of the remaining variables on tax morale is erratic.

The second group of variables include political and social attitudes; for instance, trust in courts, the legal system, politicians and democracy in general, national pride, social capital (trustworthiness), the perceived level of corruption, and voting behavior. However, inclusion of these variables in the analyses is far from systematic. In most of the papers they are omitted (see Alm and Torgler, 2006; or Cummings et al., 2007) due to the lack of data. Voting behavior, for example, is only included in Prieto et al. (2006). According to the accumulated empirical evidence, it seems that these variables are relevant for explaining tax morale.

Third, variables measuring the fiscal parameters determining deterrence are included: tax rates, the fine rate, audit probability, risk aversion, and personal income again. The only significant variable is risk aversion, which increases tax morale. Unfortunately, empirical evidence concerning the first three variables is only available for the Swiss cantons (Torgler, 2005; Torgler and Schneider, 2006). Given that cross-national homogeneous data on these variables are extremely difficult to obtain, it is not surprising that their inclusion has been limited.

Table I
LITERATURE ON THE DETERMINANTS OF TAX MORALE

Reference	Sample and econometrics	Tested variables	Significant variables
Torgler (2005)	Switzerland. Data from the ISSP. Year 1998. Weighted ordered probit estimation.	Gender, age, marital status, education, employment status, personal income church attendance, direct democracy, trust in court and legal system, tax rate, fine rate and audit probability, culture variables (language dummy variables).	Education and tax morale are positively correlated. Tax morale is stronger in the case of students and retired. Trust in legal system has a positive effect on tax morale. Religiosity increases tax morale. Direct democracy has a strong impact on tax morale in Switzerland.
Martínez-Vázquez and Torgler (2005)	Spain. Data from WVS and EVS. Years 1981, 1990, 1995 and 1999/2000. Weighted ordered probit estimation.	Gender, age, marital status, employment status, religiosity, trust in the parliament, national pride, time dummy variables.	Tax morale is stronger in the 90's than in the 80's. Tax morale rises with age and religiosity. Tax morale is lower for upper-class individuals. Trust in parliament and national pride increase tax morale.
Prieto et al. (2006)	Spain. Data from the ISSP. Year 1998.	Gender, age, marital status, education, self-employed, social class, size of municipality of residence, voted political party.	Tax morale rises with age. Tax morale is lower for self-employed. Tax morale is higher for voters to nation-wide parties.
Torgler and Schneider (2006)	Spain, Switzerland and Belgium. Data from the WVS (1995-97) and the EVS (1999-2000). Weighted ordered probit estimation.	Gender, age, marital status, education, employment status, social class, personal income, church attendance, direct democracy, national pride, trust in political institutions and government, attitude towards democracy, personal income tax rate, fine rate and audit probability (for Switzerland), culture variables (regional and language dummy variables).	Cultural and regional differences affect tax morale in both Switzerland and Spain. Trust in legal system, government, and parliament, national pride, and pro-democratic attitudes have a positive effect on tax morale. The positive effect of religiosity is only significant in Belgium and Switzerland. Direct democracy has a strong impact on tax morale in Switzerland. Tax morale is stronger in the case of women.
Torgler (2006)	32 countries: West Germany, East Germany, Spain, USA, Australia, Norway, Argentina, Finland, South Korea, Poland, Switzerland, Brazil,	Gender, age, marital status, education, employment status, social class, financial situation, risk aversion, religiosity (church attendance, religious education, active in	Religiosity increases tax morale, especially in the case of Catholics, Hindus, and Buddhists. Tax morale rises with age. Risk aversion increases tax morale.

	Chile, Belarus, India, Slovenia, Bulgaria, Lithuania, Latvia, Estonia, Ukraine, Russia, Peru, Venezuela, Uruguay, Moldova, Azerbaijan, Dominican Republic, Serbia, Montenegro, Macedonia, and Bosnia. Data from the WVS (1995-1997). Common cross-country slopes and intercepts are imposed. Weighted ordered probit estimation.	church group, importance of religion, religious guidance, trust church), corruption, trustworthiness.	Tax morale is lower for upper-class individuals. Financial satisfaction increases tax morale. Tax morale is stronger in the case of retired, home workers, and part time employed. Tax morale is stronger in the case of women. Tax morale is stronger for married individuals but weaker for individuals living together. Education and tax morale are negatively correlated. Trustworthiness increases tax morale. Perceived corruption drops tax morality.
Alm and Torgler (2006)	USA and Spain. Data from the WVS, 1999-2000. Common cross-country slopes are imposed. Weighted ordered probit estimation.	Gender, age, marital status, education, employment status, church attendance, trust in parliament, country dummy variables.	Tax morale is lower in Spain than in the USA. Tax morale rises with age. Religiosity increases tax morale. Tax morale is stronger in the case of women. Tax morale is stronger for married individuals.
Alm and Torgler (2006)	16 countries: Belgium, Portugal, Finland, Norway, Netherlands, France, Ireland, UK, Germany, Italy, Spain, Sweden, Denmark, Austria, Switzerland, USA. Data from the WVS (1990-93). Common cross-country slopes are imposed. Weighted ordered probit estimation.	Gender, age, marital status, employment status, church attendance, country dummy variables.	Country dummy variables are highly significant. According to coefficients this is the ranking (from the top): USA, Switzerland, Denmark, Austria, Spain, Italy, UK, Germany, France, Ireland, Norway, Netherlands, Finland, Portugal, and Belgium. Tax morale rises with age and religiosity. Tax morale is weaker for self-employed and stronger in the case of retired. Tax morale is stronger in the case of women and married individuals, but it is weaker for individuals living together.
Cummings et al. (2007)	Botswana (1999) and South Africa (2000). Data from Afrobarometer. Common cross-country slopes are imposed. Ordered probit estimation.	Gender, age, education, employment status, country dummy variables.	Tax morale rises with age and it is higher in Botswana (Authors relate this result to best rankings of Botswana in the fairness of tax administration, in the perceived fiscal exchange, and in overall attitude towards the government).

Acronyms. ISSP: International Social Survey Programme data set "religion II"; WVS: World Values Survey; EVS: European Values Survey.



Finally, contextual-level variables have been included to control for national differences in the extent of direct democracy (in Switzerland), language fragmentation, or the existence of regional cleavages. According to the literature, direct democracy is positively correlated with tax morale. The explanation rests on the fact that political culture is significantly affected by direct democracy; citizens feel more responsible for their community, which improves tax morale (Feld and Kirchgässner, 2000). As Torgler (2005) points out, the more taxpayers participate in political decisions, the more the tax contract is based on trust and, therefore, the higher the tax morale. This argument is strongly supported by empirical evidence provided by Pommerehne and Weck-Hanneman (1996); tax evasion is lower (around SFr 1500) in those Swiss cantons in which citizens enjoy direct rights concerning budgetary decisions. On the other hand, dummy variables identifying regions or countries are difficult to interpret due to their “black box” potential. Further theoretical and empirical research should disentangle the causal mechanisms explaining these cross-national or regional differences.

3. THEORETICAL ARGUMENTS

Similar to perceptions of national economic conditions (Duch, Palmer and Anderson, 2000), individual differences in tax morale are not random. They are correlated with socio-demographic characteristics, political attitudes and values, personal financial circumstances and institutional or contextual arrangements. There are at least six sources of subjective heterogeneity in tax morale at the individual and contextual level.

Individual-level determinants

a. Socio-demographic characteristics.—Even if all individuals are exposed to the social norm that paying taxes is right and tax evasion is wrong, their internalization of this norm may differ. Similar to what occurs with public goods such as voting (Blais 2000, chapter 5), tax compliance should be more widespread among individuals who are prone to think in terms of morality and ethics. Since religious people are concerned with what is right and wrong, they may believe that there are certain duties one should carry out, paying taxes being one of them. Similarly, women are prone to give more importance to ethical issues than men; for instance, as Frank (1996) has shown, women pay more attention to ethical considerations when choosing an employer. People are also more likely to construe tax compliance as a citizen’s duty as they grow older or when they have stronger social ties. So, religion, age, gender and education should increase the attachment to a community and the adherence to the norm that the

good citizen ought to pay taxes⁵. As Conover, Feldman, and Knight (1986: 583) argue, for instance, "... well-informed (citizens) tend to ignore their own personal economic experiences while the uninformed draw heavily upon them".

The impact of education on tax morale deserves special attention. Despite the previous discussion, Torgler and Schneider (2006) argue that 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. However, they may also be more critical of how the state acts and spends the tax revenues. Thus, a clear prediction is difficult to make. According to their empirical evidence, education is negatively correlated with tax morale in the three countries they analyze, Switzerland, Belgium and Spain, but it is not statistically significant in most of the specifications.

b. Personal financial experiences.—As Duch, Palmer and Anderson (2000) have shown for evaluations of the national economy, self-interested citizens have opinions that reflect their particular economic circumstances (e.g., employment status, income). Accordingly, individuals who derive greater benefits from the state should tend to have a better understanding of the necessity of paying taxes than those individuals who do not. As the level of income increases, citizens should feel more inclined not to comply with the payment of taxes. Moreover, in line with previous research, the status of being self-employed is included as regressor. Self-employed individuals usually enjoy more opportunities to cheat on their taxes. Opinions on tax morale might reflect an ex-post justification of cheating⁶.

c. Political attitudes.—Due to partisan and ideological positions or even a general distrust of political institutions and a lack of confidence in their own country's institutions, citizens might evaluate tax compliance less positively. Individuals who defend the limitation of government's revenues and hence a protection of parts of their own income and wealth from taxation are probably more likely to cheat on their taxes. But apart from ideological biases, there are other political attitudes affecting tax morale, particularly *political disaffection* or the subjective feeling of powerlessness, cynicism, and lack of confidence in the political process, politicians, and democratic institutions, but with no questioning of the political regime (Montero and Torcal 2006, 6). Given that political disaffection results in reduced engagement in the *res publica*, disaffected individuals should have a weaker propensity to pay taxes or, in other words, a higher propensity to be a free-rider. As Feld and Frey (2007) argue, political processes

⁵ See Blais (2000: chapter 5) for empirical evidence from open-ended interviews supporting these arguments.

⁶ We have also investigated the impact of the *main source of income in households* (1 for pensions, unemployment/redundancy benefit or any other social benefits or grants, and 0 for wages/salaries, income from self-employment, income from farming, income from investment, savings, insurance or property), without finding significantly stronger results than those reported. Moreover, the inclusion of this variable generated problems of multicollinearity.



perceived as fair and legitimate boost tax morale. The contract between taxpayers and authorities would involve not only the provision of public goods and tax payment, but also a psychological contract including the way both parts treat each other and the fairness of the procedures leading to political outcomes. Additionally, Schnellenbach (2006) shows that tax evasion might be seen as a mechanism to punish Leviathan governments that are eager to increase tax revenues rather than adhere to the preferred policies of the taxpayer⁷. We have selected the two most commonly used measures of political disaffection: confidence in politicians and satisfaction with the way democracy works⁸.

Contextual-level determinants

a. Regional redistribution.—According to the empirical evidence provided by Gütz, Levatti and Sausgruber (2005), people’s propensity to pay taxes is higher in a decentralized tax structure, in which taxes collected in one region are spent exclusively on that region’s public goods, than in a centralized tax structure, in which taxes paid in all regions are pooled and spent on regional public goods on a per capita basis.

However, if fiscal equalization is strong enough this mechanism is cancelled out because decentralization would not imply reducing interregional redistribution. Furthermore, decentralization increases the visibility of interregional transfers and nurtures the creation of sub-national political parties that claim regional interests⁹.

⁷ Moreover, the way tax administration treats taxpayers may also raise tax morale. According to results based on surveys of the Swiss cantons, provided by Frey and Feld (2002), a respectful treatment supports and even raises tax morale; the opposite is true when the treatment is authoritarian. Moreover, they show that there is an implicit psychological contract between taxpayers and tax authorities in Switzerland based on trust. And this contract particularly holds when direct democracy is stronger.

⁸ In preliminary regressions, two additional variables concerning political attitudes were tested: *ideology*, the self-placement in a left-right ideological scale from 0 (left) to 10 (right), and *trust in people*, a scale from 0 to 10 where 0 corresponds to those who think that ‘you can’t be too careful’ in dealing with people and 10 for those who thinks that ‘most people can be trusted’. However, both variables were significantly correlated with those that proxy political attitudes, which are included in the final model.

⁹ According to the empirical evidence provided by Chhibber and Kollman (2004) for Canada, Great Britain, India and the United States, the relative authority of national and subnational governments in a country helps to determine the success or failure of regional and minor parties and, therefore, the formation of a national party system. The basic argument is straightforward. Voters are more likely to support national political parties as the national government becomes more important for their lives. As this happens, candidates also are more likely to forsake local parties and assume the labels of national parties. These two effects are particularly relevant in federal states where there can be a real back-and-forth between the authorities of states and provinces and the national government. Thus, one expects a better linkage in states that are more unitary and worse linkage in states that are more federal.

Hence, two types of effects might result. First, support for interregional redistribution might be tempered by citizens' willingness to tolerate a certain degree of interregional inequality¹⁰. Second, the propensity to pay federal taxes in rich regions might drop. This is what Prieto, Sanza and Suarez-Pandiello (2006) suggest as an explanation for why voters of sub-national parties in the richest Spanish regions are more prone to tax evasion.

In sum, in both centralized and decentralized countries with strong interregional transfers tax morale will tend to be weaker in net contributor regions. But this negative relationship will be stronger in the latter, because visibility of interregional redistribution is higher and the political party system tends to be more poorly nationalized.

b. National tax arrangements.—Enforcement efforts are made everywhere to encourage tax compliance. However, using fine rates and the probability of audits as regressors is troublesome. Homogeneous data is extremely difficult to obtain. As we have seen previously, Switzerland is an exception. Moreover, since we are interested in tax evasion in general, fiscal parameters should not be limited to the personal income tax. Evasion could be of value added tax, business income tax, and other taxes. Therefore, in this paper we do not focus on deterrence factors, but on taxpayers' "fatigue". The level and recent dynamics of national tax burden is included into estimates as contextual variables affecting taxpayers' moral. Our hypothesis is that tax morale will tend to be weaker in those countries where taxes are higher or when they have significantly increased in recent years. Because visibility of direct taxes is usually higher¹¹, we also distinguish between direct and indirect taxes.

c. Ethnic-linguistic fractionalization.—A large literature on the impact of ethnic fractionalization on government activities has shown that ethnic and linguistic fractionalization are associated with negative outcomes in terms of the quality of governments (see, for instance, Alesina, Devlesschauwer, Easterly, Turlat and Wacziarg, 1999; and La Porta et al., 1999). The causal mechanism is that trust does not travel well across racial lines. As a consequence, public goods provision is less efficient and participation in social activities and trust are lower. Regarding tax morale, Alesina et al. (2003) found a negative, but not statistically significant relationship between ethnic fractionalization and tax compliance.

We summarize the hypotheses that compose our individual-level model of tax morale as follows:

- Citizens who are more prone to think in terms of morality and ethics –and this depends on gender, age, religion, and education– are more likely to defend the payment of taxes.

¹⁰ In Lago-Peñas (2008), relationships between fiscal equalization and politics in different federal frameworks are analyzed.

¹¹ See, for instance, the study of the Spanish case by Alvira, Garcia, and Delgado (2000: chapter 3) on this subject.



- Economic self-interest affects tax compliance. Citizens' tax morale varies with their socio-economic situation in terms of the distributive role of the state.
- Some partisan biases and political disaffection might weaken tax compliance. In particular, tax morale will be weaker for disaffected individuals and those citizens that are less prone to support fiscal redistribution.

On the other hand, the hypotheses of our contextual-level model are the following:

- High national tax burdens and significant tax increases generate “tax fatigue” and weaken tax morale.
- In countries with a significant regional redistribution, economic self-interest weakens tax morale; citizens who live in the richest regions will be less prone to tax compliance. This effect will be strengthened in federal countries with strong interregional redistribution (fiscal equalization) and/or countries with poorly nationalized party systems.
- Ethnic-linguistic fractionalization should be negatively associated with tax morale.

4. DATA, METHODS AND RESULTS

Data sources

For the econometric analysis, we use the second wave of the European Social Survey (ESS), which provides data on sociopolitical attitudes, trust in institutions, financial and household circumstances and, crucial for the purposes of this research, a module on economic morality for residents of 17 European nations. The survey is designed to provide methodological consistency and is therefore ideal for comparative and cross-national analysis. Fieldwork was conducted between autumn 2004 and winter 2005. The surveys are representative of all persons aged 15 and over (no upper age limit) who reside within private households in each country, regardless of their nationality, citizenship or language. The sample is selected by strict random probability methods. Finally, the minimum “effective” sample size is 1,500. Response rates varied by country, with a median of 62 per cent and most countries exceeding 60 per cent¹².

Fiscal data are culled from Eurostat (2007a) for Slovenia and Estonia and from OECD (2007a) for the remaining countries. Data on regional per capita GDP come from different data sources in order to match data from the ESS. This survey uses

¹² See <http://www.europeansocialsurvey.org/>.

the NUTS2 level classification with the exceptions of Denmark, Estonia, and Slovenia (NUTS3 level), and Luxemburg (no regionalization). or Austria, Belgium, the Czech Republic, Finland, Germany, Greece, Poland, Portugal, Spain, Sweden, and the United Kingdom, data for 2004 at the NUTS2 level are from Eurostat (2007b). Data for Norway at NUTS2 level and 2002 are from OECD (2007b). Because original data from OECD are offered at the NUTS3 level, data on population from Statistics Norway (<http://www.ssb.no/en/>) were also used to aggregate data to the NUTS2 level. Data for Switzerland at the NUTS2 level and 2005 are culled from the Swiss Federal Statistical Office (2007). The data source for Denmark at the NUTS3 level and 2005 is Statistics Denmark (www.statbank.dk). Data for Estonia at the NUTS3 level and 2003 are from the *Regional development database* by Statistics Estonia (<http://www.stat.ee>). Data source for Slovenia at the NUTS3 level and 2004 is the Statistical Office of the Republic of Slovenia (2007). Data for Luxemburg are not regionalized in the second wave of the ESS. Finally, the source for ethnic-linguistic fractionalization is Alesina et al. (2003).

Definition of variables

The dependent variable is *Tax morale*. The corresponding survey question asks individuals how much they agree with the statement “citizens should not cheat on their taxes”. Responses have been coded so that they range from "Agree strongly or agree" to "Disagree strongly or disagree". "Neither agree nor disagree" is the intermediate category. Hence *Tax morale* is defined as an ordered categorical variable. "Agree strongly or agree" is the reference category. As can be seen in Figure 1, according to the second round of the *European Social Survey (ESS)*, in 2005 the percentage of individuals who agreed with the statement “citizens should not cheat on their taxes” in seventeen European countries ranged from 90 in Estonia to 60 in Belgium; the standard deviation of this variable in the sample of countries is surprisingly high: 6.64.

The independent variables are operationalized as follows:

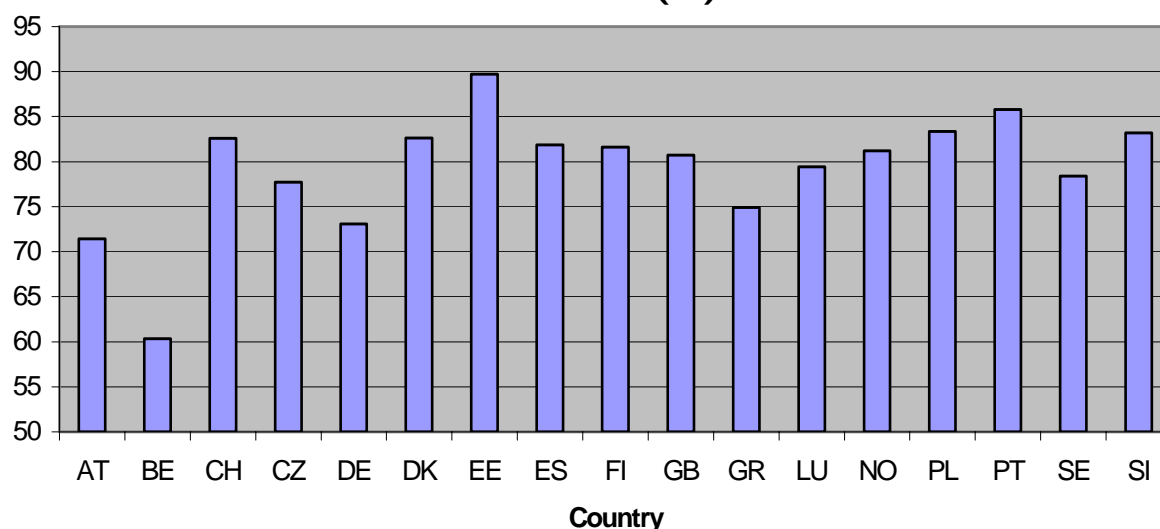
- Socio-demographic characteristics:
 - *Male* is a dummy variable that equals 1 for men and 0 for women.
 - *Age* is the age in years.
 - *Education* is the number of years of completed full-time education.
 - *Religion* is a scale from 0 to 10 where 0 corresponds to those for whom religion is not at all important in their life and 10 for whom it is very important.
- Personal financial experiences:
 - *Income* is a categorical variable describing how people feel about their household’s income nowadays: living comfortably on present income,



coping on present income, finding it difficult on present income or finding it very difficult on present income. The reference category is living comfortably.

- *Self-employment* is a dummy variable that equals 1 for self-employed individuals and 0 for not self-employed.

Figure 1
AGREEMENT WITH THE STATEMENT “CITIZENS SHOULD NOT CHEAT ON THEIR TAXES” (%)^(*)



Source: European Social Survey (2005), (<http://www.europeansocialsurvey.org/>).

(*) AT=Austria, BE=Belgium, CH=Switzerland, CZ=Czech Republic, DE=Germany, DK=Denmark, EE=Estonia, ES=Spain, FI=Finland, GB=United Kingdom, GR=Greece, LU=Luxembourg, NO=Norway, PL=Poland, PT=Portugal, SE=Sweden, SI=Slovenia.

— Political attitudes:

- *Satisfaction with democracy* is a scale from 0 to 10 where 0 corresponds to those who are extremely dissatisfied with the way democracy works in the country and 10 for those who are extremely satisfied with the way democracy works in the country.
- *Trust in politicians* is a scale from 0 to 10 where 0 corresponds to those who do not trust politicians at all and 10 for those who have complete trust.
- *Measures to reduce differences in income* is a categorical variable describing to what extent respondents agree with the statement “The government should take measures to reduce differences in income levels”: disagree or disagree strongly, neither agree nor disagree, agree or agree strongly. The reference category is disagree.

— Interregional fiscal redistribution:

- *Regional per capita GDP* is expressed in percentage (National mean = 100). In order to test differences in slopes between unitary and federal

or quasi-federal states, two dummy binary variables are also defined. Variable *Unitary* is coded 1 for individuals living in unitary countries and 0 otherwise. Variable *Federal* is defined in the opposite way. The sample includes five federations or quasi-federations (Watts, 1999): Austria, Belgium, Germany, Spain, and Switzerland. In the first four countries, fiscal equalization is very strong (Bird, 1986; Watts, 1999). In Switzerland it is less important (Spahn, 1997), but the Swiss party system is one of the poorest nationalized party systems in the world. According to the comparative data, only Brazil and Belgium rank higher than Switzerland (Jones and Mainwaring, 2003; Moenius and Kasuya, 2004).

- National tax arrangements:
 - *National tax burden* (TAX) is the total taxes (including social security contributions) over GDP in 2004 expressed as a percentage.
 - *Change in national tax burden* (CTAX) is calculated as TAX in 2004 minus TAX in 1995 expressed as a percentage.
 - *Direct tax burden* (DTAX) is the taxes on income and profits over GDP in 2004 expressed as a percentage. The difference between TAX and DTAX is also used to compare the effects of DTAX with those of the rest of taxes.
 - *Change in direct tax burden* (CDTAX) is calculated as DTAX in 2004 minus DTAX in 1995 expressed as a percentage. Change in the remaining taxes is directly computed as CTAX-CDTAX
- Ethnic-linguistic fractionalization:
 - The most commonly used measure of aggregate ethnic diversity is *Fractionalization*, defined as the probability that two individuals selected at random from a country will be from different ethnic groups. If the population shares of the ethnic groups in a country are denoted $p_1, p_2, p_3, \dots, p_n$, then fractionalization is $F = 1 - \sum_{i=1}^n p_i^2$. Obviously, the higher the value of F, the higher the fractionalization. For our analyses, we have calculated the mean between ethnic and linguistic fractionalizations.

Methods

Given that the dependent variable is an ordered categorical variable, ordered logit is a more appropriate econometric method than linear regression, since it does not impose the assumption that all adjacent responses are equidistant apart (Long, 1997: chapter 5)¹³. In particular, as explained in the introduction, we employ a multilevel weighted ordered logistic regression model. According to the

¹³ Results do not change appreciably if the logit model is replaced with a probit model.

likelihood-ratio test of the random-coefficient proportional-odds model against the random-intercept proportional-odds model, the first model does not fit better than the second one. The random-intercept model is therefore the model we use. Responses are weighted by population and design weights to ensure that each country is represented in proportion to its population size and to make the sample more representative of a “true” sample of individuals aged 15+ in each country¹⁴.

In the analysis of tax morale, we run six specifications to observe the robustness of our results: the first model includes the six sources of heterogeneity in tax morale that we have previously discussed; in the second model *ethnic-linguistic fractionalization* is omitted, given that it is not statistically significant; in the third model *regional per capita GDP in federal and unitary countries* is added to the previous specification instead of *regional per capita GDP*; the fourth model includes four more variables: direct tax burden, the rest of tax burden and their change, while the national tax burden is omitted; in the fifth model the change in direct tax burden as well as in the rest of tax burden are omitted; finally, in the sixth model the direct tax burden and the rest of tax burden are replaced with their changes from 1995 to 2004.

Potential multicollinearity among tax variables has been taken into account. Simple correlation between total tax burden (TAX) and changes in total tax burden (CTAX) for the seventeen countries is positive but low (0.26; p-value=0.31)¹⁵. Simple correlations between the four tax variables included in the fourth model are all below 0.36 (p-value>0.16). However, in order to control for potential problems caused by multiple correlations, we have also estimated the model alternatively including the level (model 5) and dynamics (model 6) of tax burdens.

Table 2
ECONOMETRIC ESTIMATES

Variables	Models					
	1	2	3	4	5	6
Socio-demographic characteristics						
Male	0.124*** (0.031)	0.123*** (0.031)	0.122*** (0.030)	0.127*** (0.031)	0.126*** (0.031)	0.126*** (0.031)
Age	0.020*** (0.001)	0.020*** (0.001)	0.019*** (0.001)	0.019*** (0.001)	0.019*** (0.001)	0.019*** (0.001)
Education	-0.219*** (0.005)	-0.219*** (0.005)	-0.219*** (0.004)	-0.224*** (0.004)	-0.225*** (0.004)	-0.222*** (0.004)
Religion	0.014** (0.006)	0.014** (0.006)	0.017*** (0.006)	0.017*** (0.006)	0.017*** (0.006)	0.016*** (0.006)

(Keep.)

¹⁴ See <http://www.europeansocialsurvey.org/>.

¹⁵ We also run the third model including alternatively as regressor TAX and CTAX. In both cases the coefficient was negative and statistically significant at the 0.01 level.

(Continuation.)

Variables	Models					
	1	2	3	4	5	6
Personal financial experiences						
<i>Income (ref. Living comfortably)</i>						
<i>Coping on present income</i>	0.605*** (0.068)	0.603*** (0.068)	0.618*** (0.067)	0.616*** (0.067)	0.606*** (0.067)	0.611*** (0.067)
<i>Finding it difficult</i>	0.757*** (0.065)	0.756*** (0.065)	0.765*** (0.065)	0.774*** (0.065)	0.757*** (0.065)	0.764*** (0.065)
<i>Finding it very difficult</i>	0.655*** (0.071)	0.653*** (0.070)	0.678*** (0.070)	0.689*** (0.070)	0.664*** (0.070)	0.672*** (0.070)
<i>Self-employment</i>	-0.105** (0.051)	-0.104** (0.051)	-0.093* (0.051)	-0.107** (0.051)	-0.103** (0.051)	-0.106** (0.051)
Political attitudes						
Satisfaction with democracy	0.049*** (0.007)	0.049*** (0.007)	0.051*** (0.007)	0.051*** (0.007)	0.052*** (0.007)	0.052*** (0.007)
Trust in politicians	0.193*** (0.008)	0.193*** (0.008)	0.193*** (0.008)	0.194*** (0.009)	0.193*** (0.009)	0.193*** (0.009)
<i>Measures to reduce differences in income (ref. Disagree)</i>						
Neither agree or disagree	-0.249*** (0.050)	-0.249*** (0.050)	-0.251*** (0.050)	-0.247*** (0.050)	-0.254*** (0.050)	-0.248*** (0.050)
Agree	0.375*** (0.042)	0.374*** (0.042)	0.369*** (0.042)	0.389*** (0.042)	0.381*** (0.041)	0.390*** (0.041)
Fractionalization						
Ethnic-linguistic fractionalization	-0.083 (0.140)					
Interregional redistribution						
Regional per capita GDP	-0.004*** (0.0006)	-0.004*** (0.0006)		-0.004*** (0.0006)	-0.004*** (0.0006)	-0.004*** (0.0006)
Regional per capita GDP*Unitary			-0.001* (0.0006)			
Regional per capita GDP*Federal			-0.007*** (0.0005)			
National tax arrangements						
National tax burden	-0.060*** (0.005)	-0.060*** (0.005)	-0.042*** (0.006)			
Change in national tax burden	-0.032*** (0.009)	-0.033*** (0.008)	-0.035*** (0.008)			
Direct tax burden				-0.053*** (0.007)	-0.087*** (0.006)	
Rest of tax burden				-0.001 (0.008)	0.016* (0.009)	
Change in direct tax burden				-0.016 (0.011)		-0.066*** (0.009)
Change in the rest of tax burden				0.128*** (0.013)		0.157*** (0.014)
Cut 1	-3.265*** (0.226)	-3.265*** (0.222)	-2.392*** (0.230)	-1.212*** (0.249)	-1.434*** (0.284)	-0.556*** (0.127)
Cut 2	-1.886*** (0.225)	-1.887*** (0.221)	-0.952*** (0.230)	-0.167 (0.249)	-0.055 (0.284)	0.823*** (0.127)
Estimated σ_u^2	0.278	0.282	0.256	0.232	0.145	0.154
Number of Observations	30156	30156	30156	30156	30156	30156

Random-coefficient proportional-odds model. Standard errors are given in parentheses.

***p<0.01; **p<0.05; *p<0.10.

Results

The main results are displayed in Table 2. As can be seen, the impact of individual-level variables is quite robust: differences among coefficients across the models are minimal. All coefficients are of the expected sign, with the exception of gender and education, and statistically significant at the 0.01 level. Tax morale is positively related to age, being male, income (the higher the financial stress, the stronger the tax morale), satisfaction with democracy, trust in politicians and agreement with redistribution. On the contrary, tax morale is negatively correlated with self-employment and education. While most of these results confirm previous findings in the literature, it is worth emphasizing the positive impact on tax morale of individuals' opinion on the redistributive role of the public sector: people who agree with measures to reduce differences in income have stronger tax morale.

The positive coefficients on *male* and negative on *education* deserve special attention. In the six models we have run, men have a stronger tax morale than women. This finding seems to challenge the conventional wisdom. The reason for this deviation in the expected sign of the variables is our sample of countries. According to the estimates for different groups of countries, not shown in the paper, we also found a negative impact of being male on tax morale when the analysis is focused on the most common countries in the literature: Belgium, Spain and Switzerland (see table 1). The positive sign appears when the rest of our seventeen countries are included in the analysis. In other words, the well-known positive impact of being female on tax morale does not travel well across countries. But this argument needs further research.

The negative effect of education supports the arguments and findings of Torgler and Schneider (2006), previously explained. Not surprisingly, the same thing happens in the explanation of voting. According to the empirical evidence provided by Blais (2000, chapter 5), the feeling that voting is not a moral obligation is not correlated with the level of education.

Regarding the effect of contextual variables, our arguments are strongly supported by the estimates. First, the coefficient on *regional per capita GDP* is negative and statistically significant at the 0.01 level (see model 1). That is, tax morale is weaker for individuals living in rich regions and then net contributors to interregional redistribution. Furthermore, this effect is much stronger in federal or quasi-federal countries than in unitary countries. As can be seen in model 3, the coefficient is seven times higher in federal countries than in unitary countries, where it is only statistically significant at the 0.1 level.

The results also support the importance of national tax arrangements on tax morale. In the first, second and third models, both the level and recent dynamics of total tax burden have a negative impact on tax morale. Both variables are sta-

tistically significant at the 0.01 level; the higher the (growth of) national tax burden, the lower the tax morale. Furthermore, the composition of the tax burden matters. In the fourth model, the level and changes of both direct taxes and the remaining taxes are individually included. The coefficient on the level of direct tax burden is statistically significant at the 0.01 level and negative, while the coefficient for the remaining taxes is negative but not statistically significant (p -value=0.86). The effect of changes in direct tax burden is negative but not statistically significant (p -value=0.15). Finally, the coefficient is positive and highly significant for changes in the rest of taxes.

In order to avoid potential problems caused by multiple correlations, we have also estimated models 5 and 6. Model 5 omits changes in tax burden, while model 4 omits tax burden levels. The effect of both the level and changes in direct tax burden is negative and statistically significant at the 0.01 level, while the effect of the level and changes in the rest of taxes is positive. Results can also be interpreted as supporting the hypothesis of fiscal illusion: individuals are more sensitive to direct taxes than to other less visible tax instruments.

In sum, both the level and recent dynamics of the national tax burden are negatively correlated with tax morale, which confirms the “tax fatigue” hypothesis. And the mechanism at work here is the direct tax.

5. CONCLUSIONS

In this paper, we have exploited the European Social Survey in order to study tax morale in European countries. Applying a multilevel statistical model, we investigated whether the individual differences in micro-level variables and the cross-national differences in macro-level variables were able to produce systematically different patterns of tax morale. We found this to be true.

First, our analyses provide conclusive evidence that tax morale is shaped by socio-demographic characteristics, personal financial experiences and political attitudes. But contrary to the conventional wisdom, we found that being female has a negative impact of tax morale. This finding suggests that what the literature has found in some Western countries does not necessarily travel across borders. Furthermore, we show that individuals, as well as countries, who are more prone to fiscal redistribution have higher levels of tax morale.

Second, cross-national differences in tax morale are not related to ethnic and linguistic fractionalization.

Third, regional redistribution within countries is relevant for explaining tax morale, particularly in federal countries. Those individuals living in rich regions are less prone to tax compliance. Interregional fiscal redistribution implies that



the central government budget constraint does not apply region by region. On the contrary, differences in tax capacity or spending needs generate federal taxes and expenditure that do not match in each region. Hence, residents in net fiscal contributor regions are tempted to think that the federal fiscal menu is disadvantageous. This opinion may be boosted and used by sub-national political parties in the sense that they may benefit from claiming changes in the fiscal arrangements. Cheating on taxes may be then justified as a way of (*de facto*) increasing the fairness of the system in rich regions.

Finally, fiscal arrangements matter. High national burdens, as well as their changes in the short-term, are negatively correlated with tax morale; this is clear evidence in favor of the “tax fatigue” hypothesis. Furthermore, we have demonstrated that this relationship depends on direct taxes. According to our results, taxes on income and profits are more negative for tax morale than social security payments or consumption taxation. This finding is robust to different econometric specifications and deserves further attention in future empirical research with international data.

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SÍNTESIS

PRINCIPALES IMPLICACIONES DE POLÍTICA ECONÓMICA

Los trabajos empíricos sobre los determinantes del cumplimiento fiscal demuestran que éste no se explica exclusivamente por el análisis coste-beneficio individual que interrelaciona tipos impositivos, probabilidad de inspección y sanciones. De hecho, con los modelos estándar de fraude fiscal disponibles, serían necesarios grados de aversión al riesgo extraordinariamente elevados y escasamente plausibles para explicar el alto nivel observado de cumplimiento. Una forma de explicar esta inconsistencia entre grado de incumplimiento y esfuerzo en control es la moral fiscal, definida de forma sintética como la “motivación intrínseca” a pagar impuestos. De hecho, este factor se ha convertido en clave en la literatura más reciente.

En este trabajo analizamos los determinantes de la moral fiscal con un doble objetivo científico y de política pública. Por un lado, se trata de entender qué explica las diferencias entre individuos y países en su moral fiscal. Por otro, la comprensión de esos determinantes es fundamental para diseñar políticas que incentiven la moral fiscal y, de ahí, el cumplimiento fiscal. Y esto es algo muy relevante dado que el control del fraude es costoso y siempre imperfecto.

El trabajo empírico utiliza datos correspondientes a 17 países europeos: Austria, Bélgica, República Checa, Dinamarca, Estonia, Finlandia, Alemania, Grecia, Luxemburgo, Noruega, Polonia, Portugal, España, Eslovenia, Suecia, Suiza y Reino Unido. Nuestra contribución a la literatura ya disponible es triple. Primero, utilizamos la segunda ola (2004-2005) del *European Social Survey (ESS)*, que provee un amplio abanico de datos sobre capital social, política, bienestar subjetivo, moral económica y características sociodemográficas. Al utilizar el ESS, somos capaces de explorar modelos de moral fiscal a escala individual más sofisticados que si trabajásemos con fuentes alternativas como el *International Social Survey Program*, el *World Values Survey* or the *European Values Survey*. Dado que el ESS está diseñado para garantizar la consistencia metodológica, es particularmente apropiado para estudios comparados. En segundo lugar, demostramos que la moral fiscal a escala individual viene explicada no sólo por factores individuales, sino también por variables de tipo institucional o contextual. En tercer lugar y como novedad respecto a la literatura sobre los determinantes de la moral fiscal con microdatos procedentes de encuestas, nuestro estudio utiliza modelos econométricos multinivel. Dado que partimos de la idea de que la moral fiscal refleja tanto factores individuales como supra-individuales que operan a escala regional o estatal, la forma más apropiada es optar por este tipo de metodología econométrica.

Entre los resultados del trabajo, destacan los siguientes. Primero, obtenemos evidencia empírica robusta sobre el hecho de que la moral fiscal viene determinada por las características sociodemográficas, situación financiera personal y actitudes políticas. Segundo, la redistribución interregional dentro de los países es relevante para explicar la moral fiscal, especialmente en los países federales o cuasi-federales. Los individuos

que residen en las regiones más ricas dentro de cada país tienden a mostrar niveles más bajos de moral fiscal. En tercer lugar, los niveles de presión fiscal nacional influyen sobre la moral fiscal a escala individual. Cuanto mayor es la presión fiscal o más se ha incrementado en el pasado reciente, menor tiende a ser la moral fiscal de los individuos. Y el efecto se asocia particularmente a los tributos directos. Este resultado es robusto a diferentes especificaciones econométricas y merece atención especial en futuras extensiones del trabajo. Por último, las diferencias entre países en el grado de fragmentación ética o lingüística no son factores estadísticamente relevantes en las regresiones.

NORMAS DE PUBLICACIÓN DE PAPELES DE TRABAJO DEL INSTITUTO DE ESTUDIOS FISCALES

Esta colección de *Papeles de Trabajo* tiene como objetivo ofrecer un vehículo de expresión a todas aquellas personas interesadas en los temas de Economía Pública. Las normas para la presentación y selección de originales son las siguientes:

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2. Los trabajos deberán enviarse por duplicado a la Subdirección de Estudios Tributarios. Instituto de Estudios Fiscales. Avda. Cardenal Herrera Oria, 378. 28035 Madrid.
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5. Los epígrafes irán numerados secuencialmente siguiendo la numeración arábica. Las notas al texto irán numeradas correlativamente y aparecerán al pie de la correspondiente página. Las fórmulas matemáticas se numerarán secuencialmente ajustadas al margen derecho de las mismas. La bibliografía aparecerá al final del trabajo, bajo la inscripción "Referencias" por orden alfabético de autores y, en cada una, ajustándose al siguiente orden: autor(es), año de publicación (distinguiendo a, b, c si hay varias correspondientes al mismo autor(es) y año), título del artículo o libro, título de la revista en cursiva, número de la revista y páginas.
6. En caso de que aparezcan tablas y gráficos, éstos podrán incorporarse directamente al texto o, alternativamente, presentarse todos juntos y debidamente numerados al final del trabajo, antes de la bibliografía.
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Junto al original del Papel de Trabajo se entregará también un resumen de un máximo de dos folios que contenga las principales implicaciones de política económica que se deriven de la investigación realizada.

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This serie of *Papeles de Trabajo* (working papers) aims to provide those having an interest in Public Economics with a vehicle to publicize their ideas. The rules governing submission and selection of papers are the following:

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