

Social Identities, Ethnic Diversity, and Tax Morale

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Abstract

This paper investigates the impact of individuals' social identities on their tax attitudes, and how these effects on the micro level are translated to the impact of a country's ethnic heterogeneity on the public's overall tax morale. We find that both ethnic and national identities play important roles shaping tax morale, and these effects depend on the country's population heterogeneity. Overall, ethnically fractionalized countries have poorer tax morale than homogeneous ones, suggesting a higher cost of tax collection for the former. This is consistent with previous findings that suggest detrimental impact of ethnic fractionalization on public sector performance.

Key words: social identity, ethnic fragmentation, tax morale

JEL codes: H26, J15

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“The basis on which you can extract large sums of money in tax and pay it out in benefits is that most people think the recipients are people like themselves, facing difficulties that they themselves could face. If values become more diverse, if lifestyles become more differentiated, then it becomes more difficult to sustain the legitimacy of a universal risk-pooling welfare state. People ask: ‘Why should we pay for them when they are doing things that we wouldn’t do?’” from David Willets, British Conservative MP [1998]

1. Introduction

This study examines how social identities – one’s (perceived) membership in social groups – and ethnic heterogeneity of a country affects tax morale. Tax morale, i.e., the intrinsic motivation to pay taxes, is an important determinant of tax compliance. Conventional economic theories model tax compliance decisions as balancing the tradeoff between the benefit of a lower tax burden and the cost of penalties for noncompliance (Allingham and Sandmo 1972). Empirical studies, however, find a higher level of compliance than theory predictions (i.e., voluntary overcompliance). Researchers try to reconcile this discrepancy by incorporating social factors into the analysis, such as social norms, morality, perceptions of fairness and trust. This paper introduces two new factors, social identities and ethnic heterogeneity, and shows that they play important roles in shaping tax morale. The results offer insights for researchers to better understand reasons for tax evasion on the one hand and voluntary overcompliance on the other (Feld and Frey 2002).

We use data from the European and World Values Surveys which encompass national representative samples from sixty seven countries and contain information on moral acceptability

of tax cheating, respondents' ethnic backgrounds, and national identity. The comprehensive information in the Surveys allows us to differentiate the *internal* and *external* evidence of the impact of social identities, with the former based on self-identification as a citizen of the country, and the latter based on racial, linguistic and religious characteristics observed by the survey interviewers. When studying the external evidence of social identities, we introduce a *majority* versus *minority* classification. Survey respondents are categorized as majority group if they belong to the largest ethnic group and the most popular religious denomination, and speak the country's most commonly used language at home. Otherwise, they are categorized as minority groups of that country. This classification captures important differences in the groups' tastes for public spending or political dominance which can cause different intrinsic tax attitudes.

We find that on average residents show lower tax morale in ethnically heterogeneous countries than in homogeneous ones, consistent with the quote above. This *aggregate* impact of ethnic heterogeneity is driven by how taxpayers' *individual* social identities affect their tax morale. We find that all else equal, those from ethnic majority groups have significantly higher tax morale than minority groups. Since ethnically heterogeneous countries have more minority groups (by definition), this individual-level difference aggregates to explain the country-level difference. In addition, those who self identify as citizens show stronger tax morale than those who do not. The effects of identities are contingent on the country's ethnic fractionalization.

This study contributes to the literature in two ways. First, we make a connection between the micro evidence on individual compliance attitudes and the aggregate evidence on the country's tax morale. It allows us to study how the effects of ethnic identities on *individuals'* tax attitudes are translated to an impact of ethnic heterogeneity on the public's *overall* tax morale. Our findings link to a growing literature that documents the detrimental impacts of ethnic

fractionalization on government's redistributive spending and public sector performance. We discuss this literature in section 2. Our study suggests a micro mechanism for this finding. Since people are more willing to pay taxes to finance a public sector that benefits their own group and are reluctant to bear the economic cost for other groups, ethnic fractionalization undermines the public's tax morale by eroding their altruism and sense of mutual obligation, and hence increases the probability of noncompliance. As a result, ethnically fractionalized countries are more likely to face a higher cost of tax collection, which restricts funds for their public sector.

Second, this study fills a gap in the economic literature on social identity by identifying a non-experimental data source, and differentiating the *internal* and *external* evidence of the impact of social identities. Social identity theory was developed by Tajfel and Turner (1986) to understand the psychological basis for intergroup discrimination. In economics, research interest on identity has been growing since the seminal work by Akerlof and Kranton (2000). Nevertheless, the current empirical literature on identity focuses on a limited range of topics, such as discrimination (Fershtman and Gneezy 2001) and social preferences (Chen and Li 2009). These studies rely on an *experimental* approach of data collection, and many of them focus on groups induced in laboratory settings. In contrast, this paper identifies a non-experimental data source, and focuses on naturally occurring identities – ethnic and national identities – rather than artificially induced ones. We study the impact of identities on tax morale, a topic underexplored in the literature due to data limitations. To the best of our knowledge, this is the first study that compares and contrasts the internal and external evidence of identities. Our results show that the two dimensions of identities, one internalized by individuals and the other one externally observable to others, play important but different roles in shaping tax morale.

The remaining sections of this paper are organized as follows. Section 2 presents research questions and hypotheses. Section 3 discusses the data. Section 4 presents empirical analyses and results. Section 5 concludes and discusses policy implications.

2. Research Questions and Hypotheses

The main questions we investigate include how individual's social identities affect tax attitudes, and how these effects on the micro level are translated to an impact of ethnic fractionalization on the public's *overall* tax morale. In this section, we discuss the literature, and formulate our hypotheses based on what the previous findings suggest.

An expanding literature in economics documents that inter-ethnic-group preferences affect voter choices on public spending. For example, Alesina, Baqir and Easterly (1999) show that the share of spending on productive public goods in U.S. urban areas is inversely related to the ethnic fragmentation of the communities. Luttmer (2001) finds that people increase their support for welfare spending as the share of local recipients from their own racial group rises. In a cross-country analysis, Alesina, Glaeser and Sacerdote (2001) find an inverse relationship between the size of government redistributive spending and the country's ethnic fragmentation. Many subsequent studies attribute these phenomena to intergroup bias – people favor policies that are beneficial to their own ethnic groups and withdraw support for policies that mostly benefit other groups (see Alesina and La Ferrara 2005 for a review). In an experimental study conducted in Uganda, Habyarimana et al. (2007) find evidence for 'strategy selection' (co-ethnics play cooperative equilibria whereas non-co-ethnics do not) and 'technology' mechanisms (co-ethnics are more closely linked on social networks and thus better able to support

cooperation through the threat of social sanction), but no evidence for ‘preference’ mechanisms (common tastes or a greater degree of altruism within ethnic groups).

Since tax is the major revenue source for public spending, the intergroup bias may also influence one’s willingness to pay taxes. As British Conservative politician David Willets commented in the quote above, people pay taxes to help others who are like themselves. When a society becomes more diverse and beneficiaries of public policies are more likely to come from different ethnic groups, taxpayers will question ‘[w]hy should I pay for them when they are doing things that I wouldn’t do?’ (Willets 1998). This comment suggests that an increase in ethnic heterogeneity may adversely affect tax morale. If taxpayers pay partially out of the motive to help others that are similar to them, ethnic heterogeneity may erode mutual obligation, weaken the public’s tax morale, and cause an increase in evasion.¹ There is some evidence in the literature that suggests a connection between ethnic heterogeneity and a low tax compliance rate. La Porta et al. (1999) and Alesina et al. (2003) use cross-national approaches to examine determinants of government efficiency, including levels of tax compliance. Both studies find a negative effect of ethnic heterogeneity on tax compliance, although the estimates are sensitive to the empirical specifications. This body of research motivates the first hypothesis.

H1. The public’s overall tax morale is inversely related to its ethnic heterogeneity.

As discussed earlier, the adverse impact of ethnic heterogeneity on tax morale can be attributed to intergroup discrimination – individuals favor policies that offer beneficial treatment to their own ethnic groups, and withdraw support for other groups. In other words, individuals’ tax morale is affected by their own social identities (e.g., ethnic identities).

¹ Voters may sometimes seek to modify tax codes through the legal process and change the purposes for which taxes are used. For example, residents in Prince George’s County, Maryland, passed a law in 1978 imposing a ceiling on the tax for school financing in response to an influx of a large black middle class that had made the county much more heterogeneous (Alesina, Baqir and Easterly 1999, 1244).

Our data on individual respondents' ethnic characteristics come from the European and World Values Surveys. The dataset includes national representative sample from a large number of countries, which enables a cross-country investigation on whether the effect of ethnic identities on tax morale exhibits any *universal* patterns. The biggest challenge, however, is that the ethnic classifications differ dramatically across countries. For example, many African countries categorize ethnic groups based on tribal origins. Some European and East Asian countries use country origins and/or languages spoken.² North American countries use skin tone to differentiate ethnicities. As the result, the number of identified ethnic groups varies in a wide range from a few to several hundred from country to country, which makes it practically impossible to study any universal patterns on how ethnic identities influence tax morale.

To circumvent this difficulty and to unify the drastically different ethnic classifications across countries, we construct a new classification – ethnic majority groups or minority groups. An identified ethnic group can be categorized as either the country's majority or minority groups. We hypothesize that ethnic minorities and majorities may have different tax morale due to three reasons: intergroup bias, heterogeneous tastes and political disadvantage. We note that not all these reasons are applicable to all the countries we include in our dataset, but we believe that at least one of them (and possibly more) applies for each country.

Frey and Torgler (2007) suggest that conditional cooperation is an important factor influencing tax morale. Studies in psychology and experimental economics also show that social preferences (e.g., altruism) and conditional cooperation are stronger within social groups than across the groups – an effect termed *intergroup bias* (Tajfel and Turner 1986 surveys much of this research; specific studies include Charness, Rigotti and Rustichini 2007; Chen and Li 2009).

² In Italy, the primary ethnic group is Italian and other groups include German-, French-, Slovene-, Albanian- and Greek-Italians. In Germany, the population besides German consists of Turkish, Serbo-Croatian, Italian, Russian, Greek, Polish, and Spanish. In Japan, Korean and Chinese comprise of the ethnic minority groups.

Since some benefits to public spending are enjoyed equally by all citizens, and by definition, the ethnic majority is more similar to the majority of all citizens and thus feels more altruism toward them and more conditional cooperation with them, majority groups are likely to experience stronger approval for public spending and thus have higher tax morale.

Furthermore, some forms of public spending differentially benefit different groups in the population. When public spending can be targeted at different groups, individuals in the ethnic majority are more likely to receive the benefits than are individuals in the ethnic minority. Since minority and majority groups are likely to have different tastes over public spending, and majority groups' preferences are more likely to determine the outcome, minority groups would experience lower tax morale. Indeed, previous studies show that individuals' support for public spending may be (partially) driven by group loyalty or heterogeneous tastes over public spending (Alesina, Baqir and Easterly 1999; Alesina, Glaeser and Sacerdote 2001; Luttmer 2001).

Finally, in some societies (but not all) minority groups are less politically and economically advantaged than the majority groups. The former's experience or perception of being treated unfairly can cause mistrust of the political system and the government. This perception of unfairness may lead to low tax morale. Spicer and Becker (1980) show that tax cheating can be rationalized as a device to restore equity when the tax system is perceived to be unfair. These three arguments thus lead to hypothesis 2.

H2. Taxpayers from the ethnic majority group will show higher tax morale than those from minority groups within a country.

Citizenry is another dimension of social identities that have important impact on tax morale. Graetz and Wilde (1985) suggest that a high compliance rate can be explained by taxpayers' respect for the law as citizens. Wenzel (2002) finds that a taxpayer's national identity

as an Australian citizen has a positive impact on tax compliance attitude. The data used in this paper allows us to separate the effect of the citizen identity from that of the ethnic identities.

This leads to hypothesis 3.

H3. Conditional on ethnic characteristics, taxpayers who have a strong citizen identity will show higher tax morale than their counterparts.

We also hypothesize that the effects of identities may be contingent on the population heterogeneity and vary across societies. For example, we expect the majority ethnic groups' tax morale to differ between a homogeneous country and a heterogeneous country. The role that citizen identity plays may be different across countries that have different degrees of heterogeneity. This leads to hypothesis 4.

H4. The effects of identities on tax morale will be contingent on the heterogeneity of the population in the country.

These hypotheses will be tested using the European and World Values Surveys data.

3. Data

The main source of data is the European and World Values Surveys (EWVS) wave 4 (1999-2002). The surveys, initially built on the European Values Survey in 1981, poll representative national samples of adults worldwide regarding questions on their basic values and beliefs. The surveys enable cross-national, cross-cultural comparisons of values, norms, as well as socio-cultural and political changes across the globe. They have been fruitfully used in economics research (Knack and Keefer 1997; Alm and Torgler 2006; Frey and Torgler 2007) in spite of commonly identified caveats regarding attitudinal surveys. The fourth wave, conducted between 1999 and 2002, covers countries that contain 85 percent of the world's population, including

many Islamic and African societies that have rarely been included in cross-national survey research before. Tax attitude information is available for sixty seven countries except Israel. The average sample size is about 1,400 individuals per country with a standard deviation of 648.

Tax morale The tax morale measure is constructed based on the question about noncompliance attitudes (denoted as *CheatTax*). In the survey respondents are asked to rate, on a one-to-ten scale, the extent to which they think cheating on taxes is justifiable. The actual wording is, “[p]lease tell me for each of the following statements whether you think it can always be justified (scale 10), never be justified (1), or something in between... *Cheating on taxes if you have a chance.*” The response reflects one’s willingness to cheat on taxes when an opportunity is available, i.e., tax morale. The lower the score the higher the tax morale.

The distribution of the *CheatTax* variable is right skewed. Pooling all the countries, we find that 63 percent of respondents consider tax cheating as never justifiable (scale 1). Ten percent of respondents choose scale 5 or higher and consider tax cheating justifiable to a large extent. In the cross-country aggregate analysis, we construct an average tax morale variable (*AvgCheatTax*) for each country using the weights that reflect the national distributions of key demographic variables. The mean of *AvgCheatTax* is 2.27, with a standard deviation of 0.71.³

A preliminary look at the *AvgCheatTax* data suggests that countries with poor tax morale are likely to have a heterogeneous population. Consider the twelve countries for which *AvgCheatTax* is at least one standard deviation above the sample mean, i.e., Russia, France, the Philippines, Greece, Estonia, Luxembourg, Ukraine, Uganda, Belgium, Lithuania, Moldova and Belarus. Six of them are former Soviet Union countries and most of the other six countries have a highly heterogeneous population. Uganda, one of the most heterogeneous countries in the world, has an *AvgCheatTax* equal to 3.4. The Philippines is a very linguistically diversified

³ It is computed as the simple average of *AvgCheatTax* across countries with each country equally weighted.

country, where a population of 81 million speaks about 170 different languages. It has a high *AvgCheatTax* score of 3.14. Belgium and Luxemburg, with *AvgCheatTax* 3.66 and 3.38, respectively, have the most diversified populations both ethnically and linguistically among the OECD countries. On the contrary, highly homogeneous countries, such as Bangladesh, Japan, Malta, and South Korea, have high tax morale. Their *AvgCheatTax* values are towards the far low end (i.e., cheating on tax being perceived as unjustifiable) in the distribution. This pattern implies a negative correlation between ethnic heterogeneity and tax morale across countries.

Ethnic majority versus minority For ethnic identities, we introduce a variable called *Majority* to categorize respondents as belonging to an ethnic majority group in their country based on their racial, linguistic and religious backgrounds. During the survey interviewers coded respondents' racial characteristics by observations.⁴ Respondents were also asked what language they normally spoke at home and whether they belonged to a religious denomination (if yes, which religious denomination).⁵ To validate the classifications of racial, linguistic and religious groups in the surveys, we crosscheck with *Encyclopedia Britannica* (2000) and the *CIA World Factbook* (2000), two commonly used sources in the field, and find they are highly consistent.

For every country we identify the largest racial group, the most commonly spoken language, and the most popular religious denomination. We construct an ethnic identity variable called *Majority* defined as the dominant ethnic groups of that country. The baseline *Majority* variable is a composite measure. It is set to be one for people who belong to the largest racial group *and* the most popular religious denomination, *and* speak the most widely used language at

⁴ The survey was conducted via face-to-face interviews. Phone interviews were used for remote areas in Iceland.

⁵ The questions on race, language and religion each had a list of answers that reflect the country's modifications of the master questionnaire in the translation from English to the respective participant language.

home.⁶ The minority groups are comprised of those for whom at least one of the three criteria fails to be met. In atheist countries religious people are considered to be minorities. If the largest groups share similar sizes they are all treated as majority groups.⁷ Complementary to this composite measure of *Majority* based on the combination of racial, linguistic and religious characteristics, alternative measures are constructed in a similar way by using the three characteristics separately. Table 1 presents information on race, language and religion, based on which the *Majority* variable is generated for each country.

[Table 1 about here.]

Citizen identity The citizen identity variable (*Citizen*) is constructed based on a closed-ended question that asked respondents whether they would best describe themselves as being a citizen of the country, or being a member of some ethnic groups. For example, in the U.S. survey respondents were asked whether they best described themselves as (1) Hispanic American, (2) black American, (3) white American, (4) Asian American, or (5) an American citizen first and a member of some ethnic group second.⁸ The *Citizen* variable takes a value of one if the respondent *best* describes herself as a citizen or as citizen *first*, and is zero otherwise. This measure differs from the racial identity variable since *Citizen* was based on respondents' self-identification and the racial variable was coded by the interviewers.⁹ Citizen identity over and above sub-national ethnic identity reflects one's identification with and respect for the

⁶ As an alternative to the commonly spoken language, we also use the official language when constructing the *Majority* variable. Using the official language makes very little difference in the results.

⁷ The proportions of groups are reported in Table 1 for countries where multiple groups are considered as the majorities. Hausa, Yoruba, and Igbo in Nigeria are listed as the most commonly used languages in both the *CIA World Factbook* and the *Encyclopedia Britannica* although no statistics are provided on the population proportion of these groups. In Canada, both English and French are categorized as the majority languages.

⁸ The exact wording is "Which of the following best describes you? Just call out one of the letters on this card. [A] Above all, I am a Hispanic American; [B] Above all, I am a Black American; [C] Above all, I am a white American; [D] Above all, I am an Asian American; [E] I am an American first and a member of some ethnic group second."

⁹ The correlation between *Majority* and *Citizen* is generally close to zero, except in Albania (correlation is -0.45), Macedonia (0.65), Philippines (0.63), and Vietnam (0.90). It suggests that one's internalized identity as a citizen may not link to the group categorization based on their observable characteristics (e.g., race, language, or religion).

country's policies including its tax policies, and therefore is expected to have an important impact on one's tax attitude.

Ethnic fractionalization The degree of ethnic heterogeneity of a country is measured by a fractionalization index $Fract_c$ defined by the formula

$$Fract_c = 1 - \sum_{g=1}^N s_{gc}^2 \quad (1)$$

where s_{gc} denotes the share of ethnic group g in country c . The index measures the probability that two randomly selected individuals from the population will come from different ethnic groups. The index varies from zero to one. The larger the number of different groups and the more groups with equal size, the greater the fractionalization index.

We use the ethnolinguistic (ELF) fractionalization index constructed by La Porta et al. (1999) and the three separate fractionalization measures based on ethnicity, language and religion, respectively, constructed by Alesina et al. (2003).¹⁰ In the EWVS sample used in this study, Alesina's indices are available for sixty five countries and La Porta's *ELF* index for fifty countries. The ethnic and linguistic measures are highly correlated with the *ELF* index (0.77, $p < 0.01$; 0.92, $p < 0.01$). The religious fractionalization index has a much lower correlation with any of the other three measures, and the correlation varies from 0.2 to 0.3. As a robustness check, these heterogeneity measures are used as alternatives in all analyses.

Figure 1 presents the scatter plots of countries' noncompliance attitude ($AvgCheatTax$) against the fractionalization indices by geographic region. Panels A – D use *ELF*, ethnic,

¹⁰ This commonly used fractionalization index was constructed in the Soviet Union and first published in the 1964 *Atlas Narodov Mira* (Atlas of Peoples of the World). This index takes into account the number and size of population groups as distinguished by their ethnolinguistic status. Easterly and Levine (1997) focus on the Soviet data and use alternative measures from other studies to check for robustness. La Porta et al. (1999) compile their own ethnolinguistic index by averaging the former Soviet code and four other measures on linguistic heterogeneity that are discussed in Easterly and Levine (1997). To take into account the importance of racial or religious origin, Alesina et al. (2003) provide three separate fractionalization measures based on ethnicity, language and religion.

linguistic and religious fractionalization indices, respectively. In most cases there is a positive correlation between a country's fractionalization and overall noncompliance attitude, suggesting a *negative* correlation between fractionalization and tax morale. A closer look at some individual cases also offers helpful insight. For example, South Korea, Bangladesh and Japan are among the most homogeneous countries, and their *AvgCheatTax* is one standard deviation below the sample mean of the sixty seven countries. In contrast, *AvgCheatTax* in Uganda, one of the most heterogeneous countries, is 1.5 standard deviations above the mean. These results suggest a link between population homogeneity and the country's tax morale. Nevertheless, there exist some counterexamples in the data. India, Nigeria and Tanzania are among the heterogeneous countries. The survey respondents in these countries, however, possess higher tax morale on average than their counterparts in other countries. Hence, fractionalization may provide only a partial explanation of tax attitudes. Other factors, e.g., countries' tax burden, legal origin, level of democracy, culture, and income distribution, ought to be taken into account in the analyses. These variables will be discussed in section 4 where we present the empirical strategies.

4. Empirical Analysis and Results

In this section, we first investigate the relationship between ethnic heterogeneity and aggregate level of tax morale across countries (hypothesis 1). We then use the pooled cross-national analysis on the micro level to test hypotheses 2 – 4. We present the results for the U.S. separately in subsection 4.3, since they offer complementary evidence for numerous studies in the tax compliance literature that focus on the U.S. data (Andreoni, Erard, and Feinstein 1998, and Slemrod and Yitzhaki 2002 survey much of this research.)

4.1. Ethnic Fractionalization and Aggregate Tax Morale: A Country-Level Analysis

We use OLS to analyze the impact of a country's ethnic fractionalization on the overall tax morale. The empirical specification is given by:

$$AvgCheatTax_c = \beta + \beta_1 Fract_c + X_c \bar{B} + \varepsilon_c \quad (2)$$

where $AvgCheatTax_c$ is the average acceptance of tax cheating in country c . The higher the scale the more justifiable the respondents consider tax cheating. The key explanatory variable $Fract_c$ is ethnic fractionalization. We use the *ELF* index obtained from La Porta et al. (1999) and ethnic, linguistic and religious fractionalizations from Alesina et al. (2003) alternatively.

To test the robustness of the effect of the *Fract* index, we examine various specifications. Specification (1) is the baseline that includes only the logarithm of per capita tax revenues, $\log(PC \text{ tax revenues})$, in addition to $Fract_c$.¹¹ Our hypothesis is that heavy tax burdens may exacerbate the public's tax morale. Previous studies find that the taxpayer's perception of the fairness of his tax burden is an important social factor that affects tax compliance (e.g., Spicer and Becker 1980). Alm and Torgler (2006) find that a country's tax morale and tax burden are negatively (but insignificantly) correlated. Specification (2) adds legal origin variables since the preliminary observations of the *AvgCheatTax* data in section 3 suggests that a country's political institution may affect tax morale. We follow La Porta et al. (1999) and Alesina et al. (2003), and categorize a country's legal origin based on the national commercial legal traditions into common law, French civil law, German civil law, Scandinavian law, and socialist law. We hypothesize that people in the countries with socialist law may be more likely to consider tax cheating justifiable since the primary goal of socialist law is to maintain the State's control over economic resources (La Porta et al. 1999). Specification (3) further adds a country's democracy

¹¹ Data source: 2009 Index of Economic Freedom by the Heritage Foundation.

index.¹² Torgler (2005) and Alm and Torgler (2006) find that a country's tax morale is positively correlated with the degree of democracy since a democratic system helps incorporate citizen preferences into public spending. Alternatively, one may expect to find a *negative* correlation between tax morale and the degree of democracy since survey responders may express their negative opinions on the tax system more freely in democratic countries (compared to people in less democratic countries) if they are not satisfied with the public services they have received. In specification (4), we follow La Porta et al. (1999) and differentiate four regions – Africa and the Middle East, East and Southeast Asia, Latin America, and Europe and North America – to capture the effects of culture. The Europe and North America region is used as the omitted category. We also add the Gini coefficient to control for income distribution which may have potential impact on tax attitudes (e.g., La Porta et al. 1999; Alesina et al. 2003). In countries where income is very unequally distributed, poor people may perceive or use tax evasion as an equity-restoring device whereas rich people may use tax evasion as means to secure their status of economic advantage.

Table 2 presents the coefficient estimates of the *Fract* variable using *ELF* in panel i), racial fractionalization index in panel ii), linguistic index in panel iii), and religious index in panel iv). Results show that the *Fract* index enters with a positive and significant effect in most cases ($p < 0.05$ when the *ELF* or linguistic *Fract* indices are used, $p < 0.10$ in all but two cases). The adjusted R-squares reveal that the models with the linguistically based *Fract* measures, i.e., *ELF* or linguistic *Fract*, have larger explanatory power than those using the ethnic or religious *Fract* measures. The linguistic *Fract* measures also deliver coefficient estimates with smaller standard errors. When the *ELF* or linguistic *Fract* measures are used, the average size of the effects is bounded by 0.940 and 1.430 ($p < 0.05$ in one case and $p < 0.01$ in all other cases).

¹² Data source: Polity98 Project. Regime Characteristics, 1800–1998.

These results suggest that all else being equal, ethnically fractionalized countries tend to have a higher level of noncompliance attitude than homogeneous countries.

[Table 2 about here.]

The effect of *Fract* is also economically substantial. Take the coefficient estimate of the *ELF* index in column (4) for example. A one standard deviation increase in *ELF* contributes to 42 percent of a one standard deviation increase in the dependent variable *AvgCheatTax*, which is 13 percent of increase from the sample mean. Interpretation of the coefficient estimate of the linguistic *Fract* tells a consistent story. In fact, such a large magnitude of increase in ethnic heterogeneity is not unrealistic for countries that experience substantial changes in ethnic composition mostly caused by global migration. During recent years in the U.S., the population is becoming increasingly diverse. In 1970 Hispanics and minority racial groups – non-Hispanic blacks, Asians, and American Indians – together represented only 16 percent of the population. By 1998 this share had increased to 27 percent. Assuming current trends continue, the Bureau of the Census projects that these groups will account for almost half of the U.S. population by 2050.¹³ As the result the *ELF* index would be more than doubled in the U.S., increasing from the current level of 0.21 to 0.48. Another hypothetical example compares Bangladesh and Uganda. Bangladesh (*ELF* about zero) is one of the most homogeneous countries in the world whereas Uganda (*ELF* 0.84) is among the most heterogeneous ones. Our estimates in column (4) of Panel i) implies that if Bangladesh were to have a population as diversified as in Uganda its *AvgCheatTax* would be doubled, rising from 1.06 to 2.02.

¹³ Source: U.S. Census Press Release.
URL: <http://www.census.gov/Press-Release/www/releases/archives/population/001720.html>.

In addition, results show that the public's noncompliance attitude is positively associated with tax burdens in a country – this suggests that heavy tax burdens exacerbate tax morale.¹⁴ We also find that countries with socialist law or French civil law have lower tax morale in general, consistent with La Porta et al. (1999) and Alesina et al. (2003). The democracy index enters with a positive sign (the significance level changes from 1 percent to 10 percent after we control for the geographic dummies and the Gini coefficient), suggesting a *negative* correlation between tax morale and the degree of democracy. Although this result is inconsistent with Torgler (2005) and Alm and Torgler (2006) we conjecture that this negative correlation may reflect the fact that people have more freedom in expressing their dissatisfaction about the public services and tax system in democratic countries compared to those in less democratic countries. Finally, the geographic differences in tax attitude are not statistically significant after we control for fractionalization, tax burden, legal origin, democracy index, and the Gini coefficient. When the *ELF* index is replaced by other *Fract* variables, the results largely follow the same pattern.¹⁵

The finding that ethnically heterogeneous countries have lower levels of tax morale supports hypothesis 1. In comparison with La Porta et al. (1999) and Alesina et al. (2003), the results in this paper are robust across different specifications.

4.2. Effect of Social Identities: A Pooled Cross-National Microanalysis

In this subsection the focus of our analysis switches from the aggregate country level to the individual level. We investigate the roles that an individual's social identities play in shaping her tax attitude. Our goal is to identify micro evidence that may help explain the detrimental impact of ethnic fractionalization on the public's tax morale found in the previous subsection.

¹⁴ Coefficient estimates of the covariates are omitted from Table 2 due to page limits but are available upon request.

¹⁵ Results are omitted for brevity but are available upon request.

The ordered probit specification is given by:

$$\begin{aligned} \text{Prob}(\text{CheatTax}_{ic}) = & \delta_c + \delta_{1c} \text{Majority}_{ic} + \delta_{2c} \text{Majority}_{ic} * \text{Fract}_c \\ & + \delta_{3c} \text{Citizen}_{ic} + \delta_{4c} \text{Citizen}_{ic} * \text{Fract}_c + Y_{ic} \bar{\Delta} + \varepsilon_{ic} \end{aligned} \quad (3)$$

where CheatTax_{ic} denotes the level of a noncompliance attitude by individual i in country c . Majority_{ic} and Citizen_{ic} indicate person i 's ethnic (i.e., majority versus minority) and citizen identities. We use an ordered probit model since the dependent variable CheatTax_{ic} scales from one (tax cheating never justifiable) to ten (always justifiable). Hypothesis 2 conjectures that taxpayers from ethnic majority groups show higher tax morale and hence are less likely to perceive tax cheating justifiable, i.e., $\delta_{1c} < 0$. Hypothesis 3 suggests that citizen identity enhances compliance attitude, i.e., $\delta_{3c} < 0$. The impacts of the *Majority* and *Citizen* variables may vary with the extent of fragmentation across countries, and the interactive effects are captured by δ_{2c} and δ_{4c} . Country fixed effects, δ_c 's, control for unobserved country-specific characteristics. We follow the previous literature on tax evasion and tax morale to include other covariates (denoted vector Y_{ic}) in the analysis. We control for the degree of responders' trust in their government since previous studies show that the degree of taxpayers' satisfaction with the government influences their willingness to comply with tax laws (Alm, Jackson and McKee 1992; Feld and Frey 2002; Alm and Torgler 2006).¹⁶ The demographics variables include age, gender, marital status, educational background, and occupation (see Andreoni, Erard and Feinstein 1998 for a review). We also try to control for the level of household income. Since the income variable is scaled differently across countries we follow Alm and Torgler (2006) and use self categorization of income groups (e.g., upper class, upper middle class, lower middle class,

¹⁶The actual wording of the survey question is "... could you tell me how much confidence you have in [the government]: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?"

working class, or lower class) as a proxy for household income.¹⁷ The lower class is used as the omitted category. Empirical evidence on the effects of income on *tax evasion* is mixed. Previous studies find that tax evasion is positively (e.g., Slemrod 1985), or negatively (e.g., Alm, Jackson and McKee 1992; Fishlow and Friedman 1994) associated with taxpayer’s income. Other studies find zero correlation between tax evasion and income (Feinstein 1991). The effects of income on *tax morale* are also difficult to predict since they are contingent on various unobservable factors such as risk preferences, income tax rate progression, and opportunity costs of time (Alm and Torgler 2006). As elaborated in Alm and Torgler (2006), when the tax system is progressive, the high income individuals may have lower tax morale than the low income individuals if the increase in potential benefit through tax evasion dominates the decrease in marginal utility of income. On the other hand, the low income individuals may have lower tax morale since their social stakes are lower compared to the high income individuals. Therefore, it is an empirical question to investigate how tax morale is affected by income. The vector $\bar{\Delta}$ in the ordered probit specification denotes the corresponding coefficients of these covariates.

Since forty out of the sixty seven countries in EWVS (wave 4) lack ethnic and/or citizen identity information, we include twenty seven countries with individual respondents’ data.¹⁸ Data are weighted to reflect the national distributions of key demographic variables. Each country is weighted equally to avoid a large sample bias in the pooled-country analysis.¹⁹ The ordered probit results are presented in Table 3. Columns (1) – (4) include *Majority_{ic}*, *Citizen_{ic}*, their interactions with *Fract_c*, and the country fixed effects. Each of the alternative

¹⁷ The WVS survey question is “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: ...?”

¹⁸ The twenty seven countries include Albania, Algeria, Bosnia and Herzegovina, Canada, Chile, Egypt, India, Indonesia, Iran, Jordan, Macedonia, Mexico, Moldova, Nigeria, Pakistan, Peru, Philippines, Puerto Rico, Singapore, South Africa, Spain, Tanzania, Uganda, U.S., Venezuela, Vietnam, and Zimbabwe.

¹⁹ Observations are weighted within countries, and the sums of weights are equalized across countries to avoid a large sample bias in the pooled-country analysis.

fractionalization measures is investigated, with *ELF* in column (1), *Ethnic Fract* in column (2), *Linguistic Fract* in column (3), and *Religious Fract* in column (4). Columns (5) – (8) add the trust-in-government variable, demographics and household income, but otherwise parallel Columns (1) – (4). Coefficient estimates are reported with heteroskedasticity robust standard errors in parentheses. Coefficient estimates for occupations and country fixed effects are omitted for brevity.

[Table 3 about here.]

Note that the coefficient estimates and standard errors of *Majority_{ic}*, *Citizen_{ic}* and their interactions with the *Fract* variables are robust when additional covariates are included. When the *Fract* variables are evaluated at the sample means, the average effect of *Majority* varies from -0.143 to -0.187 in columns (1) – (4), from -0.112 to -0.161 in columns (5) – (8) ($p < 0.01$ in all cases). This supports hypothesis 2 and suggests that ethnic majorities perceive tax cheating less favorably than the minorities. The average effect of *Citizen* varies from -0.071 to -0.116 in columns (1) – (4), from -0.080 to -0.121 in columns (5) – (8) ($p < 0.01$ in all cases), suggesting that the citizen identity is significantly associated with a higher tax morale. This supports hypothesis 3. We also find that respondents who trust more in their government tend to have higher tax morale ($p < 0.01$). Controlling for trust in government does not change the effects of the identity variables, as we compare results in Column (1) – (4) with Columns (5) – (8). This suggests that ethnic identities and citizen identities have direct influence on tax attitudes which can be separated from the effect of trust in government.

Results in Table 3 also support hypothesis 4. We find that both the impact of *Majority* and *Citizen* is contingent on the ethnic fractionalization of the country. Specifically, the interaction of *Majority* and *Fract* has a positive and significant effect ($p < 0.05$) in all the

specifications. It implies that although a majority group identity reduces levels of noncompliance attitude, this effect is weakened in more heterogeneous countries. This phenomenon may be interpreted by the majority group's lack of trust in other groups' honesty in paying taxes. It may also be interpreted by their lack of interest in paying taxes to support other groups. In short, the majority identity contributes to higher levels of tax morale more effectively in homogeneous countries than in heterogeneous ones. The effect of the citizen identity (*Citizen*) also depends on the country's population heterogeneity. The *Citizen* and *Fract* interaction has a negative and significant effect ($p < 0.10$ in column 7, $p < 0.05$ for all other cases). It indicates that the citizen identity further reduces one's moral acceptance of tax cheating in heterogeneous countries compared to in homogeneous ones. It suggests the role that the citizen identity plays in promoting tax morale is more important in *heterogeneous* countries.

Effects of other control variables are generally consistent with findings in the literature. For example, men and younger people tend to consider tax cheating more justifiable. This is consistent with the evidence found in studies using tax return data, i.e., men are more likely to cheat on taxes than women, and noncompliance is significantly less common and of lower magnitude among elderly taxpayers. Our results suggest that married respondents are less likely to report tax cheating as justifiable, although previous studies based on tax return data show that noncompliance is more common and of greater magnitude among married households (Feinstein 1991). We also find that the education level has positive effect on tax morale. The positive (but insignificant) coefficients of the *Upper Class* and *Upper Middle Class* variables suggest that tax morale tends to worsen as income increases. However, tax morale does not seem to change monotonically with income. Interestingly, respondents who self identify as the working class have higher tax morale than all other income groups ($p < 0.05$).

The micro evidence found in this subsection offers an explanation for why aggregate tax morale is higher in homogeneous countries than in heterogeneous ones. Recall that taxpayers from ethnic minority groups exhibit lower tax morale than majority groups, and greater ethnic differentiation of a society decreases the intrinsic compliance motivation of majority groups. This suggests that the detrimental impact of heterogeneity may be driven by the low level of tax morale by the relatively large minority population and by the adverse effect of ethnic fragmentation on the majority group's compliance attitudes.

4.3. Micro Evidence from the U.S.

In this subsection, we analyze the effects of individuals' identities on tax attitude in the U.S. Despite the large volume of tax compliance literature that uses the U.S. data, this topic has rarely been studied primarily because of data constraints. An exception is Beron, Tauchen and Witte (1992) that uses the 1969 federal tax return data from the Taxpayer Compliance Measurement Program, and finds a positive correlation between the noncompliance rate and the proportion of non-white population in the U.S. communities. This finding is left unexplained because the data is aggregated at the three-digit zip code level. In this subsection, we use the U.S. WVS survey data to investigate the causes of this correlation by studying the impact of individuals' ethnic and citizenship identities on compliance attitudes.

The empirical specification adopted here is the same as in the previous subsection. The country-specific intercepts and the interactive terms are dropped from the specification since only the U.S. data are used. The construction of the identity variables follows the same approach in section 3. In particular, *Majority* is coded as one for English-speaking, Christian, and non-Hispanic white respondents. The ordered probit results are presented in Table 4. The dependent

variable *CheatTax*, scaled from one to ten, measures the level of noncompliance attitudes. Column (1) displays the baseline results with two regressors, *Majority* and *Citizen*. An additional explanatory variable, *Trust in government*, is added in column (2). Column (3) adds more control variables such as gender, age, income groups, marital status, education and occupation. Coefficient estimates along with heteroskedasticity robust standard errors are reported. As shown, the coefficient estimates and the standard errors of *Majority* and *Citizen* barely change with the addition of more covariates. The majority group identity and the citizen identity both have substantial effects restraining noncompliance attitudes. Effects of both variables are not only statistically significant ($p < 0.05$), but also economically sizable. Take the results in column (1) for example. On average, 36.8 percent of respondents in the U.S. consider tax cheating as somewhat justifiable ($CheatTax \geq 2$). The coefficient estimate of *Majority* (-0.224) suggests that this probability is 8.6 percentage points lower for ethnic majorities (i.e., English-speaking, Christian, non-Hispanic white Americans) than for minorities. Similarly, holding ethnic status constant, the coefficient estimate of *Citizen* (-0.345) implies that those who self identify as American citizen are 12.9 percentage points less likely to consider tax cheating acceptable compared to those who self identify as a member of some ethnic group. These findings are consistent with those in the pooled cross-national micro analysis and further support hypotheses 2 and 3. Controlling for respondents' trust in government does not change the effects of identities. The positive signs of the income groups in column (3) suggest that tax morale decreases with income, consistent with Alm and Torgler (2006). But the effects are not statistically significant except that the *Upper Class* considers tax cheating marginally more justifiable than the lower class ($p < 0.10$). The effects of other variables are similar as in the pooled cross-country analysis.

[Table 4 about here.]

Furthermore, alternative measures of *Majority* are constructed based on respondents' racial, linguistic and religious characteristics separately. We repeat the analysis by replacing the composite *Majority* variable with each of these separate measures. Results remain consistent.

In sum, evidence from the U.S. survey confirms the pooled cross-country results in subsection 4.2 that ethnic majority groups exhibit higher tax morale than minorities. Since the boundary drawn between the majority and minority here is highly correlated with the differentiation of white and non-white population, it offers some explanation for the lower compliance rate in the U.S. communities with higher proportion of non-white population as in Beron, Tauchen and Witte (1992).

5. Conclusion

This paper investigates the relationship between social identities, ethnic fragmentation and tax morale. We study two measures of social identities: (1) identity based on externally observable ethnic, linguistic, or religious characteristics, and (2) internalized identity based on self-reported sense of citizenship. We find that both dimensions of identities influence people's tax morale and the effects are contingent on the level of the society's ethnic fragmentation. These findings are consistent with the aggregate level evidence that ethnic fragmentation hurts tax morale, and suggest a micro mechanism for the aggregate evidence. The results imply that ethnic heterogeneous countries may face a higher cost of tax collection than homogeneous ones, which imposes constraints on their public sector performance.

While this paper focuses on the differences in tax morale between the majority and minority groups we do not interpret these differences as being driven by biological or ideological

differences between specific racial or religious groups. Instead, we view these differences as proxies for how strongly a taxpayer identifies with her society. Although one's *true* identification cannot be measured empirically it is reasonable to believe that the majority groups on average have a stronger identification than the minority groups. Hence, the finding that the former has higher tax morale implies a positive correlation between tax morale and the level of identification. Similarly, we do not interpret an ethnically fragmented country as being populated simply with numerous *racial* groups; we view it as one where the residents have low levels of identification with their country. For example, developed economies have faced increasing levels of immigration. In 2001 and 2002, the U.S. admitted more than a million permanent immigrants each year – 25 percent more than in 2000. Some European countries, Austria, France and Switzerland, admitted 15 percent more immigrants.²⁰ If this trend of global migration persists, a continuous increase in the population heterogeneity in these countries may potentially erode the strength of the public's identification with the society, and in turn impact tax morale, public attitudes toward civic responsibility and the functionality of public sectors. This research suggests that policies which strengthen an individual's identification with their (new) country can alleviate the negative effect of increasing immigration on tax morale.

This study also shows how the effects of *individuals'* identities on tax attitudes are translated to the impact of ethnic heterogeneity on the public's *overall* tax morale. This micro-macro link leads to actionable policy recommendations. For example, tax authorities may consider targeted advertising to minority groups in order to increase identification. Advertising may stress similarities among all taxpayers and their common needs, e.g., we all use the roads, all our children need to be educated, we all face concerns around retirement, unemployment can happen to anyone. The common identity theory (Gaertner 2000) in psychology suggests that if

²⁰ OECD's Annual Trends in International Migration notes.

members of different groups can conceive of themselves as a common group they will have a lower level of intergroup bias. The subsequent shared collective identity can reduce social loafing and, we argue, increase tax morale.

The tax authorities might also make the tax collection process more inclusive of minorities in order to reduce their economic and psychic cost of compliance. For example, the State of California introduced a Spanish version for electronic filing of sales and use tax in 2003. The entire filing process, including registration, tax forms, help files, error messages and live telephone support, is in Spanish. This innovation has significantly helped sales and use tax filing by Latino businesses. One mechanism through which this might operate is to increase the identification these business owners feel with their society.

Moreover, the empirical findings of this paper highlight the considerable promise of nourishing citizen identity. They suggest that tax authorities consider investing in motivational capital to complement conventional tax enforcement strategies of deterrence and material incentives. Since taxpayers who assume a salient citizen identity have stronger intrinsic motivation to comply with tax laws, authorities may promote the spirit of citizenship – a consensual understanding of shared goals and common values. This implication is especially helpful for ethnically fragmented countries where a strong sense of citizenship is related to increased tax morale.

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Table 1: Major Ethnic, Linguistic and Religious Groups by Country

Country	Ethnic majority group(s)	Language most commonly used	Major religion(s)
Albania	Albanian	Albanian (Tosk)	
Algeria		Arabic	
Bosnia and Herzegovina	Bosniak (44%), Serb (31%)		Muslim (40%), Orthodox (31%)
Canada	Caucasian	English (59.3%), French (23.2%)	Roman Catholic
Chile	White and white-Amerindian	Spanish	Roman Catholic
Egypt			Muslim
India		Hindi	Hindu
Indonesia	Javanese	Indonesian (Bahasa Indonesia)	Muslim
Iran		Farsi	Shi'a Muslim
Jordan	Jordan	Arabic	Sunni Muslim
Macedonia	Macedonian	Macedonian	Macedonian Orthodox
Mexico	Mestizo	Spanish	Roman Catholic
Moldova	Moldovan (Romanian)	Moldovan (Romanian)	Eastern Orthodox
Nigeria	Black	Hausa, Yoruba, Igbo	Muslim (50%), Christian (40%)
Pakistan	Punjabi	Punjabi	Sunni Muslim
Peru	Amerindian (45%), Mestizos (37%)		Roman Catholic
Philippines	Tagalog	Tagalog	Roman Catholic
Puerto Rico		Spanish	Roman Catholic
Singapore	Chinese	English	Buddhism
South Africa	Black	isiZulu (23.8%), isiXhosa (17.6%), Afrikaans (13.3%), Sepedi (9.4%), English (8.2%)	Christians and most are Protestants
Spain	White	Spanish	Roman Catholic
Tanzania		Kiswahili	Christian (45%), Muslim (35%)
Uganda	Black	Luganda	Roman Catholic (33%), Protestant (33%)
United States	White	English	Protestant
Venezuela	Mestizo		Roman Catholic
Vietnam		Vietnamese	Buddhism
Zimbabwe	Black		Mainstream Christian denominations

Table 2: Ethnic Fractionalization and Average Tax Attitude on the Country Level
(Dependent Variable: $AvgCheatTax_c$)

	(1)	(2)	(3)	(4)
i) ELF	0.940** (0.378)	1.314*** (0.458)	1.255*** (0.387)	1.430*** (0.510)
Observations	51	51	47	45
Adjusted R ²	0.179	0.174	0.374	0.385
ii) $Ethnic Fract_c$	0.701* (0.412)	0.822* (0.470)	0.914* (0.503)	0.687 (0.486)
Observations	66	66	62	59
Adjusted R ²	0.038	0.154	0.216	0.272
iii) $Linguistic Fract_c$	1.027*** (0.318)	1.246*** (0.353)	1.216*** (0.366)	1.219*** (0.401)
Observations	66	66	62	59
Adjusted R ²	0.110	0.259	0.303	0.383
iv) $Religious Fract_c$	0.735* (0.375)	0.953** (0.446)	1.074* (0.575)	0.871 (0.653)
Observations	66	66	62	59
Adjusted R ²	0.052	0.153	0.210	0.274

Note: Heteroskedasticity robust standard errors are in parentheses. Significance level notation: * at 10 percent; ** significant at 5 percent; *** significant at 1 percent. Specification (1) includes log(PC tax revenues). Specification (2) includes log(PC tax revenues), and legal origins (French civil law, German civil law, Scandinavian law, and socialist law; common law is the omitted category). Specification (3) includes log(PC tax revenues), legal origins, and democracy index. Specification (4) includes log(PC tax revenues), legal origins, democracy index, geographic regions (Africa and Middle East, East and Southeast Asia, and Latin America; Europe and North America is the omitted categories), and the Gini coefficient.

Table 3: Social Identities, Population Heterogeneity and Tax Morale – Ordered Probit Results for the Pooled-Country Analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Fract_c</i>	<i>ELF</i>	<i>Ethnic Fract_c</i>	<i>Linguistic Fract_c</i>	<i>Religious Fract_c</i>	<i>ELF</i>	<i>Ethnic Fract_c</i>	<i>Linguistic Fract_c</i>	<i>Religious Fract_c</i>
<i>Majority</i>	-0.207*** (0.042)	-0.275*** (0.056)	-0.252*** (0.045)	-0.231*** (0.046)	-0.176*** (0.046)	-0.246*** (0.062)	-0.227*** (0.049)	-0.209*** (0.049)
<i>Majority*Fract_c</i>	0.256*** (0.080)	0.250** (0.105)	0.226*** (0.078)	0.204** (0.094)	0.264*** (0.086)	0.239** (0.112)	0.232*** (0.083)	0.218** (0.100)
<i>Citizen</i>	-0.031 (0.034)	-0.0003 (0.052)	-0.065* (0.037)	0.073** (0.036)	-0.043 (0.037)	-0.023 (0.057)	-0.076* (0.040)	0.096** (0.038)
<i>Citizen*Fract_c</i>	-0.167** (0.066)	-0.239*** (0.091)	-0.132** (0.064)	-0.437*** (0.070)	-0.155** (0.070)	-0.200** (0.098)	-0.121* (0.068)	-0.498*** (0.075)
Trust government					-0.071*** (0.011)	-0.066*** (0.010)	-0.073*** (0.010)	-0.074*** (0.010)
Male					0.122*** (0.019)	0.124*** (0.018)	0.122*** (0.018)	0.122*** (0.018)
Age					-0.007*** (0.001)	-0.007*** (0.001)	-0.007*** (0.001)	-0.007*** (0.001)
Upper					0.104 (0.081)	0.051 (0.076)	0.084 (0.074)	0.087 (0.074)
Upper middle					0.002 (0.033)	0.021 (0.030)	0.028 (0.030)	0.028 (0.030)
Lower middle					-0.035 (0.027)	-0.021 (0.025)	-0.018 (0.025)	-0.017 (0.025)
Working class					-0.072** (0.029)	-0.079*** (0.027)	-0.075*** (0.027)	-0.074*** (0.027)
Married					-0.039* (0.021)	-0.040** (0.019)	-0.048** (0.019)	-0.049*** (0.019)
Education					-0.020*** (0.005)	-0.022*** (0.005)	-0.023*** (0.005)	-0.022*** (0.005)
Observations	34440	39238	39944	39944	29049	32638	33253	33253
Pseudo R ²	0.031	0.043	0.042	0.042	0.039	0.050	0.049	0.049

Note: Coefficients are reported. Observations are weighted within countries and the sums of weights are equalized across countries. Occupations and the country fixed effects are included. Coefficients are omitted for brevity. Heteroskedasticity robust standard errors are in parentheses. Significance level notation: * at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

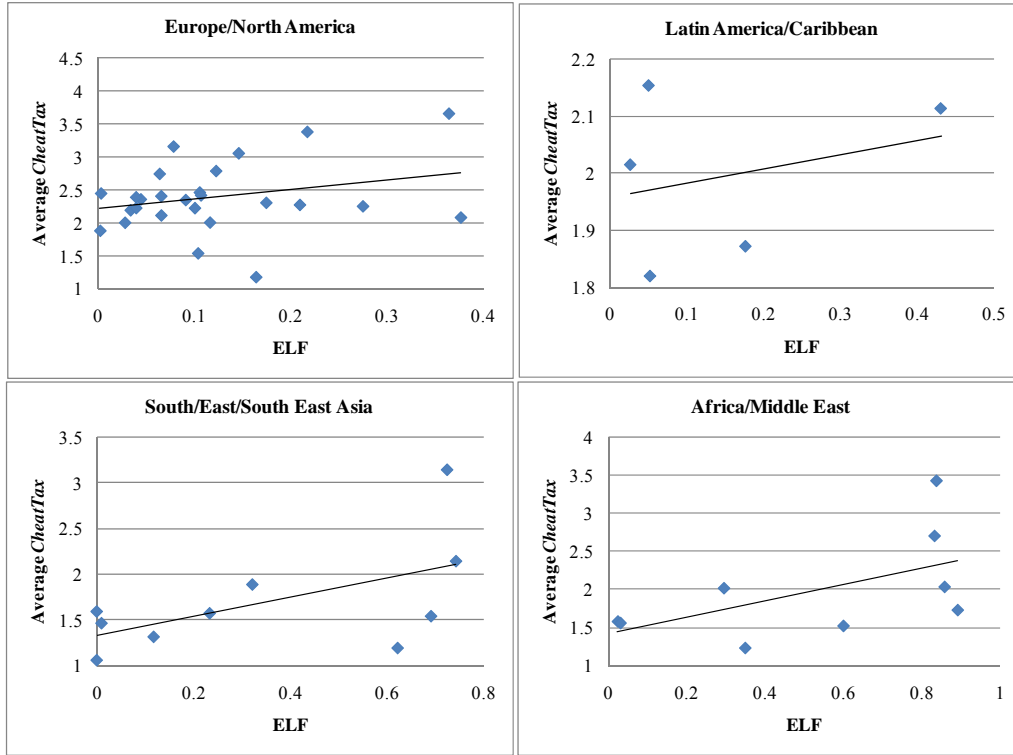
Table 4: Social Identities and Tax Morale in U.S.
(Dependent Variable: *CheatTax* 1~10)

	(1)	(2)	(3)
<i>Majority</i>	-0.224*** (0.079)	-0.252*** (0.079)	-0.218** (0.085)
<i>Citizen</i>	-0.345*** (0.075)	-0.357*** (0.075)	-0.372*** (0.079)
Trust government		-0.134*** (0.047)	-0.152*** (0.049)
Male			0.387*** (0.077)
Age			-0.008*** (0.002)
Upper			0.589* (0.337)
Upper middle			0.142 (0.202)
Lower middle			0.043 (0.205)
Working class			0.054 (0.207)
Married			-0.115 (0.076)
Education			0.031 (0.019)
Observations	1198	1181	1141
Pseudo R ²	0.011	0.014	0.038

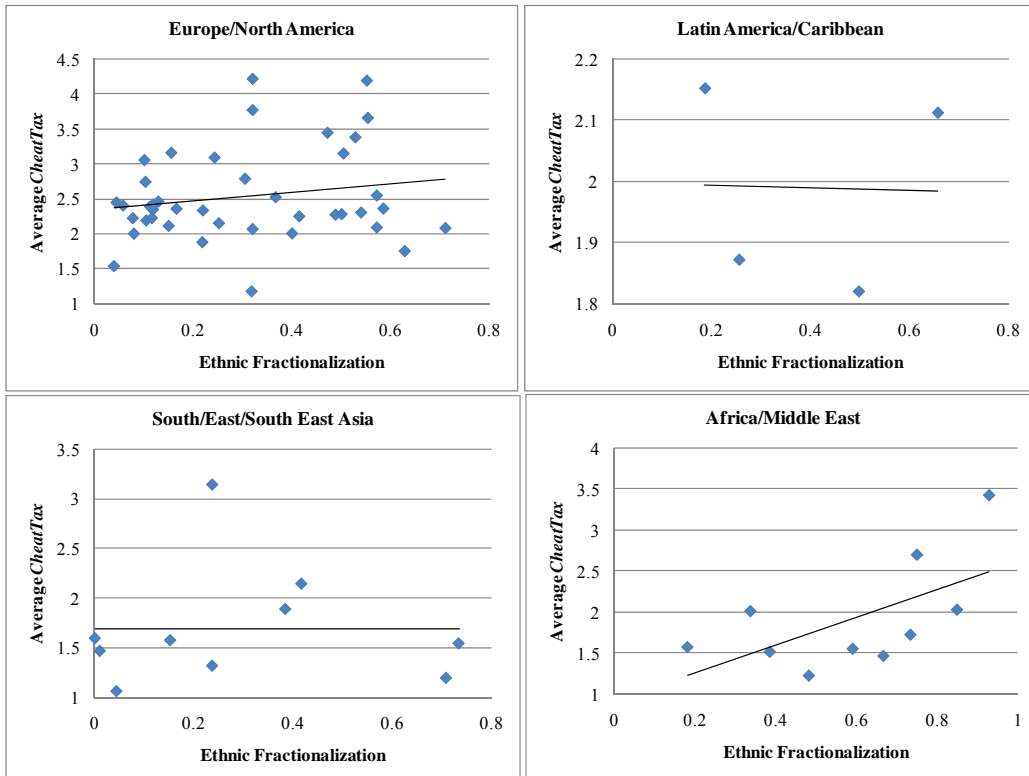
Note: Coefficients for the ordered probit model are reported. Observations are weighted within the U.S. dataset. Heteroskedasticity robust standard errors are in parentheses. Occupations are included in column (3) and the coefficients are omitted for brevity. Significance level notation: * at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

Figure 1: The Country's Fractionalization and Tax Attitude (by Geographic Region)

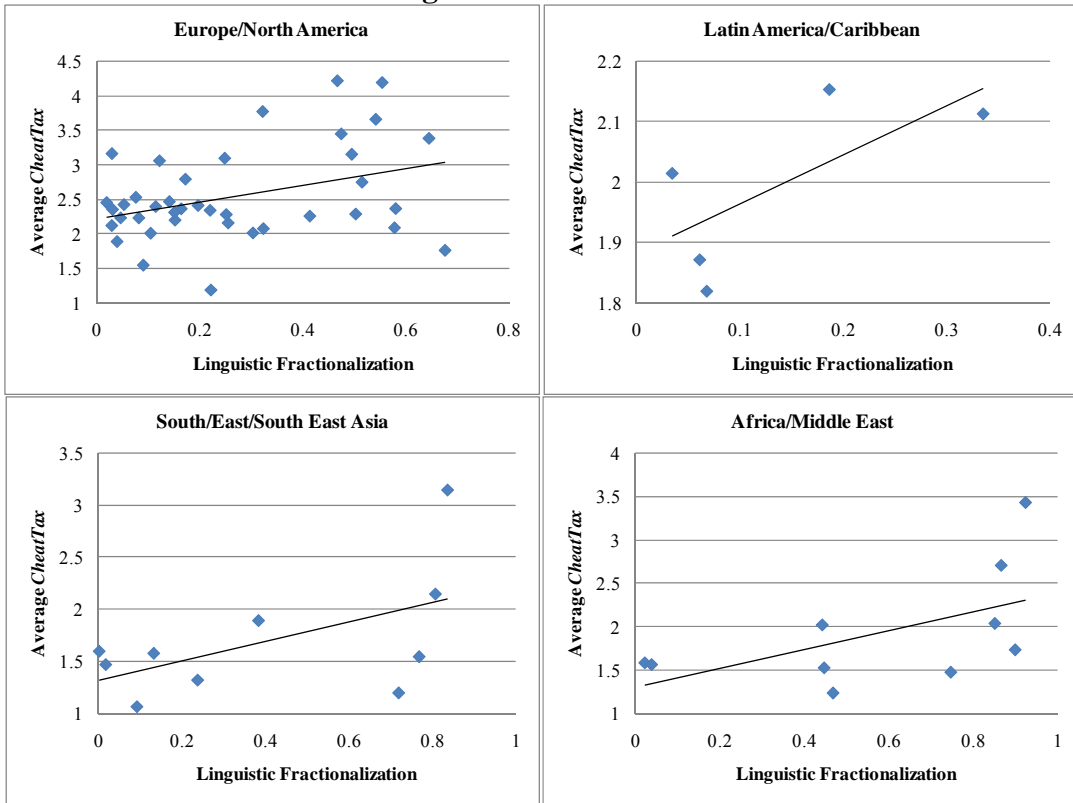
A: ELF



B: Ethnic Fractionalization



C: Linguistic Fractionalization



D: Religious Fractionalization

