

How do inequality affect tax morale in Latin America and Caribbean?

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Abstract

Latin America is well known as an inequitable region. As it is recognized, inequality and corruption perception weaken the way that political institutions works and the democratic system. Focusing on Latin American and Caribbean countries, this paper analyzes what are the elements shaping tax morale. In particular, how the context influences ethical grounds decisions such as the predisposition to pay taxes is analyzed, using the survey carried out in 2005 by Latinobarometro. The objective is to analyze how country performance determines tax morale. To do so, four probit models are estimated using Gini index, Transparency International Corruption Perception Index and Gross Domestic Product per capita (GDPpc) as explanatory variables. As expected we found that some socio-demographic variables play a relevant role. Interestingly, we also found that, in this attitude, LAC countries do not register a gender bias. However, those are not our main contributions to the literature on the field. The most important results are linked to: 1) the level matters, GDPpc increases the probability of people having tax morale, 2) moreover, income distribution also influence on tax morale but in opposite direction and 3) corruption perception also

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reduces tax morale. Those results show that the quality of institutions matters and therefore, the way that democracy works play a relevant role.

JEL Classification: H26, H73.

Keywords: Tax morale, corruption, inequality, democracy, macroeconomic performance.

Cómo afecta la desigualdad la moral fiscal en Latinoamérica y el Caribe

Resumen

La literatura previa muestra que los más ricos tienen una probabilidad mayor de involucrarse en causas medioambientales. El aporte de este trabajo es analizar si hay un efecto conjunto entre el ingreso subjetivo y el desempeño del país de residencia sobre esta probabilidad. Para ello, se utiliza la quinta ola de la Encuesta Mundial de Valores. Se muestra que el ingreso subjetivo y las características del país de residencia son determinantes claves de estas actitudes así como lo es el efecto-interacción entre estas variables. Por lo tanto, las medidas que afectan las características de los países podrían tener un impacto relevante en la disposición de los individuos a participar.

Clasificación JEL: H26, H73.

Palabras clave: Moral fiscal, corrupción, inequidad, democracia, desempeño macroeconómico

1 Introduction

Values, tastes, expectations and consequently individual's decisions are influenced by the context. Therefore, comparative research could not ignore context effects; in particular when analyzing individuals' behaviors with respect to the law (Bergman and Nevarez, 2005). This paper analyzes some elements that shape tax morale as a proxy of individual's ethic behavior. It is expected that some individual characteristics play a relevant role. However, our main contribution is based on analyzing how inequality and the perceived quality of institutions affect the probability of behaving in accordance with the law regarding evading or not taxes.

Tax morale is defined as the individuals' intrinsic motivation to pay taxes, which is treated as a "black box" by many studies of the subject, considering it as a residual in the analysis of tax evasion (Feld and Frey, 2002).

Given this definition, we found, as previous literature, that some socio-demographic characteristics play a relevant role, as well as related with trust, democracy and national pride (Azar and Rossi, 2008). However, our main contribution to the literature is the finding of the influence of context. In particular, we found that corruption perception, Gross Domestic Product per capita and inequality do shape people decisions towards paying taxes. Therefore, we can conclude that institutions, equity and the way that democracy works make the difference.

2 Background

Analyzing the decision of whether or not to evade income taxation, Allingham and Sandmo (1972) found that evasion will depend on the expected savings resulting from the evasion, the probability of being caught and the magnitude of the monetary sanction in case of being caught. Some other studies extend this analysis including other characteristics such as cooperation among taxpayers to evade (Boadway et al., 2002), the corruption in the public administration (Polinsky and Shavell, 2001) or variables related to the compliance with formal and informal rules and the way in which the tax authority recognizes taxpayers' rights and characteristics (Feld and Frey, 2002).

Nevertheless, these works predict levels of compliance that are lower than those actually observed, so the intrinsic motivation to pay taxes is gaining more importance in the literature than the levels of compliance (Alm and Torgler, 2004; Martinez-Vazquez and Torgler, 2005; Schneider and Torgler, 2004; Torgler, 2001, 2005).

Alm and Torgler (2004), using data from the World Values Survey (1990 and 1995) for United States and 15 European countries, show the importance of social and cultural variables. The highest level of tax morale was found in the United States (above Austria and Switzerland). They also found that some

socio-demographics characteristics matter and the same is true in the case of context (trust in the legal system and parliament and level of financial satisfaction). At the same time, they find a strong negative correlation between tax morale and the size of the formal sector. In the same line, Schneider and Torgler (2004) analyzing the cases of Belgium, Spain and Switzerland found that intra-national cultural differences have a significant impact on the level of tax morale.

Focusing on fiscal policies implications of tax morale, Schaltegger and Torgler (2005), found that taxpayers' attitudes are significantly influenced, among other factors, by the government's decisions in the field of tax policies and by the authorities' behavior. The effects of tax systems, public expenditure, effectiveness of tax administration and the total amount of taxes, are aspects that play a relevant role.

One of the first studies in the subject in Latin America was made by Torgler (2005) using the Latinobarometro 1998 and the World Values Survey 1981-1997. He finds that tax morale levels are higher in Central America and the Caribbean.

In light of the existing literature, the objective of this paper is to analyze whether an environment with high levels of corruption and / or inequality leads to a decline in the tax morale.

3 Data and methodology

The data source is the Latinobarometro 2005. This survey is a public opinion study that is carried out annually in 18 Latin American countries, with more than 19,000 personal interviews that represent about 400 million people. The unit of analysis is individuals responding the the survey.

The dependent variable, that is the intrinsic motivation to pay taxes (tax morale, *tm*), is captured with the question: "Within a 1 to 10 scale, where 1 means "not at all justifiable" and 10 means "totally justifiable", how much justifiable do you think tax evading is?" For ease of reading we inverted the order in such a way that 1 corresponds to the lower level of tax morale and 10 to the highest and with the aim of taking into account the highest levels of tax morale we construct the binary variable *tm* in the following way: *tm* equals 1 if respondent indicates 9 or 10 and 0 in other case.¹ Table 1 shows the distribution of answers to this question.

Given our objective we converted our dependent variable into a binary dependent variable, gathering answers 9-10 into the category high tax morale, (binary variable value 1) and the rest as value 0 (low tax morale). Then we estimate probit models including the following explanatory variables. Education level is captured through a group of binary variables (*Educa* 1 - 5) that

¹This is the case because 8.3 is the mean and 8 the median.

Table 1. Distribution of answers, variable *tm*

Values	Distribution
1	45,97%
0	44,81%
Do not answer / do not know	9,22%
Total	100%

indicates whether the individual finished primary education (*Educa1*), has uncompleted secondary (*Educa2*), completed secondary (*Educa3*), and has some university (*Educa4*) or completed university studies (*Educa5*). In our model we omitted the lowest education level. We should expect that tax morale rises with education level.

Religion and religiosity are included as explanatory variables, through *Norelig* and *Catholic* variables. They capture whether the person declares not attending religious services and whether the person declares to be catholic respectively. We expect that religious and catholic people tend to have a higher intrinsic motivation to pay taxes. Then we included a variable that captures self perceived level of income in a 1-10 scale (with 1 poorest and 10 richest). We have no a priori expected sign of this variable's effect.

To capture the individual's labor condition we included a series of 5 binary variables that are: *Unemp*, *Inactive*, *Public*, *Private* and *Selfemp*. They represent whether the person declares to be unemployed, inactive, employed in the public sector, employed in the private sector or self employed, respectively. In this case, we expect self-employed people to show lower levels of tax morale, regarding that taxes represent a more direct cost to people that run some kind of own business, than to people that work as an employee.

The rest of the demographic control variables included are *Women*, *Age18-25*, *Age26-40*, *Age41-60*, *Age 61+*, *Married* and *Divorced*. In this case, we expect older people to show higher levels of tax morale regarding the higher perceived costs in terms of social status.

The most important variables whose effect we intend to study are: *Gini*, *GDPpc* and *TI*. The first one is an ordinal variables (values 1-3) that represents the value of individual's country Gini Index. More precisely, whether that value is lower than percentile 25, between percentile 25 and 75, or higher than percentile 75, respectively. We expect that people who live in countries where wealth is more evenly distributed have a higher motivation to pay taxes. *GDPpc* represents individual's per capita gross domestic product. The expected effect of this variable is that people living in richer countries tend to have higher levels of tax morale.

Finally, the variable *TI* represents country's ranking in the Transparency International Corruption Perception Index (CPI). The ordinal value (1-3) rep-

Table 2. Description of independent variables

Area	Variable	Values	Mean
Human Capital	Educa1	1 completed primary school (omitted)	0.503
	Educa2	1 did not finish secondary school	0.175
	Educa3	1 completed secondary school	0.178
	Educa4	1 did not finish university studies	0.079
	Educa5	1 completed university studies	0.065
Religion and religiosity	Norelig	1 does not attend to religious services	0.114
	Catholic	1 identifies with Roman Catholic	0.72
Income	Incscale	Self-placement in 10 point income scale	3.72
Labor market	Unemp	1 unemployed	0.066
	Inactive	1 inactive (omitted)	0.362
	Public	1 working in public sector	0.073
	Private	1 working in a private enterprise	0.172
	Selfemp	1 being self-employed	0.328
Other socio-demographic variables	Woman	1 being a woman	0.51
	Age18-25	1 age is between 18 and 25 y.o. (omitted)	0.249
	Age26-40	1 age is between 26 and 40 y.o.	0.348
	Age41-60	1 age is between 41 and 60 y.o.	0.271
	Age61+	1 age is 61 y.o. or more	0.132
	Married	1 married or living as married	0.571
	Divorced	1 divorced or widowed	0.116
Others variables	GINI	1 Gini Index is lower than percentile 25	0.538
		2 Gini Index is between percentile 25 and 75	
		3 Gini Index is higher than percentile 75 (p25 = 0.505 and p75 = 0.579)	
	GDPpc	Log. of GDP, Atlas method (current US\$)	8.67
	TI	Transp. Int., Corrup. Perc. Index. (CPI)	3.523
		1 CPI is lower than percentile 25	
		2 CPI is between percentile 25 and 75	
		3 CPI is higher than percentile 75 (p25 = 2.3 and p75 = 3.9)	

resent whether person’s country CPI is lower than percentile 25, between percentile 25 and 75 or higher than percentile 75. Intuitively, we expect that people living in countries where levels of corruption perception are low, are more likely to be more “willing” to pay taxes, than people who live in countries where corruption is seen as an important problem. In the next section we present the results of the estimated probit models and its marginal effects.

4 Results

Table 3 shows the estimated probit models. The four columns represent 4 different flavors of the estimated models. In all cases we included age, sex, education level, marital status, employment status, income level, and religion as independent variables. The difference is whether we included country's per capita GDP (model 1), country's Gini Index (model 2), country's Transparency International Corruption Perception Index (model 3), or Gini Index and corruption perception index (model 4) as explanatory variables. Table 2 shows the definition of all the independent variables used.

In table 4 you may find the estimated marginal effects, that show the change in the probability of having tax morale given a change in the independent variables. Firstly, as could be seen in table 4, the selection of the model does not change the average probability of having a high tax morale. In all cases the mean value of tax morale is 50.54% for all the four models presented.

4.1 *As expected some socio-demographic characteristics matters*

It is found that all the included age groups are significant at 1% and more important we found that tax morale increases with age. As table 4 shows, the change in the probability of having tax morale is always positive and it increases as the person changes between groups. While belonging to the first group increases the probability almost 7 percent points (pp), having between 41 and 60 years old raises the probability almost 14 pp. This is consistent with previous literature (as Azar and Rossi, 2008) that states that older people is more sensitive to sanctions or to the shame of being caught in an illegal activity. The aim of not harming social status which was attained with the passage of the years is a cost that people may take into account.

The same is true in the case of years of schooling. We found a significant difference between the lowest level and the remaining levels and the change in the probability becomes higher as years of education increases (the change ranges between 2.2 pp and 9.3 pp).

However, the higher an individual place himself in the income scale, the lower the probability of having tax morale. In this case, probability changes between 1.5 pp and 1.8 pp. This result implies that the cost of legality is inversely proportional to an individual's income. Moreover, is consistent with some reforms in Latin American countries regarding tax structures. In particular, with the purpose of improving equity, some countries change tax systems with the purpose of richer people pay more taxes. Those reforms may strengthen tax evader's incentives of avoiding to pay taxes and this effect could be higher in the case of rich people.

Regarding religious groups and religiosity, we found that attendance to religious services makes no differences in attitudes towards tax morale. How-

ever, those people who identify with Roman Catholic religion are more likely to have less tax morale; in this case the probability decreases, on average, 2.8 pp. This result is consistent with Weber's thesis. He argued that for example, the culture of Protestantism would have left an enduring legacy in values that still remain visible today. Moreover Weber stresses that an important aspect of Protestantism concerns the teaching of broader ethical standards, including those of honesty, willingness to obey the law, and trustworthiness, which serve as the foundation of business confidence, good faith dealings, and voluntary contract compliance.

We also found that self-employed people are more likely to have less tax morale, in this case the probability reduces between 1.8 and 2.8 pp. It might be possible that self-employed people are exposed to corrupted behavior, as well as the fact that they suffer more directly and are more conscious of the tax burden. However, we found that there are no significant differences between those working for a private enterprise or in the public sector. Moreover, we found that gender, marital status and being unemployed do not influence tax morale, as all these variables appear to be non statistically significant in all the four models.

4.2 Our models also show that context affects decision-making process and tax morale

In order to capture income level effects among countries, model 1 includes GDPpc. As expected, it was found that this variable makes a significant difference and it is worth noting that its impact is relatively high, 11.2 pp. Moreover, we include the logarithm of the variable so the result implies that people who live in those countries that grow faster are more likely to have tax morale. GDPpc is highly correlated with GINI index and Transparency International Corruption Perception Index (TI), but in opposite direction. Therefore, model 2-4 focus on those variables and do not include GDPpc.

Models 2 to 4 show that inequality and the level of corruption matters. According to TI ranking, the lower the level of corruption perception, the higher a country is placed and we found that the probability of having tax morale increases as the country improves its position. This result is consistent with Cabelkova (2001) findings. The incentives to take corrupt actions are affected by individual perception about the level of corruption and the authority's level of tolerance. This perception may affect both the demand and supply of corrupt behavior. In countries where corruption is systemic it cannot be assumed that the obligation of paying taxes is an accepted social norm. Corruption generally undermines the tax morale of the citizens, because they get frustrated (Torgler, 2005).

On the other hand, inequality plays a relevant role in shaping tax morale but in opposite direction. We found that Gini Index is significant and in this

case, the probability decreases. Therefore equity improves tax morale. With the increased inequality, the rich, as a class or as interest group, can use lobbying, political contributions or bribery to influence law-implementing processes and to buy favorable interpretations of the law. This process worsens institutions performance and democratic policies.

Model 2 shows that the probability of having tax morale reduces 6.7 pp as GINI index decreases and according to model 3 this probability reduces 4.5 pp when corruption perception lowers. Given those results, we estimated model 4, in this model we included both GINI index and TI. It is worth noting that both variables are significant and the sign remains. However, we found that taking into account both the changes in the probability in absolute value, inequality plays the most relevant role: the net effect is negative. Finally, the previous results confirm that policy-makers decisions are also important in order to improve the quality of institutions and income distributions.

Table 3. Estimation results

	Model 1 tm	Model 2 tm	Model 3 tm	Model 4 tm
Age 18-25	0.169 ^a [0.030]	0.180 ^a [0.030]	0.184 ^a [0.030]	0.173 ^a [0.030]
Age 26-40	0.250 ^a [0.033]	0.272 ^a [0.033]	0.271 ^a [0.033]	0.255 ^a [0.033]
Age 41-60	0.336 ^a [0.041]	0.363 ^a [0.041]	0.356 ^a [0.041]	0.338 ^a [0.041]
Woman	-0.027 [0.022]	-0.024 [0.022]	-0.027 [0.022]	-0.024 [0.022]
Educa2	0.082 ^a [0.029]	0.079 ^a [0.029]	0.076 ^b [0.030]	0.059 ^b [0.030]
Educa3	0.092 ^a [0.029]	0.118 ^a [0.029]	0.111 ^a [0.029]	0.107 ^a [0.029]
Educa4	0.178 ^a [0.041]	0.158 ^a [0.040]	0.172 ^a [0.041]	0.162 ^a [0.041]
Educa5	0.228 ^a [0.044]	0.235 ^a [0.044]	0.227 ^a [0.044]	0.233 ^a [0.044]
Married	0.021 [0.026]	0.025 [0.026]	0.018 [0.026]	0.024 [0.026]
Divorced	0.032 [0.041]	0.053 [0.041]	0.046 [0.041]	0.047 [0.041]
Selfemp	-0.046 ^c [0.024]	-0.071 ^a [0.024]	-0.053 ^b [0.024]	-0.048 ^c [0.024]
Public	0.017 [0.041]	0.018 [0.041]	0.034 [0.041]	0.035 [0.041]
Unemp	-0.047 [0.043]	-0.039 [0.043]	-0.051 [0.043]	-0.042 [0.043]
Incscale	-0.046 ^a [0.006]	-0.037 ^a [0.006]	-0.038 ^a [0.006]	-0.040 ^a [0.006]
Norelig	-0.006 [0.033]	0.033 [0.033]	0.017 [0.033]	0.004 [0.033]
Catholic	-0.089 ^a [0.026]	-0.075 ^a [0.026]	-0.044 ^c [0.026]	-0.053 ^b [0.026]
GDPpc	0.280 ^a [0.024]			
GINI		-0.167 ^a [0.014]		-0.136 ^a [0.015]
TI			0.113 ^a [0.009]	0.095 ^a [0.009]
Constant	-2.389 ^a [0.201]	0.302 ^a [0.053]	-0.299 ^a [0.047]	0.033 [0.059]
Observations	15146	15146	15146	15146
Pseudo R-squared	0.02	0.02	0.02	0.02

Note: Robust standard errors in brackets. *c* significant at 10%; *b* significant at 5%; *a* significant at 1%. Model 1 includes GDPpc. Model 2 includes Gini index. Model 3 includes TI index. Model 4 includes Gini and TI index.

Source: Author's compilation.

Table 4. Marginal effects

	Model 1	Model 2	Model 3	Model 4
Probability	0,504	0,504	0,504	0,504
Age 18-25	0,067	0,072	0,073	0,069
Age 26-40	0,099	0,108	0,108	0,101
Age 41-60	0,132	0,143	0,140	0,133
Educa2*	0,033	0,031	0,030	0,023
Educa3*	0,037	0,047	0,044	0,043
Educa4*	0,071	0,063	0,068	0,065
Educa5*	0,090	0,093	0,090	0,092
Selfemp	-0,018	-0,028	-0,021	-0,019
Inscale	-0,018	-0,015	-0,015	-0,016
Catholic	-0,036	-0,030	-0,018	-0,021
GDPpc	0,112			
GINI		-0,067		-0,054
TI			0,045	0,038

5 Conclusions

With the aim of analyzing how country performance influence on tax morale at individual level, this paper studies the willingness to avoid paying taxes and the effect of some key variables on this attitude.

There are a set of individual characteristics that play relevant role (age, years of schooling, income scale, being self-employed and religious denomination). Regarding those results, we conclude that the asymmetries of rules make a significant difference; they reduce the probability of having tax morale. However, social status influence on people's attitudes and its impact is higher.

Latin American and Caribbean countries show gender biases in several issues related to culture and morale views. However, we found that there is no significant difference in attitudes between women and men. We also found that context is determinant in shaping people attitudes and that there is room for the improvement of the quality of institutions and in particular, the democratic system.

Firstly, GDP per capita influence people's tax morale. The probability of having tax morale increases 11.2 pp. People who live in those countries that grow faster are more likely to have tax morale.

Secondly, we found that the probability of having tax morale increases 4.5 pp as the country improves its position in TI, Corruption Perception Index. Therefore, avoiding paying taxes is less costly when individual's perception of corruption is high and/ or the authority's level of tolerance is also high.

Thirdly, inequality also plays a relevant role in shaping tax morale but in opposite sense. We found that inequality reduces tax morale (the probability reduces 5.4 pp). With the increased inequality, the rich, as a class or as interest group, can use lobbying, political contributions or bribery to influence law-implementing processes and to buy favorable interpretations of the law. This process worsens institutions performance and democratic systems.

Finally, the joint effect of the quality of institutions and inequality is negative. Therefore, the latter is more important than the former. So, there is room for pro-active government role.

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