



Working Paper Series

**Threats in Latin American and Caribbean
countries: How do inequality and the
asymmetries of rules affect tax morale?**

Mariana Gerstenblüth
Natalia Melgar
Juan Pablo Pagano
Máximo Rossi

ECINEQ WP 2009 – 143

Threats in Latin American and Caribbean countries: How do inequality and the asymmetries of rules affect tax morale?

Mariana Gerstenblüth

Natalia Melgar

Juan Pablo Pagano

Máximo Rossi*

Department of Economics, State University, Uruguay

Abstract

Latin America is well known as the most 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, we analyze what are the elements that shape tax morale. In particular, we analyze how the context influences on ethic decisions such as the predisposition to pay taxes. Our data source is the survey carried out in 2005 by Latinobarometro. In particular, our objective is to analyze how country performance is determining tax morale. To do so, we estimated four probit models including Gini index, Transparency International Corruption Perception Index and Gross Domestic Product per capita (GDPpc). 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 with: 1) the level matters, GDPpc increases the probability that people have tax morale, 2) moreover, income distribution also influence on tax morale but in opposite direction and 3) corruption perception also reduces tax morale. Those results show that the quality of institutions matters and therefore, the way that democracy works play a relevant role.

Keywords: Tax morale, corruption, inequality, democracy, microeconomic behaviour.

JEL Classification: H26, H73.

* Addresses of correspondence: mito@decon.edu.uy

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).

There from, we are interested in analyzing what elements shape tax morale as a proxy of individual's ethic behavior. We expect 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.

For tax morale we understand the individuals' intrinsic motivation to pay taxes, which is treated as a "black box" by most of the studies on 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 aspects related with trust, democracy and national pride (Azar et al., 2008). However, our main contribution to the literature on this field is based on showing the influence of the 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.

1. Background

Analyzing the decisions regarding whether or not evading an income tax, 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, Marceau and Mongrain, 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 et al., 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-Vázquez and Torgler, 2005; Schneider and Torgler, 2004; Torgler, 2005; and Torgler, 2001).

Alm and Torgler (2004), through the use of data from the World Value Survey (1990 and 1995) for United States and 15 European countries, show the importance of social and cultural variables. The higher level of tax morale was found in the case of United States (above Austria and Switzerland). They also found that some socio-demographics characteristics matters 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.

In light of these previous researches, our objective is to analyze whether an environment with high levels of corruption and/ or inequality leads to a decline in the tax morale.

2. Data and Methodology

The data source is the *Latinobarometro* survey carried out in all Latin American countries in 2005. The intrinsic motivation to pay taxes (tax morale, *tm*) is captured through 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 answers order in 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 and Table 2 presents definitions as well as descriptive statistics of the independent variables.

Insert table 1: distribution of answers

Insert table 2: description of independent variables

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

Given our objective and our binary dependent variable, we estimate probit models and in order to measure the impact of significant independent variables we also compute the marginal effects.

3. Results

Table 3 shows the estimated probit model and in order to measure the impact of significant independent variables on tax morale, we also compute the marginal effects that are presented in table 4. In particular, this table shows the change in the probability of having tax morale given a change in one of the independent variables.

Insert Table 3: The models

Insert Table 4: Marginal effects

Firstly, as could be seen in table 4, there are no changes in significance or sign and table 4 shows that in all cases, the probability that a person has tax morale is 50.4%.

As expected some socio-demographic characteristics matters.

We 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 et al., 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 all included levels and as before 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/ herself 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, it 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 trying that 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. However, those people who identify with Roman Catholic religion are more likely to have less tax morale; in this case the probability reduces, on average, 2.8 pp. This result is consistent with Weber's thesis; we might expect that there are significant differences among religious groups on this direction. 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 more incidents of corrupted actions, 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.

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 Cábelloková (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 actions. 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, 2004).

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

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, those results confirm that policy-makers decisions are also important in order to improve the quality of institutions and income distributions.

4. Conclusions

With the aim of analyzing how country performance influence on morale at individual level, we focus on the predisposition to avoid paying taxes and the incidence of some key variables on this attitude.

As it was expected, 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.

References

Allingham, M. G. and Sandmo, A. (1972), "Income Tax Evasion: A Theoretical Analysis", *Journal of Public Economics* I, 323-338.

Alm, J. and Torgler, B. (2004), "Culture Differences and Tax Morale in the United States and in Europe", CREMA WP 2004 - 14.

Azar, K., Gerstenblüth, M. and Rossi, M. (2008), "Moral Fiscal en el Cono Sur", Department of Economics working paper 0208, State University, Uruguay.

Bergman, M. and Nevarez, A. (2005), "¿Evadir o pagar impuestos? Una aproximación a los mecanismos sociales del cumplimiento", *Política y Gobierno*, Vol. XII, 1.

Boadway, R., Marceau, N. and Mongrain, S. (2002), "Joint tax evasion", *Canadian Journal of Economics* vol. 35: 417-435.

Cábelková, I. (2001). "Perceptions of Corruption in Ukraine: Are they correct?" CERGE-EI, WP 176. Latinobarometer Corporation: questionnaire 2005.

Feld, L. P. and Frey B. S. (2002), "Trust Breeds Trust: How Taxpayers are Treated", *Economics of Governance*, Vol. 3, 87-99.

Martinez-Vazquez, J. and Torgler, B. (2005), "The Evolution of Tax Morale in Modern Spain", CREMA, WP 2005 - 33.

Polinsky, M. and Shavell, S. (2001), "Corruption and optimal law enforcement", *Journal of Public Economics* vol. 81: 1-24.

Schaltegger, C. A. and Torgler, B. (2005), "Tax Morale and Fiscal Policy", CREMA, WP 2005 - 30.

Schneider, F. and Torgler, B. (2004), "Does Culture Influence Tax Morale? Evidence from Different European Countries", CREMA WP 2004 - 17.

Torgler, B. (2001). "What Do We Know about Tax Morale and Tax Compliance?" *RISEC: International Review of Economics and Business*, XLVIII: 395-419.

Torgler, B. (2004), "Tax Morale, Trust and Corruption: Empirical Evidence from Transition Countries", CREMA WP 2004 - 05.

Torgler, B. (2005), "Tax Morale in Latin America", *Public Choice*, vol. 122, 1: 133-157.

Weber, M. (1930), "The Protestant Ethic and the Spirit of Capitalism". Talcott Parsons. New York, Scribner's Sons.

Annex – Tables

Table 1
Distribution of answers

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

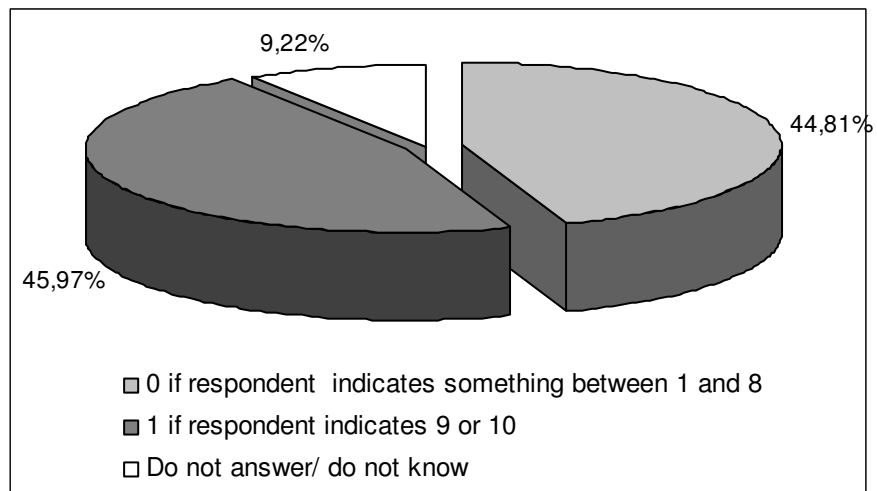


Table 2
Description of independent variables

Area	Variable	Values	Mean
Human Capital	Educa1	1 if respondent completed primary school (omitted)	0 .503
	Educa2	1 if respondent did not finish secondary school	0.175
	Educa3	1 if respondent completed secondary school	0.178
	Educa4	1 if respondent did not finish university studies	0.079
	Educa5	1 if respondent completed university studies	0.065
Religion and religiosity	Norelig	1 if respondent does not attend to religious services	0.114
	Catholic	1 if respondent identifies with Roman Catholic	0.720
Income	Incscale	Self-placement in 10 point income scale	3.720
Labor market	Unemp	1 if unemployed	0.066
	Inactive	1 if inactive (omitted)	0.362
	Public	1 if working in public sector	0.073
	Private	1 if working in a private enterprise	0.172
	Selfemp	1 if being self-employed	0.328
Other socio-demographic variables.	Woman	1 being a woman	0.510
	Age18-25	1 if respondent's age is between 18 and 25 years old (omitted)	0.249
	Age26-40	1 if respondent's age is between 26 and 40 years old	0.348
	Age41-60	1 if respondent's age is between 41 and 60 years old	0.271
	Age61+	1 if respondent's age is 61 years old or more	0.132
	Married	1 if married or living as married	0.571
	Divorced	1 if divorced or widowed	0.116
Others variables	GINI	1 if Gini Index is lower than percentile 25 2 if Gini Index is between percentile 25 and 75 3 if Gini Index is higher than percentile 75 (p25 = 0.505 and p75 = 0.579)	0.538
	GDPpc	Logarithm of Gross Domestic Product, Atlas method (current US\$)	8.670
	TI	Transparency International, Corruption Perception Index (CPI, 2004) 1 if CPI is lower than percentile 25 2 if CPI is between percentile 25 and 75 3 if CPI is higher than percentile 75 (p25 = 2.3 and p75 = 3.9)	3.523

Table 3
The models

	Model 1	Model 2	Model 3	Model 4
	tm	tm	tm	tm
Age 26-40	0.169***	0.180***	0.184***	0.173***
	[0.030]	[0.030]	[0.030]	[0.030]
Age 41-60	0.250***	0.272***	0.271***	0.255***
	[0.033]	[0.033]	[0.033]	[0.033]
Age 61+	0.336***	0.363***	0.356***	0.338***
	[0.041]	[0.041]	[0.041]	[0.041]
Woman	-0.027	-0.024	-0.027	-0.024
	[0.022]	[0.022]	[0.022]	[0.022]
Educa2	0.082***	0.079***	0.076**	0.059**
	[0.029]	[0.029]	[0.030]	[0.030]
Educa3	0.092***	0.118***	0.111***	0.107***
	[0.029]	[0.029]	[0.029]	[0.029]
Educa4	0.178***	0.158***	0.172***	0.162***
	[0.041]	[0.040]	[0.041]	[0.041]
Educa5	0.228***	0.235***	0.227***	0.233***
	[0.044]	[0.044]	[0.044]	[0.044]
Married	0.021	0.025	0.018	0.024
	[0.026]	[0.026]	[0.026]	[0.026]
Divorced	0.032	0.053	0.046	0.047
	[0.041]	[0.041]	[0.041]	[0.041]
Selfemp	-0.046*	-0.071***	-0.053**	-0.048*
	[0.024]	[0.024]	[0.024]	[0.024]
Public	0.017	0.018	0.034	0.035
	[0.041]	[0.041]	[0.041]	[0.041]
Unemp	-0.047	-0.039	-0.051	-0.042
	[0.043]	[0.043]	[0.043]	[0.043]
Incscale	-0.046***	-0.037***	-0.038***	-0.040***
	[0.006]	[0.006]	[0.006]	[0.006]
Norelig	-0.006	0.033	0.017	0.004
	[0.033]	[0.033]	[0.033]	[0.033]
Catholic	-0.089***	-0.075***	-0.044*	-0.053**
	[0.026]	[0.026]	[0.026]	[0.026]
GDPpc	0.280***			
	[0.024]			
GINI		-0.167***		-0.136***
		[0.014]		[0.015]
TI			0.113***	0.095***
			[0.009]	[0.009]
Constant	-2.389***	0.302***	-0.299***	0.033
	[0.201]	[0.053]	[0.047]	[0.059]
Observations	15146	15146	15146	15146
Pseudo R-squared	0.02	0.02	0.02	0.02

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4
Marginal effects

	Model 1	Model 2	Model 3	Model 4
Probability	0,504	0,504	0,504	0,504
Age 26-40	0,067	0,072	0,073	0,069
Age 41-60	0,099	0,108	0,108	0,101
Age 61+	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