Tax Evasion and Tax Morale in Latin America

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Abstract

Tax evasion throughout the world is widely endured, but not widely understood. The decision making process of the taxpayer may include many concerns outside of monetary payoffs. The tax compliance decision considers social norms and social sanctions in addition to deterrence levels. The goal of this paper is to illuminate some of the social norms and factors that affect tax morale, since tax morale in turn drives part of compliance. An empirical study comparing tax morale in 18 Latin American countries finds that, social factors like perception of evasion by peers, as well as government trust and approval, are significant determinants of tax morale. Moreover, culture also plays a role. However, its role is not nearly as large as believed, and cannot explain much of the variance across countries. Compliance is partly explained by tax morale, which is partly explained by culture. Tax morale will drive higher compliance all else equal, but compliance is also a function of deterrence, and both factors work in a feedback loop. Social norms and culture develop through the assimilation of deterrence mechanism over time, and so, culture need not be deterministic since it may be mutable.

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Introduction

Tax evasion has plagued governments since the beginning of taxes. The oldest tax records date to the 4th century BC, when cuneiform tablets were used to record tax obligations and economic exchanges. (Leu, Kinzer, Coiro, Cammack, 2004) Given its nature, tax evasion cannot be measured easily; yet estimates show it still remains today. The economics of crime have sought to explain its persistence. In the economic view, the rational taxpayer chooses to comply or evade taxes based on the tax rate, penalties for defection, and probability of audits. However, some people suggest that these deterrence mechanisms are not sufficient to explain the entire taxpayer decision. Field experiments have tested tax compliance in several countries and have found different compliance levels under controlled constraints (See Torgler 2004; Cummings, Martinez-Vazquez, Knee and Torgler 2006). Recent literature has begun to include social norms and social sanctions to explain the taxpayer decision. This paper focuses on the aspects driven by social norms that lead to tax compliance.

The individual taxpayer chooses to pay or evade taxes in order to maximize his own utility. His choice depends on the deterrence set by the government, as well as social costs and sanctions. In the same way that social norms can explain why some people chose to evade, they can also explain why others choose to comply. Economics looks at tax behavior and focuses on evasion, yet the mystery lies not in why do some citizens don't pay taxes, but why some many citizens do. Douglass North's thoughts on why people demonstrate pro-social behavior apply to taxpayers. Concerns outside of the neoclassical theory, like morality, may be part of the answer. He writes,

> I am not arguing that these actions are irrational – only that the calculation of benefits and costs that we [economists] employ is too limited to catch other elements in people's decision making processes. Individual utility functions are simply more complicated then

> the simple assumptions so far incorporated in neoclassical theory. The task of the social scientist is to broaden the theory to be able to predict when people will act like free riders and when they won't. (Douglass North, 1981 pg 46)

Though this paragraph was written in 1981, the criticism of Economics' limited view applied to the study of tax evasion until recently. Only recently has the literature looked at tax evasion as more than an expected value calculation to maximize material payoffs for taxpayers.

Some suggest that taxpayers consider more than just pecuniary concerns when deciding between evasion and compliance. If that is the case, in order to improve compliance rates, it becomes essential to understand the behavioral aspects motivating the tax compliance decision. In recent literature, ideology and social norms have risen as a factor motivating compliance with rules. Ideology and norms are tools to simplify the decision making process. (North, 1981 p 49) Mark McCoon (2011) defines institutions as both formal and informal rules that govern society.[1] He claims there is a correlation between said institutions and tax compliance. Yet McCoon's definition of institutions is very broad. A more nuanced separation is necessary: institutions are formal rules, while social norms are informal. The distinction is significant analytically because it allows a conceptualization of their relationship. Social norms are the internalized response to credible and consistent institutional and social sanctions; tax compliance, is in the same way, a response -internalized over time- to these sanctions.[2] Thus, institutions –governmental or social-, are integral in the creation and internalization of social norms, and not inconsequential.

The author's motivation for studying factors that affect tax compliance arose from the comparison of two neighboring Latin American countries: Chile and Argentina. Chile and Argentina today are operating at different equilibrium as a result of different social norms. In

[1] McCoon, Mark (2011). Tax Compliance in Latin America: a cross country analysis. pp 6.
[2] Bergman, Marcelo (2003). pp 595.

Chile, tax compliance is high and tax evasion is seen as risky.[3] In Argentina, a unilateral move towards compliance would be more costly than to simply follow the convention and evade. Marcelo Bergman has studied the tax administrations in Argentina (*Dirección General Impositiva*- DGI) and in Chile (*Servicios de Impuestos Internos*- SII) during the period 1975-1999 to understand how their deterrence policies shaped the social norms in each country. Norms have been internalized in the different cultures to portray the perception of sanctions from defection. The dependence of DGI on the government, its focus on maximizing short-term revenues, and its limited ability to detect evasion led to an ineffective administration that could not support a credible threat to evaders. Ineffectual threats from the DGI and low probability of detection caused a large share of free riders to become convention, gradually eroding concerns for social sanctions as well. A higher perception of risk in Chile shows that a credible threat for punitive measures translates to social norms of compliance in the long run.

According to Bergman, only the SII understood that in order to maximize long run revenue, high compliance rates should take precedence over net collection, with an effect on compliance in the two countries. During the years 1989 and 1999, the average VAT compliance coefficient for Argentina was 54.26 per cent while Chile's average coefficient was 77.59 per cent.[4] More importantly, the varying policies also resulted in different efficiency levels for the TAs. "The cost of collecting $1 in Chile is .04 cents, in Argentina its 1.9 cents. The budget of the SII is .07% of the GDP, while in Argentina it amounts to .22% of its GDP."[5] The lesson is that once tax evasion is entrenched, tax compliance is costly. Since increasing deterrence is costly to the tax authority, it is in its interest to increase compliance at the lowest cost, contingent on the

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[3] In a 1997 survey, 82% of Argentinean respondents conveyed willingness to evade taxes in a $10,000 transaction. In contrast, 75% of Chileans saw evasion in the same standard transaction as extremely risky. Bergman, Marcelo (2003). pp 601.

[4] Bergman, Marcelo (2003). pp 598.

[5] Bergman, Marcelo (2003). Pp 622.

extent to which the change will affect *its* constituents' decision to pay taxes. By looking at the disparity in approaches and success rates between Argentina and Chile, it becomes clear that, in order to maximize tax revenues, the concern of the tax authority must be to maximize compliance.

Analysis of the behavioral factors that affect taxpayer compliance has focused on defining tax morale, and understanding its effect on compliance. Often, tax compliance and tax morale are incorrectly treated as synonymous. Though they have a close relationship, they must be treated distinctly. Tax compliance is the actual decision by the taxpayer to comply or evade. Tax morale is the intrinsic motivation to pay taxes (Torgler 2004). More simply, tax compliance is a behavior; tax morale is an attitude. All else equal, higher tax morale will result in higher tax compliance. However, tax compliance is a function of both morale and deterrence, and tax morale will interact with the deterrence mechanisms in place to yield compliance. A deeper understanding of tax morale is important to illuminate some aspects of tax compliance.

The goal of this paper study tax behavior and determine what factors affect the decision of the taxpayer. To what extent is the choice driven by constraints and parameters, and to what extent are the culture and environment of the taxpayer important? Tax compliance may be driven by the parameters under which each individual behaves, like the penalty rates, audit rates and tax rates set by the government, as well as corruption, government approval, and even gender or age. On the other hand, compliance may be cultural in the sense that each of these variables may affect people in different countries to different degrees.

This paper will attempt to measure tax morale through public opinion surveys of 18 Latin American countries. It will analyze the impact of social norms and perceptions of government within each country, and these variables' impact on morale independent of culture. The goal is to

explore aspects of tax morale in order to illuminate the taxpayer's compliance decision. Cultural determinism has the view that norms cannot be changed, and would suggest that a country stuck in a suboptimal outcome with high evasion rates is doomed to a vicious cycle. Yet, a better understanding of these norms can help each government find a way to decrease tax evasion tailored to its institutions and norms. Though culture may be relatively fixed, socialization need not be deterministic. While culture plays a role in the tax decision, the goal of the literature should be to unpack this role and understand in what ways it might be mutable.

The rest of this paper is structured as follows. Section I presents relevant findings and the evolution of economics' perspective on tax evasion and discusses two models exploring the taxpayer's utility calculation: the Allingham-Sandmo (1972) taxpayer model and a model by Christian Traxler and Mathias Spichtig (2010). Section II empirically analyzes public opinion surveys from eighteen Latin American countries to create a clearer picture of what factors affect tax morale. The results and their implications are discussed. In the end, this paper seeks to investigate what factors affect tax behavior, and how those factors interact in order to provide a better understanding of the tax payer's decision that will help government's design successful and appropriate policy.

SECTION I

Literature on taxpayer behavior has focused on two perspectives on the compliance decision. The following section will present two models, one representing each perspective. It will also look at empirical research analyzing tax morale and tax compliance.

The Pecuniary Theory: Allingham –Sandmo Model (1972)

Much of the tax evasion literature presents the taxpayer as making an expected value calculation. The Allingham-Sandmo Model (A-S Model) (1972) provides the basis for this analysis.

A taxpayer *i* has income *I*. He must choose an amount to declare *D*, which will be taxed at rate *T*. However, the government audits reports to uncover underreported income. Probability of detection is *p*. A penalty *f* is imposed on taxes evaded (*f*>=1). If the individual is caught, his income is

$$I_C = I - DT - Tf(I-D) \qquad (1)$$

If he is not caught, his income is

$$I_N = I - TD \qquad (2)$$

Thus, the citizen will choose *D* to maximize expected utility. Since probability of detection is *p*, expected utility is calculated by

$$E(U(I)) = pU(I_C) + (1-p)U(I_N) \qquad (3)$$

D is bounded [0,I]. Evasion will decrease when deterrents, like *f* and *p* increase.

The A-S model is successful in presenting the monetary cost-benefit calculation of taxpayers as a function of tax rate, probability of detection, penalty for detection, and income; yet, appears to be incomplete. Some suggest that it fails in explaining divergence in tax compliance among countries with similar tax rates, penalties, and probabilities of verification. (Traxler 2006, Torgler 2006) This realization led many economists (and behavioral economists) to suggest that there exist concerns outside pecuniary calculations, which must be incorporated into the model so as to understand what drives the tax compliance decision.

An alternative is to include morality and societal norms.

The Social Theory: Conditional Cooperators

Christian Traxler (2006) introduces a model that incorporates the costs of compliance, both monetary and social, and claims that taxpayers behave as conditional cooperators. As the share of evaders increases in a population, the social sanctions tied to evasion will decrease, therefore making it psychologically "cheaper" for other tax-payers to evade taxes (even while audit and penalty rates remain equal). Tax compliance for an individual is then interdependent with the actions of others. The interconnected choice to comply or evade will result in one of two possible equilibria: a "bad case" in which a high share of evaders have eroded the costs of evasion so no one will comply, or a "good case" in which high rates of compliance support high social costs of defection, making evasion more costly. Traxler and Spichtig (2010), explore the evolution of conditional cooperation in a heterogeneous setting. Their model can easily be adapted to taxpayer behavior.

Each taxpayer has an action space of x^i {0,1}, where the two discrete choices are x^i=1: cooperate and pay taxes, or x^i=0: defect and evade. Change in income I is given by

$$\Delta I(x^i) = -x^i c$$

where $c>0$ is the cost of paying taxes. There is an additional payoff z determined by the action x^i and the share of free riders, n, in a population.

$$z(x^i,n)=(x^i-1)s(n)$$

$S(n)$ represents the sanctions incurred by defecting and evading taxes. Sanctions are harsher the more people adhere to the norm, and therefore depend on n, the share of evaders (Traxler and Winter 2009). In this model, sanctions are both monetary and social; meaning it accounts for sanctions from deterrence as well as social sanctions; two types may be guilt and shame.

The function $s(n)$ behaves in the following manner. It is continuous on $n \in [0,1]$, $s'(n) \leq 0$, $s(0)>0$, and $s(n) \rightarrow 0$ as $n \rightarrow 1$.

Utility of the taxpayer then is determined by the function[6]

$$u^i(x^i,n) = y(x^i) + \theta^i z(x^i,n)$$

θ^i is the degree of norm sensitivity and is continuously distributed.

An individual will contribute if the costs from norm sanctions dominates the cost of cooperation $\theta^i s(n) > c$. As the share of evaders in a population increases, $s(n)$ will decrease, and tax evasion will be less costly.

Total tax compliance is a function of both deterrence factors and tax morale. In the model, $S(n)$ incorporates the monetary sanctions from deterrence as well as the social sanctions from violating a norm.

We know $s(n)$ = deterrence + costs of tax morale

$S(n)$ = deterrence(f,T,p, I) + costs of tax morale(n, trust, corruption, etc.)

Therefore, if the individual is caught, his payoff is

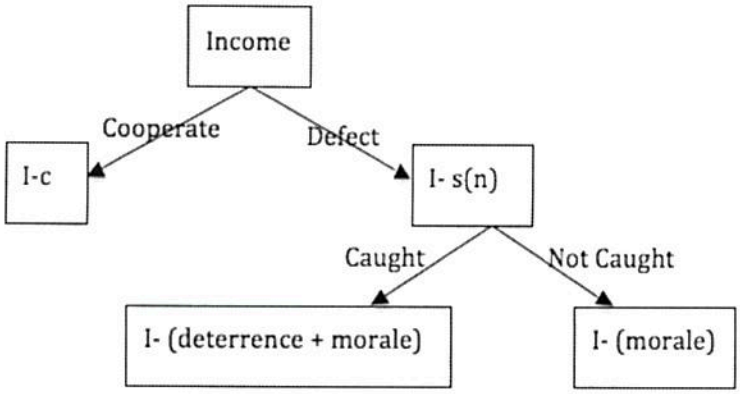
$$I_C = I - DT - Tf(I-D) - \text{costs of tax morale} \qquad (1)$$

If he is not caught, his income is

$$I_N = I - TD - \text{costs of tax morale} \qquad (2)$$

The following decision tree helps visualize the taxpayer decision and payoff. The choice whether to Cooperate or Defect is made contingent on the levels of deterrence and morale in place. If the taxpayer chooses to evade and is caught, he will suffer the costs of deterrence (penalties) as well as the costs of morale. If the taxpayer chooses to evade and is not caught, he will not incur any penalties, but he will still suffer the social costs. Costs of deterrence and social costs are always positive, I-(deterrence +morale)<I-(morale). In this way, the theoretical model can include a wider picture of the decision-making of citizens, since they may be accounting for costs outside of those driven by deterrence.

Figure 1 – Taxpayer Decision Tree Payoff



Traxler and Spichtig (2010), distinguish between static and dynamic environments, and explain the theoretical mechanism behind the evolution of a social norm. A static environment is representative of a cross sectional analysis, in which one time period is studied. In the decision, all parameters, including social sanctions to defection, are fixed. Based on such constraints, the taxpayer, then, makes his decision in order to maximize payoff. In a dynamic environment, social sanctions to evasion evolve dependent on the share of evaders in the population. The theory behind the dynamic view provides a way to understand how social norms ("culture") developed and diverged. Though the paper abstracts from the specific context of tax evasion, the difference in context between static and dynamic is helpful in understanding how tax evasion in Latin America depends on culture and institutions.

Both of the above models have looked at taxpayers' behavior theoretically. There is also research that has taken an empirical approach.

Empirical research

As mentioned before, the illicit nature of tax evasion makes it is very difficult to measure; for this reason, several methods and data sources are often used. Tax compliance can be

measured through field experiments; and, by controlling the deterrence variables, is able to get at the compliance driven by culture. Measuring tax morale often relies on survey data or public opinion polls, because they are able to measure individual perceptions on evasion, government corruption, and trust in government. However, poll data has its limitations since it cannot credibly measure actual behavior. Additionally, it relies on the subjectivity of how each responder interprets the question, as well as how truthful they really are. Culture may even play a part in how survey data is answered, because some cultures may be more positive, or aspirational than others.

Cummings, Martinez-Vazquez, Knee and Torgler (2006) study the relationship between tax morale and tax compliance between South Africa, Botswana, and the US (as reference). After determining a level of tax morale for each country, compliance is measured via field tests. They find that perception of evasion by others, as well as trust in government and the legal system, and national pride, are all factors that affect tax morale. Additionally, their findings show that higher tax morale will lead to higher compliance, all else equal. Their paper demonstrates how both tax morale and deterrence affect tax compliance.

However, it is important to remember that tax morale and deterrence mechanisms, each measured in a different experiment, are not independent. They interact to yield a particular level of compliance. Though difficult to explicitly define, the relationship is understood as self-enforcing. Countries with equal deterrence levels may enjoy lower or higher levels of compliance, depending on tax morale. Similarly, countries with similar morale may experience diverging compliance depending on deterrence levels in place. Moreover, countries with high tax morale may require lower levels of deterrence to achieve the same compliance, or a history of high deterrence generates high tax morale. Tax morale and compliance work in a feedback loop.

Tax morale still needs to be analyzed further to determine to what extent culture affects a taxpayer's decision. Establishing what factors affect tax morale is important. Also important is understanding which factors affect tax morale independently, and which ones may be influenced by culture.

SECTION II

Data

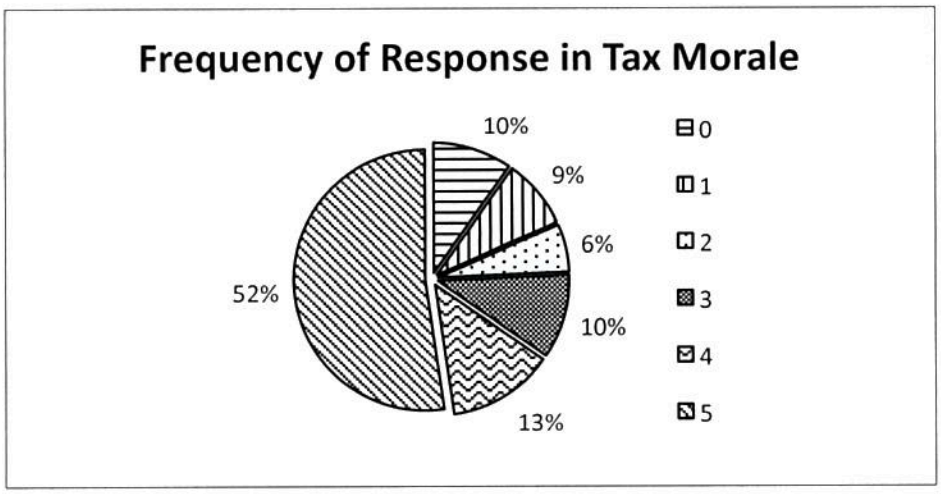
This paper analyses survey data from public opinion polls to determine tax morale. The main source of data is LatinoBarometer, a yearly study run in eighteen Latin American countries. It offers information on the public opinion of citizens towards democracy, corruption, the economic situation, inequality, and global issues. The last available wave, 2010, is analyzed to understand how views on corruption, lawfulness, the current government, and the provision of public goods affect one's intrinsic motivation to pay taxes. Before explaining the data and variables, the limitations of survey data must be addressed. The survey does not provide any information on actual behavior, and can only explore the respondents' perceptions. Moreover, the answers are dependent on each respondent's interpretation of the question, which is variable. Along a spectrum from 1 to 10, one individual's "5" may mean something very different from another's same answer. Even with these constraints in mind, LatinoBarometro nevertheless provides sufficient data to explore tax morale in Latin American countries.

To determine the tax morale of the surveyed countries, the following question is used as a dependent variable:

"On a scale of 1 to 10, where '1' means 'not at all justifiable' and '10' means 'totally justifiable,' how justifiable do you believe it is to evade paying taxes?"

The data was reformatted into 6 categories (0,1,2,3,4,5) across a spectrum, with "5"meaning "never justifiable" and "0" meaning "always justifiable." The original values 6-10 have been combined into 0 due to lack of variance, and for simplicity of interpretation.[7] The final frequency of responses is the following, where "5" represents the highest level of tax morale:

Figure 1- Frequency of Response in Tax Morale



The data are used to run a multivariate analysis of tax morale. Several variables are introduced to understand their effect on tax morale. Perception of evasion by peers is measured in two instances: firstly, by a continuous variable measuring the believed share of citizens who pay taxes properly (perceptionCompliance); then, closer contact to evasion is examined by an additional variable knowEvader, which asks if the polled citizen has heard of someone who managed to avoid paying taxes. It is expected that perception of more widespread evaders or higher evasion will lead to lower tax morale. Trust in government is also expected to affect intrinsic motivation to comply with the system. Therefore the variables "gvtTrust," "gvtApproval," and "lawful" are included in the regression to examine their effect on tax moral.[8]

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[7] Method borrowed from Cummings et al. (2006) in their cross-cultural analysis of tax morale in Botswana, South Africa, and the US.

[8] gvtTrust and gvtApproval measure trust and approval of a respondent respectively; lawfulawful measures whether the respondent described the citizens of his nation as law-abiding.

Higher trust and approval of government are expected to result in higher tax morale. A further variable, publicGood, explores the relationship between perceived benefit from the government and willingness to contribute to the public good (by paying taxes); it is hypothesized that the greater the perceived benefit from the government, the higher willingness to pay. Finally, covariables are introduced to control for additional factors, like sex, age, socioeconomic status of the respondent, employment, and education.

An ordered logit regression is run which included all of the previously mentioned variables, to test for significance in the model. Subsequently, the same regression is run, this time including a dummy variable for each of the countries in the study. A log likelihood ratio test indicates that the inclusion of the country dummies is significant and justified. The results will be discussed next.

Results

The initial regression was ran to understand what factors affect tax morale, and in what ways. Table 1 presents the results from empirical analysis.

Many of the variables expected to have an impact on tax morale proved statistically significant. Interestingly, an individual's personal economic situation does not appear to affect tax morale, meaning that rich and poor report about the same willingness to comply, all else equal. The results for perception of compliance support the conditional cooperation theory, which claims that people are more willing to pay taxes (higher morale) if they believe their peers are also paying taxes properly. The effects of expected compliance by others will be more thoroughly discussed later. As expected, tax morale is higher for respondents with the highest level of government trust, any level below that, however, was not statistically significant from no

trust. (When cleaning the data missing values were replace with no answer, or "I don't know," therefore interpretation only allows a limited comparison.) Those who disapprove of the government have lower tax morale than those who approve, as was expected. Those respondents who know no one who has successfully avoided taxes had higher tax morale than those who did. If the respondent says "paying taxes" is a requirement for good citizenship, he is more likely to see tax evasion as unjustifiable. Tax morale increases with age, as well as if the respondent is female. Interestingly, a higher perception of benefit from government policies leads to lower tax morale, or a belief in justification for avoiding taxes. This finding seems counterintuitive and may be explained by the fact that perception of public good provision or benefit may be capturing the effect of higher government budgets, not accounted for in the survey. All those who believed their countrymen where a little lawful or above enjoy higher tax morale. Employment was benchmarked against people in a salaried position with a private company. There was not significance in tax morale between them and workers in a state company, taxpayers who were retired, students, or not in the workforce. However, two statuses of employment resulted in lower tax morale: self-employed, and those temporarily out of work. These findings are consistent with the literature, since these groups have more opportunities to hide income.

Next, the same regression was run including a dummy for each country in the survey, 19 in total (Chile was omitted due to collinearity). The log likelihood ratio test returned significance at the .000 level, meaning that is justified to include the country dummies, since they provide additional explanation. The results are in column 2 of Table 1. The country dummies are statistically significant. In hoping to address the question of whether tax evasion is cultural or contextual, the following results suggest that culture must be part of the answer. A significant

coefficient for country dummies implies that under the same parameters for the tested variables, tax morale for someone in Argentina will not be equal to that of someone in Chile. However, the pseudo R2 for both regressions does not have enough explanatory power.

Table 1- Determinants of Tax Morale in Latin America

Ordered Logit Estimation		1	*Standard*	2	*Standard*
Independent Variables		*Coefficient*	*Error*	*Coefficient*	*Error*
Personal Economic Situation	Good	0.1265653	(0.101)	0.0581672	(0.103)
(Omitted: Very good)	Average	-0.0239233	(0.099)	-0.008273	(0.101)
	Bad	-0.0496789	(0.106)	-0.006852	(0.108)
	Very Bad	-0.1342497	(0.127)	-0.0224827	(0.130)
Government Trust	A lot	0.1743904***	(0.062)	0.0942704	(0.063)
(Omitted: None)	Some	0.0047223	(0.048)	-0.0669719	(0.049)
	A little	0.0143363	(0.044)	-0.0367181	(0.045)
PublicGood	A lot	-0.2898181***	(0.069)	-0.3014199***	(0.070)
(Omitted: None)	Some	-0.1291493***	(0.049)	-0.1599877***	(0.050)
	A little	-0.0820584*	(0.046)	-0.0804556*	(0.047)
lawful	A lot	-0.5455623***	(0.073)	-0.4830819***	(0.074)
(Omitted: None)	Some	-0.31868***	(0.054)	-0.3409667***	(0.056)
	A Little	-0.2586859***	(0.046)	-0.2487355***	(0.046)
Employment	Self Employed	-0.0961715**	(0.045)	-0.0999279***	(0.046)
(Omitted: Salaried in private Co.)	Salaried in State Co.	0.0462828	(0.065)	0.0710289	(0.066)
	Temp. out of work	-0.2028859***	(0.073)	-0.2263981***	(0.074)
	Retired	0.0599062	(0.082)	0.0209925	(0.083)
	Not in workforce	-0.0913013	(0.056)	-0.0895917	(0.056)
	Student	-0.0841569	(0.073)	-0.0784212	(0.074)
gvtApproval	No	-0.1751366***	(0.035)	-0.2022939***	(0.036)
Know Evader	No	0.2539027***	(0.038)	0.2372902***	(0.039)
payTaxes		0.3829328***	(0.031)	0.3708075***	(0.031)
perceptionCompliance		0.0014266***	(0.001)	0.0011385*	(0.001)
Head of Household		-0.0532892	(0.040)	-0.0386801	(0.040)
Female		0.0920785***	(0.035)	0.0764383**	(0.035)
Age		0.0113172***	(0.001)	0.0092275***	(0.001)
Education		0.0260781***	(0.004)	0.0110387***	(0.004)
Country					
(Omitted: Chile)	Argentina			0.2079695***	(0.092)
	Bolivia			-0.476157**	(0.089)
	Brasil			0.0956039***	(0.093)
	Colombia			-0.087461	(0.090)
	Costa rica			-0.3866372	(0.096)
	Ecuador			0.234042***	(0.091)
	El Salvador			-0.4284712***	(0.102)
	Guatemala			-1.007339***	(0.099)
	Honduras			0.3267117***	(0.102)
	Mexico			-0.5022159***	(0.088)
	Nicaragua			-0.737625***	(0.098)
	Panama			-0.5215326***	(0.094)
	Paraguay			0.2051131***	(0.094)
	Peru			-0.1136609**	(0.090)
	Uruguay			-0.0880929	(0.094)
	Venezuela			0.2482377	(0.092)
	Republica Dominicana			-0.6487245***	(0.093)
# Obs		15352		15352	
Prob (F-statistic)		0.000		0.000	
Pseudo R2		0.0129		0.0253	

Notes: Dependent variable: tax morale on a 6 point scale 0-5. Significance levels: * 0.05<p<.10, ** .01<p<.05, ***p<.01
Log likelihood: 0.000

Though inclusion of the country dummies nearly doubled the pseudo R2, it remains at .0253 (from 0.0129), far too small to explain the majority of variance.

It is important to note that the coefficient for each country in the ordered logit regression, now attributed to national "culture," encompasses many institutions; culture being only one of them. In fact, since it is a cross-sectional analysis, fixed effects of each country are difficult to distinguish from other factors. The country coefficient may be including the effect of culture, as well as deterrence, inequality, and other variables not controlled for. The role of each country in determining tax morale must be further analyzed. Country cultures have a significant effect on tax morale, however, they have little explanatory power in the model. This suggests that other factors not encompassed by national culture may be large drivers of tax morale; factors like family customs or deterrence. How large a role does this encompassing notion of "culture" play in tax morale, as well as what institutions are concealed within it are important questions to answer; yet much of the explanation of tax morale may lie outside of culture, in institutional factors.

A closer look at the country coefficients produces new questions. The main ordered logit regression including country variables returns results that may be surprising to anyone familiar with estimates of actual tax evasion in Latin America. It shows that someone from Argentina has higher tax morale, all else equal, than someone from Chile. Given estimates of compliance for Argentina at 54.26%, while Chile's average compliance was 77.59% (Bergman 2003), the results warrant further analysis, which leads to one of the most interesting findings of the project. Average tax morale in Argentina is 3.98, and average tax morale in Chile is 3.86 (out of a maximum of 5). Though the difference is statistically significant, it is not practically significant. More Argentineans believe that tax evasion is never justifiable, than Chileans do; 66.22% to

52.76% to be exact. However, a closer look at perception of compliance tells a different story. Argentineans believe that, on average, 49.89% of the total population is paying taxes properly (a perceived evasion of 50%), while Chileans believe that 64.43% of their peers are paying taxes properly. This difference is dramatic. When analyzing how tax morale affects tax compliance, one must understand that morale is only a part of the equation, as discussed in the theoretical section. The empirical study of tax morale, as well as similar studies in the literature (Torgler 2004), can only claim that a country with higher tax morale will enjoy higher tax compliance, *all else equal*. [9] However, the differences in perception of compliance are enough to shatter that assumption in reality.

What the comparison between Argentina and Chile makes clear is that Argentineans are, on average, more willing to see tax evasion as unjustifiable. Nevertheless, estimates of actual compliance behavior tell a different story: Argentinean respondents believe that close to 50% of the population does not pay taxes properly. This must mean that there are additional factors outside of morale that affect an individual's decision. This finding supports the institutional perspective. There is something in the institutions of Argentina that is causing the population, who might otherwise willing to pay, to evade taxation. On the other hand, Chileans, who appear to be less intrinsically motivated to pay, have higher rates of compliance, perhaps due to the institutions in place.

The puzzle that large difference in perceptions of compliance between Argentina and Chile still yield similar average tax morale suggests that perception of compliance may be affecting tax morale differently across countries. To test this, an interaction variable between

[9] Compliance across countries with different levels of morale have been studied with experimental field-tests that control audit rates and penalties of evasion. Cummings, Martinez-Vazquez, Knee and Torgler (2006)

perceptionCompliance and Argentina was created. The log likelihood ratio between these two equations justifies the inclusion of an interaction variable. Table 2 shows the results.

Table 2 - Determinants of Tax Morale in Chile and Argentina

Ordered Logit Estimation *Independent Variables*		1 *Coefficient*	*Standard Error*	2 *Coefficient*	*Standard Error*
Personal Economic	Good	-0.0868162	(0.391)	-0.0558783	(0.392)
(Omitted: Very Good)	Average	-0.202685	(0.390)	-0.1618604	(0.390)
	Bad	-0.676555*	(0.410)	-0.6387655	(0.411)
	Very Bad	-0.5994345	(0.584)	-0.5339611	(0.587)
Government Trust	A lot	0.1967946	(0.223)	0.167078	(0.224)
(Omitted: None)	Some	0.0812766	(0.158)	0.0574922	(0.159)
	A little	-0.1099321	(0.138)	-0.1289227	(0.138)
PublicGood	A lot	-0.1099998	(0.227)	-0.1153073	(0.228)
(Omitted: None)	Some	-0.0320394	(0.158)	-0.0221253	(0.158)
	A little	0.0769554	(0.148)	0.0939145	(0.148)
lawful	A lot	-0.4702633*	(0.267)	-0.4328529	(0.267)
(Omitted: None)	Some	-0.5565848***	(0.164)	-0.5314526***	(0.164)
	A little	-0.3741895***	(0.138)	-0.3283736**	(0.139)
Government Approval	No	-0.1970954*	(0.114)	-0.2049969*	(0.114)
Know Evader	No	0.5781117***	(0.106)	0.5899821***	(0.106)
payTaxes		0.6195993***	(0.094)	0.6195101***	(0.094)
perceptionCompliance		0.0017304	(0.002)	0.0062161**	(0.003)
Head of Household		-0.0798385	(0.110)	-0.0725458	(0.111)
Female		0.063789	(0.102)	0.0562004	(0.102)
Age		0.0083069***	(0.003)	0.0085475***	(0.003)
Arg		0.2065706*	(0.107)	0.8053471***	(0.250)
ArgXperception				-0.0103627***	(0.004)
# Obs		1953		1953	
Prob(F-statistic)		0.000		0.000	
Pseudo R2		0.0278		0.0292	

Notes: Dependent variable: tax morale on a 6 point scale 0-5. Significance levels: * 0.05<p<.10, ** .01<p<.05, ***p<.01

In fact, changes in perception of compliance have different outcomes in Chile and Argentina. An increase in perception of compliance in Chile will have a larger effect on increasing tax morale than the same increase in perception of compliance in Argentina. This is extremely interesting and important for public policy planning, and may explain some of the divergences in compliance across both countries. If taxpayers are behaving as conditional cooperators, then a lower rate of compliance will have eroded the social sanctions to defecting. Thus, a change in perception of compliance will yield a smaller change in morale in Argentina than in Chile, where social sanctions are stronger.

In the end, cultural factors only explain a small part of a country's tax morale, which in turn only explains a part of actual compliance. Thus, tax compliance is a factor both of the tax morale, or social norms of the country, and the institutions. Though compliance is a function of morale and deterrence, there is not yet a clear understanding of how these interact. It is strongly believed that social norms are simply the assimilation of institutions (formal rules) into informal rules. This assimilation takes time. The empirical analysis has only looked at cross sectional data, looking at the static picture of tax compliance in Latin America.

Conclusion

For a long time, the study of tax evasion focused on the deterrence mechanisms to explain a taxpayer's decision to evade. However, a neoclassical approach could not speak to the entire taxpayer calculation, since a lot of non-pecuniary concerns were not accounted for. The introduction of moral costs and social sanctions has been able to expand our understanding of what matters to the taxpayer. Social costs may be incurred in addition to those set by the government, and for that reason, some people comply with taxes beyond what deterrence would predict. In the same way, an erosion of social costs in a country where there is a high number of evaders, may explain the low levels of compliance.

Tax compliance is a function of both tax morale and deterrence, two factors that are not independent. Though their relationship is difficult to define, the example of Argentina and Chile supports the belief that deterrence and morale work in a feedback loop. This paper chooses to focus on analyzing tax morale in Latin American countries, to shed some light into an aspect of compliance. Some of the factors that influence tax morale are perception of evasion by others, government approval and trust, employment, and country. Though the coefficient for dummy countries is significant, is still cannot explain much of the variance in the data. This is an

important realization. Culture matters; it explains a part of tax morale, which in turn explains a part of tax compliance. However, locking countries into their fate due to a "bad culture" is deterministic, since culture itself may be mutable. In order to expand Economics' understanding of tax evasion and compliance, both deterrence and tax morale must be considered, and their relationship to each other, better understood.

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