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EVIDENCE FROM A PALESTINIAN SURVEY

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Abstract

The Palestinian context is missing in the tax morale literature. Hence, in this paper we consider public spirit and associational activity two major expressions of pro-social behavior and we estimate their impact on Palestinians' tax morale (intrinsic motivation to pay taxes). The empirical analysis uses a unique dataset based on a survey conducted by the Palestine Economic Policy Research Institute in 2007 in the West Bank and Gaza Strip. By using a bivariate probit model, we find that tax morale increases with public spirit but it is lower among Palestinians involved in associational activities. Predicted conditional probabilities indicate that public spirit has more impact when the respondent has low confidence in the institutions and in the rule of law. Finally, more public spirit is required for a self-employed worker in order to deal with tax compliance than for a worker in the public sector, unless the worker in the public sector has lower confidence in the institutions and in the rule of law than the self-employed worker.

ملخص

السياق الفلسطيني مفقود في الأدبيات الخاصة بمعنويات الضرائب. ومن هنا، فان هذه الورقة تعتبر ان الروح العامة ونشاط الجمعيات هما تعبيرين رئيسيين عن السلوك الاجتماعي المؤيد ونقدر تأثيرها على معنويات الضرائب الفلسطينية '(الدوافع الذاتية لدفع الضرائب). التحليل التجريبي يستخدم مجموعة بيانات فريدة من نوعها استنادا إلى دراسة استقصائية أجراها معهد أبحاث السياسات الاقتصادية الفلسطيني في عام 2007 في الضفة الغربية وقطاع غزة. وباستخدام نموذج وحدة احتمالية المتغير الثنائي، نجد أن المعنويات الضريبية تزداد مع الروح المعنوية العامة ولكنها أقل بين الفلسطينيين المشاركين في أنشطة الجمعيات. الاحتمالات تشير إلى أن الروح العامة له تأثير أكبر عند الشخص الذى لديه ثقة منخفضة في المؤسسات وسيادة القانون. وأخيرا، هناك حاجة إلى مزيد من الروح العامة بالنسبة للعامل لحسابه الخاص من أجل التعامل مع الالتزام الضريبي للعامل أكثر من من يعملون في القطاع العام، إلا إذا كان العامل في القطاع العام لديه ثقة أقل في المؤسسات وسيادة القانون من العامل لحسابه الخاص.

1. Introduction

Tax evasion can create economic distortion because it favors inequality among citizens. People that are "equally well off end up with different tax burden" (Slemrod 2007,25). It is argued that the probability of audits and the degree of punishment do not fully explain this free-riding attitude (Torgler 2005a; Lago-Penas and Lago-Penas 2010; Andreoni et al. 1998; Allingham and Sandmo 1972). In fact, even though tax evasion is legally punished by deterrence policies, it occurs in any political economic context, nowadays as in the past (Slemrod 2007). Recent literature shows that tax compliance records high scores in contexts with high tax morale (Cummings, Martinez-Vasquez, McKee, Torgler 2009; Wenzel 2005; Torgler 2011), the latter defined as intrinsic motivations to pay taxes (Frey 1997). On the one hand, the literature on tax morale considers the existence of a psychological contract between taxpayers and Government that implies loyalty (Torgler 2004). The trust towards the institutions (institutional trust) is crucial for the contract to be respected by the citizens. Where the institutional trust is missing, the loyalty at the basis of the contract might reduce tremendously. On the other hand, cooperation towards public good is based not only on institutional loyalty but also on the behavior adopted by the members of the community. For instance, the civic conscience has an impact on individual's perceptions of whether tax evasion is right or wrong (Torgler 2005a; Orviska and Hudson 2003). This perception is affected by pro-social behavior adopted by the individuals in the form of respect for the social norms internalized by the community and its members. Indeed some individuals might be more respectful of social norms than others and this is likely to favour their tax compliance. In other words, economic and social behavior "requires individuals to make assessments of norms and rules in particular contexts" (Sanghera and Satybaldieva 2007, 922). For these reasons social attitudes represent one of the groups of covariates included in empirical models and have significant statistical results with respect to tax morale (Lago-Penas et al. 2010). Even though Laog-Penas et al. (2010) highlight that in some works social norms and attitudes are missing due to lack of data (Alm and Torgler 2006; Cummings et al. 2009), experimental studies show the importance of pro-social behavior for conditional cooperation toward the public good (Croson 1998; Sonnesman et al. 1999; Keser and van Winder 2000; Fischbacher et al 2001) regardless whether this cooperation is due to the mechanism of conformity (Henrich 2004) or of reciprocity[1] (Folk and Fehr 2002). Frey and Torgler (2007) provide empirical evidence of these experimental outcomes in a cross-country analysis where they show that the individual taxpayer is influenced by the behavior of the others in complying with taxes. In fact tax morale increases in countries where the perceived tax evasion is low. Positive individual's expectation about the cooperative behavior of others increases an individual's intrinsic motivation to pay taxes. Given this background, the aim of this paper is to estimate the impact of pro-social behavior on tax morale among Palestinians. We consider public spirit and associational activities two major expressions of pro-social behavior. For public spirit is defined as a positive attitude adopted by the citizens for the benefit of the community even though this might incur personal cost or reduced personal gain. Hence, having public spirit implies to behave sometimes against the self-interest and "to think about others when taking a stand" (Kelman 1987,93). This occurs only within a system of social norms that "declares it appropriate for people to try to do the right thing in public behavior and inappropriate for them to seek to advance their personal interests" (Kelman 1987, 93). The associational activity refers to individuals engaged in voluntary activities. It is

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[1]With the term "reciprocity" the literature refers to the fact that the single individual feels obliged to pay taxes especially when many other citizens comply with taxes. With the term "conformity" the literature refers to the willingness of the individual to adopt a cooperative behavior if this is in accordance (conformity) to the social norms and rules of the society to which the individual belongs. For a more complete and exhaustive presentation of the literature on pro-social behavior and conditional cooperation see Frey et al. (2007).

argued that more associational life should promote cooperation and civic engagement among the members of the community (Putnam, Leonardi and Nanetti 1993). However, in this sense, the Palestinian reality represents a particular case study. Jamal (2007) argues that associations are directly influenced by the political context in which they operate. She stresses the endogenous relationship existing between democratic settings and associational activities. NGOs and Voluntary organizations operating in democratic contexts are likely to foster a sense of civic engagement. This might not necessarily occur in non democratic contexts. In fact, Jamal (2007, 78) reports that associational life in Palestinian Territories is polarized between pro and anti-Palestinian National Authority. The former are described as clientelistic associations vertically linked to the government or institutions. The latter are presented as non-clientelistic associations operating with less government support. In this particular set up, since the function of NGOs risk being driven by nepotism and personal connections, the associational activity might fail in delivering civic engagement among people until the extreme point of discouraging tax compliance. The contribution that this work can provide to the literature is remarkable for at least three reasons.

Firstly, with regard to the Palestinian Territories, this work presents pioneer research since there is neither literature or policy reports produced on tax morale in West Bank and Gaza Strip. Even though the literature on tax morale has been growing quite rapidly in the last decade (Torgler 2005a, 2005b; Frey and Torgler 2007; Alm et al. 2008), micro-level empirical studies on this phenomenon are rare (Cannari et al. 2007; Barone and Mocetti 2009), especially with regard to developing countries (Cummings et al. 2009; Fagbemi et al. 2010;). At least two reasons can explain this existing gap: the topic of tax morale is relatively new and empirical works so far mainly focus on cross-country analysis (Torgler 2005a; Lago-Penas et al. 2010) and on high-income countries (Cannari et al. 2007; Alm and Gomez 2008) where it is easier to access the data; there is a lack of surveys in developing countries covering tax compliance and opinions of citizens about tax evasion.

Secondly, the existing literature on tax morale generally adopts ordered probit/logit and multi-level regressions where tax morale is the dependent variable and variables of social behavior are assumed exogenous regressors. However, since tax morale is part of a system of social norms, on the one hand it is possible that tax morale and social behavior are correlated one to another by unobservable factors. On the other hand, they are likely to be influenced by similar observed characteristics. For these reasons we estimate these behaviors jointly using bivariate probit models where tax morale and social behavior are the dependent variables. The observable factors include several socio-economic characteristics that are likely to be related to both social behavior and tax morale. Compared to the previous literature, this empirical approach presents at least two advantages. Firstly, the biases connected to cross-country analysis (Torgler 2005b) is absent since we focus only on the Palestinian context. Secondly, unlike the ordered logit/probit models, the bivariate probit model is able to reduce reverse causality problems and to provide unbiased results. This also allows us to estimate, conditional on pro-social behavior, predicted conditional probabilities of the change of tax morale for different characteristics of our representative agent regarding the importance of the rule of law, institutional trust and working status.

Thirdly, this work can provide useful insights for potential policy recommendations, especially if we consider that the Palestinian territories represent a peculiar geo-political context under state-capacity building.

The paper is structured as follows: Section 2 describes the Palestinian tax system; Section 3 presents the empirical approach and the data; Section 4 presents and discusses the empirical results; Section 5 presents the conclusions.

2. Tax System in West Bank and Gaza Strip

Only since January 1, 2005 have the West Bank and Gaza Strip been regulated by a unified tax law through the Income Tax Act N. 17 of 2004. Before, there were two tax systems in use. In Gaza there was the Egyptian Income Tax Act N 13 of 1947 while in the West Bank the Jordanian Income Tax Act N. 25 of 1964. According to this unified tax system, in Palestinian Territories the corporate tax is 15% for both residents and non-residents (Yacoub 2011). Tax on properties is levied at a rate of 17% of the assessed value of rental income, 60% of the property tax is set off against tax liability and 40% is deducted in computing taxable income. Individual income tax is charged at a progressive rate from 5% to 15%. The standard VAT rate is 14.5%. In Palestinian Territories there are no tax treaties (Deloitte 2011). Even though WBGS are regulated by a single tax system, the Palestinian fiscal policy faces four major constraints based on: the socio-economic structure; the capacity of administrative and political institutions; the bargaining power of interest groups and civil society; and the influence of external actors (Fjeldstad and Zagha 2002).

Firstly, between 1994 and 2000, the PNA employed economic policies in favor of large corporate interests and manufacturing industries holding some linkages with the political and administrative elites. This political-economic strategy was justified under the goal of promoting economic development and alleviating poverty based on the Oslo Agreement.

Secondly, the political uncertainty characterizing the Palestinians' Territories is likely to favor the building of personal and patrimonial linkages in order to assure political and personal loyalties between institutional authority and some influential taxpayers (Fjeldstad et al. 2002). For instance, especially until 2000, disputes on tax assessments were solved through negotiations, discount and exempt. Social obligations and political intervention affected the work and the integrity of the tax officers as well as the relationship between taxpayers and enforces (Fjeldstad et al. 2002). This situation undermines the citizens' perception of good governance and their opinion about the regulatory capacity of PNA authority (Fisher et al. 2001). Things slightly changed in 2000 when the PNA took "important steps to make its own financial operations more transparent, including by bridging all tax revenues under the control of the Ministry of Finance and by having its commercial operations audited and the results from this audit made public" (Fisher et al. 2001,271).

Thirdly, during the second half of 1995, the growing and intensive polarized associational life is mainly the consequence of a system of clientelistic favoritism embedded in the Palestinian civil society (Jamal 2007). The main problem is that a large number of civic associations operating in WBGS have very little bargaining power with the "Government" (Fjeldstad et al. 2002). The majority of the NGOs employ the strategy of collusion with some PNA officers to pursue two goals: exemption from taxation, including VAT and taxes on imported goods and services; being "friends" with the major authority and not to "irritate" it (Hilal and Khan 2002). Moreover, the strong relationship between Fateh and most of the professional associations (lawyers, doctors and engineers) has favored several channels of rent seeking (Hilal et al. 2002).

Finally, the influence of external actors plays a crucial role in the Palestinian's fiscal policy. The Paris "Protocol of Economic Relations" between the PNA and Israel allows the latter to collect a major proportion of PNA's tax revenue through the revenue clearance system. According to the protocol, all imported taxes and levies on goods purchased and consumed by WBGS Palestinians should be reimbursed to the PA (Kanafani 2001). However, products initially imported by Israeli companies and then re-exported to WBGS are not included in this mechanism, at least according to the Israeli interpretations of the protocol. This, of course, causes substantial lost revenue which is quite difficult to estimate (Kanafani 2001). One of

the consequences of this system is several types of off-budget fiscal activities undertaken by the PNA. This reduces the transparency of the book-keeping activities. (Fjeldstad et al. 2002).

3. Empirical Approach and Data

3.1 Methodology

The main research question of this paper is whether the tax morale of Palestinians changes in the presence of declared pro-social behavior such as associational activism and public spirit.

Since tax morale is part of an individual's social behavior, on one hand, it is possible that tax morale and social behavior are correlated one to another by unobservable factors and, on the other hand, they are likely to be influenced by similar observed characteristics. For this reason we estimate these behaviors jointly using bivariate probit models where tax morale and social behavior are the dependent variables. The observable factors include several socio-economic characteristics that are likely to affect both social behavior and tax morale. The model allows the residuals to be correlated which may capture the effect of unobservable factors. While the bivariate probit model is commonly used in health economics to estimate the effect of a treatment on a binary health outcome (Jones and O'Donnell 2002; Jones 2007; Winkelmann 2011), it is a pioneer approach in the literature of tax morale. The existing literature generally adopts ordered probit/logit and multi-level regressions where tax morale is the dependent variable and variables of social behavior are assumed exogenous regressors. Even though robust analyses are conducted, all these works present problems of reverse causality that a bivariate model is able to reduce providing unbiased results.

The empirical model is presented according to the following standard equation. Let y^{*}_{1i} be the unobservable propensity of individuals to declare totax morale and y^{*}_{2i} be the unobservable propensity of individuals of having pro-social behavior.

$$y_{1i}^* = \beta'_1 x_{1i} + u_{1i} \tag{1}$$

$$y_{1i} = 1 \underset{if}{} y_{1i}^* > 0$$

$$y_{1i} = 0 \underset{otherwise}{}$$

$$y_{2i}^* = \beta'_2 x_{2i} + u_{2i} \tag{2}$$

$$y_{2i} = 1 \underset{if}{} y_{2i}^* > 0$$

$$y_{2i} = 0 \underset{otherwise}{}$$

$$\{u_{1i}, u_{2i}\} \sim \Phi_2(0,0,1,1,\rho) \tag{3}$$

where $y_{1i} = 1$ indicates the individual declaring a tax morale, which depends on socio-economic factors x_{1i}. $y_{2i} = 1$ indicates the individual "having" pro-social behavior which depends on socio-economic factors x_{2i}. The errors $\{u_{1i}, u_{2i}\}$ are assumed to have a standard bivariate normal distribution Φ_2. The bivariate probit model considers that the errors in equation (1) and (2) are correlated $\text{cov}(u_{1i}, u_{2i}) = \rho$ such that

$$u_{1i} = \eta_i + \varepsilon_{1i} \tag{4}$$

$$u_{2i} = \eta_i + \varepsilon_{2i} \tag{5}$$

The errors in each model consist of a part (ε_i) that is unique to the model and a second part (η_i) that is common to both. Notice that if $\rho = 0$ the two errors in the equations (1) and (2) are independent and the Φ_2 reduces to two separate standard normal distributions. If $\rho \neq 0$, the two errors are correlated. This means that the probability of one will be dependent on the probability of the other. In this case the bivariate probability model will fit the data better than the two separate models. Notice, also, that if $\rho = 1$, the two variables are identical. Instead if $\rho = -1$, the two variables are exactly negative correlated.

In the case of $\rho \neq 0$ the two outcomes (corrupt-averse opinion and social capital in our case) can be linked in two different ways. The first one is based on observable socio-economic factors x_i. If some x_i similarly affect both y_{1i} and y_{2i}, this induces the outcomes to be correlated. The second one is based on unobservable factors through the correlation of the errors. Factors affecting the tax morale endowment might also affect the pro-social behavior of an individual.

Given the equations (1) – (5) then

$$\Pr(y_{1i} = 1) = \Pr(u_{1i} > -\beta'_1 x_{1i}) = \Pr(\eta_i + \varepsilon_{1i} > -\beta'_1 x_{1i}) \tag{6}$$

$$\Pr(y_{2i} = 1) = \Pr(u_{2i} > -\beta'_2 x_{2i}) = \Pr(\eta_i + \varepsilon_{2i} > -\beta'_2 x_{2i}) \tag{7}$$

Hence the probability for an individual to declare to a tax morale and that having pro-social behavior is the following

$$\Pr(\text{tax-morale ,pro- social} \mid x) = \Pr(y_1 = 1, y_2 = 1 \mid x) = \Pr(y^*_1 > 0, y^*_2 > 0 \mid x)$$

$$= \Pr(u_1 > -\beta'_1 x_1, u_2 > -\beta'_2 x_2) = \Phi_2(\beta'_1 x_1, \beta'_2 x_2, \rho) \tag{8}$$

Where Φ_2 is the standard bivariate normal distribution.

This model, through predicted conditional probabilities, allows for detecting how the propensity of declaring tax morale changes in the presence of pro-social behavior. From equation (8) we can derive the odd ratio of the predicted conditional probabilities (9)

$$\frac{\Pr(y_1 = 1 \mid y_2 = 1)}{\Pr(y_1 = 1 \mid y_2 = 0)} \tag{9}$$

$$\Pr(y_1 = 1 \mid y_2 = 1) = \frac{\Phi_2(x_{1i}\beta_1, x_{2i}\beta_2, \rho)}{\Phi(x_{2i}, \beta_2)} \tag{10}$$

$$\Pr(y_1 = 1 \mid y_2 = 1) = \frac{\Phi(x_{1i}, \beta_1) - \Phi_2(x_{1i}\beta_1, x_{2i}\beta_2, \rho)}{1 - \Phi(x_{2i}, \beta_2)} \tag{11}$$

3.2 Data description and variables

The data source is the survey of social capital conducted by the Palestine Economic Policy Research Institute (MAS) in 2007. The survey contains several sections where a number of opinions regarding public spirit, trust, shared values and norms have been collected from a

random sample of individuals (2,508 observations) located in the West Bank and Gaza Strip[2]. Almost 50.3% of the individuals are female and 2,498 individuals out of 2,508 are included in the aging interval 16 – 92[3] (Table 1).

In our reduced form specified models the binomial dependent variables of tax morale and pro-social behavior (*public spirit* and *associational activity*) are expressed as in Table 2.

Notice that the construction of the binary variable *public spirit* follows Green and Hensher[4] (2010). The answer to each of the "behaviors" listed in Table 2 follows a scale (1-3) in the order of 1"I can justify it", 2 "I can justify it sometimes", 3 "I can't justify it at all". We set a composite measure which is the sum of the scores obtained by answering all the questions. The range of this measure is [0-18] with mean equal to 16.428. The variable *public spirit* assumes value 1 if the composite measure is at least 16.428 and 0 otherwise.

The choice of the explanatory variables is based on theoretical and empirical works on tax morale (Cannari et al. 2007; Alm and Gomez 2008; Frey and Torgler 2007; Lago-Penas et al. 2010; Torgler 2005a, 2005b). The socio-economic covariates that are likely to affect both tax morale and pro-social behavior are age, gender, marital status, education, occupational status, importance of the rule of law[5], trust in institutions (*institutional trust*), trust in people in general (*generalized trust*[6]), friends with political affiliation, family network, friends/neighbors network (*bridging*) and a regional dummy for Palestinians living in West Bank rather than in the Gaza Strip (see Table A1 in the Appendix for variable descriptions and their coding scheme). We are aware that because the Palestinian Territories are facing a complicated process of State capacity building[7], the concept of institutions for Palestinians might be different if compared with citizens of a fully independent State. For this reason, unlike previous research (Torgler 2005a, 2005b, Lago-Penas et al. 2010), we consider a composite indicator of institutional trust consisting of trust in different institutions including "trust in clans". In the Palestinian context, the clans are social-based institutions responsible for community governance and whose role is considered to be at the same level (if not sometimes higher) of the "State" institutions[8]. Hence, it is not surprising that in our survey 40.32% of respondents have lot of trust in the clans while only 11.75%, 10.6% and 8.68% declare trust a lot trust in the juridical system, the President and the Parliament respectively. Given this framework, the composite nature of the institutional trust variable allows the

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[2] The individuals of the sample between the two regions are not equally distributed. 2,304 individuals out of 2,508 are located in the West Bank. This might affect the reliability of a potential regional dummy variable.

[3] The six missing individuals not included in the 2,498 are less than 16 years old. More precisely they are less than 10 years old.

[4] In the application of the binary choice model to health satisfaction, Green and Hansher (2010) construct a variable of health satisfaction (*Healthy*) from a self-reported health assessment recorded with a range of values [0 -10]. Given the sample mean equal to 6.8, the binary variable *Healthy = 1* if the health assessment is at least 7 and 0otherwise.

[5] Notice that the importance of the rule of law is crucial in the tax compliance literature. Moreover, Orviska and Hudson 2002 include in their analysis the concept of "law abidance". Recalling Tyler (1992) "law abidance" indicates the propensity of the citizens to comply with the law, hence tax compliance, because they attribute to the legal authority the legitimate right to dictate their behavior (Orviska et al. 2002, 88).

[6] There exists a systematic relation between trust and economic and social behavior (Fukuyama 1995; 2001; Kanck and Keefer 1997; Guiso et al. 2004). Empirical evidence shows that there is a negative relationship between trust and the shadow economy in a cross-country analysis (D'Hernoncourt and Meon 2012). Indeed we can define trust as the expectation of an individual with respect to others' behavior with the confidence that the others will act responsibly (Gambetta 1988, 217; Lyon and Porter 2007, 905. In our opinion, this locates trust in between the mechanism of "reciprocity" and "conformity" which can become an important factor for pro-social behavior and, hence, cooperation to occur.

[7] A relevant proportion of "State tasks" are under Israeli control (monetary, military, partially fiscal and trade aspects)

[8] There is a traditional conflict resolution system based on the practice of "clan justice" where in case of conflicts between members of different clans, a committee of mediators can solve the dispute instead of the official court system (Landinfo 2008; Crisis Group 2007).

indicator to be more robust and to consider the complexity of the institutional condition of the Palestinian society.

We are aware that the measure of tax morale is subject to bias problems since it is based on subjective surveys where significant reporting errors may occur (Torgler 2005a; Torgler et al. 2007). Moreover, in our paper we use a single-item measure of tax morale instead of a multi-item index. Unlike a multi-item measure, a single-item index may incur that might not completely capture the multidimensional nature of the concept, might provide a less representative sample of information about tax morale and might be less precise since it is likely to increases score variability (Torgler 2011; Torgler, Schaffner and Macintyre 2010). Indeed, respondents self reporting might overstate their degree of compliance. However, the phrasing of questions about tax morale is one of the main factors of biased answers. The less personal the questions are the higher is the probability of obtaining unbiased estimates since the respondents feel more protected by the general structure of the sentence (Clausen et al. 2010). Moreover, Clausen et al. (2010) argue that this unbiased condition is favored by less topic-specialized surveys. For instance, where surveys are mainly focused on tax evasion, respondents might become more reticent because they might feel that every question could provide additional inferences about the respondent's own behavior. On the other hand, a more general survey in which the topic "tax evasion" is only one of the numerous behavioral questions might reduce this risk. We argue that the data source used in this paper corresponds to the latter scenario for, at least, two reasons. Firstly, the survey we use covers multi-dimensional aspects of citizens' behaviors where the attitude towards tax evasion is only one of them. In fact, the individuals in the survey are required to answer to questions about many aspects of their social, political and civil life. Hence, the question about tax evasion is included alongside several others. Secondly, the question on tax evasion is general rather than personal. It mainly focuses on the respondents' opinion about other people's behavior within a general perspective[9].

According to our sample, 71.5% of respondents declare that they cannot justify tax evasion and 41.31% of the respondents have provided volunteering work in the last 12 months.

Besides the socio-economic and trust variables we include also the variables *family and bridging*. Glaeser et al.(2002) suggest that reduced physical distance intensifies social connections and, hence, favor cooperation. We replace geographical proximity with the frequency of individuals meeting their family, friends and neighbors[10]. In our empirical model the variable "income" is missing since it is not in the survey. However, as in Alm and Gomez (2008, 74) we can argue that "individual compliance behavior implies that rational individuals (especially those whose income are not subject to third-party sources of information) should report virtually no income" or alternatively, they should tend to under report income. In fact, there is relevant empirical evidence confirming this position. Torgler (2005a) finds that socio-economic variables such as "economic status", "homeownership" and "fortune" (in terms of physical assets and resources) do not have any significant impact on tax morale in Latin America. Similarly, Cummings et al. (2009) find that in Botswana tax compliance increases with the perception of good governance rather than with income. Cannari et al. (2007) find a negative relationship between income and tax evasion in a survey

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[9]For instance, if we consider another free-riding action, such as corruption, a common problem of surveys dealing with corruption is the trade-off between the accuracy of the questions (general or specific and how much general or how much specific) and the unbiased answer. This survey is not able to overcome this problem. However, we believe that biased estimates are mitigated and reduced by the structure of the survey and the phrasing of the questions.

[10]Frequency of meetings and physical distance are not equivalent. However, the Palestinian Territories suffer from the presence of physical obstacles that limit the movement of Palestinians within the Territories tremendously. This means that in general Palestinians are likely to limit their movements to within short distances. Hence, higher frequency of contacts definitively implies higher geographical proximity.

of Italian families covering the period between 1992 and 2004. They argue that this variable might not be reliable since in Italy income declaration suffers of under-reporting.

Unconditional joint probabilities[11]show that in relationship with institutional trust, 80.74% of the respondents declaring to greatly trust the juridical system cannot justify tax evasion. Even though still relevant, this proportion becomes lower, 74.59% and 78%, among individuals that have lot of trust in the clans and in the local government respectively, while 65.31% of individuals that greatly trust the juridical system hold public spirit. This percentage increases, 68.46% and 69.90%, among individuals that trust the local government and the police respectively.

Table 3 indicates a high systematic association between tax morale and public spirit, showing that 86.36% of the individuals that hold public spirit are against tax evasion. This proportion rises up to 88.7% if we consider individuals aging above 35 Table 3)

Among individuals providing who volunteer, 59.55% are females and 40.45% are males. Unconditional joint probabilities show that 51% of respondents that are employed did some volunteer works in the last 12 months against 33% of unemployed individuals. There is an interesting association between tax morale and associational activity. Of the people that did some social activity as volunteer in the last 12 months, 66.28% declare to not justify tax evasion at all. This proportion of pro-tax morale increases up to 75.37% among the people not involved in any associational activity.

The correlation matrix of Table 4 indicates a negative binary correlation between associational activity and tax morale and between associational activity and public spirit while it shows a quite high correlation between public spirit and tax morale.

4. Empirical Results
4.1 The Baseline Model

The Table 5 shows the results from the baseline model (equations 1-3). Between tax morale and public spirit the ρ is considerably large (0.59) and significant at 1% confidence level. The LR test indicates that the null hypothesis of $\rho = 0$ is rejected at 1% confidence level. This means that the two variables/errors are correlated and that the probability of one variable will depend on the value/probability of the other. Hence the bivariate probit fits the data better than separate models. Between tax morale and civic engagement the errors are negatively correlated ($\rho = -0.17$) and significant at 1% level. As in the previous case, the LR test reject the null hypothesis of $\rho = 0$ at 1% confidence level.

This initial analysis can lead to some considerations. Firstly, individuals involved in associations are less likely to consider tax evasion very important. In fact, the negative residual correlation indicates that respondents that have done voluntary works in the last 12 months are less likely to consider tax evasion very important. Secondly, respondents with high public spirit are more likely to consider tax evasion very important. As in Soon (2010), in order to detect the joint significance of all the explanatory variables, the model is also tested for its overall model specification by using the Wald test. The chi-squared statistics result is large and all significant at a 1% level.

Table 6 shows the marginal effects on the joint probabilities of the change in tax morale and pro-social behavior as in equation (8)[12]. We consider the marginal effects on the joint

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[11]The statistical significance of the unconditional joint probabilities analysis is tested through the Chis Squared approach.

[12]Notice that we have four joint probabilities: $\Pr(y_1 = 1, y_2 = 1)$; $\Pr(y_1 = 1, y_2 = 0)$; $\Pr(y_1 = 0, y_2 = 1)$; $\Pr(y_1 = 0, y_2 = 0)$. We focus the attention on the first type since we consider them more related to the statement of tax morale and pro-social behavior described by equations (1-3).

probabilities of declaring to be against tax evasion and being actively involved in associational life $\Pr(y_{Tax} = 1, y_{Asso} = 1)$ and the marginal effects on the joint probabilities of declaring to be against tax evasion and holding public spirit $\Pr(y_{Tax} = 1, y_{Spirit} = 1)$.

The joint probabilities estimations are divided into four columns. In the first and third columns we consider only whether (?) is employed or not and in second and fourth columns we also include the working sectors.

In the first column, the joint probabilities of being against tax evasion and doing volunteer work significantly increase with an extra level of education by 0.012 and with being employed by 0.05. This joint probabilities increase by 0.08 when individuals consider the rule of law important and by 0.007 in the presence of institutional trust. Having a friend with a political affiliation increases the joint probabilities of being tax morale by 0.13 and by 0.002 for individuals that have a good social network outside the family.

When we include the covariates indicating the working sectors (Column 2) the level of education is still positive but no longer significant. Working for the public or for the private sector has a positive and significant marginal effect on the joint probabilities. In the presence of working sectors specification, the importance of the rule of law and trust in institutions has a positive and significant impact on the joint probabilities.

Column 3 shows that the joint probabilities of being tax morale and holding public spirit increases by almost 0.18 with the importance of the rule of law and by 0.008 with trust in institutions. These results are very similar to empirical evidence shown in other contexts. WhileOrissa et al. (2002), by using The British Social Attitudes Survey of 1996 finds that disapproval of tax avoidance increases with civic duty and law abidance, Smith (1992) shows that the willingness to pay taxes among United States citizens increases with trust in public officials. In numerous cross-countries analysis including Asian, European and Latin American countries, Torgler (2004b; 2005a) and Torgler and Schneider (2007) find that tax morale rises with trust in institutions and confidence in legal systems.

The joint probabilities of being tax morale and holding public spirit reduces by 0.058 for individuals with a friend with a political affiliation (Column4). Family ties show a negative impact on the joint probabilities as well as in the case of respondents living in West Bank rather than in Gaza Strip.

Given the negative relationship between tax morale and associational activity we also compute marginal effects on joint probabilities of declaring not to be against tax evasion and being engaged in voluntary activities (Table 7)

In both of the columns, the joint probabilities of not holding tax morale and being involved in associational activities decreases with the importance of the rule of law by 0.038 and 0.048 (when we consider employment sectors as well).This joint probabilities increases with extra family network (*bridging)* and, especially, with having friends politically affiliated (*affiliation*). In the last case the increase is of the magnitude of 0.06 and 0.079 in column one and column two respectively.

4.2 Predicted conditional probabilities

In this subsection we compute odd ratios of predicted conditional probabilities in the form of equation (9). This allows us to estimate the probabilities of the change in tax morale when the individual holds pro-social behavior compared to the case in which the individual does not hold pro-social behavior. We consider a representative individual male of age 40, with a high school education, married, with no political affiliation, with an average frequency of meeting family and friends, living in the West Bank and that trusts people in general. These odd ratios

are computed in response to a change in the parameters of the rule of law and institutional trust, on one hand, and by considering different working status, on the other hand. The confidence in the rule of law and the trust in institutions represent the view of Palestinians about formal institutions. To this purpose Levi (1998,91 in Slemrod 2007) argues that when taxpayers believe that institutions act in the citizens' interests, people are more willing to comply with taxes even though free riding can be the best short-term option. The probability of being tax morale can also be conditional on the respondent's opinion about the rule of law. Cummings et al. (2009) identify the individual's perception of good governance as one of the determinants of tax compliance. According to our scenario, we say that that our representative agent has a positive view about formal institutions when he considers the rule of law very important and has high trust in institutions. Reversely we say that our representative agent has a negative view about formal institutions when he considers the rule of law not important and has low trust in institutions.

Table 8, Section I shows that when our agent has a positive view about formal institutions, the probability of being against tax evasion in the presence of public spirit is 36% higher than in absence of public spirit. This probability increases to 85% in the case in which the agent has a negative view about formal institutions. It seems that when the agent has a negative view about formal institutions he needs more public spirit in order to deal with tax compliance. Still Section I shows that when the individual is involved in associational activities, his tax morale is lower than in absence of associational activity. This probability reduces even more when the agent has a negative view about formal institutions. Similar results occur in Sections II, III and IV when we consider individuals that are unemployed, employed in the public sector and self -employed.

It is interesting to compare the impact of pro-social behavior in the form of public spirit between the agent working in the public sector and the self-employed agent. Under both the conditions of both positive and negative views about formal institutions, the agent that is self-employed needs more public spirit than the agent working in the public sector in order to deal with tax compliance. In fact under a positive view about formal institutions, the probability of being against tax evasion in the presence of public spirit is 23% higher than in the absence of public spirit for an agent working in the public sector (Table 8 Section III). Under identical conditions this probability becomes 32% in the case the agent being self-employed (Table 8 Section IV). Under a negative view about formal institutions, the probability of being against tax evasion in the presence of public spirit is 51% higher than in the absence of public spirit for an agent working in the public sector (Table 8 Section III). Once again, under identical conditions this probability becomes 69% in the case the agent being self-employed (Table 8 Section IV). Hence, the only case in which the agent working in the public sector needs more public spirit to deal with tax compliance than the agent who is self-employed is when the public officer has a negative view about formal institutions and the self-employed agent has a positive view. In this case in the presence of public spirit, the probabilities of being against tax evasion are 51% higher for the public officer and 32% higher for the self-employed agent (Table 9 summarizes the differences between these two types of agents). Indeed, Cannari et al. (2007) argue that individuals working in the public sector tend to be more against tax evasion than other workers. This is because the loss of taxes can be compensated by an increase of tax revenue and this policy is more likely to affect workers in the public sectors rather than self-employed workers.

4.3 Robustness Analysis: the puzzling role of the associational activity

For robustness reasons, we test our model on the basis of the theoretical and empirical findings provided by the literature on tax morale and on Palestinian associational activity.

One of the limitations of our analysis is the subjective nature of our indicators. From the empirical analysis, while tax morale increases with public spirit, it decreases with associational activity. However, it can be argued that this negative impact might be driven by the harmful effect of the rent-seeking nature of the Olson-group associations. For this reason we divide the associations between the rent seeking Olson-Group and "altruistic" Putnam-Group[13] as in Knack and Keefer (1997). The latter are identified as groups that should foster a sense of cooperation and civic engagement for the benefit of the society (Knack et al. 1997). We isolate the Olson-group from our sample and we replace our variable *associational activity* with the variable *Putnam-active* in our baseline model. This variable assumes value 1 if the respondent is an active member of a Putnam-Group association and value 0 otherwise. The rationale is that if the variable *Putnam-active* provides opposite results compared to *associational activity* then our original variable is not reliable. We also test our baseline model on other two "associational" variables. The first one is *membership* which assumes value 1 if the respondent holds at least one membership from the entire list of associations in the survey (but he/she is not necessarily actively involved) and value 0 otherwise. Beugelsdijk and Schaik (2005) point out that holding just a membership does not necessarily correspond to being an active volunteer. The decision of an individual to be associated to an organization can be driven by some personal benefits that the membership can provide rather than by a spirit of civic engagement. The second one is a *volunteer* which assumes value 1 if the respondent did volunteer in the last 12 months but without holding any membership. In this case we delete the potential rent-seeking value of holding a membership.

Table 10 shows the results of the baseline models with the new three variables. A negative relationship occurs in all three cases. When we consider only Putnam-groups and volunteers without membership, the correlation is lower than in the case of *membership* but still negative and significant.

Additional analysis suggests considering the relationship between associational activity and democratic spirit. Likewise, Lago-Penas et al. (2010) and Torgler (2005a) find a positive and significant association between democratic spirit and tax morale. One of the questions in the survey is: "which is the importance of achieving democracy in domestic politics?" The answer follows a scale (1-3) in the order of 1 "very important", 2 "important" and 3 "not important". We rescale the answer such that the highest value (3) corresponds to "very important" and the lowest value 1 to "not important" and we call this variable *democratic spirit*. We include this variable in the baseline model. To avoid colinearity problems we exclude the variable *rule of law*. Our assessment shows that the variable *democratic spirit* is positively and significantly related to tax morale but negatively, even though not significantly, related to *associational activity*.

This empirical evidence seems to confirm the puzzling role that Jamal (2007) attributes to voluntary organizations in the Palestinian Territories. According to our understanding, the main concern advanced by Jamal is not about the social benefits that the Palestinian community can gain from the additional social services provided by voluntary associations in terms of education, health and other socio-economic needs. The main debate addressed by Jamal (2007) is about the endogenous relationship existing in the Territories between the

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[13]In the survey we can divide the list of associations between Olson and Putnam-Group as in Knack and Keefer (1997). The question for the respondents is the following: *"Are you a member of any of these associations?"* The respondent can choose among a list of type of associations such as *cultural institutions, religious organizations labor unions etc.* The associations belonging to the Olson-group are political parties, labor and trade unions, professional organizations, lobbies and pressure groups. The associations belonging to the Putnam-Group are parents committees at schools, sport clubs, charities, housing societies, environment associations, associations for human rights and virtual groups on the net. In the list there is also the alternative *any other group*. The respondents that have chosen this alternative are of course not distributed between the Olson and Putnam Groups even though the number of these individuals is very small.

absence of a democratic context and the need of vertical connections with political members for voluntary associations in order to operate without institutional obstacles. In fact, within this complicated system, the puzzling point is whether *the associational activity* is able to foster that civic engagement and democratic spirit as promoted by the traditional social capital theory (Putnam et al. 1993).

5. Conclusions

The Palestinian context is missing within the literature of tax morale. This paper shows that the empirical findings in previous cross-country analysis (Torgler 2005a; Lagos-Penas et al. 2010) are also valid in the case of the West Bank and Gaza Strip with some crucial differences that are peculiar to the Palestinian geopolitical context. Estimates from the bivariate probit model indicate that tax morale is lower when Palestinians are involved in associational activities. This occurs even when we consider Putnam-group organizations. On the other hand, tax morale increases with public spirit. Predicted conditional probabilities show that public spirit has more impact when there is a lack of confidence in the institutions and in the rule of law. Interestingly, more public spirit is required for a self-employee in order to deal with tax compliance than for a worker in the public sector, regardless of the level of confidence and trust in institutions. The only case in which the public officer needs more public spirit than the self-employed worker in order to deal with tax compliance is when the former has a negative view about formal institutions and the latter a positive one.

Even though the lack of political independency is likely to represent a crucial obstacle for good governance (Fisher et al. 2001), our findings might suggest that a consistent process of institutional transparency might help to increase tax morale. For instance, the variable of public spirit includes also the opinion that respondents have about the use of bribes at work. A general perception of widespread corruption can undermine the willingness of taxpayers to contribute to the public good given that personal and social benefits will be less than personal costs. The direct consequence would be lower tax morale among the citizens. As in Torgler (2005a) and Lago-Penas et al. (2010), we also show that a democratic spirit can have a positive impact on tax morale. Indeed, individuals would be stakeholders of their community and feel more involved in the decision process. As stakeholder, to some extent, the social benefits deriving from tax compliance would assume a higher value than personal interests.

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Table 1: Summary Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
Tax morale	2,465	0.716	0.451	0	1
Public spirit	2,498	0.594	0.491	0	1
Associational Activity	2,489	0.414	0.493	0	1
Age	2,498	36.409	13.730	16	92
Female	2,497	0.503	0.500	0	1
Marital status	2,498	0.647	0.478	0	1
Education	2,498	3.765	1.520	1	8
Employed	2,498	0.435	0.496	0	1
Regulatory	2,485	2,916	0.311	1	3
Inst. Trust	2,498	17.592	6.109	0	32
Gen. Trust	2,446	0.158	0.365	0	1
Affiliation	2,437	0.441	0.497	0	1
Family	2,497	35.713	17.843	0	52
Bridging	2,413	27.981	15.247	0	52
West Bank	2,498	0.918	0.274	0	1

Table 2: Dependent Variables of Tax Morale and Pro-Social Behavior

Tax morale	$\Pr(y_{Tax} = 1)$ *"Can't justify at all tax evasion"*
	$\Pr(y_{Tax} = 0)$ *Otherwise*
Associational activity	$\Pr(y_{Asso} = 1)$ *I did volunteer in the last 12 months*
	$\Pr(y_{Asso} = 0)$ *Otherwise*
Public spirit	$\Pr(y_{Spirit} = 1)$ *"Can't justify at all: absence from work without reasonable reasons, absenteeism in elections, no commitments to traffic rules, buying stolen products, finding a wallet and not give it back to the police, bribery at work"*
	$\Pr(y_{Spirit} = 0)$ *Otherwise*

Table 3: Unconditional Joint Probabilities between Tax Morale and Public Spirit*

	Absence of public spirit	Presence of public spirit
Absence of tax morale "can justify tax evasion"	50.71%	13.64%
Presence of tax morale "can't justify tax evasion at all"	49.29%	86.36%
if age $\geq$ 30 Absence of tax morale "can justify tax evasion"	48.31%	11.30%
if age $\geq$ 30 Presence of tax morale "can't justify tax evasion at all"	51.69%	88.70%

Notes: *All this values are significant at 1% level (Chi-squared)

Table 4: Tetrachoric[14] Correlation between Tax Morale, Public Spirit and Civic Engagement (2,463 Observations)

	Tax morale	Public spirit	Civic engagement
Tax morale	1.00		
Public spirit	0.61	1.00	
Associational activity	-0.16	-0.19	1.00

Table 5: Bivariate Probit and Correlation between Errors of (Tax Morale, Public Spirit) and (Tax Morale, Civic Engagement)

	$Pr(y_{Tax}=1)$ $Pr(y_{spirit}=1)$	$Pr(y_{Tax}=1)$ $Pr(y_{Asso}=1)$
N	2287	2279
MLL	-2630.5	-2730.2
ρ	0.59***	-0.17***
$se(\rho)$	0.027	0.036
$LR(H_0:\rho=0)$	321.83***	20.904***

Notes: * p<0.1 ** p<0.05 *** p<0.01

Table 6: Joint Probabilities of Tax Morale and Civic Pro-Social Behavior

Variables	$Pr(y_{Tax}=1, y_{Asso}=1)$		$Pr(y_{Tax}=1, y_{Spirit}=1)$	
	Without working sectors Column I	With working sectors Column II	Without working sectors Column III	With working sectors Column IV
age	0.003	0.007	0.002	0.004
	(0.004)	(0.006)	(0.004)	(0.007)
age^2	-.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
female	0.017	0.015	-0.060 ***	-0.078 **
	(0.019)	(0.029)	(0.022)	(0.032)
Marital status	-0.017	-0.012	0.051 **	0.026
	(0.021)	(0.032)	(0.025)	(0.035)
education	0.012 *	0.011	0.008	0.007
	(0.006)	(0.009)	(0.008)	(0.010)
employed	0.050 **		0.001	
	(0.020)		(0.024)	
Public sector		0.115 ***		0.047
		(0.037)		(0.040)
Private sector		0.115 ***		-0.015
		(0.037)		(0.039)
Self-employed		0.003		0.037
		(0.032)		(0.036)
Rule of law	0.081 ***	0.124 ***	0.176 ***	0.216 ***
	(0.028)	(0.038)	(0.032)	(0.042)
Institutional trust	0.007 ***	0.005 **	0.008 ***	0.005 **
	(0.001)	(0.002)	(0.002)	(0.002)
Generalised trust	-0.021	-0.013	0.028	0.019
	(0.023)	(0.033)	(0.028)	(0.038)
Affiliation	0.133 ***	0.088 ***	-0.030	-0.058 **
	(0.018)	(0.024)	(0.021)	(0.028)
Family	-0.000	-0.001	-0.002 **	-0.003 ***
	(0.001)	(0.001)	(0.001)	(0.001)
Bridging	0.002 ***	0.003 ***	0.000	0.002 *
	(0.001)	(0.001)	(0.001)	(0.001)
West Bank	-0.022	-0.055	-0.143 ***	-0.172 ***
	(0.031)	(0.046)	(0.035)	(0.048)

Notes: * *p<0.1 ** p<0.05 *** p<0.01* Standard errors in parenthesis.

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[14] Given the dichotomous nature of the variables of tax morale and social behavior we compute a tetrachoric correlation. This type of correlation is used for binary data. For a more accurate discussion about tetrachoric correlation measures see Uebersax JS. *The tetrachoric and polychoric correlation coefficients. Statistical Methods for Rater Agreement* web site. 2006. Available at: http://john-uebersax.com/stat/tetra.htm

Table 7: Marginal Effects on Joint Probabilities (Tax Morale = 0 and Association = 1)

Variables	$\Pr(y_{Tax}=0, y_{Asso}=1)$	
	Without working sectors **Column I**	**With working sectors** **Column II**
age	-0.002	-0.003
	(0.002)	(0.004)
age^2	-0.000	0.000
	(0.000)	(0.000)
female	0.044***	0.045**
	(0.013)	(0.019)
Marital status	-0.031**	-0.018
	(0.014)	(0.023)
education	0.006	0.003
	(0.004)	(0.006)
employed	0.024*	
	(0.014)	
Public sector		0.004
		(0.026)
Private sector		0.048*
		(0.028)
Self-employed		0.020
		(0.024)
Rule of law	-0.038**	-0.048*
	(0.018)	(0.026)
Institutional trust	-0.001	-0.000
	(0.001)	(0.002)
Generalised trust	-0.033**	-0.021
	(0.014)	(0.022)
Affiliation	0.060***	0.079***
	(0.012)	(0.017)
Family	0.001	0.002***
	(0.000)	(0.001)
Bridging	0.001***	0.000
	(0.000)	(0.001)
West Bank	0.005	0.008
	(0.020)	(0.031)

Notes: * *p<0.1* ** *p<0.05* *** *p<0.01* Standard errors in parenthesis

Table 8: Predicted Odds Ratios for Employed and Unemployed Individuals

	Section I: Individuals employed	
	$\dfrac{\Pr(y_{Tax}=1\mid y_{Spirit}=1)}{\Pr(y_{Tax}=1\mid y_{Spirit}=0)}$	$\dfrac{\Pr(y_{Tax}=1\mid y_{Asso}=1)}{\Pr(y_{Tax}=1\mid y_{Asso}=0)}$
High institutional trust & high importance of the rule of law*	1.36 (36% ↑)	0.93 (7% ↓)
Low institutional trust & low importance of the rule of law	1.85 (85% ↑)	0.80 (20% ↓)
	Section II: Individuals unemployed	
	$\dfrac{\Pr(y_{Tax}=1\mid y_{Spirit}=1)}{\Pr(y_{Tax}=1\mid y_{Spirit}=0)}$	$\dfrac{\Pr(y_{Tax}=1\mid y_{Asso}=1)}{\Pr(y_{Tax}=1\mid y_{Asso}=0)}$
High institutional trust & high importance of the rule of law*	1.34 (34% ↑)	0.93 (7% ↓)
Low institutional trust & low importance of the rule of law	1.76 (76% ↑)	0.80 (20% ↓)
	Section III: Individuals working in the public sector	
	$\dfrac{\Pr(y_{Tax}=1\mid y_{Spirit}=1)}{\Pr(y_{Tax}=1\mid y_{Spirit}=0)}$	$\dfrac{\Pr(y_{Tax}=1\mid y_{Asso}=1)}{\Pr(y_{Tax}=1\mid y_{Asso}=0)}$
High institutional trust & high importance of the rule of law	1.23 (23% ↑)	0.96 (4% ↓)
Low institutional trust & low importance of the rule of law	1.51 (51% ↑)	0.86 (14% ↓)
	Section IV: Individuals self employed	
	$\dfrac{\Pr(y_{Tax}=1\mid y_{Spirit}=1)}{\Pr(y_{Tax}=1\mid y_{Spirit}=0)}$	$\dfrac{\Pr(y_{Tax}=1\mid y_{Asso}=1)}{\Pr(y_{Tax}=1\mid y_{Asso}=0)}$
High institutional trust & high importance of the rule of law	1.32 (32% ↑)	0.95 (5% ↓)
Low institutional trust & low importance of the rule of law	1.69 (69% ↑)	0.83 (17% ↓)

Notes: *We consider the maximum score of institutional trust, 32, the equivalent of 100% of trust in institutions. Hence, we calibrate "High Institutional Trust" with a score of 24, which indicates at least 75% of trust towards institutions. We calibrate "Low Institutional Trust" with a score of 8,, which indicates only 25% of trust towards institutions. The importance of the rule of law is a parameter assuming values 1 (not important) and 3(very important).

Table 9: Difference between Public Sector and Self-Employed in Pro-Social Behavior

Positive view about formal institutions	
Self-employed > 32	Public sector > 23
Negative view about formal institutions	
Self-employed > 69	Public sector > 51
Mixed view about formal institutions	
Public sector (negative view) > 51	Self-employed (positive view) > 32

Table 10: Bivariate Probit and Correlation between Errors

	$\Pr(y_{Tax}=1)$ $\Pr(y_{Volunteer}=1)$	$\Pr(y_{Tax}=1)$ $\Pr(y_{membership}=1)$	$\Pr(y_{Tax}=1)$ $\Pr(y_{Putnam-active}=1)$
N	860	2287	2287
MLL	-866.7	-2605.3	-2659.3
ρ	-0.11*	-0.22***	-0.10***
$se(\rho)$	0.068	0.038	0.037
$LR(H_0:\rho=0)$	2.772*	32.390***	7.251***

Notes: * p<0.1 ** p<0.05 *** p<0.01

Appendix A

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Variables description and coding scheme
Dependent variables

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Variables	Description	Range
Tax morale	"Can you justify tax evasion?"	Tax-moral = 1 if "can't justify at all tax evasion" Tax-moral = 0 otherwise
Public spirit	"Can you justify these behaviors by other people?" "Absence from work without reasonable reasons, bribery at work, absenteeism in elections, not commitment to traffic rules, buying stolen products, finding a wallet and not give it back to the police"	The answers to each behavior follows a scale (1-3) 1 = I can justify it; 2 = I can justify it sometimes; 3 = I can't justify it at all We set a composite variable called behavior which is the sum of the scores obtained by answering all the questions. The range of behavior is [0 18]. The mean of behavior from the survey is 16.4 Public spirit = 1 if behavior is at least 16.4 Public spirit = 0 otherwise
Associational activity	"In the last 12 months did you volunteer?"	Associational activity = 1 if the answer to the question is "yes" Associational activity = 0 otherwise

Independent variables

Variables	Description	Range
age	Age of the individuals	16 - 92
age^2	Age squared	256 - 8464
female	Individuals that are female	Female = 1 if the individual is female Female = 0 otherwise
Marital status	Individuals that are married	Marital status = 1 if the individual is married Marital status = 0 otherwise
education	Level of education	1= illiterate 2 = primary 3 = secondary 4 = high school 5 = diploma 6 = bachelor 7 = diploma after bachelor 8 = master or more
employed	Individual employed	Employed = 1 if the individual is employed Employed = 0 otherwise
Public sector	Individual employed in the public sector	Public sector = 1 if the individual is employed in the public sector Public sector = 0 otherwise
Private sector	Individual employed in the private sector	Private sector = 1 if the individual is employed in the private sector Private sector = 0 otherwise
Self-employed	Individual self-employed	Self-employed = 1 if the individual is a self-employed Self-employed = 0 otherwise
Rule of law	"Which is the importance of the rule of law?"	1 = not important; 2 = important; 3 = very important Range = [1 3]
Institutional trust	"How is your trust for these institutions?" Clan, Government, parties, local government, Parliament, President, Juridical system, police	The score for each answer is the following 1 = no trust; 2= little trust; 3 = somehow trust; 4 = lot of trust The measure is composite and sum up the values over the six institutions. Hence the range of institutional trust is [0 32]
Generalized trust	"Can you say that you can trust people in general?"	Generalized trust = 1 if the answer to the question is "yes" Generalized trust = 0 otherwise
affiliation	"Do you have any friend from any political affiliation?"	Affiliation = 1 if the answer to the question is "yes" Affiliation = 0 otherwise
family	frequency of an individual of meeting the family and/or talking to the family via phone/email	The scores are the following: 52 = once a week; 24 = once or twice a month; 6 = few times a year; 0 = never Range of family = [0 52]

bridging	synthetic measure composed by the frequency of an individual of having contacts with friends (visiting, inviting friends, contacting them via phone or via email) and neighbors (visiting, inviting neighbors, contacting them via phone or via email)	The scores are the following For friends: 52 = once a week; 24 = once or twice a month; 6 = few times a year; 0 = never For neighbors 52 = once a week; 24 = once or twice a month; 6 = few times a year; 0 = never Bridging = (friends + neighbors)/2 The range of bridging = [0 52]
West Bank	Individuals living in West Bank	West Bank = 1 if the respondent lives in West Bank West Bank = 0 if the respondent lives in Gaza Strip
Membership	Individual holding at least one membership from the following list of associations: sport clubs, cultural institutions, parents committees at school, religious organizations, charities, housing societies, unions, environment associations, associations for minority rights groups, virtual groups on the net, lobbies, any other groups	Membership = 1 if at least one membership Membership = 0 otherwise
Volunteer	Individual that did volunteer in the last 12 months but that does not hold any membership	Volunteer = 1 if the individual did volunteer in the last 12 month but does not hold any membership Volunteer = 0 otherwise
Putnam-active	Active members of Putnam group associations	Putnam-active = 1 f the respondent is an active member of a Putnam-Group association Putnam-active = 0 otherwise
Democratic spirit	"Which is the importance of achieving democracy in domestic politics?"	1 = not important; 2 = important; 3 = very important Range of democratic spirit = [1 3]