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**Article**

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# TACKLING THE INFORMAL ECONOMY IN THE EUROPEAN UNION: A SOCIAL ACTOR APPROACH

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## **Abstract**

In recent years, participants in the informal economy have started to be viewed less as rational economic actors who engage in the informal economy when the pay-off is greater than the expected cost of being caught and punished, and more as social actors who engage when their tax morale (i.e., motivation to pay taxes) is low. To evaluate this new social actor approach and the implications for tackling the informal economy, this paper reports evidence from 41,689 face-to-face interviews conducted across the European Union. Multilevel logistic regression analysis reveals a strong association between participation in the informal economy and the level of tax morale. Finding that higher tax morale (and thus lower participation in the informal economy) is strongly correlated at the country-level with greater levels of state intervention and at the individual-level with characteristics such as gender, age, education and employment status, the outcome is to confirm a structuralist political economy explanation and refute the modernization and neo-liberal explanations and remedies, as well as to uncover the importance of some policy solutions not considered until now, including older citizens mentoring of younger people, and improving women's participation in the labour force.

**Keywords:** informal economy, tax morale, modernization, political economy, European Union.

*Jel Classification:* H26; J46; K42; O17

## **INTRODUCTION**

To tackle the informal economy, the dominant approach for the past four decades has been viewed participants as rational economic actors who participate when the pay-off is greater than the expected cost of being caught and punished (Allingham and Sandmo 1972). However, the recognition that many do not participate in the informal economy even if the benefits outweigh the costs, has led to the emergence of a new approach (Alm et al. 2012; Kirchler 2007; Murphy 2008). This views participants in the informal

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economy as social actors who engage when their tax morale (i.e., motivation to pay taxes) is low (Cummings et al. 2009; Torgler 2007a, b). The consequent policy approach is to encourage greater voluntary commitment to compliant behaviour by raising the level of tax morale (Alm et al. 2012; Alm and Torgler 2011; Torgler 2012).

This paper advances the emergent social actor approach in three ways. First, and empirically, we report a Eurobarometer survey that reveals the strong positive association between participation in the informal economy and the level of tax morale at both the individual, population group and country levels, along with the individual- and country-level determinants of low tax morale. Secondly, we advance the theoretical basis of this social actor approach by conceptualising tax morale through the lens of institutional theory as measuring the gap that exists between the laws and regulations of formal institutions (here termed “state morale”) and the unwritten socially shared norms, values and beliefs of informal institutions (here termed “civic morale”), and as low when there is asymmetry between state morale and civic morale. Finally, two policy advances are made. On the one hand, we confirm the political economy thesis that higher tax morale (and thus lower participation in the informal economy) results from greater state intervention in the form of higher taxes and social expenditure. On the other hand, we innovatively display solutions so far unconsidered, including improving educational attainment, older people mentoring younger people, and improving women’s participation in the labour market as ways of increasing tax morale (and thus reducing participation in the informal economy).

To commence, therefore, section 1 reviews the literature on tax morale in order to formulate hypotheses in relation to the association between tax morale and participation in the informal economy, the variations in tax morale across groups and its country-level determinants. To test these hypotheses, section 2 then reports the data used, namely pooled Eurobarometer survey data for 27 member states of the European Union (EU27) for the years 2007 and 2013, and the analytical methods employed; a staged multilevel logistic regression model utilizing the hierarchical nature of the data (individuals within countries). Section 3 then reports the findings while section 4 discusses the theoretical and policy implications.

To define the informal economy, Castells and Portes (1989, 15) describe such activity as “a specific form of income generating production... unregulated by the institutions of society in a legal and social environment in which similar activities are regulated”. Although this defines the informal economy through the lens of both the formal (“legal”) and informal (“social”) institutions in a society, this definition does not recognise that the informal economy, even if unregulated by formal institutions, is regulated by the informal institutions, and that such activity can be “legitimate” from the viewpoint of informal institutions even if “illegal” from the viewpoint of formal institutions (Autio and Fu 2015; Williams and Horodnic 2016a, b). Here, therefore, and reflecting the consensus in the literature, the informal economy is defined as socially legitimate activity which is legal in all respects other than it is not declared to the authorities for tax, social security or labour law purposes (Williams 2006a, b, 2014a). If it is not legal and legitimate in all other respects, it is not part of the informal economy. Whilst the formal economy is legal (from the viewpoint of formal institutions) and legitimate (from the viewpoint of informal institutions), the informal economy is illegal but legitimate, unlike the criminal economy (e.g., forced labour) which is both illegal and illegitimate.

## 1. LITERATURE REVIEW AND HYPOTHESES

For the past four decades, the rational economic actor approach proposed by Allingham and Sandmo (1972) has been dominant when explaining and tackling the informal economy. This asserts that people participate in the informal economy when the pay-off from informal work is greater than the expected cost of being caught and punished. To tackle the informal economy, most governments therefore have focused on the cost side by increasing the actual and/or perceived level of punishments and likelihood of detection (e.g., Hasseldine and Li 1999; Williams 2014a). However, the evidence of the effectiveness of this approach is less than conclusive. Although some find that raising the sanctions and risks of detection reduces participation in the informal economy, at least for some income groups (Klepper and Nagin 1989; Varma and Doob 1998), others find that it increases participation in the informal economy, largely due to the breakdown of trust between the state and its citizens (Chang and Lai 2004; Kirchler et al. 2014). Indeed, the most telling rebuttal of the rational actor approach is that many do not engage in informal work even when the benefit/cost ratio suggests they should (Alm et al. 2012; Kirchler 2007; Murphy 2008; Murphy and Harris 2007).

To explain this, a “social actor” approach has emerged, which views participation in the informal economy as arising if tax morale (i.e., the intrinsic motivation to pay taxes) is low (Alm et al. 2012; Torgler 2007a, 2012). The resultant policy approach is to improve tax morale in order to elicit higher voluntary commitment to compliant behaviour (Alm and Torgler 2011; Torgler 2012). Viewing this tax morale approach through the lens of institutional theory (Baumol and Blinder 2008; North 1990), which views all societies as having formal institutions, which are laws and regulations that define the legal rules of the game, and informal institutions, which are the “socially shared rules, usually unwritten, that are created, communicated and enforced outside of officially sanctioned channels” (Helmke and Levitsky 2004, 727), tax morale can be seen to measure the gap between the formal institutions (“state morale”) and informal institutions (“civic morale”). When this gap is large, tax morale is low and participation in the informal economy is high. To evaluate this proposition, therefore, the following hypothesis can be evaluated:

*Tax morale hypothesis (H1):* the lower is the tax morale (i.e., the greater the gap between state morale and civic morale), the greater is the likelihood of participation in the informal economy.

### 1.1. Variations in tax morale across population groups

It has been increasingly recognised that not all population groups have the same level of tax morale. Firstly, women have been found to display a higher tax morale than men (Alm and Torgler 2011; Daude et al. 2013; Kastlunger et al. 2013). Secondly, tax morale has been argued to increase positively with age (Daude et al. 2013; Lago-Penas and Lago-Penas 2010). Thirdly, the more educated have been asserted to have a higher tax morale (Lago-Penas and Lago-Penas 2010; Torgler 2012), fourthly, the self-employed to have lower tax morale (Alm and Torgler 2011; Daude et al. 2013), and fifthly, that tax morale is higher in rural than urban areas (Torgler 2007b). To test these assertions in the context of the European Union, therefore, the following hypotheses can be evaluated:

*H2a:* Women are more likely to have higher tax morale than men.

*H2b:* Younger people are more likely to have lower tax morale than older people.

*H2c:* Workers with low levels of education are more likely to have lower tax morale than those with higher levels of education.

*H2d:* The self-employed have lower tax morale than employees or the unemployed.

*H2e:* Inhabitants of rural areas have higher tax morale than inhabitants of urban areas.

## 1.2. Cross-national variations in tax morale

In previous cross-national comparative analyses, a strong negative correlation has been identified between the level of tax morale and participation in the informal economy with Pearson  $r$  values between  $-0.46$  and  $-0.66$  (Alm and Torgler 2006; Torgler 2011). For example, Torgler (2011) finds that in post-socialist societies, a decrease of tax morale by one unit results in an increase in the informal economy of 20 percentage points.

To explain these cross-national variations in tax morale, “fishing expeditions” have been undertaken which randomly select various country-level conditions such as religiosity, social protection and GNP per capita. Here, a more structured approach is taken which draws upon the competing explanations for the cross-national variations in the size of the informal economy (Williams 2014a, b; Williams and Horodnic 2015a) to develop hypotheses to test regarding cross-national variations in tax morale.

Firstly, a “modernisation” thesis has argued that the informal economy is less prevalent with economic development and the modernisation of government (Geertz 1963; Lewis 1959). From this viewpoint, tax morale would thus be lower in less developed economies, measured in terms of GNP per capita, and countries in which there is a lack of modernisation of the state bureaucracy. To test this, the following hypothesis can be evaluated:

*Modernisation hypothesis (H3):* tax morale will be higher in more developed and modernised economies.

*H3a:* tax morale will be higher in wealthier economies.

*H3b:* tax morale will be higher in more modern/less corrupt state bureaucracies.

Secondly, neo-liberals have adopted a “state over-interference” thesis which argues that the informal economy results from a rational economic decision to voluntarily exit the formal economy due to high taxes and over-regulation which increases the cost, time and effort associated with working in the formal economy (e.g., De Soto 1989, 2001; London and Hart 2004; Nwabuzor 2005; Sauvy 1984). From this perspective, tax morale would be viewed as lower in countries with higher taxes and state interference in work and welfare systems and the consequent solution to pursue tax reductions and state interference. To evaluate this therefore, the following hypothesis can be evaluated:

*State over-interference hypothesis (H4):* tax morale will be higher in economies with lower state-interference.

*H4a:* tax morale will be higher in economies with lower tax rates.

*H4b:* tax morale will be higher in economies with lower levels of social protection expenditure.

*H4c:* tax morale will be higher in economies with lower levels of expenditure on labour market interventions to protect vulnerable groups

Third and finally, political economy theorists have adopted a converse “state under-intervention” thesis. This asserts that the informal economy is a product of inadequate levels of state intervention in work and welfare, which leaves workers less than fully protected and dependent on the informal economy as a survival strategy due to the absence of other means of support and livelihood (Davis 2006; Gallin 2001; ILO 2014; Likic-Brboric et al. 2013; Sassen 1997 2009; Slavnic 2010; Taiwo 2013). Consequently, tax morale would be here viewed as lower in economies with lower tax rates and levels of social protection. To evaluate this, the following hypothesis can be tested:

*State under-intervention hypothesis (H5):* tax morale will be higher in economies with higher tax rates and levels of social protection.

*H5a:* tax morale will be higher in economies with higher tax rates.

*H5b:* tax morale will be higher in societies with higher levels of social protection expenditure.

*H5c:* tax morale will be higher in economies with greater levels of expenditure on labour market interventions to protect vulnerable groups.

*H5d:* tax morale will be higher in countries with lower levels of severe material deprivation.

*H5e:* tax morale will be higher in more equal societies.

## **2. DATA, VARIABLES AND METHODOLOGY**

### **2.1. Data**

The data near enough universally employed when seeking to understand cross-national variations in tax morale is the World Values Survey and European Values Survey. In recent years, however, two papers have used special Eurobarometer No. 284 conducted in 2007 (Williams and Martinez 2014) and special Eurobarometer No. 402 conducted in 2013 (Williams and Horodnic 2016a). This paper analyses a pooled data set, which is built by combining these special Eurobarometer Surveys conducted in 2007 and 2013. In 2007, the Special Eurobarometer No.284 involved 26,659 face-to-face interviews over the 27 member states of the European Union (EU-27). In 2013, this survey was repeated and special Eurobarometer survey No. 402 included 27,563 face-to-face interviews across the 27 member states of the European Union (i.e., we here exclude Croatia from the analysis).

These surveys interviewed adults aged 15 years and older in the national language based on a multi-stage random (probability) sampling methodology, with the number of interviews varying from 500 in smaller countries to 1,500 in larger nations. The methodology ensures that on the issues of gender, age, region and locality size, each country as well as each level of sample is representative in proportion to its population size. The face-to-face interviews explored attitudes towards working in the informal economy, followed by questions on purchasing goods and services in the informal economy, and the supply of undeclared work. Here, we focus upon the issue of tax morale.

## 2.2. Variables

To construct the multi-item index of tax morale to be used as the dependent variable in our regression analysis, we use the five different questions from the Eurobarometer survey that measure the tax morale of respondents using a 10-point Likert scale for the following statements:

Now I would like to know how you assess various behaviours. For each of them, please tell me to what extent you find it acceptable or not. Please use the following scale: “1” means that you find it absolutely unacceptable and “10” means that you find it absolutely acceptable:

1. A private person is hired by a private household for work and she does not report the payment received in return to tax or social security institutions although it should be reported.
2. A firm is hired by a private household for work and it does not report the payment received in return to tax or social security institutions.
3. A firm is hired by another firm for work and it does not report its activity to tax or social security institutions.
4. A firm hires a private person and all or a part of the salary paid to her is not officially registered.
5. Someone evades taxes by not or only partially declaring income.

We then aggregate the responses to produce an overall index figure for each individual, giving equal weight to each of the five statements. Using such a multi-item index has some advantages compared with employing single item measures separately (Williams and Martinez 2014; Torgler 2012). Firstly, single item measures lack various aspects of a phenomenon, as it is not possible to learn about different aspects of a situation from a single question. Secondly, random errors in single questions are averaged out in multi-item indices, which make them more reliable measurements. Last but not the least, inter-related aspects of an issue are combined in a multi-item index through finding principal components or common factors that shapes them.

Thus, principal component analysis (PCA) is performed to obtain the multi-item index. The PCA resulted in only one component with an eigenvalue above one. Therefore, there was no need to use the rotation. This multi-item index explains 70 percent of the total variation in the data. Besides, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.8340, thus revealing that PCA is a useful method to follow in this case. Moreover, this component is rescaled so that it also varies between 0 and 10 and, the higher the value of the index, the lower is the level of tax morale. The mean value of the composite index is 1.58.

To analyse the hypotheses regarding the variations in the prevalence of tax morale across socio-demographic, socio-economic and spatial populations, the following individual-level (level-1) variables are analysed to test H1 and H2a-e respectively:

- *Supplied Informal Work*: This is a dummy variable which is equal to 1 if the respondent answered “yes” to the question “Apart from a regular employment, have you yourself carried out any undeclared paid activities in the last 12 months?” and, 0 otherwise.
- *Purchased Goods/Services in the Informal Economy*: This is a dummy variable with recorded value 1 for respondents who answered “yes” to the question “Have you in the last 12 months paid for any good or services of which you had a good

reason to assume that they included undeclared work (i.e. because there was no invoice or VAT receipt)?”, recorded value 0 otherwise.

- *Gender*: This is a dummy variable, which is equal to 1 if the respondent is male and 0 otherwise.
- *Age*: This is a continuous variable indicating the age of the respondents. The minimum age of people in the survey is 15.
- *Education*: This is a categorical variable recoded using the survey question about the age of completing full-time education. There are 5 categories: 1=no full-time education, 2=those who left full-time education aged 15 or under, 3= those who left aged between 16 and 19, 4= those who left aged 20+ and 5=still studying. The reference category is people with no full-time education.
- *Current Occupation*: A 8-category variable showing the current occupation of the respondents. Categories are as follows: 1=self-employed, 2=managers, 3=other white collars, 4=manual workers, 5= house person, 6= unemployed, 7=retired and 8=student.
- *Type of locality*: A categorical variable about the size of the residence. There are three size groups: 1=rural area, 2=middle sized area and 3= large residency area.
- *EU Regional Dummies*: EU-27 member states are classified under four EU Regions. Namely; Continental Europe (Belgium, Germany, France, Ireland, Luxembourg, The Netherlands, Austria and the United Kingdom), Eastern and Central Europe (Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia and Slovakia), Southern Europe (Cyprus, Greece, Spain, Italy, Malta and Portugal) and Nordic countries (Denmark, Finland and Sweden).

To evaluate hypotheses H3-5, we evaluate the association between cross-national variations in tax morale and the country-level variables deemed important in each theorisation. To do this, we use the same country-level variables as previous studies have used when evaluating the informal economy (Eurofound 2013; Vanderseypen et al. 2013; Williams 2013, 2015; Williams and Horodnic 2015a, b, c, 2016a, b, c). To evaluate the modernisation hypotheses H3a and H3b respectively, the respective indicators used are:

- *GDP per capita in PPS*: This index value is obtained from Eurostat both for 2007 and 2013 (Eurostat 2016a).
- *Government Effectiveness Index*: This index is also scaled from -2.5 (weak) to 2.5 (strong) and “Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies” (WGI 2016a).
- *Rule of Law Index*: This index “reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence” and it is scaled from -2.5 (weak government performance) to 2.5 (strong government performance) (WGI 2016b).
- *Corruption Perceptions Index*: This is the composite index of public sector corruption in a country estimated by Transparency International. Each country has a score between 0 (high levels of corruption perception) to 100 (low levels of corruption perception) (Transparency International 2016).



- *Control of Corruption Index*: This index is scaled from -2.5 (weak) to 2.5 (strong) and “reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests” (WGI 2016b).

To evaluate the “state over-interference” hypotheses (H4) meanwhile, the two indicators used to test the tax rate hypothesis (H4a), and its converse hypothesis (H5a), are:

- *Implicit tax rate on labour*: This is the ratio of taxes and social security contributions on employed labour income to total compensation of employees and it can be seen as a summary measure that approximates an average effective tax burden on labour income in the economy (Eurostat 2016b). The data is obtained for 2007 and 2013.
- *Current Taxes on Income, Wealth, etc. (% of GDP)*: This measures “current taxes on income, wealth, etc. cover all compulsory, unrequited payments, in cash or in kind, levied periodically by general government and by the rest of the world on the income and wealth of institutional units, and some periodic taxes which are assessed neither on that income nor that wealth” (Eurostat 2016c).

To evaluate the state over-interference in work and welfare hypotheses (H4b and H4c) and the opposite state under-intervention in work and welfare hypotheses (H5b and H5c), meanwhile, we analyse:

- *LMP Expenditure (% of GDP)*: This is a measure for the total expenditure on labour market policy interventions as a percentage of GDP. LMP expenditures “aimed at reaching its efficient functioning and correcting disequilibria and which can be distinguished from other general employment policy interventions in that they act selectively to favour particular groups in the labour market” (Eurostat 2016d).
- *Social Protection Expenditure per capita*: This is a measure for the total expenditure on social protection per head of population. Social protection can be defined as “the coverage of precisely defined risks and needs associated with sickness/healthcare, disability, old age, unemployment, housing etc.” (Eurostat 2016g).

To evaluate the state under-intervention theses regarding deprivation and inequality respectively (H5d, H5e), meanwhile, we analyse:

- *Severely Materially Deprived People (as % of total population)*: This variable measures the percentage of total population in each member state who are unable to pay for at least four of the deprivation items out of nine (Eurostat 2016e).
- *Gini Coefficient*: This is the gini coefficient of equivalised disposable income, which scales from 0 to 100. (Eurostat 2016f) This variable is used to measure the income inequality in a country.

### 2.3. Methodology

To evaluate the determinants of tax morale across population groups (hypotheses H2a, b, c, d, e), we conduct an OLS regression analysis across the individual-level variables. The hypotheses (H3-5) investigating the country-level variables associated with higher levels of tax morale are tested by staged GLS regression analysis. Dependent variables in this second-stage are the country dummies separately for 2007 and 2013 that are

obtained from the first stage OLS regressions. This utilizes the hierarchical nature of the data (individuals within countries) by firstly examining the individual-level variables and then integrating each country-level independent variable separately to analyse their association with a higher tax morale level.

The reason this latter approach is adopted is because the obstacle confronted in many multi-country datasets such as Eurobarometer surveys is that there are large numbers of respondents (level-1 units) from a small number of countries (level-2 units). In this analysis, for example, we have information on over 50,000 individuals from 27 EU member states. There exists rigorous evidence that coefficients of country-level variables either in regression-based analysis of multi-country data, or in multilevel modelling methods, is unreliable if there are small numbers of level-2 units. As an alternative way forward therefore, a two-step approach is used in estimations using survey data with a small number of countries. According to this two-step approach, the first-step is an OLS regression of a level-1 equation, which also includes fixed country intercepts. Estimations of those country-level intercepts represent the total effect of a country on the latent variable of the regression model in step 1. In step 2, estimates of country intercepts from level-1 estimation are used as dependent variables, which are regressed on level-2 explanatory variables that are common to members of each group (country, in our case). A second-stage OLS estimator for the coefficients of country dummies will be asymptotically unbiased and normally distributed.

Thus, following the two-step procedure suggested in the literature, we first estimate an OLS model with the inclusion of individual-level variables that are associated with the effects of individual characteristics and country-level fixed effects. In the second step, we use the country-level fixed effect estimates from the first step as a dependent variable, which will be regressed, on country-level variables (level-2 predictors) in order to quantify contextual effects. The findings of the empirical analysis are provided in the following section.

### 3. FINDINGS

Table 1 presents the first-stage (individual-level) results of the empirical analysis. The first important finding is that both the supply of work in the informal economy, and the purchase of goods and services from the informal economy, are associated positively with the multi-item tax morale index; the poorer the tax morale, the higher is the likelihood of participation in the informal economy on both the supply-and demand-side (confirming H1).

Examining the variations in tax morale across population groups, Table 1 confirms H2a that women have higher tax morale than men, and also H2b that older populations have higher tax morale than younger populations. We also tested whether the positive association of age with tax morale has a linear relationship or not. We found a nonlinear relationship between age and tax morale and, the positive effect of age on tax morale decreases through time. However, no significant relationship was identified between education level and tax morale in any of the models presented in Table 1, meaning that H2c is not confirmed. Turning to the influence of employment status, the finding is that self-employed respondents have the lowest tax morale among the groups defined in Table 1. Thus, H2d is confirmed. It is also revealed that inhabitants living in rural areas

have higher tax morale than those living in middle-sized and large urban areas (confirming H2e). Model 3 in Table 1 adds in regional dummies to evaluate whether there are significant differences between European regions in terms of their tax morale. The finding is that significant variations are identified, with East-Central European countries having the poorest tax morale. Nordic countries, meanwhile, have the highest levels of tax morale. We also included a time dummy in the regression models, not least to understand if the current economic crisis has had an impact on the levels of tax morale after controlling for other covariates. The year dummy coefficient is negative in all the models, which shows that the level of tax morale in EU27 is affected positively after the recent economic crisis. In order to understand the reasons behind this finding, we need to also check the results of the second-stage analysis, which presents the country-level determinants of tax morale.

**Table 1.** Individual-level (Level-1) predictors of tax morale

	Model 1	Model 2	Model 3	Model 4
<i>Socio-demographic Factors:</i>				
Gender (1=Male, 0= Female)	.199***	.198***	.189***	.128***
Age	-.015***	-.015***	-.016***	-.013***
Education Level (RC: No full-time education)				
- before 15	.121	.123	-.041	.085
- 16–19	.051	.058	-.096	.018
- above 20	.020	.033	-.104	-.025
- still studying	-.084	-.068	-.237	-.019
<i>Socio-economic Factors:</i>				
Current Occupation (RC: Self-employed)				
- Manual Workers	-.241***	-.234***	-.254***	-.173***
- Other White Collars	-.186***	-.179***	-.153***	-.097**
- Manual Workers	-.075**	-.073*	-.071*	.002
- House person	-.012	-.011	-.084*	.058
- Unemployed	.004	.008	-.015	.038
- Retired	-.136***	-.131***	-.157***	-.034
<i>Spatial Factors:</i>				
Type of locality (RC: Rural Area)				
- Middle-sized urban		-.063***	-.059***	-.060***
- Large urban		-.071***	-.103***	-.073***
EU Region Dummies (RC: Western Europe)				
- East-Central Europe			.487***	
- Southern Europe			-.282***	
- Nordic Countries			-.439***	
<i>Participation in Informal Economy:</i>				
Supply of informal work				1.151***
Demand for informal goods & services				.625***
Country FE	YES	YES	NO	YES
Year FE (1=2013, 0=2007)	-.053***	-.052***	-.048***	-.040**
R <sup>2</sup>	0.1115	0.1118	0.0685	0.1530
Number of Observations	41,689	41,689	41,689	41,689

Note: \*\*\* p<0.01, \*\*p<0.05, \*p<0.1

Williams and Martinez (2014) analyse the 2007 special Eurobarometer survey again employing a multilevel modelling approach and conclude that economic development and governance quality together with greater government intervention in work and welfare are important in determining the level of tax morale. Meanwhile, the analysis of

the 2013 special Eurobarometer survey by Williams and Horodnic (2016a) with a multilevel model approach did not find any significant effect of GDP, governance quality and the implicit tax on labour (ITR) on the level of tax morale. Instead, they reveal only a statistically positive and significant relationship between tax morale and current taxes on income and social protection expenditure at the country-level. Thus, their study refutes the modernization and neo-liberal hypotheses to explain tax morale. The difference in the outcomes of these two papers could be due to two main reasons. First, they use a multilevel approach, which does not provide reliable country-level estimates if the number of country-level variables is small. Second, the timing of the data can make a difference as the 2007 survey was completed before the current economic crisis. Therefore, the current study merges both 2007 and 2013 Eurobarometer to obtain more generalized results especially at the country-level.

As Table 2 reveals, the modernization hypothesis is confirmed that a higher level of GDP per capita in PPS is significantly associated with higher tax morale (confirming H3a). So too is it the case that the higher the level of government effectiveness index, rule of law index, and control of corruption index, and the lower the perceptions of public sector corruption, the higher the level of tax morale (confirming H3b). Turning to the state over-interference and state under-intervention theses, meanwhile, Table 2 reveals evidence to support the state under-intervention hypothesis and little or no evidence to support the state over-interference hypothesis. The second stage GLS results show how higher tax morale is positively associated with higher tax rates (confirming H5a), higher levels of social protection expenditure (confirming H5b), higher levels of labour market expenditure to protect vulnerable groups (confirming H5c), lower levels of severe material deprivation (confirming H5d) and more equal societies (confirming H5e). Thus, this study confirms both the modernization and state under-intervention hypotheses and refutes the state over-interference hypothesis for the EU–27.

**Table 2.** Country-Level (Level-2) predictors of tax morale

Variable	Modernisation hypothesis	State over-interference vs state under-intervention hypothesis
Log (GDP per capita in PPS)	-.521**	
Government Effectiveness	-.335**	
Rule of Law Index	-.317**	
Log (Corruption Perceptions Index)	-.611*	
Control of Corruption Index	-.250**	
Implicit Tax Rate on Labour		.664
Current Taxes on income, wealth, etc		-.517**
LMP Expenditure		-.231**
Log (Severe Material Deprivation)		.167*
Gini Coefficient		.321
Log (Social Protection Expenditure per capita)		-.271***

*Notes:* Country-level coefficients are estimated through GLS models using the results of Model 4 in Table 1 in a two-stage procedure. Each independent variable is employed in separate regression models due to significant correlations between country-level variables.

## CONCLUSION

Reporting the results of pooled data from two special Eurobarometer surveys on the informal economy, multilevel logistic regression analysis has revealed not only a strong association between the level of tax morale and participation in the informal economy, but also how variations in the level of tax morale are explained both by country-level structural conditions as well as individual-level characteristics such as gender, age, and employment status.

This paper has therefore made three contributions to advancing theory on tax morale. Firstly, the significant relationship between tax morale and participation in the informal economy in the European Union strongly suggests that institutional theory may represent a useful conceptual lens through which to explain and tackle the informal economy. Denoting tax morale as a measurement of the gap between state and civic morale, participation in the informal economy can be viewed as resulting from the asymmetry between the laws and regulations of formal institutions and the norms, values and beliefs of citizens that constitute the informal institutions (see Williams and Horodnic 2016b, c). Secondly, and to further advance understanding of the informal economy from an institutional theory perspective, the finding of this multi-level analysis (individuals within countries) is that variations in tax morale (and thus the likelihood of participating in the informal economy) cannot be explained in terms of high taxes and too much government intervention in social protection (the state over-interference or neo-liberal theory). However, lower tax morale (and thus participation in the informal economy) can be explained in terms of the level of economic development and quality of governance (modernization theory) and state under-intervention in the form of lower tax rates, lower levels of social protection and active labour market expenditure, and as resulting from higher levels of severe material deprivation and more unequal societies. Third and finally, this paper has revealed how under-development and state under-intervention has different impacts on the tax morale (and thus the propensity to engage in the informal economy) of different populations. Men, younger people, the self-employed and those living in urban areas are more likely to reject state morale and to possess lower tax morale (and thus a greater propensity to participate in the informal economy). Whether similar findings would prevail in other global regions when analysing the varying levels of tax morale could be investigated in future research.

Turning to the policy implications, it is revealed that the conventional rational economic actor approach of increasing penalties and the risks of detection (as well as benefits of formal work) could be usefully complemented by a social actor approach that pursues initiatives to improve tax morale. To pursue this, it is here shown to be necessary to tackle the formal institutional failings at the country-level that lead to an asymmetry between state morale and civic morale, namely by pursuing economic development, higher quality governance and less corruption, higher tax rates, social protection and active labour market expenditure, and lower levels of severe material deprivation and more equal societies. Furthermore, the finding that individual-level characteristics are important, such as gender, age, and employment status, intimates that tackling undeclared work additionally requires a range of initiatives so far seldom considered. These include the introduction of mentoring schemes to make greater use of older citizens as local role models and mentors for younger people, and greater emphasis on improving women's participation in the labour force. It also suggests the populations that

need to be targeted when seeking to change norms, values and beliefs regarding compliance, such as when educating groups about the value of taxation by providing information on the public goods and services paid for by their taxes and advertising campaigns about the benefits of the formal economy (Saeed and Shah 2011).

In sum, if this paper facilitates a theoretical and empirical shift in future studies towards evaluating and explaining the informal economy in terms of the level of tax morale, and this is conceptualised through the lens of institutional theory, then one of the major objectives will have been achieved. If this then results in greater emphasis on a social actor policy approach when seeking to tackle the informal economy, then its wider intention will have been achieved.

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