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EXPLAINING THE PREVALENCE OF THE INFORMAL ECONOMY IN THE BALTICS: AN INSTITUTIONAL ASYMMETRY PERSPECTIVE

Colin C Williams
University of Sheffield

and

Ioana A Horodnic
Romanian Academy

Colin C Williams
Professor of Public Policy
Management School
University of Sheffield
Sheffield S10 1FL
United Kingdom
Tel: +44 114 2223476
E-mail: C.C.Williams@sheffield.ac.uk

Dr. Ioana Alexandra Horodnic
"Gh. Zane" Institute for Economic and Social Research
Romanian Academy Iasi Branch
Iasi
Romania

Colin C Williams is Professor of Public Policy in the Management School at the University of Sheffield in the UK. His recent books include Confronting the Shadow Economy: evaluating tax compliance and behaviour policies (2014, Edward Elgar) and The Role of Informal Economies in the Post-Soviet World: the end of transition? (2013, Routledge).

Dr Ioana Alexandra Horodnic is a Post-doctoral Research Fellow at the Romanian Academy. Her current research interests include issues related to labour economics, the informal economy and academic performance.

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Abstract

Reporting a 2013 Eurobarometer survey of participation in the informal economy across eight Baltic countries, this paper tentatively explains the informal economy from an institutional perspective as associated with the asymmetry between the codified laws and regulations of the formal institutions (state morality) and the norms, values and beliefs of citizens (civic morality). Identifying that this non-alignment of civic morality with the formal rules is more acute when there is greater poverty and inequality, less effective redistribution and lower levels of state intervention in the labour market and welfare, the implications for theorising and tackling the informal economy are then discussed.

Keywords: informal sector; tax morale; social contract; institutional analysis; Baltics.

1. INTRODUCTION

In recent years, numerous studies have revealed that the informal economy is not some minor peripheral feature but a large and growing sphere in the Baltic states (Kukk and Staehr, 2014; Meriküll and Staehr, 2010; Putniņš and Sauka, 2014a,b). As Putniņš and Sauka (2014b) reveal, the informal economy is the equivalent of 23.8% of GDP in Latvia, 15.7% in Estonia and 15.2% in Lithuania. Tackling the informal economy therefore, is essential because of not only the public revenue losses but also the resulting lack of control over the quality of working conditions, weakened trade union and collective bargaining and unfair competition for legitimate businesses (Andrews et al., 2011; ILO, 2014; OECD, 2014; TUC, 2008; Williams, 2014a).

This paper advances knowledge by proposing tentatively a new way of explaining the informal economy that results in a very different approach towards tackling this sphere than has so far been adopted. Drawing inspiration from institutional theory, all societies are viewed as possessing not only formal institutions (i.e., codified laws and regulations) but also informal institutions which are socially shared unwritten rules that express the wider norms, values and beliefs of the population (Baumol and Blinder, 2008; Helmke and Levitsky, 2004; North, 1990). The proposition in this paper is that the greater is the non-alignment of these formal and informal institutions, the greater is the likelihood of participation in the informal economy. When the norms, values and beliefs of the informal institutions (i.e., here termed 'civic morality') do not align with the codified laws and regulations of the formal institutions (i.e., here termed 'state morality'), such as due to a lack of trust in government, the likelihood of participating in the informal economy will be higher. The aim of this paper is to evaluate the validity of this institutional asymmetry thesis and, through an identification of the reasons for this asymmetry, to formulate a new policy approach for tackling the informal economy.

In the next section therefore, the previous explanations for the prevalence of the informal economy will be briefly reviewed along with how institutional theory provides a potentially new lens for doing so. To evaluate the proposition that the prevalence of the informal economy is associated with the asymmetry between 'state morality' and 'civic morality' and the reasons for this, the third section then introduces a 2013 survey involving 8,548 face-to-face interviews in eight Baltic nations (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden) followed in the fourth section by the results of an ordered logistic regression analysis evaluating the association between participation in the informal economy and the degree of institutional asymmetry. The fifth and final section then tentatively discusses some potential theoretical and policy implications.

Reflecting the widespread consensus, the informal economy is here defined as paid activities not declared to the authorities for tax, social security and/or labour law purposes when they should be but which are otherwise legal in all respects (European Commission, 2007; OECD, 2012; Schneider, 2008; Schneider and Williams, 2013; Williams et al., 2012). The only illegal aspect about the informal economy therefore, is that these paid activities are not declared for tax, social security and/or labour law purposes when they should be. If paid activities differ in other respects to formal work, which is paid work declared to the authorities for tax, social security and/or labour law purposes, then they are not here defined as part of the informal economy. For example, if paid activities involve the exchange of illegal goods and/or services (e.g., illegal drugs), then these activities are not part of the informal economy but rather the wider 'criminal' economy (Williams, 2014a). As with all definitions, nevertheless, there exist fuzzy edges, such as when payment is in the form of gifts or reciprocal labour instead of money. In this paper however, only paid activities are included in the definition of the informal economy.

2. EXPLAINING THE INFORMAL ECONOMY: AN INSTITUTIONAL PERSPECTIVE

Numerous studies have revealed how the prevalence of the informal economy varies not only cross-nationally (ILO, 2012; Schneider and Williams, 2013) but also locally and regionally (Kesteloot and Meert, 1999) and by employment status (Slavnic, 2010; Taiwo, 2013), age (Pedersen, 2003), gender (ILO, 2013) and income level (Barbour and Llanes, 2013; Williams, 2009). The outcome has been a more contextualised understanding which recognises how the informal economy can be large and growing in some populations, but smaller and declining in others (Pfau-Effinger, 2009; Williams and Horodnic, 2015).

To explain the varying prevalence of the informal economy, and as Williams (2014b,c) highlights, three main competing explanations exist. 'Modernisation' theory explains the prevalence of the informal economy in terms of the lack of economic development and modernisation of governance, 'neo-liberal' theory explains the informal economy as resulting from high taxes and over-burdensome regulations, and 'political economy' theory conversely explains the informal economy as resulting from inadequate state intervention and a lack of safeguards for citizens. All these theoretical approaches however, fail to explain why some individuals and population groups facing the same country-level structural conditions participate in the informal economy and others do not; put another way, agency is missing from such accounts.

Here therefore, a new way of explaining and tackling the informal economy is proposed that draws inspiration from institutional theory (Baumol and Blinder, 2008; Helmke and Levitsky, 2004; North, 1990). Viewing institutions as the cognitive, normative and regulative structures that give meaning to social behaviour (Scott, 1995), all societies are viewed as having codified regulations and laws (i.e., formal institutions) that constitute 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). Viewed through this institutional lens, the proposition in this paper is that when formal and informal institutions are in symmetry, and consequently state and civic morality are aligned, then the informal economy will not prevail. However, when civic morality is not aligned with state morality, such as when there is a lack of trust in government, then there will be a greater prevalence of the informal economy.

To evaluate the validity of this institutional asymmetry thesis, a way of measuring institutional asymmetry is required. When studying the informal economy, this can be measured using 'tax morale', which refers to the population's morality regarding engagement

in the informal economy (Alm and Torgler, 2006; Cannari and D'Alessio, 2007; McKerchar et al, 2013). Using this, the following hypothesis can be tested:

> Institutional asymmetry hypothesis (H1): the prevalence of the informal economy will be greater in populations with lower levels of tax morale.

If valid, it is important to understand what determines the lack of alignment of state morality and civic morality. Until now, the tax morale literature has conducted various exploratory analyses. On the one hand, studies of a range of socio-demographic and socio-economic variables have revealed that tax morale is lower among men, single people, the upper classes, the unemployed and self-employed, and increases with age, religiosity and income but is negatively related to education level (Alm and Torgler, 2006; Cannari and D'Alessio, 2007; Torgler and Schneider, 2007).

On the other hand, exploratory analyses of a range of country-level variables have revealed that national pride increases tax morale (Martinez-Vazquez and Torgler, 2009), as do satisfaction with public services (Russo, 2013) and trust in government and the judiciary (Daude et al. 2013; Giachi, 2014; Martinez-Vazquez and Torgler, 2009), lower levels of perceived corruption (Dong et al., 2013), trust in others to obey the law (Giachi, 2014), higher tax rates (Lago-Peñas and Lago-Peñas, 2010) and greater social security expenditure (Kanniainen and Pääkkönen, 2009).

In this paper however, a more structured approach is adopted. Here, we select country-level variables to test the three existing theories explaining the varying prevalence of the informal economy. The intention however is not to test these theories as free-standing explanations of the informal economy but rather, to identify the structural conditions that lead to lower institutional asymmetry.

As Williams (2014b,c) highlights, previous explanations of the informal economy can be grouped into three major theories. Firstly, 'modernisation' theory argues that the informal economy becomes less prevalent with economic development and the modernisation of government (Geertz, 1963; Lewis, 1959). Applying this to understanding tax morale, this perspective would thus view the degree of institutional asymmetry as greater in less developed economies, measured in terms of GNP per capita, and societies in which there is a lack of modernisation of government. To test this, the following hypothesis can be evaluated:

> Modernity hypothesis (H2): the degree of institutional asymmetry will be greater in poorer economies with unmodernised state bureaucracies.

Secondly, 'neo-liberal' theory claims that the informal economy results from high taxes and state interference and thus that reducing taxes and the level of state interference in work and welfare is the way forward (De Soto, 1989; 2001; London and Hart, 2004; Nwabuzor, 2005; Schneider and Williams, 2013). Viewed through this lens, the degree of institutional asymmetry will be greater in those nations with higher taxes and levels of state interference in work and welfare systems. As such, the following hypothesis can be evaluated:

> Neo-liberal hypothesis (H3): the degree of institutional asymmetry will be greater in economies with higher tax rates and levels of state interference.

Third and finally, 'political economy' theory, in stark contrast to neo-liberal theory, claims that the informal economy directly results from inadequate levels of state intervention in work and welfare arrangements, which leaves workers less than fully safeguarded and thus dependent on the informal economy as a survival strategy in the absence of other means of

livelihood and support (Davis, 2006; Gallin, 2001; ILO, 2014; Slavnic, 2010; Taiwo, 2013). As such, the informal economy is to be tackled by increasing expenditure on labour market interventions to protect vulnerable groups and increasing social protection expenditure. From this perspective therefore, the degree of institutional asymmetry will be higher in countries with relatively low levels of such state interventions. The following hypothesis can be therefore evaluated:

> Political economy hypothesis (H4): the degree of institutional asymmetry is greater in more equal economies with lower tax rates, levels of social protection and public sector intervention in labour markets which safeguard citizens from poverty.

Until now, evaluations of these competing theories have simply used bivariate correlations (European Commission, 2013; Eurofound, 2013; Williams, 2014b,c,d). These reveal support for the modernisation and political economy theories but little or no support for neo-liberal theory. None have evaluated whether these bivariate associations remain significant when other variables are introduced and held constant, or whether the informal economy is associated with the degree of institutional asymmetry. Here, therefore, these gaps are filled.

3. METHODOLOGY

To analyse this institutional asymmetry thesis and what determines the level of institutional asymmetry, data is reported from special Eurobarometer survey no. 402, which involved 8,548 face-to-face interviews conducted in 2013 in eight Baltic nations (Latvia, Lithuania, Poland, Estonia, Germany, Denmark, Finland and Sweden). In all eight Baltic countries, a multi-stage random (probability) sampling methodology was employed. This ensured that for each country, the sample was representative of the population in terms of gender, age, region

and locality size. For univariate analysis therefore, we employ the sample weighting scheme as recommended in both the wider literature (Solon et al., 2013; Winship and Radbill, 1994) and the Eurobarometer methodology, to obtain meaningful descriptive results. For the multivariate analysis however, a debate exists over whether to use a weighting scheme. Reflecting the dominant viewpoint, the decision has been taken not to do so (Pfefferman, 1994; Sharon and Liu, 1994; Solon et al., 2013; Winship and Radbill, 1994).

The face-to-face interview schedule firstly asked attitudinal questions regarding participants' views on the acceptability of engaging in the informal economy, followed by questions on whether participants purchased goods and services from the informal economy and participated in informal work. In this paper, we focus upon the attitudinal questions to examine the level of tax morale and thus the degree of institutional asymmetry. To do this, we analyse participants' responses to six questions that rate the acceptability of various types of informal work on a 10-point Likert scale (where 1 means absolutely unacceptable and 10 means absolutely acceptable), namely:

(1) an individual is hired by a household for work and s/he does not declare the payment received to the tax or social security authorities even though it should be declared;

(2) a firm is hired by a household for work and it does not declare the payment received to the tax or social security authorities;

(3) a firm is hired by another firm for work and it does not declare its activities to the tax or social security authorities;

(4) a firm hires an individual and all or a part of the wages paid to him\ her are not officially declared and

(5) someone receives welfare payments without entitlement;

(6) someone evades taxes by not declaring or only partially declaring their income.

Collating the responses to these six questions, an aggregate 'tax morale index' is constructed for each individual, population group and country. Using the 10-point Likert scale format, the higher is the index value the greater is the degree of institutional asymmetry and thus the lower is the tax morale.

To analyse the hypotheses therefore, the dependent variable is the degree of institutional asymmetry, measured using this tax morale index. As the dependent variable is a 10-point Likert scale index, we employ ordered logistic regressions. To analyse H1, the variable used measuring participation in the informal economy is:

- Participaton in the informal economy: a dummy variable with recorded value 1 for persons who answered "yes" to the question 'Have you yourself carried out any undeclared paid activities in the last 12 months?' and recorded value 0 otherwise.

To both analyse tax morale across population groups, the socio-demographic, socio-economic and spatial variables identified above as important in previous studies of tax morale are analysed, namely:

- Gender: a dummy variable with value 1 for men and 0 for women.
- Age: a numerical variable for the exact age of the respondent.
- Level in society: a 10-point Likert scale variable for the respondent perception regarding the level in society to which it belongs, coded from 1(the lowest level in society) to 10 (the highest level in society).
- Difficulties paying bills: a dummy variable for the respondent difficulties in paying bills with value 1 for having difficulties and value 0 for not having difficulties in paying bills.
- Employment: a dummy variable with value 1 for employed respondents and 0 for unemployed respondents.

- Area respondent lives: a categorical variable for the area where the respondent lives with value 1 for rural area or village, value 2 for small or middle sized town, and value 3 for large town.
- Country: a categorical variable for the country where the respondent lives with value 1 for Germany, value 2 for Denmark, value 3 for Finland, value 4 for Sweden, value 5 for Estonia, value 6 for Latvia, value 7 for Lithuania, and value 8 for Poland.

Meanwhile, to analyse hypotheses H2-4 regarding the country-level determinants of tax morale, various structural conditions are analysed, whilst holding constant the above individual-level characteristics. To evaluate the modernisation hypothesis (H2), the indicators used are:

- GDP per capita in purchasing power standards (Eurostat, 2014a),
- European Quality of Government Index – this includes both perceptions and experiences with public sector corruption, along with the extent to which citizens believe various public sector services are impartially allocated and of good quality. The index is standardised with a mean of zero, with higher scores marking a higher quality of government (Charron et al., 2014).
- Employment participation rate - calculated by dividing the number of persons aged 15 to 64 in employment by the total population of the same age group (Eurostat, 2014b).

To evaluate the tax tenet of the neo-liberal hypothesis (H3), the indicators previously employed when evaluating this perspective in relation to the informal economy (European Commission, 2013; Williams, 2014a,b,c,d) are used, namely the:

- Implicit tax rate (ITR) on labour, which approximates to the average effective tax burden on labour, and is the sum of all direct and indirect taxes and employees' and employers' social contributions levied on employed labour income divided by the total compensation of employees (Eurostat, 2014c).

- Current taxes on income, wealth, etc, which covers 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 assessed neither on income nor wealth (Eurostat 2014d).

To evaluate the contrasting views on the influence of state intervention of the neo-liberal (H3) and political economy (H4) hypotheses meanwhile, the indicators analysed, akin to previous studies (European Commission, 2013; Eurofound, 2013; Williams, 2014a,b,c,d), are:

- The level of income inequality, measured using the income quintile share ratio S80/S20, which is the ratio of total income received by the 20% of the population with the highest income (the top quintile) to that received by the 20% of the population with the lowest income (the bottom quintile) (Eurostat, 2014e);
- The level of severe material deprivation, measured by the percentage of the population unable to afford at least four items on a list of nine items considered by most people to be desirable or even necessary to lead an adequate life (Eurostat 2014f);
- Public expenditure on labour market interventions aimed at correcting disequilibria. This covers all public interventions in the labour market aimed at reaching its efficient functioning and correcting disequilibria which explicitly target groups with difficulties in the labour market, namely: the unemployed; those employed but at risk of involuntary job loss; and people who are currently inactive in the labour market but would like to work (Eurostat 2014g);
- Social protection expenditure contain: social benefits, which consist of transfers, in cash or in kind, to households and individuals to relieve them of the burden of a defined set of risks or needs; administration costs, which represent the costs charged to the scheme for its management and administration; other expenditure, which consists of miscellaneous

expenditure by social protection schemes (payment of property income and other). It is calculated in current prices as percentage of GDP (Eurostat, 2014h); and

- The impact of social transfers, which is a computed indicator based on the formula, 100*(B-A)/B, where B=the proportion at-risk of poverty before social transfers excluding pensions (which is the share of people having an equivalised disposable income before social transfers that is below the at-risk-of-poverty threshold calculated after social transfers), and A= the proportion at risk-of-poverty (which is the share of people with an equivalised disposable income (after social transfers) below the at-risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income after social transfers) (European Commission, 2013).

To evaluate the institutional asymmetry hypothesis (H1), and given the nonparametric nature of the data, firstly, a two-sample Wilcoxon rank-sum (Mann-Whitney) test evaluates whether the median tax morale of participants in the informal economy significantly differs to the median score of those not participating, whilst secondly, a Spearman's bivariate correlation is evaluates whether a statistically significant relationship exists between cross-national variations in tax morale and participation in the informal economy. To evaluate whether H1 remains valid when a range of individual- and country-level variables are introduced, an ordered logistic regression analysis is then provided.

To evaluate the three hypotheses (H2-4) investigating the country-level determinants of tax morale meanwhile, and given the significant correlation between these country-level structural conditions, an ordered logistic regression analysis is employed, adding each structural condition in turn to the individual-level variables to evaluate whether they are significantly associated with the degree of institutional asymmetry.

4. FINDINGS

Table 1 reports the level of tax morale and prevalence of the informal economy across various population groups in all eight Baltic countries surveyed (Latvia, Lithuania, Poland, Estonia, Germany, Denmark, Finland, Sweden). This displays that men, younger age groups, those who self-classify themselves as in the lower levels of society, those having difficulties paying the household bills, the employed and those living in rural areas have a lower tax morale. The same trends are identified when examining participation in the informal economy. To test whether those with lower tax morale are also more likely to participate in the informal economy, a Wilcoxon Rank Sum test reveals that this relationship is statistically significant. Those participating in the informal economy have a median tax morale index score of 4 compared with a score of 2 for those not participating in the informal economy (where 1=totally unacceptable and 10=totally acceptable across six tax non-compliance behaviours).

INSERT TABLE 1 HERE

Table 1 also reveals the cross-national variations. The level of tax morale is lowest in the post-communist societies of Latvia, Lithuania, Poland and Estonia, whilst civic morality is better aligned with state morality in the western societies of Sweden, Finland, Denmark and Germany. To test whether participation in the informal economy is greater in those countries with lower levels of tax morale, a Spearman's bivariate analysis reveals a statistically significant association ($p<0.001$***).

To determine whether this association remains significant when other characteristics are taken into account and held constant, Table 2 reports the results of an ordered logistic regression analysis. Model 1 examines whether this association remains significant when purely individual-level characteristics are added, and models 2-11 when various

country-level variables are further added. The first row in models 1-11 reveal that the level tax morale remains strongly associated with the prevalence of the informal economy across all models, whether individual-level characteristics alone are analysed, or various country-level structural conditions are further added. As tax morale improves, the prevalence of the informal economy significantly declines. This positively confirms the institutional asymmetry hypothesis (H1).

INSERT TABLE 2 ABOUT HERE

Model 1 also identifies that when other factors are held constant, men have lower tax morale than women and tax morale decreases with age and with a higher position in society. Strong evidence also exists that those having difficulties paying their household bills and those living in urban areas have lower tax morale.

Models 2-11 meanwhile, test hypotheses H2-4 regarding the country-level determinants of tax morale. Given that partial correlations reveal that these country-level variables are strongly correlated with each other, each is here analysed in separate models. Starting with the modernity hypothesis (H2), models 2, 3 and 4 provide strong evidence that tax morale improves with higher levels of GDP per capita, higher qualities of government and higher employment participation rates. This positively confirms the modernisation thesis.

Models 5 and 6 meanwhile, reveal a significant relationship between tax morale and taxation. However, the direction of the association is in the opposite direction to that suggested by neo-liberal theory. Tax morale improves as the tax rates increases. This therefore tentatively negatively confirms the neo-liberal hypothesis (H4) and positively confirms the political economy hypothesis (H4). Caution however, needs to be exercised in terms of not reading into this a cause-effect relationship. This cannot be simply interpreted as meaning that

higher tax morale is a consequence of higher tax rates. The taxation level could also be a consequence of tax morale, exemplified by governments in post-communist societies being unable to raise taxation levels due to the low tax morale of the population. Models 7 and 8 furthermore, provide strong evidence that institutional asymmetry is lower in countries with lower levels of severe material deprivation and lower income inequalities, and models 9, 10 and 11 strong evidence that tax morale improves with higher levels of public expenditure on labour market interventions, higher levels of social protection expenditure and more effective redistribution via social transfers, providing further positive confirmation for the political hypothesis (H4).

5. DISCUSSION AND CONCLUSIONS

Drawing upon institutional theory, this paper has proposed a new way of explaining and tackling the informal economy. Evaluating its validity in the context of eight Baltic countries, the above analysis reveals that when the codified laws and regulations of formal institutions (state morality) are not aligned with the values, norms and beliefs of informal institutions (civic morality), participation in the informal economy occurs. The greater is the level of institutional asymmetry, the greater is the prevalence of the informal economy.

To reduce the prevalence of the informal economy therefore, what is required is a policy shift away from the current approach which seeks to detect and punish those operating in the informal economy and towards an approach that seeks to reduce this institutional asymmetry. On the one hand, this requires policies to re-align civic morality with state morality. Firstly, this requires citizen education regarding the importance of the social contract in general, and paying taxes more particularly, such as by providing information on the public goods and services paid for by taxation. At present, governments have not done this, especially in those Baltic countries where tax morale is low. Secondly, therefore, advertising

campaigns are required informing citizens about the virtues of adhering to the social contract between the state and its citizens regarding the payment of taxes and the costs of violating this social contract. In these Baltic countries, as model 1 in Table 2 reveals, such campaigns could usefully be targeted at men, younger age groups, those living in urban areas and other groups shown above to have lower levels of tax morale.

To align civic morality and state morality nevertheless, formal institutions also need to change. On the one hand, and as model 3 in Table 2 clearly reveals, citizens will not improve their tax morale if there remains a low level of trust in government and extensive public sector corruption, as is the case in those Baltic countries where tax morale is lowest and the informal economy more prevalent (European Commission, 2014a,b). To tackle this, a modernisation of governance is needed. This requires improvement in procedural and redistributive justice and fairness so that citizens believe that the authorities are treating them in a respectful, impartial and responsible manner, that they believe they pay their fair share and received the goods and services they deserve (Molero and Pujol, 2012; Murphy, 2005).

On the other hand, and as models 4-11 in Table 2 display, wider economic and social developments are also required to align civic morality and state morality. These models clearly reveal how Baltic countries with higher tax rates, greater income equality, higher expenditure on labour market interventions to help vulnerable groups, higher expenditure on social protection and more effective redistribution via social transfers, have lower levels of institutional asymmetry and thus smaller informal economies. In consequence, for the post-communist Baltic countries with relatively lower levels of progress on these wider economic and social developments (e.g., Latvia, Lithuania, Estonia), greater attention to them is required if institutional asymmetry is to reduce, and thus the informal economy be tackled. For the more affluent western Baltic countries with established market economies who are relatively 'progressive' on these fronts however (e.g., Germany, Finland), the policy approach

will need to be more attentive to pursuing tax education and advertising campaigns to improve civic morality, and the pursuit of procedural and redistributive justice and fairness to elicit greater alignment of civic morality with formal institutions.

In sum, this paper has proposed a new way of explaining and tackling the informal economy which tentatively views the informal economy to be associated with the lack of alignment of state morality and civic morality. Whether this institutional asymmetry approach is also valid when explaining and tackling the informal economy across post-communist East-Central Europe more generally and in other global regions and countries now needs to be evaluated. So too is an evaluation required of whether such an association is applicable over time within individual countries (e.g., the informal economy shrinks as the degree of institutional asymmetry falls, and vice versa). If this paper stimulates such evaluations, it will have fulfilled one of its intentions. If it also stimulates governments to recognise how the informal economy is closely associated with the asymmetry between state morality and civic morality, and to begin discussing policy measures for improving tax morale, rather than continuing to simply detect and punish participation in the informal economy, then this paper will have achieved its broader goal.

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Table 1. Tax morality index and the prevalence of the informal economy in Baltic nations: by individual group and country

N = 8,548	Tax morality index (where 1 = totally unacceptable and 10 = totally acceptable)	% engaged in informal economy	% of all doing informal work	% of all population	€ earnings from informal economy (mean)
All Baltic nations	2.39	3	100	100	676
Informal work:					
Yes	3.67	--	--	3	--
No	2.33	--	--	97	--
Gender:					
Men	2.48	4	64	48	734
Female	2.31	2	36	52	586
Age:					
15-24	2.90	7	29	14	543
25-34	2.55	5	20	15	782
35-44	2.53	4	18	16	1127
45-54	2.46	4	20	18	357
55-64	2.17	2	9	15	866
65+	1.95	1	4	22	343
Level in society:					
Low level	2.57	5	33	22	620
Middle level	2.37	3	46	53	644
High level	2.29	3	21	25	802
Difficulty paying bills:					
Not having difficulties	2.23	2	54	76	674
Having difficulties	2.91	7	46	24	694
Employment:					
Employed	2.44	4	58	52	787
Unemployed	2.34	3	42	48	495
Area:					
Rural/village	2.56	2	23	34	799
Small/middle town	2.29	4	47	40	638
Large town	2.35	4	30	26	640
Country:					
Latvia	3.98	11	4	1	478
Lithuania	3.16	8	5	2	696
Poland	2.97	3	27	27	438
Estonia	2.96	11	3	1	885
Germany	2.16	2	35	54	479
Denmark	2.01	9	10	4	821
Finland	1.96	3	3	4	420
Sweden	1.93	7	13	7	1346

Table. 2. Prevalence of institutional asymmetry in Baltic nations: ordered logistic model

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Informal work (Not engaged in informal work)						
Engaged in informal work	1.270*** (0.0873)	1.273*** (0.0867)	1.331*** (0.0866)	1.336*** (0.0867)	1.215*** (0.0868)	1.365*** (0.0872)
Gender (Women)						
Men	0.212*** (0.0422)	0.275*** (0.0427)	0.255*** (0.0427)	0.257*** (0.0425)	0.241*** (0.0426)	0.234*** (0.0425)
Age (exact age)	-0.0219*** (0.0013)	-0.0185*** (0.0013)	-0.0173*** (0.0013)	-0.0192*** (0.0013)	-0.0196*** (0.0013)	-0.0196*** (0.0013)
Level in society (Self placement)	-0.106*** (0.0138)	-0.0563*** (0.0140)	-0.0416*** (0.0141)	-0.0788*** (0.0139)	-0.0802*** (0.0139)	-0.0614*** (0.0140)
Difficulty paying bills (Not having difficulties)						
Having difficulties	0.663*** (0.0492)	0.324*** (0.0511)	0.243*** (0.0517)	0.437*** (0.0505)	0.408*** (0.0507)	0.418*** (0.0508)
Employment (Unemployed)						
Employed	0.0406 (0.0444)	0.0442 (0.0448)	0.0295 (0.0448)	0.0676 (0.0447)	0.0296 (0.0448)	0.0386 (0.0447)
Area (Rural/ village)						
Small/middle town	-0.346*** (0.0500)	-0.227*** (0.0505)	-0.230*** (0.0505)	-0.277*** (0.0502)	-0.286*** (0.0503)	-0.289*** (0.0503)
Large town	-0.273*** (0.0549)	-0.277*** (0.0554)	-0.315*** (0.0555)	-0.260*** (0.0552)	-0.305*** (0.0554)	-0.311*** (0.0552)
GDP per capita in PPS 2013		-0.0222*** (0.0009)				
European Quality of Government Index 2013			-0.709*** (0.0267)			
Employment participation 2013				-0.0925*** (0.0048)		
Implicit tax rate on labour 2012					-0.186*** (0.0086)	
Current taxes on income, wealth, etc. 2013						-0.0535*** (0.0029)
Constant cut1	-2.203*** (0.120)	-4.042*** (0.143)	-2.162*** (0.121)	-8.317*** (0.342)	-8.713*** (0.325)	-2.642*** (0.123)
Constant cut2	-1.019*** (0.118)	-2.792*** (0.139)	-0.899*** (0.119)	-7.097*** (0.339)	-7.480*** (0.321)	-1.419*** (0.121)
Constant cut3	-0.117 (0.118)	-1.829*** (0.137)	0.0712 (0.119)	-6.158*** (0.336)	-6.538*** (0.319)	-0.487*** (0.120)
Constant cut4	0.653*** (0.119)	-1.016*** (0.137)	0.892*** (0.121)	-5.358*** (0.335)	-5.738*** (0.318)	0.302** (0.121)
Constant cut5	1.430*** (0.123)	-0.211 (0.140)	1.704*** (0.125)	-4.561*** (0.335)	-4.941*** (0.318)	1.093*** (0.125)
Constant cut6	2.149*** (0.131)	0.524*** (0.147)	2.443*** (0.132)	-3.831*** (0.337)	-4.211*** (0.321)	1.820*** (0.132)
Constant cut7	2.837*** (0.144)	1.222*** (0.159)	3.145*** (0.146)	-3.136*** (0.342)	-3.515*** (0.326)	2.514*** (0.146)
Constant cut8	3.523*** (0.168)	1.912*** (0.180)	3.837*** (0.169)	-2.448*** (0.353)	-2.825*** (0.337)	3.202*** (0.169)
Constant cut9	4.546*** (0.234)	2.937*** (0.243)	4.863*** (0.235)	-1.424*** (0.389)	-1.800*** (0.374)	4.227*** (0.235)
N	7603	7603	7603	7603	7603	7603
Pseudo R^2	0.0470	0.0711	0.0757	0.0617	0.0660	0.0608
Log likelihood	-12084.644	-11779.252	-11720.620	-11898.012	-11843.137	-11909.587
χ^2	1149.46	1709.46	1787.62	1492.22	1613.29	1414.43
p>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: significant at *** p<0.01, ** p<0.05, * p<0.1 (robust standard errors in parentheses); All coefficients are compared to the benchmark category, shown in brackets.

Table 2. Prevalence of institutional asymmetry in Baltic nations: ordered logistic model - continued

	Model 7	Model 8	Model 9	Model 10	Model 11
Informal work (Not engaging in informal work)					
Engaged in informal work	1.281*** (0.0866)	1.179*** (0.0869)	1.337*** (0.0871)	1.269*** (0.0869)	1.343*** (0.0870)
Gender (Women)					
Men	0.243*** (0.0426)	0.249*** (0.0426)	0.240*** (0.0425)	0.265*** (0.0426)	0.242*** (0.0426)
Age (exact age)	-0.0176*** (0.0013)	-0.0176*** (0.0013)	-0.0199*** (0.0013)	-0.0188*** (0.0013)	-0.0177*** (0.0013)
Level in society (Self placement)	-0.0622*** (0.0139)	-0.0506*** (0.0140)	-0.0645*** (0.0140)	-0.0520*** (0.0140)	-0.0335** (0.0142)
Difficulty paying bills (Not having difficulties)					
Having difficulties	0.202*** (0.0522)	0.301*** (0.0511)	0.380*** (0.0509)	0.280*** (0.0515)	0.431*** (0.0502)
Employment (Unemployed)					
Employed	0.0236 (0.0448)	0.000845 (0.0448)	0.0293 (0.0447)	0.0255 (0.0448)	0.0187 (0.0448)
Area (rural/village)					
Small/middle town	-0.245*** (0.0503)	-0.220*** (0.0505)	-0.266*** (0.0504)	-0.226*** (0.0505)	-0.236*** (0.0506)
Large town	-0.301*** (0.0554)	-0.284*** (0.0554)	-0.321*** (0.0553)	-0.307*** (0.0554)	-0.294*** (0.0553)
Severe material deprivation 2012	0.0806*** (0.0030)				
Income inequality 2012		0.755*** (0.0283)			
Public expenditure on labour market interventions 2011			-0.485*** (0.0234)		
Social protection expenditure 2011				-0.0863*** (0.0034)	
Impact of social transfers 2012					-0.0519*** (0.0023)
Constant cut1	-1.163*** (0.127)	1.747*** (0.190)	-2.754*** (0.124)	-3.986*** (0.141)	-3.632*** (0.137)
Constant cut2	0.0906 (0.126)	3.004*** (0.191)	-1.520*** (0.121)	-2.729*** (0.137)	-2.387*** (0.133)
Constant cut3	1.067*** (0.127)	3.977*** (0.194)	-0.578*** (0.120)	-1.762*** (0.135)	-1.439*** (0.131)
Constant cut4	1.901*** (0.129)	4.807*** (0.197)	0.220* (0.121)	-0.948*** (0.135)	-0.635*** (0.132)
Constant cut5	2.727*** (0.134)	5.628*** (0.202)	1.016*** (0.125)	-0.141 (0.138)	0.165 (0.135)
Constant cut6	3.476*** (0.142)	6.374*** (0.208)	1.745*** (0.133)	0.595*** (0.145)	0.897*** (0.142)
Constant cut7	4.184*** (0.155)	7.079*** (0.217)	2.441*** (0.146)	1.295*** (0.157)	1.593*** (0.154)
Constant cut8	4.878*** (0.177)	7.772*** (0.234)	3.131*** (0.169)	1.986*** (0.179)	2.282*** (0.177)
Constant cut9	5.906*** (0.241)	8.799*** (0.285)	4.156*** (0.235)	3.012*** (0.242)	3.305*** (0.240)
N	7603	7603	7603	7603	7603
Pseudo R^2	0.0756	0.0759	0.0648	0.0729	0.0685
Log likelihood	-11722.187	-11718.690	-11858.742	-11755.973	-11811.524
χ^2	1779.50	1797.34	1478.47	1727.60	1644.68
p>	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: significant at *** p<0.01, ** p<0.05, * p<0.1 (robust standard errors in parentheses); All coefficients are compared to the benchmark category, shown in brackets.