EVALUATING POLICY APPROACHES TOWARDS UNDECLARED WORK: SOME LESSONS FROM FYR OF MACEDONIA

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Abstract
To tackle undeclared work, the conventional rational economic actor approach uses deterrents to ensure that the costs of engaging in undeclared work outweigh the benefits. Recent years have seen the emergence of a social actor approach which focuses upon improving tax morale. To analyse the association between participation in undeclared work and these policy approaches, 2,014 face-to-face interviews, conducted in FYROM in 2015, are reported. Logistic regression analysis reveals no association between participation in undeclared work and the perceived level of penalties and risk of detection, but there is an association with the level of tax morale. The paper concludes by discussing the implications for theory and policy.

JEL Classification: H26, J46, K34, K42, O17
Key words: Informal Sector; Tax Morale; Tax Evasion; FYROM; South-East Europe

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Introduction

Undeclared work refers to paid work which is legal in all respects other than not being declared to the authorities for tax, social security or labour law purposes (Aliyev, 2015; Barsoum, 2015; Boels, 2014; European Commission, 2007; Hodosi, 2015; OECD, 2012; Williams, 2014a,b; Williams *et al.*, 2012). This paper evaluates different approaches for tackling undeclared work. Conventionally, the dominant approach has been to view participants as rational economic actors who participate in undeclared work when the pay-off is greater than the expected cost of being caught and punished (Allingham and Sandmo, 1972). Therefore, to tackle undeclared work, efforts are pursued to increase the actual or perceived risks of detection and costs. However, over the past decade or so, a new emergent 'social actor' approach has claimed that participation in undeclared work occurs when tax morale is low, which is often narrowly defined as the intrinsic motivation to pay taxes (Alm *et al.*, 2010; Cummings *et al.*, 2009; Kirchler, 2007; Murphy, 2008; Torgler, 2007). In this case, though, following Luttmer and Singhal (2014), the term refers to non-pecuniary motivation reasons for tax compliance, including factors falling outside the standard utility framework. Thus, the social actor approach seeks to improve tax morale by bringing informal institutions (i.e., norms, values and citizens' beliefs) into symmetry with codified laws and regulations of formal institutions (Alm *et al.*, 2012a; Alm and Torgler, 2011; Torgler, 2012). The aim of this paper is to evaluate the association between participation in undeclared work and these policy approaches. To this end, a survey is reported, which was conducted in 2015 in FYR of Macedonia (FYROM), a country with one of the highest levels of undeclared work in South-East Europe (Williams and Schneider, 2016).

    This paper advances knowledge in three ways: First, and empirically, it not only reports the first survey on tax morale in FYROM conducted after the fourth wave of the European Values Survey in 2008, which is now outdated, but also the first survey in FYROM that evaluates the association between participation in undeclared work and perceived level of sanctions, detection and tax morale. Secondly, this paper results in advanced understanding by evaluating the rational economic actor and social actor approaches towards undeclared work, and, particularly, the assumption in relevant literature that the social actor approach is merely an extension of the rational economic actor approach, which explains the residual non-compliance not explained by the rational economic actor approach (Alm *et al.*, 2012b). Finally, the third way knowledge is advanced is by revealing that there is no association between participation in undeclared work and perceived level of penalties and risk of detection, whereas there is an association with the level of tax morale, which contributes to policy by revealing the need for greater emphasis on improving tax morale when tackling undeclared work.

Consequently, in section 2, these rational economic actor and social actor approaches are reviewed in order to formulate hypotheses for evaluation. Section 3 then introduces the data and methodology to evaluate these hypotheses, namely a logit regression analysis of 2,014 face-to-face interviews conducted in 2015 in FYROM. The results are reported in section 4, while section 5 concludes by discussing theoretical and policy implications.

1. Tackling undeclared work: literature review and hypotheses development

Recently, it has been widely recognised that even if the undeclared economy is more prevalent in the developing rather than the developed world, it is extensive and persistent in all global regions and not decreasing in scale over time (ILO, 2013; Jütting and Laiglesia, 2009; Williams and Schneider, 2016). Indeed, with some estimates suggesting that 60% of the global workforce have their main job in the undeclared economy (Jütting and Laiglesia, 2009), tackling undeclared work has moved nearer the top of policy agendas of supra-national agencies and governments across the globe (European Commission, 2007; OECD, 2012; Williams, 2014a, 2017).

How can undeclared work be tackled? Reviewing the literature, it is apparent that there are two distinct policy approaches, each grounded on different explanations for participation in undeclared work. These are the rational economic actor approach, which tackles undeclared work by ensuring that the benefits from undeclared work are lower than the costs, and the social actor approach based on a view that undeclared work arises when tax morale is low. Below, each one is considered in turn.

Rational economic actor policy approach

This rational actor approach came to the fore in the late 1960s, when it was popularised by Becker (1968) when explaining crime. In the early 1970s, Allingham and Sandmo (1972) then applied it to tax non-compliance, viewing the non-compliant as rational economic actors who evade tax when the pay-off is greater than the expected cost of being caught and punished. The goal for governments was, thus, to change the cost/benefit ratio perceived by those considering non-compliance. This was to be achieved by increasing the actual and/or perceived penalties and risks of detection, and, consequently, costs. Such an approach was subsequently widely adopted (e.g., Grabiner, 2000; Hasseldine and Li, 1999; Job *et al.*, 2007; Richardson and Sawyer, 2001; Williams, 2017).

Indeed, this is also the dominant policy approach in FYROM, the country studied in this paper. Amendment to the Law on Labour Relations (Official Gazette of the Republic of Macedonia, No. 54/2013) increased penalties for undeclared work to €7,000 and since 2012, there has been a focus on improving the likelihood of detection, using not only wider electronic data exchange across government

agencies, but also more targeted inspections in high-risk sectors (Dzhekova *et al.*, 2014).

Despite its widespread adoption, the evidence-base that increasing the risks of detection reduces undeclared work is less than conclusive (Alm *et al.*, 1992, 1995; Slemrod *et al.*, 2001; Varma and Doob, 1998). Therefore, in order to evaluate the validity of this rational economic actor approach, the following hypothesis can be tested:

Rational economic actor hypothesis (H1): the greater the perceived penalties and risk of detection, the lower the likelihood of participation in undeclared work, *ceteris paribus*.

H1a: the greater the penalties perceived, the lower the likelihood of participation in undeclared work.

H1b: the greater the risks of detection perceived, the lower the likelihood of participation in undeclared work.

Social actor policy approach

During the past decade or so, a new policy approach has emerged which recognises that citizens are not always rational economic actors, given that many operate voluntarily on a declared basis even when the benefit/cost ratio suggests that they should work in the undeclared economy (Alm *et al.*, 2010; Kirchler, 2007; Murphy, 2008; Murphy and Harris, 2007). A 'social actor' model has, thus, emerged, which views participation in undeclared work as resulting from low tax morale.

This approach has its origins in the classic work of Georg von Schanz (1890), who drew attention to the relevance of the tax contract that exists between the state and its citizens. More than six decades later, the German 'Cologne school of tax psychology' sought to measure tax morale (see Schmölders, 1952, 1960, 1962; Strümpel, 1969) and viewed it as strongly correlated with tax non-compliance (Schmölders, 1960). Although the rise of the rational economic actor approach from the 1970s onwards led to the demise of this social actor approach, over the past decade or so, it has re-emerged (Alm *et al.*, 2012a; Kirchler, 2007; Torgler, 2007, 2011). At the heart of this approach lies the objective of improving tax morale in order to elicit greater self-regulation (Alm and Torgler, 2011; Kirchler, 2007; Torgler, 2007, 2011, 2012; Williams, 2014a; Williams, 2017). This is sometimes seen as an extension of the rational economic actor approach and explains the residual non-compliance not explained by the rational economic actor approach (Alm *et al.*, 2012b).

Reading this tax morale approach through the lens of institutional theory (Baumol and Blinder, 2008; North, 1990), all societies are viewed as having both formal institutions, which are codified laws and regulations that define the legal rules of the game, and informal institutions, which are 'socially shared rules, usually unwritten, that are created, communicated and enforced outside of officially sanctioned channels'

(Helmke and Levitsky, 2004: 727). When adopting this institutional lens, tax morale measures the extent to which formal institutions (which we term as 'state morale' here) and informal institutions (here termed as 'civic morale') are aligned. When there is asymmetry, tax morale will be low and engagement in undeclared work rife (Williams and Horodnic, 2017a, b). Therefore, to evaluate the validity of this policy approach towards tackling participation in undeclared work, the following hypothesis can be evaluated:

Social actor hypothesis (H2): the greater the tax morale, the lower the likelihood of participation in undeclared work.

2. Data and Variables

Data

To evaluate these hypotheses on tackling undeclared work, the data reported here come from 2,014 face-to-face interviews conducted in FYROM in late 2015. This survey was collected by the private, independent Macedonian research agency BRIMA for the purpose of the European Commission's Framework 7 Industry-Academia Partnerships Programme (IAPP) research project titled 'Out of the shadows: developing capacities and capabilities for tackling undeclared work in Bulgaria, Croatia and FYROM'.[1] The survey analysed not only attitudes towards undeclared work, but also who purchases and supplies undeclared work, and the relationship between participation in undeclared work and the perceived penalties and risk of detection, as well as level of tax morale.

To collect these data, a multi-stage random (probability) sampling methodology was used to ensure that issues of gender, age, region and locality size, the national level sample, as well as each level of the sample, were representative as proportions of the country's population size. Furthermore, to balance the random error, the database is additionally weighted based on age and gender characteristics.[2] In every household the 'closest birthday' rule was applied to select respondents, while every subsequent address was determined by the standard 'random route' procedure used in Eurobarometer surveys. Interviewing was performed using the face-to-face methodology (TAPI – Tablet Assisted Personal Interview) by trained professional interviewers.

Given the sensitive topic being investigated, the reliability of the data collected needs to be briefly discussed. In 93% of the interviews, interviewers reported good or excellent cooperation from the participant when answering questions, and average cooperation in 6% of the cases. Cooperation was found to be poor in only 1% of cases. No evidence was, therefore, identified of reticence on the part of respond-

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1. For more about BRIMA agency please see: http://www.brima.com.mk/eng/index.html
2. A total of 2,014 effective interviews were completed yielding an overall margin of error of ± 2.18% at the midrange of the 95% confidence level. Consequently, population weights based on age and gender are additionally applied to balance this random error.

ents in answering the questions, perhaps reflecting how undeclared work, although formally illegal, is widely deemed a socially legitimate activity in FYROM.

Variables

To evaluate whether increasing penalties and risks of detection and having greater tax morale reduce the likelihood of participation in undeclared work, the dependent variable used is a dummy variable with recorded value 1 for those who answered 'yes' to the question: 'Did you yourself carry out any undeclared paid activities in the last 12 months?' Here we mean again activities which you were paid for and which were not or not fully reported to tax authorities.'

Drawing upon previous studies evaluating participation in undeclared economy (Williams and Horodnic, 2015a, b, 2017a; Williams and Padmore, 2013a, b), Table 1 illustrates these explanatory variables along with the control variables used in the analysis.

Given that there were a considerable number of missing values and answers (i.e., refusal and 'don't know') across dependent and independent variables, multiple imputation was used to predict values. This is done using a system of chained equations for each variable with missing values, with twenty five imputations simulated for each missing value.

To evaluate the relationship between participation in undeclared work and perceived penalties and risk of detection, as well as the level of tax morale, a logit regression analysis is here conducted and then the average marginal effects are calculated.[3] The following equation is estimated:

$$\Pr(Un\_work_i = 1) = \beta_0 + \beta_1 Exp\_sanc_i + \beta_2 Det\_risk_i + \beta_3 Tax\_mor_i + \mathbf{Con\_var_i}\boldsymbol{\gamma} + \varepsilon_i,$$

where i indicates the individuals observed in the sample (i=1,...,n) and n the total number of individuals in the sample. Furthermore, Pr represents probability of engagement in undeclared economy, Un_work_i denotes participation in undeclared work, Exp_sanc_i denotes the level of perceived penalties, Det_risk_i denotes the level of detection risk, Tax_mor_i denotes the level of tax morale, and $\mathbf{Con\_var_i}$ denotes all control variables defined in Table 1.

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3. For more details about the logit model, please, see Green (2008) and Maddala (2001).

Table 1. Summary of variables used in the analysis

Variables	Definition	Number of missing values
Participation in undeclared work	A dummy variable with recorded value 1 for those who answered 'yes' to the question: '*Did you yourself carry out any undeclared paid activities in the last 12 months?*' and with recorded value 0 otherwise.	108
Earnings from undeclared work	A categorical variable measuring undeclared worker's earnings from the undeclared activities in the last 12 months with value 1 for 1-100 Euros, value 2 for 101-200 Euros, value 3 for 201-500 Euros, value 4 for 501-1000 Euros, and value 5 for more than 1000 Euros.	34
Control variables:		
Gender	A dummy variable with value 0 for men and 1 for women.	0
Age	An interval variable indicating the exact age of the respondent.	0
Nationality	A dummy variable with value 0 for Macedonian and value 1 for Albanian.	0
Employment status	A categorical variable for the employment status of respondents with value 1 for employed, value 2 for self-employed, value 3 for unemployed, value 4 for retired, and value 5 for students and inactive persons.	0
Financial situation	A categorical variable for the respondent's financial situation with value 1 for struggling, value 2 for maintaining, value 3 for just comfortable, and value 4 for no money problems.	82
Estimated share	A categorical variable in which every respondent estimated the proportion of the population engaged in undeclared work with value 1 for less than 5 percent, value 2 for 5 to 10 percent, value 3 for 10 to 20 percent, value 4 for 20 to 50 percent, and value 5 for over 50 percent.	150
Type of locality	A categorical variable for the type of locality where a respondent lives with value 1 for rural area or village, value 2 for small or middle-sized town, and value 3 for large town.	0
Region	A categorical variable for region where a respondent lives with value 1 for Vardar, value 2 for Eastern, value 3 for Southwestern, value 4 for Southeastern, value 5 for Pelagoni, value 6 for Polog, value 7 for Northeastern and value 8 for Skopje.	0
Explanatory variables:		
Detection risk	A categorical variable describing the perceived risk of being detected when someone is engaged in unregistered activities with value 1 for very small risk, value 2 for fairly small risk, value 3 for fairly high risk and value 4 for very high risk	136
Expected sanctions	A categorical variable describing the expected scale of sanctions when someone is engaged in unregistered activities with value 1 for those asserting that the normal tax or social security contributions would be due, value 2 for those stating that the normal tax or social security contributions due, plus there would be a fine or value 3 for imprisonment	218
Tax morale	A dummy variable which estimates the level of tax morale using the following question: "Now I would like to know how you assess various behaviour patterns. For each of them, please tell me to what extent you find it acceptable or not. Please use the following 10-point Likert scale: '1' means that you find it "absolutely unacceptable" and '10' means that you find it "absolutely acceptable":... *Someone evades taxes by not or only partially declaring income.*" The variable takes value 1 for high tax morale (absolutely unacceptable for someone to evade taxes by not declaring or only partially declaring her income) and value 0 otherwise.	74

Source: Own representation based on the representative survey of 2,014 individuals in FYROM

3. Findings

Of the 2,014 respondents interviewed in 2015 in FYROM, 6.6 percent reported having participated in undeclared work in the last 12 months, which is 1 in 15, and they reported earning a mean income of 393 Euros per annum from their undeclared work.[4] Examining the type of activities in which they had engaged, Figure 1 illustrates that 13% of these undeclared workers had provided home maintenance and improvement services, 10% baby-sitting, 8% had worked as a waiters or waitresses, 8% had sold other goods or services, 7% had engaged in domestic cleaning, 6% in IT assistance, 6% in tutoring, 6% had sold food produce, 4% engaged in car repairs, 3% in gardening services, 3% had sold goods or services associated with their hobby, 3% had undertaken home removal, and 2% had ironed clothes.

Figure 1. Type of activities carried out on an undeclared basis in FYROM, % of undeclared workers
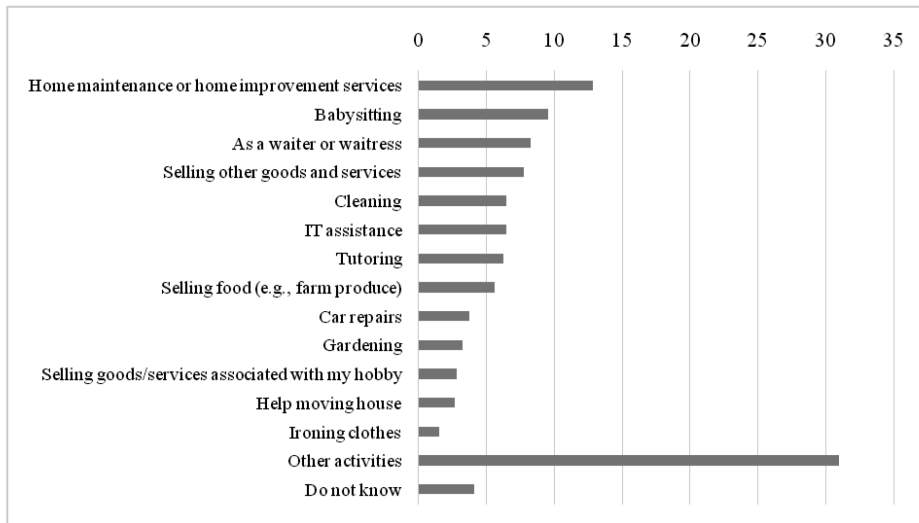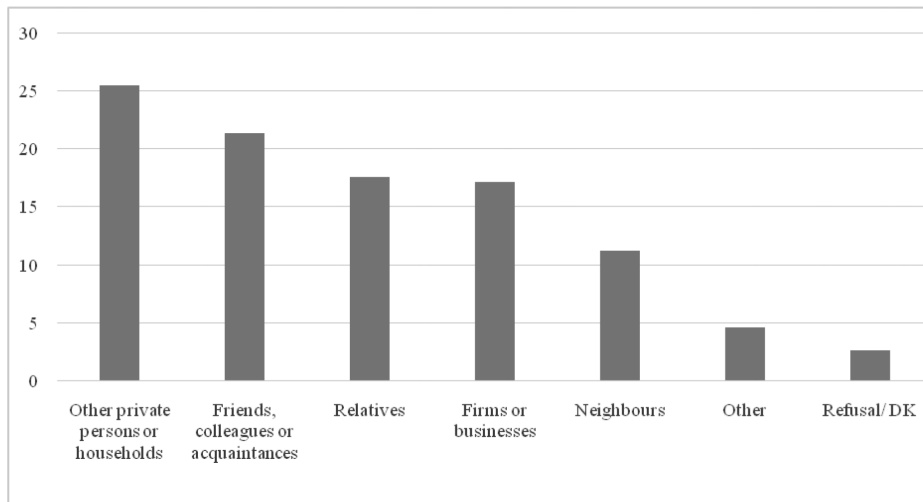

Source: Authors' own calculations based on the representative survey of 2,014 individuals in FYROM

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4. Respondents who admitted participation in undeclared work were asked how much money they received in total from the undeclared activities which they had carried out in the last 12 months.

Figure 2 reveals that only 17% of this undeclared work was conducted as waged employment for businesses. The remaining 83% was conducted on a self-employed basis, with 21% conducted for friends, colleagues or acquaintances, 18% for relatives, 11% for neighbours, and the remaining 26% on a self-employed basis for people previously unknown to them. Some 7% either refused to answer or answered 'I do not know'. The important finding, therefore, is that half of all undeclared work in FYROM is conducted for close social relations. This is a similar proportion to findings in previous studies in the EU28 as a whole (Williams, 2014).

Figure 2. The structure of buyers of undeclared goods and services in FYROM, % of undeclared workers

Source: Authors' own calculations based on the representative survey of 2,014 individuals in FYROM

Which population groups, therefore, more frequently participate in undeclared work? And what are their views on penalties, risks of detection and acceptability of operating in the undeclared economy (i.e., their tax morale)? Table 2 reports these descriptive statistics, which reveals that men participate in undeclared work more frequently than women (and also earn a higher mean income from their work in the undeclared economy); those aged 25-39 engage in undeclared work more frequently, and the proportion participating then decreases as age increases; those of Albanian ethnicity participate in undeclared work far more frequently than Macedonians (11.8% compared to 4.7%); 15.1% of the self-employed and 9.0% of the unemployed engage in undeclared work. Other groups, such as employees, the retired and students do so less frequently. There is also a slight tendency for those struggling to

cope financially to participate in undeclared work more often. Those who perceive the rest of the population to be more likely to engage in undeclared work, often do so more themselves, reflecting that, where 'horizontal trust' is low (i.e., trust in other citizens to operate legitimately), undeclared work is more frequent. Undeclared work also appears to be more prevalent in rural areas and villages than in 'more urban' areas, and much more prevalent in some regions (i.e., the Southwestern and Polog regions) than the rest of the country.

Table 2. Participation in undeclared work in FYROM

	Participation in undeclared work (%)		Earnings from undeclared work:						
	Yes	No	€1-100 (%)	€101-200 (%)	€201- 500 (%)	€501-100 0 (%)	€1000+ (%)	Refusal/ Don`t know (%)	Mean income (EUR)
Total	6.6	93.4	27.1	15.6	11.3	11.4	6.4	28.2	393
Gender									
Male	8.6	91.4	23.5	12.8	13.0	10.0	8.3	32.4	433
Female	4.3	95.7	34.2	20.9	7.9	14.2	2.7	20.0	329
Age									
15-24	5.5	94.5	54.8	13.0	13.4	6.3	0.0	12.4	185
25-39	9.9	90.1	16.3	21.9	12.1	6.4	11.3	32.0	481
40-54	6.1	93.9	21.8	12.2	14.0	20.5	3.3	28.3	421
55-64	5.2	94.8	27.7	10.7	0.0	16.9	6.0	38.6	477
65+	2.7	97.3	57.9	0.0	11.9	11.9	0.0	18.4	189
Nationality									
Macedonian	4.7	95.3	29.7	10.2	12.8	14.3	9.7	23.3	477
Albanian	11.8	88.2	23.9	22.2	9.4	7.9	2.3	34.4	271
Employment status									
Employed	5.9	94.1	15.3	20.7	12.5	8.7	8.5	34.2	497
Self-employed	15.1	84.9	19.5	7.0	22.4	7.1	7.8	36.2	439
Unemployed	9.0	91.0	22.3	16.5	8.4	15.3	7.7	29.7	458
Retired	2.6	97.4	57.3	0.0	0.0	9.0	0.0	33.7	128
Student and inactive	5.2	94.8	57.9	17.6	11.1	13.5	0.0	0.0	187
Financial situation									
Struggling	5.9	94.1	23.6	20.8	9.2	19.4	9.2	17.9	484
Maintaining	6.9	93.1	20.1	14.1	16.1	9.9	6.9	33.0	428
Just comfortable	5.2	94.8	36.8	19.4	0.0	9.9	4.8	29.1	296
No money problems	4.8	95.2	100.0	0.0	0.0	0.0	0.0	0.0	57
Estimated share									
less than 5%	4.5	95.5	64.3	0.0	0.0	17.3	0.0	18.3	196
5 to 10%	2.6	97.4	8.7	41.1	0.0	17.3	0.0	33.0	326
10 to 20%	5.2	94.8	35.1	6.3	8.0	0.0	5.7	45.0	247
20 to 50%	7.6	92.4	22.8	11.8	11.6	17.6	7.4	28.7	483
50% or more	12.2	87.8	27.1	25.5	16.9	3.8	7.3	19.3	351
Type of locality									
Rural area or village	8.0	92.0	26.2	24.8	13.2	5.0	5.2	25.7	297
Small or middle sized town	5.3	94.7	25.2	0.0	25.1	29.7	0.0	20.1	412
Large town	5.3	94.7	29.0	6.2	5.3	16.2	9.6	33.7	540
Region									
Vardar	3.9	96.1	36.4	0.0	0.0	24.6	0.0	39.0	367
Eastern	2.9	97.1	71.5	0.0	28.5	0.0	0.0	0.0	119
Southwestern	13.1	86.9	12.7	29.9	25.9	7.6	13.5	10.4	495
Southeastern	3.0	97.0	55.0	0.0	0.0	0.0	0.0	45.1	100
Pelagoni	4.5	95.5	53.0	0.0	8.6	18.0	0.0	20.3	272
Polog	13.0	87.0	20.9	29.8	5.6	3.0	5.8	35.0	276
Northeastern	1.0	99.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Skopje	5.8	94.2	25.2	0.0	7.6	23.3	6.3	37.6	575
Detection risk									
Very low	7.9	92.1	26.1	11.6	19.0	9.8	4.7	28.8	355
Fairly low	6.2	93.8	29.9	14.8	7.6	3.6	7.7	36.5	406
Fairly high	7.9	92.1	28.6	19.6	10.6	11.5	9.6	20.2	417
Very high	4.9	95.1	23.0	13.2	8.7	19.6	0.0	35.6	325
Expected sanctions									
Normal tax or social security contributions due, but no fine	7.9	92.1	18.2	21.5	15.2	14.7	5.6	24.8	415
Normal tax or social security contributions due, plus a fine	5.4	94.7	34.4	11.4	4.6	11.4	7.2	31.1	409
Imprisonment	7.2	92.8	55.5	0.0	0.0	0.0	14.5	30.0	289
Tax morale									
High tax morale	4.7	95.3	35.0	6.8	13.6	12.2	9.3	23.0	429
Otherwise	8.4	91.6	23.1	19.9	10.2	11.3	4.8	30.7	375

Source: Authors' own calculations based on the representative survey of 2,014 individuals in FYROM

Examining the possible association of participation in undeclared work with the risk of detection perceived, no discernible trend appears to be apparent and so far as sanctions are concerned, there appears to be a slightly greater possibility that those who perceive sanctions as lower engage in undeclared work more often. There does, however, appear to be a possible relatonship between participation in undeclared work and tax morale. The higher the level of tax morale, the lower the likelihood of participating in undeclared work. However, to examine this, logit regression model has to be applied.

To evaluate whether there is statistically significant association between participation in undeclared work and these explanatory variables when control variables are introduced and held constant, as well as whether any of these control variables are significantly associated with participation in undeclared work, Table 3 reports the average marginal effects after estimation of the logit model. To do this, a staged approach was adopted. In model 1, the socio-demographic variables were analysed, in model 2 socio-economic characteristics were added, in model 3 spatial variables were added as well, before model 4 added variables evaluating policy approaches, namely penalties and detection risks perceived, and tax morale.

Starting with the control variables and, therefore, which employee groups should perhaps be targeted by inspectors seeking to tackle participation in undeclared work, the finding in model 1 is that gender is strongly statistically significant; women are less likely to participate in undeclared work by between 3.7 and 4.2 percentage points than men. Ethnicity is also statistically significant with those of Albanian ethnicity being more likely than Macedonians to participate in undeclared work. Age, however, is not found to be associated with participation in undeclared work. When socio-economic variables are added in the case of model 2, the signs and significance levels of these socio-demographic variables remain the same. The additional finding is that the unemployed are significantly more likely to participate in undeclared work than those employed, those retired, students and the economically inactive. For example, the marginal effect indicates that being employed, rather than unemployed, reduces the probability of participation in undeclared work by between 3.0 and 3.2 percentage points. This is similar for those who perceive that more than 50% of the population are engaged in undeclared work: they are significantly more likely to participate in undeclared work than groups believing that small proportions of the population are engaged in the undeclared economy. Furthermore, the marginal effect indicates that those who perceive that less than 5 percent of the population are engaged in undeclared work are between 5.3 and 5.8% less likely to participate in undeclared work than those perceiving that more than half of the population are engaged in undeclared work. 'Horizontal trust', therefore, appears to play a significant role in determining participation in undeclared work. There is no statistically significant relationship, however, between participation in undeclared work and one's financial status.

Table 3. Average marginal effects after logit estimate of the likelihood of participation in undeclared work in FYROM

	Model 1 Marginal effect (Standard error)	Model 2 Marginal effect (Standard error)	Model 3 Marginal effect (Standard error)	Model 4 Marginal effect (Standard error)
Female	-0.042 (0.013)***	-0.037 (0.013)***	-0.037 (0.013)***	-0.037 (0.013)***
Age	-0.001 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Nationality (RC: Macedonian)				
Albanian	0.053 (0.013)***	0.052 (0.013)***	0.024 (0.016)	0.016 (0.017)
Employment status (RC: Unemployed)				
Employed		-0.031 (0.018)*	-0.032 (0.018)*	-0.030 (0.018)*
Self-employed		0.036 (0.035)	0.042 (0.037)	0.036 (0.036)
Retired		-0.052 (0.021)**	-0.052 (0.020)***	-0.051 (0.020)**
Student and inactive		-0.046 (0.017)***	-0.041 (0.017)**	-0.039 (0.017)**
Financial situation (RC: Struggling)				
Maintaining		0.007 (0.015)	0.003 (0.015)	0.006 (0.015)
Just comfortable		-0.008 (0.016)	-0.011 (0.016)	-0.004 (0.016)
No money problems		-0.022 (0.033)	-0.013 (0.041)	-0.016 (0.041)
Estimated share (RC: 50% or more)				
Less than 5%		-0.055 (0.024)**	-0.053 (0.024)**	-0.058 (0.026)**
5 to 10%		-0.075 (0.019)***	-0.073 (0.019)***	-0.079 (0.020)***
10 to 20%		-0.043 (0.022)**	-0.036 (0.023)	-0.043 (0.023)*
20 to 50%		-0.028 (0.019)	-0.026 (0.018)	-0.032 (0.020)
Type of locality (RC: Rural area or village)				
Small or middle sized town			0.033 (0.032)	0.034 (0.033)
Large town			-0.001 (0.013)	0.001 (0.013)
Region (RC: Vardar)				
Eastern			-0.009 (0.024)	-0.011 (0.027)
Southwestern			0.065 (0.029)**	0.062 (0.031)**
Southeastern			-0.019 (0.022)	-0.023 (0.023)
Pelagoni			0.006 (0.026)	0.005 (0.028)
Polog			0.057 (0.030)*	0.053 (0.032)*
Northeastern			-0.032 (0.022)	-0.036 (0.024)
Skopje			0.032 (0.024)	0.026 (0.026)
Detection risk (RC: Very low)				
Fairly low				-0.009 (0.018)
Fairly high				0.012 (0.018)
Very high				-0.022 (0.017)
Expected sanctions (RC: Normal tax or social security contributions due, but no fine)				
Normal tax or social security contributions due, plus a fine				-0.020 (0.013)
Imprisonment				0.000 (0.027)
High tax morale				-0.022 (0.013)**
Number of observations	2,014	2,014	2,014	2,014
Number of imputations	25	25	25	25
Prob > F	0.000	0.000	0.000	0.000
Pseudo R2	0.051	0.089	0.116	0.130
Area under ROC	0.680	0.727	0.756	0.764

Significance: *p<0.1, **p<0.05, ***p<0.01
Source: Authors' own calculations based on the representative survey of 2,014 individuals in FYROM

When spatial variables are added in the case of model 3, the signs and significance levels remain the same for the socio-demographic and socio-economic variables, with the exception of ethnicity. Once spatial variables are introduced, the significance of ethnicity disappears, largely because of the spatial concentration of these ethnic groups. Indeed, although there was moderate correlation between ethnicity and spatial variables, they remained within the limits required and, therefore, both predictors were retained in the model. The finding is that there is no statistically significant correlation between participation in undeclared work and urban/rural characteristics, but those from Southwestern and Polog regions are more likely to participate in undeclared work than others.

In model 4, the same socio-demographic, socio-economic and spatial signs and significance levels as in model 3 persist. However, the important finding is that there is no statistically significant relationship between participation in undeclared work and either the scale of penalties (refuting H1a) or the risk of detection (refuting H1b). However, tax morale is a significant predictor of the propensity to participate in undeclared work (confirming H2). The higher the tax morale, the lower the likelihood of participation in undeclared work is. Furthermore, those with high level of tax morale are 2.2% less likely to participate in undeclared work than others. These results, therefore, refute the rational economic actor deterrence approach adopted by many governments and validate the emergent social actor approach.

4. Discussion and Conclusions

Evaluating the association between participation in undeclared work and the conventional rational economic actor approach, which seeks to increase the penalties and risks of detection, and the social actor approach, which seeks to improve tax morale, the finding is that participation in undeclared work in FYROM is not influenced by penalties or risk of detection, but is significantly associated with the level of tax morale. Viewed through the lens of institutional theory, therefore, when norms, values and citizens' beliefs do not adhere to those of the state in terms of codified laws and regulations, there is greater likelihood for people to participate in undeclared work. Increasing the perceived or actual level of penalties and risk of detection citizens may be facing has no impact on the probability of undeclared work. Therefore, the current, widely used deterrence approach needs to be at least complemented by a tax morale approach.

What can, therefore, be done to improve tax morale? Given that tax morale is a measure of the lack of alignment of laws, codes and regulations of formal institutions and norms, beliefs and values of informal institutions (Helmke and Levitsky, 2004; Webb *et al.*, 2009), two sets of policy initiatives can be used to reduce the asymmetry between formal institutions ('state morale') and informal ones ('civic morale'), thus improving tax morale and, in doing so, reducing participation in undeclared work.

On the one hand, policy initiatives can be pursued to change norms, values and beliefs regarding the acceptability of participating in undeclared work. Firstly, campaigns can be designed to raise awareness about the benefits of working in the declared economy and the costs of participating in undeclared work, and secondly, policy initiatives can be pursued to educate citizens about the benefits of taxation in terms of public goods and services received for the taxes they pay. These measures might range from introducing the issue of taxation in the Civics syllabus of school curriculum through sending letters to taxpayers about how their taxes are spent, to putting up signs in hospitals, roads and schools, such as, for instance, 'Paid for by your taxes'.

On the other hand, however, reform of formal institutions is also required, especially in countries such as FYROM, where formal institutional deficiencies lead to lack of trust in the government. Firstly, this requires changes in the macro-economic level and social conditions that lead to lower tax morale, such as increasing the level of expenditure on active labour market policies to support vulnerable groups and the level of expenditure on social protection (Autio and Fu, 2015; Dau and Cuervo-Cazzurra, 2014; Thai and Turkina, 2014). Secondly, it requires changes to the way formal institutions operate in the form of governance modernisation. As previous studies have revealed, tax morale improves when citizens view the government as treating them in a respectful, impartial and responsible manner (Gangl *et al.*, 2013; Murphy, 2005), i.e., when citizens view themselves as paying their fair share compared to others (Kirchgässner, 2010, 2011; Molero and Pujol, 2012), and they believe they receive the goods and services they deserve given the taxes they pay (McGee, 2005). Ensuring citizens perceive themselves as receiving their fair share, when compared to others, and as being treated equitably and impartially is, therefore, a necessary perquisite condition for tackling participation in undeclared work.

However, these findings about the need for a social actor approach and for greater emphasis on tax morale are based on just one dataset in one country and are, therefore, very tentative. Further studies in other countries regarding the effectiveness of different policy approaches are required. So, if this paper stimulates further evaluations, in a wider range of countries, of the effectiveness of these contrasting policy approaches in reducing the likelihood of participating in undeclared work, then it will have fulfilled one of its intentions. And if this, then, stimulates governments to consider alternative approaches, other than simply deterring participation in undeclared work by increasing penalties and the risk of detection, then this paper will have fulfilled its broader aim.

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