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Article:

Williams, C.C. and Horodnic, I. (2015) Marginalisation and participation in the informal economy in Central and Eastern European nations. *Post-Communist Economies*, 27 (2). 153 - 169. ISSN 1463-1377

<https://doi.org/10.1080/14631377.2015.1026686>

This is an Accepted Manuscript of an article published by Taylor & Francis in *Post-Communist Economies* on 21/05/2015, available online:
<http://www.tandfonline.com/10.1080/14631377.2015.1026686>

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Marginalisation and participation in the informal economy in Central and Eastern European nations

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Submitted to:
Post-Communist Economies
July 2014

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Marginalisation and participation in the informal economy in Central and Eastern European nations

Abstract

To evaluate the ‘marginalisation thesis’ which holds that marginalised populations are more likely to participate in the informal economy, this paper reports a 2013 special Eurobarometer survey conducted in 11 Central and Eastern European countries. Using multilevel mixed-effects logistic regression analysis, the finding is that although some marginalised populations (i.e., the unemployed, those having difficulties paying their household bills, younger age groups) are significantly more likely to participate in the informal economy, others are not (e.g., those in poorer nations, living in rural areas, with less formal education). Yet others (e.g., women) are significantly less likely to participate in the informal economy. The outcome is a call for a more nuanced understanding of the marginalisation thesis as valid for some marginalised populations but not others. The paper concludes by discussing the implications for theory and policy of this more variegated assessment of the marginalisation thesis.

Key words: informal sector, undeclared work, shadow economy, marginalisation, transition economies, post-socialist societies.

Introduction

In recent decades, a burgeoning literature has brought out of the shadows the important role the informal economy has played in helping people get-by during the transition process in post-Soviet economies (Abbot and Wallace 2009, Kapelyushnikov et al. 2012, Kukk and Staehr

2014, Morris and Polese 2013, Rodgers and Williams 2009, Sauka and Putniņš 2011, Wallace and Haerpfer 2002, Wallace and Latcheva 2006, Williams and Round 2007a,b,c, 2008a,b,c, Williams et al. 2013). The dominant view in both this transition literature and well beyond has been that participation in the informal economy is more likely amongst marginalised populations (Ahmad 2008, Arnstberg and Boren 2003, Castree et al. 2004, Rubić 2013, Sasunkevich 2014, Surdej and Ślęzak 2009). Indeed, this ‘marginalisation thesis’ holds not only that people living in marginalised areas, such as less affluent Central and Eastern European (CEE) countries and peripheral rural areas, are more likely to participate in the informal economy (ILO 2012, 2013), but also marginalised socio-economic groups, such as unemployed people and those in financial difficulty (Morris and Polese, 2014, Round and Williams 2008, Round et al., 2010a,b, Slavnic 2010, Taiwo 2013). Until now nevertheless, the only evidence supporting this marginalisation thesis has been small-scale surveys in particular localities or populations (Round et al. 2010a,b, Sedlenieks 2003, Smith and Stenning 2006, Stănculescu 2005, Surdej and Ślęzak 2009, Williams and Round 2008a,b, 2010). The aim of this paper in consequence, is to evaluate critically this marginalisation thesis for the first time using an extensive data set, namely a cross-national survey conducted in 11 CEE countries involving 11,131 face-to-face interviews.

To do this, the first section provides a brief review of the competing views on the participation of marginalised populations in the informal economy. This reveals the existence of two competing theorisations, namely a dominant ‘marginalisation thesis’ which holds that marginalised populations are more likely to participate in the informal economy, and an emerging ‘reinforcement thesis’, which claims that marginalised populations are less likely to engage in such work, meaning that the informal economy reinforces, rather than reduces, the socio-economic and spatial disparities produced by the formal economy. Displaying that the evidence-base to support these theses currently consists only of a small number of small-scale

surveys of specific localities or populations, the second section then seeks to begin to fill this gap by introducing the methodology used in an extensive 2013 Eurobarometer survey of participation in the informal economy across 11 CEE countries. The third section reports the results. This reveals the need for a more variegated understanding which recognises that although some marginalised populations are more likely to engage in the informal economy (e.g., the unemployed, those with financial difficulties), others are not (e.g., poorer countries, those living in rural areas) and yet others (e.g., women) are significantly less likely to engage in the informal economy. The fourth and final section concludes by discussing the implications of these findings for theory and policy.

Before commencing, however, the informal economy needs to be defined. 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 (European Commission 2007, OECD 2012, Schneider 2013, Schneider and Williams 2013, Vanderseyen et al. 2013, Williams 2004, Williams and Windebank 1998). If a paid activity possesses other absences or shortcomings, then this activity is not here defined as the informal economy. For instance, if the good and/or service traded is illegal (e.g., illegal drugs), then this paid activity is here deemed to be part of the broader ‘criminal’ economy rather than the informal economy, and if the activity is unpaid, then it is part of the separate unpaid economy. Nevertheless, there remain some blurred edges regarding what is and what is not the informal economy, such as when the work is reimbursed with gifts or in-kind favours. Here, any activity reimbursed with gifts or in-kind is excluded. This paper also excludes work conducted by formal employees in formal jobs who sometimes receive part of their wage as a declared salary and an additional undeclared (‘envelope’) wage (Williams 2008). Instead, only activities that are wholly undeclared for tax, social security and/or labour law purposes are defined as constituting the informal economy.

Marginalisation and participation in the informal economy: competing perspectives

Reviewing the literature in CEE countries and beyond, two competing views can be discerned on the relationship between marginalised populations and participation the informal economy.

Marginalisation thesis

The first perspective that dominates the literature is the ‘marginalisation thesis’, which holds that marginalised populations are more likely to participate in the informal economy (Ahmad, 2008, Arnstberg and Boren 2003, Castree et al 2004, Rubić 2013, Sasunkevich 2014, Surdej and Ślęzak 2009). This is asserted to apply not only to marginalised spaces but also marginalised population groups. Starting with the geographical variations in the level of participation in the informal economy, the long-standing view which prevails across all spatial scales is that participation in the informal economy is greater in less affluent areas. This applies whether discussing global regions (ILO 2012, Williams 2014), cross-national variations (Roberts 2013, Rodgers and Williams 2009, Schneider 2013, Schneider and Williams 2013), variations across localities (Williams and Round 2008a, 2010) or urban-rural variations (Button 1984, Williams 2014). It is similarly the case that the marginalisation thesis predominates when discussing participation in the informal economy across population groups. Marginalised groups are widely asserted to be more likely to participate in the informal economy. For example, the unemployed people are claimed to be more likely to participate in the informal economy than those in formal jobs (Castells and Portes 1989, Slavnic 2010, Taiwo 2013), women are claimed to be more likely to participate in this realm than men (ILO 2013, Stănculescu 2004) and those with financial difficulties more likely to participate than more affluent population groups (Barbour and Llanes 2013, Smith and Stenning 2006).

Reinforcement thesis

Over the past few decades however, a reinforcement thesis has begun to emerge which contests this dominant marginalisation thesis. This argues that participation in the informal economy is less likely amongst marginalised populations, which means that the informal economy does not diminish the disparities produced by the formal economy but rather, consolidates them. For example, it has been argued that populations living in affluent countries and localities are more likely to participate in the informal economy than populations in less affluent countries and localities (van Geuns et al 1987, Williams et al 2013). Similarly, it has been sometimes asserted that unemployed people are less likely to participate in the informal economy than people who have formal jobs (Blalabanova and McKee 2002, Kaitedliou et al. 2013, MacDonald 1994, Moldovan and Van de Walle 2013, Pahl 1984, Renooy 1990, Williams 2001, Williams and Round 2007c, 2008c), that women are less likely to participate in the informal economy than men (McInnis-Dittrich 1995, Williams 2011, Williams and Round 2008b, 2009) and those with financial difficulties less likely to participate than more affluent population groups (Neef 2002, Williams 2004, Williams et al. 2013).

Examining the data so far collected to support either the marginalisation or reinforcement theses, the finding is that the evidence derives from small-scale surveys of specific localities and/or population groups (see, for example, Karjanen 2014, Kovác, 2014, Moldovan and van de Walle 2013, Morris and Polese 2014a,b, Mróz 2012, Müller and Miggelbrink 2014, Onoshchenko and Williams 2013). For example, several papers involve a study of just one person (Polese 2013, Woolfson 2007) whilst a survey in Riga is based on just 15 interviews (Sedlenieks 2003) and even the larger surveys involve for example 400 interviews in Ukrainian localities (Williams 2007, Williams and Round 2008c) and 311 interviews in deprived and affluent neighbourhoods in Moscow (Williams and Round 2010).

Given this small and patchy evidence-base, this paper begins to fill this major gap by reporting a more extensive survey.

Methodology

To do so, we here report Special Eurobarometer No. 402. This survey on participation in the informal economy was undertaken in April and May 2013 and includes 27,563 face-to-face interviews in all 28 European Union member states, of which 11,131 interviews were conducted in the 11 post-socialist countries of Central and Eastern Europe that are now member states of the European Union. Interviews were conducted face-to-face in the national language with adults aged 15 years and older. In every country, a multi-stage random (probability) sampling methodology was used (the number of interviews varying from 500 in smaller countries to 1,500 in larger nations). This ensured that on the issues of gender, age, region and locality size, each country as well as each level of sample (e.g., Central and Eastern Europe) is representative in proportion to its population size. For the univariate analysis therefore, we employed the sampling weighting scheme as the literature suggests (Solon et al. 2013, Winship and Radbill 1994, Sharon and Liu 1994). For the multivariate analysis however, there is a debate over whether such a weighting scheme should be used (Solon et al. 2013, Winship and Radbill 1994, Sharon and Liu 1994, Pfeffermann 1993). Given that the vast majority of this literature specifies that weighting is not recommended, we here decided not to use the weighting scheme for the multivariate analysis.

Given the sensitive nature of the issue under investigation, the interview schedule followed best practice (see Ram and Williams 2007) and built rapport with the participants before posing the more sensitive questions regarding their participation in the informal economy. Pursuing a gradual approach to the more sensitive questions, the interview schedule thus commenced with questions about their attitudes towards the informal economy, followed by

questions on whether they had purchased goods and services from the informal economy. Only then were questions posed in relation to their participation in the informal economy. Analysing the responses of interviewees regarding the perceived reliability of the interviews in CEE countries, the finding is that cooperation was deemed bad in only 1.2% of the interviews. Cooperation was deemed excellent in 50.32%, fair in 38.5% and average in 10%.

Given this, attention can turn to an analysis of the results. The hypothesis is that participation in the informal economy varies according to socio-demographic variables (gender, age, marital status, age when stopped full time education, people 15+ years in own household, number of children, tax morality), socio-economic variables (employment status, household financial circumstances) and spatial characteristics (urban-rural character of the area in which the respondent lives). To analyse this, we here use multilevel mixed-effects logistic regression analysis. The dependent variable measures whether respondents participated in the informal economy and is based on the question ‘Apart from regular employment, have you yourself carried out any undeclared paid activities in the last 12 months?’. The independent variables used to analyse whether marginalised populations are more likely to participate in the informal economy are divided into the following socio-demographic, socio-economic and spatial variables:

Socio-demographic independent variables:

- Gender: a dummy variable with value 1 for males and 0 for females.
- Age: a categorical variable for the age of the respondent with value 1 for those aged 15 to 24 years old, value 2 for those aged 25 to 34, value 3 for those aged 35 to 44, value 4 for those aged 45 to 54, value 5 for those aged 55 to 64, and value 6 for those over 65 years old.

- Marital Status: a categorical variable for the marital status of the respondent with value 1 for married/ remarried individuals, value 2 for cohabiters, value 3 for singles, value 4 for those separated or divorced, and value 5 for widowed and for other form of marital status.
- Social class: a categorical variable for the respondent perception regarding social class of society to which s/he belongs with value 1 for the working class of society, value 2 for middle class of society, value 3 for higher class of society, and value 4 for other or none.
- Age when stopped full time education: a categorical variable for age of the respondent when stopped full time education with value 1 for 15 years old and under, value 2 for 16-19 years old, value 3 for 20 years old or over, and value 4 for “still studying”.
- People 15+ years in own household: a categorical variable for people 15+ years in respondent`s household (including the respondent) with value 1 for one person, value 2 for two persons, value 3 for 3 persons, and value 4 for 4 persons or more.
- Children (up to 14 years old in the household): a categorical variable for number of children with value 1 for individuals with no children, value 2 for the presence of children less than 10 years old live in respondent`s household, value 3 for the presence of children aged 10 to 14 years old live in respondent`s household and value 4 for the presence of children less than 10 years old and children aged 10 to 14 years old live in respondent`s household.
- Tax morality index: Constructed index of self-reported tolerance towards tax non-compliance.

Socio-economic independent variables:

- Employment status: a dummy variable with value 1 for employed respondents and 0 for unemployed respondents.
- Difficulties paying bills: a categorical variable for whether the respondent witnessed difficulties in paying bills with value 1 for having difficulties most of the time, value 2 for occasionally, and value 3 for almost never/never.

Spatial independent variable:

- Area respondent lives: a categorical variable for the urban/rural 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 urban area.

Below, we report the findings.

Findings: marginalisation and participation in the informal economy

Examining the results of the 11,131 face-to-face interviews, and as Table 1 displays, 4.2% of participants report that they undertook work in the informal economy in the year prior to the survey. A further 4.4% refused to answer or said that they did not know. Even if participation in the informal economy is a sensitive issue and the differences between the reported situation and lived practice might be significant, this survey finds that 1 in 23 citizens of the 11 Central and East European (CEE) countries self-reported that they had worked in the informal economy in the prior 12 months. Examining how much they earned from their work in the informal economy, the mean earnings are €511, with 13% earning in the range of €1-100, 8% €101-200 and 16% between €201-500. Therefore, 37% of those respondents in CEE countries who work in the informal economy earn €500 or less. A further 10% earn €501-1000 and just 5% earned more than €1000. Some 48% nevertheless, either do not remember how much they earned, do not know or refused to answer.

INSERT TABLE 1 HERE

To start evaluating the validity of the marginalisation thesis, Table 1 reports the cross-national variations so as to understand whether the poorer CEE countries have higher participation rates

than more affluent CEE nations. The finding is that the phenomenon is not evenly spread across the CEE countries. Participation rates are highest in Estonia, Latvia (11%), Lithuania (8%), Croatia and Slovenia (7%) and lowest in Poland and Romania (3%). Similarly, those living in Slovenia, Estonia, Croatia and Lithuania earn more money from the informal economy than the CEE countries average of €511 (respectively: €1056, €885, €885, €696) with those living in Poland and Romania earning from the informal economy less than the CEE average (€438, respectively €362). Furthermore, the poorest country in Central and Eastern Europe, namely Bulgaria, has the lowest earnings mean from informal economy, €236. This does not mean however that the marginalisation thesis holds when examining cross-national variations in the level of participation in the informal economy at the CEE regional level. The finding is that there is no significant statistical relationship between cross-national variations in the level of participation in the informal economy and cross-national variations in GDP in purchasing power standards ($p > 0.05$). As such, the marginalisation thesis is not valid when examining cross-national variations in the level of participation in the informal economy. Poorer CEE countries do not have significantly higher participation rates in informal work than more affluent CEE countries.

Turning to the socio-demographic, socio-economic and other forms of spatial variation, Table 2 displays that, contrary to the marginalisation thesis, participation in the informal economy is higher amongst men than women (6% of men participated over the prior 12 months but only 2% of women) and women earn significantly less than men from such work (i.e., their earnings in the informal economy are 63% the amount earned by men). The unemployed are slightly less likely to participate in informal work than the employed but when they do, they earn more. Neither do respondents living in rural areas participate in the informal economy to a greater extent than respondents living in urban areas. The tentative suggestion from these descriptive statistics therefore, is that the marginalisation thesis does not apply when discussing

women compared with men, the unemployed compared with the employed and those living in rural areas compared with urban areas. Instead, the reinforcement thesis tentatively appears to be valid so far as gender and employment status are concerned.

INSERT TABLE 2 ABOUT HERE

However, when examining other population groups, it is more the marginalisation thesis that tentatively appears to be applicable. Not only are younger age groups more likely to participate in the informal economy than older age groups, but so too do those who are unmarried/cohabiting and those divorced/separated compared with those who are married/remarried or widowed/other participants, those who self-define themselves as working class compared with those defining themselves as middle or higher class, those with more than one child, and those who have difficulty paying bills compared with those who seldom have difficulties. For all these population groups, the marginalisation thesis appears to be valid.

These descriptive statistics thus tentatively intimate that it is not possible to assert that either the marginalisation or the reinforcement thesis is universally applicable at all spatial scales and across all socio-demographic and socio-economic groups. Instead, the marginalisation thesis appears to be applicable when analysing some population groups but the reinforcement thesis for others.

To evaluate this, we here analyse the hypothesis that participation in the informal economy varies according to socio-demographic variables (gender, age, marital status, age when stopped full time education, people 15+ years in own household, number of children, tax morality index), socio-economic variables (employment status, difficulty in paying bills) and spatial characteristics (area respondent lives) when other variables are held constant. Given the hierarchical structure of the data (individuals nested within countries), for the multivariate

analysis, we employ a multilevel model. As the dependent variable is dichotomous, we use a multilevel mixed-effects logistic regression (Snijders and Bosker 2012). The binary response variable is whether or not a respondent carry out any undeclared paid activities in the last 12 months. Indeed, the likelihood-ratio test for the null hypothesis that there are no variations in participation in the informal economy reports that this hypothesis can be safely rejected. Therefore, the multilevel mixed-effects logistic regression should be the one used.

To analyse the effect of the independent variables on participation in the informal economy, an additive model is used. Model 1 (M1) examines the socio-demographic factors, model two (M2) examines the socio-economic factors together with the socio-demographic factors and model 3 (M3) examines the influence of each factor on participation in the informal economy when the socio-demographic, socio-economic and spatial factors are all included. Table 3 reports the results.

INSERT TABLE 3 HERE

Model 1 in Table 3 reveals that the marginalisation thesis is valid when analysing various socio-demographic disparities in participation rates. Not only are younger age groups significantly more likely to participate in the informal economy, doubtless due to their greater exclusion from the formal labor market (European Commission 2014a), but so too are those who self-define themselves as working class and those who left school at 15 years old or younger relative to those who are still studying. In addition, those more tolerant of the informal economy and holding non-conformist attitudes towards tax compliance are significantly more likely to participate in such endeavour. This is important because it reveals that those marginalised in the sense that their norms, values and beliefs regarding informal work do not conform to the formal institutions (i.e., the codes, regulations and legislation) are more likely to participate in such

work (Williams and Martinez 2014a,b). The implication therefore, is that tax morality may well be a useful proxy indicator of the level of participation in the informal economy.

Contrary to the marginalisation thesis and in support of the reinforcement thesis however, men are found to be significantly more likely to participate in the informal economy than women, reflecting how the exclusion of women from the formal labour market is reinforced when examining the informal labour market. No evidence is found to support the marginalisation (or reinforcement) thesis nevertheless, when analysing the marital status, the social class self-assessment and the number of children in the household. As such, when considering the socio-demographic variables, the finding is that a nuanced assessment of the validity of the marginalisation thesis is required. The marginalisation thesis is valid in relation to some marginalised population groups (e.g., younger people, less educated people, single person households and those with non-conformist attitudes), but not others (e.g., women).

When Model 2 adds the socio-economic factors of employment status and financial circumstances faced by people to the socio-demographic variables, the only change to the influence of socio-demographic factors on participation in the informal economy is that social class becomes no longer a significant influence. All the other significant socio-demographic influences on participation in informal work remain. However, the additional finding is that the unemployed are significantly more likely to participate in the informal economy than those who have formal jobs. This can be explained to be the case for at least four reasons: the unemployed lack the resources (e.g., car, tools) required to engage in a wide range of informal work (Williams 2001), they receive and hear about fewer opportunities to engage in informal work due to their smaller and more confined social networks (e.g., Komter 1996, Williams 2014), they lack the skills and competencies to conduct informal work (Mingione 1991, Renooy 1990) since if their skills and competencies are inappropriate for finding formal employment, there is no reason to believe that they are appropriate for finding informal work, and the unemployed fear being

reported to the authorities, not least because claiming welfare benefits illicitly is commonly viewed as a more serious offence than tax evasion (Cooke 1997, Williams 2014, Williams et al. 2013).

Model 2 also reveals that those who have difficulties paying the household bills most of the time are significantly more likely to participate in the informal economy than those more seldom having such difficulties. In other words, they are more likely to be forced into the informal economy out of necessity to make ends meet and as a last resort than those witnessing fewer financial difficulties. Both of these socio-economic characteristics, namely employment status and financial circumstances, thus provide support for the marginalisation thesis. The unemployed and those with financial difficulties are significantly more likely to participate in the informal economy than those with formal jobs and fewer financial difficulties.

When spatial factors are added in Model 3, the finding is again that there are no major changes to the significance of the socio-demographic and socio-economic characteristics discussed above in relation to participation in the informal economy and the directions of the associations remain the same. However, no significant relationship is found between living in rural or urban areas and participation in the informal economy. There is thus no evidence to support the marginalisation thesis that those in marginal rural areas are more likely to participate in the informal economy. Neither however, is there evidence to support the inverse reinforcement thesis that participation reinforces the disparities between rural and urban areas produced by the formal economy.

Discussion and Conclusions

To evaluate the validity of the marginalisation thesis, this paper has reported the results of a 2013 survey of participation in the informal economy in the 11 CEE countries which are member states of the European Union. Using multilevel mixed-effects logistic regression analysis, this has revealed support for the marginalisation thesis in relation to some marginalised population groups. Younger age groups are significantly more likely to engage in the informal economy, as are those who spent fewer years in formal education, the unemployed, single-person households, those more tolerant of the informal economy (who are marginalised in the sense that their values and attitudes do not conform to those of the codes, regulations and laws of the formal institutions) and those who have difficulties most of the time paying the household bills. Contrary to the marginalisation thesis and in support of the reinforcement thesis meanwhile, men are found to be significantly more likely to work in the informal economy than women. No evidence is found to support the marginalisation (or reinforcement) thesis however, so far as marital status, social class, the number of children in the household or the urban-rural divide is concerned.

Examining the implications for theorising participation in the informal economy, this paper thus reveals the need to transcend the notion that the marginalisation thesis is valid across all marginalised populations. This survey displays that although the marginalisation thesis applies so far as the age, level of education, employment status, household size, tax morality and household financial circumstances are concerned, when gender is analysed, the finding is that the reinforcement thesis is valid in the sense that participation in the informal economy is found to reinforce the gender disparities in the formal economy. When other characteristics are analysed moreover, such as the urban-rural divide, social class, marital status and number of children, no evidence is found to support either the marginalisation or reinforcement thesis. The result is the need for a more nuanced understanding of the validity of the marginalisation thesis. Whether the

same findings prevail when analysing participation in the informal economy at other spatial scales, such as in particular nations, regions and localities, now needs to be evaluated.

Turning to the implications of these findings for policy, the first important consequence is that this study reveals the specific populations that need to be targeted when tackling the informal economy. In recent years for example, there has been an emphasis in the European Union on targeting poorer EU nations when allocating resources through European structural funds to tackling the informal economy (Dekker et al. 2010, European Commission 2014b). However, the findings of this survey reveal that these poorer CEE nations are not disproportionately engaged in the informal economy. This suggests the need for a rethinking of the spatial allocation of European funds for tackling the informal economy. However, this survey does display that the current targeting of the unemployed by many governments in CEE countries when tackling the informal economy is not a mistake. The unemployed are significantly more likely to participate in the informal economy. Popular policy initiatives such as seeking to smooth the transition from unemployment to self-employment therefore, appear worthwhile. However, this survey also reveals that it is not just the unemployed that need to be targeted. It might also be worthwhile targeting other marginalised populations when tackling the informal economy, such as younger people and single-person households as well as men rather than women. In other words, this analysis provides a useful risk assessment of the different marginalised populations which enables not only the validity of the currently targeted populations to be evaluated but also the identification of possible groups that might be targeted in future policy initiatives.

In sum, this paper reveals for the first time the need for a more variegated approach towards the marginalisation thesis. Although this thesis is valid when considering some marginalised populations who are more likely to participate in the informal economy, it is not valid in relation to other marginalised populations. If this paper thus stimulates the emergence of a more nuanced interpretation of the validity of the marginalisation thesis, then it will have

fulfilled its major intention. If it also facilitates a shift in policy as a result of this more variegated understanding, not least in terms of reviewing the populations targeted by the authorities when tackling the informal economy and how resources are allocated, then it will have fulfilled its wider objective.

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Table 1. Participation in the informal economy in Central and East European countries, prior 12 months

	Sample size	% engaged in informal economy	Earnings from informal economy:					Don't remember/know, refusal (%)	Mean	GDP in PPS (EU28 =100), 2013
			€1-100 (%)	€101-200 (%)	€201-500 (%)	€501-1000 (%)	€1000+ (%)			
All CEE	11,131	4.22	13	8	16	10	5	48	511	-
Estonia	1,003	11	29	12	11	7	16	25	885	72
Latvia	1,006	11	36	6	15	13	6	24	478	67
Lithuania	1,027	8	13	16	12	12	11	36	696	74
Slovenia	1,017	7	20	13	12	9	14	32	1056	83
Croatia	1,000	7	11	10	13	8	19	39	885	61
Slovakia	1,000	5	18	6	14	10	4	48	540	76
Bulgaria	1,018	5	18	11	17	4	0	50	236	47
Czech R	1,000	4	14	18	21	12	2	33	348	80
Hungary	1,033	4	17	5	6	14	9	49	429	67
Poland	1,000	3	9	4	24	9	4	50	438	68
Romania	1,027	3	2	6	12	7	0	73	362	54

Table 2. Participation in the informal economy in Central and Eastern Europe:
socio-demographic, socio-economic and spatial variations

		% engaged in informal economy	Earnings from informal economy:					Don't remember / know, Refusal (%)	Mean
			€1-100 (%)	€101-200 (%)	€201-500 (%)	€501-1000 (%)	€1000+ (%)		
Gender	Male	6	11	7	18	11	6	47	569
	Female	2	16	11	13	7	3	50	358
Age	15-24	5	20	3	18	8	10	41	488
	25-34	6	13	8	25	18	5	31	535
	35-44	5	13	8	11	10	4	54	537
	45-54	5	9	15	17	3	5	51	479
	55-64	4	4	6	5	6	4	75	564
	65+	1	13	10	10	7	0	60	291
Marital status	Married/ Remarried	3	11	11	16	7	5	50	537
	Unmarried/cohabitating	9	16	4	28	9	4	39	391
	Unmarried/single	5	17	5	13	13	9	43	545
	Divorce/separated	6	7	14	11	13	5	50	487
	Widowed/other	2	5	1	4	2	3	85	1177
Social class	Working class	5	7	9	15	11	3	55	495
	Middle class	3	21	7	20	7	9	36	510
	Higher class	2	5	8	0	29	9	49	783
	Other/ None	3	25	0	26	12	31	6	794
Age education ended	<15	4	8	10	6	7	0	69	279
	16-19	5	10	9	19	9	5	48	531
	20+	3	8	8	17	14	11	42	636
	Still Studying	4	33	4	10	5	6	42	359
Adults in household	One	5	14	4	9	9	4	60	423
	Two	4	12	11	23	9	5	40	501
	Three	5	11	6	13	14	9	47	636
	Four and more	3	15	8	13	7	4	53	473
Children	<10 years old	4	16	10	12	14	7	41	675
	10-14 years old	3	10	9	9	15	5	52	569
	<10 and 10-14	6	8	13	13	10	3	53	513
	No children	4	13	7	18	8	5	49	466
Employment	Unemployed	4	12	8	11	9	6	54	591
	Employed	5	13	9	21	10	4	43	457
Difficulties paying bills	Most of the time	9	11	13	11	13	6	46	556
	From time to time	5	10	6	25	6	2	51	423
	Almost never/never	3	16	8	11	10	9	46	572
Area	Rural area or village	4	8	9	17	10	7	49	576
	Small or middle sized town	4	13	8	19	9	3	48	441
	Large town	4	18	8	13	9	5	47	505

Table 3. Multilevel mixed-effects logistic regression of participation in informal economy

Variables	Model 1	Model 2	Model 3
Gender (CG: Female):			
Male	0.945*** (0.0976)	1.018*** (0.0993)	1.015*** (0.0994)
Age (CG: 15-24):			
25-34	-0.273 (0.187)	-0.264 (0.187)	-0.269 (0.188)
35-44	-0.451** (0.200)	-0.418** (0.201)	-0.420** (0.201)
45-54	-0.570*** (0.203)	-0.556*** (0.204)	-0.572*** (0.204)
55-64	-0.932*** (0.226)	-0.975*** (0.228)	-0.981*** (0.228)
65+	-1.945*** (0.283)	-2.028*** (0.292)	-2.032*** (0.292)
Marital status: (CG: Married/Remarried)			
Cohabiting	0.211 (0.147)	0.198 (0.148)	0.199 (0.148)
Single	-0.0735 (0.164)	-0.141 (0.165)	-0.146 (0.165)
Divorced/Separated	0.267 (0.180)	0.185 (0.181)	0.190 (0.181)
Widowed/ Other	0.0682 (0.211)	0.00547 (0.213)	-0.00268 (0.213)
Social class, self-assessment (CG: The working class of society)			
The middle class of society	-0.205** (0.102)	-0.0615 (0.106)	-0.0446 (0.107)
The higher class of society	-0.163 (0.346)	0.102 (0.349)	0.126 (0.350)
Other/none	-0.449 (0.347)	-0.544 (0.349)	-0.532 (0.349)
Age stopped full time education (CG: 15- years):			
16-19	-0.167 (0.185)	-0.0482 (0.188)	-0.0343 (0.188)
20+	-0.123 (0.202)	0.0473 (0.206)	0.0764 (0.207)
Still Studying	-0.680** (0.278)	-0.688** (0.286)	-0.655** (0.288)
Number 15+ years in household (CG:1 person):			
2 persons	-0.268* (0.149)	-0.297** (0.150)	-0.303** (0.150)
3 persons	-0.342** (0.167)	-0.340** (0.167)	-0.354** (0.168)
4 persons	-0.330* (0.179)	-0.296 (0.180)	-0.314* (0.181)
Number of children: (CG: No Children)			
Children < 10	-0.0408 (0.141)	-0.0751 (0.142)	-0.0864 (0.143)
Children 10-14	-0.130 (0.192)	-0.163 (0.194)	-0.171 (0.194)
At least one child<10 and at least one 10-14	0.109 (0.208)	0.00922 (0.211)	-0.0132 (0.212)
Tax morality	0.365*** (0.0223)	0.357*** (0.0226)	0.357*** (0.0226)
Employment (CG: Unemployed):			
Employed		-0.232** (0.116)	-0.224* (0.116)
Difficulties paying bills last year (CG: Most of the time)			
From time to time		-0.454*** (0.126)	-0.458*** (0.126)
Almost never/never		-0.791*** (0.134)	-0.802*** (0.135)
Area respondent lives (CG: Rural area or village):			
Small/middle sized town			-0.151 (0.113)
Large town			-0.131 (0.121)
Constant	-3.477*** (0.358)	-2.985*** (0.364)	-2.900*** (0.368)
Observations	9,337	9,236	9,233
Number of groups	11	11	11
Random-effects Parameters			
Identity: Country			
Variance (constant)	0.216***	0.200***	0.199***

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1