



European Platform Undeclared Work

**Under-declaring work, falsely
declaring work:
under-declared employment in the
European Union**

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Executive Summary

Under-declared employment occurs when a formal employer pays a formal employee an official declared wage but also an additional undeclared ('envelope') wage in order to evade the full social insurance and tax liabilities owed. The aim of this study is to evaluate the prevalence, characteristics and distribution of this fraudulent wage practice in the EU28, to explain its existence, to provide an evidence-based evaluation of the effectiveness of different policy approaches for tackling it, and propose a set of policy recommendations.

Prevalence, characteristics and distribution of under-declared employment

To evaluate the prevalence, characteristics and distribution of under-declared employment in the EU28, and explain its existence, there are two main datasets. The first is the 2013 special Eurobarometer no. 402 survey of 11,025 employees in the EU28. The second is the employee and employer surveys conducted in late 2015 in Croatia, Bulgaria and FYR Macedonia, funded by the European Commission's Framework 7 Industry-Academia Partnerships Programme (IAPP) [grant number 611259] entitled 'Out of the shadows: developing capacities and capabilities for tackling undeclared work' (GREY).

In the 2013 Eurobarometer survey, one in 33 formal employees in the EU28 received envelope wages in the 12 months prior to the survey. Extrapolating from this, some 6.36 million of the 212 million employees in the EU-28 receive under-reported salaries. All employee groups, types of business and member states are involved in under-declared employment. However, it is relatively more concentrated in some employee groups, business types and member states. Men, younger age groups, those with financial difficulties, skilled manual workers and those travelling for their job, are more likely to receive envelope wages, and under-declared employment is particularly prevalent in smaller firms, and the agricultural, construction, transport, hotel and restaurant, repair services, and retail sectors.

Systemic determinants of under-declared employment

Conventionally, under-declared employment has been seen as an individual criminal act, which is solved by increasing the penalties and risks of detection in order to deter participation. This, however, only deals with the effects. It does not deal with the causes of under-declaring wages. Under-declared employment is a symptom of systemic problems. To identify these, an evaluation of the relationship between cross-national variations in the prevalence of envelope wages and various macro-level economic and social conditions is undertaken. This reveals that the likelihood of under-reporting wages is higher in economies with: lower GDP/capita; unmodernised state bureaucracies with greater public sector corruption; higher levels of severe material deprivation; higher income inequality; lower levels of expenditure on labour market interventions to protect vulnerable groups; and less effective policies of redistribution via social transfers to protect workers from poverty. It is important, therefore, to confront these systemic determinants in order to solve under-declared employment.

Strategies and capacities to tackle under-declared employment

To tackle envelope wages, two contrasting policy approaches are available to governments and social partners. A 'direct' approach ensures that the costs outweigh the benefits, mostly by increasing the penalties and risks of detection, which dissuades employers and employees from under-declaring wages. An 'indirect' controls approach, meanwhile, asserts that under-declaring wages occurs when the norms, values and beliefs of employees and employers are not in symmetry with the codified laws and regulations. Here, therefore, policy measures seek to align the norms, values and beliefs of employees and employers with the laws and regulations.

Evaluating their effectiveness in reducing under-declared employment, the finding is that although the 'direct' approach of increasing the penalties and probability of

detection does not influence employees' tendency to accept envelope wages, increasing the risks of detection does reduce the likelihood of employers paying under-declared wages. The 'indirect' approach of improving voluntary compliance, however, reduces the likelihood of employees receiving envelope wages and employers' under-declaring wages. The outcome is that an indirect approach is recommended as the primary tool for changing the behaviour of employees and employers, and improving the perceived and actual risks of detection is a secondary tool recommended for changing the behaviour of employers.

Improving the rate of detection of salary under-reporting, however, is difficult due to the problems involved in identifying such a wage arrangement during workplace inspections. This is because these formal employees have a written contract or terms of employment and a declared salary, and only 33% of employees receiving envelope wages would prefer full declaration, meaning that there is likely to be limited whistle-blowing from employees. Moreover, even those employees unhappy who might wish to whistle blow will be reticent about doing so for fear of losing their job. For this reason, a shift away from workplace inspections and towards data mining and matching, using dynamic benchmarking to identify anomalies/outliers, is required to detect under-declared employment. Databases are required that can analyse average earnings in firms, and cross tabulate this with average salaries in their region and/or sector, or by occupation, in order to identify outlier businesses paying below the average wage for their region and/or sector, or for particular occupations. However, this identification of potential outlier/anomalous organisations paying envelope wages, in order to enable more targeted inspections, does not help when it comes to proving salary under-reporting. It is unlikely employers and employees will admit to such a practice.

In consequence, there is a need for awareness raising campaigns and education about the benefits of fully declared work targeted at both employers and employees. For employers, such an awareness raising campaign should target small businesses in those regions and/or sectors where salary under-reporting is more prevalent, namely the agricultural, construction, hotel and restaurant, transport, repair services and retail sectors. For employees, meanwhile, such a campaign could be targeted particularly at the employee groups identified above, especially in small firms and the sectors where envelope wages are prevalent. This could focus upon the benefits of fully declared employment and the costs of receiving envelope wages in terms of the future benefits foregone. More widely, initiatives are also required to educate citizens about the benefits of taxation in terms of the public goods and services that they receive in return for the taxes they pay. Such policy initiatives might range from introducing into the civics curriculum in schools the issue of taxation and adhering to labour legislation, through letters to employees and employers as taxpayers about how their taxes are being spent, to signs stating 'your taxes paid for this' on fire engines, roads and ambulances, and in hospitals, doctors' surgeries and schools.

Awareness raising and educational initiatives, however, will not alter the attitudes of employers and employees, and reduce under-declared employment, unless there is reform of the formal institutions, especially in countries where formal institutional deficiencies mean there is a lack of trust in government. On the one hand, this requires alterations in the macro-level structural conditions cited above that lead to lower voluntary compliance. On the other hand, the quality of governance needs improving. This is because voluntary compliance improves when employees and employers: believe they are treated in an impartial, respectful and responsible manner by state authorities; believe they pay their fair share compared with others, and believe they receive for the taxes they pay the public goods and services they deserve.

1. Introduction

The topic of under-declaring work/falsely declaring work can cover a multitude of types of undeclared work that are relevant to the European Platform Tackling Undeclared Work. Under-declaring work could be seen to include employers using unregistered employees, as well as the under-declaration of income by the formal self-employed and formal businesses in order to evade tax and social insurance contributions, and falsely declaring work could be seen to include the practice of bogus self-employment.¹ In this small-scale report, however, the intention is to focus upon one particularly prominent form of under-declaring/falsely declaring work, namely under-declared employment. This occurs when formal employers pay their formal employees two salaries: an official declared salary, and an additional undeclared ('envelope') wage hidden from the authorities for tax and social security purposes. The formal employee therefore has a written contract or terms of employment, and an official declared salary, but in addition, receives an additional undeclared wage. Given that employers in many member states give this undeclared part of the wage to the employee as cash in an envelope, the study of under-declared employment is commonly referred to as the study of 'envelope wage' practices.²

For many inspectorates, this practice of paying envelope wages has become a major concern, particularly in East-Central and Southern European member states, where it is perceived as a prominent feature of their labour markets. However, there has been until now little understanding of the prevalence, characteristics and distribution of such under-declared employment. This is largely because such a practice is difficult for inspectorates to detect. The intention of this report, therefore, is present the evidence available on its prevalence, characteristics and distribution across the EU28 and to discuss how to tackle it. This will reveal that some policy approaches are more effective than others, that what works with employers differs from what works with employees, and that there is a need to address some systemic features of member states if this practice is to be more widely effectively tackled.

Aims and objectives

The aim of this study is to evaluate the prevalence, characteristics and distribution of envelope wage practices across the EU28, and to discuss how to tackle it. The specific objectives will be to answer the following questions:

- **What is the prevalence of under-declared employment?** What proportion of formal employees receives an undeclared ('envelope') wage in addition to their official declared salary? What proportion of their take-home pay is received as an envelope wage? How does the prevalence of under-declared employment vary across the 28 member states of the European Union (EU28)?
- **What are the characteristics of under-declared employment?** Why do employers pay envelope wages? What additional terms of employment, if any, do employers impose in return for paying an envelope wage (e.g., foregoing holiday entitlements, longer hours, different tasks to those specified in the written contract)? In what situations are envelope wages paid (e.g., for overtime/extra work or for the main contract)? What is the attitude of employees to being paid envelope wages? Is it always employers, or is it sometimes employees, who propose this wage arrangement?
- **What is the distribution of under-declared employment?** Who receives envelope wages (e.g., age, gender, educational level, household financial situation, occupational characteristics)? Which employers pay envelope wages (e.g., what sectors, sizes of employer and business types)?

¹ See Heyes and Hastings (2017).

² See Horodnic (2016); Meriküll and Staehr (2010); Williams (2007, 2008a,b, 2009a,b,c,d, 2010, 2012a,b); Williams and Padmore (2013a,b); Williams and Round (2008); Williams et al. (2011).

- **What are the key drivers of under-declared employment?** Is the level of under-declared employment associated with key structural economic and social conditions? If so, which ones (e.g., GDP per capita; quality of government; active labour market policy expenditure, income inequality)? What implications does this have for tackling this illegal wage practice?
- **How can under-declared employment be tackled by governments and social partners?** What are the current legislative and institutional frameworks available for tackling envelope wages? What strategies are available for tackling such work? What works and what does not work? Are the policy initiatives that are effective in preventing employers from paying envelope wages different to those effective in preventing employees accepting such a wage arrangement? What good practices exist? And are they transferable to other member states?

To commence, therefore, section 2 evaluates the prevalence of under-declared employment in the EU28 by examining what proportion of formal employees receive an additional undeclared (envelope) wage and the proportion of take-home pay paid in this manner. Section 3 then examines the characteristics of under-declared employment, including: the reasons for this wage practice; whether additional conditions are attached to the payment of an envelope wage; whether it is paid for overtime/extra work or for the main contract; the attitude of employees towards envelope wages, and whether this wage arrangement is employer- or employee-instigated. Meanwhile, section 4 explores its distribution, including who receives envelope wages (e.g., age, gender, educational level, household financial situation, occupational characteristics), and which employers pay envelope wages (e.g., what sectors, sizes of employer and business types). With this understanding of the prevalence, characteristics and distribution of under-declared employment in hand, section 5 then identifies the systemic drivers that determine the prevalence of under-declared employment, section 6 examines the legislative and institutional frameworks and section 7 the strategies and capacities available to governments and social partners for tackling this illegal wage practice. Section 8 then provides an evidence-based evaluation of the different policy approaches in terms of what works and what does not with employers and employees, resulting in a set of broad policy recommendations for tackling envelope wages.

2. Prevalence of Under-Declared Employment

Most of the early studies of under-declared employment tended to be small-scale in-depth qualitative studies of particular East-Central European nations.³ However, these studies, often on an unrepresentative sample of the population, provided little rigorous empirical evidence of its prevalence and distribution.

The first extensive survey on a representative sample was special Eurobarometer survey no. 284 conducted in 2007 (European Commission, 2007b). This involved 11,135 interviews with formal employees across the 27 member states of the European Union (EU-27). The finding was that 5.5% of formal employees across the EU-27 received an additional undeclared ('envelope') wage from their employer in addition to their official declared salary, with the undeclared wage amounting to on average 43% of their gross salary. The prevalence of under-declared employment, however, was lower in Western and Nordic nations than in Southern and East-Central Europe, as was the portion of the gross wage received as an envelope wage (Williams, 2009a, 2013).

This Eurobarometer survey was repeated in 2013. Special Eurobarometer no. 402 involved face-to-face interviews with 11,025 employees in the EU28 (European

³ These include studies undertaken in Bulgaria (Chavdarova, 2014), Estonia (Meriküll and Staehr, 2010), Latvia (Kukk and Staehr, 2014; Meriküll and Staehr, 2010; OECD, 2003; Putniņš and Sauka, 2015; Sedlenieks, 2003), Lithuania (Meriküll and Staehr, 2010; Sasunkevich, 2014; Woolfson, 2007), Romania (Horodnic and Williams, 2017; Neef, 2002), Russia (Kapelyushnikov et al., 2012; Williams and Round, 2008) and Ukraine (Round et al., 2008; Williams, 2007).

Commission, 2014). As Figure 1 displays, in 2013, one in 33 formal employees received an additional undeclared (envelope) wage from their formal employer in the year prior to the survey, and the median proportion of their gross salary paid as an envelope wage was 25%. Therefore, a tentative estimate is that 6.36 million of the 212 million employees in the EU-28 receive envelope wages.

Figure 1. Prevalence of under-declared employment in the EU-28⁴, by country



Caution is needed regarding the portion paid as an envelope wage due to the small numbers answering this question and the large number of refusals/do not know answers.

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

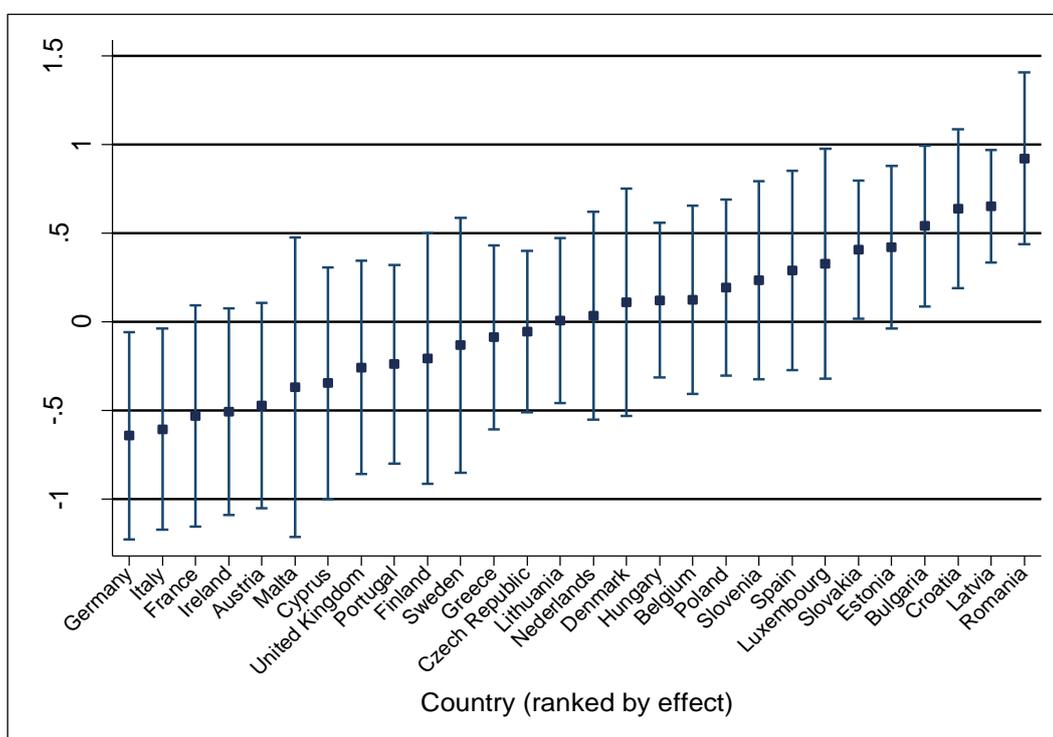
⁴ Throughout the paper, 'average gross salary received as envelope wage' is calculated based on the median value, which represents the middle value in the sample (e.g., at EU-28 level, half of the respondents received 25 percent or more of their gross salary as envelope wages; in Spain and Portugal, half of respondents received all their gross salary as envelope wages).

Examining the EU regional variations, the finding is that the proportion of formal employees receiving envelope wages is greater in East-Central Europe (6% of employees) and Southern Europe (4%) than in Western Europe (1%) and the Nordic nations (1%). So too is the proportion of their gross wage unreported higher in East-Central Europe (30%) and Southern Europe (50%) than in Western Europe (10%) and the Nordic countries (3%).

Under-declared employment is concentrated in East-Central Europe. Just 22% of the formal employees surveyed in 2013 were in East-Central Europe, but 45% of those receiving envelope wages. It is not equally prevalent however, across all East-Central European nations. In Latvia, 11% of formal employees receive envelope wages, 8% in Croatia, 7% in Romania and Slovakia, 6% in Bulgaria, Hungary and Lithuania, 5% in the Czech Republic, Estonia and Poland, and 4% in Slovenia. Neither, moreover, is its greater prevalence confined to East-Central Europe. Other member states with above EU-average rates include Greece (7%), Spain (5%) and Belgium (4%).

To determine whether the cross-national variations in the prevalence of under-declared employment are statistically significant after controlling for a variety of individual-level variables, Figure 2 displays the residual country effects. A country whose confidence interval does not overlap the line at zero has a level of under-declared employment that is significantly different to the EU-28 average within a 95% confidence interval. At the lower end, therefore, Germany and Italy have a lower propensity to pay envelope wages that is statistically significant. At the upper end, Romania, Latvia, Croatia and Bulgaria have a higher propensity to pay envelope wages that is again statistically significant. Therefore, there are statistically significant cross-national variations in the propensity to pay envelope wages when the individual-level variables are included.

Figure 2. Cross-national variations in the propensity to pay envelope wages in the EU-28: residual country effects within a 95% confidence interval



Method: When calculating whether the likelihood of under-declared employment in a member state differs significantly from the EU28, the model controlled for: gender; age; age formal education ended; difficulties paying bills; occupation, and the size of the firm for which the individual works.

Source: Williams and Horodnic (2017)

3. Characteristics of Under-Declared Employment

The decision to pay an undeclared (envelope) wage in addition to the official declared salary usually occurs at the stage of a job offer. At the same time as the employer and employee agree an official declared salary, detailed in a formal written contract, they also reach a verbal unwritten agreement to pay an additional undeclared 'envelope' wage, sometimes with additional conditions of employment. In effect, therefore, the verbal contract takes precedence over the written contract, and constitutes the unwritten 'psychological contract' regarding their wage and conditions of employment (Rousseau, 1995). Although verbal agreements are in many countries legal and hold the same weight in law as a written contract, this particular verbal contract is illegal. It is an agreement to fraudulently under-declare to the state authorities the salary paid to an employee in order to evade the full tax and social security payments owed by the employee and employer.

In this section, firstly, the reasons employers engage in this wage practice are briefly analysed. Secondly, what additional conditions, if any, are attached to the payment of envelope wages are analysed, thirdly, what envelope wages are paid for (e.g., for overtime/extra work or for the main contract), and fourthly, the attitude of employees to receiving an additional undeclared (envelope) wage. Fifth and finally, whether the employer or employee instigates the decision to pay envelope wages is evaluated.

3.1 Why do employers pay envelope wages?

Superficially, the reason employers engage in this fraudulent wage practice is simple. Employers do not have to pay the full tax and social contributions owed to the state if a portion of the total salary of an employee is not declared. As such, employers weigh up the benefits in terms of money saved, against the costs in terms of the probability of detection and penalties, and decide to pay envelope wages. This cost saving could hypothetically be either kept by the employer or used to pay the employee a higher salary, or a combination of the two. The problem with this rational economic actor explanation, however, is that it does not explain why some employers decide to pay envelope wages and others do not. Indeed, many employers do not even when the rational economic decision would be to pay envelope wages. Instead, they voluntarily comply.

In recent years, a social actor approach has emerged to explain this. Grounded in institutional theory (North, 1990), this views under-declared employment to arise when the norms and beliefs of employers and employees (i.e., the informal institutions) do not align with the laws and regulations of the formal institutions. The view is that under-declared employment is used by employers (and sometimes employees) who do not accept the formal 'rules of the game', such as due to their belief that the state is corrupt, or that the state does not provide them with the public goods they deserve given the taxes they pay (Williams and Horodnic, 2015a,b).

In consequence, although under-declared employment superficially appears to be simply a way of employers saving costs by reducing their tax and social contributions owed, this illegal wage practice only occurs when employers (and employees) do not accept the formal 'rules of the game' (i.e., the codified laws and regulations). Section 5 will evaluate the reasons for this lack of adherence to the formal laws and regulations.

3.2 What conditions are attached to the payment of envelope wages?

No information is available for the whole EU28 on whether such verbal agreements result in additional conditions to those stated in the written contract or terms of employment, and what additional conditions are commonly included. However, the 2015 GREY employees' survey conducted in Bulgaria, Croatia and FYR Macedonia collected such information. As Table 1 displays, some 50% of employees receiving envelope wages in Bulgaria have additional conditions to those stated in the written contract or

terms of employment, 61% in Croatia and 40% in FYR Macedonia. Analysing these additional conditions:

- 28%, 34% and 24% of employees receiving envelope wages in Bulgaria, Croatia and FYR Macedonia respectively, were asked to work longer working hours than stated in their written contract. This can result in those on a part-time formal written contract actually working full-time, full-time workers doing more than the maximum hours in the working hours' directive, and/or the wage of workers in practice being less than the minimum hourly wage.
- 20%, 27% and 15% in Bulgaria, Croatia and FYR Macedonia respectively were asked to conduct different tasks and/or responsibilities to those stated in their written contract; and
- 9%, 19% and 11% in Bulgaria, Croatia and FYR Macedonia respectively were asked not to take their full holiday allowance.

Given that an employee could select more than one condition if they had multiple additional conditions attached to receiving envelope wages, the numbers do not necessarily always round-up in Table 1.

Table 1. Conditions attached to the payment of envelope wages

% of employees receiving envelope wages:	Bulgaria	Croatia	FYR Macedonia
No additional conditions in verbal contract	50	39	60
Additional conditions:	50	61	40
asked to work longer working hours than stated in their written contract	28	34	24
asked to conduct different tasks to those in their written contract	20	27	15
asked not to take their full statutory entitlement to annual leave	9	19	11

Source: 2015 GREY employees survey

3.3 Are envelope wages paid for overtime or regular work?

The 2013 Eurobarometer asked people whether they were paid envelope wages for their regular employment, for overtime/extra work, or for both their regular employment and overtime/extra work conducted. As Table 2 reveals, some 37% received envelope wages for their regular employment, 31% for over/extra time worked, and 25% for both their regular work and overtime/extra work.

Table 2. Are envelope wages paid for overtime or regular work? (2013)

% of employees receiving envelope wages:	EU28	Western Europe	Nordic nations	East-Central Europe	Southern Europe
For their regular employment	37	43	58	32	38
For overtime/extra work	31	32	36	32	29
For both their regular employment and overtime/extra work	25	14	6	32	27
Don't know/refused to answer	7	11	0	4	6

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Evaluating the variations across EU regions, the finding is that in Western Europe and Nordic nations, envelope wages are more commonly for regular employment, while in East-Central Europe and Southern Europe envelope wages are more commonly for both regular work and overtime/extra work.

With one-third of envelope wages in the EU28 given for overtime or extra work conducted, this often appears to be a tactic used by employers to cope with temporary increases in demand by using their existing labour force, rather than buying in extra labour or outsourcing, or taking on wholly undeclared labour to meet temporary increases in demand.

3.4 What is the attitude of employees to being paid envelope wages?

Some employees might prefer full declaration of their salary. This is because they would then obey the law, get access to higher levels of credit/loans, and even perhaps gain official recognition as a full-time rather than part-time worker in some cases. Other may be happy receiving an envelope wage, perhaps because they believe that they receive a higher 'take-home pay' when paid in this manner. Others might be neutral in their attitude towards envelope wages. Table 3 reports the results from the 2007 Eurobarometer survey (the 2013 survey did not include such a question).

There is no evidence that the overwhelming majority of employees receiving envelope wages in the EU would prefer either full declaration of their salary or are happy receiving an envelope wage. Instead, one-third of employees receiving envelope wages are happy with this arrangement, one-third would prefer full declaration, and the remainder are either neutral or do not know/refuse to answer.

Table 3. Attitude of employees towards receiving envelope wages (2007)

% of employees receiving envelope wages:	EU27	Western Europe	Nordic nations	East-Central Europe	Southern Europe
Would prefer full declaration of their salary	33	12	27	40	34
It depends	16	4	9	18	19
Happy receiving envelope wage	33	82	58	24	19
Don't know/refused to answer	18	2	6	18	28

Source: Authors' own work based on the Special Eurobarometer 284 (2007)

There are, however, clear East/West and North/South regional variations in the EU. Recipients of envelope wages in Western Europe and the Nordic nations are more commonly happy receiving an envelope wage, and those in East-Central Europe and Southern Europe more commonly assert they would prefer full salary declaration.

Given that these results are from 2007, the 2015 GREY survey provides a partial check on whether this is still the case (see Table 4). Akin to the 2007 finding that those receiving envelope wages in East-Central and Southern Europe are more likely to assert that they would prefer full declaration of their salary, this is found to be also the case in 2015 in these three Southeast European countries.

Table 4. Attitude of employees towards receiving envelope wages (2015)

% of employees receiving envelope wages:	Bulgaria	Croatia	FYR Macedonia
Would prefer full declaration of their salary	31	55	44
It depends	34	23	21
Happy receiving envelope wage	27	19	36
Don't know/refused to answer	8	3	0

Source: 2015 GREY employees survey

Given that only one-third of recipients of envelope wages in the EU would prefer full declaration of their salary, this suggests that it will prove difficult during workplace inspections to elicit 'whistle-blowing' behaviour from employees, and even those not happy with this arrangement may fear losing their job if they whistle blow.

Indeed, evidence that this is unlikely to change in the near future as younger generations enter the workforce is found in a 2016 survey of Romanian and Moldovan students of the Faculty of Economics and Business Administration at Alexandru Ioan Cuza University of Iași. Of the 497 students completing the survey, 40% stated that in their future employment they would prefer the full declaration of their salary, 28% were happy to receive envelope wages, and a further 28% neutral. 4% did not answer. The majority of students are thus happy to accept, or are neutral about, under-declared employment. Only 13%, moreover, would reject an employer imposing additional conditions to those in the formal contract in return for an envelope wage (Horodnic and Williams, 2017). If this cohort of university business studies students reflects the attitudes of the wider future workforce, it provides a compelling case for educational and awareness raising campaigns about the benefits of full declaration and the costs of receiving envelope wages.

3.5 Envelope wages: an employer- or employee-instigated decision?

Until now, it has been widely assumed that under-declared employment is always employer-instigated and purely a result of employers seeking to reduce their tax and social security contributions. However, given that under-declared employment is an agreement between an employee and employer, the 2015 GREY employee survey evaluated whether the verbal agreement to pay envelope wages was always employer initiated. Every employee receiving envelope wages was asked 'Who suggested paying this additional salary which would not be declared to the authorities?'. Three different answers were possible: the employer initiated the arrangement; the worker requested to be under-declared; and under-declaration was a joint idea.

As Table 5 reveals, under-declaration is in 65% of cases in Bulgaria initiated by the employer, in 70% of cases in Croatia, and 54% in FYR Macedonia. This is perhaps not surprising given the benefits to employers from this type of noncompliance, which is not always the case for employees. However, in 1 in 3 cases of envelope wages in Bulgaria and Croatia, and nearly half of all cases in FYR Macedonia, the employee reported playing a role in suggesting this wage arrangement. However, in most cases it was a joint idea, while only a small proportion of employees asserted that it was exclusively due to them suggesting this arrangement.

Table 5. Is salary under-reporting employer- or employee instigated? (2015)

% of employees receiving envelope wages:	Bulgaria	Croatia	FYR Macedonia
Initiated by employer	65	70	54
A joint idea	29	20	24
Initiated by employee	2	10	22
Refused/do not know	4	0	0

Source: 2015 GREY employees survey

However, given the differential power of the employer and employee in such negotiations, caution is required regarding this self-reported involvement of employees in the decision. To see this, Franic (2017) distinguishes four types of employee receiving envelope wages based on qualitative interviews in the Croatian city of Zagreb, and in doing so displays the lack of choice available to many employees receiving envelope wages. These four types are:

- *Under-declared by deception* – for a typical Croatian employee the phrase 'income from employment' means 'take-home pay'. Employers, therefore, will offer a job to a person at a certain take-home pay rate but not mention that only a portion of this will be the official declared salary and the rest paid as an undeclared (envelope) wage.

- *Reluctant voluntarists* – these employees give their consent to under-declaration, which is not the case with those deceived, but do so reluctantly and are not happy with this arrangement. Their decision to consent arises out of desperation given the lack of alternative employment opportunities.
- *Monetary rationalists* – an employer offers a job candidate either a higher take-home pay with a low amount as a declared salary and the rest as an envelope wage, or a much lower take-home pay if the salary is fully declared, and allows the employee to make the decision. Given that the employee chooses the higher take-home pay, they are 'monetary rationalists'.
- *Pure voluntarists* – these employees give their unconditional agreement to receive envelope wages, and are often either in the upper tier of the hierarchy in their companies or in lower tiers but with a high level of trust in their employers.

Employees, therefore, might assert that they have chosen to receive an envelope wage but for many, they accept this arrangement due to their lack, rather than as a matter, of choice.

4. Distribution of Under-Declared Employment

Which employee groups receive envelope wages and which businesses are more likely to pay such wages? To evaluate the distribution of under-declared employment, first, who receives envelope wages is evaluated (e.g., age, gender, educational level, household financial situation, occupational characteristics, locality type and region), and secondly, which employers pay envelope wages (e.g., what sectors, sizes of employer and business types).

4.1 Who receives envelope wages?

All employee groups are involved in under-declared employment, albeit some more than others. This section evaluates which particular groups are more involved, whilst recognising that this is not a wage arrangement confined to specific employee groups. Given the relatively small number identified in the 2013 Eurobarometer survey engaged in under-declared employment, these figures should be seen as indicative, especially for the portion of gross salary received as an envelope wage since only a portion of those receiving an envelope wage answered this question.

Starting with whether men or women employees are more likely to receive envelope wages, Figure 3 reveals that men in employment are slightly more likely to receive envelope wages than women (3% compared with 2%). Although men constitute 53% of all surveyed employees, they constitute nearly two-thirds (63%) of those receiving envelope wages, and on average, receive 25% of their salary as an envelope wage compared with 30% among women. Under-declared employment, therefore, is more common among men in the workforce than among women.

Figure 3. Prevalence of under-declared employment in the EU-28: by gender

Gender	Share of employees receiving under-reported salaries (%)	Distribution of employees by gender:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
Man	3	63	53	25
Woman	2	37	47	30

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Figure 4 reveals that the likelihood of receiving an envelope wage varies according to the age of the employee. Younger employees are more likely to receive envelope wages (with 6% of employees aged 15-24 paid an envelope wage) and this steadily declines with age, until workers reach 65 years old when it again increases, signifying the existence of a U-shaped curve regarding the relationship between age and the likelihood of receiving envelope wages. Under-declared employment, nevertheless, is above average among employees aged 15-34 years old (a group that has higher unemployment rates in the EU28). No discernible trends are evident in relation to the proportion of gross salary paid as an envelope wage across age groups.

Figure 4. Prevalence of under-declared employment in the EU-28: by age

Age	Share of employees receiving under-reported salaries (%)	Distribution of employees by age:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
15-24	6	17	9	25
25-34	3	27	23	25
35-44	3	28	28	20
45-54	2	21	27	30
55-64	1	6	12	15
65+	3	1	1	25

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Besides men and younger age groups (15-34 years old) being more likely to receive envelope wages, so too are those who finished their formal education earlier than 20 years of age. Indeed, those ending their formal education at 20+ years old accounted for 41% of the surveyed employees but only 27% of those receiving envelope wages. Employees that finished their education early are also more likely to receive a higher proportion of their gross salary as an envelope wage.

Figure 5. Prevalence of under-declared employment in the EU-28: by education

Age formal education ended	Share of employees receiving under-reported salaries (%)	Distribution of employees by age when formal education ended:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
<15	3	10	9	28
16-19	3	63	50	30
20+	2	27	41	20

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

A further possibility is that individuals divorced or separated will be more likely to receive envelope wages, as this is a means of hiding income from ex-partners to evade alimony payments. However, Figure 6 reveals no evidence that this is the case. Instead, single persons and single people living with a partner are more likely to receive envelope wages. This might be associated with age, since single people and single persons living with a partner are more likely to be from younger age groups. Interestingly, although the divorced or separated have no greater likelihood of engaging in under-declared employment, when they do, a much higher proportion of their gross salary is paid as an envelope wage than among other groups. This, therefore, provides some support for

the notion that this group might see such a wage arrangement as a way of hiding income from ex-partners.

Figure 6. Prevalence of under-declared employment in the EU-28: by marital status

Marital status	Share of employees receiving under-reported salaries (%)	Distribution of employees by marital status:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
(Re-)Married	3	53	58	25
Single living with partner	4	19	15	30
Single	4	22	18	20
Divorced or separated	2	4	7	50
Widowed or other marital status	2	2	2	40

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

As Figure 7 reveals, the self-reported social class of the employee influences the likelihood of being paid envelope wages. Those reporting themselves as working class have greater likelihood of receiving envelope wages than those reporting themselves as middle- or higher-class. The self-reported working class are 40% of all surveyed employees but 61% of those receiving envelope wages, and receive a higher share of their gross salary as an envelope wage when engaged in under-declared employment.

Figure 7. Prevalence of under-declared employment in the EU-28: by social class

Social class: self-assessment	Share of employees receiving under-reported salaries (%)	Distribution of employees by social class:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
The working class of society	4	61	40	30
The middle class of society	2	36	56	20
The higher class of society	2	2	3	7
Other/ None class of society	1	1	1	50

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

There is also a strong association between under-declared employment and the ability of employees to pay their bills. As Figure 8 displays, those with difficulties paying the household bills 'most of the time' more commonly receive envelope wages than those who almost never/never have difficulties, or those who have difficulties from time to time. Those who have difficulties most of the time in paying the bills constitute 10% of the surveyed employees but 20% of those in under-declared employment.

Figure 8. Prevalence of under-declared employment in the EU-28: by financial status

Difficulties paying bills	Share of employees receiving under-reported salaries (%)	Distribution of employees by difficulties in paying bills:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
		Most of the time	6	
From time to time	4	39	29	30
Almost never/ Never	2	41	61	20

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

There are also significant variations in the likelihood of receiving envelope wages across different occupational groups. As Figure 9 displays, under-declared employment exists across all occupations. However, it is more common in some occupations. Unskilled manual workers more commonly receive envelope wages. Although only 7% of surveyed employees, they represent 17% of all receiving envelope wages and receive a median of 50% of their gross salary as an envelope wage. Some 1 in 20 skilled manual workers also receive envelope wages, and this amounts to some 30% of their gross salary. Those employed and travelling for their job also more commonly receive envelope wages. This may well be because they are paid an additional undeclared (envelope) wage as compensation for the extra hours/overtime worked. Importantly, 1 in 33 (3%) professionals (e.g., doctors, lawyers, accountants, architects) receive envelope wages, displaying how this wage arrangement exists across all occupations.

Figure 9. Prevalence of under-declared employment in the EU-28, by occupation

Occupation	Share of employees receiving under-reported salaries (%)	Distribution of employees by occupation:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
		Professional (doctor, lawyer, accountant, architect)	3	
Top, middle management, supervisor	1	8	21	30
Employed mainly at desk	1	8	20	20
Employed travelling (salesperson, driver)	4	9	7	20
Service job not at desk (hospital, restaurant, police, etc.)	2	14	17	20
Skilled manual worker	5	35	22	30
Unskilled manual worker	7	17	7	50

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Finally, and as Figure 10 reveals, some minor differences exist between rural and urban areas in terms of the commonality of under-declared employment. Those living in rural areas or a village are slightly more likely to receive envelope wages (i.e., they are 32% of surveyed employees but 38% of those receiving envelope wages) and these rural dwellers receive a higher proportion of their gross salary as an envelope wage, which is perhaps a reflection of the sectors in which they work (see below).

Figure 10. Prevalence of under-declared employment in the EU-28, by type of community

Type of community	Share of employees receiving under-reported salaries (%)	Distribution of employees by type of community:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
		(%)	(%)	
Rural area or village	3	38	32	30
Small/middle town	2	35	42	20
Large town	3	27	26	20

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

4.2 Which employers pay envelope wages?

Understanding which employee groups receive envelope wages enables a targeting of particular groups to prevent under-declared employment. Understanding which employers pay such wages is important for the same reason, namely to target those firms and sectors where this practice is more prevalent.

Figure 11 reveals that although under-declared employment exists in all sizes of firm, it is more common in smaller firms. Indeed, 1 in 20 (5%) formal employees in businesses with less than 20 employees receive envelope wages compared with 1% of formal employees in businesses with 50+ employees. Indeed, only one-third (34%) of employees surveyed are in businesses employing less than 20 employees, but nearly two-thirds (63%) of employees receiving envelope wages are in such small businesses. This concentration of salary under-reporting in small firms in part may be a result of the relative lack of dedicated human resource management (HRM) staff and formal HRM practices in smaller businesses (Barrett and Mayson 2007; Benmore and Palmer 1996). The result is that such employers are able to introduce unwritten verbal contracts that contravene the employees' formal written contracts. Under-declared employment, therefore, is essentially a small firm problem. However, it needs to be recognised that it is not absent in larger firms. For example, 1 in 6 (16%) of all formal employees receiving envelope wages are in firms with 100+ employees. Hence, although a small firm problem, it is not exclusively so.

Figure 11. Prevalence of under-declared employment in the EU-28, by firm size

Firm size	Share of employees receiving under-reported salaries (%)	Distribution of employees by firm size:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
		(%)	(%)	
1-4 employees	5	19	10	30
5-9 employees	5	20	11	23
10-19 employees	5	24	13	23
20-49 employees	3	16	15	20
50-99 employees	1	5	11	35
100-499 employees	1	8	16	25
500 or more employees	1	8	24	28

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Is under-declared employment more prevalent in some sectors? Figure 12 reveals that under-declared employment exists in all sectors, although it is more common in some

sectors. The sector characteristic was not included in the 2013 Eurobarometer survey so we here report the results of the 2007 Eurobarometer survey.

This reveals that under-declared employment is common in the construction sector (where 10% of all formal employees are paid envelope wages), agriculture (7% receive envelope wages), and the hotel and restaurant, repair services, transport and retail sectors (where 6% of employees receive envelope wages). However, a focus upon specific sectors when tackling under-declared employment will not fully solve the problem. Employees receiving envelope wages prevail across all sectors of the economy, with 20% of all employees receiving envelope wages in construction and 20% in manufacturing industry, 14% in personal services and 13% in retail services. Any strategy to tackle under-declared employment, therefore, cannot adopt solely a sectoral approach if the problem is to be fully tackled.

Figure 12. Prevalence of under-declared employment in the EU-28, by sector of work

Sector of work	Share of employees		Distribution of employees by sector of work:		Average gross salary received as envelope wage
	receiving under-reported salaries	Employees receiving envelope wages	All employees		
			(%)	(%)	
EU-27	5				between 1-20
Construction	10	20	10		between 1-20
Industry	5	20	19		between 81-100
Household services	2	4	8		between 1-20
Transport	6	7	5		between 81-100
Personal services	4	14	16		between 1-20
Retail	6	13	10		between 1-20
Repair services	6	4	3		between 1-20
Hotel and restaurant	6	5	4		between 1-20
Agriculture	7	2	2		between 81-100
Other	2	11	23		between 81-100

Source: Authors' own work based on the Special Eurobarometer 284 (2007)

The descriptive statistics so far presented of the prevalence of under-declared employment do not control for other variables. The greater participation of single person households for example, may not be relevant if one controls for the age of the employee.

Table 6, therefore, provides a logistic regression analysis of whether the significance of each variable (e.g., gender, age) remains relevant after controlling for other variables. This reveals that men are statistically significantly more likely to receive envelope wages than women (i.e., the odds of a man receiving envelope wages is 1.603 times higher than that of a woman), after controlling for all other variables. So too are younger employees significantly more likely to receive envelope wages than older employees. Those self-reporting themselves as working class are significantly more likely to receive envelope wages than those reporting themselves as middle class, and those who have difficulties most of the time in paying their household bills are significantly more likely to receive envelope wages than those without so many financial problems.

Compared with those classified as employed at a desk, Table 6 further reveals that employees who travel for their job are 2.35 times more likely to be paid envelope wages, doubtless due to working longer hours than their formal written contract stipulates, and skilled manual workers 1.71 times more likely to receive envelope wages.

Table 6. Multilevel logistic regressions of the propensity to receive envelope wages, by socio-demographic characteristics

VARIABLES	Model 1		
	Coefficient	Standard error	Odds ratio
Fixed part			
Gender (Women)			
Men	0.472***	(0.143)	1.603
Age	-0.0252***	(0.007)	0.975
Age stopped full-time education (Up to 15)			
16–19	0.469	(0.329)	1.598
20+	0.117	(0.358)	1.124
Marital status (married/ remarried)			
Single living with partner	-0.121	(0.206)	0.886
Single	-0.107	(0.226)	0.899
Divorced or separated	-0.164	(0.290)	0.849
Widow/ Other	-0.234	(0.447)	0.791
People aged 15 years or more live in household (One)			
Two	-0.00350	(0.231)	0.997
Three	0.226	(0.238)	1.254
Four or more	-0.211	(0.280)	0.810
Having children (No)			
Yes	-0.0842	(0.152)	0.919
Social class - Self-Assessment (Working class)			
Middle class	-0.304**	(0.153)	0.738
Higher class	-0.351	(0.613)	0.704
Other/ None	0.570	(0.632)	1.768
Difficulties paying bills last year (Most of the time)			
From time to time	-0.590***	(0.179)	0.554
Almost never/never	-1.127***	(0.197)	0.324
Occupation (Employed position, at desk)			
Employed professional	0.0677	(0.373)	1.070
General, middle management, supervisor etc.	0.294	(0.269)	1.342
Employed position, travelling	0.855***	(0.266)	2.351
Employed position, service job	0.323	(0.253)	1.381
Skilled manual worker	0.541**	(0.239)	1.718
Unskilled manual worker, etc.	0.323	(0.327)	1.381
Company size (1–4 employees)			
5–9	-0.437*	(0.231)	0.646
10–19	-0.380*	(0.216)	0.684
20–49	-0.613***	(0.221)	0.542
50–99	-1.181***	(0.274)	0.307
100–499	-1.266***	(0.267)	0.282
500 or more	-1.578***	(0.294)	0.206
Type of community (Rural area or village)			
Small/ middle town	0.0977	(0.162)	1.103
Large town	0.198	(0.170)	1.219
Constant	-1.811***	(0.627)	0.163
Observations	7,669		
Random part			
Country – level variance (constant)	0.445***	(0.171)	
Countries	28		

Notes: Significant at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All coefficients are compared to the benchmark category, shown in brackets. We kept in the analysis the individuals for which data on each and every independent variable is available.

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Turning to the types of business more likely to pay envelope wages, smaller firms are significantly more likely to pay envelope wages to their formal employees after controlling for other factors. Unfortunately, due to the absence of sectoral data from the 2013 Eurobarometer survey, Table 6 cannot analyse whether envelope wages are significantly more likely in some sectors rather than others, whilst controlling for other variables. However, an earlier multivariate analysis of the 2007 Eurobarometer survey reveals that the likelihood of under-declared employment is significantly more likely in the construction, agricultural, hotel and restaurant, retail services, transport and repair sectors (see Williams and Padmore, 2013a,b).

Prevalence, characteristics and distribution of under-declared employment

- ✓ 1 in 33 formal employees in the EU28 received an envelope wage from their formal employer in 2013.
- ✓ This suggests that 6.36 million of the 212 million formal employees in the EU-28 receive under-reported salaries.
- ✓ The median portion of their gross salary paid as an envelope wage is 25%.
- ✓ Only 33% of these employees receiving envelope wages would prefer full declaration of their salaries.
- ✓ All employee groups, types of business and member states engage in this illegal wage arrangement.
- ✓ The employee groups more likely to receive envelope wages are men, younger people, those with financial difficulties, skilled manual workers and those travelling for their job.
- ✓ This wage practice is particularly prominent in East-Central Europe.
- ✓ Small firms are more likely to pay envelope wages to their employees.
- ✓ It is more prevalent in the agricultural, construction, transport, hotel and restaurant, repair services, and retail sectors.

5. Systemic Determinants of Under-Declared Employment

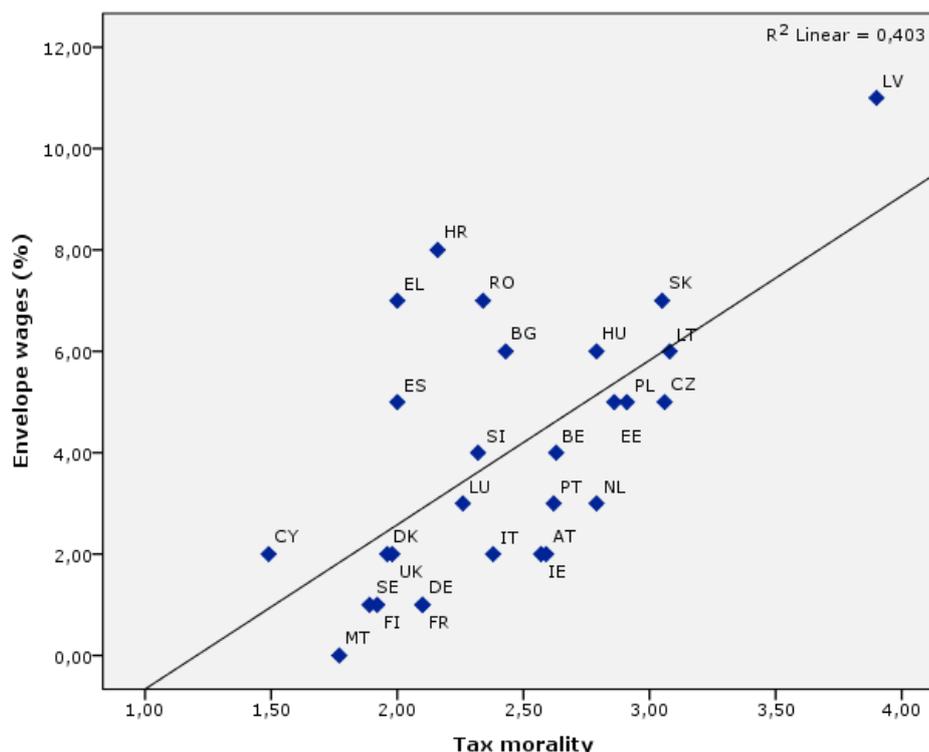
The aim of this section is to show that besides developing effective policy measures to enable inspectorates and social partners to identify and tackle those engaging in under-declared employment, it is also necessary to deal with the structural causes of such salary under-reporting. This means tackling the macro-level economic and social conditions that are beyond the reach of inspectorates but within the remit of governments.

To explain under-declared employment, it has become increasingly popular to use the lens of institutional theory (Baumol and Blinder, 2008; Helmke and Levitsky, 2004; North, 1990). In this perspective, all societies have codified laws and regulations (i.e., formal institutions) that define the legal rules of the game. They also have informal institutions that are the 'socially shared rules, usually unwritten, that are created, communicated and enforced outside of officially sanctioned channels' (Helmke and

Levitsky, 2004: 727). When these formal and informal institutions are in symmetry, little or no under-declared employment will exist since the socially shared norms, values and beliefs of employees and employers will align with the formal rules. However, when there is asymmetry, practices such as envelope wages emerge that, although illegal in terms of the formal rules, are seen as socially legitimate, due to the lack of belief in what the formal institutions are seeking to achieve. The greater the institutional asymmetry, the greater will be the prevalence of envelope wages.

Tax morale, which is the intrinsic motivation to pay taxes, is a measure of the degree to which employers and employees attitudes towards operating on an undeclared basis align with the laws and regulations (Williams, 2017a). To measure this institutional asymmetry or tax morale, the 2013 special Eurobarometer survey no. 402 asked citizens to rank on a scale of 1 to 10 (where 1 is totally unacceptable and 10 is totally acceptable) six different types of undeclared work. The higher the tax morale value, therefore, the greater is the non-alignment of their attitudes with the laws and regulations (i.e., the lower is their tax morale). The finding, as Figure 13 reveals, is a very strong bivariate association between the cross-national variations in the prevalence of envelope wages and the cross-national variations in the level of tax morale. The higher the tax morale (i.e., the greater is the alignment of their beliefs with the laws and regulations), the lower the likelihood of employees participating in under-declared employment.

Figure 13. Relationship between envelope wages and tax morality



Source: Authors` own work based on Special Eurobarometer 402 (2013) and Eurostat data

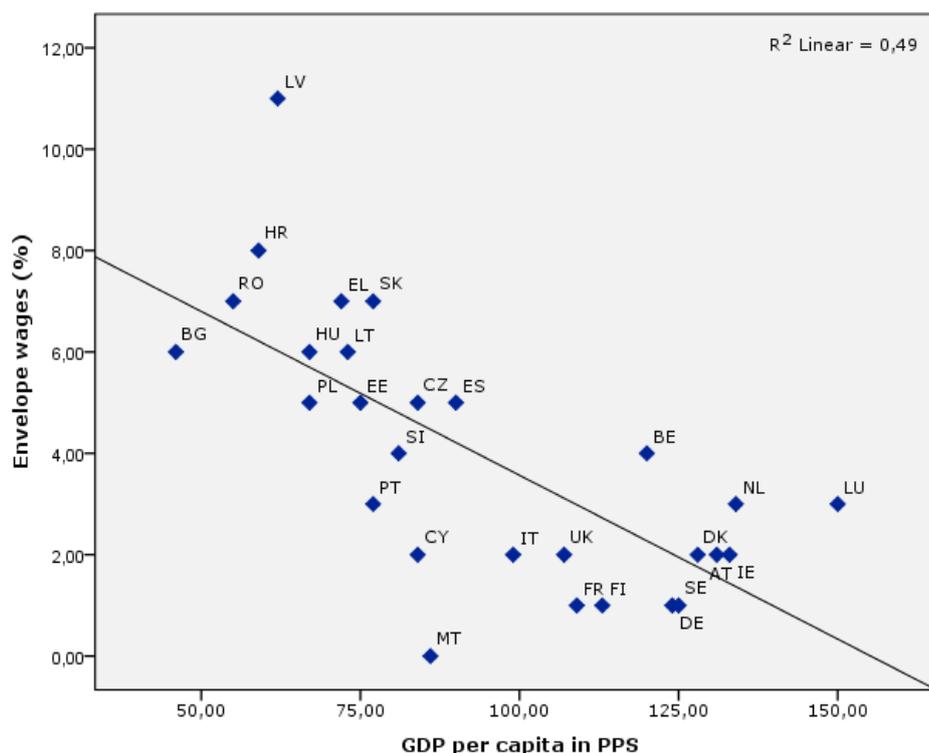
Countries such as Finland, Sweden, Malta have relatively high levels of tax morale (i.e., citizens` beliefs about the acceptability of operating on an undeclared basis are relatively closely aligned with the laws and regulations) and a relatively low prevalence of under-declared employment. In contrast, countries such as Latvia, Lithuania and Slovakia have poorer tax morale (i.e., citizens` beliefs are relatively out of symmetry with the laws and regulations) and relatively high levels of under-declared employment. The outcome is a strong relationship between the level of tax morale in a country and the extent of under-declared employment, measured by Spearman`s rank correlation coefficient ($r_s = .596^{***}$). The greater the institutional asymmetry in a country (i.e., the lower is the tax morale), the greater is the prevalence of envelope wages.

Why, however, does institutional asymmetry (i.e., lower tax morale), and thus the prevalence of under-declared employment, exist? The answer from an institutionalist perspective is that institutional asymmetry (and thus envelope wages) directly results from formal institutional failings and imperfections. Which formal institutional failings and imperfections, therefore, cause institutional asymmetry and thus the prevalence of under-declared employment?

There are two dominant theories that each identify different structural conditions/formal institutional failings and imperfections strongly correlated with the prevalence of under-declared employment (Francic, 2017; Williams, 2013; Williams and Horodnic, 2015a,b, 2016, 2017). On the one hand, modernisation theory shows that the prevalence of both undeclared and under-declared employment is associated with a lack of economic development and modernisation of government. On the other hand, political economy theory shows that the prevalence of undeclared and under-declared employment is strongly associated with a lack of state intervention in the economy and society to protect workers, and with societies where there are higher levels of inequality and greater levels of severe deprivation.

All these structural conditions (i.e., formal institutional imperfections and failings) are determinants of the prevalence of under-declared employment. Starting with economic under-development, measured by GDP per capita in personal purchasing power standards (Eurostat, 2014a), Figure 14 reveals the strong correlation between cross-national variations in the level of GDP per capita in PPS and cross-national variations in the prevalence of under-declared employment ($r_s = -.747^{***}$). The greater the level of GDP per capita in PPS, the lower is the prevalence of under-declared employment.

Figure 14. Relationship between envelope wages and GDP per capita



Note: To avoid excessive influence, the GDP of Luxembourg was capped at 150 in the analyses presented here. It should be noted that using the original figure of 261, the correlation coefficient is the same

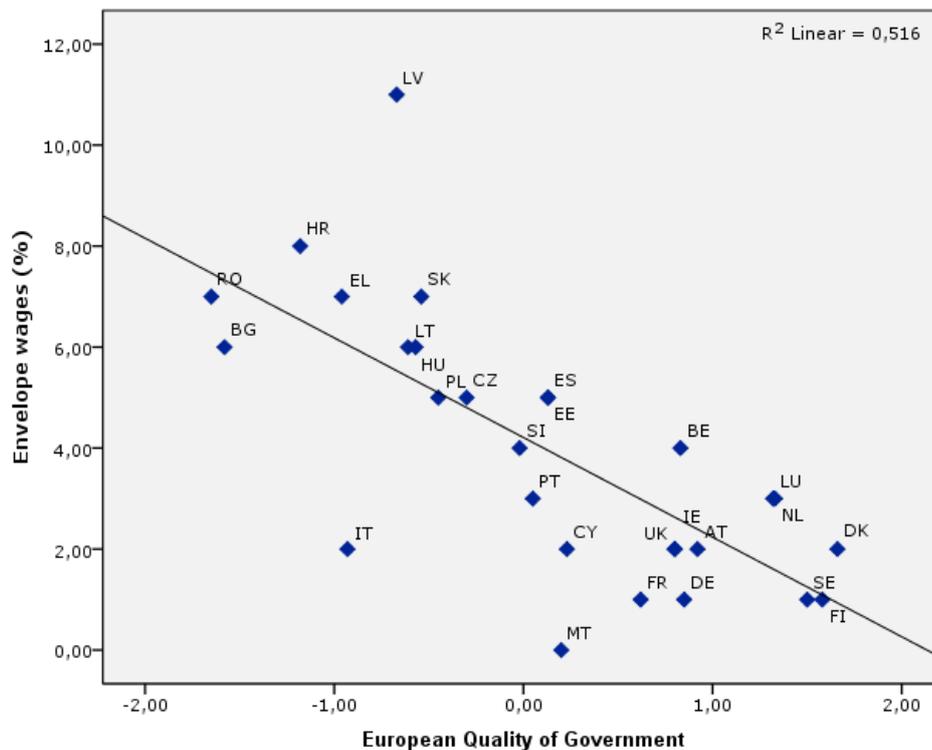
Source: Authors' own work based on Special Eurobarometer 402 (2013) and Eurostat data

To understand the correlation between the modernisation of governance and under-declared employment, it is obvious that if there is a perception of public sector corruption, then there will be an asymmetry between the views of citizens regarding the

acceptability of operating on an undeclared basis, and the laws and regulations. This in turn will result in people turning to under-declared employment due to perceiving it as socially legitimate, even if illegal in terms of the formal rules.

To show this relationship, Figure 15 compares cross-national variations in the prevalence of under-declared work with cross-national variations in the modernisation of governance, as measured by the European Quality of Government Index. This index includes both the perceptions and experiences of citizens 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 standardized with a mean of zero, with higher scores marking a higher quality of government (Charron et al., 2015). Figure 15 displays the strong statistically significant correlation ($r_s = .709^{**}$) between the cross-national variations in the prevalence of under-declared employment and the European Quality of Government Index. Countries such as Romania, Bulgaria and Croatia not only have a poor quality of government but also relatively high levels of under-declared employment. At the other end of the spectrum, countries such as Finland, Sweden and Denmark have not only a relatively high quality of government but also relatively low levels of under-declared employment.

Figure 15. Relationship between envelope wages and European Quality of Government



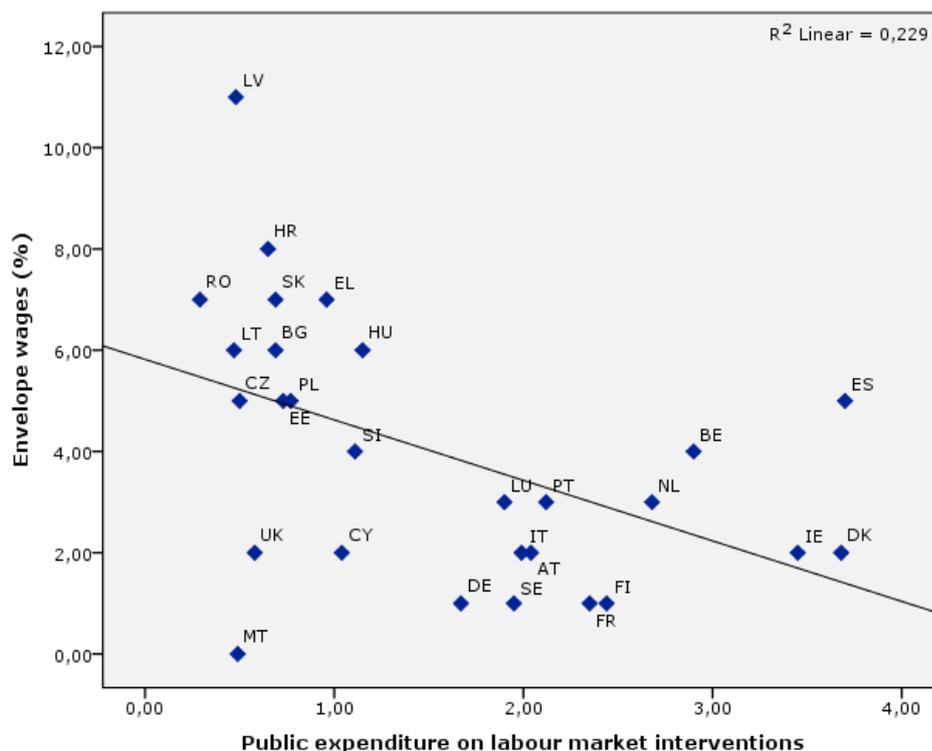
Source: Authors` own work based on Special Eurobarometer 402 (2013) and Charron et al. (2015)

The prevalence of under-declared employment from a political economy perspective is associated with a lack of state intervention in the economy and society to protect workers, and with societies in which there are higher levels of inequality and greater levels of severe deprivation.

To start to see this, Figure 16 displays the relationship between cross-national variations in the prevalence of under-declared employment and cross-national variations in public expenditure on labour market interventions aimed at correcting disequilibria as a % of GDP. This covers all public interventions in the labour market that are aimed at reaching its efficient functioning and correcting disequilibria (e.g., training, employment incentives, supported employment and rehabilitation, out-of-work income

maintenance), which explicitly target groups with difficulties in the labour market. These include: 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, 2014d).

Figure 16. Relationship between envelope wages and public expenditure on labour market interventions

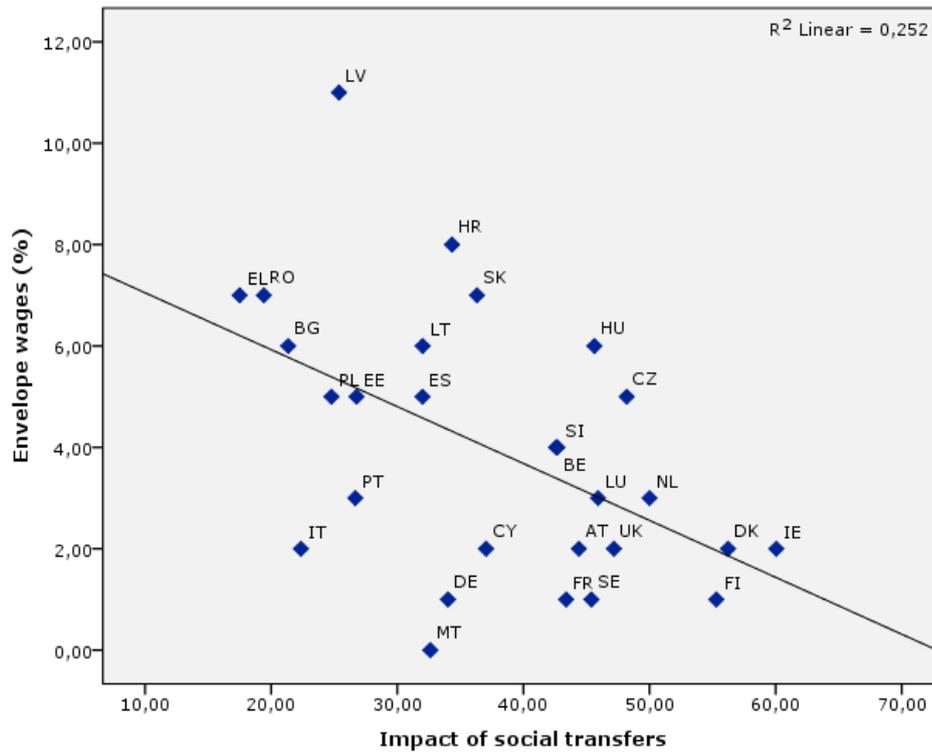


Source: Authors' own work based on Special Eurobarometer 402 (2013) and Eurostat data

Figure 16 displays a moderate statistically significant correlation ($r_s = .487^{***}$) between the cross-national variations in the prevalence of under-declared employment and the level of expenditure on labour market interventions as a percentage of GDP. The greater the level of expenditure on labour market interventions, the lower is the prevalence of under-declared employment. Countries such as Ireland and Denmark have relatively high levels of expenditure on such labour market interventions and relatively low levels of under-declared employment, while countries with relatively low levels of such expenditure such as Romania and Latvia have higher levels of under-declared employment.

Figure 17, meanwhile, displays the relationship between cross-national variations in the prevalence of under-declared employment and cross-national variations in the impact of social transfers on reducing poverty, with poverty defined as the proportion of people with an income below 60 percent of the national median income. This computed indicator is based on the formula, $100 \cdot (B - A) / B$. B = the proportion at-risk of poverty before social transfers excluding pensions (i.e., the share of people with an equivalised disposable income before social transfers below the at-risk-of-poverty threshold). A = the proportion at risk-of-poverty after social transfers (i.e., the share of people with an equivalised disposable income after social transfers below the at-risk-of-poverty threshold) (European Commission, 2013).

Figure 17. Relationship between envelope wages and the impact of social transfers

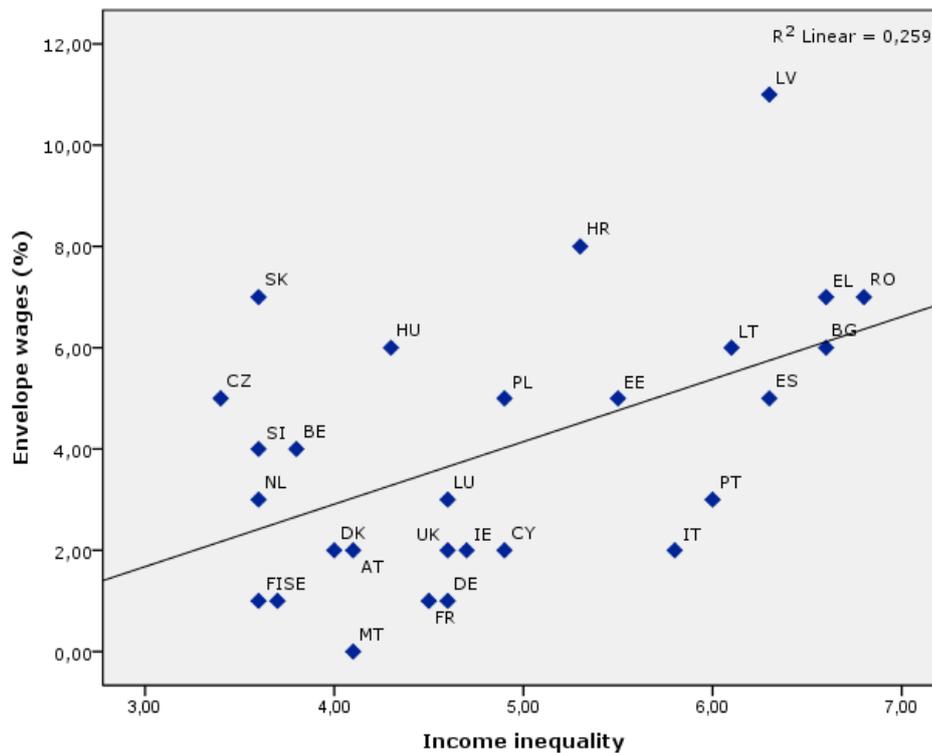


Source: Authors` own work based on Special Eurobarometer 402 (2013) and Eurostat data

Figure 17 displays a moderate statistically significant correlation ($r_s = -.479^{***}$) between under-declared employment and the level of impact of social transfers on reducing poverty. The greater the impact of social transfers on reducing poverty, the lower is the prevalence of under-declared employment. Countries such as Ireland, Denmark and Finland have effective social transfer systems in terms of their impact on reducing poverty and lower levels of under-declared employment, while countries with relatively less effective social transfer systems such as Greece and Romania have relatively higher levels of under-declared employment.

Finally, Figures 18 and 19 evaluate the relationships between cross-national variations in the prevalence of under-declared employment and cross-national variations in the level of income inequality and severe material deprivation. This results in vulnerable populations having to turn to such practices as a survival strategy. To see this relationship, Figure 18 evaluates the level of income, 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, 2014c).

Figure 18. Relationship between envelope wages and income inequality

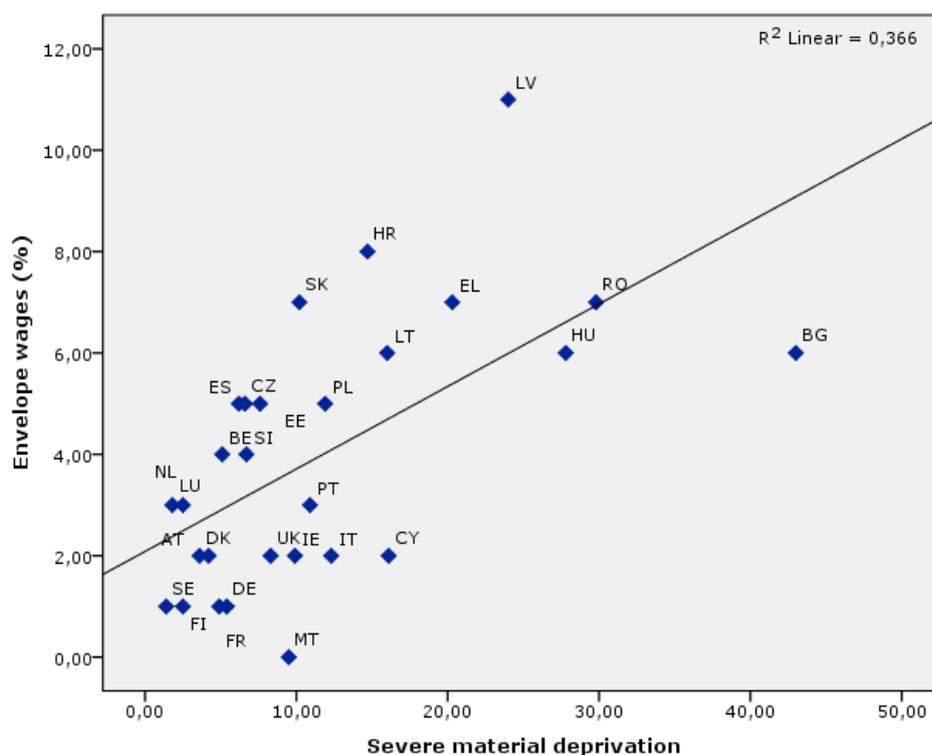


Source: Authors` own work based on Special Eurobarometer 402 (2013) and Eurostat data

This displays a moderate statistically significant correlation ($r_s=.443^{**}$) between the prevalence of under-declared employment and the level of income inequality. The greater is the level of income inequality, the greater is the prevalence of under-declared employment. Countries such as Bulgaria, Romania, Latvia and Greece have higher levels of income inequality and higher levels of under-declared employment whilst countries such as Finland and Sweden have lower levels of income inequality and lower levels of under-declared employment.

Figure 19, meanwhile, examines the relationship between under-declared employment and 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 2014b). This displays a strong statistically significant correlation ($r_s=.635^{***}$). The greater is the level of severe material deprivation, the greater is the prevalence of under-declared employment. Countries such as Bulgaria, Romania, Latvia and Hungary have relatively high levels of severe material deprivation and relatively high levels of under-declared employment, whilst countries such as Sweden and Finland have relatively low levels of severe material deprivation and relatively low levels of under-declared employment.

Figure 19. Relationship between envelope wages and severe material deprivation



Source: Authors` own work based on Special Eurobarometer 402 (2013) and Eurostat data

Until now, these economic and social conditions associated with under-declared employment are only evaluated using bivariate correlations (see also Williams 2010, 2014b). This simplistic analytical method however, fails to analyse whether these associations remain significant when controlling for other variables, including the individual-level variables reported in Table 6. To do so, Table 7 applies a multi-level logistic regression analysis using the hierarchical nature of the data (individuals within countries) to test whether these associations remain statistically significant after controlling for firm size and the various socio-demographic characteristics of employees considered in Table 6.

After controlling for these variables, model 1 analyses whether the level of under-declared employment remains significantly associated with the level of GDP per capita, the European Quality of Governance index in model 2, severe material deprivation in model 3, income inequalities in model 4, public expenditure on labour market interventions to protect vulnerable groups in model 5, and social transfers in model 6.

Model 1 reveals that an employee in countries with lower levels of GDP per capita is significantly more likely to receive envelope wages. A unit increase in GDP per capita decreases the likelihood of receiving envelope wages by 1.4%. Model 2 reveals that under-declared employment is higher among employees living in countries with lower qualities of government. For a unit increase in the European Quality of Governance Index, the likelihood of receiving envelope wages decreases by 35%. These models therefore support that under-declared employment is more prevalent in countries with lower levels of economic development and less modernised state bureaucracies (i.e., modernisation theory).

Model 3 reveals envelope wages to be significantly more prevalent in countries with higher rates of severe material deprivation, and model 4 how envelope wages are more likely in countries with higher income inequalities. Evaluating whether state intervention reduces the likelihood of under-declared employment, model 5 displays that envelope

wages are more likely in countries with lower levels of public expenditure on labour market interventions to protect vulnerable groups in the labour market. Meanwhile, model 6 displays that envelope wages are more likely among employees in countries where social transfers are less effective at reducing poverty. Importantly moreover, the inclusion of all these country-level variables reduces country-level variance.

Table 7. Multilevel logistic regressions of the propensity to receive under-reported salaries: macro-level indicators

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Socio-demographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Company size	Yes	Yes	Yes	Yes	Yes	Yes
Detection risk	Yes	Yes	Yes	Yes	Yes	Yes
Tax morality	Yes	Yes	Yes	Yes	Yes	Yes
GDP per capita in PPS 2013	-0.014*** (0.004) 0.986	No	No	No	No	No
European Quality of Government Index 2013	No	-0.350*** (0.108) 0.705	No	No	No	No
Severe material deprivation 2013	No	No	0.028*** (0.010) 1.028	No	No	No
Income inequality 2013	No	No	No	0.195* (0.102) 1.215	No	No
Public expenditure on labour market interventions 2012	No	No	No	No	-0.230** (0.105) 0.795	No
Impact of social transfers 2013	No	No	No	No	No	-0.019** (0.009) 0.981
N	8,741	8,741	8,741	8,741	8,741	8,741
Country-level variance (Standard error)	0.0846 (0.0626)	0.1321 (0.0719)	0.1653 (0.0798)	0.2049 (0.0906)	0.1789 (0.0858)	0.1939 (0.0881)

Notes: Significant at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Displayed: coefficient, standard error (in parenthesis), odds ratio. Indicators were centred to the mean obtained using weighting scheme. To avoid excessive influence, the GDP of Luxembourg was capped at 150 in the analyses presented here. For Public expenditure on labour market interventions, the latest available data were from 2010 for Greece and from 2011 for Cyprus and UK. For Impact of Social Transfer, the latest available data for Ireland were from 2012.

Source: abridged version of Williams and Horodnic (2017: Table 3).

To enable individual member states to assess their relative progress on each of these key economic and social determinants of the prevalence of under-declared employment, Figure 20 provides a quick reference guide, or 'league table', of the relative position of member states. Ranking member states according to the prevalence of under-declared employment, the figure then denotes the relative position of each member state on every structural condition significantly associated with the prevalence of under-declared employment. To do so, we use a traffic light system composed of red where a member state is in the 'bottom quartile' on an individual structural determinant, amber where it is in the 'lower middle' quartile, yellow when it is in the 'upper middle' quartile and green when it is in the 'upper quartile'.

Figure 20. Key determinants of under-declared employment: ranking of the EU28

	Envelope wages (%)	Tax morality	GDP per capita in PPS	European Quality of Government Index	Severe material deprivation	Income inequality	Public expenditure on labour market interventions	Impact of social transfers
Latvia	11	28	23	23	25	24	26	23
Croatia	8	11	26	26	21	19	22	16
Slovakia	7	25	18	20	17	2	20	15
Romania	7	14	27	28	27	28	28	27
Greece	7	7	22	25	24	26	17	28
Hungary	6	22	24	21	26	11	14	8
Lithuania	6	27	21	22	22	23	27	19
Bulgaria	6	16	28	27	28	26	20	26
Czech Rep.	5	26	15	18	11	1	24	5
Spain	5	7	13	14	10	24	1	20
Estonia	5	23	20	14	13	20	19	21
Poland	5	24	24	19	19	17	18	24
Slovenia	4	13	17	17	12	2	15	12
Belgium	4	20	8	8	8	7	4	13
Netherlands	3	21	2	4	3	2	5	4
Luxembourg	3	12	1	5	2	13	12	7
Portugal	3	19	18	16	18	22	8	22
Ireland	2	17	3	9	16	16	3	1
Denmark	2	5	5	1	5	8	2	2
UK	2	6	11	9	14	13	23	6
Austria	2	18	4	6	6	9	9	10
Cyprus	2	1	15	12	23	17	16	14
Italy	2	15	12	24	20	21	10	25
Finland	1	4	9	2	3	2	6	3
Sweden	1	3	6	3	1	6	11	9
France	1	9	10	11	7	12	7	11
Germany	1	9	7	7	9	13	13	17
Malta	0	2	14	13	15	9	25	18

Notes:



Ranks based on macro level indicators values in 2013 (except *Public expenditure on labour market interventions* - 2012).

For instance, the UK has a low prevalence of under-declared employment and is in the upper quartile or upper-middle quartile on nearly all structural determinants associated with reductions in the prevalence of envelope wages. However, it is in the bottom quartile on the % of GDP spent on labour market interventions aimed at correcting disequilibria (e.g., training, employment incentives, supported employment and rehabilitation, out-of-work income maintenance). This 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. The very tentative intimation from Figure 20, therefore, is that if the UK wished to reduce under-declared employment further, it might make the decision to target its resources on this structural feature of the UK economy.

The Netherlands, similarly, performs relatively well on nearly all of the economic and social features associated with low levels of under-declared employment, but with one exception. It ranks 21st out of 28 in terms of the level of tax morale. The norms, values and beliefs of its citizens regarding the acceptability of operating on an undeclared basis are one of the most unaligned with the laws and regulations in the whole of the EU28. This is despite performing relatively well on all of the structural features normally associated with higher levels of tax morale and lower levels of under-declared employment. To reduce this asymmetry between Dutch citizens' views of the acceptability of working undeclared and the formal rules of the game, therefore, it is not a case of changing the normal structural features associated with greater symmetry. Instead, awareness raising and educational initiatives are required to enable citizens to understand the benefits of operating on a declared basis. To pursue such a campaign, there is a need to understand why citizens' views are not in symmetry with the formal rules of the game. Is it due to a lack of belief that they receive a fair share in return for what they pay in taxes, a lack of belief in what the state is seeking to achieve, or are there other reasons?

Systemic determinants of under-declared employment

- ✓ Conventionally, under-declared employment has been seen as an individual criminal act and dealt with by increasing the penalties and risks of detection so as to deter participation.
- ✓ However, this does not deal with the causes of under-declared employment. It only deals with the effects.
- ✓ Under-declared employment results from systemic problems.
- ✓ These systemic problems are formal institutional failings that lead people to not trust the state and to thus view illegitimate activity as acceptable.
- ✓ Structural conditions associated with higher levels of under-declared employment include:
 - Low GDP/capita in PPS.
 - Poor quality governance, including public sector corruption.
 - High income inequality.
 - Higher levels of severe material deprivation.
 - Low levels of expenditure on active labour market policies to help vulnerable groups.
 - Ineffective policies of redistribution via social transfers to protect workers from poverty.

6. Legislative and Institutional Frameworks

To understand the legislative and institutional frameworks within which under-declared employment is tackled, there is a need to recognise that a formal employer reaching a verbal agreement with a formal employee to pay them an undeclared ('envelope') wage in addition to their official declared salary is illegal in several respects. Although verbal agreements are in many countries legal and hold the same weight in law as a written contract, this particular verbal contract is illegal. This is because it is an agreement to fraudulently under-declare to the state authorities the salary paid to an employee to evade the full tax and social security payments owed by the employee and employer. This verbal contract also often leads to labour law violations.

Therefore, the three key reasons for the formal employer not to declare the full salary of the formal employee are:

- to evade payment of the full tax contributions owed to the state;
- to evade payment of the full social insurance contributions owed such as pension and health insurances; and
- to evade having to meet certain legal labour standards, such as minimum wages and maximum hours.

As such, under-declared employment is of interest to government authorities responsible for tax, social security and labour law compliance respectively.

For *tax administrations*, their main interest in under-declared employment is the lost tax revenues that result from formal employers not declaring the full salary of their formal employees to the state for tax compliance purposes, which result from written contracts with a lower official wage than the real wage.

For *social insurance institutions*, and for tax administrations responsible for social security contributions such as pension and health insurance contributions, their main interest is both the lost social contribution revenues that result from under-declared employment as well as the negative impacts on workers who may have reduced pension and health entitlements due to this under-payment.

For those charged with ensuring *labour law compliance*, such as labour inspectorates, meanwhile, their main interest in under-declared employment is the negative impacts on workers due to the false declaration of labour contracts. This can include:

- employers verbally agreeing with employees for them to work longer hours than stated in their written contract. This can result in: those on a formal part-time written contract actually working full-time; full-time workers doing more than the maximum hours in the working hours' directive; other false calculations of working time that do not account for night, holidays and/or extra hours of work, and/or the wage paid to employees is less than the minimum hourly wage.
- employees being asked to conduct different tasks and/or responsibilities to those in their written contract; and
- employees being asked not to take their full holiday allowance.

In different member states, however, there are variations in where responsibility lies for tackling under-declared employment. Some member states have one agency responsible for some and/or all these facets of under-declared employment (e.g., Germany). However, in most member states, not only is the responsibility for tax, social insurance and labour law compliance in relation to under-declared employment distributed across a range of institutions (e.g., labour, tax and social insurance inspectorates and agencies), but the powers of each of these institutions in relation to tackling under-declared employment vary.

In Croatia, for example, the Tax Administration (TA) in the Ministry of Finance (MF) is responsible for identifying and collecting the lost tax revenue due to under-declared employment. Meanwhile, the Croatian Health Insurance Fund (CHIF) and Croatian Pension Insurance Institute (CPII) have responsibilities for identifying the social

contributions owed, and the Labour Inspectorate (LI) in the Ministry of Labour and Pension System (MoLPS) for identifying and prosecuting the labour law violations resulting from the false declaration of labour contracts associated with under-declared employment.

In RO, meanwhile, the LI has a responsibility for aligning the stated number of hours in the written contract with the reality, but unlike Croatia, the LI does not have the authority to impose sanctions. They therefore inform the Tax Administration (ANAF), which is the institution responsible for recalculating the contributions due.

Although it is beyond the reach of this report to map how the institutions and legislative responsibilities vary across each of the 28 member states, it is nevertheless important to recognise that:

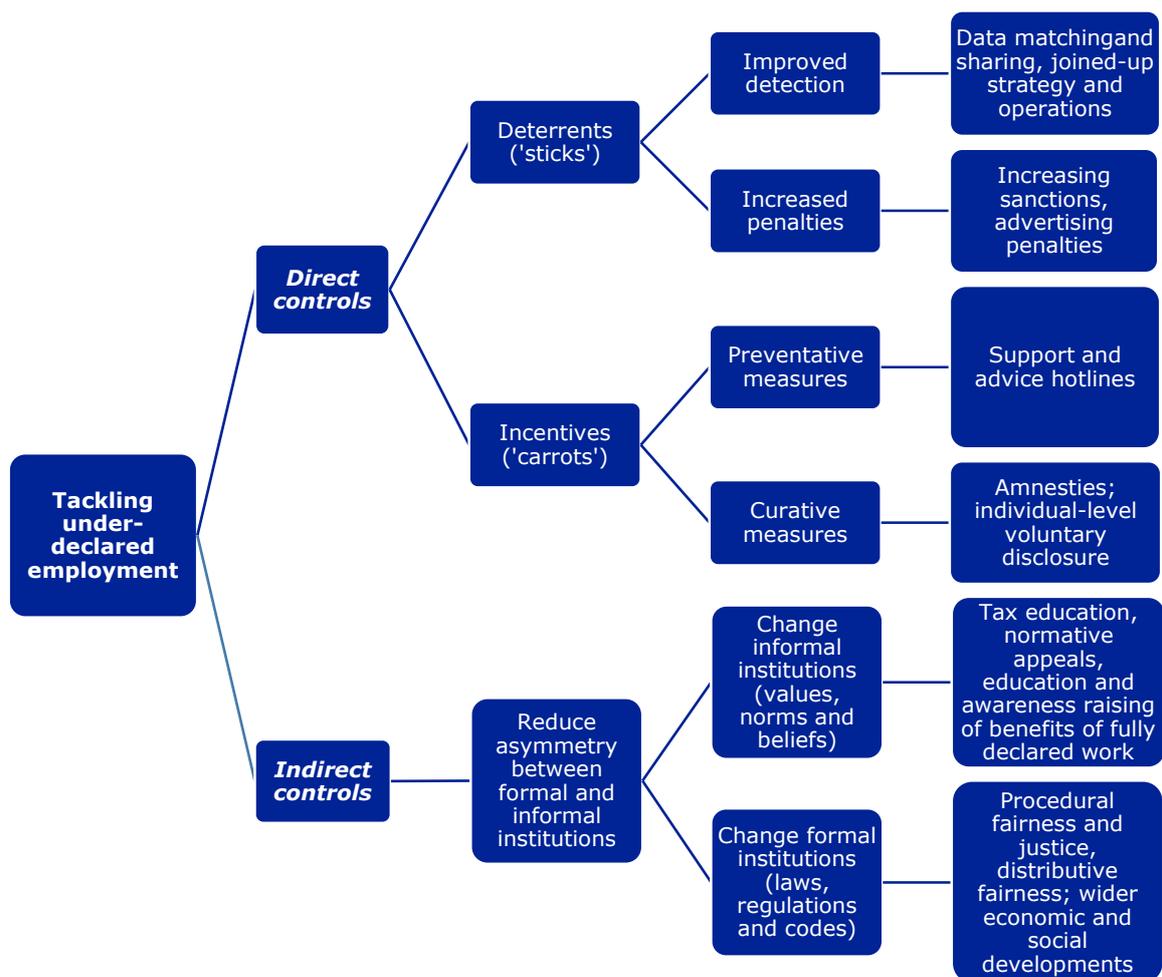
- in most member states, different institutions are responsible for the tax, social security and labour law violations that result from under-declared employment;
- the resources in terms of databases available to identify envelope wages, and the degree of data sharing, significantly vary, and
- the powers of each of these institutions to prosecute under-declared employment often differ markedly.

7. Strategies and Capacities to Tackle Under-Declared Employment

There is a strong international consensus that the aim of governments is not to eradicate the undeclared economy, but to move undeclared work into the declared economy (Eurofound, 2013; European Commission, 2007a; ILO, 2015; Williams, 2014a, 2017a,b). The same argument can be applied to under-declared employment. It might be argued that the objective is not to eradicate jobs where envelope wages are paid but to move these jobs into fully declared employment. The intention, therefore, is to eradicate envelope wage payments but not the jobs themselves.

As displayed in the Platform learning resource paper on *Developing a Holistic Approach for Tackling Undeclared Work* (Williams, 2017a, pp. 3-5), a wide range of tools exist. As Figure 21 displays, these tools are also relevant for transforming under-declared employment into fully declared employment. On the one hand, there are 'direct' tools. These transform under-declared employment into fully declared employment by ensuring that the benefits of fully declared employment outweigh the benefits of under-declared employment. This is accomplished either by using deterrence measures to increase the costs of under-declared employment ('sticks') and/or by making the conduct of fully declared work more beneficial and easier using incentives ('carrots'). On the other hand, there are 'indirect' tools. These shift away from using 'sticks' and 'carrots', and instead focus on dealing with the formal institutional failings so as to repair the social contract between the state and its citizens in order to foster a high trust high commitment culture. These seek either to change the norms, values and beliefs regarding the acceptability of envelope wages, so that these are in symmetry with the laws and regulations (e.g. using awareness raising campaigns and educational initiatives), and/or to change the formal institutional imperfections. Firstly, this, involves changing the internal processes of formal institutions to improve the perception amongst employees and employers that there is procedural and distributive fairness and justice, to improve trust in government. Secondly, and as chapter 5 showed, it involves resolving the structural conditions that lead to under-declared employment, including: increasing GDP per capita; improving the quality of governance and reducing corruption; increasing expenditure on labour market interventions to help the most vulnerable groups; and developing more effective social transfer systems to reduce the level of inequality and severe material deprivation.

Figure 21. Policy approaches for tackling under-declared employment



Source: derived from Williams (2017a: Figure 1)

The debate however is not whether it is best to use either indirect or direct policy approaches. Instead, there is recognition that it is effective to **combine direct and indirect policy approaches** (Williams, 2014a, 2017a,b). For example, inspectorates may focus upon improving the perceived, rather than the actual, risk of detection, using a marketing campaign about how effective tools are being developed to identify those organisations paying envelope wages, and that unless employers put their affairs in order, then they will be caught in a matter of time. This marketing campaign might run alongside either an amnesty for employers who decide to fully declare their workers in a certain time-period, or for those who voluntarily disclose to the authorities that they have been paying envelope wages, it may be decreed that no penalties or limited sanctions will be imposed. This could be then coupled with the threat of severe sanctions for those who fail to put their affairs in order.

As such, there is recognition that a **holistic approach** towards tackling envelope wages should be pursued which uses, in a strategic and coordinated manner, the full range of both direct and indirect policy approaches and measures available to increase the power of, and trust in, authorities respectively. The debate, therefore, is more over how to combine and sequence the various direct and indirect policy approaches. Two contrasting approaches exist for doing this:

- *Responsive regulation* - this envisages a regulatory pyramid, with the least intrusive indirect controls used first, and only as a last resort the most intrusive direct controls. Here, authorities start with the commitment measures and if these fail to change behaviour with some groups, then incentives are used and only as a final

step, punitive measures if nothing else elicits the desired response (Braithwaite, 2003; Job et al., 2007).

- *Slippery slope framework* - this argues that citizens abide by the law either because they fear detection and fines due to the power of authorities (**enforced compliance**) or because they feel a commitment to be honest because they have trust in the authorities (**voluntary cooperation**). When there is effective enforced compliance as well as high voluntary cooperation (i.e., both power and trust), under-declared employment is absent. When there is ineffective enforced compliance and little voluntary cooperation, under-declared employment is more extensive.⁵

This recognition that both effective enforced compliance and high voluntary cooperation might be essential for tackling envelope wages is now evaluated.

8. Evidence-based Evaluation of Good Practice Approaches

To evaluate the effectiveness of these direct and indirect policy approaches in tackling under-declared employment, an evidence-based empirical evaluation is here undertaken of whether direct and indirect policy measures are effective at firstly, reducing the participation of employees in under-declared employment and secondly, reducing the engagement of employers in this illegal wage practice.

8.1 Evaluating policy measures to reduce employee participation

The participation of employees in under-declared employment can be reduced firstly, using a direct approach that changes the cost/benefit ratio, usually by increasing the penalties and risks of detection, and/or secondly, by aligning the norms and beliefs of employees with the codified laws and regulations. Figures 22-24 reveals the perception of employees regarding the risk of detection, the penalties for operating on an undeclared basis, and whether employer and employee attitudes towards operating undeclared align with the laws and regulations (here termed their 'tax morale').

Figure 22. Prevalence of salary under-reporting in the EU-28: by detection risk

Detection risk	Share of employees receiving under-reported salaries		Distribution of employees by detection risk:		Average gross salary received as envelope wage (%)
	Employees receiving envelope wages (%)	All employees (%)	Employees receiving envelope wages		
			Employees receiving envelope wages (%)	All employees (%)	
Very small	4	16	22	22	40
Fairly small	2	45	36	45	25
Fairly high	3	32	31	32	20
Very high	4	7	11	7	15

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

The direct policy approach believes that those perceiving the risk of detection as small are more likely to engage in under-declared employment. Figure 22 confirms this, displaying that employees perceiving the risk of detection as very small are more likely to report receiving envelope wages (4%) than those perceiving the risk as either fairly small or fairly high (2% and 3% respectively). Indeed, those perceiving the risk as very small are 16% of all employees surveyed but 22% of those receiving envelope wages, and report receiving a higher proportion of their gross salary in an envelope wage. However, those perceiving the risk as very high are as likely to engage in under-declared employment (4%) as those perceiving the risk as very small. Therefore, this does not

⁵ Alm and Torgler, 2011; Alm et al., 2012; Kirchler et al., 2014; Kogler et al., 2013

confirm the rational economic actor view which argues that those perceiving the risk as high are less likely to engage in under-declared employment. The reason is because in most cases, not only is this practice initiated by the employer but also there are in many member states only sanctions for employers (and not employees) if caught. Therefore, even if the employee might believe the risk of detection to be high, they might still accept envelope wages, especially if no other job options are available.

There is also some indication that those who view sanctions as tougher are less likely to engage in under-declared employment. As Figure 23 reveals, those viewing the penalty as weaker are more likely to receive envelope wages. 4% of employees who perceive the penalty to be that normal tax or social contributions will be due receive envelope wages, compared to just 2% of those perceiving the penalty to be that normal tax or social contributions will be due plus a fine, and 3% of those who think that prison will be the sanction. Hence, although under-declared employment is more prevalent among those who view the sanction as weaker (i.e., 24% of all employees believe that the sanction is that normal tax or social contributions will be due but 36% of those receiving envelope wages), the association again does not appear to be very strong. Similar to the results regarding the risk of detection, this does not confirm the rational economic actor view which argues that those believing the sanction to be higher will be less likely to engage in under-declared employment. Again, the reason is because this is an employer-initiated practice and there are in many member states only sanctions for employers (and not employees) if caught. Consequently, even if the employee believes penalties to be high, they might still accept envelope wages, displaying once again that the rational economic actor does not explain which employees engage, and which do not, in under-declared employment.

Figure 23. Prevalence of salary under-reporting in the EU-28: by expected sanction

Expected sanction	Share of employees receiving under-reported salaries (%)	Distribution of employees by expected sanction:		Average gross salary received as envelope wage (%)
		Employees receiving envelope wages (%)	All employees (%)	
		(%)	(%)	
Normal tax or social security contributions due	4	36	24	30
Normal tax or social security contributions due, plus a fine	2	57	69	20
Prison	3	7	7	50

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

To measure whether employees' attitudes align with the laws and regulations, Figure 24 examines tax morale. Employees were asked to rank on a scale of 1 to 10 where 1 is totally unacceptable and 10 is totally acceptable, six different types of undeclared work. The higher the tax morale value, the greater is the non-alignment of their attitudes with the laws and regulations (i.e., the lower is their tax morale). The finding is a correlation between the likelihood of employees receiving envelope wages and their tax morale. The higher is their tax morale (i.e., the greater is the alignment of their beliefs with the laws and regulations), the lower is the likelihood of employees receiving envelope wages.

Figure 24. Prevalence of salary under-reporting in the EU-28: by tax morality

Tax morality (mean = 2.33)	Share of employees receiving under-reported salaries	Distribution of employees by tax morality:		Average gross salary received as envelope wage
		Employees receiving envelope wages	All employees	
	(%)	(%)	(%)	(%)
Below mean	2	36	59	30
Above mean	4	64	41	25

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

Besides tax morale, which is a measure of the level of 'vertical trust' (i.e., the trust of citizens in the state), there is also 'horizontal trust' which measures the degree to which citizens trust each other to abide by the law. This can be analysed by assessing whether they know others who work without declaring their income or part of their income. The finding in Figure 25 is that those who know others who do not abide by the law also do not do so themselves. 5% receive envelope wages compared with 2% who do not know anybody operating on an undeclared basis.

Figure 25. Prevalence of salary under-reporting in the EU-28: by having acquaintances working without declaring their income

Personally knowing persons working without declaring their income or part of their income	Share of employees receiving under-reported salaries	Distribution of employees by knowing persons working undeclared		Average gross salary received as envelope wage
		Employees receiving envelope wages	All employees	
	(%)	(%)	(%)	(%)
Yes	5	64	36	30
No	2	36	64	20

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

To move beyond these descriptive statistics and evaluate whether the participation of employees in under-declared employment is associated with their perceptions regarding the risk of detection, the penalties for operating undeclared and their 'tax morale' when socio-demographic, business and spatial characteristics are included and held constant, Table 8 reports a logistic regression analysis. This reveals no association between the participation of employees in under-declared employment and the perceived level of penalties and risk of detection, but a strong association between employees' receiving envelope wages and their views on the acceptability of operating undeclared (i.e., their lack of alignment with the laws and regulations) and also with their level of 'horizontal trust'. This clearly displays the need to move beyond using direct policy measures (i.e., 'sticks' and 'carrots') with regard to employees, and to focus upon the use of indirect policy measures to improve firstly, the tax morale of employees so as to encourage greater voluntary compliance and secondly, the level of horizontal trust.

Table 8. Multilevel logistic regressions of the propensity to receive under-reported salaries, by policy measures

VARIABLES	Model 1		
	Coefficient	Standard error	Odds ratio
Fixed part			
Detection risk (Very small/ Fairly small)			
Fairly high/ Very high	0.227	(0.142)	1.255
Expected sanction (Normal tax or social security contributions due)			
Normal tax or social security contributions due, plus a fine	-0.0562	(0.148)	0.945
Prison	0.112	(0.348)	1.119
Tax morality	0.263***	(0.038)	1.301
Personally knowing persons working without declaring their income or part of their income (No)			
Yes	1.291***	(0.152)	3.636
Respondent characteristics	Yes	Yes	
Firm characteristics	Yes	Yes	
Constant	-3.555***	(0.667)	
Observations	7,669		
Random part			
Country – level variance (constant)	0.276***	0.124	
Countries	28		

Notes: Significant at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; All coefficients are compared to the benchmark category, shown in brackets. Respondent characteristics include: age, gender, household size, marital status, social class, difficulties paying bills, urban/rural community, and occupation. Firm characteristics include number of employees. Tax morality is calculated as a mean of non-compliant behaviours (each of them measured from 1 to 10, where 1 equals absolutely unacceptable and 10 equals absolutely acceptable). Thus, a positive sign means the better the tax morale, the lower the likelihood of receiving envelope wages.

Source: Authors' own work based on the Special Eurobarometer 402 (2013)

8.2 Evaluating policy measures to reduce employer participation

What however, is the association between the perceived risk of detection and levels of penalties, and tax morale, as determinants of employers using under-declared employment? The 2013 Eurobarometer survey only includes employees' views. To evaluate employers' views, the only data source currently available is the 2015 GREY survey of employers in Croatia, Bulgaria and FYR Macedonia.

The use of under-declared employment by employers can be reduced firstly, using a direct approach that changes the cost/benefit ratio, usually by increasing the penalties and risks of detection, and/or secondly, by aligning the norms and beliefs of employers with the codified laws and regulations. Tables 9-11 reveal whether employers reduce the use of under-declared employment according to their perceptions of the risk of detection, the penalties, and employers' tax morale.

The direct policy approach believes that employers perceiving the risk of detection as small are more likely to pay envelope wages. Table 9 displays that those employers perceiving the risk of detection as smaller are indeed more likely to report paying envelope wages in Bulgaria and Croatia, although this is not so clearly the case in FYR Macedonia.

Table 9. Prevalence of salary under-reporting in Bulgaria, Croatia and FYR Macedonia: by detection risk

Detection risk (probability, %)	Employers offering under-reported salaries			Of all:					
				Firms using under- reported salaries			Firms		
	BG	HR	MK	BG	HR	MK	BG	HR	MK
0-20	85	85	59	41	41	32	38	38	36
21-40	93	95	82	22	17	19	16	13	13
41-60	88	91	63	18	17	19	18	17	19
61-80	92	78	82	8	10	13	9	11	9
81-100	61	71	56	11	15	17	19	21	23

Note: BG – Bulgaria, HR – Croatia, MK – FYR Macedonia

Source: Authors' own work based on the GREY employers survey (2015)

Turning to whether the expected penalties influence the likelihood of employers paying envelope wages, Table 10 reveals only patchy evidence that this is the case. Although in Bulgaria those believing that the business would be forced to cease operations if caught are far less likely to pay envelope wages than those who believe that the consequence is less, this is not the case across the other two countries. There is therefore little evidence that perceived level of penalties has an impact on the likelihood of employers paying envelope wages.

Table 10. Prevalence of salary under-reporting in Bulgaria, Croatia and FYR Macedonia: by expected sanction

Expected sanction	Employers offering under-reported salaries			Of all:					
				Firms using under- reported salaries			Firms		
	BG	HR	MK	BG	HR	MK	BG	HR	MK
Nothing serious	79	55	41	8	2	4	8	2	6
A small fine	87	82	74	32	17	22	27	17	20
A serious fine that would affect the competitiveness of the company	83	89	69	38	49	49	41	46	46
A serious fine that would put the company at risk of insolvency	89	82	51	20	27	17	20	28	22
The company would be forced to cease operations	60	83	74	2	5	8	4	7	6

Note: BG – Bulgaria, HR – Croatia, MK – FYR Macedonia

Source: Authors' own work based on the GREY employers survey (2015)

However, and as Table 11 displays, there is evidence that the tax morale of employers has an influence on their propensity to pay envelope wages (i.e., whether their views on the acceptability of undeclared work align with the laws and regulations). Those employers whose tax morale is better than the average employer are slightly less likely to pay envelope wages in Bulgaria, Croatia and FYR Macedonia.

Table 11. Prevalence of salary under-reporting in Bulgaria, Croatia and FYR Macedonia: by tax morale

Tax morale (BG = 5.77, HR = 5.42, MK = 4.98)	Employers offering under-reported salaries			Of all:					
				Firms using under- reported salaries			Firms		
	BG	HR	MK	BG	HR	MK	BG	HR	MK
Below mean	85	86	71	50	51	56	53	53	51
Above mean	84	82	58	50	49	44	47	47	49

Note: BG – Bulgaria, HR – Croatia, MK – FYR Macedonia

Source: Authors' own work based on the GREY employers survey (2015)

What however, is the association between the perceived risk of detection and levels of penalties, and tax morale, as determinants of employers using under-declared employment when firm and employer characteristics are included and held constant? Table 12 reports the results for Bulgaria, Croatia and FYR Macedonia. This reveals that although the severity of the penalty does not determine whether employers' pay envelope wages, the risk of detection is a significant determinant of whether employers engage in salary under-reporting. Unlike employees, therefore, improving the perceived risk of detection does have a significant impact on reducing the likelihood of Bulgarian, Croatian and FYR Macedonia employers paying envelope wages.

Table 12. Ordered logistic estimations of the main determinants of employers' participation in under-declared employment in Bulgaria, Croatia and FYR Macedonia, 2015

VARIABLES	Model 1		Model 2		Model 3	
	Coefficient (Standard error)	Odds ratio	Coefficient (Standard error)	Odds ratio	Coefficient (Standard error)	Odds ratio
Detection risk	-0.0046** (0.002)	0.995	-0.0052** (0.002)	0.995	-0.0045** (0.002)	0.996
Expected sanction	-0.0588 (0.067)	0.943	-0.0560 (0.068)	0.946	-0.0357 (0.070)	0.965
Tax morale	0.147*** (0.035)	1.158	0.130*** (0.035)	1.139	0.121*** (0.036)	1.129
Respondent characteristics	No		Yes		Yes	
Firm characteristics	No		No		Yes	
Observations	1,014		1,014		1,014	
Pseudo R-square	0.012		0.020		0.040	

Notes: Significant at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. We kept in the analysis the cases for which data on each and every independent variable is available. Respondent characteristics include: position, age, gender, education and experience. Firm characteristics include: number of employee, sector, legal status, number of years since the firm was set up and VAT status. Tax morality is calculated as a mean of respondents' views about the acceptability of non-compliant behaviour (each of them measured from 1 to 10, where 1 equals absolutely unacceptable and 10 equals absolutely acceptable). A positive sign thus here means the better the tax morale, the lower the likelihood of paying envelope wages.

Source: Authors' own work based on the GREY employers survey (2015)

This additional important finding is that besides the risk of detection being a significant determinant of whether employers pay envelope wages, there is also a strong correlation with tax morale. The higher is their tax morale, the lower is the likelihood of employers paying envelope wages. This suggests that there should be a twin focus on increasing the perceived risk of detection among employers, and soft indirect policy measures to improve the tax morale of employers to encourage greater voluntary compliance.

8.3 Policy recommendations

This evidence-based evaluation confirms the need for the adoption of different policy approaches when tackling employers and employees participating in under-declared employment. As Table 13 summarises, when tackling employees receiving envelope wages there is a need to move beyond the direct controls approach that seeks to deter employees by increasing the penalties and risk of detection. Instead, indirect controls should be the focus, which improve the tax morale of employees in order to encourage greater self-regulation and a culture of commitment to compliance.

To tackle employers paying envelope wages, however, approaches should combine improving the risk of detection with improvements in their tax morale. Increasing the perceived level of penalties has no impact on employers' under-reporting employee wages. The currently widely used deterrence approach therefore needs to focus upon

increasing the risk of detection, rather than increasing the penalties, and state authorities need to complement this with a tax morale approach.

Table 13. Evaluation of policy approaches

Hypothesis	Employees	Employers
The higher the perceived penalties and probability of detection, the lower the likelihood of salary under-reporting.		
The higher the perceived penalties, the lower the likelihood of salary under-reporting.	Not confirmed	Not confirmed
The higher the perceived probability of detection, the lower the likelihood of salary under-reporting.	Not confirmed	Moderately confirmed
The higher the tax morale, the lower the likelihood of salary under-reporting.	Strongly confirmed	Strongly confirmed

What policy measures are required, therefore, to ensure that employers view there to be a higher risk of detection? Improving the probability of detection of under-declared employment is difficult due to the problems involved in identifying such a wage arrangement during workplace inspections. This is because they are a formal employee with a written contract or terms of employment and a declared salary, and as has been shown, only 1 in 3 employees receiving envelope wages would prefer full declaration. Moreover, those who might like to 'whistle blow' fear that they may lose their job if they do so.

Consequently, a shift away from workplace inspections and towards data mining and matching is required to improve the probability of detecting under-declared employment. This can use dynamic benchmarking in order to identify outlier/anomalous businesses. For example, data systems are required that can analyse data on average earnings in firms and cross-tabulate this with average salaries in their region and/or sector, or by occupation, in order to analyse outlier businesses paying below the average wage for their region and/or sector, or for particular occupations. Box 1 provides an Estonian case study of how data mining led to the identification of businesses, to who notification letters were then sent either to the employers and/or the employees, resulting in a reduction of under-declared employment.

Initiative: Reducing under-declared employment using data mining and notification letters, Estonia

Aim: To identify 'outlier' employers and employees using data mining followed up by notification letters to reduce envelope wages and increase tax revenues.

Description: In January 2008, the Estonian Tax and Customs Board identified using data mining 1,000 businesses with low wage levels compared to the average level in their region and respective business sector, which might suggest the payment of envelope wages. They then sent notification letters to these 1,000 companies and 2,000 employees. Letters were sent either to employees only, employers only or both employers and employees of the same company. These notification letters informed the employers of the low competitiveness of their wage levels compared with average wage levels. Employees were informed of the risks that accompany envelope wages such as losing social guarantees. The intention was to provide employers with the opportunity to change their behaviour before receiving penalties. It also aimed to raise awareness about the impacts of paying envelope wages among both employers and employees in order to change employers' and employees' attitudes towards under-declared employment.

Evaluation: 46% of the companies receiving these letters adjusted their wage levels and increased their tax payments. After four months, the notification letters had brought an additional EEK 10 million (c.€640,000) of tax income, including EEK 8.8 million (€562,000) from notifications sent to enterprises and EEK 1.2 million

(€76,600) from those sent to individual employees. Comparing different methods of sending notification letters, the most successful in terms of improved tax behaviour was when both the employer and the employees received letters; 56% of such enterprises improved their tax behaviour. Given that the Estonian Tax and Customs Board at the time conducted 2,000 inspections per annum, and these notification letters resulted in just less than 500 enterprises improving their tax behaviour, this provides a cheap and relatively effective additional measure that can be implemented to reduce under-declared employment (Anvelt, 2008; Levit, 2008; Rum, 2008; Tubalkain-Trell, 2008).

A further more recent example from Estonia is that data mining revealed 150 companies in the hotels and catering sector in 2012 where the declared wages of staff were considerably below the average wages for the region (Äripäev, 2012). After the inspections, the average declared salary increased by 17.3 per cent in catering and by 13 per cent in the hotels (Estonian Employers' Confederation, 2012).

Identifying potential organisations paying envelope wages using benchmarking, however, does not help when it comes to inspections, and employers and employees admitting that they pay or receive envelope wages. For this reason, it is thus perhaps the perceived risk of detection, rather than actual risk of detection, that needs to be improved. If achieved, then there would be a lower tendency to engage in under-declared employment, which would prevent it occurring rather than seek to detect it and address it. To improve the perceived risk of detection, one approach is to pursue a marketing campaign informing employers that effective tools are being developed by the authorities to identify those organisations paying envelope wages, and that unless employers put their affairs in order, then they will be caught in a matter of time. This marketing campaign might heavily publicise in the media (e.g., newspapers, television, radio, social media) individual cases where employers have been caught paying envelope wages. Such a marketing campaign might also run alongside either an amnesty for employers who fully declare their workers in a certain time period, or for those who voluntarily disclose that they have been paying envelope wages, it may be stated that no penalties will be imposed or lesser sanctions. This could be coupled with the imposition of severe sanctions for those who fail to put their affairs in order within a time limit.

However, besides increasing the perceived risk of detection, and coupling this other initiatives (e.g., amnesties or penalty-free voluntary disclosure, followed by harsher penalties for those not coming forward), there is also a need for broader awareness raising and education about the benefits of fully declared work targeted at both employers and employees.

For employers, such an awareness raising campaign could be targeted at those EU regions, business types and/or sectors where salary under-reporting is more prevalent, namely East-Central Europe, small firms, and agriculture, construction, hotels and restaurants, transport, repair services and the retail sector.

For employees, this awareness raising campaign could be targeted at those employed in small firms and men, younger age groups, those viewing themselves as working class, who have difficulties paying the bills most of the time, and are skilled manual workers or employed in a position which involves travelling, especially in the sectors stated above where envelope wages are prevalent. This marketing campaign should focus upon the benefits of fully declared employment and the costs of receiving envelope wages in terms of the future benefits foregone (e.g., poorer access to credit and loans, health, pension and welfare benefits, lack of recognition of full-time rather than part-time employment status).

More widely, initiatives are also required to educate citizens about the wider benefits of taxation in terms of the public goods and services that they receive in return for the taxes they pay. Such policy initiatives might include:

- introducing into the civics curriculum in schools the issue of taxation and adhering to labour legislation;
- letters to employees as taxpayers about how their taxes are being spent; and
- signs stating 'your taxes paid for this' on roads, ambulances and fire engines, and in hospitals, doctors surgeries and schools.

These awareness raising and educational initiatives, however, will not reduce under-declared employment unless there are changes in the formal institutions. On the one hand, this requires changes in the macro-level economic and social conditions highlighted in chapter 5, that result in the greater likelihood of employers and employees engaging in under-declared employment. On the other hand, this requires a modernisation of governance. Voluntary compliance and tax morale improve when employees and employers:

- believe they pay their fair share compared with others (Kirchgässner, 2010, 2011; Molero and Pujol, 2012);
- view the state authorities as being respectful, impartial and responsible in how they treat them (Gangl et al., 2013; Murphy, 2005), and
- believe that for the taxes paid, they receive an appropriate level and range of public goods and services (McGee, 2005).

In sum, if this report encourages a shift beyond viewing under-declaring work as an individual criminal act that can be tackled by increasing the penalties and risks of detection, which only deals with the effects, and instead encourages recognition that under-declared employment is a symptom of systemic problems, then one of its intentions will have been achieved. If this then results in member states adopting a more evidence-based holistic approach towards tackling envelope wages that uses, in a strategic and coordinated manner, the full range of both direct and indirect policy approaches and measures available to increase the power of, and trust in, authorities respectively, then it will have achieved its wider objective.

Tackling under-declared employment: policy recommendations

- ✓ Increasing the penalties has no impact on reducing under-declared employment.
- ✓ Increasing the perceived risk of detection has no impact on employees receiving envelope wages but a significant impact on employers paying them.
- ✓ Aligning the norms and beliefs of employers and employees with the laws and regulations is strongly associated with reductions in under-declared employment.
- ✓ To increase the perceived risk of detection among employers, a marketing campaign is required publicising employers prosecuted for paying envelope wages.
- ✓ This needs to be coupled with education campaigns about the benefits of fully declaring wages targeted at both employees and employers.
- ✓ More widely, citizens need educating about the benefits of taxation.
- ✓ This needs to be coupled with a modernisation of state authorities and improvements in the economic and social conditions that lead to under-declared employment.

Appendix 1 Main Data Sources on Under-Declared Employment

2013 Special Eurobarometer survey no. 402

Special Eurobarometer survey no. 402 involved 27,563 face-to-face interviews conducted in April and May 2013 across the EU-28. Adults were interviewed aged 15 years and older in their national language based on a multi-stage random (probability) sampling methodology, with the number of interviews varying from 500 in smaller countries to 1,500 in larger nations. The methodology ensures that on the issues of gender, age, region and locality size, each country as well as each level of sample is representative in proportion to its population size.

The face-to-face interviews covered attitudes towards undeclared work, followed by questions on purchasing undeclared goods and services, envelope wages and finally supplying undeclared work. Here, we confine discussion to the questions on envelope wages asked to the 11,025 respondents who reported that they were employees in employment. This examined, firstly, whether formal employees had received an undeclared (envelope) wage in addition to their official declared wage from their employer in the prior 12 months, secondly, whether this envelope wage was for their regular work, as payment for overtime hours, or for both, thirdly, the additional undeclared wage as a percentage of their gross annual wage and fourthly, some questions regarding their attitudes towards being paid envelope wages.

It also included questions on whether their views of the risks of detection and penalties for operating on an undeclared basis, as well as questions on whether they view operating on an undeclared basis as acceptable (i.e., tax morale), enabling the relationship between various policy approaches and participation in under-declared employment to be evaluated. This survey, therefore, represents an employee survey about under-declared employment conducted across the EU28.

2015 GREY employees survey in Bulgaria, Croatia and FYR Macedonia

This survey was similar to the 2013 special Eurobarometer survey no. 402 but extended the range of questions asked on envelope wages.

The sampling methodology replicated that used in the special Eurobarometer survey. In each of the three countries, however, 2,000 face-to-face interviews were conducted (6,000 in total across the three countries) between July and November 2015, enabling a finer-grained analysis of the participation of employees in under-declared employment.

All of the questions asked in the Eurobarometer survey were asked in this survey. The key additional questions asked on envelope wages were firstly, whether it was an employer-instigated, employee-instigated or joint idea to pay an envelope wage, and secondly, whether additional conditions were attached to the verbal agreement to pay an envelope wage which exceeded those included in the formal written contract or terms of employment. This survey, therefore, again represents an employee survey about under-declared employment conducted in these three countries.

2015 GREY employers survey in Bulgaria, Croatia and FYR Macedonia

This survey of employers about undeclared and under-declared work involved face-to-face interviews with a nationally representative sample of some 500 employers in each country (1,500 employers in total) conducted between July and November 2015.

The employer survey achieved a nationally representative sample using a multi-stage random (probability) sampling methodology which ensured that on the issues of firm size, sector and region, the national level sample, as well as each level of the sample, was representative in proportion to its population size. This again analysed the prevalence of under-declared employment and the relationship between receiving envelope wages and the perceived penalties and risk of detection, and level of tax morale.

Appendix 2. Country Case Study: Tackling Envelope Wages in Bulgaria

Introduction: institutional and legislative context

The key national authorities responsible for tackling under-declared employment are the National Revenue Agency (NRA) at the Ministry of Finance (MF) and the General Labour Inspectorate Executive Agency (GLI EA) at the Ministry of Labour and Social Policy (MLSP). For the NRA, their interest is due to the lost tax and social security contribution revenue resulting from contracts with a lower official wage than the real wage. For the GLI EA, it is the false declaration of labour contracts, such as employers declaring labour contracts for part-time work instead of the real full-time employment, and the false calculation of working time such as for night, holiday and extra hours.

From 1st January 2014, the Personal Income Tax Act stipulated a right to refund taxes for those in employment relationships not exceeding the annual minimum wage. This the NRA believes led to an increase in under-declared employment as employers and employees agreed official wages set at the annual minimum wage, with the rest paid as an undeclared ('envelope') wage. Although withdrawn in 2015, it was considered a main cause of an increased loss in tax and social contributions in 2014.

Prevalence of under-declared employment in Bulgaria

In 2016, the GLI EA undertook 48,053 inspections, resulting in 33,315 irregularities identified relating to the payment of workers, and 11,420 irregularities related to the working time directive, many of which were related to under-declared employment.

Table A1 reports a risk analysis by the Risk Management Directorate of the NRA of under-declared employment. This estimates the average annual loss at circa BGN 440 million with 47% of employers and 58% of employees at risk of engaging in under-declared employment.

Table A1. Risk characterisation data for 2010-2015

Year	Relative share of risky employees (%)	Relative share of risky employers (%)	Total potential loss (taxes + social contributions) (in thousands of BGN)
2010	53.79	47.50	441 054
2012	59.33	48.04	375 539
2013	58.79	47.60	363 685
2014	58.71	47.64	469 173
2015	58.50	47.49	426 976

The 2015 nationally representative survey conducted by the Marie Curie GREY project, comprising 2,004 face-to-face interviews with employees, finds that just under 1 in 7 formal employees (14.4%) reported receiving an additional undeclared (envelope) wage from their formal employer, with the mean amount of their net income unreported amounting to 29.8%.

Characteristics of under-declared employment in Bulgaria

In 48% of cases, the envelope wage was paid for regular work, in 21% of cases for overtime/extra work, and in 26% for both regular work and over time. The remaining 5% either refused to answer or did not know. Contrary to the widely-held assumption that this illegal wage practice is the decision of employers, the 2015 GREY survey reveals this is the case in less than two-thirds (65%) of reported instances. Employees in some one-third of cases asserted it was either a joint idea or that they had suggested this illegal arrangement. Indeed, 31% of employees were happy receiving envelope wages, 34% were neutral, and 27% would prefer their wage fully declared, with the remaining 8% refusing to answer or not knowing.

Those happy with this arrangement were more likely to have agreed to additional conditions not stated in their written contract, suggesting that additional conditions

might be suggested by the employee to the employer as compensation for paying the additional undeclared wage. Such additional conditions prevailed in 50% of all reported cases of envelope wages. 28% receiving envelope wages had verbally agreed to work longer hours than stated in the formal contract, 20% had agreed to conduct tasks, or take on responsibilities, not stated in their written contract, and 9% not to take their full statutory holiday entitlements.

Distribution of under-declared employment in Bulgaria

Which employee groups are more likely to receive envelope wages? Table A2 reveals that male employees are far more likely than female employees to receive envelope wages (17.6% compared with 12.9%), and that the proportion of employees receiving envelope wages declines with age, although it rises again for those aged over 55, and the proportion of their net income received as an envelope wage increases. Envelope wages is also more prevalent among those cohabiting and in larger households. However, it is not concentrated among those struggling financially but rather, among those reporting no financial problems. Examining personal income, it is concentrated among two polar opposite groups, namely those in the lowest and highest income groups. No differences exist however between urban and rural localities, and it is more prevalent in the North Central, South Central and South Eastern regions.

Table A2. Formal employees receiving envelope wages, 2015

	% of all employees surveyed	% of employees receiving envelope wage	% of net income paid as envelope wage	Envelope wages paid for:			
				Regular work	Overtime / extra work	Both regular & overtime work	Refusal / don't know
Gender							
Male	52.2	17.6	28.8	47.8	20.7	26.8	4.8
Female	47.8	12.9	30.9	48.7	20.0	24.2	7.1
Age Groups							
15 - 24 years	7.9	16.5	25.2	60.2	8.4	19.6	11.8
25 - 34 years	23.1	19.1	27.2	61.3	14.8	21.5	2.4
35 - 44 years	25.9	14.6	26.2	36.7	28.5	28.9	5.8
45 - 54 years	23.0	12.6	35.8	43.4	27.3	26.2	3.2
55 - 64 years	17.3	17.1	35.0	42.1	17.2	30.3	10.4
65 years+	2.9	0.0					
Marital status							
Married/Remarried	66.1	12.0	31.8	47.2	21.2	26.7	4.9
Cohabiting	12.8	26.9	28.0	50.5	23.7	23.7	2.1
Single	21.2	19.4	26.8	48.0	16.1	25.5	10.4
Household Size							
One	7.4	11.0	28.5	26.1	32.0	41.9	0.0
Two	27.3	14.1	35.4	42.0	22.2	26.5	9.4
Three	34.2	12.9	29.2	55.6	17.0	21.3	6.0
Four or more	31.1	20.1	26.6	49.4	20.2	26.4	4.0
Financial situation							
Very comfortable	1.2	31.4	36.9	0.0	0.0	100.0	0.0
Just comfortable	20.8	19.4	28.7	45.7	17.2	26.2	10.9
Maintaining	60.7	13.3	27.4	47.7	23.5	26.6	2.2
Struggling	17.3	16.9	37.9	57.4	19.0	14.4	9.3
Personal income							
< 350 euros	10.8	27.3	37.6	63.7	13.3	16.1	6.9
350-699 euros	61.2	12.9	26.7	48.8	22.7	26.5	2.0
700-999 euros	18.8	12.8	24.6	36.9	20.5	30.5	12.1
> 1000 euros	9.2	19.7	30.8	40.9	27.1	23.4	8.6
City size							
Rural area	20.8	15.8	27.0	29.4	37.4	27.8	5.4
Small/medium town	23.3	14.9	29.6	51.6	12.8	33.6	2.1
City	55.9	15.4	30.7	53.8	17.1	21.9	7.3

Regions							
North Central	8.6	29.1	27.5	24.9	27.6	22.6	24.9
North Eastern	10.9	6.2	22.6	78.4	21.6	0.0	0.0
North Western	9.6	12.2	42.8	15.8	62.7	21.5	0.0
South Central	20.4	27.1	25.1	43.5	23.8	29.9	2.8
South Eastern	14.7	21.6	29.8	65.2	9.8	25.0	0.0
South Western	35.9	7.0	41.3	62.2	2.9	29.6	5.2

Source: authors' calculations from GREY survey

Tackling under-declared employment in Bulgaria: an evidence-based evaluation

Table A3 reveals that employees perceiving the risk of detection as fairly high/very high are the most likely to receive envelope wages. No marked association exists, however, regarding the expected sanctions. However, there is a strong association between tax morale and the propensity to receive envelope wages. While only 8.5% of employees expressing the highest tax morale received envelope wages from their formal employer, this share gradually increases up to 22.9% for employees with very low tax morale.

Table A3. Relationship between likelihood of employees receiving envelope wages and their perceptions of the penalties, risks of detection and level of tax morale

	% of all employees surveyed	% of employees paid envelope wage	% of net income received as envelope wage	Envelope wages paid for:			
				Regular work	Overtime / extra work	Both regular & overtime work	Refusal / don't know
<i>Tax morale</i>							
Upper quartile	24.5	8.5	33.8	47.9	40.2	8.4	3.5
Upper middle quartile	25.4	10.0	27.3	47.4	13.6	39.0	0.0
Lower middle quartile	25.0	18.7	24.5	60.4	21.8	10.2	7.6
Lower quartile	25.1	22.9	33.1	37.9	15.6	41.7	4.9
<i>Detection risk</i>							
Very small	32.9	16.4	37.9	57.8	13.2	29.0	0.0
Fairly small	41.9	11.9	24.2	50.7	19.2	19.7	10.4
Fairly/Very high	25.2	20.9	25.0	34.7	34.5	25.0	5.9
<i>Expected sanctions</i>							
Tax or social security contributions due	42.0	15.6	29.1	49.2	26.9	20.4	3.4
Plus a fine/ Prison	58.0	14.3	29.3	46.8	16.1	27.4	9.7

To evaluate whether this strong association between employee receiving envelope wages and their level of tax morale, and perceptions of the detection risks, persists when controlling for other variables, Table A4 reports the results of a logit marginal effects regression analysis.

This reveals a weak but significant relationship between employees engaging in under-declared employment and the risk of detection, but not in the direction expected. Individuals perceiving the risk of detection as fairly high/very high are 9.2% more likely to receive envelope wages. However, those viewing the sanction as being a fine or prison in addition to the normal tax and social contributions due are 7.3% less likely to receive envelope wages than those who believe that the normal tax and social contributions owed will need to be paid. There is also a strong statistically significant relationship between tax morale and employees receiving envelope wages. The higher the tax morale, the lower is the likelihood of employees receiving envelope wages. A unit decrease in tax morale, for instance, results in a 4.3 percentage point increase in the probability of receiving envelope wages.

Table A4. Logit marginal effects regression analysis of the propensity of employees to receive envelope wages, Bulgaria

VARIABLES	Model 1	
	Marginal effects	Standard error
<i>Tax morale</i>	0.043***	(0.012)
<i>Detection risk (BG: Very small)</i>		
Fairly small	-0.027	(0.040)
Fairly high/Very high	0.092*	(0.055)
<i>Expected sanctions (BG: Tax or social security contributions due)</i>		
Plus a fine/ Prison	-0.073*	(0.040)
Interaction term		
Fairly small* Tax morale	-0.004	(0.014)
Fairly high/Very high* Tax morale	-0.015	(0.015)
Plus a fine/ Prison* Tax morale	-0.004	(0.013)
<i>Female</i>	-0.033	(0.022)
<i>Age</i>	-0.001	(0.001)
<i>Marital status: (BG: Married/Remarried)</i>		
Cohabiting	0.069*	(0.036)
Single	0.077**	(0.031)
<i>Household Size: (BG: One Person)</i>		
Two	0.088***	(0.034)
Three	0.056*	(0.033)
Four or more	0.122***	(0.035)
<i>Financial situation (BG: Very comfortable)</i>		
Just comfortable	-0.152	(0.133)
Maintaining	-0.189	(0.132)
Struggling	-0.142	(0.135)
<i>Personal income (BG: Less than 350 euros)</i>		
350-699 euros	-0.170***	(0.045)
700-1000 euros	-0.143***	(0.053)
More than 1000 euros	-0.129**	(0.064)
<i>City size (BG: Rural area)</i>		
Small/medium town	-0.016	(0.028)
City	0.060**	(0.028)
<i>Regions (BG: North Central)</i>		
North Eastern	-0.088*	(0.049)
North Western	-0.096*	(0.050)
South Central	0.115**	(0.045)
South Eastern	0.103*	(0.054)
South Western	-0.126***	(0.035)
Number of imputations	50	
N	1126	

Note: ***, **, and * indicate significance at the 1, 5 and 10 percent level respectively. Tax morale is calculated as a mean of non-compliant behaviours (each of them measured from 1 to 10, where 1 equals absolutely unacceptable and 10 equals absolutely acceptable). A positive sign thus means the better the tax morale, the less is the likelihood of under-declared employment.

Source: authors' calculations from GREY survey

Does the effect of the perceived penalties and detection risk have a different impact on receiving envelope wages at varying levels of tax morale? The finding is that the effect of the perceived sanctions on the likelihood of engaging in under-declared employment is not significantly different at varying levels of tax morale. Neither is the effect of the perceived risk of detection on the likelihood of engaging in under-declared employment significantly different at varying levels of tax morale.

Table A4 also reveals the employee groups that should be targeted when tackling under-declared employment. Gender and age makes no difference to participation in under-declared employment. However, single and divorced people are significantly more likely than the married/remarried to receive envelope wages, perhaps in the case of divorced people to hide their actual wages to reduce payments agreed in divorce settlements.

Envelope wages are also significantly more common among those in multiple adult households compared with single adult households. No significant association exists, however, between an employee’s financial situation and the receipt of envelope wages. Nevertheless, a strong significant association exists with personal formal income. Those earning over 350 euros are significantly less likely to receive envelope wages than those earning less than 350 euros per month. So too are those living in large urban areas significantly more likely to receive envelope wages than those living in rural areas. Finally, significant regional variations exist with those in the South Central and South Eastern regions significantly more likely to receive envelope wages than those in the North Central region, and those in the other regions significantly less likely. In sum, single and divorced employees, those living in multiple adult households, earning less than 350 euros per month of formal income, in larger urban areas and in the North Central, South Central and South Eastern regions could be targeted by policy.

Table A5 provides a summary evaluation of the different policy approaches and measures in relation to employees in Bulgaria. This reveals that *increasing the penalties and risks of detection is not an effective means of reducing employee participation in under-declared employment*. Indeed, this is reinforced by the Risk Management Directorate in the NRA who reveal that despite over 2,500 workplace inspections 2012, 2013 and 2014, 1,850 inspections of individuals, and 200 audits of risky employers, these were not particularly effective and resulted in only a negligible reduction of the tax and social insurance contribution losses over this period (European Platform Bulgaria Factsheet, 2017).

Table A5. Evaluation of policy approaches and measures in Bulgaria

Hypothesis	Result
<i>H1: The higher are the perceived penalties and probability of detection, the lower is the likelihood of falsely-declared salaries.</i>	
<i>H1a: The higher are the perceived penalties, the lower is the likelihood of falsely-declared salaries.</i>	Weakly confirmed
<i>H1b: The higher is the perceived probability of detection, the lower is the likelihood of falsely-declared salaries.</i>	Not confirmed
<i>H2: The higher is tax morale, the lower is the likelihood of falsely-declared salaries.</i>	Strongly Confirmed

However, the empirical evidence finds a strong association between tax morale and employee engagement in under-declared employment. This suggests that *improving the tax morale of employees and citizens is an effective means of tackling under-declared employment*. On the one hand, this requires marketing campaigns to raise awareness among employees about the benefits of fully declaring salaries and the costs of not doing so in terms of the future benefits foregone. It also requires initiatives to educate citizens about the wider benefits of taxation in terms of the public goods and services that they receive in return for the taxes they pay. In Bulgaria, an initiative in this regard is the NRA ‘Wages in the Envelope’ campaign. However, there is no formal evaluation of the impacts of this campaign. The fact that the prevalence of envelope wages has not significantly declined, nevertheless, tentatively suggests that it has not been an effective instrument.

As the 2017 Bulgaria Factsheet reports, this is perhaps in major part because there is a need for a reform of the formal institutions in Bulgaria to increase trust in government. This includes modernising the formal institutions and quality of governance, not least to overcome the high actual and perceived level of corruption, and a focus upon the structural determinants, discussed in this Report.

Appendix 3. Country Case Study: Tackling Envelope Wages in Croatia

Introduction: institutional and legislative context

The national authorities responsible for tackling under-declared employment are the Labour Inspectorate (LI) in the Ministry of Labour and Pension System (MoLPS), and the Tax Administration (TA) in the Ministry of Finance (MF). For the TA, their main interest in under-declared employment is the lost tax and social security contributions revenue resulting from contracts with a lower official wage than the real wage. For the LI, meanwhile, it is the false declaration of labour contracts, such as employers declaring labour contracts for part-time work instead of the real full-time employment, and the wider false calculation of working time not accounting for night, holiday and extra hours of work.

The Labour Inspectorate (LI), based on the Labour Inspectorate Act (OG19/2014), is empowered to inspect compliance with the laws and other regulations that prescribe the relationship between employers and employees. These inspections include checking whether employees are in under-declared employment. The Tax Administration (TA) is responsible for collecting all taxes and all the social contributions the Croatian employer has to pay due to the employment relationship (e.g., pension insurance, health insurance and unemployment insurance). If corrections are necessary, the TA makes corrections.

Prevalence of under-declared employment in Croatia

In the 2013 Eurobarometer survey, 8.2% of employees in Croatia report received envelope wages in the year prior to the survey and a median of 35% of their gross salary as an undeclared (envelope) wage. In the 2015 GREY survey, 6.6% of formal employees reported receiving envelope wages from their employer and a mean of 30% of their take-home pay as an envelope wage.

Although it might be assumed that employers pay employees the minimum wage as their declared salary, and the rest as an unofficial undeclared (envelope) wage, this is not always the case in Croatia. Analysing the net monthly wage officially earned, only one-fifth in under-declared employment received the minimum wage as their declared salary.

Characteristics of under-declared employment in Croatia

Examining whether envelope wages are paid for the regular work of employees, or for overtime/extra work, the 2015 GREY employees survey reveals that 47% receive envelope wages for their regular work, 29% for overtime/extra work, and 24% for both their regular work and overtime/extra work. This is employer instigated in seven out of ten cases. In 30% of cases, the employee reported that they were active in selecting this arrangement, albeit in most cases this was a joint idea, with only a small proportion of employees starting it was their idea alone to under-report their salary (accounting for 10% of all under-declared employment). As Franic (2017) shows however, even if employees might assert that they have chosen to receive an envelope wage, most accept this arrangement due to their lack, rather than as a matter, of choice (see page 12 of the main report).

Analysing the attitude of employees towards being paid envelope wages, the finding of the 2015 GREY employees survey is that 55% would prefer full declaration of their salary, 23% say it depends, 19% are happy receiving under-declared (envelope) wages, and 3% do not know or refused to answer. The fact that only 55% would prefer full declaration of their salary means that it will prove difficult during workplace inspections to elicit 'whistle-blowing' behaviour from employees, and even those not happy with this arrangement, may fear losing their job if they whistle blow.

Some 39% of employees receiving envelope wages stated that there were no additional conditions attached. Some 61% of employees therefore state that additional conditions were attached. Analysing these, 34% were asked to work longer working hours than

stated in their written contract, 27% were asked to conduct different tasks to those in their written contract, 19% were asked not to take their full statutory holiday allowance, and 5% stated other conditions. The percentages do not add up to 61% because employees could select more than one condition if multiple additional conditions were attached to their envelope wages.

Distribution of under-declared employment in Croatia

As the LI and TA recognise, all employee groups, types of business and regions participate in the practice of under-declaring salaries. However, it is relatively more concentrated in some employee groups, business types and places.

Who, therefore, receives envelope wages? Examining the socio-demographic and socio-economic characteristics of employees receiving envelope wages, Table A6 reveals that men and younger age groups are more likely to receive envelope wages, those in rural areas and villages and in North Croatia, single, widowed and divorced individuals, those in full-time employment, and those believing a large proportion of the population engage in the undeclared economy. This latter point is particularly important since it shows that under-declared employment is much more prevalent among those where 'horizontal trust' is lacking, namely they believe that the majority of the population are non-compliant.

Table A6. Profile of employees receiving envelope wages in Croatia, 2015: % of surveyed employees

		Yes	No	Refusal	DK
Gender	Male	7.7	89.0	2.4	0.9
	Female	5.5	93.2	1.3	0.0
Age	15 – 24	22.3	75.7	2.0	0.0
	25 – 34	8.4	91.2	0.4	0.0
	35 – 44	5.1	90.9	3.4	0.6
	45 – 54	3.5	94.5	1.4	0.6
	55 – 64	2.3	93.2	3.5	1.0
	65+	0.0	100.0	0.0	0.0
Marital status	(Re)Married	3.3	94.6	1.6	0.5
	Cohabiting	8.6	87.1	4.3	0.0
	Single	11.6	87.1	1.3	0.0
	Divorced	11.3	84.5	1.8	2.4
	Widowed	16.2	83.8	0.0	0.0
Household size	One	5.8	93.2	1.0	0.0
	Two	5.6	90.5	3.1	0.8
	Three	6.8	91.7	0.9	0.6
	Four or more	7.5	89.9	2.2	0.4
Type of contract	Full-time	6.8	90.7	2.0	0.5
	Part-time	0.0	100.0	0.0	0.0
Financial situation	Struggling	10.0	87.8	1.5	0.7
	Maintaining	7.3	91.5	1.2	0.0
	Just comfortable	3.6	92.3	3.2	0.9
	No money problems	0.0	100.0	0.0	0.0
Estimated share of population engaged in UW	Less than 5%	5.4	90.0	4.6	0.0
	5 to 10%	4.3	93.8	0.5	1.4
	10 to 20%	2.8	96.1	0.4	0.7
	20 to 50%	8.8	89.5	1.7	0.0
	50% or more	12.8	76.5	9.1	1.6
Type of community	Rural area or village	7.1	90.6	1.4	0.9
	Small or middle sized town	6.2	90.5	3.3	0.0
	Large town	6.6	92.0	0.8	0.6
Region	Zagreb	5.7	93.0	1.3	0.0
	North Croatia	10.9	85.5	1.7	1.9
	Slavonia	3.4	96.6	0.0	0.0
	Lika and Banovina	6.0	94.0	0.0	0.0
	Istria, Primorje and Gorski Kotar	8.0	90.4	1.6	0.0
	Dalmatia	5.7	87.9	5.5	0.9
Total		6.6	91.0	2.0	0.4

Source: Williams et al. 2017: Table 2

Which employers pay envelope wages? Table A7 reveals that agriculture (28.3% of employees receive envelope wages) and construction (16.1% receive envelope wages) are the sectors facing the most profound problems with under-declared employment. It is also prevalent among employees in the household services sector (15.5%) and the hospitality sector (9.4%). On the other hand, the lowest frequency of under-declared employment was in transport of goods (3.2%) and those in personal services (3.1%).

Table A7. Prevalence of under-declared employment in Croatia: by sector, % of employees, 2015

	Yes	No	Refusal	DK
Construction	16.1	79.4	4.5	0.0
Industry	6.7	90.1	3.2	0.0
Household services (incl. gardening, child and elderly care)	15.5	84.5	0.0	0.0
Transport	3.2	89.1	7.7	0.0
Personal services	3.1	93.2	2.0	1.7
Retail	7.5	90.7	1.8	0.0
Repair services	0.0	100.0	0.0	0.0
Hospitality (hotels, restaurant, cafes)	9.4	89.7	0.9	0.0
Agriculture	28.3	58.2	13.5	0.0
Other	4.2	94.8	0.6	0.4

Source: Williams et al. 2017: Table 3

Table A8 evaluates the proportion of employers across different sectors who state that competitors use under-declared employment either always or in most cases. Overall, 1 in 20 (5%) employers assert that competitor businesses always pay envelope wages, and a further 1 in 5 (22%) assert that this occurs in most cases, 57% sometimes, and only 16% of employers' assert that this never occurs among their competitors. A higher proportion (44%) of employers in the hotels and restaurant sector assert that competitors use under-declared employment always or in most cases, 28% of employers in the transport and communications sector, 27% in the construction sector, and 26% in services, but none in the utilities sector and only 5% in manufacturing industry.

Table A8. Croatian employers' views on whether competitors pay envelope wages always or in most cases: by sector, 2015

Sector	%
All sectors	27
Hotels and restaurants	44
Agriculture	17
Construction	27
Services	26
Transport and communications	28
Retail	22
Trade	20
Other	20
IT sector	23
Utilities (gas, electricity, etc.)	0
Industry	5
Education	22
Health	10

Source: Williams et al. 2017: Table 5

Tackling under-declared employment in Croatia: an evidence-based evaluation

Evaluating policy measures to reduce employee participation

Table A9 reveals that individuals who perceive the risk of detection as very high are slightly more likely to receive envelope wages (7.5%) than those who denote the risk as fairly small (7.2%). Overall, however, there does not seem to be a strong association between whether employees engage in under-declared employment and their

perceptions of the risks of detection. This is not the case with the penalties. Under-declared employment is more common among employees who believe that a fine will result in addition to paying the taxes and contributions owed if caught (7.9%) than amongst those who do not believe that will be any additional fine (5.2%). This perhaps displays, therefore, that employees in Croatia recognise that they will not be penalised for engaging in under-declared employment so sanctions do not particularly matter to them, since they view their employer as the one who will be sanctioned by the state authorities.

Table A9. Employee participation in under-declared employment: by employees' perceptions of the risk of detection, penalties and tax morale, 2015

		Yes	No	DK/Refusal
Detection risk	Very small	7.6	89.0	3.4
	Fairly small	7.2	90.8	2.0
	Fairly high	5.4	92.9	1.7
	Very high	7.5	92.5	0.0
Expected sanctions	Tax + social security contributions due	5.2	91.4	3.4
	Tax + contribution + fine	7.9	91.0	1.1
	Prison	0.0	100	0.0
Tax morale	<2	5.7	92.3	2.0
	2-4	7.7	91.6	0.7
	4-6	7.1	83.6	9.3
	6-8	18.4	81.6	0.0
	8-10	0.0	100	0.0

Source: Williams et al. 2017: Table 7

To measure whether employees' attitudes regarding the acceptability of operating on an undeclared basis align with the laws and regulations, tax morale was measured. To do so, employees were asked to rank on a scale of 1 to 10 where 1 is totally unacceptable and 10 is totally acceptable, six different types of undeclared work. The higher the tax morale value, therefore, the greater is the non-alignment of their attitudes with the laws and regulations (i.e., the lower is their tax morale). The finding is a very strong association between the likelihood of employees receiving envelope wages and their tax morale. The higher is their tax morale (i.e., the greater is the alignment of their beliefs with the laws and regulations), the lower is the likelihood of employees participating in under-declared employment.

To evaluate whether the participation of employees in under-declared employment is associated with their perceptions regarding the risk of detection, the penalties for operating undeclared and their 'tax morale', when socio-demographic and regional characteristics are included and held constant, Table A10 reports a logit regression analysis. This reveals no association between the participation of employees in under-declared employment and the perceived level of penalties and risk of detection, but a strong association between employees' participation in under-declared employment and their views on the acceptability of operating undeclared (i.e., their lack of alignment with the laws and regulations). This confirms in the Croatian context that there is a need to move beyond using direct deterrence measures with regard to employees, and to focus upon the use of indirect policy measures to improve the tax morale of employees to encourage greater voluntary compliance.

Table A10. Logit regression model of the main determinants of employee participation in under-declared employment in Croatia, 2015

	Model 1		Model 2		Model 3	
	Coefficient	Odds ratio	Coefficient	Odds ratio	Coefficient	Odds ratio
Risk of being caught	0.151	1.163	0.132	1.141	0.109	1.115
Severity of the penalty	0.172	1.188	0.1	1.105	0.125	1.133
Tax morale	-0.046**	0.955	-0.043*	0.958	-0.046*	0.955
Socio-demographic characteristics	No		Yes		Yes	
Regional characteristics	No		No		Yes	
N	661		648		648	
Pseudo R-square	0.026		0.247		0.28	

Notes: * p<0.05; ** p<0.01; *** p<0.001; Source: Williams et al. 2017: Table 8. Tax morale is calculated as a sum of non-compliant behaviours (each of them measured from 1 to 10, where 1 equals absolutely unacceptable and 10 equals absolutely acceptable) and is then reversed for the index. Thus, a negative sign means the better the tax morale, the less the likelihood of under-declared employment (unlike earlier tables).

Evaluating policy measures to reduce employer participation

What however, is the association between the perceived risk of detection and levels of penalties, and tax morale, as determinants of employer participation in under-declared employment when firm characteristics and the characteristics of the employer are included and held constant? Table A11 reports the results using ordered logit model estimations. This reveals that although the severity of the penalty does not determine whether employers' pay envelope wages, the risk of detection is a significant determinant of whether employers engage in salary under-reporting. Unlike employees, therefore, improving the perceived risk of detection does have a significant impact on reducing the likelihood of employers paying envelope wages.

The additional important finding is that besides the risk of detection being a significant determinant of whether employers pay envelope wages, so too is there a correlation with tax morale. The higher their tax morale, the lower is the likelihood of employers paying envelope wages, although this is not statistically significant. This suggests that although the primary focus should be upon increasing the perceived risk of detection among Croatian employers, a secondary focus should be upon indirect policy measures to improve the tax morale of employers to encourage greater voluntary compliance.

Table A11. Ordered logit estimations of the likelihood of employers' paying envelope wages in Croatia, 2015

	Model 1		Model 2		Model 3	
	Coefficient	Odds ratio	Coefficient	Odds ratio	Coefficient	Odds ratio
Risk of being caught	-0.009*	0.991	-0.010*	0.990	-0.011**	0.989
Severity of the penalty	0.123	1.131	0.106	1.112	0.104	1.110
Tax morale	-0.010	0.990	-0.011	0.989	-0.007	0.993
Firm characteristics	No		Yes		Yes	
Characteristics of the replying person	No		No		Yes	
N	357		357		357	
Pseudo R-square	0.01		0.046		0.068	

Note: * p<0.05; ** p<0.01; *** p<0.001; Source: Williams et al. 2017: Table 9. Tax morale is calculated as a sum of non-compliant behaviours (each of them measured from 1 to 10, where 1 equals absolutely unacceptable and 10 equals absolutely acceptable) and then reversed. Thus, a negative sign means the better the tax morale, the less the likelihood of under-declared employment (unlike earlier tables).

This evidence-based evaluation reveals the need for the adoption of different policy approaches when addressing employers and employees participating in under-declared employment. When tackling employees receiving envelope wages, an indirect controls approach that improves the tax morale of employees is required to encourage greater self-regulation and a culture of commitment to compliance among employees. To tackle employers paying envelope wages, however, it is primarily the risk of detection that

needs to be addressed, followed only secondarily by improvements in their tax morale. Increasing the perceived level of penalties has no impact on the probability of employers paying envelope wages. The current deterrence approach, therefore, needs to focus upon increasing the risk of detection, rather than increasing penalties, and to be complemented by a tax morale approach. How to achieve this has been addressed in section 8.3 of the main report.

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