

The fiscal and social cost of tax evasion: the impact of underreporting of income by the self-employed*

Headlines

- Recent analysis shows that underreporting of income by the self-employed may be relatively high, ranging from 10% to 43% of the income reported by the employed, in a sample of European countries.
- JRC work suggests that such levels of income underreporting by the self-employed may produce budgetary losses of up to 1.6% of GDP.
- This form of tax evasion typically also has negative distributional implications, due to the high concentration of self-employment income in the higher income groups and the progressivity of tax systems.

The fiscal and social cost of tax evasion

Tax evasion is a major concern for European fiscal policy. Not only does it limit the capacity of countries to finance their economic and social policies; it is also fundamentally unfair, both horizontally (taxpayers with similar incomes end up paying different amounts of tax) and vertically (it reduces the redistributive power of the tax–benefit system).

Income underreporting by individuals is believed to make up a major part of overall tax evasion. The self-employed arguably have more opportunity than others to underreport their income for tax purposes, since their income is typically not subject to third-party reporting.

Given the hidden nature of tax evasion, measuring its magnitude is difficult. An extensive body of economic literature has, in recent years, focused on different methods to measure the extent (and in some cases the distributional impact) of tax non-compliance. Kukk et al. (2018) [1] have recently estimated the extent of income

underreporting among the self-employed in fourteen EU countries, using the well-known Pissarides-Weber approach (in which the extent of income underreporting is visible as differences in the consumption–income relationship across different population groups) [2]. Based on these estimates, this brief presents the fiscal and distributional impact of this form of tax evasion in those countries using the EUROMOD microsimulation model (see the ‘Quick guide’ for details).

The budgetary impact of income underreporting

Figure 1 illustrates three key variables that influence the budgetary impact of income underreporting by the self-employed. The countries under analysis are ranked by the extent of underreporting by the self-employed as estimated by Kukk et al. Although there is no clear pattern across countries, **underreporting by the self-employed is substantial in all countries analysed, ranging from 10% of the income reported by employees in Bulgaria and Cyprus to above 40% in Latvia.** Using similar data and methods, other studies have found comparable levels of self-employment income underreporting in other countries (in the range of 23–40%) [3]. The average tax burden of the self-employed (i.e. total direct taxes and social contributions in relation to market income) ranges between 15 and 33% for most countries, except Hungary and Romania, where it is above 46%. According to microdata, self-employment income as a share of total employment income is below 20% in all countries except Greece, where it is above 40%.

Drawing on the Kukk et al. country-specific estimates of the extent of income underreporting by the self-employed, JRC-EUROMOD microsimulations assess the **impact of this form of tax evasion on public budgets.** Figure 2 shows the budgetary effect on three items, namely, on direct taxes and social insurance contribution collections (both on the revenue side) and on social benefit pay-outs (on the expenditure side), as a percentage of GDP.

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The views expressed in this policy brief are those of the authors and do not necessarily reflect the official views of the European Commission.

Quick Guide

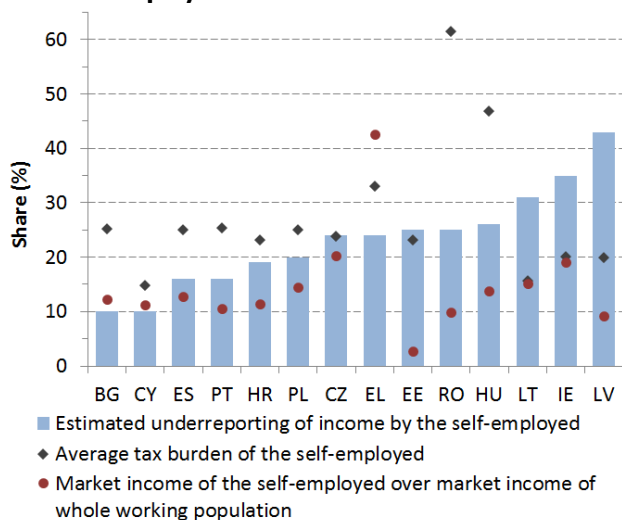
This brief presents the budgetary and distributional impact of income underreporting by the self-employed using a two-step analysis.

In a **first step**, the extent of income underreporting among the self-employed was estimated by Kukk et al. (2018) for fourteen European countries using the methodology developed by Pissarides and Weber and using microdata from the 2010 wave of the Eurostat Household Budget Survey (EHBS). The Pissarides–Weber approach relies on the notion that households tend to report their consumption accurately in surveys while some may underreport their incomes, as they do for tax purposes. Since there is a robust relationship between consumption and true (permanent) income, assuming a similar propensity to consume from true income across households makes it possible to estimate the extent of income underreporting. Wage earners are assumed to report income accurately, therefore income underreporting by other types of households (self-employed) can be estimated in relative terms compared to wage earners.

Although the EHBS is harmonised across 25 EU countries, some relevant information (e.g. total income, main source of income, education level) was missing for some countries, making the estimations of income underreporting by the self-employed feasible for only 14 countries (Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Romania and Spain).

In a **second step**, we incorporated the country-specific estimates (one per country) obtained in the first step into the EUROMOD tax-benefit microsimulation model. This means that all self-employed in a given country are assumed to hide income in the same proportion, independently of their income level or non-income characteristics. Furthermore, since EUROMOD input data are derived from the European Statistics on Income and Living Conditions (EU-SILC 2016), the use of the estimates implies that underreporting in EU-SILC is assumed to be similar to underreporting in EHBS. Within this framework two scenarios are simulated: in one scenario the self-employed underreport their incomes to the extent estimated in the first step; and in the second scenario they are assumed to declare their full incomes. The tax-benefit rules in force in 2018 apply in both cases for the analysis of the fiscal and distributional impact of this form of tax evasion. No specific assumption about potential behavioural effects is made, which must be seen as a potential limitation of this approach.

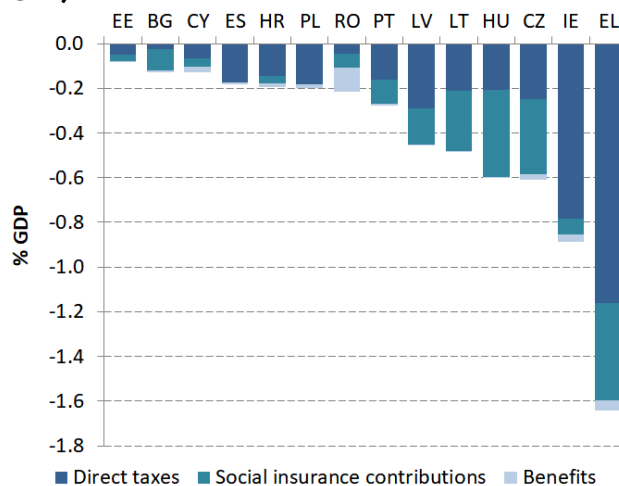
Figure 1. Estimated income underreporting, average tax burden and share of total income of the self-employed



Sources: Kukk et al. (2018) [estimated underreporting], EUROMOD [average tax burden] and EU-SILC 2016 [market income share].

Note: The underreporting of income is the estimated percentage of income underreported by the self-employed in relation to income reported by employees (using the Pissarides-Weber methodology); to compensate for possible underestimation due to data limitations, the upper bound estimate is shown here and chosen for the simulations in EUROMOD (see Kukk et al., p.20, Table 2, column 5). The average tax burden is the sum of direct taxes and social contributions in relation to market income – that is, income before taxes and transfers – for the self-employed. The share of market income shows the ratio between the market income earned by the self-employed and that of the whole working population.

Figure 2. Budgetary losses from income underreporting by self-employed individuals (% GDP)



Source: Joint Research Centre, calculations based on EUROMOD.

There is **high variability in the estimated overall budgetary effects**. In most countries the estimated impact is below 0.6% of GDP, while the largest impacts are found in Ireland (at around 0.9% of GDP, due to high levels of underreporting and a relatively high share of self-employed income) and Greece (at more than 1.6% of GDP, due to the high share of self-employed income). Despite high underreporting ratios, the overall effect on public budgets is moderate in Latvia and Lithuania, most likely due to the low tax burden on the self-employed

(Lithuania) and the low share of self-employed market income (Latvia). The smallest budgetary impacts occur in Estonia (due to the very low share of market income of the self-employed) and Bulgaria and Cyprus (with relatively low levels of underreporting and low shares of self-employed market income).

Most of the budgetary impacts are due to loss of tax revenue and social insurance contributions.

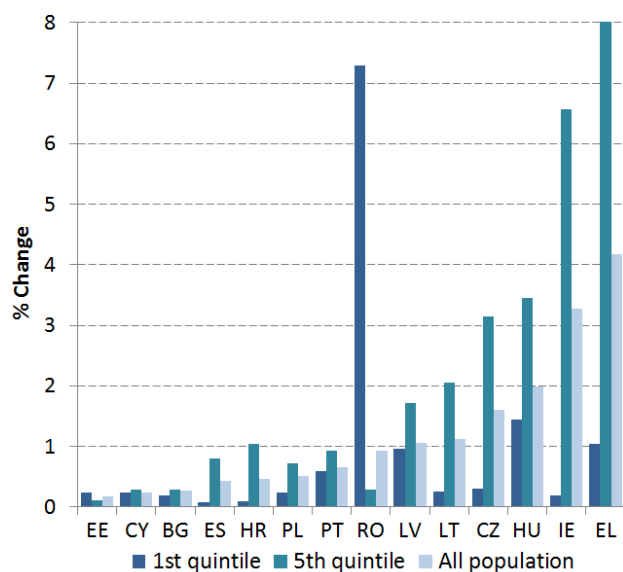
With the exception of Romania, the effect on social benefits is negligible in relative terms. This means that underreporting of income by the self-employed does not generally qualify them for means-tested benefits.¹

The distributional outcome

Income underreporting by the self-employed also affects household disposable income and its distribution.

Figure 3 shows the percentage change in mean equivalised disposable income that occurs under an underreporting scenario compared to a full reporting scenario. Results are presented for the whole population, for the poorest 20% (1st quintile) and the richest 20% (5th quintile).

Figure 3. Percentage change in equivalised disposable income resulting from income underreporting by the self-employed



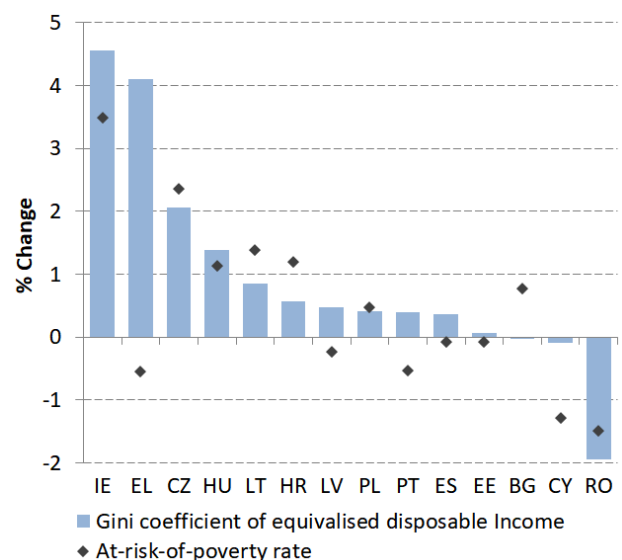
Source: Joint Research Centre, calculations based on EUROMOD.
 Note: Equivalised income refers to the fact that household members are made equivalent by weighting them according to their age, using the so-called modified OECD equivalence scale.

Self-employed income underreporting impacts on the whole population’s combined disposable income by less than 2% in most countries. However, the effect is more pronounced for the richest 20% of households. This is a consequence of the relatively unequal distribution of self-employment income (i.e. the richest self-employed have very high average incomes in relation to the poorest self-employed) and the progressive nature of tax systems (which tax incomes at increasing rates).

One notable exception is Romania, where the highest impact on disposable income from underreporting by the self-employed is on the poorest 20% of households. This is due to the very high concentration of self-employed people in that quintile (66% of total workers in comparison with an average of 17% in the other countries). This also explains the relatively higher impact of increased social benefit pay-outs, compared to taxes and contributions, on the full budgetary impact in Romania (Figure 2).

Figure 4 shows how income underreporting by the self-employed affects inequality, as measured by the Gini coefficient. Consistent with the findings shown in Figure 3, the **increase in inequality caused by underreporting** is particularly high in Ireland and Greece, but is true everywhere except in Bulgaria and Cyprus (where inequality is not affected) and Romania (where it is reduced). The interplay of factors outlined in the previous paragraphs explains these results; that is, the country-specific concentration of self-employed people and self-employment income across the income distribution and the progressivity of the tax–benefit systems.

Figure 4. Percentage change in inequality and at-risk-of-poverty rates (AROP) resulting from income underreporting by the self-employed



Source: Joint Research Centre, calculations based on EUROMOD.
 Note: The Gini coefficient takes values between 0 and 1; the higher the value, the more unequal the distribution of equivalised disposable income. The at-risk-of-poverty rate is the share of individuals whose equivalised disposable income is below 60% of the median.

However, there is no clear pattern in the impact of underreporting of income by the self-employed on at-risk-of-poverty rates, since changes in disposable income also shift the poverty line, and the combination of both effects produce different results across countries.

Related and future JRC work

The work presented here complements the regular analysis of tax–benefit reforms developed by the JRC

¹Some means-tested benefits (such as education grants) are not simulated for some countries due to data limitations, which may imply a slight underestimation of the impact on social expenditure.

in the context of the European Semester. The usual assessment using EUROMOD abstracts in general from tax evasion effects – in other words, it assumes full tax compliance. The analysis carried out here opens up the possibility of assessing different scenarios of partial tax compliance. Besides improving the preliminary estimations of the impact of tax evasion by the self-employed, the methodology could be extended in three ways: adding more countries; obtaining estimates for other income sources; and disaggregating, by country, the estimates for different income levels or types of individuals or households.

This policy brief is one of a **series of ‘science for policy’ briefs** discussing various aspects of fairness. A **comprehensive report on fairness** will be published in 2019.

References

[1] See Kukk M., A. Paulus & K. Staehr (2018), ‘Income underreporting by the self-employed in Europe: A

cross-country comparative study’, Eesti Pank Working Paper Series, 4/2018. This paper was based on a joint project between the JRC and Praxis.

[2] See Pissarides, C. A. & Weber, G. (1989), ‘An expenditure-based estimate of Britain’s black economy’, *Journal of Public Economics*, 39(1).

[3] Other studies that estimate the extent of underreporting by the self-employed include Martínez-López, D. (2013) ‘The Underreporting of Income by Self-Employed Workers in Spain’, *Journal of the Spanish Economic Association*; Engström, P. & Holmlund, B. (2009) ‘Tax evasion and self-employment in a high-tax country: evidence from Sweden’, *Applied Economics*; Impact Assessment Office (2018) ‘Income under reporting and tax evasion in Italy’, Senato della Repubblica, Documento di Valutazione, N 8.

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