

## Fiscal consolidation through tackling labor taxes evasion?

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Like most countries, Serbia has seen a drop in public revenues – and, consequently, an increase in the fiscal deficit and public debt – owing to the economic crisis. Fiscal consolidation measures aimed at ensuring the sustainability of the public finances system mainly entail reductions in public spending and improvements to the efficiency of collection of public revenues, i.e. measures designed to cut down on tax evasion. This paper uses micro data obtained from the Living Standards Measurement Survey to estimate and analyze the prevalence of evasion of taxes and other dues payable on labor income in Serbia.<sup>1</sup> The results indicate that the ratio of undeclared-to-declared income is 26.9%, a figure higher than in other transition and developed countries. The structure of tax evasion was also analyzed for various amounts and types of remuneration, which resulted in the finding that tax evasion was particularly pronounced with income from self-employment, as well as with low wages. These findings prompted the recommendation of several relevant guidelines for reducing the level of evasion of payroll tax and social contributions. A one percentage point drop in the share of undeclared income would lead to an increase in public revenues of about 0.16pp of GDP.

### Introduction

The drop in economic activity as a consequence of the global economic crisis, as well as further liberalization of foreign trade, resulted in a fall in Serbia's tax revenues; this, in turn, led to an increase in the fiscal deficit that has for three years now stood at over 4% of GDP; this, again, caused public debt to rocket from 25.6% in late 2008 to 44.4% at the end of the third quarter of 2011. To ensure the long-term sustainability of the public finances system, the fiscal deficit needs in the future to remain within the limits set by fiscal rules – or even below those thresholds. As no major economic growth (and attendant increase in tax revenues) is expected, a gradual reduction in the fiscal deficit is possible through cuts to public spending, but also through combating tax evasion. Empirical data show that the problem of evasion of personal income taxes and social security contributions is a major and growing one, as well as that implementation of measures aimed at eliminating the evasion of these taxes could make a significant contribution to overall fiscal consolidation in Serbia.

In taxation theory there are four basic elements of a tax that determine its performance – taxpayer, tax base, tax rates, and tax breaks. Tax evasion is, however, often considered the fifth key element of a tax, as it is inseparably linked with taxation. Tax evasion is the intentional and illegal avoidance of paying a tax. Ideally, a tax should be designed with the aim of ensuring zero evasion, yet evasion is always present in practice, regardless of how other elements of a tax and other institutional arrangements are defined. The fact that evasion is always present wherever there is taxation is most frequently explained by the fact that taxes are used to finance public goods, which it is possible to use “free of charge” (“free rider” problem).

Tax evasion disrupts market competition, alters the results of public policies, distorts the principle of equity (having people with the same incomes pay the same amounts in taxes), and, most importantly in times of growing fiscal risk, leads to lower public revenues. The primary goal of taxation is the collection of a certain sum of tax revenue. The achievement of this goal depends on the way in which the tax basis, tax rates and tax breaks are defined, but also on the scale of tax evasion. Therefore, the permanent aim of an efficiently-designed tax system, and also of any reforms made to such a system, is to reduce evasion. For this to be possible, the main determinants or factors affecting the scale of evasion need to be established. In doing so, modern economic theory and relevant empirical research start from the Allingham-Sandmo model (“the A-S model”) of tax evasion, which states that the scale of tax evasion depends on the marginal tax rate, the penalty for tax evasion, and the probability that revenue bodies will uncover the evasion (Allingham & Sandmo (1972)).

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<sup>1</sup> Labor taxes comprise wage tax and social security contributions. Rather than enumerating all these taxes, the term “labor taxes” will be used throughout this paper.

The issue of the informal economy, or the carrying out of business operations by commercial entities outside of legal channels and without the payment of taxes and other dues, is considered to be very pronounced in Serbia. As there is no comprehensive and precise research into this issue, it is estimated that between one fifth and one third of all business is carried out in the informal sector, although a number of systemic measures have been put into place since 2000 that have led to a relatively significant reduction in the overall volume of the informal economy (primarily in the area of trade in excise goods). However, the scale of the informal economy remains relatively high in the field of employment and personal income. Since budget revenues have seen substantial decline since the beginning of the crisis, with the fiscal deficit recording growth in consequence, the issue of establishing the scale and characteristics of the informal economy in the field of employment – i.e. taxation of personal income – becomes ever more topical. An estimate of the scale and characteristics of labor taxes evasion is the first precondition for tackling the informal economy. In this paper we will therefore use microeconomic data to estimate the scale of tax evasion in Serbia and its structure, to be able to use these results to arrive at relevant conclusions that could serve to inform the design of measures to combat the informal economy. In addition, an analysis will be made, starting with the scale of Serbia's informal economy in this area and comparable results of other countries, of opportunities to reduce the fiscal deficit by tackling tax evasion in the future. The paper is made up of four parts. *Part one* provides a brief overview of theories concerning factors affecting personal income tax evasion, as well as of empirical research done in various countries. An outline of the current institutional framework in Serbia and the main factors affecting tax evasion – tax rates, penalties and the probability of evasion being uncovered – is given in *part two*, while *part three* presents the results of research into the scale and structure of personal income tax evasion in Serbia. *Part four* appraises the effects that reducing the informal economy in the area of employment to the level seen by other transition countries would have on the fiscal balance. The final section, *part five*, presents the appropriate conclusions and provides recommendations for tackling the informal economy in the field of employment.

## 1. Theoretical determinants of personal income tax evasion and overview of empirical literature

A substantive and legislative analysis of the economic effects of taxing personal income, as well as the theory of optimal taxation, start from the implicit assumption that the entire income of an individual is declared to the tax authorities and appropriately taxed. In practice, however, there is a difference between real and taxed (declared) income.

Fundamental factors underlying tax evasion need to be established if efficient instruments and measures are to be designed with the aim of tackling evasion. The scale and modes of evasion are affected by factors that can be divided into two groups: broad (economic) and narrow (tax-related). As for the broad, institutional and economic factors, it has been established that the scale of tax evasion has a positive correlation with the degree of fragmentation of an economy, i.e. that the scale of tax evasion is, on average, is lower in economies dominated by medium-sized and large companies.<sup>2</sup> In addition, the scale of tax evasion is also affected by the structure of income of a population, as tax evasion for income derived from formal employment is much lower than that for income from self-employment (agricultural producers, sole traders, etc.). This difference is primarily caused by the different mechanisms used to collect these taxes, as wage tax is either generally withheld at its source, while tax on income from self-employment is generally self-assessed or based on official assessments made by tax authorities. Theoretical considerations and results of empirical analyses also indicate that the quality of public goods financed through taxation also has a major contribution to the scale of evasion. In addition, the level of tax morality also affects the degree of likelihood of tax evasion.

On the other hand, when narrow (tax-related) factors are considered, the structure of the taxation system is found to be a major factor in the scale of tax evasion: this is less pronounced in countries that base their public revenue system on the taxation of consumption than in those that primarily rely on taxing factors of production. The reason for this can be found in the fact that the degree of evasion of indirect taxes is on average lower than that of direct ones (Jimenez, J.P. *et al.* (2010)). The design of the taxation system also affects the scale of evasion: a greater number of taxes leads to more evasion, which is caused by the inability of the tax administration to efficiently control the collection of a large number of different dues payable. In addition, any increase in the complexity of the taxation system leads to a commensurate increase in unintentional tax evasion caused by the fact that taxpayers are often not acquainted with all the important rules. Although the impact of these factors is self-evident, both economic theory

<sup>2</sup> See Tanzi, V. *et al.* (1993), p. 2.

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and empirical analyses indicate that the scale of tax evasion is overwhelmingly conditioned by the design of the particular tax itself and the efficiency of the institutional framework for tax collection. In that sense, the Allingham-Sandmo model represents the cornerstone of modern theoretical analysis of income tax evasion.<sup>3</sup> This model treats tax evasion as a problem of rational choice under uncertainty. Tax evasion theory based on the A-S model points to several fundamental conclusions:<sup>4</sup>

- When actual income levels vary, the fraction of declared income increases, remains unchanged or decreases, depending on whether the relative risk aversion of the taxpayer is an increasing, constant or decreasing function of income.
- Any increase in penalties will increase the fraction of actual income declared, meaning that any increase in penalties implies a reduction in tax evasion.
- Any increase in the probability of detection of undeclared income will increase the fraction of income declared, i.e. will reduce tax evasion.
- The marginal tax rate also has a major impact on the fraction of income declared, but the impact of any increase in the marginal tax rate on the undeclared fraction of income is ambivalent.

As economic theory provides unambiguous postulates about the impact of penalties and the probability of detection of tax evasion on the volume of evasion, special attention is paid to the influence of the marginal tax rate, where opinions are divided. The cumulative effect of the increase in the marginal tax rate on the volume of undeclared income will represent the result of the action of the substitution effect and the income effect. Thus, on the one hand, any increase in the marginal tax rate will make it more expensive to declare income (i.e. taxes will rise), which will lead to a reduction in the amount of income declared, i.e. to greater tax evasion, due to the substitution effect. On the other hand, any increase in the tax rate decreases the amount of income available. If one were to start from the assumption of decreasing risk aversion (as income rises, risk aversion falls), any reduction in income caused by higher tax rates will lead to an increase in risk aversion, and consequently to an increase in the volume of income declared, i.e. to less tax evasion, due to the income effect. An implicit assumption in the foregoing analysis (and the A-S model in general) is that penalties for tax evasion are a function of undeclared income. If penalties were to be defined as a function of the tax evaded, greater tax rates would lead to greater cost of both declared and undeclared income (for the same relative amount), eliminating the substitution effect. As the income effect will remain in operation, the conclusion is that an increase in the tax rate would lead to an increase in declared income, i.e. to a fall in the extent of tax evasion.<sup>5</sup>

There are two ways in which the tax scale and the volume of evasion are linked. In addition to being dependent on the amount of the tax, undeclared income also depends on the degree to which income tax is progressive. Fundamental theoretical concepts explaining the connection between the level of evasion and the extent to which a tax is progressive are postulated in Koskela and Yitzhaki's analysis of this issue. Thus, as theorized by Koskela, any tax made more progressive, assuming a tax revenues or the expected utility of a taxpayer remain the same, will lead to greater tax evasion if the penalty for tax evasion is linked to undeclared income.<sup>6</sup> On the other hand, according to Yitzhaki's concept – increasing the marginal tax rate but also allowing for greater deductions, thus leaving an individual's real net income unchanged – this will not affect the extent of tax evasion.<sup>7</sup> However, newer theoretical models analyzing this issue combine postulates of both Koskela's model and Yitzhaki's model of general tax evasion analysis. According to these more recent studies, the relationship between tax progressivity and tax evasion is primarily dependent on whether the fine for tax evasion is defined as a function of the tax evaded or of the income not declared. It is also believed that there are effects associated with a taxpayer's obligation to declare either his income or his tax liabilities.

Empirical research on the impact of the amounts of fines and the probability of detection on the extent of tax evasion show that this impact does indeed exist, but is not pronounced. One of these empirical studies based on experimental data and carried out in the US showed that any increase in penalty and/or probability of being audited by tax authorities leads to a slight decrease in tax evasion. According to the study, the elasticity of income declared in relation to the the probability of being audited amounted to 0.169, while the elasticity of income declared in relation to the

<sup>3</sup> See Allingham, M., Sandmo, A. (1971), pp. 329-330.

<sup>4</sup> See Yitzhaki, S. (1974).

<sup>5</sup> See Yitzhaki, S. (1974).

<sup>6</sup> Koskela, E. (1983), p. 131.

<sup>7</sup> Yitzhaki, S. (1987), p. 127.

penalty rate was 0.037.<sup>8</sup> Similar results were obtained in a study done in Mexico, where doubling fines resulted in an increase in income declared of just 10%.<sup>9</sup> Further, research carried out in Switzerland concluded that increasing the probability of detection to 100% leads to a reduction in undeclared income of 15.5%, while increasing fines by 100% resulted in a drop in undeclared income of just 4.6%.<sup>10</sup> Although there are differences in the results of empirical research done in various countries – caused by varying institutional frameworks and the structure of preferences and risk aversion of different populations – as well as methodological variations used to establish these linkages, all of these results indicate that greater probability of detection and greater penalties can have an impact on decreasing tax evasion, and that in that sense increasing the probability of detection is more efficient than raising fines. However, many instances of empirical research also show that prone to tax evasion is lower where the quality of public goods and services provided by the public sector is higher, as well as that an increase in the general level of efficacy and efficiency of the public sector can also result in a lower extent of tax evasion.<sup>11</sup>

As for the effect of the tax rate on the extent of tax evasion, empirical research unquestionably shows that this effect does indeed exist, but conclusions of the various studies are divergent.<sup>12</sup> Thus experimental data from the US study referred to above show that the elasticity of declared income in relation to the marginal tax rate amounts to -0.5, while the Swiss study, on the other hand, concludes that the elasticity of undeclared income in relation to the tax rate is very low at 0.076.<sup>13</sup> The same Swiss research also shows that the effect of making a tax more progressive has a positive, albeit still very low, effect on tax evasion (the more progressive a tax, the greater the amount of income undeclared). Although the elasticity of undeclared income in relation to the tax rate was shown to be positive, at 0.076, the elasticity of undeclared income in relation to the non-taxable portion of income was negative at -0.052; thus a simultaneous increase in both the tax rate and the non-taxable portion of income would result in rather slight changes to the amount of income not declared. These results indicate that making the tax system more progressive while at the same time raising tax rates and non-taxable portions of income would have a negligible effect on the increase in undeclared income, i.e. tax evasion. Although these results are pro-intuitive, they conflict with the A-S tax evasion model to some extent, affirming instead the conclusions of the Yitzhaki's concept. This difference is often ascribed to the rigidity of the postulates of the theoretical model itself. Thus only a shift in this theoretical model from a static into a dynamic context, where a taxpayer optimizes the amount of income declared at the lifecycle level rather than at the level of a single year, implies the conclusion that an increase in the tax rate leads to greater tax evasion.<sup>14</sup>

## 2. Factors affecting the extent of tax evasion – Serbian institutional framework

As the above discussion shows, economic theory and empirical literature are in agreement that tax rates, fines and probability of detection are the basic factors affecting the extent of tax evasion. Before embarking on an analysis of the issue of labor taxes evasion in Serbia, we therefore need to consider the characteristics of the current institutional framework related to these factors.

### 2.1 Tax rates

European Union member states generally apply a version of comprehensive, dual or flat personal income tax. These are rarely pure theoretical taxation models; instead, they are mainly slight combinations of various modes of taxation. The current personal income tax system in Serbia is considered *mixed*, as its characteristics mean that it does not belong to any of the concepts applied in other European countries: it is instead a combination of scheduler (flat) taxation and comprehensive taxation.

This model entails the taxation of personal income in two phases:

- *Phase one, scheduler taxation* – income from all sources is taxed at the moment of payment, either by withholding a portion of income, by requiring payment upon receipt of an official assessment issued by the tax authority, or after self-assessment;

8 Alm, J. et al. (1992), p. 111.

9 See Tanzi, V. (1993).

10 Pommerehne, W. et al. (1996), p. 164.

11 See Alm, J. et al. (1992) and Pommerehne, W. et al. (1996).

12 See Keen, M. et al. (2006).

13 See Alm, J. et al. (1992) and Pommerehne, W. et al. (1996).

14 See Lin, W-Z et al. (2001).



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• *Phase two, complementary (global) taxation* – individuals (residents of Serbia) whose income exceeds a statutory limit are required to pay an additional, so-called “annual income tax” on income earned in a calendar year. This tax is to be paid after the expiry of respective year.

The scheduler component is considered dominant, since more than 99% of all taxpayers pay all their taxes using this method. In scheduler taxation income from various sources is taxed separately and by application of different rules. The person receiving the income is considered the taxpayer for taxes on all these types of income, while the taxes are most often actually paid by the person or entity paying out the income. The tax basis is defined as gross income less costs associated with earning such income.

**Table L2-1. Individual income tax rates in Serbia**

Source of income	Statutory tax rate	Deductions	Effective tax rate
Self-employment income <sup>1</sup>	10%/14%	-	10%
Wages/Salaries	12%	Non-taxable threshold of RSD 7,310	10,4% <sup>2</sup>
Income from agriculture and forestry	10%	-	10%
Income from authorship and related rights, and income from industrial property rights	20%	34%, 43%, 50%	10%, 11.4%, 13.2%
Capital income	10%	-	10%
Income from immovable property	20%	20%	16%
Capital gains	10%	-	10%
Other income	20%	20%	16%

1) Tax rate in 2007 amounted to 14%

2) Calculated at the average wage in the Republic of Serbia

In addition to income tax payable at the time of payment, individuals residing in Serbia whose total annual income exceeds a statutory limit are also required to pay an additional “annual income tax” on income earned in a calendar year after the expiry of that year. The basis for calculating annual income tax includes all income earned in the course of a year except capital income and capital gains. These two types of income were excluded to avoid taxing them multiple times.<sup>15</sup> The exclusion of capital income from the annual tax basis lends the Serbian individual income tax model elements of a dual system. Gross income is also subject to personal and dependent deductions; once thus established, taxable income is taxed at progressive rates of 10% and 15% (a single 10% rate was applied until 2006).

In addition to income tax, compulsory social insurance contributions are payable at a rate of 35.8% on all contractual fees (earnings, income from self-employment, income from temporary service agreements, and income from authorship rights).

As earnings from employment and income from self-employment make up most of the income earned by individuals in Serbia, a discussion of the treatment of these forms of income for tax purposes is of particular relevance from the perspective of tax evasion. Gross wages earned by employees (less a non-taxable portion of RSD 7,310 per month) are taxed at a rate of 12%. In addition, contributions are payable on gross wages (at rates of 17.9% by the employee and 17.9% by the employer). If the gross wage is lower than the minimum base used to calculate contributions (which amount to 35% of the average wage at the national level), these contributions are calculated using the minimum base. On the other hand, if an employee’s gross wage is greater than the maximum base used to calculate contributions (five times the average wage at the national level), contributions are calculated using the maximum base. The result of such treatment is the fact that each RSD 100 earned (at average wage level) are subject to taxes and contributions amounting to RSD 64.5, making the tax burden relatively high in comparison to other countries in the region, and particularly so for lower-paid workers (Koettl, J. (2010), Arsić, M. *et al.* (2010)).

Income from self-employment (if not subject to lump-sum taxation) is taxed at the rate of 10% (14% in 2007), and is also subject to all compulsory social security contributions (at the total rate of 35.8%).

<sup>15</sup> Thus, dividends are taxed first using corporate income tax (as part of pre-tax profits), and then by operation of the capital income tax.

An important difference in the method of collection of wage tax and contributions and taxes on income from self-employment lies in the fact that wage tax is withheld (by the employer), while taxes on income from self-employment are assessed by the tax authorities.

## 2.2 Fines for tax evasion

Under the Personal Income Tax Law, any legal entity/employer evading the payment of taxes on the wages paid out to its employees, as well as any sole trader evading the payment of taxes on income from self-employment, is subject to a fine ranging from double the amount of taxes owed to ten times that amount; the fine for a legal entity cannot be lower than RSD 100,000, or lower than RSD 50,000 for a sole trader. In addition, the company officer responsible is also subject to a fine. This means that the fine for tax evasion in Serbia is a function of the tax evaded (rather than income not declared), which leads to the conclusion that, from the standpoint of analysis of tax evasion factors, views presented in the Yitzhaki concept are more relevant. Such methods of establishing fines are believed to be more justified in theory, as they eliminate the substitution effect and make the collection system more efficient.

## 2.3 Probability of detection of tax evasion

Data provided by the Tax Administration show that 18 audits per 1,000 taxpayers (i.e. employers) were carried out on average in 2010; the figure for registered sole traders was 32 audits per 1,000. This means that the probability of being audited was greater for earners of income from self-employment than for employers/employees. As the number of audits in absolute terms and the total amount of assessed (unpaid) taxes was nearly equal for employee and self-employed taxpayers, the conclusion is that the effectiveness of tax audits was nearly equal.

**Table L2-2. Probability of audits for wage tax and tax on income from self-employment, 2010**

	Number of taxpayers <sup>1</sup>	Number of audits	Number of audits per 1,000 taxpayers	Amount of tax assessed in audit (billions of dinars)
Wages/salaries	463,580	8,384	18	1.75
Self-employment income	246,704	8,050	32	1.56

1) Number of employees in audited companies

## 3. Assessment of the level and structure of income tax evasion in Serbia

We have assessed the level and structure of income tax evasion based on the data obtained from the 2007 Living Standards Measurement Survey (LSMS 2007). Unlike other similar surveys, LSMS 2007 contains information on the actual income earned by an individual (from both employment and self-employment), as well as information on the amount of income declared to the tax authorities in the same period. The difference between these two categories is undeclared income that was neither assessed for tax purposes nor subject to any taxes or other fiscal dues (compulsory social security contributions) in this period. These questions are asked in the LSMS since an employed or self-employed person will often declare lower income to the tax authorities while having earned much more in wages or from self-employment. A general drawback of using surveys to collect information on income lies in the fact that respondents tend to under-report their actual earnings. In addition, the crisis which started in late 2008 has led to the loss of a large number of jobs, especially with sole traders. It is estimated that a number of people who thus lost formal employment continued to work for their previous employers informally. It is therefore thought that the estimated tax evasion rate based on LSMS 2007 represent the lower edge of the real extent of the shadow economy in the area of employment in Serbia.

We estimated the extent of labor taxes evasion by comparing the undeclared portion of income with the declared portion, or with total actual income. To this end we have defined two indicators of the level of tax evasion: *i*) income non-declaration rate (the ratio between undeclared and declared income), and *ii*) tax evasion rate (share of undeclared income in total actual income). While the first indicator is used to illustrate the extent of tax evasion, the second one represents the marginal prone towards tax evasion. As tax collection mechanisms differ for the two main forms of income from labor (wages and income from self-employment), separate analyses of levels of evasion of these two forms of income from labor are justified.

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**Table L2-3. Basic indicators of evasion of incomes from labor in Serbia**

Source of labor income	% of total labor income	Non-reporting rate <sup>1</sup>	Tax evasion rate <sup>2</sup>	% of total number of taxpayers
Employment	75%	9,8%	8,9%	16,6%
Self-employment	25%	78,3%	43,9%	64,4%
Total	100%	26,9%	21,2%	25,6%

1) Ratio of non-reported to re reported income.

2) Ratio of non-reported to true (total) labor income.

Data shown in Table L2-3 indicate that the average rate of non-declaration of income in Serbia stands at some 26.9%, meaning that for every RSD 100 of declared income there are RSD 26.9 not subject to taxes and contributions. These data also show that some 25.6% of all taxpayers earn more than their declared income. The results should be interpreted as an approximation of the level of tax evasion due to the shortcomings inherent in surveys as respondents tend to under-report their actual income. Besides, it is estimated that part of economic activity has moved into the shadow sector owing to the crisis, and that tax collection consequently declined. These results could therefore be taken as a conservative assessment of the actual extent of labor taxes evasion in Serbia.

These indicators also show that tax evasion is far more pronounced with income from self-employment than with wages: income from employment accounts for three quarters of the total amount of income from labor, while only one quarter is made up of income from self-employment. The results of our research show that the average rate of non-declaration for income from employment stands at 9.8%, while the figure for income from self-employment is as much as 78.3% (meaning that for every RSD 100 of declared income from self-employment there are another RSD 78.3 of undeclared income). This stems from the fact that income from employment is taxed at its source, with the required portion being withheld, while taxes on income from self-employment income are collected either as assessed by the taxpayer himself or by the tax authority. The data shown are consistent with both theoretical views and results of empirical studies carried out globally, whereby the pay-as-you-earn or withholding tax system is much more efficient at tackling tax evasion than the self-assessment or official assessment method. Further, nearly half of the total sum of wages in Serbia is paid in the public sector, where this type of tax evasion by employers and employees is very rare. This, further, means that the rate of non-declaration of income from employment in the public sector is probably twice greater than the 9.8% shown.

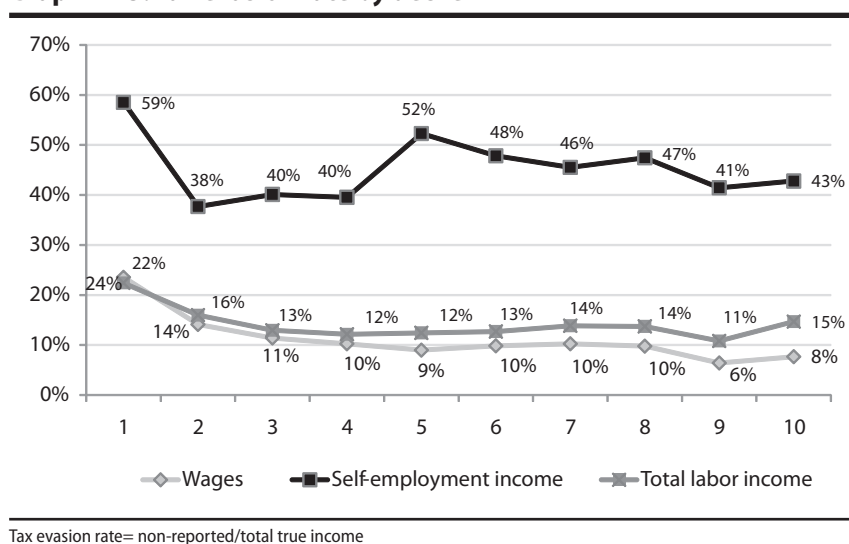
As for the distributional effects of this form of tax evasion, results of micro-simulation and statistical analyses indicate that the greatest portion of the total sum of undeclared income is earned by people in the upper deciles. Thus people in the top two deciles earn 33.8% of the total amount of undeclared income from employment, while this percentage is even higher for the self-employed, standing at 54.2%. However, people in the upper deciles earn the greatest portion of total income (42.2% of all income from employment and 38.9% of all income from self-employment), which is why any analysis of the distributional effects of tax evasion should be complemented by an appraisal of the relative level of tax evasion (i.e. rate of income non-declaration) by earning group.

**Table L2-4. Distribution of total undeclared income by decile**

decile	employment income		self-employment income	
	true	non-reported	true	non-reported
1	0.4%	1.0%	1.6%	0.4%
2	2.5%	4.0%	4.2%	2.5%
3	4.4%	5.7%	4.0%	2.5%
4	6.1%	7.0%	5.5%	3.4%
5	7.9%	8.0%	5.9%	5.7%
6	10.0%	10.9%	7.5%	6.8%
7	11.8%	13.6%	10.2%	10.8%
8	14.7%	16.1%	12.1%	13.7%
9	17.5%	12.6%	14.3%	14.3%
10	24.7%	21.2%	34.6%	39.9%

Source: Author's calculations

**Graph L2-5. Tax evasion rate by decile**



Further to that point, results obtained by analyzing LSMS data indicate that the rate of wage tax evasion is relatively high among the lower deciles and declines as wages rise. On the other hand, the rate of evasion of tax on self-employment income is high at the lowest income levels and slightly lower at moderately low income levels (second, third and fourth deciles), only to rise again at middle and higher income levels.

Since wages account for three quarters of all income from labor, the distributional effects of tax evasion are mainly governed by the distribution of wage tax evasion. Data on the distribution of evasion of tax on all income from labor indicate that

evasion is relatively (mildly) progressive, being the highest at the lowest income levels, dipping at middle ones, and again slightly increasing at the highest income levels. Since these statistical indicators are descriptive, a final appraisal of the linkages between the levels of various forms of income from labor and the inclination towards tax evasion can only be made after appropriate econometric analysis is carried out. The results of one such analysis done in Serbia show that the elasticity of the tax evasion rate in relation to income from employment is negative (-0.83), meaning that the rate of tax evasion falls as wages rise (Randelović, S. (2011)). This finding is consistent with Yitzhaki’s theoretical model where the link between tax evasion and the marginal tax rate is negative when the penalty for evasion is a function of the tax evaded, as is the case in Serbia. At the same time, the elasticity of the rate of tax evasion relative to income from self-employment is positive (0.46), indicating that people with higher incomes from self-employment are relatively more inclined to commit tax evasion than those with lower incomes (Randelović, S. (2011)).

#### 4. Fiscal effects of reducing tax evasion

The shadow economy entails trading without being registered, and, consequently, without being taxed. Unregistered (untaxed) trading is a source of cash flows used to finance the unregistered payment of wages. The extent of the shadow economy therefore depends on the volume of unregistered trading and wages paid out outside of formal channels and not subject to the appropriate taxes and contributions.

Comparative analyses show that the shadow economy accounts for between 12% and 15% of GDP on average in developed nations and OECD member states, while the figure for transition countries is about 21% of GDP.<sup>16</sup> This means that, in transition countries, for every 100 units of turnover/income that are registered, there are another 21 units that are unregistered. As the analysis referred to above established that, in Serbia, for each RSD 100 of registered income there are RSD 26.9 of unregistered income, it can be concluded that the extent of the shadow economy in terms of employment is substantially greater than in both developed and transition economies.

Non-declaration of income causes an erosion in the base used to calculate personal income taxes and mandatory social insurance contributions. Serbia’s income tax revenues amount to some 4.8% of GDP, of which nearly four fifths (some 3.8% of GDP) is made up of taxes on income from labor (employment and self-employment). Contribution revenue is substantially greater and amounts to about 11% of GDP; nearly all of which comes from dues payable on wages and income from self-employment. We can therefore conclude that the total revenue collected by Serbia from taxation of income from labor amounts to about 14.8% of GDP. Starting from the estimated rate of non-declaration, the share of labor tax in Serbia’s GDP, the estimated elasticity of wage taxes in relation to the tax base of 1.15, and the unit elasticity of contributions in relation to the tax base, we estimate that a reduction to the rate of income non-declaration of one percentage point would, *ceteris paribus*, lead to an increase in public revenue of about 0.16 percentage points of GDP. The average extent of the informal economy in transition countries is estimated at around 21%. However, empirical analyses done in other countries show that the rate of evasion of indirect taxes is much

16 Schneider, F. et al. (2000).



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lower than that of direct ones.<sup>17</sup> Therefore, although precise results are lacking, it is estimated that the rate of income non-declaration in other transition countries is greater than 21%, but could also be slightly lower than Serbia's. With this in mind, we can conclude that improvement in the efficiency of tax collection could reduce the extent of the shadow economy in the area of employment in Serbia by a couple of percentage points, implying an increase in public revenue by about 0.3 to 0.6 pp of GDP.

### Conclusion

Results of empirical analysis of microeconomic data show that evasion of taxes in Serbia is relatively widespread and stands at 21.2%, meaning that more than one fifth of all income earned by Serbian nationals is outside of legal channels, and that the state faces significant losses in tax and contributions revenue. These results also indicate that the fiscal importance of the evasion of wage tax and social contributions is greater than that of the evasion of taxes and contributions levied on self-employment income, while the relative rate of evasion is greater for self-employment income. It was also noticed that the marginal inclination towards tax evasion in Serbia declined as wages rose, and that it rose in parallel with self-employment income. This is caused by the fact that informal employment is mostly widespread with lower-paid occupations, as well as because it is employers rather than employees who usually decide on whether an employee will have formal or informal status. On the other hand, the trend of sole-trading in the shadow economy is at its most pronounced among highly-paid occupations (such as lawyers, doctors, etc.), which is reflected in the fact that these categories of taxpayers are among the most vocal opponents of the introduction of fiscal cash registers that would require them to register their earnings.

The Tax Administration, the body tasked with collecting and auditing personal income tax and social contributions, has limited human and financial resources. Any improvement in the efficiency of collection and the attendant reduction in the evasion of labor taxes would thus be possible only by making appropriate improvements to taxpayer audits and fully automating the data collection and processing system. Audits could be improved by freeing the Tax Administration from the burden of other oversight functions, increasing the number of its employees, and providing professional training for current and prospective staff.

The approach adopted in 2010, with more sole traders being audited than those in paid employment or employers, is considered appropriate. However, as results show that the rate of evasion of wage tax and social contributions is graduated, and that it is highest among those who earn/declare low wages, we can conclude that additional improvements to tax audit efficiency could be made by further shifting the focus of Tax Administration audits onto employers where employees "earn" wages lower than the national average (especially those declaring wages close to the minimum wage). On the other hand, evasion of taxes on income from self-employment could be tackled by shifting resources onto auditing sole traders who earn more, or whose businesses have a statistically greater probability of earning more (lawyers, doctors, accountants, etc.). As these taxpayers often earn so much that they are able to save substantial amounts and invest into various forms of property, more proactive and consistent cross-checking of property and declared income could also serve as an instrument of combating tax evasion in this field. If audits of these categories of employees/employers and sole traders were intensified, this would increase the probability of detecting tax evasion. As the results of theoretical analyses and empirical research done in other countries clearly indicate, doing so would lead to a drop in the extent of evasion of income taxes and contributions and an attendant increase in public revenues from this source. If anti-evasion measures were used efficiently to bring down the rate of income non-declaration to levels seen in other transition economies, all other things being equal, public revenues would grow and the fiscal deficit would drop by between 0.3 and 0.6pp of GDP (i.e. €90 to €180 mn) per year.

<sup>17</sup> Jimenez, J.P. et al. (2010).

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