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Shadow Economy Index in Russia and Comparison with Nearby Countries

This policy brief analyses the dynamics of the shadow economy in Russia during the period 2017-2018 and provides evidence on the main factors that influence entrepreneurs' involvement in the shadow economy. The Shadow Economy Index draws on methodology developed by Putnins and Sauka (2015). Our findings show that the size of the shadow economy in Russia was 44.7% of GDP in 2018. Putting this level into perspective by comparing it to nearby countries, it is similar to the level of shadow economy in countries such as Kyrgyzstan, Kosovo, Ukraine and Romania, but higher than the level seen in the Baltic countries. Our findings are largely consistent with other less direct approaches for estimating the size of the shadow economies. An advantage of our approach is that it is able to provide more detailed information on the components of the shadow economy.

Introduction to the Shadow Economy Index

The aim of the Shadow Economy Index is to measure the size of shadow economies, as well as to explore the main factors that influence participation in the shadow economy. We use the term "shadow economy" to refer to all legal production of goods and services produced by registered firms that is deliberately concealed from public authorities (OECD, 2002; Schneider, Buehn and Montenegro, 2010).

The Shadow Economy Index draws on methodology developed by Putnins and Sauka (2015) using information from entrepreneurs obtained via a survey. It combines business income that has been concealed from authorities, unregistered or hidden employees, and 'envelope' wages to estimate the size of the shadow economy as a proportion of GDP. Computation of the Index proceeds in three steps: (i) estimate the degree of underreporting of employee remuneration and underreporting of firms' operating income using the survey responses; (ii) estimate each firm's shadow production as a weighted average of its underreported employee remuneration and underreported operating income, with weights reflecting the proportions of employee remuneration and firms' operating income in the composition of GDP; and (iii) calculate a production-weighted average of shadow production across firms (see Putniņš and Sauka (2015) for more details).

Survey-based approaches face the risk of underestimating the total size of the shadow economy due to non-response and untruthful response given the sensitive nature of the topic. Our method minimizes this risk by employing a number of survey and data collection techniques shown in previous studies to be effective in eliciting more truthful responses (e.g. Gerxhani, 2007; Kazemier and van Eck, 1992; Hanousek and Palda, 2004). These include confidentiality with respect to the identities of respondents, framing the survey as a study of satisfaction with government policy, phrasing misreporting questions indirectly about "similar firms in the industry" rather than the respondent's actual firm, gradually introducing the most sensitive questions after less sensitive questions, excluding inconsistent responses, and controlling for factors that correlate with potential untruthful response such as tolerance towards misreporting. Furthermore, our method for estimating the size of the shadow economy requires fewer assumptions than most existing methods, in particular compared to methods based on macro indicators. The Shadow Economy Index can be used through time or across countries and thus is a useful tool for providing policy makers with information for policy decisions, fostering a deeper understanding of entrepreneurship processes, and evaluating the effectiveness of policy designed to minimise the shadow economy (see Putniņš and Sauka (2015) for a more detailed discussion).

Size of the Shadow Economy in Russia and Nearby Countries

The index approach to calculate the amount and determinants of the shadow economy has been applied to numerous countries. The Shadow Economy Index for Russia is based on a survey conducted during February - March 2019 and containing questions about shadow activity

during 2018 and 2017. We use random stratified sampling to construct samples that are representative of the population of firms in Russia drawing on the official company register and covering the whole territory of Russia. 500 phone interviews were conducted with owners, directors and managers of companies in Russia. We use the same methodology to collect data in other countries, which we compare with Russia, conducting a minimum of 500 interviews in each country.

The findings of the Shadow Economy Index in Russia show that the size of the shadow economy in Russia was 45.8% of GDP in 2017 and slightly decreased to 44.7% of GDP in 2018. For comparison with nearby countries, high levels of shadow economy are also found in Kyrgyzstan (44.5% of GDP in 2018), Kosovo (39.5% of GDP in 2018), Ukraine (38.2% of GDP in 2018) and Romania (33.35% of GDP in 2016), but considerably lower levels are found in the Baltic countries, especially Estonia (16.7% of GDP in 2018) (Table 1).

The findings of the Index approach are largely consistent with other less direct approaches for estimating the size of the shadow economies, such as Schneider (2019). An advantage of our approach is that it is able to provide more detailed information on the components of the shadow economy, which we turn to next.

Table 1. Size of the shadow economies in Russia and nearby countries

This table reports point estimates and 95% confidence intervals (in parentheses) for the size of the shadow economies as a proportion of GDP in Russia (2017-2018), Ukraine (2017-2018)*, Kyrgyzstan (2017-2018)**, Latvia, Lithuania and Estonia (2015-2018)***, Moldova (2015-2018), Romania (2015-2016)****, Poland (2015-2016)*****, Kosovo (2018) ****** using the method of Putniņš and Sauka (2015).

	2018	2017	2016	2015
Russia	44.7% (42.4%, 46.9%)	45.8% (43.4%, 48.1%)	-	-
Ukraine	38.2% (35.3%, 41.2%)	38.5% (35.5%, 41.5%)	-	-
Kyrgyzstan	44.5% (40.9%, 48.1%)	46.1% (42.4%, 49.6%)	-	-
Latvia	24.2% (21.5%, 26.8%)	22.0% (19.6%, 24.5%)	20.7% (18.0%, 22.6%)	21.3% (19.0%, 23.7%)
Lithuania	18.7% (17.0%, 20.4%)	18.2% (16.1%, 20.4%)	16.5% (14.8%, 18.3%)	15.0% (13.8%, 16.3%)
Estonia	16.7% (14.5%, 18.8%)	18.2% (16.1%, 20.3%)	15.4% (13.1%, 17.8%)	14.9% (12.4%, 17.4%)
Moldova	27.5% (24.0%, 31.0%)	29.4% (25.7%, 33.1%)	29.7% (26.9%, 32.5%)	29.8% (27.0%, 32.6%)
Kosovo	39.5% (n/a, n/a)	-	-	-
Romania	-	-	33.3% (30.4%, 36.3%)	35.6% (32.2%, 39.0%)
Poland	-	-	25.0% (22.5%, 27.4%)	24.5% (22.0%, 26.9%)

Sources:
* Lysa et al (2019)
** SIAR (2019)
*** Putnins and Sauka (2019). Data on the Baltic countries available for 2009-2018.
**** Putnins, Sauka and Davidescu (2020, forthcoming)
***** Lechmann and Nikulin (2017)
****** Mustafa et al (2019)

Determinants of the Shadow Economy in Russia

We find that envelope wages and underreporting of business profits stand out as the two largest components of the Russian shadow economy. Underreporting of salaries or so-called 'envelope wages' in Russia as a proportion of the true wage accounted for 38.7% on average in 2018, whereas underreporting of the business income (percentage of actual profits) was 33.8%. Underreporting of employees in Russia (percentage of the actual number of employees) is estimated at 28.2% in 2018.

Some companies in Russia, rather than simply concealing part of the income or employees, are completely unregistered and therefore also contribute to the shadow economy. We estimate that such companies make up 6.1% of all enterprises in Russia.

Our findings also suggests that there is a very high level of bribery in Russia: the magnitude of bribery (percentage of revenue spent on 'getting things done') is found to be 26.4%, whereas the percentage of contract value that firms typically offer as a bribe to secure a contract with the government in Russia is 20.6% in 2018. We also find that more than one third of companies in Russia pay more than 25% of the revenue or contract value in bribes.

We find that the size of the shadow economy in all sectors is close to 40% with somewhat higher levels in the construction and wholesale sectors, controlling for other factors. Using regression analysis, we find that entrepreneurs that view tax evasion as a tolerated behaviour tend to engage in more informal activity, as do entrepreneurs that are more dissatisfied with the tax system and the government. This result offers some insights into why the size of the shadow economy in Russia is so large – it is at least in part due to relatively high dissatisfaction of entrepreneurs with the business legislation and the government's tax policy. We also find some evidence that higher perceived detection probabilities and, in particular, more severe penalties for tax evasion reduce the level of tax evasion, suggesting increased penalties and better detection methods as possible policy tools for reducing the size of the shadow economy.

Finally, while firms of all sizes participate in the shadow economy, we find that younger firms tend to do so to a greater extent than older firms. The results support the notion that young firms use tax evasion as a means of being competitive against larger and more established competitors.

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