THE INVESTIGATION OF THE SCALE OF LITHUANIA'S AND UKRAINE'S SHADOW ECONOMY¹

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Introduction

Various factors influence the income collected by the state to the budget, one of them is officially unaccounted economy or shadow economy. The government aims to get the planned income to the budget often is forced to increase the tariff of the taxes thus aggravating the burden of taxes for the residents working in official economy. The growth of the shadow economy indicates that the country policy performed by the government is not expedient. The economic activity performed in the shadow hinders the growth of economy and distorts the country statistics, as it becomes complicated to establish the real level of unemployment or average monthly gross salary, the aims of the state social support become distorted, as then the residents working honestly suffer, as due to the big unemployment social insurance payments the less part of the state income falls to the health care, education and other spheres. The shadow economy impedes the growth of economy, so nearly all the countries attempt to limit the scale of officially unaccounted economy. The aim of the present article is to define the shadow economy, analyze the factors influencing the shadow economy and calculate the scale of Lithuania’s and Ukraine’s shadow economy. The object of the article is the scale of shadow economy and its evaluation concentrating only to Lithuania’s and Ukraine’s states. A number of authors such as Schneider (2007), Bueth (2007), Smith (1994), Feige (1994), Brooks (2001), Enste (2002), Seever (2007), Gassenheimer (2007), Bivainis, Škaikskauskienė (2007), Krumplyte (2008), Starčienė, Trimonis (2009) and others analyze shadow economy, evaluation of its scale and the problems arising from shadow economy. Following already

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The Conception of the Shadow Economy and Methods of its Calculation

The concept of shadow economy or officially unaccounted economy is not uniform. After the analysis of sources of literature we see that there are many and rather various definitions, concepts and evaluations. We will discuss several of them, so that it would be possible to calculate and value the shadow economy. Smith (1994) has defined the shadow economy as legal and illegal products and services existing in the market which avoid the accounting to the gross domestic product (Schneider, 2007, Buehn, 2007). Feige (1999, 2004), Schneider (1994, 2003, 2007) and others by generalizing state that shadow economy are all economic activities unaccounted at present moment which are temporarily not included in the countries’ gross national product.

Shadow economy covers the products and services which are conscientiously hidden from the authorities due to the following reasons:

- Aiming to avoid income, value-added tax or other taxes;
- Aiming to avoid social security tax;
- Aiming to avoid such standards of legal labour market as minimal pay, maximal working hours, security standards and others;
- Aiming to avoid following the obligatory administration procedures as well as in the statistic questionnaires or other administrative forms.

Aiming to evaluate the scale of shadow economy it is possible to follow the statistical data on the present shadow economy gathered by the very author or follow the discrepancy between the demand and obtained expenses paying for the electricity, taxes and other goods and services. The Lithuanian Free - market Institute calculates the value of the shadow economy following the way of interrogation when they gather the statistical data themselves. However, the gathered statistical data about the possible shadow economy value are not exact, as they are partial and do not avoid the bias of screening. The value of shadow economy calculated in this way also cannot be compared with other countries.

Schneider calculating the value of shadow economy in his papers follows another way presented by Fleming (2000) and other authors – by searching for discrepancy between the demand and expenses according to already presented statistics.

The method of calculation of shadow economy covers questionnaire interrogations and audit. The advantage of calculation of questionnaire interrogations is the fact that it is possible to learn the structure of shadow economy. For example, according to the data of Free-market Institute in 2011 smuggling made the biggest share, 35 per cent, of the shadow economy. However, by the statement of Schneider and others (2000) the results of questionnaire interrogation largely depend on the fact how the questionnaire is made. Schneider and other (2000) also stated that the results obtained by calculating the questionnaire interrogations depend on the respondent’s wish to cooperate as it is difficult to evaluate the undeclared work by direct questioning. The majority of the questionnaire respondents denied if it is worth to recognize the dishonest actions and rather seldom can be reliable, the scale of the shadow economy presented by questionnaire interrogations is not exact.

Another direct method of calculation of shadow economy is audit during which the value of the shadow economy is defined by comparing the value of the declared income while paying the taxes with the results obtained during the inspection. However, by this method according to Schneider and others (2000) the value of shadow economy is calculated not in random way, but by choosing to perform the inspection of the object which as is probable strives to hide the taxes. Still it is a rather partial way, as it is chosen where to inspect and the obtained results more reveal not the value of shadow economy, but the value of the income hidden from the taxes which does not cover the whole value of shadow economy.

The indirect method of calculation of shadow economy of Schneider and others (2000) covers the macroeconomic level, as various economic and other indicators are employed. Schneider and others (2000) distinguish five indirect methods of calculation of shadow economy: the difference between the country’s expenses and revenue, discrepancy between the official and real manpower, trade operation, money demand, physical revenues (such as electricity consumption).

The method of difference between the country’s expenses and revenues evaluates the expenses of the GDP which must be equal to GDP revenues. If the GDP has been calculated independently from anything, the difference between GDP expenses and revenues indicates the value of shadow economy.

The method of discrepancy between the official and real manpower indicates the tendencies of change of shadow economy. As the official manpower diminishes it can be one of the indicators indicating that the shadow economy increases. However, it is not expedient to use this method, as the change of the manpower can be preconditioned by other factors as well. All the people can do official work, however, have illegal work as well, i.e. work in the shadow.

The trade method was created by Feige in which he stated that there is constant relation between the scale of trade operations and official GDP. An assumption between the money speed and relation between all the trade transactions (p*T) and all nominal GDP is made. By relating the nominal GDP with all the trade transactions the GDP created by the shadow economy can be calculated by subtracting the official GDP from the nominal GDP. Feige aiming to calculate the shadow economy made an assumption that in the basic year there was no shadow, so coefficient p*T was equal to nominal GDP. The GDP would be “normal” if there would not be any shadow economy.

Money demand method follows the fact that the shadow transactions are performed by cash aiming to be unnoticed. As the value of shadow economy increases the demand for money, currency must increase. Aiming to isolate the money demand “surplus” the money demand is leveled by econometric calculations. All the standard possible factors as the growth of income, paying habits, interest rate are controlled. Also such variables as the burden of direct and indirect taxes, government regulation and complexity of tax system are the major factors forcing the people to work in shadow economy, they are included in the calculation of equality.

The method of consumption of physical input, such as electricity. Kaufmann (1996) and Kaliberda (1996) stated that the consumption of electricity is one of the best physical factors aiming to generalize the economic activity. By common economic activity by both official and shadow economy and electricity consumption it was empirically established that the consumption of electricity/GDP elasticity most often are close to each other. The growth of shadow economy can be indicated by the difference between the official tempo of GDP growth and relation with general consumption of electricity.

Model method. In many methods of calculation of shadow economy only one factor is applied. However, it is obvious that the shadow economy is encouraged by many factors – production, work, money market, tax burden. DYMMIC (dynamic multi-indicators multiple causes) method consists of two parts, the model relates the unknown variables with known variables. In this case the unknown variable is shadow economy. The interaction between the causal variables $Z_i$ (i = 1, 2, …, k), the value of shadow economy $Y$ and factors $Y_i$ (i=1,2,..p) (see III. No. 21).

Aiming to calculate and forecast the value of shadow economy it is necessary to establish the ties between the value of shadow economy and the factors influencing the shadow. The statistical relation demonstrates itself as the dependence between random values in such way that the change of one value affects the distribution of the other value.

Schneider (2007) has performed the calculations of shadow economy for 19 Eastern Europe and Central Asia countries according to the data of 1989-2006, the following factors influencing the value of shadow economy have been established: business freedom, budget freedom, unemployment level, part of indirect taxes, inflation level, GDP for one resident (Schneider and others, 2007, p.10). However, in the calculation of shadow economy for 1999-2007 performed by Schneider (2010), Buehn (2010) and Montenegro (2010) it is stated that the shadow economy for transit states is also determined by the index of economic freedom and government expenses (% from GDP). Schneider, 2010, Buehn, 2010, Montenegro, 2010, p.44).

Following the above mentioned factors by Komlogrov-Smirnov criterion it was inspected if the variables are distributed according to the normal distribution and with significant variables obtained by correlation analysis the value of shadow economy for 2012-2013 following “Stepwise”
and “Max.R-Square” methods was calculated. While performing multiple linear regression by “Stepwise” method for the scale of shadow economy, budget freedom and GDP falling to one resident are statistically significant.

The equation of multiple linear regression for the calculation of Lithuania’s shadow economy by “Stepwise” method:

\[ Y = 42.43915438 - 0.10071685 \times X_1 - 0.00049397 \times X_2 \]  

\( Y \) – the value of Lithuania’s shadow economy;

\( X_1 \) - the budget freedom;

\( X_2 \) - the GDP falling to one resident

The equation of multiple linear regression for the calculation of Lithuania’s shadow economy by “Stepwise” method:

\[ Y = 40.21998224 + 1.04045786 \times X_1 \]

\( Y \) – the value of Ukraine’s shadow economy;

\( X_1 \) - the unemployment level.

SEB bank forecasts that in 2012 the unemployment in Ukraine will reach 8.4 per cent. If we insert this value in the equation of multiple linear regression obtained by “Stepwise” method we see that the value of Ukraine’s shadow economy in 2012 should be 48.3 per cent from GDP.

The Scale of Lithuania’s and Ukraine’s Shadow Economy in 2000-2011 and Forecasts for 2012-2014

When analyzing the value of Lithuania’s shadow economy for 2000-2011 calculated by Schneider we can notice the tendency of reduction of shadow economy in 2000-2008 which can be related with the growth of economy. In 2009-2010 shadow economy increased due to the started economic recession during which the GDP falling to one resident decreased: in 2008 made 9700 EUR, and in 2009 only 8000 EUR, in 2010 - 8400 EUR. The reduced budget freedom also influenced the growth of shadow economy in 2008-2010 which in 2008 reached 70.9, and in 2009 only 69.9, in 2010 70.3.

However, in 2011 when the Lithuania’s economy was recovering after economic crisis as Lithuania’s GDP for one resident increase up to 9500 EUR, budget freedom up to 86.1, the value of Lithuania’s shadow economy decreased to 29 per cent from GDP. Due to improving economy tendencies in 2012 the value of shadow economy of 28.2 per cent from GDP is forecasted by “Stepwise” method. Lithuanian Free-market Institute forecasted that the Lithuania’s shadow economy in 2012 would make 27 per cent from GDP.

In 2013 it is forecasted that Lithuania’s budget freedom ought to decrease to 90, due to possible changes as the new Government starts acting, however, in 2014 ought to return to the level of 2012, i.e. to increase to 93.6. Following SEB bank forecast that in 2013-2014 Lithuania’s GDP will grow by 4 per cent, in 2013 the scale of Lithuania’s shadow economy is forecasted to be 28.3 per cent from GDP, in 2014 – 227.8 per cent from GDP.

Ukraine’s shadow economy in 2000-2007 had reduction tendency which was determined by the growing economy, decreasing unemployment, increasing budget freedom. The Ukraine’s shadow economy value calculated by “Stepwise” method in 2008-2009 grew due to the economic recession during which the unemployment increased up to 8.8. per cent, when in 2008 it made 6.4 per cent and in 2010-2011 it decreased as the economy started to recover from economic crisis when as more jobs appeared, the unemployment started to decrease: in 2010 made 8.1 per cent and in 2011 8.2 per cent. The Ukraine’s forecast of shadow economy calculated by “Stepwise” method indicates that in 2012 the shadow economy will increase up to 49.0 per cent from GDP, as following the SEB bank forecast that employment in Ukraine in 2012 will make 8.4 per cent, in 2013-2014 SEB bank forecasts that the Ukraine unemployment will decrease: in 2013 will make 8.2 per cent, in 2014 – 8.0 per cent. Due to that the Ukraine value of shadow economy in % from GDP in 2012-2014 will have reduction tendency.

Conclusions

1. Many authors discussing shadow economy emphasize the same trait of unaccounted economy: created, but unaccounted valuables. That is a very vast and multisided problem which many states of the world are solving.

2. Several methods of calculation of shadow economy exist which enable to evaluate the scale of the country’s shadow economy, but they give different digital results. Often several methods of evaluation of shadow economy are applied at once.

3. Lithuania and Ukraine according to investigation of shadow economy performed by Schneider (2007) appeared in the same countries’ group. After the calculation of shadow economy for 19 Eastern Europe and Central Asia countries according to the data of 1999-2006 it has been established that the shadow economy of Ukraine is the largest and the shadow value of Lithuania is in the middle when comparing with other countries. Different countries ought to pay attention to separate indicators: Ukraine to inflation, Lithuania to business freedom and openness. Common factors determining the value of shadow economy are budget freedom, unemployment level and GDP for one resident.
ПРОБЛЕМЫ РАЗВИТИЯ ВНЕШНЕЭКОНОМИЧЕСКИХ СВЯЗЕЙ И ПРИВЛЕЧЕНИЯ ИНОСТРАННЫХ ИНВЕСТИЦИЙ: РЕГИОНАЛЬНЫЙ АСПЕКТ

4. After performing the investigation with the additional data of the nearest period it is forecasted that in 2012 Lithuania’s value of shadow economy will reduce to 28.2%, Ukraine to 49.0%, in 2013 it is forecasted that Lithuania’s budget freedom ought to decrease to 90, due to possible changes as the new Government starts acting, but in 2014 it ought to return to the level of 2012, i.e. to increase up to 93.6. Following the forecast of SEB bank that in 2013-2014 Lithuania’s GDP will grow by 4 per cent, in 2013 the forecasted scale of Lithuania’s shadow economy will be 28.3 per cent from GDP, in 2014 – 27.8 per cent from GDP. In Ukraine in 2013 the forecasted shadow economy scale is 48.8 per cent from GDP, in 2014 – 48.5 per cent from GDP. Both in Lithuania and in Ukraine the tendency of the reduction of shadow economy is plausible.

References

РЕЗЮМЕ
Сучасна проблема тіньової економіки дуже актуальна для багатьох країн світу, вона актуальна і для Литви та України. Багато авторів пропонують свої методи для оцінки об’єму тіньової економіки. Різні методи дають різні результати, тому застосовуються декілька методів зрозуміло, щоб краще вивчити ситуацію. Досліджування тіньової економіки, проведене Schneider (2007) показало, що Литва та Україна впинились у одній групі – країн, що розвиваються. За показниками 1999 – 2006 рр. тіньова економіка на Україні сама велика, а в Литві майже середина в групі. В Україні вживається інфляція, а для Литви – відкритість, свободи підприємництва, для обох країн важливим показником є бюджетна безробіття, бюджетна свобода та ВВП (валовий внутрішній продукт) на 1 жителя країни. Приняті спроби прогнозувати об’єм тіньової економіки обох країн показала, що е тенденції зменшення неврахованої економіки в 2014 р. 28,3% в Литві та 48,8% на Україні.

Ключові слова: тіньова економіка, бюджетна свобода, свобода підприємництва, відкритість.

SUMMARY
Contemporary problem of the shadow economy is very topical for many countries in the world, it is also relevant for Lithuania and Ukraine. Many authors offer their methods to estimate the shadow economy. Different methods produce different results, so several methods at once are applied to better understand the situation. The study of the shadow economy, conducted Schneider (2007) showed that Lithuania and Ukraine were in the same group - the developing countries. In terms of 1999 - 2006 years shadow economy in Ukraine is the largest, and in Lithuania, almost the average of the group. Ukraine is an important indicator - inflation, and for Lithuania - openness, freedom of enterprise, both countries are important indicators of unemployment, fiscal freedom and GDP (gross domestic product) / per 1 citizen of the country. Adopted an attempt to predict the shadow economy of both countries has shown that there is a downward trend in the unrecorded economy in 2014 28.3% in Lithuania and 48.8% in Ukraine.

Keywords: shadow economy, fiscal freedom, business freedom, openness.

ДО ПИТАНЯ ПРО ТЕОРЕТИЧНІ ОСНОВИ ТРАНСНАЦІОНАЛІЗАЦІЇ ЕКОНОМІЧНОЇ ДІЯЛЬНОСТІ

Ніколаєва К.М.

На сучасному етапі розвитку світової економіки транснаціональні корпорації є головним суб’єктом світогосподарських відносин і формою, що втілює в собі, як правило, всі відмінності міжнародного експансію.

Одночасно дослідження транснаціоналізації є відносно новим напрямом економічної науки, оскільки власне виникнення поняття «транснаціональна корпорація» датується серединою 60-х років ХХ ст., хоча процеси, що стосуються діяльності ТНК, розглядалися ще в роботах Т.Манна, А.Смита, Д.Рікардо, А.Маршалла тощо.

Перші наукові праці, присвячені питанням визначення напрямків географічного розташування прямих іноземних інвестицій, з’явилися в середині 3-х років ХХ ст., коли Дж.Веллс продемонстрував наявність протиріч між неокласичною теорією міжнародної торгівлі і розвитком міжнародного виробництва.

Метою даної статті є ретроспективна систематизація теоретичних поглядів на процеси транснаціоналізації світової економіки як основи забезпечення.

Загребле виробництво почало розглядатися як форма еволюції картелів (Т.Бай), зокрема доводиться, що для підвищення ефективності діяльності великих підприємств доцільно запровадити вертикальне управління всіма стадіями виробництва, що можливо в

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