The Tax Pressure Influence on Underground Economy Size in Romania between 2001-2010

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Abstract. The aggressive extension of the level of underground economy, with a more and more organized developmental character, tends to place the phenomenon as a direct threat to the proper operation of State democratic institutions and, due to the generalized internationalization trend of the phenomenon, quantification and control of underground economy constitutes a problem considered by national governments and international bodies as well. The obvious growth and refinement trends of the methods used by the „practicants“ of underground activities impose the need to know and to evaluate this phenomenon, to establish the possible reaction ways of the public power, according to the cost and consequences forecast on the short term and, especially, on the long term, of the adopted measures. It is therefore necessary to analyze all pertinent factors that influence the level and structure of the underground economy and particularly the fiscal pressure.

Keywords: underground economy, tax pressure, macroeconomic analysis, economic policy.

JEL Code: Applied economics, business communication

1. Measuring the underground economy – absolute necessity of the real economy

Considered by some authors as an universe that evolves complementary or contradictory to the official economy, the underground economy may take the form of progress and damaging forms. This phenomenon endangers the economic and social development of a state, but the discerning and professional approach to this phenomenon creates the conditions for an efficient government management.

Even it is widely accepted in economic theory and practice, the idea that the reliability scale macroeconomic indicators of a country is affected by size of underground economy, the aggressive extension of the level of underground economy, with a more and more organized developmental character, tends to place the phenomenon as a direct threat to the proper operation of State democratic institutions.

The various analyses which have been carried out till now, related to underground economy, lay the stress either on the social, the economic or the moral aspect, or underlie the illegal – or on edge of legality – aspects. Due to this fact, the various studies in the field do not provide comparable data or they even give contradictory information.

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In periods of economic boom, when State levies allow the procurement of sufficient resources, the way of applying State conjuncture policies and its functions do not cause any debates. However, when the economy is in crisis and as the economic disequilibria carry along social difficulties, the need for financial resources can generate conflicts both between the adepts of different economic doctrines and in other environments as well (population and taxpayers included).\footnote{Nicolae Craiu, Economia subterană între da și nu, Editura Economică, București, 2004, p. 109}

When quantifying the level of underground economy, one must start from the following premises:
underground economy is a complex phenomenon which exists in all types of economies\textsuperscript{27} (developing, transitional, developed), irrespective of tax or administrative measures adopted by the legal bodies;

- in all countries, underground economy has reached a substantial level. Thus, economist Peter M. Gutmann was stating back in 1977\textsuperscript{28} that “statistically unrecorded economic activity is no longer a negligible quantity”;

- it is possible that legal bodies advance speculative estimations in order to convince the population of the need to adopt certain regulations and justify certain measures;

- in order to reduce the amount of underground economy, governments analyze first of all the complex relations between it and official economy and then the consequences of their political decisions;

- it is possible that in certain countries legal bodies do not want a drastic decrease of the level of underground economy, given that 2/3 of the incomes earned in underground economy are immediately spent in official economy; these incomes determine an increase in the standard of living for at least 1/3 of the population activating in the “unofficial” economy and people who activate in underground economy have less time for “hostile” social manifestations (demonstrations, strikes, etc.).\textsuperscript{29}

2. Determining the level of underground economy using the method of structural equations (Schneider model)

Although the negative effects of the activities specific to underground economy simultaneously alter all the fields of real economy, most of the methods used to estimate the phenomenon take into consideration only one indicator for capturing all of its negative effects.

Starting from the M.I.M.I.C. model, introduced by Goldberger in 1975, Professor Friedrich Schneider from Johannes Kepler University of Linz elaborated a model\textsuperscript{30} which explicitly takes into account the multiple causes of the existence and increase of underground economy, as well as the multiple effects of underground economy along the years.

This model presupposes one unobservable variable (the level of underground economy) which is supposedly influenced by a set of indicators, thus emphasizing the structural dependence of underground economy on the variables which can be useful in estimating its future movement and size.

The model analyzes the following, as potential causes of the level of underground economy:

- tax pressure, direct and indirect, real and perceived;
- tax regulations pressure, as a result of the measures adopted by legal bodies, both in terms of the number of adopted tax laws and the frequency of changes and the difficulties encountered by the economic operators in perceiving them;
- tax morality, as attitude of taxpayers. It is assumed that a decreasing tax morality contributes to an in increase in the size of underground economy.

A change in the size of underground economy can be reflected by the following indicators:

- development of monetary indicators. If underground economy activities increase, additional monetary transactions will be needed;
- development of the labor market. An increased participation of workers in the hidden sector results in their decreased participation in official economy. Similarly, more activities in the hidden sector may be reflected in fewer working hours spent in official economy;
- development of the production market. An increase of underground economy means that input (manpower especially) leaves official economy (partially at least) and this movement can have a negative effect on the official economy rate of increase.

In the category of causal variable, the model refers to:

- tax burden / GDP,
- taxes due by individuals / GDP,
- taxes on production and import / GDP,
- taxes on corporate income / GDP,

\textsuperscript{27}Daniela Şarpe, Microeconomie- Teorie şi aplicaţii, Editura Economică, Bucureşti, 2002
\textsuperscript{29}Friedrich Schneider, Shadow Economies and Corruption All Over the World: What Do We Really Know? – I.Z.A. Paper no. 2315, 2006, p. 35
The interaction in time between causes $Z_{it}$ ($i = 1, 2, \ldots, k$), the size of underground economy $X_t$ in time and the indicators $Y_{jt}$ ($j = 1, 2, \ldots, p$) is shown in the figure below:\footnote{Friedrich Schneider, Shadow Economies and Corruption All Over the World: What Do We Really Know? –I.Z.A. Paper no. 2315, 2006, p. 48}

The method of structural equations advanced by Professor Friedrich Schneider is the most used model for estimating the level of underground economy and represents the starting point in most recent studies and information on the determination of the level of underground economy.

The graphical evolution of underground economy in Romania, between 2001 and 2010 is the following:\footnote{Friedrich Schneider, The size of the Shadow Economy for 25 Transition Countries over 1999/ 00 to 2006/ 07: What Do We Really Know?, September 2009}

\footnote{Friedrich Schneider, Size and Development of Shadow Economy of 31 European Countries from 2003 to 2010, September 2010}
3. Tax pressure – the main causal variable analyzed by structural equation model

As noted previously, the model analyzes tax pressure as the main cause of the underground economy. Although the model refers to several aspects of the causal variable (tax pressure, fiscal rules pressure, tax morality), this refers mainly to a payment to the consolidated state budget.

The obligation to pay taxes appeared along with the emergence of the State and of Law in the human society and the attempt to elude this system was more or less strong according to the increase or decrease of tax burden.

Irrespective of the terms used: tax burden, tax pressure, fiscal coefficient, compulsory levies rate, etc. the central idea is that of the obligation towards the State and of the diminution / cutting of personal incomes.33

The tax pressure indicator (or tax rate) represents the ratio between inland revenues (of the State and of local communities) and GDP or NDP, expressed in percentages. This indicator measures the share of tax in the obtained wealth and thus allows determining the tax burden.

The compulsory levies rate is often emphasized as an indicator measuring the degree of State intervention and is frequently used for international comparisons, especially in order to measure differences between countries, in matter of tax pressure particularly.34

The aim of conjuncture policies is to stabilize the economy by means of counter-cyclical methods: expansionist, in periods of recession and restrictive, in periods of expansion. Therefore, the fiscal policy of a State represents an important tool in influencing economic conjunctures, either in modifying the tax rate, or in changing the structure of State expenditures.

The change of the tax rate and / or of the share of budget resources categories in the total State revenue varies with the economic situation: when economy boost is wanted, in case of recession, the tax rate will be low, direct taxes will be less burdening, etc, while in case of economic overheating, contrary measures shall be adopted.

It is known that an increase in indirect taxes causes inflation (a reduced economic growth) and in case of recession, the decision to opt for preponderantly favouring inflation decrease at the risk of disfavouring the rhythm of economic growth is difficult and controversial, the tools of fiscal policy being crucial.

According to the data provided by the National Institute of Statistics35 and The Tax Council36, the level of the tax pressure in Romania for the period 2000 – 2010, had the following evolution:

![Graph showing tax pressure in Romania between 2001-2010](image)
4. Comparative analysis: underground economy / tax pressure in Romania between 2001 and 2010

The comparative analysis between two of the variables suggested by Schneider Model, respectively, between the unobservable variable (the level of underground economy) and the causal variable (tax pressure) emphasizes a series of aspects related to:

- evolution of the two variables in time\(^{37}\),
- ratio of the two variables in time\(^{38}\),
- correlation coefficient between the two variables\(^{39}\),
- coefficient of determination degree,
- manner in which the unobservable variable captures the increase evolution rhythm of the causal variable.

Regarding the time evolution of the two analyzed variables, one can notice that their variation is fairly identical. If the level of underground economy recorded values comprised between 36.10% of GDP and 38.30% of GDP, tax pressure varied between 27.70% of GDP and 29.50% of GDP.

Both series reached maximum values between 2006 and 2007, their values starting to decrease afterwards, mainly as a consequence of introducing the unique taxation quota.

The increase of tax pressure level in 2010 is due mainly to the increase of the VAT ratio by 5 percentage points, which automatically led to an increase in the transfer of activities from real economy to underground economy.

The evolution of the two variables between 2001 and 2010 is graphically represented in the chart below:

5. Conclusion:

- No matter how the causal variable may be determined within the model (tax burden / GDP, taxes due by individuals / GDP, taxes on production and import / GDP, taxes on corporate income / GDP, contributions to compulsory social security programs / GDP, unemployment benefit / GDP, etc.) they concern the general idea of obligation towards the State and, hence, reduction of personal incomes.
- Even the model refers to several aspects of the causal variable (tax pressure, tax regulations pressure, tax morality), it mainly concerns a payment to the State consolidated budget.
- Although tax pressure is determined as the ratio between tax collections (of the State and of local collectivities) and GDP or GNP, expressed in percentages, this indicator influences the predisposition to eluding tax and duties and, therefore, the taxpayer’s bias towards underground economy.
- The empirical analysis of the determination degree between the two variables reveals the fact that within the structure of underground economy, the share of tax pressure varies between 74% and 80%.
- In order to reduce the amount of underground economy activities, governments should increase the degree of collection and voluntary conformation to market of taxpayers instead of compensating for...

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\(^{38}\) Silviu Pripoaie - The Underground Economy influence on economic policy decisions, RCE Galați 2009

\(^{39}\) Rodica Pripoaie – Statistica economică, Editura Didactică și Pedagogică, București, 2008
the lack of budget income - due to a defective operation of the collection factors - by increasing tax pressure through new taxes and duties.

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