The estimating methods of underground economy dimension

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Abstract

This paper cumulates methods of estimating the dimension of underground economy. It clusters them in different categories: direct and indirect methods, macroeconomic and microeconomic approaches, monetarist methods, accountancy methods and statistical methods. The article succeeds in demonstrate that underground economy is defined as a part of the economy of one country. The importance of this study is sustained by the fact that underground economy covers over 38% of international economy. The concepts developed in this paper are the underground and surface economy, both being components of one country's economy. The question to which this article tries to answer is if the underground economy is an empirical domain and if it can be measured. Hence, a balanced conclusion of all considerations above, establishes that underground economy is an equivocal concept being difficult to record.

Introduction

The concept of underground economy has marked the speech of many important categories of experts of the social domain and juridical domain and press before being analyzed from the economical point of view.

Internationally, in the last 25 years there has been registered a rise of the interest concerning the research of the mechanism which underlies the development of underground economy and the most accurately evaluation of its dimension. This rise of interest for the underground economy is due to many causes, from which I would like to mention the following :the desire of underling the economical politics on real and complete data, which could become miscalculated if that the impact of underground economy is omitted, the major impact of some underground activities organized at an international network level, as drug and arms traffic ,clandestine emigrations, money laundering, etc ,not only from the economical point of view, but also from the social point of view social; the negative impact of the proliferation of such activities on the reform process after 1989 in the past communist countries from East Europe.

The proportions of component elements, their manifestation habits, the impact over the official economy, vary from country to country according to the economical and organizational system, as well as to the social-historical particularities.

At international level, the underground economy represents 25% from the World Raw Product. The local quantum of the underground transactions is high at a world scale, and the evil has stroked all the countries during the past few years, especially the ones where the restrictive and inextricable settlements, the hard taxation and checks had lead to fraud. Statistically tackled at the world trade number level, the underground economy rises in a dangerous way. The total average of the occult monetary patrimony of obscure origin is estimated at 1000 billion dollar per year.

This numbers should be analyzed only in comparison with similar statistics from different countries, and in the same time, for each case, we must take care of the correction agent that could influence in a determinant way the statistics elaborated by the governments of different countries, according to certain concourse interests. So, for states like Italy, Spain, France, Sweden, there are frequently evaluations which overrun 15-20% from the Intern Raw Product, and for others, like Germany, USA, Japan, in general moderate amounts are estimated.

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Chapter 1

Underground economy - evaluation methods

Specialized literature classifies the underground economical estimated methods after more criteria, as following: direct and indirect methods, macroeconomic and microeconomic landings, monetary methods, accounting methods, statistic methods, etc. Irrespective of the correct percentage, it is obvious that the economy is only one, and the underground economy is a way of redistribution and should be carefully analyzed taking into consideration that it represents 38% of the international economy. At this level I will make a difference between the underground economy and the legal economy, together building the economy of a nation. The difficulty of measuring underground economy results from the postponement between the earnings and the outgoings method. The underground economy is a doubtful concept because the process can't be quantified, it does not belong to the empirical records field, so that it is very difficult to report it.

The calculation of the real percentage of underground economy emerges from the national economy malfunction, so that the information of the Statistic National Institute is that the underground economy represents a percentage of 20% from Romanian economy and of the Romanian Informational Services, a percentage of 40%.

A document from the European Parliament mentions that:" the underground economy is a subject which comes back with regularity on the newspaper first page and in various politics document. There are presented too many easy numbers that seems to be taken from the hand of a magician just for sustaining some political interests or just for publicity. It is our duty to call the attention that trying to express such a complex phenomenon just with a few numbers it is arguable and, some times even tricky.'' (EU DOC, 2000)

The economical theory has tried to solve the problem of the underground economy quantification. The existent and applied methods till now for the valuation of the underground economy are the following:

Chapter 2

Twelve methods to estimate underground economy dimension

„Rosanvallon Classification" is a step before this demarche. This classification introduces the concept of occult economy(illegal work, fiscal fraud, organized crime) and independent economy (domestic activities, bricolage, gardening). (Rossanvalon, 2/1980). This classification supposes a distinct classification from the point of view of statistical evidence, of the underground economical elements. So, the general opinion is that, even if the two components of the underground economy given by the Rosanvallon classification developed apart from the government control, the two of them have a very different contribution to the economical development he occult economy characterized by a phenomenon of voluntary dissimulation of its activity, fact which justifies its estimated statistical weight. Because of the dissimulation effect there is not aloud a research through sample survey, because people don't want to cooperate. The autonomous economy has a character which should permit to obtain

correct statistical data, but practically, research through a sample survey on the autonomous economy is quite vague for the single fact that subjects are incapable of a correct domestic activities evaluation. So, practically speaking, Rosanvallon classification doesn't always give the desirable results.

Another important step in this road of measurability of the underground economy phenomenon was made in 1990 due to a few researchers work: Friedrich Schneider and Dominic Enste with their work „Schattenwirtschaft und Schwarzarbeit" (The underground Economy and the Illegal Work), Tanzi Vito with his paper „Coruption around the World" and Bhattacharyya Ridges and Bosworth-Davies with the paper „Black Economy". Romanian research is based on Lucian Liviu Albu's documents: Nonlinear Model of the Tax Evasion and Underground Economy: a Theoretical and empirical Investigation.

Even if the underground estimation is hardly and difficult, the academical world has reach the conclusion that there are other two important method should be taken into consideration.

The sequential method refers to specific activities of some economical domains, using real cases and samples. This method helps to obtain an entire image on underground economy weight by summation the partial results. The weak point of this method is the experience of the double or multiple registration.

The Global Method has as scope the underground economical evaluation at national level. The principle of this method is based on tracking the underground economy and it uses three types of investigations: the investigation of currency aggregates (the ways in which payments are realized), accountant investigation (the type and quantum of outgoings) and the indicators investigation which suggest the presence of underground activities (the divergence of statistic data (Pestieu, 1991).

Statistic Sample is a method of direct research, probability which is based on data obtained from the processing questionnaires with questions concerning specific economic underground activities. The strong point of this method is that it can be obtained a detailed information concerning the underground economy structure pointing out activities which aren't often taken into consideration by governmental authorities. The weak point of this questionnaire is that the subjects can't answer sincerely and even they minimize the number of underground activities because of the lack of trust in the system of evaluation of this phenomenon. The solution for the most efficient applying of this method is ensuring the subjects confidentiality and a correct and complete formulation of the questionnaire.

The control sample method named also „measurement method of taxes conformation" (Lawrence) is a method of direct estimation. This method measures the underground economy as a fiscal deficit, the results being obtained through the measurement of the differences between the incomes registered in fiscal declarations and the results obtained from aleatory controls. The method technique resides in organizing some intensive controls in a certain domain of the economy, considering these results as whole analyzed population.

Statistic registration- monographic type (Ivanescu, 1980, p.31). This is a method of direct estimation which can quantify approximately the level of underground economy, on activity types, on regions etc. The strong point of this method is that researchers become inactive participants in the underground economy network being capable of picking clear information in order to elucidate the underground economic mystery. The weak points of this method are the deficiency of

quantity measurements and the fact that conclusions of the research are valid just for phenomenon of the underground activity, without being extended to all population.

The direct methods 4, 5 and 6 have the great advantage that they can offer detailed information about the real structure of the underground economy but they also have the great disadvantage of presenting only limited estimations of underground economic phenomena, without offering estimations for a long period.

The method of differences between outgoings and earnings is considered one of the most precise method of measurement of the underground economic dimension. The method represent the calculation of the difference between the Intern Raw Product calculated by the method of production costs and the Intern Raw Product measured by the totally income method. The fact that the average of outgoings is inferior to that of incomes is a right sign of underground economical existence. The weak point of this method is that the differences may appear not really because of the underground economic activities but also because of the errors during the statistic processing. The principles of these methods can be used to study domestic activities but also offer information about the underground economic dimension.

Physical input method is also known as Kaufman method and it is based on a theory which considers that physical large inputs are used in underground economy as well as in legal economy. This method supposes a difference between the Intern Raw Product estimated on the electricity input, and the official InternRaw Product, resulting in this way an approximate estimation of underground economy. The weak point of this method is the fact that not all the underground activities request a high input of electricity and it is known the fact that there can be used other sources of energy as cools, oil products, wood, etc. another reason which strengthens the above assertion is that the rise of the technical progress and the electricity production efficiency changes very much with the demand elasticity/ the Intern Raw Product unit using this method, in her analysis, Maria Lacko sustains that a certain part of the underground economy is strongly tied with the domestic input of electricity, including a so-called domestic production, personal activities and unregistered services (Lacko, 1996)

Labor force census is a very important method taking into account the weight of the illegal work of the underground economy. The researchers in this domain show that the reduction of the labor force in official economy is interpreted as an index of the activity in the underground environment. This method has also its weak points because these differences between the participations rate can have other causes. We usually met people who have jobs in the two economics or who are officially registered as unemployed workers..

The transactions volume method or Feige method (Feige 1989) supposes the existence of constant relations in time between the transactions volume and the rise of Intern Raw Product , based on Fisher quantitative equation(Enste, Schneider):

$M*S=p*T$, where: M= currency mass;
S= currency circulation speed;
p= prices level;
T= transactions average.

Feige method suppose that the first year in which there had been measured the evolution of the phenomenon, hadn't presented an underground economy, and secondly, that the report p*T of the total nominal Intern Raw Product was constant all the time, if there hadn't been underground economic activities. Friedrich Schneider appreciates
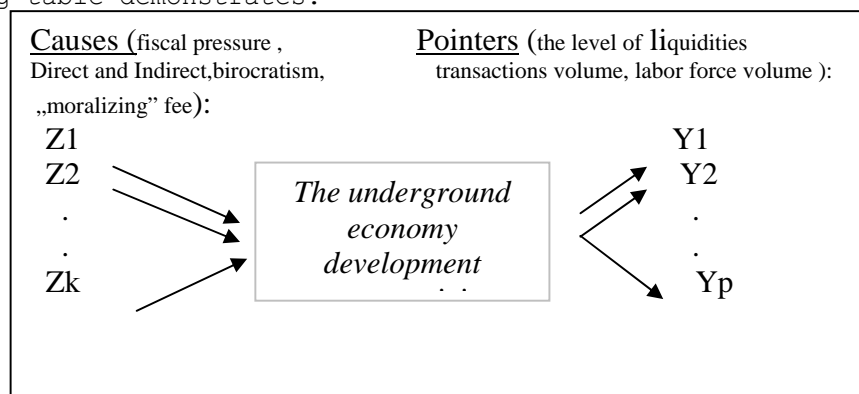
that even if Feige's approach was an attractive one from a theoretical point of view, the necessary empiric demands for obtaining valid estimations are very difficult to accomplish saying that the use of this method brings doubtful results.

The request liquidities, method used for the first time by Philip Cagan in 1958 who identified the connection between the currency demand and fiscal fees explaining the existence of underground economy between 1919-1955. Cagan Method was developed by Vito Tanzi during the 80's, when estimated econometrically a function of the liquidities request in the USA between 1930-1980.Approximatively 20 years later from Cagan's method, Pierre p. Gutman used also the currency approach, realizing an analysis of the report between liquidities and credits during 1937-1976.

This method of request liquidities is based on two assumptions: liquidities represent the main way of payment in the underground economy, and each currency unit process the same quantity of activity in underground economy but also in surface economy. This approach is supported by the theory which says that underground transactions are taking place in the likeness of in cash payment in order to escape to authorities, so in consequence an underground economy dimension rise will unavoidable lead to a liquidities request rise. The request excess is based on econometric equation, in which the liquidities request represents the dependent variables and those elements which influence the underground economy are considered independent variables.

The request liquidities method is used by various people, even if there are a lot of criticism: not all the underground transactions are running in cash, so there are also barters, resulting a superior level of underground economy, comparing to that estimated by this method. There isn't a certainty concerning the affirmation that says that the in cash circulation speed of the underground economy is the same as in the legal economy, and it is very difficult to demonstrate the contrary; we shouldn't ignore the in cash volume brought from abroad, especially in the case of the countries which are using the reference currency; the model independent variables, respectively element considered „guilty" of the underground economy rise, don't have an unanimous recognition in specialized literature.

The „complex" shaping method - is also called Frey - weck Hanemann method or Multiple Indicators Multiple Causes (MIMIC), it is one of the most complex method because its application implies more than one causes and multiple effects in the underground economy, as the following table demonstrates:

Causes (fiscal pressure , Direct and Indirect,birocratism, „moralizing" fee):

Z1
Z2
.
.
Zk

The underground economy development
. .

Pointers (the level of liquidities transactions volume, labor force volume):

Y1
Y2
.
.
Yp

This method is based on the statistic theory of unobserved variables, considering that we should take into account more than one cause and

pointers, which reflect the changes appeared in the underground economy dimension.

Chapter 3

A kind of conclusion

This short presentation of the main valuation method of the underground economy dimension shows an obvious fact that is none of these methods can present the exact underground economy dimension, each of them having strong parts and weak part. As a recommendation, I would suggest the taking into account of more than one method, of two or three of them or even more in order to cover all the spread areas of underground economic activities.

Enste and Schneider realisez through their paper an hierarchy of some valuation methods of the underground economy considered as relevant by them :

Table 1 : Valuation Methods of the underground economic dimension

The Used Method	The middle value of the underground economy in 5 countries OECD between 1970-1990
The labor force census	14,4
Feige Transactions	21,9
Gutman Econometric shaping method	15,5
The physical Input	12,7
Liquidities Request	8,9
MIMIC	7,9
The difference between The Intern Raw Product found outthrough the income method and the Intern Raw Product found out through the outgoing methods	6,4
Controle sample (Fiscal Audit)	6,1
Statistic Request	3,1

(Dinu, 2001)

So, it is obvious that the most important methods are those of Feige Transactions, Gutman Econometric Shaping method and the labor force census. If we are going to put down a short analysis of what each method is measuring we are reaching the conclusion that these important three methods have a major weight in analyzing the underground economy, especially fiscal fraud and illegal work.

From this short analysis it can be observed the fact that it is important to take into account more than a single method because they are addressing to different underground economic elements.

Researches in this field demonstrate the weight of the immeasurable measurability, even if there are various attempt of measuring.

Hence, a balanced conclusion of all considerations above, establishes that underground economy is an equivocal concept being difficult to record.

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