METHODS AND ESTIMATION MODELS OF UNDERGROUND ECONOMY

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Abstract:
The paper carries out a review of the main methods and estimation models of underground economy used in the specialty literature stressing the strong points and their limits. It is also identified and presented in the paper a possible model to be applied in estimating the Romanian underground economy on the basis of an empirical function.

Key words: *underground economy, model, tax evasion*

JEL classification: E26, H26

The economic realities of the past decades, with an underground economy extended to a global level and present in a greater or less extent in all the countries of the world, have shown that effective are those strategies which follow not to eradicate the underground economy but its control.

In these circumstances, the activities within the global underground economy have become an increasingly common concern, both at the level of the international organizations and the states and leader political groups which activate in them.

As a result of these situations more and more economists have tried to define, measure and establish the effects of underground economy.

This paper aims to identify the specific issues to each type of method or model used in specialty literature in order to estimate this phenomenon and the possibility of their application to the realities of the Romanian economy.

An analysis of the studies and references on the underground economy leads to the conclusion that there can be identified *three approaches* to determining its dimensions:

a) Launching some figures of a speculative character, depending on certain conjuncture interests. The role of such an "estimation" is to convince the public and the interested media that determining the activities' dimensions which evade to the legal regulations, the responsible persons shall adopt the appropriate measures, depending on the case, thus providing, the justification of certain measures.

b) Another direction is the issue of some figures whose background is exclusively a logical reasoning, a good knowledge of economic activity (both formal and informal), this kind of analysis often offering relevant figures, at least in the situation when the author is a connoisseur of reality in his country, and not only, having a good specialty training and the necessary intuition to such an approach.

An important role in approaching this method is represented also by making some international comparisons, at least in countries similar from the economic structure, law and custom point of view, the behavior of economic agents and, last but not least, the educational characteristics, temperamental characteristics of population.

c) A third direction is represented by the estimations based on the well defined estimation methods, for which there are prepared certain methodologies of calculation, methods that rely on the same idea, namely that the underground economy leaves traces that occur in the labor market, in the monetary aggregates or in the form of the disagreement between revenues and expenditures.

Within this final direction for determining the dimensions of the underground economy there are known the following general approaches, but each offering, in practice, the possibility of several estimation ways:

1. methods based on data from the national accounts system;
2. estimation based on data obtained from tax inspections and other control methods;
3. method of the clues that appear on the labor market;
4. monetary methods;
5. methods based on electricity consumption.

On the international level there were still put up some calculation methods with the mention that being applied to the same country and the same period, the results are rarely consistent, sometimes being even fundamentally different.

a) At first glance, the most obvious method is **direct supervision** by analyzing the data provided by the economic agents who operate, in whole or in part, "in the underground". This method offers the possibility of acknowledging the structure of underground economy but it is based on the accuracy of the provided data, which generates doubts especially as some activities are illegal and the economic agents are not prepared to admit their involvement, even in terms of ensuring the anonymity.

b) A similar method is based on **the detailed analysis of a sample of a taxpayer**, under threat of sanctions if they refuse to cooperate. In this way there are also obtained data on small tax dodgers who perform independent activities and who, in most cases, avoid to pay the duties and taxes due to the state. But this method is not accurate since it is limited to the taxable activities, without thus referring to a significant part of the underground economy.

The two presented methods, considered direct methods of estimating the underground economy, are little used because of the obvious disadvantages.

It is primarily about the subjectivity of the analyzed data and also the inability to achieve some projections for the evolution of the phenomenon of the underground economy. There is also an advantage that is related to the information that can be obtained on the structure of the underground economy, but these results depend very much on how the questionnaires are designed.

More objective and therefore more accurate are the methods of indirect estimation of the underground economy, based on the discrepancies occurred in the evolution of different markets.

a) **The method of discrepancies in expenditures –** the persons who work in the informal sector spend more than their declared revenue. This discrepancy, which reflects the amount of the underground economy can be stressed both at the individual level and at the level of the national financial system.

One way of measuring the underground economy in this group of methods is to compare the results of the recordings made in the national accountancy, in the process of determining the GNP by the two approaches: the method of revenues and the method of expenditures. In general, the calculation of national product from the perspective of the revenues offers lower figures than those obtained by aggregating the expenditures. "The unexplained residue", consisting of the spread between the two aggregates may serve as a basis for estimating the size of the parallel economy.

This method has the advantage of a simple calculation manner, easy to apply and the supervision, year after year, of the relative size of these differences may explain the general evolution of the occult economy.

These estimation methods have a series of shortcomings, among which most important seem to be:

- the errors in estimating both aggregates;
- the errors caused by the differences of statistical coverage;

- the gross domestic product estimations are not always independent from the estimations of the revenue based on the tax data (a revenue undetermined by the tax authorities may also be absent in the national accounts).

The financial audit programs are especially used for estimations. The problem of this method consists of the incorporated errors, both errors of measurement as well as substance - for example, by omission of the possibility of increasing the expenditures by obtaining some banking loans. Also, the samples used for the financial audit programs are not representative for the entire population of a country.

These estimation methods have been used by many economists, as it follows:

- In 1965, M. Ray[1] has calculated that 52.44% of the revenue which would have to be levied from the tax on the movement of goods, in Italy, was removed from taxation. His method was based on the identification of consumption and the gross domestic product and the estimation of the amount which would have to be paid compared to what was actually paid;

- Pissarides şi Weber[2], in 1982, have concluded that the unobserved economy represents 5.5% of the gross domestic product in UK;

- Feige şi MeGee[3], in 1983, have found that the underground economy represents 10% of the gross domestic product in Sweden.

b) **The method of discrepancies in the labor market –** a groundless drop of the supply of labor can be considered an increase, in the same extent, of the underground economy but also this estimation is affected by the interpretable elements. In most cases, people work both in the underground economy as well as in the official one, so that this method of estimation is little used, having to mention the studies of Bruno Contini and Del Boca (Introduzione alla Econometrics) for Italy's economy or O'Neill for U.S. Economy.

A variant of the method consists of comparing the official rate of active participation with that of the countries and/or the periods in which the underground economy has a minimum size. The difference between the official rates of participation and the "real" ones is considered to be an index regarding the size of the irregular labor force.

In accordance with the assumption of the labor force method it may be considered the rate of participation of other countries or the rate of participation at the beginning of the examined period, as an estimation of the actual rate of participation. Thus it is carried out an estimation of the relative size of the irregular labor force compared to other countries or other times. In order to obtain a relative size of the underground economy in terms of GNP, there must be made assumptions about the productivity of the labor force in the official and unofficial sector.

Another variant of the method is represented by the attempts to measure the size of the underground economy in absolute terms, based on questionnaires and interviews, especially through polls and surveys upon time use. They are aimed both to those who sell their services on the black labor market, and also to those who resort to the employment or services of others.

In Norway, such a study, based on interviews and surveys, was undertaken in 1980, the questions being also about the number of working hours and hourly wage, on a sample of 900 people. It was thus come to evaluate the size of the underground

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[1] M.Ray (1965), „Estimating Tax Evasion: the Example of the Italian General Sales Tax", *Public Finance*, no. 20, p.366-392

[2] C.A.Pissarides şi G.Weber (1989), „An Expenditure-Based Estimate of Britain's Black Economy", *Journal of Public Economics*, no. 39, p.17-32

[3] E.L.Feige şi R.T. McGee (1983), „Sweden's Laffer Curve: Taxation and the Unobserved Economy", *Scandinavian Journal of Economics*, no.85, p.499-519

economy of 0.9% of the GNP, from the "supply" and 1.5% of the GNP from the "demand", the difference in favor of the supply being made on the account that those who use black labor declare it more easily than those who practice it.

The advantage of this method is that it allows taking into account not only the activities paid in cash, but also those paid in kind, this form of payment having a considerable share.

c) **The method of discrepancies in transactions** - another method of estimation was set up by Edgar Feige and starts from the premise of a constant relationship in time between the volume of transactions of a country and the gross national product officially measured. In order to estimate the level of the underground economy, Feige started from a year considered the basis when there was no underground economy and subsequently considered a "normal" volume of transactions that would remain the same for a period of several years. Obviously these "allegations" seriously put into question the accuracy of the obtained data. In addition, it is difficult to assess a volume of transactions, especially if we think about those performed with cash.

d) **The method of discrepancies on the money market** - another discrepancy is visible on the money market and is the basis of the most used method of estimating the underground economy. It starts from the premise that transactions from the unofficial sector are carried out in cash to make their detection more difficult by the authorities. The level of the underground economy is then given by the amount of cash used nationwide in addition to the one from the official transactions. This method is considered more accurate whereas the quantity and monetary structure are generally known in detail. However, it must be noted that also within the underground economy are sometimes used the payments by the bank or the payments by electronic means. For example, in a study conducted in mid'80's in Norway it was found that less than 80% of the transactions made in the underground economy use cash. On the other hand, for the transactions "in black" are widely used coins from other countries - for example the U.S. dollar – aspects that affect the accuracy of the estimation results.

The existence of the underground economy is closely linked to the monetary sphere, in particular by the accentuated inclination to liquidity, which is displayed by those working in this field.

The motivation of this behavior is obvious: cash transactions are less visible than banking operations.

There are known, in practice, three methods which involve the monetary approach of the underground economy estimation:

1) Starting from the idea that the release of a quantity of growing high value denominations, to facilitate payments, is an evidence of expansion of the "black" activities, it is tried the accreditation of the idea that thus it can be determined the size of informal activities. This method, simplifying a very complex reality, first gives indications upon the trends that develop in this area, than an idea at all relevant to its size.

2) The method of transactions starts from the assumption that there is a constant relationship, in time, between the volume of cash transactions and the total GNP, formal and clandestine. The method is based on Fisher's known quantitative relationship:

$$M * V = p * T$$

where: M- monetary supply

V- speed of circulation of money

p- level of prices

T- volume of transactions

Remarking the total M monetary supply, which includes both the currency and the sight deposits, it can be inferred the total GNP size. By subtracting from it the official GDP, it is obtained a clandestine GNP, as a residue in terms of GNP. The

hypothesis that builds on this estimation is that the speed of circulation of money in the two sectors (legal and illegal), is equal.

3) The most commonly used method of this category is that based on the ratio of the currency in circulation and the sight deposits. According to it, the transactions of the clandestine economy are reflected in the changes of the report between the currency in circulation and the sight deposits, held in banking institutions.

The basic assumption of the method of increasing the demand for cash is the following: assuming that the speed of movement of the currency is the same in occult economy and formal economy, any significant increase in demand for liquidity in relation to banking deposits, may indicate an expansion of black activities.

Using this method, Gutmann estimated in 1977 that the underground economy represents 10% of the measured legal activity.

The criticism brought to these monetary methods refer to the assumptions on which the research is built:

- involves choosing a basic year, which implies a certain level of clandestine economy, most often deemed to be void;
- transactions in cash, even in this sector are more often covered by using checks and other modern methods of payment;
- the speed of movement of money, considered the same in the two sectors, is very hard to be noticed even to the formal economy, in the informal sector is even more difficult to estimate.

Variations of the monetary method were introduced by Edgar Feige[4], Peter Gutmann[5] and Vito Tanzi[6] which were generally used by a series of historical points of reference to successively estimate the amount of underground economy.

e) Modeling the underground economy and its definition as a system are used by a modern method of estimation of the level of underground economy. This method, called **the method of family electric power consumption,** was introduced by Maria Lacko and aims to determine the level of the underground economy in several European countries using a single model.

The premise for this model is that in each country a part of family consumption (in households) of electric power is used in the underground economy (unofficial). It is thus considered that the consumed electric power in the households in a certain country is not determined only by obvious causes such as population size, standard of living, country's geographical location (with respect to climate), relative price of electricity or access to other sources of energy, but also of expanding the underground economy. On the other hand, a significant number of unregistered economic agents operate within the individual households or directly obtain revenues from them.

In this model, the underground economy is represented by three variables: the percentage of duties and taxes in the gross national product, the ration between inactive and active population, as well as the level of social public expenditures relative to gross national product. The first two variables represent obvious relationships: the higher these percentages, the greater the amount of the underground economy. A high level of duties cause more economic activities to move in the underground while a high level of inactive population leads to a greater supply of labor force in the underground market economy. Concerning the third indicator, the higher it is the more the respective state takes more stringent measures to collect the duties, which reduces the level of underground economy.

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[4] Feige, E. – The Underground Economies. Tax Evasion and Information Distortion, New York, 1989, http://www.worldcatlibraries.org/oclc/17547266&referer=brief_results

[5] Gutmann, P. – The Subterranean Economy, Financial Analysts Journal, 1977

[6] Tanzi,V. – The Underground Economy in the United States: Estimates and Implications, http://www.imf.org/external/pubs/ft/fandd/1999/06/tanzi.htm

The equation that describes the impact of the factors which determine the household electric power consumption is as it follows:

$$ERij = 1\ln Cij + 2AGij + 3Gij + 4Qij + 5PRij + 6Hij$$

Where:

- i: country,
- j: year,
- ERij: electric power consumption per capita in a certain country in a year (kWh)
- Cij: electric power consumption of households per capita,
- AGij: percentage of gross national product made in agriculture,
- Gij: coefficient for climatic differences = relative frequency of months in which heating is required in dwellings, multiplied by the average temperature in January,
- Qij: percentage of other energy sources other than electric power from the total energy consumption within households,
- PRij: price of 1 kWh consumed by the population (in U.S. $),
- Hij: output from the underground economy (per capita).

On the other hand, the equation that describes **the effect of the factors** which determine the level of the underground economy is:

$$Hij = 1TLij + 2TCij + 3Dij + 4Iij + 5EXij$$

where:

- 1
  - Tlij: the level of duties upon the revenues from work,
  - TCij: the level of duties upon the revenues from stock,
  - Dij: the decline of the output comparing to 1989: Dij= 1- (GNPij/GNP1989),
  - Iij: annual inflation rate of commercial products,
  - EXij: Government's expenditures, a percentage of the gross national product.

The studied model is related to the former socialist European countries and which had in the last decade of the last century, transition economies to a market economy. In early'90's, in transition economies the radical change in the structure of property (by reducing the state property and extending the private one) has defined as essential to the state budget the revenues from duties and taxes. Thus all registered businesses were taxed, which also led to the appearance of those which wanted to hide the revenues in order to avoid paying the duties and taxes. Given also the drastic reduction of the activity in most industries as well as the declining of real earnings, many former employees have sought alternative sources of revenue. The easiest way was to join the underground economy.

The impact of duties on economic activities has been exacerbated by inflation. Even the insignificant price increases led to a pronounced increase of tax burden borne by households or businesses while a lowering of prices greatly reduced this tax burden.

Also, the analysis for these countries shows that the level of taxation on the revenues from work (wage revenue taxation and social security contributions) is influencing both the decision of the employees to provide the labor force on the market and the decision of the employers to engage in the formal economy.

The level of taxation on the revenues from work is high for the period analyzed in particular in Poland, Slovenia, Ukraine, Belarus, Hungary and Romania[7].

[7] Lacko M. – Hidden Economy, an Unknown Quantity?
http://www.economics.unilinz.ac.at/Buchegger/LackoWP.PDF

Table 1

Results - the percentage level of the underground economy

Country	Year	The level of the underground economy reported to the total electric power consumption	The level of the underground economy reported to the gross national product
Bulgaria	1991	25,00	34,00
	1992	26,00	34,00
	1993	26,00	34,00
	1994	27,00	36,00
	1995	26,00	34,00
Croatia	1992	29,00	39,00
	1993	30,00	39,00
	1994	30,00	40,00
	1995	27,00	36,00
Czech Republic	1993	29,00	27,00
	1994	18,00	25,00
	1995	16,00	22,00
Hungary	1990	19,00	26,00
	1991	23,00	31,00
	1992	25,00	33,00
	1993	25,00	34,00
	1994	24,00	31,00
	1995	22,00	30,00
Poland	1990	24,00	32,00
	1991	24,00	33,00
	1992	24,00	32,00
	1993	23,00	31,00
	1994	21,00	28,00
	1995	18,00	24,00
Romania	1990	18,00	24,00
	1991	28,00	37,00
	1992	29,00	39,00
	1993	28,00	37,00
	1994	26,00	34,00
	1995	21,00	28,00
Russia	1992	28,00	38,00
	1993	27,00	36,00
	1994	29,00	39,00
	1995	29,00	39,00
Slovenia	1990	20,00	27,00
	1991	21,00	27,00
	1992	24,00	31,00
	1993	21,00	28,00
	1994	19,00	25,00
	1995	17,00	23,00
Slovakia	1993	26,00	34,00
	1994	24,00	32,00
	1995	21,00	28,00
Ukraine	1992	28,00	37,00
	1993	35,00	47,00
	1994	41,00	55,00

In Table 1 it is observed that in 1995 among the countries included in the study the highest level of the underground economy was registered in Ukraine and Russia, followed by Croatia, Bulgaria, Hungary, Slovakia and Romania. On the opposite side there were the Czech Republic, Slovenia and Poland, with the lowest economic activity in the underground (22-24%). These latter percentages are almost identical to those

calculated for 1990 in Greece and Spain, the developed countries with the most significant underground economies.

It is also observed, on the results table above, that after the first years of transition in which in all countries there have been recorded uniform increases of the level of underground economy in Russia, Ukraine and Bulgaria, the underground economy has stagnated or even increased in time while in other countries there has been recorded an obvious decline.

Using the same model it was also stressed the relationship between the underground economy and the development of legal private property in the countries in progress of transition. Thus, in 1989, the year before the start of reforms, the amount of underground economy in each country was higher than that of private businesses. This condition is easy to understand since during the socialist period, due to ideological causes as well as legal causes, the possibilities for the development of private economy were extremely low. This picture has undergone radical changes until 1995: in most countries such as Estonia, Czech Republic, Poland, Slovenia, Latvia, and so on, the level of private economy has absolutely exceeded the one of underground economy[8]. In other countries, especially in those that had been included in the Soviet Union (such as Uzbekistan or Kazakhstan), the level of private economy has continued to be lower that than of underground economy.

Table no. 2

Underground economy compared to private economy in 1989 and 1995

Country	Initial 1989		Final 1995	
	Private economy (% GNP)	Underground economy (% GNP)	Private economy (% GNP)	Underground economy (% GNP)
Bulgaria	10	23	22	17
Czech Republic	5	25	12	13
Estonia	10	17	17	23
Hungary	15	17	27	22
Kazakhstan	10	12	45	70
Kyrgistan	10	65	60	25
Latvia	10	40	60	55
Lithuania	10	60	40	60
Poland	15	45	30	34
Romania	10	22	36	30
Slovakia	10	38	35	43
Slovenia	5	46	24	28
Uzbekistan	5	28	23	30

From Table 2 we note that in the countries with a rapid continuous process of reform, the level of private economy has reached a high level in 1995 while the underground economy remained at a relatively low level. It is also noticed that the transition was most rapid in those countries where the underground economy was more developed in the last years of socialism.

It does not necessarily mean that the experience gained in solving the problems raised by the underground economy has been used in the more rapid transition to a market economy. We rather consider that in these countries the inefficiency of the system based on state ownership became visible earlier and the expansion of the "second economy" was also tolerated, in some cases even encouraged. In these

[8] Lacko M , idem

countries, after the start of transition, the implementation of the elements of the market economy was achieved with more firmness while the sacrifices (like the unemployment) were accepted more easily than in the countries in the other category. This firmness lead to raise a strong private economy, which has left less "space" for the underground economy.

f) Evaluation based on data obtained from tax inspections and other control methods

This estimation method goes from the data obtained by the tax authorities after the discovery inspections of the revenues evading from taxation, thus ignoring the answers voluntarily given, based on questionnaires. The method allows the detailed knowledge of the situation, highlighting those professions declaring lower revenues than the actual ones or not declaring at all and to what extent this form of avoidance is practiced. The tax results are applied, by extrapolation, to the whole taxed population.

One of the problems raised by this method and which suggests that the obtained results are much diminished compared to the actual situation is the large number of people who make no kind of tax declaration and who, therefore, do not appear on the role, being found only in a little extent, quite accidentally.

A U.S. research undertaken on a sample of 50,000 household showed that among the 65 million household which should declare their revenues, between 6% and 7.8%, do not make any declaration, which, for the year 1976, represented between 5.9% and 7.9% of the official GNP.

g) DYMIMIC method (dynamic multiple-indicators multiple-causes)

A method distinct from the one above is the DYMIMIC method (dynamic multiple-indicators multiple-causes). It takes into account the multiple causes that determine the emergence and expansion of the underground economy and its multiple effects in time. The method based on the statistical theory of unnoticeable variables, consists of two parts that connect the unnoticeable variables to the noticed indicators. In this case there is only one unnoticeable variable, the size of underground economy. It involves a set of causes and a set of indicators that are influenced by the size of underground economy, thus overtaking the structural dependence of the underground economy of these variables, this dependence being used for forecasting the changes of the size of the underground economy in the future.

The interaction, in time, between the causes Zit(i=1,2,..,k), the size of the underground economy Xt and the indicators Yjt(j=1,2,…,p) is present in Diagram 1.

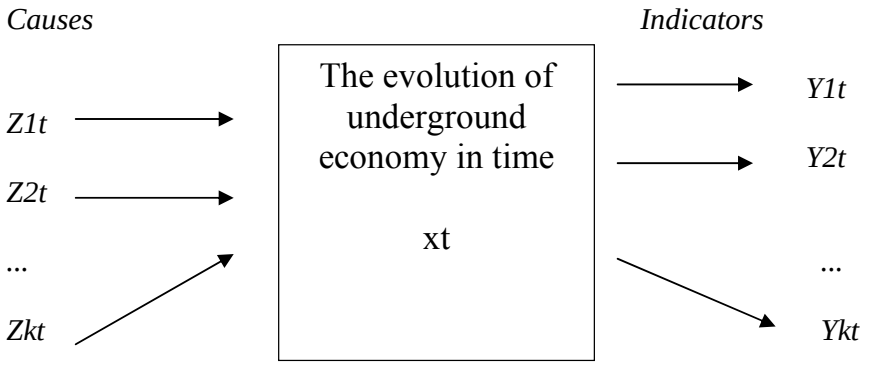

Diagram 1.: DYMIMIC method. Expansion of underground economy in time

Source: F. Schneider, „The Size of Development of the Shadow Economies and Shadow Economy Labor Force of 22 Transaction and 21 OECD Countries: What do we really know?", Institute of Public Finance, Zagreb, 2002

There is a rich literature on possible causes of the underground economy, among which there are differentiating the following three types of cases: the tax pressure exerted by direct and indirect taxes, the pressure exerted by the regulations imposed by state, the tax morality.

The changing of the underground size may be reflected in the following indicators:

- the development of the monetary indicators: if the economic activity increases in the underground economy there are required additional monetary transactions;
- the development of the labor market: increasing the participation in the underground economy has as a result the decrease of the participation in the formal economy;
- the development of production: the growth of the underground economy may have the effect of decreasing the rate of growth of formal economy.

h) The model for measuring the underground economy (tax evasion) in Romania

Romania's underground economy is particularly made up of undeclared economic activities and not of illegal activities. Of statements and records there are omitted (partly or wholly) in particular those activities and revenues from which there must be duties and social debts. But this does not happen deliberately (due to the desire of a higher profit or an anarchic spirit) but from misunderstanding, negligence or incognizance.

The phenomenon of tax evasion is influenced by 2 categories of factors:

- endogenous factors (tax authorities, Parliament, Government)
- exogenous factors, expressed by economic, social, cultural and psychological variables.

Specialty literature suggests for the tax fraud a general function which has an empirical character and whose values differ from one country to another and from one period to another.

This function is:

$$E = F(u, x, y) \quad (1)$$

Where E = the tax fraud function

u = the variable of the level to which taxpayers are inclined to tax fraud (this depends on culture, economic and social status of the company)

x = the variable of tax policy (the size of the tax pressure, the strictness used for its implementation)

y = the value of real variables of economy (GDP, national revenue)

Starting from the general function of tax evasion, some particular cases can be illustrated. Thus, if we assume that the inclination of taxpayers to tax fraud adapts spontaneously to any changes of tax policy (especially in the light of the variations of tax pressure and the strictness used to apply the tax laws), the variable "u" not having an independent value within the function, can be written as it follows:

$$u = u(x)$$

The function of the tax fraud changes and becomes:

$$E = f(x,y) \quad (2)$$

Since the true values (marked down by "y") are considered to be permanently constant at all times for short periods, the formula (2) represents the reaction of the phenomenon of tax evasion to the variation of tax policy. It is a medium and long term relationship.

Continuing this logic, we can stop considering the variables "y" as being exogenous variables, admitting their addiction to tax policy.

$$y = f(x),$$

The function shall be enunciated as it follows:

$E = f(x)$ (3)

This latter relationship is variable for a long time.

Although empirical verification of the formulas presented raises static complex investigations, on the grounds of static investigations there can be found a close link between tax evasion and the mentioned variables, with the aid of correlation coefficients. Except for the general functions of tax fraud, literature renders a special importance to other functions, elaborated from the perspective of human behavior.

The need of this kind of plan is justified the fact that the relevant analysis of tax fraud is carried out using an approach to human behavior and from the economic point of view. The opinions of specialists concerning the relationship (2) supports this approach, taking into account the marginal utility of money, duties and tax frauds.

It is known the fact that also the law of decreasing the marginal utility confirms this: the more the quantity of goods (or services) increases, the lower value instated by the additional utilities of the same good.

In addition to the illegality of this phenomenon and its consequences on tax policy, tax fraud as an individual action is not entirely irrational. Many difficulties of people arise from the relationship "utility (pleasure) - cost". But on the other hand, it is much better without any cost (no charge) without paying the duties or the lowest possible duties.

In order to establish the optimal ways to fight against tax fraud, it is necessary to develop a model that takes into account the following elements: damages, the cost of tax fraud detection, the number of crimes:

a) The damages caused by committing frauds tends to increase in proportion to the level of activity, in agreement with the relationship:

$H = H(A)$

where:

H = the size of damages caused to the company

A = the activity level (of tax fraud)

On the other hand, the social value of the profits which the participants to the underground economy gained tends to increase in proportion to the number of contraventions:

$G = G(A)$

where:

G = the value of earnings from the underground economy

Based on these two above mentioned elements, there can be determined the loss of the company due to underground economy, according to the relationship:

$D(A) = H(A) - G(A)$

b) The expenditures for the discovery of tax fraud and after that the cost of punishing the criminals is higher if the costs for tax, justice and specialized equipment are higher.

In this case, there is the relationship:

$C = C(I)$

where:

C = the cost for the discovery of tax fraud

I = the level of the caused expenditures.

If we assume that the "f" function is the one which compiles the endowment degree against tax fraud, the following relationship is valid:

$I = f(u,m,c)$

where:

u = using the human resources (energy)

m = using the material resources

c = using the financial resources

c) In the opinion of some specialists, the higher number of crimes, the lower the probability of conviction of the person concerned.

The area where the tax fraud is present is as large as the size and variety of the implementation field of duties.

A common aspect - perhaps the only - between those activities that form the underground economy is illegality, the hidden nature of some revenues which they generate. Considering the need to respect the limits imposed or suggested by the EU, the only possible attitude towards the underground economy is the fight in strength against it.

The percentage value of the underground economy in relation to the GDP in Romania, according to the scenario of eliminating the underground economy.

Year	***2001***	***2002***	***2003***	***2004***	***2005***	***2006***
The percentage value of the underground economy in relation to GDP	18.6	18.0	17.5	17.0	16.0	15.5
The percentage rate of the tax payments (also including the social ones) in relation to GDP	28.3	28.8	27.9	27.8	28.0	28.5

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