

TAX COMPLIANCE MODELS: FROM ECONOMIC TO BEHAVIORAL APPROACHES

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Abstract

The paper reviews the models of tax compliance with an emphasis on economic and behavioral perspectives. Although the standard tax evasion model of Allingham and Sandmo and other similar economic models capture some important aspects of tax compliance (i.e., taxpayers' response to increases in tax rate, audit probability, penalty rate) they do not suffice the need for an accurate prediction of taxpayers' behavior. The reason is that they do not offer a comprehensive perspective on the sociological and psychological factors which shape compliance (i.e., attitudes, beliefs, norms, perceptions, motivations). Therefore, the researchers have considered examining taxpayers' inner motivations, beliefs, perceptions, attitudes in order to accurately predict taxpayers' behavior. As a response to their quest, behavioral models of tax compliance have emerged. Among the sociological and psychological factors which shape tax compliance, the 'slippery slope' framework singles out trust in authorities and the perception of the power of authorities. The aim of the paper is to contribute to the understanding of the reasons for which there is a need for a tax compliance model which incorporates both economic and behavioral features and why governments and tax authorities should consider these models when designing fiscal policies.

Keywords: tax compliance, economic model of tax compliance, behavioral model of tax compliance, income tax evasion, 'slippery slope' framework.

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1. Introduction

Taxation is a topic that stirs controversies at any given point in time and in any society, regardless of the degree of democracy. Still, without taxes modern societies could not survive. As Franklin D. Roosevelt used to say, 'Taxes, after all, are dues that we pay for the privileges of membership in an organized society'. The optimum level of public goods provided by authorities is achieved when every taxpayer is compliant and pays his fair share of tax liabilities. Franzoni (2000, p. 54) highlights four basic rules a taxpayer should follow in order to be fully compliant with the tax law: (1) report the real tax base to the tax authorities; (2) compute correctly the tax liability; (3) file the tax return on time; and (4) pay the amounts due on time. If one of the rules is broken, the taxpayer becomes non-compliant. When talking about non-compliance, two types of behavior can emerge: tax avoidance and tax evasion. The distinction between the two notions is made upon the legality of taxpayers' actions. On one hand, tax avoidance is legal because it assumes the use of the legislative loopholes with the purpose of reducing taxes by creative accounting, therefore committing no crime (James and Alley, 2002; Webley, 2004); it is within the letter of the law but not the spirit of the law. On the other hand, tax evasion is illegal because it refers to deliberately breaking the law with the purpose of reducing taxes, therefore committing a crime (Elffers, Weigel and Hessing, 1987); it is neither in the letter of the law nor in the spirit of the law. Relative to the distinction between avoidance and evasion, Sandmo (2003, p. 4) comes with some interesting remarks and defines tax evasion as 'violation of the law: When the taxpayer refrains from reporting income from labor or capital which is in principle taxable, he engages in an illegal activity that makes him liable to administrative or legal actions from the authorities. In evading taxes, he worries about the possibility of his actions being detected. Tax avoidance, on the other hand, is within the legal framework of the tax law. It consists in exploiting loopholes in the tax law in order to reduce one's tax liability [...]. In engaging in tax avoidance, the taxpayer has no reason to worry about possible detection'.

For a long time, economists have disregarded 'crime' from their analyses, although it has always been of substantial practical interest. The reason behind this disregard might have been the opinion that illegal activities are too immoral to deserve a special scientific consideration. Nobel Prize winner Gary Becker (1968) uses economic analysis as a tool for designing optimal public and private policies that fight against illegal behavior. He defines optimal policies as those decisions that reduce the social loss in income caused by 'offenses' (i.e., crimes). The loss is considered to be the sum of injuries, costs of apprehension, conviction and imprisonment. Becker's study integrates the behavioral components which link the costs implied by crime eradication. These components are: (1) the number of offenses and their costs; (2) the number of offenses and the corresponding punishments; (3) the number of offenses and the public outlays on police and the judicial system; (4) the number of sentences and the expenditures with incarceration and other types of punishments; and (5) the number of offenses and the money spent for protection and arrests. The model attempts to cover all sorts

of violations, ranging from felonies like murder, assault, robbery etc., to tax evasion, collusive business arrangements, white-collar crimes, traffic etc. Starting from Becker's insights on crime and punishment, the literature on tax evasion flourished both in the economic and behavioral direction.

The present paper briefly describes models of tax behavior, some through the rational economic lens, and others through the socio-psychological lens. The aim of this study is to highlight the reasons why economic models do not meet all the requirements necessary to accurately predict taxpayers' behavior and why it is necessary for tax authorities to also take into account behavioral factors when designing fiscal policies. The remainder of the paper is as follows. The second part presents the economic dimension of tax compliance, with a focus on the classical model of tax evasion. The third part offers some insights into the behavioral dimension of tax compliance. The final part summarizes the main ideas of the paper.

2. Economic models of tax compliance

The economic model of criminal activity proposed by Becker (1968), the article of Tulkens and Jacquemin (1971) on delinquency cost and the optimal allocation of private and public expenditure along with studies regarding the analysis of optimal portfolio and insurance policies under uncertainty (Arrow, 1970; Mossin, 1968) were the starting point in Allingham and Sandmo's model of income tax evasion. The aim of their study was to analyze taxpayers' propensity towards avoiding taxes by underreporting income and the degree in which taxpayers display this type of economic behavior. Roughly in the same time with Allingham and Sandmo (1972) and independently of them, Srinivasan (1973) also proposed a theoretical model that yields the same predictions.

2.1. Allingham and Sandmo's model of tax evasion: general setting

Allingham and Sandmo's model departs from the following statement: due to the lack of assurance concerning an audit performed by tax authorities and a bad repercussion in case of undeclared income, filling in a tax return is a decision under uncertainty.

Consider a taxpayer and an income I_r exogenously given. The outcome is known to the taxpayer but not to the government's tax collector. Being in the position of paying taxes at a constant income tax rate t , the taxpayer has two alternatives: to declare an income I_d equal to the real income I_r (i.e., to be honest), or to declare an income I_d which is lower than its actual income I_r (i.e., to cheat). The choice of understating the income represents a decision under uncertainty as the taxpayer is, with a probability p , subject to an audit from the tax authorities. Taking into account the status of the taxpayers' income (i.e., declared or undeclared) and the audit probability (being audited or not), the taxpayer could obtain three different net (after-tax) incomes:

1. The first net income arises when the taxpayer is fully compliant and declares his entire real income to the tax authorities. Then, no matter if audited, his net income would be: $A = I_r - tI_r$.

2. The second net income happens when the taxpayer declares less than his real income and he is not audited. In this case, his net income would be: $B = I_r - tI_d$.

3. The third net income occurs when the taxpayer understates his real income and he is caught as a consequence of an audit. In this case, the taxpayer will have to incur a sanction s , under the form of a penalty applied to the undeclared income. Allingham and Sandmo assume that the sanction is proportional to the undeclared income. Hence: $s(I_r - I_d)$, with $s > t$. Taxpayer's net income would be: $C = I_r - tI_d - s(I_r - I_d)$.

For simplicity, let us denote the undeclared income by I_u , where $I_u = I_r - I_d$. Rewriting net incomes A, B and C , we obtain:

$$A = I_r - tI_r = I_r(1 - t)$$

$$B = I_r - tI_d = I_r - t(I_r - I_u) = I_r(1 - t) + tI_u$$

$$C = I_r - tI_d - s(I_r - I_d) = I_r - t(I_r - I_u) - sI_u = I_r(1 - t) + (t - s)I_u$$

One can notice that the relationship between the three net incomes is: $C < A < B$. Thus the taxpayer is better off cheating, provided he is not audited, because $B - A = tI_u$, but he is worse off cheating, if audited, because $A - C = (s - t)I_u$.

In this model the authors simplify the real life situation in that, apart from the uncertainty of an audit, they do not consider other forms of uncertainty, like the possibility that the sanction could take the form of a financial penalty, of a jail sentence or could even be a combination of these two.

The taxpayer's net income generates utility. Let this utility be denoted by U . The level of utility differs according to the amount of declared income and the probability of being audited. Thus, if $I_d = I_r$, his net income A will engender a utility of $U(A)$. If $I_d < I_r$ and there is no audit, the taxpayer's utility will be: $U(B)$, whereas if audited the utility will be: $U(C)$. The authors assume the following: as net incomes are increasing, the overall utilities are increasing too and consequently the marginal utilities (denoted by MU) are decreasing. Hence: $C < B \Rightarrow U(C) < U(B) \Rightarrow MU(C) > MU(B)$.

Through a comprehensive approach based on both mathematical and graphical information, Yaniv (2009) clarifies why the predictions of Allingham and Sandmo's model are ambiguous. He provides graphical examples for the tax compliance demand curve and the income tax rate. In the following we describe Allingham and Sandmo's model based on Yaniv's explanations.

2.2. Optimal level of declared income

In order to determine the taxpayer's optimal level of declared income, it is assumed that the taxpayer is a rational utility maximizer. As a consequence, he will choose that particular income from which he derives the highest utility. Because he is uncertain about being audited or not, the best strategy is to maximize his expected utility: $EU = (1 - p)U(B) + pU(C)$. The taxpayer is assumed to know the probability p . This happens if $I_d < I_r$. If $I_d = I_r$, $B = C = A \Rightarrow EU = U(A)$.

Let us assume that the taxpayer understates his income by one monetary unit. In case of no audit (with probability $1 - p$), his benefit will be t monetary units.

Consequently, his utility will increase by $tMU(A)$ units and his expected utility by $(1-p)tMU(A)$ units. In case of audit (with probability p), his loss will be $s-t$ monetary units, his utility will decrease by $(s-t)MU(A)$ units and his expected utility by $p(s-t)MU(A)$ units. As a utility maximizer, the taxpayer evades taxes if the expected utility of evasion is greater than the expected utility of full compliance. In other words, he engages in tax evasion as long as the prospective utility benefit from tax evasion exceeds the prospective utility loss from evasion. Hence, $(1-p)tMU(A) > p(s-t)MU(A) \Leftrightarrow (1-p)t > p(s-t) \Leftrightarrow t > ps$. This is defined by Yaniv (2009) as the 'entry condition into tax evasion' and is set by the tax rate and enforcement deterrence mechanisms (audit, fines).

Once this condition is stable, every additional undeclared monetary unit will increase B generating an expected utility benefit of $(1-p)tMU(B)$ and will decrease C generating an expected utility loss of $p(s-t)MU(C)$. This will hold until $(1-p)tMU(B) = p(s-t)MU(C)$ is satisfied. When $(1-p)tMU(B) < p(s-t)MU(C)$ engaging in tax evasion is not worthy any more. The above equality is called 'taxpayer's optimum condition' (Yaniv, 2009).

2.3. Demand curve for tax compliance

Starting from the taxpayer's optimum condition, the following equality results:

$$\frac{(1-p)t}{p(s-t)} = \frac{MU(C)}{MU(B)}$$

The term $\frac{(1-p)t}{p(s-t)}$ is constant and, due to the fact that it doesn't contain any variable regarding the income, it is not influenced by the taxpayer's decisions. Let $\frac{(1-p)t}{p(s-t)}$ be denoted by P_c .

The term $\frac{MU(C)}{MU(B)}$ varies with the change in declared income, I_d , thus depending on the taxpayer's decisions. Let $\frac{MU(C)}{MU(B)}$ be denoted by $D(U_d)$.

The equality is portrayed in Figure 1. As a constant, P_c , the relative price of compliance, is represented by a horizontal line parallel to the x-axis. $D(U_d)$, the demand curve for tax compliance, is represented by a downward slopping curve. The point at which the straight line intersects the curve gives the optimal level of declared income, I_d^* . The corresponding point on the y-axis is P_c^* .

Assume that the price ratio of compliance increases from the optimal level P_c^* to P_{c1} . Consequently, the line representing the price ratio of compliance shifts upwards and intersects $D(U_d)$ curve at $I_{d1} < I_d^*$. As seen previously, P_c expresses the ratio between declared and undeclared income. If the price ratio increases, the declared income becomes more expensive than the undeclared income. Thus, the taxpayer will substitute some declared income with undeclared income. The decrease of the

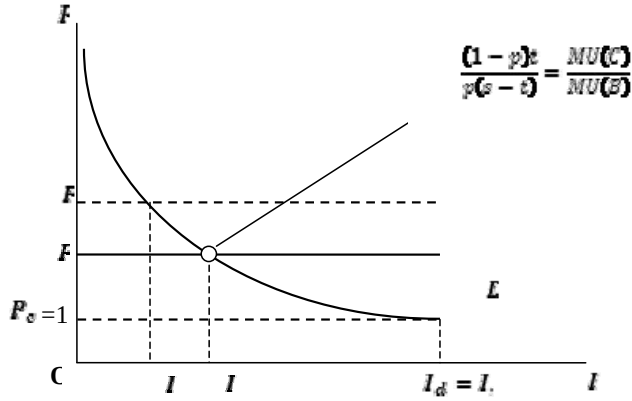


Figure 1: The tax compliance demand curve
Source: Yaniv, 2009, p. 217

declared income corroborated with the increase of the undeclared income is called the 'substitution effect' (Yaniv, 2009).

The demand curve for tax compliance shows the compliance level chosen by the taxpayer for any level of the price ratio. As can be seen in Figure 1, the higher the price ratio, the lower the compliance level chosen by the taxpayer. The taxpayer will only decide to declare $I_d^* < I_r$ if the price of compliance is greater than 1. If this requirement is fulfilled, t exceeds ps which means that the entry condition for tax evasion holds.

2.4. The income effect on tax compliance

We assume that the income tax rate t increases, thus raising the price of compliance from P_c^* to P_{c1} and decreasing compliance level from I_d^* to I_{d1} . As mentioned before, the substitution effect generated by the increase in income tax rate mitigates compliance.

The income effect on tax compliance is displayed in Figure 2. As expected, if income tax rate t is raised, the income levels of B and C decrease by the same amount, while both $MU(B)$ and $MU(C)$ increase but not by the same amount or percentage. When the increase in $MU(C)$ exceeds the increase in $MU(B)$, $D(I_d)$ moves upwards. If the increase in $MU(C)$ exceeds the increase in $MU(B)$, $D(I_d)$ moves downwards. If the absolute change in marginal utility is denoted by ΔMU , the percentage change in

marginal utility denoted by R is determined as follows: $R = \frac{\Delta MU}{MU}$. Therefore, $D(I_d)$ would shift upwards if $R(C) > R(B)$ and downwards if $R(C) < R(B)$.

In order to establish the nature of the relationship between $R(C)$ and $R(D)$, one has to consider the concept of *risk aversion* and the fact that it is associated with decreasing marginal utilities (Friedman and Savage, 1948). Generally, the majority of taxpayers are assumed to be risk averse, namely they do not engage in a risky situation if the expected monetary benefit is equal to the expected monetary loss. Allingham and Sandmo model the behavior of a risk averse taxpayer who assesses the possibility of risking an absolute amount of money I_u . As the propensity to risk an absolute amount of

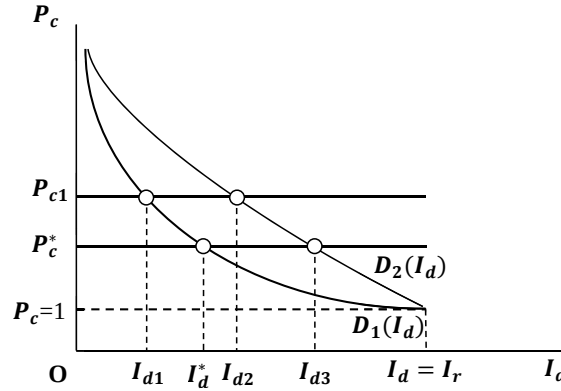


Figure 2: Tax compliance and the income tax rate

Source: Yaniv, 2009, p. 219

money is inversely related to R (Arrow, 1970), R represents the absolute risk aversion measure which is influenced by the taxpayer's income and decreases as income rises.

Based on the assumption of decreasing absolute risk aversion, it can be observed that $R(C) > R(B)$. Therefore, if the income tax rate t increases, the demand curve of tax compliance shifts from $D_1(I_d)$ to $D_2(I_d)$ and the level of compliance also increases from I_{d1} to I_{d2} . The income effect has a positive influence on compliance as opposed to the substitution effect, because it reduces the taxpayer's propensity to take risks. Due to the fact that the income effect acts in the opposite direction of the substitution effect, the net effect on compliance behavior assumed by Allingham and Sandmo's model is ambiguous.

Yitzhaki (1974) solves this shortcoming of the Allingham and Sandmo's model by demonstrating that, if the penalty is proportional to the evaded taxes (like in the US and Israel) rather than to the undeclared income, the substitution effect is eliminated and the increase in compliance is due exclusively to the income effect. Thus, in Yitzhaki's view, the penalty s should be replaced by ft , $f > 1$ and should be applied to the evaded taxes, ftI_u . By operating this modification, the price ratio of compliance depends no longer on the income tax rate and the effect is unambiguous: compliance level rises from I_d^* to I_{d2} .

2.5. Extensions of the classical model of tax evasion

The model of Allingham and Sandmo (1972) constituted the starting point for a massive stream of tax evasion theoretical models that took into account different variables (*i.e.*, audit probability, social stigma, and information uncertainty) and economic choices (*i.e.*, allocation of work time, high expenses employed to hide evaded taxes). Besides causing an important stir among theoreticians, the classical model of tax evasion has left its mark also on the empiricists who used it to study the firm's decision-making process relative to evading different taxes (*i.e.*, income tax, profit tax) or to design financial policies based on enforcement.

Nearly all studies published after Allingham and Sandmo have incorporated Yitzhaki's recommendation of applying the penalty to the evaded tax and not to the undeclared income. Even if his suggestion solves the major inconsistencies of the classical model, it still generates a counterintuitive result (compliance level rises with the increase of the income tax rate) which is not in line with empirical results (Clotfelter, 1983). Only when the extensions of Yitzhaki's framework incorporate more practical aspects of tax evasion does the model predict the intuitive result (compliance level falls with the increase in the income tax rate). Pencavel (1979), Cowell (1981), Sandmo (1981) and many other researchers extended Allingham and Sandmo's model by adding the labor supply variable and making income endogenous, as opposed to the classical model in which income was exogenous. Their proposal complicates though the analysis because the effects of enforcement parameters (*i.e.*, audit probability, penalty rate) on compliance are ambiguous. On one hand, if enforcement increases, the effective wage rate is abated and this in turn decreases total labor supply. On the other hand, if the labor supply curve is backward bending, increasing enforcement above a certain level can lead to an increase in the labor supply and in the undeclared income. Other researchers extend the Allingham and Sandmo's model assessing repeated reporting decisions as taxpayers may condition present tax returns on past tax experiences as well as on upcoming prospects (Engel and Hines, 1994). Gordon (1989) predicts that, if taxpayers have different levels of honesty, they will decrease compliance with the increase of income tax rate. According to Yaniv (1999), when the taxpayer has to pay mandatory advance taxes, an increase in the tax rate will mitigate compliance level provided that compliance is high enough. Lee (2001) demonstrates that compliance falls after the increase of tax rate when taxpayers can safeguard their income from possible monetary sanctions. Lin and Yang (2001) show that, in a dynamic setting that gives taxpayers the opportunity to select the level of compliance, an increase in tax rate generates the intuitive result.

3. Behavioral models of tax compliance

The economic models of tax compliance have been subject to harsh criticism. The first reason for this criticism was that they assume taxpayers to be fully rational utility maximizers whose behavior is interpreted as a reaction to different financial benefits and losses. As Dean, Keenan and Kenney (1980, p. 44) express it, 'To abandon taxation studies to arid suppositions concerning how taxpayers might act if they were condemned to being entirely rational, utility-maximizing automatons can only serve to postpone the emergence of realistic tax theories and useful policy insights'. The second reason was that the predictions of the economic models were invalidated by a bevy of empirical studies. Unlike the general conclusion of these analyses that most people engage in tax evasion, empirical studies suggest that many people are honest taxpayers (Porcano, 1988; Gordon, 1989; Erard and Feinstein, 1994b; Andreoni, Erard and Feinstein, 1998; Elffers, 2000), or there are some people who never evade paying taxes even when the risk is sufficiently low to encourage cheating behavior (Baldry, 1986). The limitations

of such approaches have paved the way for the development of behavioral models of tax compliance. In these latter models, built on the grounds of sociological and psychological determinants, taxpayers are seen no longer as selfish utility maximizers but as human beings motivated to pay taxes on the basis of different attitudes, norms, beliefs, perceptions, feelings, social characteristics, cultural background like age, gender, race, religion etc. (Schmölders, 1960; Fishbein and Ajzen, 1975; Meier and Johnson, 1977; Lewis, 1978; Jackson and Milliron, 1986; Ajzen, 1991; Bordignon, 1993; Cowell, 1992; Erard and Feinstein, 1994a; Coleman and Freeman, 1997; Frey, 1997; Mumford, 2001; Wenzel, 2003; Wenzel, 2004a; Wenzel, 2004b; Wenzel, 2005a; Wenzel 2005b).

One such behavioral model of tax compliance which encompasses these socio-psychological determinants is the 'slippery slope' framework proposed by Kirchler, Hoelzl and Wahl (2008). According to the 'slippery slope' framework, trust in authorities and power of authorities are two main dimensions shaping tax compliance. *Trust in authorities* is defined as 'the general opinion of individuals and social groups that the tax authorities are benevolent and work beneficially for the common good' and *power of authorities* is defined as 'taxpayers' perception of the potential of tax officers to detect illegal tax evasion [...] and to punish tax evasion' (Kirchler, Hoelzl and Wahl, 2008, p. 212). Both trust in authorities and power of authorities increase tax compliance, but the quality of compliance differs: *voluntary tax compliance* is achieved by increasing levels of trust; *enforced tax compliance* is achieved by increasing levels of power.

11The 'slippery slope' framework designed by Kirchler, Hoelzl and Wahl (2008) is represented in the figure below.

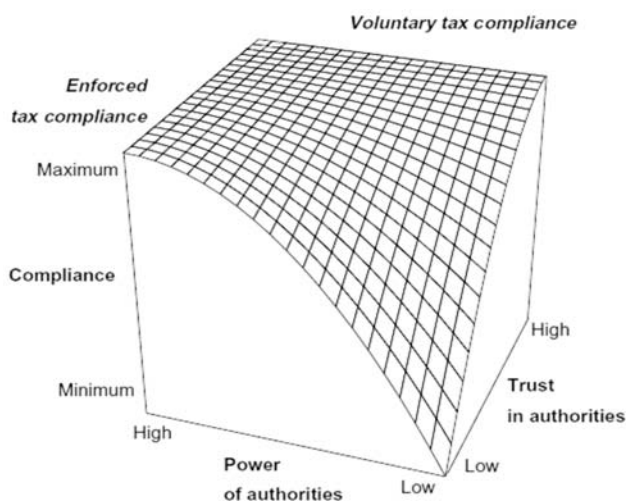


Figure 3: The 'slippery slope' framework
Source: Kirchler, Hoelzl and Wahl, 2008, p. 212

As one can notice in Figure 3, when trust in and power of authorities are at a low end, taxpayers have the propensity to maximize their income by engaging in tax evasion. Consequently, compliance level is at its minimum. Moving upwards the left edge of the

model along the power dimension and in the condition of low trust, compliance level rises due to the increase in the power of authorities which deters tax evasion. Hence, increasing power generates enforced compliance. Moving upwards the right edge of the model along the trust dimension and in the conditions of low power, compliance level rises due to the increase in trust which fosters cooperation. Thus, boosting trust in authorities generates voluntary compliance. Moreover, the maximum level of tax compliance, regardless of its quality, is achieved in the conditions of high trust and/or high power.

When talking about tax behavior, the attitude towards taxpayers is of great importance as it can enhance either compliance or non-compliance. A 'service and client' climate between tax authorities and taxpayers is meant to foster trust in authorities and stimulate taxpaying behavior. Alternatively, a 'cops and robbers' climate breeds distrust and resistance, giving birth to cheating behavior. In the light of these realities, a huge merit of the 'slippery slope' framework is that it promotes a more 'service and client' approach of tax authorities towards taxpayers.

4. Conclusions

It has been shown that tax compliance is related not only to economic, but also to behavioral issues that impact the process of raising public levies. This is the reason why economic and behavioral models of tax compliance should receive increased attention and consideration from governments. The present paper conveys a review of tax compliance models with the aim of emphasizing the need for a tax compliance model that incorporates both economic and behavioral characteristics and assists tax authorities in designing more viable fiscal policies.

The economic models of tax compliance are grounded on Becker's (1968) seminal work of the economics of crime. The purpose of his study is twofold. First, Becker attempts to evaluate the resources and punishments needed to enforce the law. In order to do that, he designs a measure of social loss resulted from crimes, then identifies the outlays of resources and punishments which diminish the social loss. According to Becker, these outlays depend primarily on the cost of identifying, catching and convicting criminals, the types of punishments, i.e., whether they are simple fines or imprisonments, and criminals' reaction to these enforcement strategies. Second, the author aims at analyzing whether economic theory could assist in achieving the first goal of the paper. The most important input of Becker's work is the demonstration of the fact that optimal policies used in the crime combat process are closely related to the optimal resources allocation process.

Allingham and Sandmo's (1972) model of tax evasion assesses the individual's decision of filling in a tax return under the uncertainty of being audited in a static framework. Given an exogenously established income, a constant income tax rate and a constant audit probability, the taxpayer is confronted with two alternatives: to declare or to understate his real income. If the taxpayer chooses to declare less than his real income, he is uncertain about his final outcome due to the probability of being audited

and fined for non-compliance. The authors stress that the taxpayer will evade taxes if the expected utility from evasion exceeds the expected utility from full compliance. Due to the fact that the model sets the penalty rate proportional to the undeclared income, the results reported are rather ambiguous. In the attempt to clarify the mathematics behind Allingham and Sandmo's model, Yaniv (2009) offers a comprehensive explanation for the reason why the results reported by the classical tax evasion model are considered ambiguous. Based on graphical representations of the tax compliance demand curve, the author shows that the substitution effect generated by the increase in the income tax rate is annulled by the income effect. According to Yaniv's conclusions, the demand curve of tax compliance can serve as a tool for predicting taxpayer's behavior when other parameters change (*i.e.*, audit probability, penalty rate). Using his graphical representations, it easily can be observed that a rise in enforcement strategies deters tax evasion, result which is in line both with empirical studies and theoretical grounds concerning the economics of crime (Becker, 1968).

The Allingham and Sandmo model has been extensively criticized. Besides the inconsistent results generated by the application of the penalty to the undeclared income, another notable weakness is that it assumes audit probability to be constant (Andreoni, Erard and Feinstein, 1998). This assumption is, however, invalidated by economic realities. For example, the audit probability in the US depends on the amount of income reported. In Romania, tax authorities establish audit probabilities during a process which comprises a risk analysis aiming to identify the economic areas subject to a high probability of tax evasion (*i.e.*, excisable commodities, intracomunitary trade, production and distribution of agricultural commodities). After such a risk analysis is performed, authorities establish the economic entities and/or areas which register the maximum probability of identifying the monitored phenomenon (*i.e.*, border checkpoints, transit roads, warehouses).

The shortcomings of the classical model of tax evasion were solved two years later by Yitzhaki (1974), who suggested setting the penalty on the evaded taxes rather than on the undeclared income. Consequently, the substitution effect is eliminated and the increase in compliance is due solely to the income effect. Though important, his modification yielded a counterintuitive result: an increase in the income tax rate generated an increase in compliance behavior. Thereafter, almost all papers on tax evasion adopted Yitzhaki's recommendation, incorporating also other economic variables (*i.e.*, labor supply, expenses for concealing tax evasion, repetition of reported decisions).

As stated before, economic models predict far too much tax evasion than actually exists. According to Alm and Torgler (2011, p. 635), 'the puzzle of tax compliance is not why there is so much cheating. Instead, the real puzzle is why there is so little cheating. Typically, the percent of all individual income tax returns that are audited is often less than 1% and the penalties on even fraudulent evasion are only a fraction of unpaid taxes. Virtually all economic models of taxpayer behavior conclude that there should be much more tax evasion than is actually observed. However, most people pay most of their taxes most of the time'.

Noticing the failure of the classical economic model in predicting taxpayers' actual behavior, many researchers became aware of the need to consider other variables when evaluating the levels of tax compliance. Thus, behavioral models based on sociological and psychological determinants such as attitudes, beliefs, norms, social characteristics or cultural background emerged. Among such models, the 'slippery slope' framework (Kirchler, Hoelzl and Wahl, 2008) is a notable example which encompasses trust in authorities and power of authorities as main predictors of compliance behavior. The major contribution of this model is the fact that it disentangles the quality of compliance. Hence, voluntary compliance is fostered by trust in authorities and enforced compliance is fostered by power of authorities. Assessing the dynamics of the relationship between taxpayers and tax authorities, the framework advocates for a 'service and client' approach which can breed mutual trust and cooperation, therefore boosting compliance levels.

Although a manifold of rational and behavioral models of tax evasion have been published, one which incorporates all the above mentioned economic, psychological, sociological features is yet to be developed. The need for such a model of tax compliance behavior stems both from taxpayers' complex economic, socio-psychological motivation which emerges when deciding to comply and from the requirement to design a unitary fiscal policy fitting this complex motivation. Such a model would considerably increase tax compliance by involving taxpayers and tax authorities in the most suitable manner.

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