ASSESSING DETERMINANTS OF TAX EVASION IN ALBANIA-A MULTINOMIAL ECONOMETRIC APPROACH

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ABSTRACT

This is a study about assessment of determinants or factors of tax evasion in Albania. Literature, though there is not a consensus about a unique set of factors, has found a number of them as contributing to tax evasion extent, such tax rates, trust in government, size of firms, etc. We collected through a questionnaire and used dummy and multinomial econometric models to assess a number of hypothetic factors. In the Albanian context we found as having positive significant effect on the probability of tax evasion five factors: profit tax rate, income tax rate, capabilities of the tax administration, sustainability of the tax legislation, financial situation of the company. We found as having negative significant effect the turnout of company. We suggest for further investigation testing other variables of interest and we recommend government to make policy improvements accordingly.

Keywords: Tax evasion, informality, econometric modeling, factors of tax evasion, exponentiated coefficient.

INTRODUCTION

Research Problem

Tax evasion in Albania is a big issue; many companies, if not all make efforts to evade paying full tax obligations to the government. One common way they follow to do so is taking into account a low base of their Turnout, or profits while calculating their tax bill. And this base is a variable influenced for sure by various internal or external factors. These facts and their influence of course vary from company to company. In Albania the heavy tax burden is considered as a major factor for tax evasion (Muharremi). According to Fortuzi, informality in Albania is about 33% of GDP.

At the end of 2015 a new improved legislation on fiscal reform was introduced. Coercion is a major characteristic of this legislation. Failure to keep clear and transparent evidence on sales/profits and pay taxes is heavy punished; penalties, confiscation and imprisonment are the main coercive means to reduce tax evasion, Tax Alert for Albania, (2015).

As we mentioned, there is some research on tax evasion issues in Albania, but it is far from being exhaustive. Moreover, research carried so far is extremely simplistic and descriptive; use of advanced research methods, such as econometric models is almost missing. We need to go more in depth to analyzing determinants of tax evasion in Albania. In this context, our research problem is the need to know and ascertain which are the factors or conditions that more commonly have an influence on the behavior of Albanian companies towards paying taxes to
government. What would be also as much important, knowing which of the factors count more and which counts less in terms of lower chances of making evasion is the other side of the research problem. Answer to these questions we need to understand better what government policy should take into consideration to reduce tax evasion by companies and make its budget thrive.

**Objectives and Research Hypothesis**

The Goal of this Research is to assess the attitude of Albanian companies in terms of tax payment. Specific objectives of the research are as follows:

1-To empirically identify and assess most important factors having an influence on the tax evasion by companies
2-To make possible forecasting probability and odds of tax evasion under given values of the significant factors

Research hypothesis is:
Tax evasion effort of Albanian Companies is in significant relationship with Profit Tax Rate, Personal Income Tax Rate, Turnout of company, Trust in Government, number of employed in company, probability of detection by Tax Office, Penalty payable for tax evasion, social and health contribution rate, Number of controls made by Tax Office, Capabilities of the taxation Staff, Economic Situation of the Company, Sustainability of the legal Tax System, and Technical Controls made by tax administration.

**LITERATURE REVIEW**

Tax evasion is an international widespread problem. Tax evasion has to do with illegal practices to escape paying taxes. To this end, taxable income, profits liable to tax or other taxable activities are concealed, the amount and/or the source of income are misrepresented, or tax reducing factors such as deductions, exemptions or credits are deliberately overstated (see Alm and Vazquez, 2001 and Chiumya, 2006), GIZ, (2010, p.9). According to OECD, tax evasion are illegal arrangements where liability to tax is hidden or ignored, i.e. the taxpayer pays less tax than he is legally obligated to pay by hiding income or information from the tax authorities. Bhuiyan (2012) described tax evasion as intentional and unlawful non-fulfillment of tax liabilities.

Tax evasion and informality interrelate, but may different as concept and practices. Informality has to do with unregistered business in the books of tax administration. Unregistered business doesn’t pay taxes as well, but also formal or registered business may not comply with tax obligations. According to Business Dictionary, informality is a system of trade or economic exchange used outside state controlled or money based transactions. Practiced by most of the world's population, it includes barter of goods and services, mutual self-help, odd jobs, street trading, and other such direct sale activities. Income generated by the informal economy is usually not recorded for taxation purposes. Informal economy is “all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements” (ILO 2002, p. 53). It includes illegal activities, but it can also
include legal economic activities such as self provisioning, barter, volunteer work, unpaid labor, etc.

Tax avoidance is an attempt to reduce the amount of payable taxes, by taking advantages of the weaknesses, loopholes or ambiguities in the tax legislation (GIZ, 2010, p.9). According to OECD, tax avoidance is an arrangement of a taxpayer's affairs that is intended to reduce his tax liability and that although the arrangement could be strictly legal it is usually in contradiction with the intent of the law it purports to follow. Tax avoidance is conscious acts of reducing one’s taxes by lawful means, Bhuiyan (2012).

GIZ (2010) groups factors of tax evasion in four groups: low tax morale, high compliance costs, weak capacity of tax collection, and inefficiency in tax collection. In the first group among the most important are: fairness of the tax system, low transparency and accountability of public institutions, low quality public services, corruption, lack of rule of law and weak fiscal jurisdiction; the questions that might be asked as a justification for not paying taxes could be: why pay taxes if they are stolen by corrupted government officials, if government is not transparent to public or government doesn’t deliver good services for the public, or the tax system is perceived as unfair?

Literature about tax evasion is broad, but researchers have not yet reached at a unique conclusion about the set of common tax evasion factors, Marandu, E.E., Mbekomize, Ch., Ifezue, A., (2014). Feinstein, J.S.,(1991) studied the extend and fraction of tax evasion. Bribes and corruption have been largely considered by many researchers as factors having an impact on the extent of tax evasion. In general, citizens expect some kind of service or benefit in return for the taxes paid. If the government fails to provide basic public goods and services or provides them insufficiently, citizens may not be willing to pay taxes and tax evasion and avoidance will be the consequence Lieberman, (2002, Pashev, (2005); Everest-Phillips, (2008), Brautigam et al., (2008).

If due to high levels of corruption, citizens cannot be certain whether their paid taxes are used to finance public goods and services their willingness to pay suffers and it becomes more likely that they evade their tax liabilities. A taxpayer might consider evading taxes if the cost of bribing a tax auditor is lower than the potential benefit from tax evasion (Popoola, 2009). Joulfiaian, (227-244) through questionnaire data and econometric techniques found significant relationship between tax evasion and bribes.

Many other authors like Alm, J. and B. Torgler, (2011), Alm, (2012). Alm, Martinez-Vazquez, McClellan, (2014), studied relationship between corruption and tax evasion and found that it is as an important determinant for tax evasion. Pirtili, (1999) studied the case of Russia and found corruption as a major tax evasion factor. Lack of transparency and accountability in the use of public funds contributes to public distrust both with respect to the tax system as well as the government. This, in turn, increases the willingness to evade taxes (Kirchler, Muebacher, Kastlunger & Wahl, 2007). Richardson, (2017), analyzed data from 45 countries using econometric methods and found significant relationship between tax evasion extent and education, tax system complexity, fairness of the tax system and tax morale.
Tax evasion is a function of firm level and institutional level factors, Abdixhiku, Krasniqi, Pugh, and Hashi, (2016). They analyzed WB/EBRD database for 12692 firms from 26 countries and found that low trust in government, judicial system, and high public perception on corruption, have a positive impact on tax evasion. And small size firms tend to evade more than larger firms. Kanybek, Nur-Tegin, (2008) analyzed data from 4538 firms from 23 countries and found that together with corruption, high tax rates, low probability of detection, low trust in government, and high compliance costs tend to stimulate tax evasion. Oz Yalama, Gumus, (2013), Feinstein (1991), Kirschler (1997), Feld, Torgler and Dong (2008) used factor analysis and regression techniques and found that major determinants of tax evasion are high tax rates, heavy tax burden, income level, tax audits, tax morale, education and bureaucracy. Other researchers also found dependence of tax evasion on tax-rate (Chiarini, Marzano, Shreider, (2003), Fisman and Wei (2004), Mason and Calvin (1998), etc. Research shows that audit probability has a negative effect on tax evasion if it is higher (Miltone, 2006), Engeida and Baisa (2014).

Norris, E.D., Gradstein, M. Inchauste, G. (2005) have built an interesting model where informality is function of four variables: firm productivity, size of firms, regulatory costs and quality and efficiency of the legal system. Christie, E., Holzner, M. (2006) realized an excellent study and found that increase of audit rate, punishment, higher tax morale, fair tax system and high satisfaction of the public from government services tend to reduce both informality tax evasion; increased tax rate and perception on high social inequality tend to increase tax evasion. He didn’t find any relationship between tax evasion and the complexity of the tax system.

Tax evasion is related to the public perception about corruption of tax administration and government. If government is able to supply good quality services to its citizens, if judicial system performs better, higher trust in government officials and higher probability of detection have both negative effect on tax evasion, Uslaner, Hanousek and Palda, (2004). Unproductive government expenses/investment, audit tax culture, corrupt tax administrators, high tax rates, complex tax systems, amnesties for tax evader have also effects on tax evasion, Awan, A.G., Hannan, A.(2014).

Bismark identifies reduction of tax rates and conferring penalties on tax payers as major factors to reducing tax evasion. Crane and Nourzad, (1986) also say that penalty rates seem to have a negative effect on tax evasion. But, to reduce tax evasion, it is extremely important to combine coercive approach with the so-called balanced approach (Marandu, Mbekomize et.al).

**METHODOLOGY**

Many of researchers as presented above used regression techniques to identify determinants of tax evasion. We used econometric modeling; specifically we use the dummy and multinomial (both ordered and unordered) variable econometric modeling, and the classical econometric model. We used a combination of techniques with the aim of obtaining more consistent results. The dummy variable approach consists in estimating and commenting on the binary k-factorial logistic model:

$$P(Y=1) = \frac{\exp(a+b_1X_1+b_2X_2+...+b_kX_k)}{1+\exp(a+b_1X_1+b_2X_2+...+b_kX_k)}, \quad P(Y=0) = 1-P(Y=1)$$
EV is an ordered multinomial dependent variable with \( J=3 \) classes. We use ordered multinomial logistic model. For each class of \( Y \), except for the base class, we estimate a specific model. In our case we should estimate three separate models. Taking the last class as base, the logistic ordered cumulative models would be:

\[
P_j = P(Y \leq j) = \frac{\exp(a_j^1 - (b_1 X_1 + b_2 X_2 + \ldots + b_k X_k))}{1 + \exp(a_j^1 - (b_1 X_1 + b_2 X_2 + \ldots + b_k X_k))}, \quad j=1, 2, 3 \quad P_4=1
\]

Non-cumulative probability \( p_j \) for each class would be:

\[
p_1=P_1 \quad p_2=P_2-P_1 \quad p_3=P_3-P_2 \quad p_4=1-P_3
\]

The ordinal model takes into consideration a number of dichotomies equal to the number of cut-offs. In our case the multivariate variable EV takes three alternative values, so we have two cut-offs as follows:

\((0,\text{ vs. } (1, \text{ or } 2)), \quad (0, \text{ or } 1) \text{ vs. } (2)\)

For each dichotomy we could estimate a separate dummy variable model. By means of the ordinal model we could calculate odds, and relative odds. Odds could be calculated:

\[
\frac{P(Y \leq j)}{1 - P(Y \leq j)} = \frac{P(Y \leq j)}{P(Y > j)} = \exp(a_j^1 - (b_1 X_1 + \ldots + b_k X_k)), \quad \text{per } j=1, 2, 3
\]

Exponentiated coefficients \( \exp(b_i) \) indicate the change of odds of being in the higher half of the dichotomy, compared to the lower half of the dichotomy, when a specific factor \( X \) is changed by one and the other factors remaining unchanged.

For the ordinal logistic multinomial model these odds are constant for each dichotomy, because in the ordinal model we have the same coefficients for each of the three models or non-reference classes, except for intercepts. This property of the ordinal logistic model we call odds proportionality property. In practice for the model in hand it may hold or may not hold, and so it should be tested or discussed.

For a while we ignore the fact that EV is ordered and we estimate also the unordered multinomial logistic model. Again we estimate one model for each of non-reference categories. If first category is taken as a reference category, the general form, of this model could be:

\[
\log\left(\frac{P_j}{P_1}\right) = \exp(a_j + b_{1j} X_1 + \ldots + b_{kj} X_k), \quad \text{for } j=1, 2, 3
\]

The right side represents logs of odds. Exponentiated coefficients \( \exp(B) \) indicate how many times are increased odds if a specific independent variable \( X \) is increased by one, the other \( X \)'s remaining constant, whereas coefficients themselves indicate the percentage by which change the log of odds if a specific \( X \) is increased by one and other factors remain constant. This model doesn’t assume proportionality of odds. More technical details on all kinds of models we used, the reader can find in literature, Wooldridge (2013); Gujarati, (2003); Heij, De Boer, etc. (2004).

Data used by the research are primary; they come from a random sample of a total of 200 businesses, directly interviewed. All types of businesses were taken into consideration. Independent variables and their scale of measurement are shown in the following table:
Table 1: Independent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Name of the variable</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTAX</td>
<td>Profit Tax (Likert Scale)</td>
<td>Profit Tax Rate is high</td>
</tr>
<tr>
<td>PITAX</td>
<td>Personal Income Tax (Likert Scale)</td>
<td>Personal Income Tax Rate is high</td>
</tr>
<tr>
<td>TURNOUT</td>
<td>Turnout of the Company (Ratio Scale)</td>
<td></td>
</tr>
<tr>
<td>GCON</td>
<td>Trust in Government (Likert Scale)</td>
<td>Trust in Government for the efficiency of collected taxes is low</td>
</tr>
<tr>
<td>PROBCONT</td>
<td>Perception of Probability of Detection (Likert Scale)</td>
<td>Control Strategy is based on Risk</td>
</tr>
<tr>
<td>FINES</td>
<td>Penalties (Likert Scale)</td>
<td>Penalties are heavy</td>
</tr>
<tr>
<td>SOCON</td>
<td>Social Contribution Rate (Likert Scale)</td>
<td>Rate of Social Contribution is reasonable</td>
</tr>
<tr>
<td>HCON</td>
<td>Health Contribution Rate (Likert Scale)</td>
<td>Rate of Health Contribution is reasonable</td>
</tr>
<tr>
<td>CONTR</td>
<td>Controls (Likert Scale)</td>
<td>Controls aim at punishment of companies</td>
</tr>
<tr>
<td>CAPA</td>
<td>Capabilities (Likert Scale)</td>
<td>Capabilities of Tax official are sufficient</td>
</tr>
<tr>
<td>BIZSIT</td>
<td>Business Situation (Likert Scale)</td>
<td>Business are capable of paying their taxes</td>
</tr>
<tr>
<td>LESIST</td>
<td>Legal System (Likert Scale)</td>
<td>Legal Base for VAT (Value Added Tax) is sustainable</td>
</tr>
<tr>
<td>TECONTR</td>
<td>Technical Controls (Likert Scale)</td>
<td>Selected Control techniques don’t hamper business activity</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax (Likert Scale)</td>
<td>Value added Tax is high</td>
</tr>
</tbody>
</table>

Likert Scale we used was: 1=strongly agree, 2=Agree, 3=Average 4=Disagree 5=strongly disagree.

Dependent variables and their scale of measurement are:

PNRR—Percentage of not reported firm’s revenue when calculating taxes due for payment, (Ratio Scale).

EV—Tax Evasion, multinominal three class variable (Ordinal Scale). Classes are 0, 1 and 2 for low, medium and high evasion rates, respectively. Low means EV<20, medium means 20<EV<50, high means EV>50 percent of PNRR.

EVDUM—Dummy for Evasion, a binary variable. EVDUM is set 0 for low evasion and 1 for high evasion. High evasion brings together the former 1 and 2 levels of the three multinominal response EV variable.

RESULTS

First we estimated an ordered multinomial logit model for dependence of probability of evasion. The estimated model is presented in table 2 below:

Table 2: Ordered Logit, Dependent variable: EV Standard errors based on Hessian

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z</th>
<th>p-value</th>
<th>Exp(B)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTAX</td>
<td>0.379242</td>
<td>0.193273</td>
<td>1.9622</td>
<td>0.0497</td>
<td>1.46</td>
<td>**</td>
</tr>
<tr>
<td>PITAX</td>
<td>0.770695</td>
<td>0.275653</td>
<td>2.7959</td>
<td>0.0052</td>
<td>2.16</td>
<td>***</td>
</tr>
<tr>
<td>TURNOUT</td>
<td>-0.0077785</td>
<td>0.0026288</td>
<td>-2.959</td>
<td>0.0031</td>
<td>0.99</td>
<td>***</td>
</tr>
<tr>
<td>BIZSIT</td>
<td>0.525129</td>
<td>0.294517</td>
<td>1.783</td>
<td>0.0746</td>
<td>1.69</td>
<td>*</td>
</tr>
<tr>
<td>LESIST</td>
<td>0.37538</td>
<td>0.204942</td>
<td>1.8316</td>
<td>0.067</td>
<td>1.46</td>
<td>*</td>
</tr>
<tr>
<td>CAPA</td>
<td>0.622076</td>
<td>0.300277</td>
<td>2.0717</td>
<td>0.0383</td>
<td>1.86</td>
<td>**</td>
</tr>
</tbody>
</table>

cut1 6.08814 1.79108 3.3991 0.0007***
cut2 8.97261 1.93563 4.6355 <0.00001***
Number of cases 'correctly predicted' = 68 (66.0%), Likelihood ratio test: Chi-square (6) = 50.1707 [0.0000]

Those who think that PTAX or PITAX is high evade less, while those who think that their rates are low make more evasion, thus with lower tax rates evasion tends to increase. Companies with higher Turnout make less evasion, thus with lower turnout tax evasion tends to decrease. If capabilities of tax officers are greater evasion will be lower, thus we have lower evasion if we try to improve capabilities of tax administration officers. If a company is in better situation to pay its tax obligation, it is more likely to pay, so we have less evasion; thus, part of tax evasion efforts of companies is related to their bad financial situation. This might be a good starting point to think what to do and help companies to improve their economic situation with the view of stimulating them to better conform vis-à-vis their tax obligations. And last but not least, those who think that the legal tax base is sustainable make less evasion, emphasizing so how much important is the sustainability of the legislation system for the reduction of the tax evasion.

Based on the table results, there are six factors that are influencing the rate of tax evasion by companies: PITAX, PTAX, TURNOUT, BIZSIT, LESIST, and CAPA. The other factors’ influence results insignificant. All factors, except for TURNOUT have a positive significant effect on tax evasion rate.

Focusing on the column exp(B) of the table 1, we can say that if PITAX is increased by one unit of Likert scale, this would increase the odds of high rate evasion versus medium or low level evasion by 2.16 times, other variables being constant. Increase of the company TURNOUT by one unit would decrease the odds of high rate evasion versus medium or low level evasion by (0.99^{-1})*100=1%, other variables held constant. Using the two models estimated above we could calculate expected cumulative probability for each cut. Please take note that the multinomial dependent variable Y could take three possible classes: Y=0, Y=1 and Y=2.

Let’s suppose that independent variables in the model take values: PITAX=4, PTAX=3, TURNOUT=50, BIZSIT=3 LESIST=2 CAPA=5 Then cumulative probabilities for the two cuts

\[ P(Y \leq j) \]

for j=0, 1 would be:

\[ P_0 = P(Y \leq 0) = \frac{\exp(6.08814 - (0.37924*3 + 0.77069*4 - 0.007778*50 + 0.52513*3 + 0.37538*2 + 0.622076*5))}{1 + \exp(6.08814 - (0.37924*3 + 0.77069*4 - 0.007778*50 + 0.52513*3 + 0.37538*2 + 0.622076*5))} = 0.04 \]

\[ P_1 = P(Y \leq 1) = \frac{\exp(8.97261 - (0.37924*3 + 0.77069*4 - 0.007778*50 + 0.52513*3 + 0.37538*2 + 0.622076*5))}{1 + \exp(8.97261 - (0.37924*3 + 0.77069*4 - 0.007778*50 + 0.52513*3 + 0.37538*2 + 0.622076*5))} = 0.43 \]

So, if values of the independent variables would be as above, the first probability of 0.04 gives the chance of low tax evasion; the second probability 0.43 denotes the chance of low or medium tax evasion. Chance of medium evasion alone would be (0.43-0.04=0.39). Chance of high evasion would be (1-0.43=0.57).

One supposition of the ordered model is equal distance between classes of the response variable, and proportionality of odds. To be able to assess it in some way, we first estimated an unordered multinomial logit model, for the dependent multinomial variable EV. Results of estimation are presented in table 3:
Table 3: Unordered Multinomial Logit, Dependent variable: EV Standard errors based on Hessian

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z</th>
<th>p-value</th>
<th>Exp(B)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ev=1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Const</td>
<td>-3.46645</td>
<td>1.33408</td>
<td>-2.598</td>
<td>0.0094</td>
<td>0.03</td>
<td>***</td>
</tr>
<tr>
<td>PTAX</td>
<td>0.775803</td>
<td>0.225109</td>
<td>3.4463</td>
<td>0.0006</td>
<td>2.17</td>
<td>***</td>
</tr>
<tr>
<td>PITAX</td>
<td>0.535343</td>
<td>0.301112</td>
<td>1.7779</td>
<td>0.0754</td>
<td>1.71</td>
<td>*</td>
</tr>
<tr>
<td>TURNOUT</td>
<td>-0.0083988</td>
<td>0.0030387</td>
<td>-2.764</td>
<td>0.0057</td>
<td>0.99</td>
<td>***</td>
</tr>
<tr>
<td>LESIST</td>
<td>0.517931</td>
<td>0.263024</td>
<td>1.9691</td>
<td>0.0489</td>
<td>1.68</td>
<td>**</td>
</tr>
<tr>
<td>Ev=2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Const</td>
<td>-5.62878</td>
<td>1.77643</td>
<td>-3.169</td>
<td>0.0015</td>
<td>0</td>
<td>***</td>
</tr>
<tr>
<td>PTAX</td>
<td>0.520586</td>
<td>0.330035</td>
<td>1.5774</td>
<td>0.1147</td>
<td>1.68</td>
<td>**</td>
</tr>
<tr>
<td>PITAX</td>
<td>0.998046</td>
<td>0.397581</td>
<td>2.5103</td>
<td>0.0121</td>
<td>2.71</td>
<td>**</td>
</tr>
<tr>
<td>TURNOUT</td>
<td>-0.0099119</td>
<td>0.0053597</td>
<td>-1.849</td>
<td>0.0644</td>
<td>0.99</td>
<td>*</td>
</tr>
<tr>
<td>LESIST</td>
<td>0.674158</td>
<td>0.354193</td>
<td>1.9034</td>
<td>0.057</td>
<td>1.96</td>
<td>*</td>
</tr>
</tbody>
</table>

Number of cases 'correctly predicted' = 64 (62.1%). Likelihood ratio test: Chi-square (8) = 36.4447 [0.0000]

We can see that this model gives us four significant variables (PTAX, PITAX, TURNOUT, LESIST); except for PTAX for EV class 2. The most relevant determinants seem to be PITAX, PTAX and LESIST. Next, we use the binary response variable EVDUM to analyze dependence of probability of evasion from various factors, in similarity with the exercise we performed above. The estimated model is presented in Table 4.

Table 4: Binary Logit, Dependent variable: EVDUM Standard errors based on Hessian

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z</th>
<th>p-value</th>
<th>Exp(B)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const</td>
<td>-3.39922</td>
<td>1.62951</td>
<td>-2.086</td>
<td>0.03697</td>
<td>2.06</td>
<td>**</td>
</tr>
<tr>
<td>PTAX</td>
<td>0.722541</td>
<td>0.221315</td>
<td>3.2648</td>
<td>0.0011</td>
<td>0.58</td>
<td>**</td>
</tr>
<tr>
<td>PITAX</td>
<td>0.647593</td>
<td>0.298704</td>
<td>2.168</td>
<td>0.03016</td>
<td>1.91</td>
<td>**</td>
</tr>
<tr>
<td>TURNOUT</td>
<td>-0.0083792</td>
<td>0.0030663</td>
<td>-2.7327</td>
<td>0.00628</td>
<td>0.99</td>
<td>***</td>
</tr>
<tr>
<td>HCON</td>
<td>-0.549886</td>
<td>0.258189</td>
<td>-2.1298</td>
<td>0.03319</td>
<td>0.58</td>
<td>**</td>
</tr>
<tr>
<td>CAPA</td>
<td>0.764362</td>
<td>0.334552</td>
<td>2.2847</td>
<td>0.02233</td>
<td>2.15</td>
<td>**</td>
</tr>
</tbody>
</table>

Based on this model, number of cases 'correctly predicted' = 81 (79.4%), f (beta'x) at mean of independent vars = 0.502, Likelihood ratio test: Chi-square (5) = 42.0896 [0.0000], McFadden R-squared=0.298. Again, PTAX, PITAX are among the most relevant factors for tax evasion. Health contribution rate (HCON) and tax officers' capabilities add to the list of significant factors. The following classification table certifies the quality of the model, which assures almost 80% correct classification of items; this result could be termed as good.
Table 5: Classification table for the binary logit model

<table>
<thead>
<tr>
<th>Prediction Evaluation (success cutoff C = 0.5)</th>
<th>Estimated Equation</th>
<th>Constant Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dep=0</td>
<td>Dep=1</td>
</tr>
<tr>
<td>P(Dep=1)&lt;=C</td>
<td>42</td>
<td>10</td>
</tr>
<tr>
<td>P(Dep=1)&gt;C</td>
<td>11</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>49</td>
</tr>
<tr>
<td>Correct</td>
<td>42</td>
<td>39</td>
</tr>
<tr>
<td>% Correct</td>
<td>79.25</td>
<td>79.59</td>
</tr>
<tr>
<td>% Incorrect</td>
<td>20.75</td>
<td>20.41</td>
</tr>
</tbody>
</table>

The quality of the model is certified otherwise by Andrews Test Statistic, (Table 6); model is good.

Table 6: Andrews and Hosmer-Lemeshow Goodness-of-Fit Tests for the binary logit model

<table>
<thead>
<tr>
<th>Grouping based upon predicted risk (randomize ties)</th>
<th>Quantile of Risk</th>
<th>Dep=0</th>
<th>Dep=1</th>
<th>Total</th>
<th>H-L</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Actual</td>
<td>Expect</td>
<td>Actual</td>
</tr>
<tr>
<td>1</td>
<td>0.0093</td>
<td>0.0803</td>
<td>9</td>
<td>9.50167</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0.0859</td>
<td>0.1507</td>
<td>8</td>
<td>8.83964</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>0.1579</td>
<td>0.2164</td>
<td>9</td>
<td>8.27727</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>0.2219</td>
<td>0.3490</td>
<td>9</td>
<td>7.27122</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>0.3753</td>
<td>0.4857</td>
<td>6</td>
<td>6.42273</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>0.4857</td>
<td>0.6207</td>
<td>4</td>
<td>4.22955</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>0.6207</td>
<td>0.7393</td>
<td>5</td>
<td>3.54812</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>0.7439</td>
<td>0.7841</td>
<td>0</td>
<td>2.39581</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>0.7841</td>
<td>0.8706</td>
<td>2</td>
<td>1.54474</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>0.8741</td>
<td>0.9640</td>
<td>1</td>
<td>0.97373</td>
<td>10</td>
</tr>
</tbody>
</table>

H-L Statistic: 7.4146  Prob[Chi-Sq(8 df)]: 0.4926  Andrews Statistic: 17.3810  Prob[Chi-Sq(10 df)]: 0.0663*

Last, we estimated a classical model for dependent PNRR, using heteroskedasticity-correction procedure (See table 7).

Table 7: Heteroskedasticity-corrected, Dependent variable PNRR

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
<th>Estimated Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const</td>
<td>-0.246752</td>
<td>0.0863219</td>
<td>-2.8585</td>
<td>0.00521***</td>
</tr>
<tr>
<td>PTAX</td>
<td>0.0320918</td>
<td>0.0087647</td>
<td>3.6599</td>
<td>0.00041***</td>
</tr>
<tr>
<td>PITAX</td>
<td>0.070202</td>
<td>0.018221</td>
<td>3.8560</td>
<td>0.00021***</td>
</tr>
<tr>
<td>TURNOUT</td>
<td>-0.000060343</td>
<td>0.000122666</td>
<td>-4.9162</td>
<td>&lt;0.00001***</td>
</tr>
<tr>
<td>CAPA</td>
<td>0.0583267</td>
<td>0.0173503</td>
<td>3.3617</td>
<td>0.00111***</td>
</tr>
<tr>
<td>BIZSIT</td>
<td>0.0407215</td>
<td>0.0132827</td>
<td>3.0658</td>
<td>0.00281***</td>
</tr>
</tbody>
</table>

The model reaffirms that PITAX, PTAX, TURNOUT, CAPA and BIZSIT are among the most relevant determinants of tax evasion in Albania. For this model, tests for multicollinearity and normality of residuals have been made and they result negative.
DISCUSSION

As it was expected by hypothesis, the research concludes that Personal Income Tax Rate (PITAX) and Profit Tax Rate (PTAX) have a strong positive influence on the probability of evasive conduct by Albanian firms. Maybe these two variables make the pivotal determinants of tax evasion extend of Albanian companies. For one Likert unit increase in the PITAX rate the average chances of a company to make evasion are almost 2.2 times greater than chances of not making evasion. For one Likert unit increase in the PTAX rate the average chances of a company to make evasion are almost 1.5 greater than chances of not making evasion. So it is more or less for the business Situation, and Sustainability of the Fiscal legislation. It seems also logically c and in full compliance with outside Albania research that bigger companies tend coherent o make less evasion than smaller ones. And the other results is that if Tax Administration Officers have sufficient capabilities to perform their tasks then tax evasion is more likely to go down; this as well is quite logical. The other variable having a significant impact on the probability of tax evasion is Health Contribution Rate (HCON). The model says that the more reasonable is perceived HCON, the more negative effect has this variable on the probability of tax evasion; in other words they who think this HCON is reasonable are more likely to make evasion than they who think HCON is not reasonable. This result seems not logical, and may have as explanation the interrelation between two or some of explanatory variables; may be this category of companies make evasion not because of HCON per se, but because of other reasons (factors) that are in correlation with HCON.

CONCLUSIONS

We have to point out that all models we estimated almost converge in identifying the same set of tax evasion determinants. However, a number of hypothesized variables didn’t result significant as having an effect on tax evasion probability. So it was in the case of GCON (Trust in Government), FINES (Penalties), PROBCONTR (Probability of Controls), (CONTRS) Controls, TECONTR (Technical Controls), Value Added Tax (VAT) and Social Contribution Rate (SOCON). So people rate Trust in Government for the efficiency of collected taxes is neither high nor low and we don’t have a clear result on the effect of this variable. To go further, companies don’t think tax penalties are heavy; this might be so because the survey was made before year 2014, a year of drastic changes in fiscal legislation, featured by heavy penalties for non-compliance with tax obligations. PROBCONTR results insignificant, meaning that controls are not really probabilistic. CONTR variable is significant; maybe people don’t merely aim at punishing companies. CTECONTR also results insignificant, may be companies don’t have a clear stand whether technical controls made by tax administration hamper or do not hamper business activity of companies. VAT variable resulted also insignificant, may be the actual level of VAT rate of 20%. Internationally we can find cases with higher as well with lower VAT rates. As a summary conclusion, five are major determinants of the tax evasion in Albania: Personal Income Tax Rate, Profit Tax Rate, business Situation, and Sustainability of the Fiscal legislation, Turnout of the Company and Capabilities of Tax administration. And this is fully compatible with worldwide research results. We recommend government to reduce income and profit tax rates, to make more sustainable fiscal legislation and, design and implement programs for continuing training of tax administration staff and or recruit more educated staff in the office.
SCOPE FOR FURTHER RESEARCH

Though most of results of our research are significant and fully compliant with wider research, further research must be considered. Larger sample of companies could give clearer and sounder results, in particular for some of the insignificant ones. This could also improve the consistency of the significant results. It would be also useful testing other variables, not included in this study, such as size of firms, perception about corruption, complexity of the tax system, etc., as suggested also by literature. It is also advisable testing new measures or improvement made in the legislation by the Albanian government after year 2014, to assess the effect of higher penalties and the complex tax system, introduced by the new government after year 2014.

REFERENCES


