ENTREPRENEURSHIP AND TAX COMPLIANCE GAMES:
EVIDENCE REGARDING ENTERPRISE BEHAVIORAL DYNAMICS IN GREECE

Vasileios Vlachos, Aristidis Bitzenis
University of Macedonia, Greece
Panagiotis Kontakos, University of Central Lancashire, Cyprus

ABSTRACT

This paper is part of the research project titled "Shadow economy and corruption in Greece: Size, causes and impact." Drawing from a discussion about the alternative methods adopted by researches based on tax compliance games it introduces a multifaceted approach and research methodology to tax compliance and presents the preliminary results of our questionnaire survey aiming to identify the tax behavioural dynamics of Greek SMEs. The preliminary qualitative data of our interviews indicate that the loss of income experienced during the crisis particularly by Greek micro and small businesses has led to an increase in the number of tax evasion transactions. However, and as might be predicted by the classical economic model of tax evasion, the average amount of money involved in all these cases has declined, mainly as a result of the increased frequency of tax audits and higher fines imposed. Among the policy measures proposed by the authors is the introduction of a significantly lower and thus much more internationally competitive corporate taxation rate. The ultimate aim is to develop a policy mixture that would significantly enhance tax morale and tax compliance and thus, affect positively tax revenues and at the same time improve the country's attractiveness for inward foreign direct investment.

I. INTRODUCTION

The growing body of literature on tax compliance indicates that economic, social and psychological variables have to be considered to understand the factors that foster it. The researchers performing tax compliance games adopt a behavioral approach to game theory. They test out the implications about tax compliance through (usually agent-based) models based on elements of game theory and data from group experiments. The tax compliance games reviewed here concerns such models, which are either tested by data from group experiments or by simulations.

The methods of tax compliance games indicate that the studies based on the particular method cannot explore all the determinants of tax compliance concurrently (Vlachos et al., forthcoming). Nevertheless, the findings indicate that priming and a friendlier tax service foster tax compliance, while uncertainty and inequity foster tax noncompliance. Their findings also give evidence for the “bomb crater effect” and indicate that:

- income levels are positively related to tax compliance,
- tax rate levels have an inverse relationship with tax compliance,
- monetary rewards and higher penalties do not reinforce compliance.

Moreover, the fact that two papers (Andrei et al., 2014; Hashimzade, et al., 2014) indicate through their simulations that networks play a major role in tax compliance, at the same time that Bloomquist (2010) finds no neighborhood effects, indicates that findings are not only case sensitive to the population from which data are taken but also on the theoretical assumptions.
The direction that tax compliance games should follow has been insinuated in another paper by the authors (Vlachos et al., forthcoming), where more all-encompassing models explore the properties of the “slippery slope framework”. Accordingly, Prinz et al. (2014) attempt a formalization of the coerciveness and persuasiveness features of the “slippery slope framework” so that experimental studies of the phenomenon may emerge. While detection and punishment are important, the findings of the studies discussed in the previous section are in consistence with the suggestion of Alm and Torgler (2011) about the abilities of the “service” and “trust” paradigms to foster tax compliance. Beyond coerciveness, persuasiveness is also important, as for example, recent studies (Hallsworth, et al., 2014) indicate that standard tax payment reminder letters seem to considerably enhance tax compliance.

Overall, attention has to be brought to the group of individuals on which the experiment takes place. Interestingly enough, all studies discussed in the previous section except from Bloomquist (2010), are based on experimental data from student groups.

The paper is organized as follows. The next section introduces our comprehensive approach and research methodology, whereas the third section provides preliminary evidence from our questionnaire survey performed with the participation of Greek SME representatives. The final section makes some conclusions on the findings of the studies discussed and the preliminary evidence from the observed tax compliance behavioral patterns.

II. OUR RESEARCH AIM AND METHODOLOGY

The purpose of our research project is to research and measure all the various aspects of shadow economy in Greece, including corruption, tax evasion, tax avoidance, social contribution avoidance, undeclared and illegal work, self-consumption, tax morale level, tax compliance level, illegal and criminal acts (black or underground economy, money-laundering, human and drug trafficking, briberies). It covers all economic agents in Greece, such as citizens and corporations (e.g. public servants and private individuals, companies and all professional categories, etc.) The research is also performed at sector levels. It does not aim to the precise percentage regarding the measurement of Greek shadow economy but aims to the qualitative analysis of questionnaire results and the comprehension of the problem. The implementation of our interviews, scientific games and economic experiments (tax compliance games) involves at least 2,000 individuals and business owners (in majority small businesses). The project aims to achieve numerous objectives, among which the development of a relevant theoretical background, and perform cross-country comparisons at regional level, but also with country groups with advanced taxation systems.

Emphasis is given to the qualitative analysis of questionnaire results which it aspires to reveal the opinions of households, enterprises and institutional entities and public services. It does not aim to the precise percentage regarding the measurement of Greek shadow economy but aims to the qualitative analysis and the comprehension of the problem so that we can reach essential and thorough proposals to the government in order to contain the problem.

Particularly, the implementation of our scientific games / economic experiments (tax compliance games) will involve at least 2,000 individuals and business owners (in majority small businesses, as explained in the next section), which will be identified via random or other statistically sound sampling methodologies. At least 20 different occupational categories and income groups will participate in the execution of the experiment, in order to determine their behavioral aspects related to tax compliance and attitude arising from the impact of the economic crisis, high unemployment, undeclared work, informal economy, corruption, tax implications, etc. The experiment is performed within an environment where the decisions or actions of participants are based on monetary incentives (and not vouchers) in which participants are exposed to frameworks resembling real-life taxpaying situations. The real cash earnings / incomes cannot be observed by other participants or the experiment coordinator or other researchers (no impacts from the breach of rules will apply). Also, the participants in the experiment will not be occupied by a sense of injustice in taxation of their income during the game, whereas various levels of tax rates will be involved during the game in order to identify their respective levels of tax evasion incentives.

The final selection of the exact methodology for the implementation of the tax compliance games is based on the literature review aforementioned in the current paper. Currently, the phase of the Project related to the implementation of a pilot survey involving 500 participants has been concluded and the preliminary evidence is discussed in the current paper.

The innovativeness and the originality of our research area and of the wider Project are associated with the facts that has never before in Greece been performed a research to such an extent, and also that this study is situated at the peak of the current public and academic debate. Until now, the estimated size of shadow economy in Greece results
only through indirect approaches, methods that are easily applicable but include a great possibility of fault in the accurate measurement of the shadow economy, and are also unable to determine the factors that cause people to shift toward shadow economy. These indirect approaches to measure shadow economy are the widespread calculations of black economy that are based on secondary macroeconomic data. The research methodology and the Project by considering the weaknesses of a direct approach of measuring the Greek shadow economy (there is a cost in resources and time of managing a large number of questionnaires), however, aspire to be the first that will calculate the shadow economy in Greece by using and analyzing primary data.

Finally, various proposals and structural polices to the Greek Government are expected to be addressed at the finalization of the research, for the effective confrontation of black / shadow economy and tax evasion in Greece.

More specifically, the methodology we have followed is described in the next paragraphs of the section.

a. Experiments

Previously it was commonly accepted that economic science could not rely on experiments as a tool for generating scientifically sound conclusions. This concept has now reversed. The experiment is used during the last 30 years in a wide scale, also by the economic science. Several studies have conducted laboratory experiments to estimate the extent of tax compliance and the degree of responsiveness in key economic variables. However, only few of them have advanced to the examination of other non-economic factors that affect the final decision of a person on whether or not to tax evade and at which extent. The aim of this study is exactly through the experimental procedure to identify the social, psychological, political and cultural factors that influence the decision of individuals to comply with their tax obligations and the influencing of each factor in their final choices. One of the main drawbacks of this method is that the high cost does not leave room for wide participation, which leads us to select and check a few parameters, which are considered more important in the final selection of the taxpayer.

b. Objectives of the experiment

For the successful performance of the experiment should be, firstly, identified the targets, the criteria for selecting the individuals, the way of presentation and the rules of the game. Equally important parameter is the timing and whether it is static or dynamic:

The main objective of the experiment is to see whether the concepts of reward, ethical barriers and reciprocity positively influence the tax behavior of individuals.

Our experiment is a synthesis of previous experiments adapted to the Greek reality. We used information mainly from laboratory experiments of Alm et al. (1992), Torgler (2003) and Bosco and Mittone (1997). The common denominator of all these studies is their emphasis on the social and psychological factors affecting tax compliance and the introduction of variables involving ethical dilemmas of the taxpayer and that they render special role in the value of reciprocity.

c. Rules and Procedure of the Game

We have first attempted that the game variables approximate as much as possible the values that taxpayers are facing in reality. In particular, the tax rate should neither be very high so that participants do not feel possessed by injustice in taxation of income, nor too low, thus resulting in the lack of any incentive for tax evasion. This study proposes a tax rate equal to 30%.

Indicatively are mentioned the variables that can be changed if deemed that they do not fully reflect the Greek reality, such as: the tax rate (t = 0.30), the probability of a tax audit (p = 0.10) and the tax fine or penalty (equal to two times the undeclared income).

For the experiment to be more realistic it is suggested that the allocated income and profit to be gained by the participants in the experiment is in the form of real money and not vouchers. Also, it is suggested the involvement of students in the experiment. This could potentially lead to bias in the sample. The arguments supporting this view are:

i) Due to their young age, students have little or no experience from production and preparation of tax returns;

ii) The levels of education of students is higher than average.

Also some groups will be exposed in ethical dilemmas in order to determine whether the moral constraints affecting their tax consciousness. The group of students might be a good sample because the teachers will check
their tax behaviour, exerting a form of authority over students - even limited, which can be compared with the power of the tax authorities.

Another challenge is whether all the rules of the game will be clearly explained or only the most important. Taxpayers are known as not being fully aware of the tax laws, especially when these are highly complex. Our view is that a simple and clear tax legislative framework can positively affect the tax consciousness of people. Because our aim through the conduct of the experiment is to understand whether and how the person is affected by moral constraints in the final decision to evade taxes or to tax comply, in order to arrive at clear conclusions we have preferred to conduct the game with the introduction of a small number of clear rules. Further, the influence of the complexity of the legislation in the tax moral citizens will be examined through the questionnaire survey.

Those taking part in the experiment are randomly divided in five groups. At the start of the game players receive an amount of money as compensation for their participation in the game (e.g. 60 Euro), out of which they will be requested to reimburse 30% in the form of a tax (i.e. 18 Euro). Players choose the amount of tax that will pay, knowing that their obligation is to pay 30% (or 18 Euro). The payment is done in such a way as to ensure their anonymity (except the players in Group E). Checks are carried out by lottery in the presence of all players. The results of the tests are published unless the checks are carried out in group E. Clear instructions are provided to the players regarding the tax payment, the tax audits, the payment of fine or penalty in the case of a tax audit, and finally the payment of the remaining balance in the form of remuneration for their participation in the research project. Players are notified in writing shortly before carrying out the game for the conduct and the rules.

III. PRELIMINARY RESULTS FROM OUR QUESTIONNAIRE SURVEY

The preliminary evidence presented in this section is based on our questionnaire survey conducted during the period July 1st to December 31st, 2014, with the participation of micro and small business owners (i.e. owners of SMEs). According to the new European SME definition, which entered into force on 1 January 2005, “The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million euro.” (Extract of Article 2 of the Annex of Recommendation 2003/361/EC). Further, according to Günter Verheugen, Member of the European Commission, Responsible for Enterprise and Industry, “Micro, small and medium-sized enterprises (SMEs) are the engine of the European economy and are an essential source of jobs, create entrepreneurial spirit and innovation in the EU and are thus crucial for fostering competitiveness and employment”.

The Greek SME sector differs considerably in its structure from the EU as a whole. The SME sector is more important in Greece (accounting for 99.9% in the total number of companies) than in the average EU country, and Greek SMEs tend to be smaller than their EU peers; specifically, within the SME sector micro enterprises are more heavily represented and in 2011 accounted for 96.6% of enterprises, 56.6% of the jobs and 33.9% of the value-added, against an EU average of 92.2%, 29.7% and 21.2 % respectively (European Commission, 2012).

Greek SMEs tend to specialize in trade more than their EU peers (38% against 30 %), and less in services (40% against 45 %). In general terms, the combined share of Greek SMEs specializing in high-tech manufacturing and knowledge-intensive services, which are likely to be more productive, is only 18% in Greece, while these SMEs account for almost a third of the EU total. Based on the available data up until the end of 2012, the Greek SME sector is estimated to have been hit particularly hard by the crisis in terms of the number of enterprises, estimated to be 90 thousand units between 2008 and 2011, which is not only inferior to 2008, the last year before the crisis, but also to the year of 2005. The picture is less depressing in terms of employment, which has also decreased drastically (in absolute numbers, by an estimated 200,000 between 2008 and 2011). In the light of recent trends after 2012, the respective figures are expected to have further deteriorated significantly.

To be noticed, that in April 2011, new, simplified procedures for setting up new companies within one day were introduced by the Ministry of Development, Competitiveness and Shipping in Greece. In some cases, however, as was revealed by our respondents, the poor quality of record-keeping by the tax authorities and the social security funds has led to the experiencing of significant delays in the period required for the establishment of new entrepreneurship. The required period is higher for entrepreneurs without a clear tax or social security status.

The preliminary qualitative data of our interviews and pilot tests conducted under the Thales Research Programme indicate that because Greece's GDP has fallen due to the recession in the period 2008-2013 by approximately 25% cumulative, the loss of income experienced particularly by Greek micro and small businesses has led to an increase in the number of actions of corruption, contribution evasion, undeclared employment, tax
evasion, and unrecorded transactions in general. However, and as might be expected, the average amount of money involved in corruption in all these cases has decreased. Therefore, for example, although the Corruption Perception Index (CPI) ranks Greece among the main Corruption Perceptions Index improvers in 2013, the deterioration of disposable income and living standards, and the perception that the financial scandals and corruption by highly ranked Government officials has led to the debt crisis, and the rigid fiscal measures undertaken in turn, all these have made the authors of this paper, based on the first results of our research, to disagree with the conclusions of the CPI. Instead we can argue that the level of tax morale in Greece during the crisis has worsened due to the lower living standards and the severe Greek sovereign debt crisis, and Greek citizens try to replace the loss of income by tax avoidance transactions, contribution evasion by employers and employees for Social Insurance and other-Auxiliary Funds for Employees, and concealment of income.

In view of the political determinants of tax compliance behaviour of SME in Greece it is found in accordance with other researchers (Batrancea et al., 2012) to have been affected by the complexity of tax law, the complexity of tax system, and the inefficiencies of fiscal policy. In contrast with others researchers (Beck et al., 1991; Snow and Warren, 2005), who support that the uncertainty of tax law due to multiple changes generates itself a lack of certainty in the filing behavior and punishment aversion, we observe that Greek micro businesses have become less risk averse and more motivated toward “game-playing” to tax avoidance and tax evasion. Further, an increasing number of taxpayers hire tax professionals or accountants to give expert advice on the correct filling of their tax returns (mostly by taxpayers who are inclined to meet their obligations due to strong moral or ethical beliefs), whereas other taxpayers increasingly involved on devising ways to tax evade in order to exploit the latest loopholes in the tax system.

The social psychological determinants of tax compliance of the small business owners that participated in the interviews, underlined that the majority of taxpayers mention that fairness significantly supports a high level of compliance with the tax rate levels perceived to be fair lying lower than those indicated by other studies; e.g. some studies show that a 50% tax rate is the maximum level taxpayers accept (Lévy-Garboua et al., 2006), while a 30% tax rate seems somewhat just (Porschke and Witte, 2002).

In accordance with Allingham and Sandmo (1972) and Srinivasan (1973) models of tax evasion, the increased probability of being audited by the tax authorities has increased overall the attitude of Greek small businesses to pay the tax according to their real income, instead of selecting a strategy of declaring a smaller amount. The results were differentiated according to the size of the business, with the latter case of declaring less income being more frequent when the real incomes were lower, thus indicating a negative relationship between income and compliance in accordance with others (Baldry, 1987; Anderhub et al., 2001). Moreover, friendly treatment of taxpayers by the tax office in auditing processes increases tax compliance, as also supported by Feld and Frey (2007). In line with Alm et al. (1992) it is found that that compliance level lessens when the tax rate is boosted from 10%, 30% to 50%. The level of compliance is generally higher under a progressive than under a proportionate tax regime (in accordance with Heinemann and Kocher, 2010). As such, the applicability of the classical economic model of tax evasion and the significance of the four different determinants which shape taxpayers’ behavior (audit probability, fines, tax rates, and income) seems to be confirmed in the Greek SME case.

In addition, regarding the exact level of the tax rate, it is confirmed from the pilot interviews the inappropriateness of the increase in the corporate tax rate from 20% to a flat rate 26%, which is applicable irrespective of the level of profitability; in turn, this increase has motivated many companies to declare losses in order to avoid to be taxed, and also lowering their declared revenues, thus negatively impacting GDP growth.

A tax rate at a level approximate to 10%, as in the neighboring countries of Greece (i.e. Bulgaria, Romania, Serbia, Montenegro and Cyprus which all have applied a 10% tax rate), would enhance tax morale and tax compliance, decrease propensity to tax evade, and finally would positively affect tax revenues.

The level of Value Added Tax (VAT) seems also to act as a motivation to the firms that were involved in our questionnaire survey for engineering VAT avoidance schemes. VAT fraud in Greece through schemes in the form of “carousel” has been very frequent in practice, as also in other European countries (e.g. Belgium). This allows the fraudster SMEs to charge VAT on the sale of goods, and then instead of paying this over to the government's collection authority, to simply abscond, by retaining the VAT. "Carousel", specifically, refers to a complex type of fraud in which VAT and goods are passed around between companies and jurisdictions. Respectively, the undertaking of reforms which will seek to implement in Greece the model similar to the one followed in recent years by the tax authorities of Belgium (Special tax inspectorate), would be advisable. These reforms might deploy a Hybrid Fraud Detection System, which is based on special accounting SNA, where all transactions between businesses are registered and monitored electronically. The accounting has the "capacity" to identify transactions
which present a high risk for creating carousel-type fraud circuit. In fact the existence of the system can act as a deterrence mechanism for those who seek to steal VAT as they know that the probability to be identified quickly is very significant.

Regarding the impact of corruption and specifically bribing at a sector level, we find that bribing in procurement contracts ranges between to 2% to 22%, depending on the sector that was tested. A level of 2% to 2.5% is estimated or foreseen for general contracts of every kind of goods and services, whereas an average of 3% to 4% was estimated for companies involved in armament contracts and weapons supplies. The highest rate with an average of 19% to 22% can be expected when contracts for medical and pharmaceutical supplies for public hospitals and other institutions are involved. Further, as it has been discussed in other papers by the authors, it is estimated that a significant illegal activity takes place in fuel trading, where the surveillance mechanism of this activity on the part of state authorities remains inadequate and important measures remain to be undertaken in this direction (Bitzenis and Kontakos, 2014).

According to Schneider, a member of our research team in Thales programme, the shadow economic activity in Greece is forecasted to reach 22.5% of GDP in 2015. The two-thirds concern legitimate goods and services amid violation of the rules, albeit with beneficial effects on society, and should be incorporated in the official GDP. The state should provide incentives to those who operate in the shadow economy to be transferred to the formal sector. Tax consciousness remains low due to the lack of taxation justice and the little or no trust to the government. Tax evasion remains a “national sport” and corruption is very high. A successful fight against corruption would be an effective tool against fraud. Tax justice should be improved. The taxation of deposits originated from activities in the shadow economy which have been placed in Switzerland can provide a buffer of about 3 billion euro. The black economy in Greece has fallen quite in recent years, however, remains among the highest in Europe. The first years of the crisis in Greece, the activities in the informal sector were increased due to high unemployment and the wider impact of the recession. In turn, however, the impact of crisis has affected and exhausted even the activities taking place in the shadow of the economy.

In particular, according to Schneider, the following are suggested:

a. Policy measures against gray economy: A policy measure is the return of VAT on labor-intensive services (Luxembourg model) in order to strengthen the incentive to provide these services in the formal economy; Household investments (e.g. in Germany 1,200 euro per household per year) should be deducted from tax; The penalties for the illegal economy should be applicable only if they are related to organized crime e.g. prostitution.

b. Policy measures against tax evasion: There must be a tax amnesty, and after a certain level that will be specified severe penalties should be applied for tax evasion; Incentives should be provided to tax collectors associated with a system of remuneration; Potential fraudsters could get a letter from the tax office on the grounds that there is evidence of tax evasion by offering to pay 20%, without any further discomfort; Every Greek home should be able to deduct a certain amount of paid value added taxes, e.g. 500 euro for a turnover of receipts of 7,000 euro that show the value added taxes; Small businesses or self-employed should pay a fixed amount of taxes 1,000 (5,000) euro on the turnover of 15,000 to 30,000 (31,000 to 50,000) euro and the standard taxation rate for a turnover 51,000 euro or more. By the tax authorities it is checked only the turnover of the respective company.

c. Policy measures against corruption: Enterprises which are involved in bribing and/or corrupting activities should be banned from participation in public contracts for a period of 3-5 years; Whistle blowing practices should be supported. A whistleblower is a person who exposes any kind of information or activity that is deemed illegal, dishonest, or not correct within an organization that is either private or public. Moreover, a protection system should be developed for these people; Civil servants and politicians should immediately lose privileges, position, and their pensions.

Finally, we find that the strict control mechanisms and electronic governance (e-governance) have contributed to the reduction of corruption associated with tax evasion and social security contribution evasion, due to the risks and penalties associated with the higher possibilities of detection and the increased number of tax audits and inspections carried out. Also, it has decreased the probabilities of concealing tax income. As a result, overall, and in contrast to the reduction of the shadow economy as a percentage of GDP from 28% before the crisis at 24% in 2013, we estimate that at the end of our full research analysis, probably, this percentage will have exceeded 30% in 2013/2014.
IV. CONCLUSION

Preliminary evidence is presented from the pilot questionnaire survey to identify tax compliance behavioral patterns in the case of Greek SMEs which was performed by the authors. Respectively, the political, social psychological and economic determinants of their tax compliance were analyzed, by following a multifaceted approach. We observe that particularly Greek micro and small businesses have become less risk averse and more motivated toward “game-playing” to tax avoidance and tax evasion, which can be explained as a matter of their attempt to survive in the current crisis conditions. According to these first results, there is evidence that the level of shadow economy in Greece has increased in the period of economic crisis, and particularly during 2010-2013, in contrast with the indications of other relevant research and international published indicators.

The level of Value Added Tax seems also to act as a motivation to the firms that were involved in our survey for engineering VAT avoidance schemes. Respectively, the undertaking of reforms which will seek to implement in Greece the model similar to the one followed in recent years by the tax authorities of Belgium (Special tax inspectorate), would be advisable. Regarding the impact of corruption and specifically bribing at a sector level, we find that bribing in procurement contracts ranges between to 2% to 22%, and is the highest when contracts for medical and pharmaceutical supplies for public hospitals and other institutions are involved. Finally, policy measures against gray economy, tax evasion and corruption were specifically outlined, such as tax amnesties, the taxation of deposits originated from informal activities in their source by the banks where have been placed abroad, the enhancement of whistle blowing practices, and properly incentivizing and motivating households and tax collectors against tax evasion.

Among the main policy measures proposed by the authors is the introduction of a corporate taxation rate at a level approximate to 10% (from a flat level of 26% currently), as in the neighboring countries of Greece (i.e. Bulgaria, Romania, Serbia, Montenegro and Cyprus which all have applied a 10% tax rate); this would significantly enhance tax morale and tax compliance, affecting positively tax revenues and also the country’s attractiveness for inward foreign direct investment.

ENDNOTES

1. The current paper is presented under the auspices of the THALES Research Programme. THALES Programme has been co-financed by the European Union (European Social Fund - ESF) and Greek national funds through the Operational Program “Education and Lifelong Learning” of the National Strategic Reference Framework (NSRF).

REFERENCES


