

**SHADOW ECONOMIC ACTIVITIES IN ITALY, SPAIN AND SWITZERLAND:  
A REVIEW OF THE LITERATURE**



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**ABSTRACT<sup>1</sup>**

This study surveys the literature on size of the shadow economy, its determinants, informal labour, tax evasion, the relationship between the shadow and the formal economy, and the determinants of corruption and its relation with the shadow economy in a selected sample of three countries. Empirical evidence retrieved from other contemporary studies is utilized for this purpose, based on an extended literature review performed by the authors. The methodology used is that of descriptive analysis and comparative profiles for each of the three countries are developed. Our ultimate aim is to use the three countries as benchmarks and input for future work; specifically, for the performance of a qualitative analysis and the comprehension of tax evasion in the case of Greece, so that we can reach essential and thorough proposals to the Greek government in order to contain the problem.

**1. INTRODUCTION**

The aim of this study is to survey the literature on size of the shadow economy, its determinants, informal labour, tax evasion, the relationship between the shadow and the formal economy, and the determinants of corruption and its relation with the shadow economy.

The report is formatted as follows. The next section gives an overview of some stylized facts concerning the shadow economy, i.e. its synthesis and determinants, the methods to quantify it, its impact on the official economy and its relation with corruption. The same section also gives information about the studies reviewed. Sections 3 to 5 refer to the countries of interest. Finally, section 6 elaborates on the importance of the work and suggests applications and extensions of our project.

**2. STYLIZED FACTS AND SCOPE OF THE STUDY**

The commonly found macro estimations of the shadow economy in the international literature is based on cross-country panel estimates of the multiple indicators multiple causes (MIMIC) approach that succeeded the currency demand approach (see the work of Schneider). In fact, researchers employing the MIMIC approach use the currency demand approach to calibrate the MIMIC estimates. Therefore, it can be said that the MIMIC approach requires the estimates of a currency demand model. The commonly explored determinants of the MIMIC approach are the tax burden (+), the self-employment quota (+), the unemployment rate (+), regulations (+), the quality of formal institutions measured (-) and the level of tax morale (-).<sup>1</sup>

With regard to the countries of interest to this report, the average estimates for the period 1999-2007 are 27 percent of GDP for Italy, 22.5 percent of GDP for Spain and 8.5 percent of GDP for Switzerland (Schneider et al., 2010).

The studies reviewed in this report focus on each of the economies described in the previous paragraph (and the title of this report). Although the aim is to review studies that generate results from data concerning single countries,

studies which focus on a small set of countries for comparative purposes (e.g. 2 to 4 countries) and generate for that reason their estimations from cross-country panel data sets, are also reviewed. Reference is also made to studies which generate estimations from large (in terms of number of countries) cross-country panel data sets, but only about their special focus (if there is any) on a country of interest to this report (every such reference is stated clearly in the text in order to avoid confusions). The aim is to avoid references to generalized estimates and conclusions that may be the outcome of analyses of data which concern a large number of countries. Drawing generalized conclusions from cross-cultural comparisons is not ideal (despite its practicality due to issues concerning data availability) because institutional and cultural frameworks that typify specific countries influences the size of the shadow economy and the significance of its determinants.

Moreover, the studies included in this report either generate estimates on the shadow economy and discuss relevant issues that concern shadow economic activity from the year 2000 onwards, or have been heavily cited (in the case that their findings and discussion concerns a period before the year 2000).

The shadow economy and other terms associated to it (i.e. informal employment, corruption, etc.) in all sections before section 6, refer to the country which is in the title of the section. The reason for doing this is for not being repetitive.

The terms included in this report are shadow/informal/underground economy, which have the same meaning. The total hidden or total unobserved economy includes criminal activities. The formal/official economy, are terms that have the same meaning. Informal employment/labour and undeclared work have the same meaning and constitute part of the shadow economy. Informal employment (either in the form of a complementary-secondary job or a main job due to high unemployment) and its obvious association with irregular immigration is a whole strand of literature in the subject of the shadow economy. Another term of particular importance that should not be confused with the shadow economy is tax evasion. The shadow economy is more than tax evasion as it is the sum of all forms of tax non-compliance which are irrelevant to tax evasion, such as tax avoidance and concerns other activities generating concealed income such as bribery (criminal activities are excluded thus the illegal economy is something completely different). Tax evasion has also developed into an autonomous literature strand.

Another issue discussed in this paper is the relation/effect of the shadow economy on the formal economy. It assumed that the shadow economy may be pro-cyclical (i.e. follow) or counter-cyclical to the business/economic cycle. Based on this notion a theory has been developed that the shadow economy and the formal economy may be substitutes (counter-cyclical shadow economy) or complementary (pro-cyclical shadow economy). For example, Schneider (2005) finds a negative correlation between the shadow and the official economy for developing countries and a positive relationship for developed and transition countries.

Finally, the determinants of corruption and more importantly its relation with the shadow economy also concern the literature. With regard to its determinants, both personal and country characteristics determine the likelihood of being asked for a bribe (Mocan, 2008). For example, males, wealthier and more educated individuals are more likely to be asked for a bribe. Moreover, the strength of institutions in the country (e.g. as measured by the rule of law) has the benefit of reducing the extent of corruption in the country.

As far as the relation between the shadow economy and corruption is concerned, the literature concedes on two main conclusions. Firstly, not only the shadow economy grows primarily due to weak institutions and rule of law, but institutional quality is also responsible for the levels of corruption. Secondly, the country-specific formal and informal institutions, which are primarily responsible for the sizes of both, corruption and the shadow economy, foster a complementary relationship for the mature economies in a fashion similar to that of transition economies.

Finally, it should be noted, also with reference to our research project THALES, that our aim 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, bribes). 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 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).

### 3. SWITZERLAND

There are but a few studies that focus exclusively on Switzerland in order to discuss the size and the determinants of its shadow economy. Nevertheless, the country is always included in MIMIC approaches to the shadow economy. Although the last exclusive study of the Swiss shadow economy (i.e. no cross-country data) in the previous century is three decades old (see Weck-Hannemann and Frey, 1985)<sup>3</sup>, the interest re-emerged after the year 2000.<sup>4</sup>

The contemporary literature about the shadow economy in Switzerland focuses on tax morale. This is because it was perceived by the mid-1990s that tax morale can help explaining the high degree of tax compliance in the country (Pommerehne et al., 1994).<sup>5</sup> In addition, beyond the importance of tax morale, the literature gives attention to the effect of political institutions on tax compliance.<sup>6</sup> The discussion that follows indicates the inclusion of such variables in studies of the shadow economy published in the previous decade.<sup>7</sup>

Torgler et al. (2010) explore the relationship between local autonomy, tax morale and the size of the shadow economy. The authors provide evidence using Swiss data at the micro and meso level (through Swiss cantons) that local autonomy is highly relevant to understand why individuals cooperate with societies rules. Local autonomy allows the expression of local preferences and enhances identification with the state's institutions, thus counteracting the inclination to be active in the shadow economy and increasing the willingness to pay taxes (i.e. a responsive government enhances the citizens' tax morale). Moreover, Torgler et al. (2010) estimate the size of the shadow economy and explore its determinants. Based on data for the shadow economy of the Swiss Cantons from Schneider et al. (2008) and by through the MIMIC method, the authors estimate that the Swiss shadow economy peaked in 2003 at approximately 9 percent of GDP and since then it follows a downward trend. Their statistically significant estimated coefficients indicate that the shadow economy is determined by house ownership (+),<sup>8</sup> GDP growth (-), direct democracy (-), population over 65 (+), transfer payments between the federal level and the cantons (+), tax burden (-), deterrence (+) and labour force (-).<sup>9</sup>

Torgler and Schneider (2007b) also explore the determinants of the shadow economy via cantonal data. The authors the shadow economy is determined by religion (+), house ownership (+), probability of detection (+), the labour force (-), urbanization (+), democratic participation rights (-), tax morale (-) and the tax burden (-).<sup>10</sup>

### 4. ITALY

The National Institute of Statistics (ISTAT – <http://www.istat.it/en/>) generates an estimate for the Italian unobserved economy, which is comprised by the shadow<sup>11</sup> and the illegal economy, respectively. In line with ISTAT estimations are Ardizzi et al. (2013), who introduce some innovations to the traditional “Currency Demand Approach” and based on data 91 Italian provinces for the years 2005-2008 they estimate the rate of both the shadow and the illegal economy. The authors find that the average shadow economy was 16.5 percent of GDP (the lowest being 14.5 percent and the highest being 18.5 percent)<sup>12</sup> and through this finding they distinct themselves from the values for Italy in the international literature.<sup>13</sup> Ardizzi et al. (2013) argue that their lower estimates of the Italian shadow economy is due to their decision to distinguish between the shadow and the illegal economy as parts of the whole unobserved economy (something ignored by the international literature) and thus, generate different estimates.<sup>14</sup> Moreover, as far as accuracy is concerned, it must also be considered that Ardizzi et al. (2013) reach their estimates through purely Italian data while the international literature is based on cross-country panels.

Chiarini et al. (2013) mention that the several estimations preceding their time of publication and thus that of Ardizzi et al. (2013), are not only differentiated by the use estimation methods but also by the variability in their findings.<sup>15</sup> The authors finally state that the ISTAT estimations set the record straight and as such, the estimations after the late 2000s are closer to ISTAT's (e.g. Ardizzi et al., 2013).<sup>16</sup>

Turning to the determinants of the shadow economy, Chiarini et al. (2013) explore the relation between the tax burden and tax evasion. Firstly, the authors explore the difference between the tax revenues as a percentage of total GDP (i.e. formal and shadow economy) and the tax revenues as a percentage of official GDP. They term the first as the apparent tax rate and the second as the effective tax rate and find that the former is greater that later by 10-11 percent of GDP. Secondly, by testing the cross-elasticity between tax evasion and average fiscal pressure, the authors report that in equilibrium, an increase of 1 percentage point in the apparent tax rate up by brings the share of unreported tax liabilities up by 0.49 percentage points. Finally, the authors state that whenever a force (i.e. a reform) generates disequilibrium, it is rapidly learned by the evaders and removed and the system moves back into equilibrium.

In an experiment (with 505 students) for the exploration of tax compliance, Lewis et al. (2009) observe that Italian students declare less than UK students and as such, report that culture is an important factor in tax avoidance. The authors also report a gender effect, as males declare the least. Finally, Lewis et al. (2009) report the importance of framing effects, i.e. income declaration depends on whether it is presented as a loss or as a gain.

Based on data from the Bank of Italy's Survey on Household Income and Wealth, Cannari and D'Alessio (2007) study the Italian households' perception about tax evasion. The authors find that the propensity towards tax evasion increases for the self-employed, blue-collar workers, urban centres with higher crime rates and unemployment. On the other hand, the authors find that the propensity towards tax evasion decreases with education and age. The authors also report findings which are consistent with the concept of tax morale (i.e. social capital and the quality of public services are inversely related to the propensity towards tax evasion). Finally, the authors state that the aversion to tax evasion turns out to be quite low across all social classes.

Fiorio and D'Amuri (2006) construct a sample by stratifying data sets of the 1998 and 2000 Survey of Household Income by the Bank of Italy and the 1998 and 2000 tax forms table produced by SeCIT. The authors assume that tax evaders might consider declaring a closer-to-true income in an anonymous interview and perform the stratification process in order to overcome possible bias. The authors find that tax evasion for self-employed individuals is more or less constant across income levels, while for employees, it is more persistent at low levels of income and decreases constantly and becomes negligible after the median income. Their findings are not indifferent from Fiorio and D'Amuri (2005).

Fiorio and D'Amuri (2005) construct a sample by stratifying data sets of the 2000 Survey of Household Income by the Bank of Italy and individual tax forms of the same year. The authors find that employed individuals evade taxes at low levels of income and their evasion rate decreases constantly and becomes negligible above the median income. On the other hand, self-employed taxpayers hide a consistently larger share of their income. These findings lead the authors to the conclusion that tax evasion is correlated to income levels.

Fugazza and Jacques (2004) develop a model qualifying the links between labour market institutions, taxation, tax monitoring, and shadow economic activity and calibrate it for the Italian and the Canadian economies. The discussion in this section concerns the Italian case. The authors report both on the determining factors and on policies aiming to reduce the shadow economy. With regard to the former, the authors assert that low income levels are more easily attached to the shadow economy, as higher unemployment benefits levels generate higher workers participation in the formal economy. Moreover, the authors observe that workers participation in the formal economy increases when wages in the shadow and the formal economy are uncorrelated and that lower tax rates induce a rise in the size of employment in the formal economy.

Dell'Anno and Schneider (2003) use the MIMIC approach to quantify the shadow economy and explore its determinants. Although their work should not be presented in this report because their data set concerns an OECD countries panel, it is because of the title of their paper that a brief discussion takes place here. The authors find that (listed in terms of importance) the efficacy of the justice,<sup>17</sup> government consumption (as a proxy for the public sector's size), the tax burden, self-employment and unemployment are all positively related to the shadow economy. The authors also propose suitable policy recommendations for the reduction of the shadow economy which are based on their findings, i.e. reduction of the tax burden, etc.

Brosio et al. (2002) explore the geographical profile of tax evasion. The authors hypothesize that tax evasion may be understood as a tacit compensation for a higher than optimal central tax burden in the less developed regions, since tax evasion of central taxes is negatively correlated to per capita regional gross product. The authors find evidence in support of their argument.

Venturini and Villosio (2008) account for immigrants and assert that the general pattern for foreign workers appears to be a fragmented career, either restricted to seasonal or temporary employment or alternating between formal and informal employment. Through an ethnographic close observation and participation in migrant networks in Naples between 2004 and 2008, Harney (2012) asserts that Ukrainian migrants create a sense of security through activities in the shadow economy.<sup>18</sup> Accordingly, Schuster (2005) states that irregular migrants share employment positions or work for migrants who have permits, rent from or live with migrants who have permits and purchase goods from fellow migrants. In an earlier study about the Neapolitan economy, Harney (2006) reveals the value of rumors for migrants engaging in the shadow economy (in terms of assessing opportunities), which is similar to the value of information for the business world.

However, the studies about the engagement of immigrants in the shadow economy date back to end of the 1990s. Quassoli (1999) asserts that migrants' insertion in the in Italy's shadow economy (which, according to the author, is characterized mainly by self-employment and ethnic business) does not produce a new trend but represents an

element of continuity in the economic organization and involves documented and undocumented migrants as well as many types of Italian workers. Reyneri (1998a) supports the argument that the Italian shadow economy has been well established for a considerable period and as such, the author sees the migrants' contribution only towards its continuation. Reyneri (1998a) asserts that most migrants are employed in occupations which are at risk of being priced out of the market because of their high labour intensity and low growth in productivity and therefore, informal work is a mean for labour cost reduction. Based on fieldwork in the metropolitan area of Milan, Reyneri (1998b) shows that measures aimed at making migrant workers emerge from their irregular status and the shadow economy had only partial and temporary success because of the large domestic shadow economy, which attracts those migrants who are prone to accept irregular stay and informal working conditions.

With regard to the effects of the shadow economy on the formal economy, Busato et al. (2012) indicate through a dynamic general equilibrium model that the shadow economy mitigates the distortionary impact of fiscal policies.<sup>19</sup> The authors use shadow economy estimates from ISTAT for their calculations and although these estimates are for the period 1993-2001 (i.e. a little less than a decade before the effects of the recent global economic crisis were realized), they are of particular importance for the current era of economic austerity. This is because if the shadow economy lessens the drop of aggregate production that follows contractionary fiscal policies, as the authors assert (bearing in mind that their data precedes the current extraordinary circumstances), then the effect of the shadow economy may be counter-cyclical when economic downturn is accompanied with economic austerity.

Another study, however, reveals the hampering effects of the shadow economy. In particular, Gobbi and Zizza (2007) estimate that if the size of informal employment would increase by 1 percent it would correspond to a decline of about 2 percent of GDP in the volume of business lending and 0.3 percent of GDP in outstanding credit to households.

With regard to deterrence measures fostering tax compliance, based on a data set that contains audits of about 80,000 small businesses and professionals, Galbiati and Zanella (2012) assume that the size of local tax jurisdictions affects the cross-group variance of tax evasion only through the within-group variance and identify a positive tax evasion social multiplier (of about 3). Through this finding, the authors suggest that the combination of a stricter tax enforcement policy with a more flexible resource allocation mechanism would be an effective tool for controlling tax evasion.<sup>20</sup>

Lewis et al. (2009) performed an experiment (505 students) for the exploration of tax compliance. The authors report that tax compliance is influenced through both deterrence measures and incentive schemes, i.e. both the rise of detection rates and when tax was framed as a gain led the participants to declare more. Moreover, the authors report that instrumentality in terms of income maximisation encourages tax evasion.

Mittone (2006) finds through 8 experiments (and a total of 240 subjects) evidence for the bomb-crater effect (i.e. after an audit, evasion persists for a while, since it is assumed that another audit is highly unlikely to occur, and then decreases).<sup>21</sup> Moreover, the author reports that the redistribution of taxes increases tax compliance and as such, highlights the issue of exchange fairness (i.e. receiving value from taxes paid).

Fugazza and Jacques (2004) develop a model qualifying the links between labour market institutions, taxation, tax monitoring, and shadow economic activity and calibrate it for the Italian and the Canadian economies. The discussion that takes place here concerns the Italian case. The authors report both on the determining factors and on policies aiming to reduce the shadow economy. With regard to the latter, the authors assert that a rise in the detection rate increases the participation rate in the formal economy but produces budget deficits (i.e. the audit cost effect dominates the fines revenue effect). The authors conclude that aggregate efficiency in terms of social welfare is always higher with the incentives approach to reducing the shadow economy. For example, contrary to the deterrent approach, the incentives approach serves and other policy objectives, such as lower unemployment rates.

It is time now to turn the discussion to informal employment, which is one of the standardized ingredients of the contemporary Italian industry (Hadjimichalis, 2006).

Di Porto (2011) explores informal employment in the artisan sector of Piedmont for the period 2000-2005. The author reports that on average, 14 percent of workers are informally employed and finds that inspections may induce counterproductive reactions, because in the sample explored, the number of declared workers decrease significantly with the amount of fines imposed. The author identifies a bomb-crater effect, as employers have a lower expectation of a future audit if he or she has been audited in the past.

Del Boca and Vuri (2007) analyze the characteristics of the child care system in Italy and its relationship to the labour market participation decision of mothers. The authors state that a large share of child care activities is provided privately within the informal household sector, but expect that the informality of child care services will

decrease. Firstly, because the constantly increasing participation of women in the labour market shrinks the pool of available informal carers. Secondly, it is not possible to assume what kind of child care women would use if the cost would rise.<sup>22</sup>

Baculo (2006) explores the complexity of informal employment in Southern Italy and the difficulties of implementing policies to counteract this phenomenon. The authors argue that informal employment in Southern Italy (and elsewhere) is not a structural problem, since it does not concern equally all sectors, being particularly high in the agricultural and service areas and notably high in construction. The author refers to two questionnaire surveys, which highlighted the same reasons for the phenomenon in Southern Italy: low levels of economic growth (referring to skilled job creation) and immense (international) competition in the business environment that requires continuous cost reduction. With regard to the difficulties of implementing policies to counteract informal employment, Baculo (2006) distinguishes between the supply and the demand side. The latter is reflected in the demands of the business environment for less fiscal and social burdens along with support for entrepreneurs and the development of a quality labour force (i.e. the requirement to improve firm performance and competitiveness). The supply side, except from the pressure from unemployment and job availability, is reflected in informal employees who think that defrauding the state is not that bad, because the state is responsible for public service inefficiencies, favouritism and corruption.

Similarly to Baculo (2006), Cappariello and Zizza (2004) argue that the assumption which states that the informal economy is caused by tax and social regulation is not true, since the phenomenon is not identical throughout Italy. Cappariello and Zizza (2004) assert that regional differences in the size of informal employment and the shadow economy depend on factors such as the availability of credit, qualified workforce, quality of public and private educational institutions, levels of unemployment, unionization, and the perception of state support.

Finally, with regard to the phenomenon of corruption, compared to other developed economies, Italy is strongly affected by it. For example, according to the Corruption Perceptions Index results for 2013, Italy is placed on the 69th position and is falling behind from all Eurozone(12) member states but Greece. Italy's corruption issues become more apparent as the criticism for the perceptions dimension of the Corruption Perceptions Index (and thus less realistic estimates) led Golden and Picci (2005) to develop a more straightforward measurement. Golden and Picci (2005) find that Italian data are more than sufficient for a demonstration of their novel measurement of corruption, which is based on the difference between a measure of the physical quantities of public infrastructure and the cumulative price government pays for public capital stocks (where a larger difference implies greater expenditure due to bribes, etc.).

Through statistics on crimes against the public administration at a regional level, Del Monte and Papagni (2007) investigate the determinants of corruption in Italy for the period 1963-2000. The authors find that the level of corruption differs between Italian regions and assert that the country's corruption problem is rooted in the transformation of Italy's patronage system that took place in the early 1970s.<sup>23</sup> With regard to the key determinants of corruption, the authors report that corruption in terms of reported crimes against public administration is positively linked to absenteeism<sup>24</sup> and to GDP per region,<sup>25</sup> while there is a U-shaped relation with political concentration.<sup>26</sup>

## 5. SPAIN

The estimation of the Spanish shadow economy has always been of interest to scholars. Unlike the rest of the countries reviewed in this report (except from Italy), there have been both many papers in terms of quantity and quality in every decade since the phenomenon gained interest. For example, the findings of Ahn and La De Rica (1997), Gadea and Serrano-Sanz (2002) and Serrano and Gadea (2005), although frequently cited are not discussed here, since they concern an era that dates back two decades from the time that this report is written.

Alanon and Gomez-Antonio (2005) employ the MIMIC approach to estimate the size of the shadow economy. The authors report that the shadow economy ranges between 8 and 18.8 percent of GDP during the period 1976-2002 and find it is significantly influenced by the tax burden, the degree of regulation and unit labour costs. Moreover, the authors find a positive correlation between GDP, money demand and the level of the shadow economy.

Dell'Anno et al. (2007) employ the MIMIC technique to estimate the Spanish shadow economy and compare it with those of Greece's and France's. The authors indicate that the Spanish shadow economy follows an upward trend and that after the country's accession in the European Economic Community it moves in the range 24-30 percent of GDP. According to the statistically significant estimated coefficients, the rate of public employment (as a

proxy for regulations), unemployment, social security contributions, indirect taxation and self-employment<sup>27</sup> (listed in terms of importance) are positively linked to the size of the shadow economy, while labour force participation has a negative effect. The simulated effects of these estimates indicate that in the case of:

- a 1 percent increase of public employment, the shadow economy will increase by 2 percent;
- a 1 percent increase of unemployment, the shadow economy will increase by 1 percent;
- a 1 percent increase of social security contributions, the shadow economy will increase by 0.9 percent;
- a 1 percent increase of indirect taxation, the shadow economy will increase by 0.6 percent.

Finally, the authors report a negative relationship between the shadow economy and GDP, which (along with the influence of unemployment) implies a substitution effect.

Based on annual data for the period 1970-2007, Dobre and Alexandru (2009) adopt the MIMIC approach to estimate the size of the shadow economy. The authors report that the shadow economy ranges from the 1990s to 2007 between 18 and 22 percent of GDP. The statistically significant coefficients indicate that bureaucracy, followed by unemployment and self-employment are positively linked with the shadow economy, while the labour force is negatively related. Moreover, the estimates reveal an inverse relationship between GDP and shadow economy.

Pickhardt and Sarda (2013) employ (what they call) the modified-cash-deposit-ratio approach and regard it as the most econometrically sound approach to the shadow economy. The authors indicate that in the long run, GDP and overall factor competitiveness, have a statistically significant and negative influence on the shadow economy, while higher tax pressure, the increasing numbers of self-employed and unemployed individuals lead to more shadow economic activities. Moreover, the authors' estimated size of the shadow economy is differentiated (to a greater lesser extend) from all previous findings.

With the use of data from Spain's Survey of Fiscal Policy, Alm and Gomez (2008) explore the relation between social capital and tax morale. The authors find that an individual's tax morale is significantly and positively associated with the perception of the benefits derived by society from the public delivery of goods and services. Accordingly, the perceived size of fiscal fraud also influences directly and negatively the intrinsic motivation to pay taxes.

Martinez-Vazquez and Torgler (2009) study the evolution of tax morale (1981-1990) through the survey data from the World Values Survey and the European Values Survey. The authors report that the succession in designing general institutional reforms, including tax policy and tax administration reforms led to significant increases in tax morale. Other factors influencing tax morale include personal characteristics such as age and gender (notably females), which are correlated with higher tax morale, and social capital variables.

In another study about the factors influencing tax compliance, Lopez-Lamborda and Rodrigo (2003) find that tax amnesties do not have any effect on tax collection neither in the short nor in the long-term.

Gupta (2008) and Gupta and Ziramba (2009) explore whether financial repression can be explained by tax evasion. The findings of both studies indicate that when tax evasion is mainly influenced by the level of corruption and low penalty rates, it yields higher degrees of financial repression (i.e. restrictions imposed by the government to the banking sector in terms of reserve requirements or other conditions that would accommodate the government's financing needs). On the contrary, when it is driven by a lower tax rate, it reduces the severity of financial repression.<sup>28</sup>

With regard to the supply and demand for informal labour, Corkill (2001) indicates that the requirement of the Spanish economy for immigrant workers is reflected in the needs of employers for the supply of cheap and flexible labour (which in turn characterizes the demand for informal employment). This robust demand for low-cost labour along with the difficulties controlling irregular flows and the repeated regularizations of unauthorized populations make informal employment even more difficult to control (Arango and Jachimowicz, 2005; Fuentes, 2005). For example, although the care work sector in Spain is more regulated than in many other countries, greater efforts to formalise and improve the labour and employment rights of household employees are needed to counterbalance occupational segregation and social inequality (Leon, 2010).

Carrasco et al. (2004) find that immigration has a negative effect on the employment rates of native workers. However, the authors report statistically significant results only for the case of legal immigrants and for the case of total immigrants (including irregulars). In a more recent study, Amuedo-Dorantes and De la Rica (2010) indicate that immigrants choose to reside in regions with larger employment rates and where their probability of finding a job is higher and appear more responsive than their native counterparts to a higher likelihood of informal, self, or indefinite employment.

Last but not least are Spain's corruption issues. Although according to the Corruption Perceptions Index results for 2013, Spain is placed on the 40th position and thus, reserves a much better placement than the eurozone Mediterranean countries which considered corrupt (namely Greece and Italy), the literature is synthesized by studies that consider corruption (and in particular, political corruption) in Spain a major issue (see Heywood, 2007).

For example, the problem of corruption in local governments is indicated by the great number of corruption incidents that have come to light and are attributed to factors such as bureaucratic inefficiencies, bad design of both integrity rules and town planning policies, the relevance of informal institutions such as patronage networks and the existence of perverse incentives, which altogether highlight the important influence of local informal institutions for the actual working of formal ones (Jimenez et al., 2012).

Moreover, public sector corruption, which has been attributed to the involvement of regional and local administrators and politicians in the country's urban development boom, have angered the public and sparked calls for government reform following the late economic crisis. All of these are reflected in the findings of a questionnaire survey about perceived corruption and the attitudes and behaviors of citizens undertaken by Villoria et al. (2012) in 2009. Villoria et al. (2012) report that perceptions of administrative as well as political corruption are associated with less satisfaction, lower levels of social and institutional trust, and a greater willingness to break rules. The findings of the particular survey reveal the factors leading to protests and the formation of organized movements (Hughes, 2011).

## 6. CONCLUSION

The content of this manuscript is a byproduct from an ongoing EU funded project titled "The Shadow Economy (Informal Sector) in Greece: Size, Causes and Consequences". Our wider project, named as THALES, aims to achieve numerous objectives, among which the development of a theoretical background and framework that will facilitate the understanding of the reasons of black/shadow economy in Greece, the typology of Greek taxpayers and of the factors that influence and shape his/her behavioral dynamics, perform cross-country comparisons at regional level, but also with country groups by advanced taxation systems (e.g. Austria, Germany, Switzerland, France), other Mediterranean countries (Italy, Spain), South Eastern (Bulgaria) and transition and developing economies (Turkey, Peru). A mixture of suggestions and structural policies are expected to be provided to the Greek Government at the conclusion of the research, for the efficient conduct of black/shadow economy and tax evasion in Greece.

## 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).
2. The signs in brackets signify the relation of the determinants with the shadow economy.
3. Weck-Hannemann and Frey (1985) estimated that the size of the Swiss shadow economy was approximately 4 to 5 percent of GNP.
4. Schaltegger (2011) refers to a survey carried out by the secretariat of state for economic affairs and reported in 2007, which indicates that less than half of the respondents gave an answer of 6 or above (scale of importance was from 1 to 10) to the question "how important is the shadow economy according to your opinion?"
5. Despite the general consensus that Swiss tax morale is relatively high, Kirchgassner (2006) argues that is relatively low in international comparisons due to increasing capital income tax evasion and to the Swiss bank secrecy.
6. Pommerehne and Weck-Hannemann (1996) indicate that in cantons with a high degree of direct political control, tax evasion is lower as compared to the average of the cantons without such direct influence. Moreover, Schaltegger



and Frey (2003) indicate that voting on tax issues has a positive effect on tax compliance and Torgler (2005) also shows a positive effect of voting on tax morale.

7. The findings of Feld and Frey (2006) and Torgler and Schneider (2007a) are not discussed because their estimates are based on data that reaches up to mid-1990s.

8. Torgler et al. (2010) use the house ownership variable as a proxy for the higher opportunity cost to move to another canton and the demand for those economic sectors that have the highest rates of informal work.

9. The determinants are listed in terms of importance according to the absolute value of the estimated coefficient. The sign in brackets indicates the relation of the determinant with the shadow economy.

10. The determinants are also listed in terms of importance according to the absolute value of the estimated coefficient. The sign in brackets indicates the relation of the determining factor with the shadow economy.

11. According to ISTAT estimations, the Italian shadow economy in 2011 accounted for 11.5 percent of GDP (see last paragraph at <http://www.istat.it/en/archive/115500>).

12. According to ISTAT estimations, the Italian shadow economy in 2008 accounted for somewhere between 16.3 and 17.5 percent of GDP (see paragraph 14 at [http://www.istat.it/en/files/2012/04/Pillole\\_Capitolo3\\_ING.pdf](http://www.istat.it/en/files/2012/04/Pillole_Capitolo3_ING.pdf)).

13. For example, Schneider et al. (2010) find that the average size of the Italian shadow economy is 27 percent (data from two samples: one concerning 151 countries for the period 1996-2007 and another concerning 120 countries for the period 1996-2006).

14. The average illegal economy was 10.9 percent of GDP (the lowest being 9.6 percent and the highest being 12.6 percent).

15. For example, papers published in Italian are by Bovi (1999), Zizza (2002) and Chiarini and Marzano (2004). Dell'Anno and Schneider (2003) find that the average size of the Italian shadow economy is similar to that of Schneider et al. (2010).

16. Dell'Anno (2005) also raises this concern and refers to the role of ISTAT.

17. Dell'Anno and Schneider (2003) expected a negative relationship as they hypothesized that the efficacy of criminal judicial system may act as proxy of efficacy in fiscal auditing. The explanation they offered for the unexpected relation of the estimates was that the ability of the State authorities to punish crimes is unconnected to the efficacy of tax auditing.

18. In particular, Harney (2012) asserts that migrants make extensive use of social networks and knowledge distribution to form the basis of decisions about economic behaviour, emplacement and ontological security. Earlier studies support this argument (e.g. Reyneri, 2003; Ambrosini, 2008) by identifying that some of the main factors leading to the entry of irregular immigrants and their integration into the labour market is the economic convenience for both businesses and families of employing unauthorised manpower and the support from compatriot networks and ethnic economies.

19. As such, the effects of the shadow economy reverse the theoretical predictions of the standard neoclassical growth model (mainstream economic theory).

20. For the importance of resource allocation, Galbiati and Zanella (2012) refer to the findings of previous studies (i.e. Bordignon and Zanardi, 1997) in order to emphasize that in local allocation, only a small number of employees is associated with auditing and enforcement activities.

21. Another term used is the echo effect, in order to characterize the persistence of taxpayers in evading for a while after the audit. The bomb-crater effect is termed as such from the behaviour of soldiers who would take shelter in bomb craters in the belief that it was impossible for a bomb to fall in the same place twice.
22. Del Boca and Vuri (2007) find that the limitations in the child care labour market affect only employment and not child care decisions.
23. Del Monte and Papagni (2007) highlight the cultural context of Italian corruption by pinpointing that the decrease in the level of corruption in the mid-1990s is primarily explained by political and cultural variables and not by economic variables. Moreover, Acconcia and Cantabene (2008) indicate that the part of corruption in Italy that fed on the huge amounts of public spending in social infrastructure and social security, collapsed just after the prosecutions and convictions of many public officials by a pool of Italian judges in the mid-1990s. Nevertheless, there are arguments that there has been little noticeable increase in anti-corruption efforts (Newell, 2005) after the mid-1990s, and that political corruption is still there to stay and is significantly associated with corruption in public works construction (Golden and Picci, 2005).
24. Low absenteeism is considered by Del Monte and Papagni (2007) as a proxy for positive social norms through which the community relates to public administration, and a sign of an efficient local political system.
25. Del Monte and Papagni (2007) interpreted this finding by considering that in more affluent regions there could be more transactions between government and private business, hence more chance of corrupt transactions.
26. Del Monte and Papagni (2007) assert that this finding accords with a view of political competition and lobbying where fragmentation and high concentration are both negative contexts and virtue lies in the middle.
27. The rate of self-employment was found statistically significant only once in the several model specifications estimated by Dell'Anno et al. (2007).
28. Apart from Spain, these findings concern also Italy. However, they are reported here, because the late Spanish economic crisis was triggered by the threat of insolvency faced by the country's banking system.

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