University of Macedonia
Department of Balkan, Slavic and Oriental Studies

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Evaluation of the Level of Corruption in Greece and the Impact on Quality of Government and Public Debt

Rodney Jetton
rodjetton@gmail.com

Department of Balkan, Slavic and Oriental Studies, University of Macedonia, 156 Egnatia str, 540 06 Thessaloniki, Greece, + 30 (0) 2310 891377
http://mabsos.uom.gr/

ABSTRACT

This essay offers a helpful overview on both the definition of and main methods for measuring corruption along with a concise but comprehensive survey of best recent scholarship concerning the destructive cycle of corruption in Greece. Included is a detailed analysis of four reliable indices of corruption and of empirical studies of its association with high tax burdens, government spending, and quality of government (QoG). Taken together, this material makes clear the ways in which corruption is impacting governance in the Hellenic Republic and what it is costing the Greek people. Also presented here are 35 suggestions for reforms that can help to reduce corruption and increase tax revenue by as much as €28 billion annually, thereby allowing for rapid repayment of Greece's €320 billion public debt. Resulting in a higher QoG, improved public trust and increased revenues that would permit lowering tax rates.

Keywords
corruption, shadow economy, non-perception methods, perception methods, corruption perception index, tax reform

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INTRODUCTION

"There are several good protections against temptations, but the surest is cowardice."
Mark Twain, *Following the Equator*, 1897

The 2010 sovereign debt crisis in Greece both exposed the economic imbalances within the eurozone and highlighted the vulnerability of the euro, bringing intense global scrutiny on both Greece's government and economy. Since then, considerable research has been conducted in an effort to determine how the Hellenic Republic accrued so much debt and why it continues to languish in an ongoing recession nearly a decade later. These studies almost invariably speak of corruption, bribery, embezzlement, patronage, tax evasion, and/or the ever-growing shadow economy.[1]

The austerity measures imposed on Greece by the European Union in response to the crisis have raised taxes and lowered incomes, thereby increasing the temptation for public servants to abuse their power and leaving average citizens scrambling for ways to survive. This toxic environment has had devastating consequences for a country with weak institutions and low quality of government (QoG). Thus, from 2009 to 2014, nominal GDP fell by €55 billion or 24.7%, unemployment increased to 16.9% as one million workers lost their jobs, and income from wages dropped by 27.4%. At the same time, Greek deficits added €42 billion to the public debt and the Troika[2] loans to Greece totaled €230 billion (Giannitsis & Zografakis, 2015). Greeks have moreover seen their property values drop by 70% and investments by 40% as economic growth has ground to a standstill, leaving the national debt at €320 billion, roughly 180% of annual GDP (Danopoulos, 2014).

This essay offers an evaluation of corruption in Greece, a topic that today is inseparable from the effects that the fiscal crisis has had on the country's citizens. Thus, while the Corruption Perception Index (CPI) produced by Transparency International (TI) indicates that corruption was already rampant in Greece before the crisis, it has manifestly made a dire situation worse. So also the 2012 National Integrity Systems Assessment of the Hellenic Republic by TI Greece (TI-G), a comprehensive, 197-page evaluation of the country's civil society, put the cost of corruption, tax evasion, and other illegal activities at over €70 billion annually (TI-G, 2012). Other studies have corroborated this finding, including one that estimated the resulting loss of tax revenue at €28 billion, a sum equivalent to nearly 10% of Greece's public debt (Dellas et al., 2017).

This discussion is organized as follows. Section 1 defines and explores briefly methods for measuring corruption, including both perception and non-perception approaches. Particular attention is paid to formal empirical academic studies of the relationship between corruption and the shadow economy and between public trust and QoG. The next section provides an in-depth look at Greece's historical performance on the CPI in comparison with the European Union (EU), United States (US), and Black Sea and other Balkan countries. Also presented here is a review of Greece's rankings on other reputable indices and an econometric approach that involves two simple linear

[1] Shadow economy is a broad term; synonyms include informal, black, grey, or underground economy. Here notion is understood in terms of the framework of Schneider and Enste, which takes into account goods and services that are produced legally but deliberately concealed from the government in order to evade taxes or fees or to meet set standards (Schneider & Enste, 2000, p. 79).

[2] The Troika consists of the European Commission, European Central Bank, and International Monetary Fund.

regression models comparing the CPI and Greece's tax burden as a percentage of GDP and the negative relationship between government spending and QoG. The correlation between Gross Domestic Product (GDP) and corruption is further observed. Section 3 explores the ongoing costs of corruption in Greece, estimated to be as high as €28 billion annually, as well as two non-financial costs, namely inequality and population decline. Section 4 assesses some 35 possible reforms that have been advanced by the EU Commission, TI, and other organizations seeking to reduce corruption in Greece. The discussion concludes with an overall assessment of how this cycle of corruption emerged in Greece, its costs, and the reforms necessary to break it, closing with a personal reflection from the author.

SECTION 1. DEFINING & MEASURING CORRUPTION

Corruption is costly. Thus the World Bank estimates the total value of bribes paid annually worldwide at around $1 trillion, and the World Economic Form pegs overall corruption costs at 5% of global GDP or $2.6 trillion (Heywood & Rose, 2014). These monetary costs are mind-boggling, and the human costs are tragic. Corruption disrupts social equilibrium, reduces confidence in the government, and, most dangerous of all, erodes trust among individuals (Azariadis & Ioannides, 2015; Kaplanoglou & Rapanos, 2012). It increases inequality, reduces economic growth, and discourages foreign direct investment in a country (Chene, 2014). It allows those with money and connections to pick winners and losers while fostering uncertainty and waste, usually at a high cost to the public. Like an unhealthy contagion, it spreads unscrupulousness and demoralizes honesty (Shacklock et al., 2006).

Corruption has proved difficult to define, as it encompasses a wide range of activities, including bribery, embezzlement, fraud, patronage, extortion, theft, nepotism, conflicts of interest, and tax evasion. Most researchers also distinguish grand from petty corruption. The former involves high-government officials who make significant policy or procurement decisions,[3] while the latter involves low-level bureaucratic officials and small amounts of money relating to, for example, traffic tickets or building permits (Rohwer, 2009). One definition that embraces both grand and petty corruption is "behavior that deviates from the formal duties because of private gains" (Papaconstantinou, 2013, p. 3). Such behavior occurs most often when public power exerts control or authority over private wealth without accountability or established, enforceable rules. TI accordingly uses Lambsdorff's definition for corruption as "the abuse of entrusted power for private gain" (Lambsdorff, 1999, p. 5). This essay relies on an expanded definition that takes into account the widespread problem of tax evasion in Greece that involves both corrupt tax officials and high-level politicians.

1.1. NON-PERCEPTION BASED METHODS

The lack of agreement regarding the definition of corruption is paralleled by the healthy debate regarding how best to measure it. Perception-based methods rely on reports, surveys, interviews, anecdotes, and structural evaluations to determine levels of corruption, providing a glimpse into its various different forms. Some scholars, however, argue such methods are subjective and unreliable and recommend instead non-perception-based methods, which are less concerned with individuals' subjective experiences, as more quantitative, and therefore more objective and quantifiable, though reliable data are often difficult to obtain in this manner as well (Miller, 2006). All methods of course involve making precise distinctions regarding various types of corruption, units to be measured, and transaction points in order to account for the variety of factors impacting and impacted by corruption (Heywood & Rose, 2014).

Non-perception measurements fall into three broad categories based on whether they are made at the macro, sectoral, or micro levels. Macro measurements include such national statistics

[3] Grand corruption is also called political corruption because it typically involves the exercise of undue influence over politicians in major policy matters (Dahlstrom, 2012).

as GDP, unemployment, and tax revenues; sectoral measurements include statistics relating to healthcare, military, and education; and micro measurements involve the data of companies, non-government organizations (NGOs), and individuals. The path that a researcher takes naturally depends greatly on the topic of study and the available data. Data can be obtained directly through basic research, surveys, or auditing records. Also effective are approaches that identify discrepancies in such variables as spending and reported incomes and labor market participation. Econometricians use this kind of data to conduct model-based testing in an effort to identify corruption in a scientific and objective manner (Duncan, 2006).

Researchers tend to encounter three main problems when using model based-approaches. First, because corruption is clandestine, first-hand experiences typically cannot supply sufficient data to be accurate. Second, models must be able to account for the many complex interactions and variables that create and sustain corruption. Third, in many countries, especially undeveloped ones, only sectoral and micro measurements are available owing to the paucity of reliable national data (Duncan, 2006).

1.2. PERCEPTION BASED METHODS

The issues with the data just described are one reason that perception-based measurements have proved so helpful in assessing levels of corruption worldwide. Such methods can be well understood by reviewing the history and methodology of one of the most respected corruption indices, the Corruption Perception Index put out by TI (Dreher & Herzfeld, 2005).

Corruption has been endemic in societies since antiquity. The World Bank has identified it as "the single biggest obstacle to economic and social development" (Papaconstantinou, 2013). For this reason, governments, lenders, and aid agencies, including the International Monetary Fund (IMF), World Bank, EU, UN, US, and various NGOs, have sought high-quality analysis regarding the levels of corruption in countries in which they operate (Dreher & Herzfeld, 2005; Heywood & Rose, 2014). In the past, researchers had very little reliable data of this sort, but numerous indices that track and document corruption have become available since the mid-1990s, in particular Business International (BI), World Development Report (WDR), International Country Risk Guide (ICRG), and the Institute for Management Development (IMD). Also important as overall institutional indicators are the World Bank's Governance Indicators and Ease of Doing Business Index (EDB), the Heritage Foundation's Index of Economic Freedom (IEF), Bertelsmann Stiftung's Sustainable Governance Indicators (SGI), and the World Economic Forum's Global Competitive Index (GCI). TI is the most-recognized anti-corruption organization; thus its Global Corruption Barometer (GCB), Bribes Payers Index (BPI), and the "poll of polls" known as the Corruption Perception Index (CPI) that debuted in 1995 are regularly cited in the media and used by scholars (Dreher & Herzfeld, 2005). Regrettably, Greece consistently scores near the bottom among EU countries on such indices.

This essay relies on the CPI for Greece, which has a robust track record for measuring and comparing the Hellenic Republic with neighboring countries.[4] The reliability of the CPI has

[4] The CPI index has been used in countless studies of corruption, and its results are extensively reported by leading news outlets around the globe when they are announced every year. Its influence is considerable; in 1996, the CPI

naturally been called into question, Frederik Galtung's study titled "*Measuring the Immeasurable: Boundaries and Functions of (Macro) Corruption Indices*" being one such critique; but even he credited the CPI with "catapulting" corruption into the national discourse and referred to 1995 as a "watershed" moment for the anti-corruption movement (Galtung, 2006). Similarly, Johann Lambsdorff admitted in his defense of the CPI, titled *Measuring Corruption—The Validity and Precision of Subjective Indicators (CPI)*, that "no single source or polling method has yet been developed that combines a perfect sampling frame, a satisfactory country coverage and a fully convincing methodology to produce comparative assessments"; it is for this reason, according to him, that a composite index like the CPI represents a better measure (Lambsdorff, 2006, p. 81). It is important to keep in mind the perception-based nature of the CPI, specifically its focus on the perceptions of public officials, as it aggregates corruption-related data that have been gathered by professionals in business and academia from around the world with expertise in the various countries included in the index. Over the years, the CPI has relied on annual sets of some 12 to 18 distinct sources representing some 8 to 17 independent institutions; Greece has been represented by anywhere from 6 to 9 such sources (see Figure 1). The sources rank the various nations surveyed and measure overall levels of corruption in a manner that allows for consistent comparisons among countries (TI, 2016; Rohwer, 2009).

The questions posed in these surveys concern the use of public office for private gain, covering such topics as bribery of public officials, kickbacks in the context of procurement projects, and embezzlement of public property as well as anti-corruption efforts and institutional efficiency. Each year, the effort is made to improve the methodologies and results. Thus, for example, in the period from 1995 to 2012, countries were ranked on a 0 to 10 scale proceeding from high levels of corruption to high levels of transparency, but beginning in 2013 a 100-point scale was substituted. In terms of the process of creating the index, TI, once it has received the scores, standardizes the data and calculates the averages and the measures of uncertainty. In order to smooth the data, the CPI includes statistics from the past two years' surveys in each annual report, though this manner of presentation complicates year-to-year comparisons (TI, 2016; Rohwer, 2009).

ranking of Pakistan as the second most corrupt nation (behind Nigeria) led to the removal of that country's prime minister, and the 1997 Bolivian presidential race was impacted by release of the CPI results just before voting took place (Galtung, 2006).

Figure 1: CPI Country coverage and sources

CPI 1995-2016 Country Coverage & Sources				
Year	**Number of Countries Included**	**Greek Sources**	**Number of Sources**	**Number of Independent Institutions**
1995	41	-	7	3
1996	54	-	10	6
1997	52	-	7	6
1998	85	9	12	7
1999	99	9	17	10
2000	90	8	16	8
2001	91	8	14	7
2002	102	9	15	10
2003	133	9	17	13
2004	146	9	18	12
2005	159	9	16	10
2006	163	7	12	9
2007	180	6	14	12
2008	180	6	13	11
2009	180	6	13	10
2010	178	6	13	10
2011	182	8	13	17
2012	178	7	13	12
2013	175	7	13	12
2014	174	7	12	11
2015	167	7	12	11
2016	177	7	13	12
Source: Annual reports available on TI's website.				

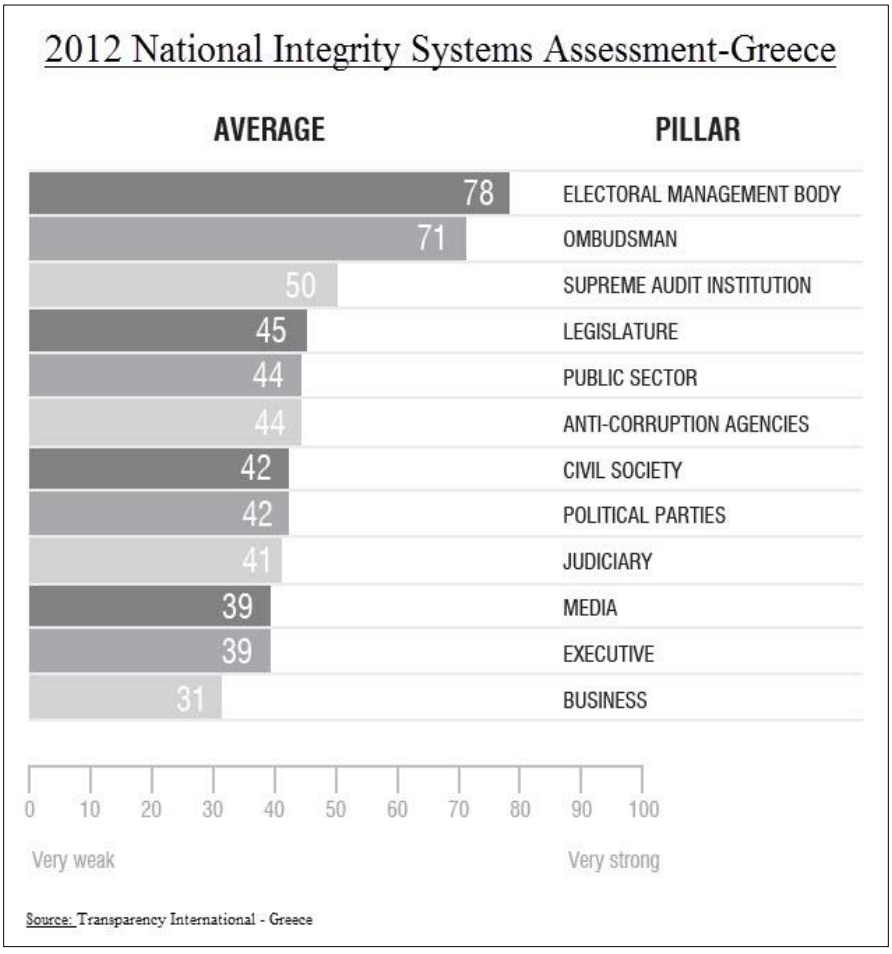
1.3. LITERATURE REIVIEW

Having defined corruption and distinguished non-perception-based and perception-based approaches to measuring it, it is now possible to appreciate fully the literature on corruption in Greece. Since the 2010 debt crisis, research on the topic has proliferated as scholars have sought to assess the extent of corruption in the country, its relationship to the ongoing recession,[5] its cost, effective measures to control it, and the willingness of the Greek people to tolerate it (Azariadis & Ioannides, 2015). The following survey of this material begins with overall assessments of Greek corruption and then explores in turn econometric models for tax evasion, which is one of Greece's most pressing issues, before turning briefly to the unintended and surprising reaction to the Greek government's 2015 capital controls introducing electronic payments. Next and perhaps most importantly, the discussion will focus on two papers that explore the links among QoG, public trust, and corruption. Lastly, a brief account is provided of the manner in which taxes are paid in Greece and the points in the process at which corruption is most likely to occur.

[5] Given the recession's duration and depth, it can now be classified as a depression by economists and researchers (Economides et al., 2017).

TI-G's 2012 National Integrity Systems Assessment, mentioned in the introduction, is one of the most comprehensive studies undertaken since the crisis, being based on two years of qualitative research involving in-depth interviews and field tests. The focus was on 4 foundational areas and 12 institutions (also referred to as "pillars"), assessing capacity, governance, and roles in anti-corruption efforts.[6] The overall scores for each pillar were not encouraging (Figure 2), indicating that, while Greece's legal framework was sufficient to fight corruption, the state tolerated failure to comply with the law and, in some instances, even encouraged corruption. The assessment offered numerous suggestions for improvements—covered below in Section 4—and its last line was particularly sobering: "Therefore, it is made clear that the problem of corruption in Greece is mainly the result of a crisis of values" (TI-G, 2012, p. 177).

Figure 2: National Integrity Systems Assessment – Greece



Another detailed report worthy of mention in this context is the Greek Annex to the EU Anti-Corruption Report for 2014, which originated in a 2012 agreement between Greek officials and the European Commission Task Force on a national action plan for fighting corruption in Greece. This report called for the appointment of a national anti-corruption coordinator to oversee execution of the plan and emphasized that only one of the 27 recommendations by the Council of Europe's Group of States against Corruption (GRECO) had been fully implemented. The report was critical of Greece's "piecemeal" and "complex" approach to fighting corruption as well as the short statute of limitations and special immunity that high government officials enjoyed in the performance of their duties, all of which have impeded the prosecution of corrupt officials. In addition, the report drew attention to flaws in Greece's taxation system and public procurement processes and the financing of its political parties

[6] It should be noted that the media pillar ranked near the bottom in the assessment, though the media are often mentioned in studies of corruption in Greece. Thus the TI-G pointed out that at the time a mere six businessmen owned a sizable percentage of the Greek media market, even as licensing and tax policies have been keeping media outlets dependent on the government and thereby setting up a possible quid pro quo situation.

that created opportunities for corruption along with its rating as "partially free" on the 2013 Freedom of the Press Index (EU Commission, 2014).

One study that deserves particular attention in this context is a recent working paper titled "Thinking about Corruption in Greece" by Costas Azariadis and Yannis Ioannides, who strove to answer the question of "why Greek society tolerates so much corruption" (p. 2). They reviewed the so-called "growth" theory and ways in which bribes, embezzlement, and tax evasion limit economic growth and increase the tax burden on compliant taxpayers. Drawing attention to Greece's continued failure to fulfill its obligations under the OECD Anti-Bribery Convention—which requires lobbyists to register with the government and to disclose all contacts with public officials—the authors also described the cozy relationship between the government and the media with respect to the renewal of licensing agreements, one result being a lack of media exposure for corruption cases in Greece. From this perspective, corruption and tax evasion are related, since the state permits the latter through the bribery of both revenue officials on the front lines and high-ranking politicians with the power to intervene on behalf of supporters. Such antisocial behavior, according to Azariadis and Ioannides, can be changed, but doing so in Greece would require an improvement in the quality of public services so as to win back the trust of the populace. Thus, there is no sense of shame on the part of Greek citizens or public officials when it comes to corruption—this being an indication that social equilibria are amiss. Polling indicates that the lack of trust serves as justification for corruption; thus in answer to a question on a survey administered in 2000 asking whether it was "justifiable to get benefits from the state that one is not entitled to," while more than 60% of respondents in most countries answered in the negative, a whopping 80% of those in Greece answered in the affirmative (p. 18). The various links among corruption, tax evasion, and Greece's fiscal crisis thus contributed to a sorrowful assessment that depicts the country as trapped in a vicious circle of low quality of government, lack of trust, tax evasion, corruption, and economic recession. Among the policy recommendations made by these researchers are measures for the protection of whistleblowers, full disclosure of lobbying activities, elimination of the statute of limitations on crimes by high-ranking government officials, empowering the Supreme Audit Council in procurement actions, and enacting 12-year term limits for members of parliament. They even go as far as to call for an EU supranational institution empowered to audit and investigate corruption independently (Azariadis & Ioannides, 2015).

The first interdisciplinary review of tax evasion and the size and nature of Greece's shadow economy in relation to corruption was undertaken in 2016 by Aristidis Bitzenis, Vasileios Vlachos, and Friedrich Schneider. They set out to identify policy changes that could transfer this economic activity to the official sector based on a comparison of studies from before and after the crisis, and their analysis demonstrated that Greece was experiencing elevated levels of corruption in connection with a large shadow economy even before 2010 (Figure 3). Using CPI scores and a multiple-indicators-multiple-causes (MIMIC) approach to evaluate 28 EU nations and 8 non-EU nations, they were able to estimate the size of the shadow economy as a percentage of GDP. The levels of direct and indirect taxes, social security contributions, business freedom, the quality of state institutions, unemployment rates, tax morale, and GDP growth were all found to have contributed, over time, to the development of the shadow economy. Factors such as participation in the labor force, local currency per-capita, and GDP per capital were identified as indicators of the relationship between the shadow and official economies. The Greek shadow economy was thus

revealed as one of the most extensive among the Organisation for Economic Co-operation and Development (OECD) countries, but it was argued that a sizable portion of it could be transferred to the official economy were the reforms implemented. The authors further pointed out that clientelism and rent-seeking impair public administration, decreasing trust and tax morale and increasing the stress on the official Greek economy caused by high unemployment, tax burdens, and levels of self-employment and by low GDP growth—all of which affects the size of the shadow economy. Recommendations accordingly included lowering the tax burden, improving tax enforcement, and shifting tax burdens from labor to consumption. (Bitzenis et al., 2016)

Figure 3: Shadow Economy estimates -Greece

GREEK SHADOW ECONOMY ESTIMATES

Study	Method	Size of the Greek shadow economy (% of GDP)
Schneider and Buehn (2012) provide estimates for the size of the shadow economy in 39 OECD countries (1999–2010).	MIMIC approach.	26% in 2008 (27.4% is the average value for 1999–2008)
Schneider et al. (2010) and Buehn and Schneider (2012a) provide estimates for the size of the shadow economy in 162 countries (1999–2007).	MIMIC approach.	26.5% in 2007 (27.5% is the average value for 1999–2007)
Dell'Anno et al. (2007) provide estimates for the size of the shadow economy in France, Spain, and Greece (1968–2002).	MIMIC approach.	Approximately 28% in 2002
Tatsos (2001) provides estimates for the size of the shadow economy in Greece (1967–1997).	Currency demand approach.	36.7% in 1997 (30.1% is the average value for 1967–1997)
Kanellopoulos et al. (1995) provide estimates for the size of the shadow economy in Greece (1982 and 1988).	Comparison of data from the Household Budget Survey with private consumption as registered in the National Accounts.	27.6% in 1982 and 34.6% in 1988
Negreponti-Delivani (1991) provides estimates for the size of the shadow economy in Greece (1970–1985).	Currency demand approach.	18.9% in 1984 (11% is the average value for 1958–1988)
Vavouras et al. (1990) provide estimates for the size of the shadow economy in Greece (1958–1988).	Currency demand approach.	31.6% in 1988 (26.6% is the average value for 1958–1988)
Pavlopoulos (1987) provides estimates for the size of the shadow economy in Greece (estimates for 1984).	Assuming for discrepancies on the macro level: i.e. accounting for underestimation of value-added activities.	28.6% in 1984

Note: Although Schneider and Buehn (2012) provide estimates until 2010, their estimates for 2009 and 2010 are not depicted in Table 2. They state that "data for 2009 and 2010 are not available for all causes, hence 2009 and 2010 estimates are a linear interpolation of the 2008 estimate and the country average" (Schneider and Buehn 2012, 19).

Source: Bitzenis, Vlachos and Schneider, (2016)

Mai Hassan and Friedrich Schneider have conducted similar research on shadow economies as a percentage of GDP in 157 countries using a MIMIC model. Analyzing data from 1999 to 2013, they found that higher taxes and excessive regulation encouraged the growth of shadow economies and that countries characterized by high levels of self-employment and high unemployment rates experienced particularly intense shadow economic activity. Of particular interest for the present discussion are the results for Greece, in which the increase in the shadow economy since the crisis

(to over 40%) has been much larger than that for other countries hard hit by the economic crisis. A comparison of Greece with Bulgaria, Portugal, Cyprus, and the US is presented in Figure 4.

Figure 4: Greek shadow economy 1999- 2015

Percentage Size of the Shadow Economy 1999-2013																
Country	**99**	**00**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**Avg.**	**World Rank**
Greece	28.5	28.1	27.6	30	28.8	28.2	29.4	28.5	29.9	30.7	35.7	37.6	42.3	43.7	39.4	32.56	77
Bulgaria	36	42.5	37.6	31.6	31.9	31.7	32.5	33.2	33.1	34.4	36	37.3	34	33.6	35.6	34.7	85
Cyprus	29.2	28.6	27.8	26.6	33.1	33.2	34.3	34.4	36.4	37.3	29.3	29.7	30.6	32.6	33.8	32	75
Portugal	23	23.3	24	25.5	26	25.7	26.5	25.4	24.1	25.3	26	26.9	27.3	26	26.4	25.4	45
USA	8,8	8.9	9	9.4	9	8.5	8.4	8.7	9.4	10.5	10.6	10.5	9	8.6	8.3	9.1	2
Source: Hassan & Schneider (2016)																	

Moreover, other empirical research using both direct and indirect approaches to measure corruption, tax evasion, and the size of the Greek shadow economy (e.g., Matsaganis & Flevotomou, 2010; Katsios, 2006; Litina & Palivos, 2011; Dellas et al., 2017; Artavanis et al., 2015) has confirmed its status as an ongoing problem in Greece over the past two decades that has worsened since the crisis. Among the themes that recur in these studies are polling showing that large numbers of Greeks believe cheating on taxes to be justifiable, the erosion of trust caused by the corruption of political officials as a justification for tax evasion, the contribution of low QoG and poor public institutional performance to tax evasion, the over-complexity of the Greek tax code, the need to lower tax rates, the role that tax evasion plays in inequality by shifting the tax burden from higher to middle and lower incomes,[7] the ineffectiveness of tax enforcement efforts owing to the rarity of audits and the low penalties involved, and the loss of income to the shadow economy as a cause of budget deficits and growing public debt.

Across these studies, the significant impact of revenue from a growing shadow economy on Greece's public debt problem is clear. Additionally, the study using a dual economy model (Dellas et al., 2017) indicated that the Troika's projections of tax increases and spending reductions were inaccurate because they failed to account for Greece's shadow economy.

[7] The chief income tax-evaders were found to be doctors, lawyers, engineers, educators, and members of the media; that is, the professional, higher-income earners were cheating the most, causing lower salaried labors and pensioners to pay a larger proportion of the tax burden (Artavanis et al., 2015).

Paradoxically, the 2013 and 2017 International Monetary Fund (IMF) country reports on the Hellenic Republic somewhat contradicted the austerity measures that the fund had forced on Greek citizens in the Memorandums of Understanding (MoU) as part of the Troika. Use of a dynamic stochastic general equilibrium (DSGE) model confirmed the structural problems in the Greek economy regarding production and labor inefficiencies, and the country report also examined Greece's revenue administration, pointing out many of the same flaws identified in the above studies but with a focus on where revenue was being lost. The report showed that a third of Greek workers were not registered, suggesting that a large share of work being done is undeclared (Figure 5). Additionally, social security assessments were €20 billion behind and Greece has a major issue with unpaid back taxes, with €115 billion still owed in 2016, by 4,146,483 citizens of which 839,056 have had enforcement measures imposed on them (Figure 6) (Symeon Mavridis, 2018). The report points out that the cost of avoiding taxes in general is much less than the cost of paying them because of the low probability of detection, weak penalties, and frequent amnesty programs. Furthermore, Greek citizens were found to justify not paying taxes for three main reasons: because they felt the tax system to unfair; because they were dissatisfied with the quality of government services; and because the recession had placed severe strain on their resources. The IMF report accordingly recommended simplifying tax policies, targeting staff resources where cheating is greatest, replacing older, entrenched staff with new professional accountants, and, unexpectedly, lowering tax rates as an incentive for voluntary tax compliance (Eble et al., 2013; Bergthaler et al., 2017). This last point was surprising because the MoU's requirement that Greece raise taxes is one of the reasons for their current high levels.

Figure 6: Greek Undeclared Work

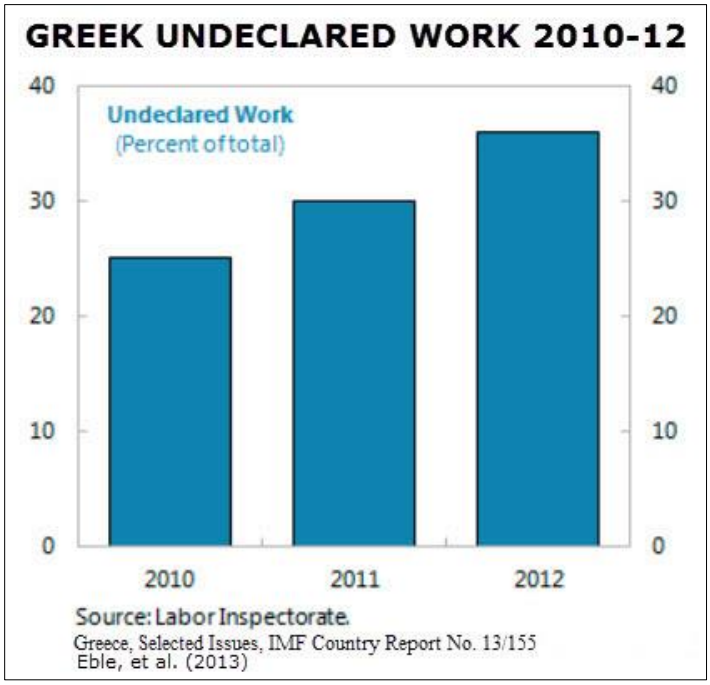
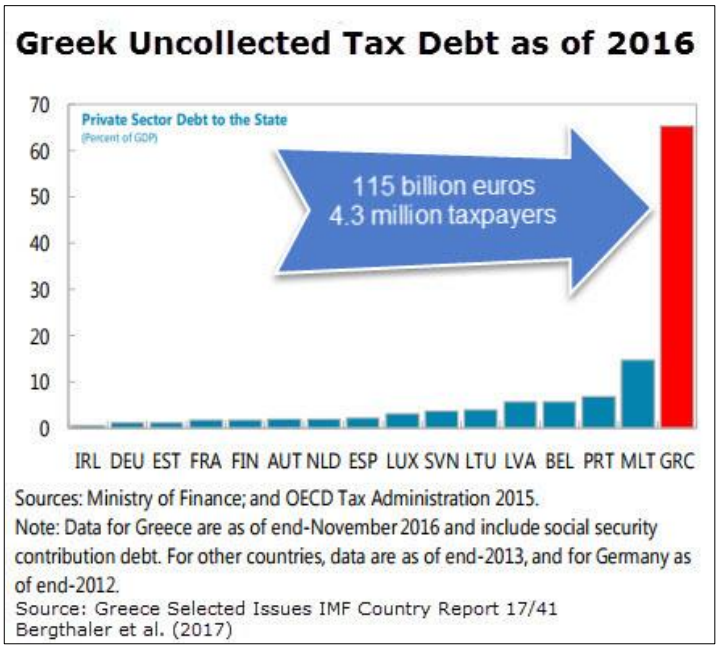
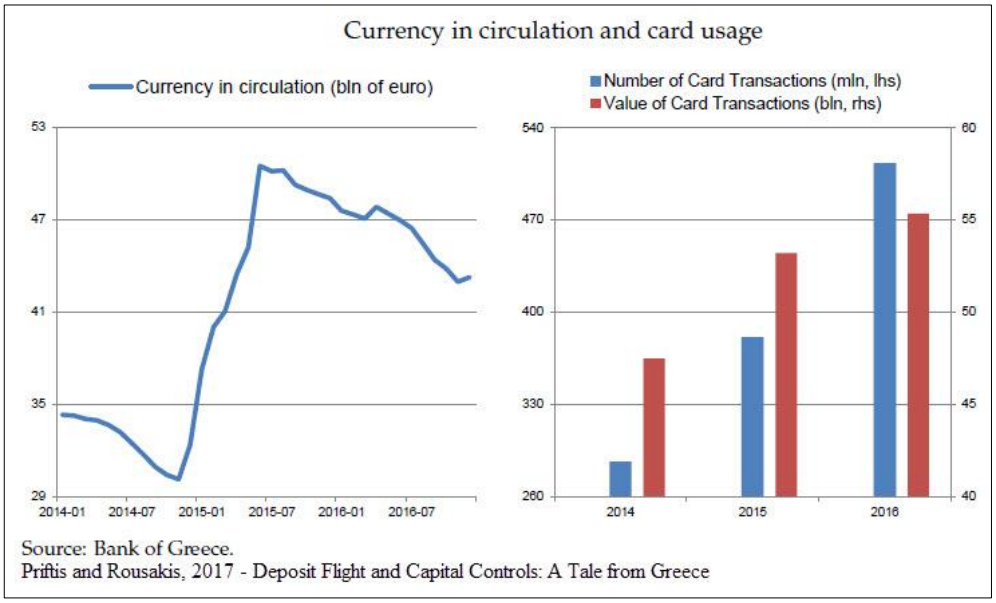


Figure 5: Greek Uncollected Tax Debt



The capital controls put into effect in late 2015 resulted in increased VAT tax revenues, as has been documented in three recent studies. This outcome that has created intense curiosity among researchers because it provided a rare and fascinating glimpse into the vast scope of Greece's shadow economy. Thus, as talk of "Grexit"—Greece's potential exit from the EU—heated up in 2015, Greeks feared either being left with a new worthless currency or losing their savings to confiscation and began withdrawing their funds from Greek banks. To avoid a run on these undercapitalized institutions, government officials placed capital controls on all banks that limited the number of accounts that a citizen could have and, more importantly, limited withdrawals by individuals to €60 a day (Priftis & Rousakis, 2017). Before June of 2015, Greeks had used cash for 95% of all retail transactions, by far the largest percentage of any EU country, but, after the capital controls were put in place, electronic payments skyrocketed (Antoniadis et al., 2017) because the €60-limit did not apply to purchases with debit or credit cards. Before the controls were put into place, payment cards were used sparingly, accounting for only 2.2% of private consumption in 2002, 5.4% in 2007, and 4.4% from 2010 to 2014. After the controls were enacted in 2015, though, the percentage more than doubled, to 9.5%, and increased again in 2016, to 11.2%. There was an immediate impact on VAT revenue in the last quarter of 2015 and the first two quarters of 2016, with increases of 8.5%, 18%, and 15.9%, respectively, even though the overall tax base shrunk by 0.3%, 2.9% and 1.1% year-on-year for these same three quarters (Hondroyoannis & Papaoikonomou, 2017). However, the Greek GDP only fell by 0.3% in 2015, even after capital controls had been imposed; for private consumption actually increased by 1.7% in Q1 and 1.6% in Q2 before the controls were imposed (Priftis & Rousakis, 2017). Surprisingly, consumption held strong in Q3 (1.4%) and Q4 (1.6%), meaning that 28% (a very high number) of the Greek GDP was circulating in cash[8] (as represented in Figure 7, left panel). Predictably, immediately after the controls took effect, the number of cards issued climbed considerably, by 11.29%, as did the value of transactions, by 12%, and transactions per card, by 33.3% (Figure 7, right panel).

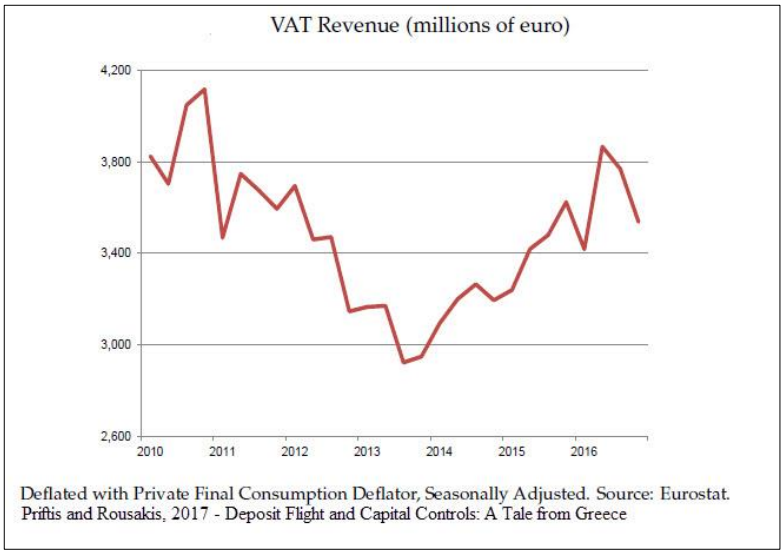
Figure 7: Currency Circulation and Card Usage



[8] The cash average for the eurozone is 10% of GDP in circulation (Priftis & Rousakis, 2017).

In a University of Oxford discussion paper, the researchers who compiled the above data, Priftis & Rousakis (2017), hypothesized that the fear of Grexit and a new currency had caused Greek citizens to pull their money out of banks and spend it on durable goods as a means to preserve their wealth and that the surge in payment card use had shifted economic activity from the shadow to the formal economy. To test their hypothesis, they included an empirical model that accounted for both the formal and informal economy and employed the sales of passenger cars as a measure of spending on durable goods. According to their model, in the key period in the first half of 2015, economic activity did indeed move to the formal economy, with car sales increasing dramatically. Thus the figures for March increased year-on-year by 11%, for April by 43%, for May by 21%, and for June by 11%, before returning to historical levels once the capital controls were in place. This study thus confirmed that the capital controls indeed increased consumer spending through payment cards, thereby leading to higher VAT revenue and moving economic activity from the shadow to the official economy, also confirming that corruption and tax evasion exist on a large scale in Greece (Figure 8) (Priftis & Rousakis, 2017). Additionally, Hondroyoannis and Papaoikonomou (2017) found that card payments for private consumption and Greek VAT revenue were directly correlated, with lower VAT rates expanding collections, as the recent VAT increases have suggested a declining Laffer curve. These authors thus recommended allowing consumers to deduct the costs of card payments made to high-risk industries from their payment-in-installments (PIT) accounts as an incentive and training tax officials to identify discrepancies between tax returns and VAT receipts (Hondroyoannis & Papaoikonomou, 2017).

Figure 8: VAT Revenue - Greece



The implications of Greece's score on the corruption indices will become clearer with the aid of a basic understanding of the methods for collecting taxes in Greece, which point in turn to areas in which corruption may be particularly rampant. The Greek tax system is fluid; thus from 2002 to 2016 there were 37 major tax law changes which were articulated in some 722 authorizations, with another 109 transitional provisions and 273 regular provisions dealing with tax issues scattered throughout a plethora of unrelated bills. In what was billed as an effort to help citizens understand these changes, the government issued approximately 200 ministerial circulars annually (Georgakopoulos, 2016). All of this activity amounted to an average of more than two major tax law changes per year in this period and, unsurprisingly, produced considerable confusion and uncertainty (Figure 9). Interestingly, the pace of change did not increase after the Troika's imposition of austerity measures (Kaplanoglou & Rapanos, 2012).

Figure 9: Tax Law Changes in Greece

TAX LAW CHANGES IN GREECE				
Year	**Major Law**	**Authorization**	**Transitional Provisions**	**Regular Provisions**
2002	2	30	4	14
2003	1	17	2	7
2004	3	52	7	4
2005	3	44	13	1
2006	3	35	7	3
2007	3	44	10	11
2008	2	40	3	1
2009	3	79	0	20
2010	6	87	30	16
2011	1	92	0	16
2012	0	0	0	22
2013	6	177	32	64
2014	0	0	0	45
2015	3	17	0	14
2016	1	8	1	35
Total	37	722	109	273
Source: Georgakopoulos (2016)				

In another study of tax evasion in Greece, Thodoris Georgakopoulos (2016) has demonstrated that tax revenues have been decreasing since 2010 despite numerous tax increases over that same time period (PwC, 2016) (Figure 10). To do so, he joined forces with the professional services firm Ernst & Young to analyze all of the available tax data and the estimates of other experts regarding how and where Greece has been losing economic activity to the shadow economy. The results are revealing (Figure 11).

Figure 10: Total Tax Revenue - Greece

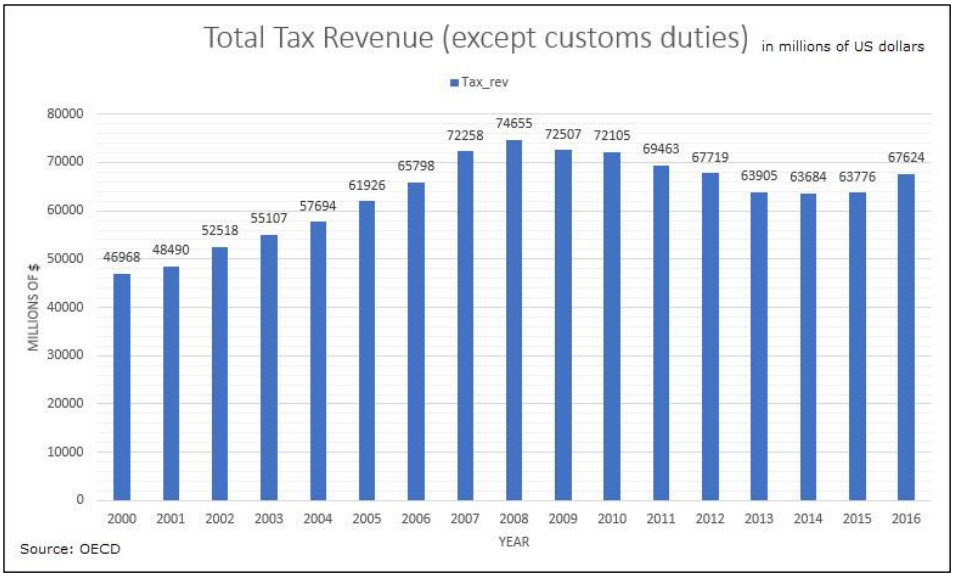


Figure 11: Estimate of Shadow Economy Costs

ESTIMATE OF SHADOW ECONOMY COSTS		
TYPE TAX	% of GDP RANGE	ESTIMATE COST RANGE
Personal Income Tax	1.9% to 4.7%	3 to 8 billion
VAT tax	3.5%	6 billion
Alcohol, tobacco, fuel	.05%	.9 billion
Legal Entities Income Tax	.15%	2 billion
Total	6% to 9%	€11 to €16 Billion
Source: Georgakopoulos (2016)		

Similarly revealing is a 2013 International Labor Organization (ILO) report showing undeclared work to be a major contributor to Greece's shadow economy. According to this study, individuals at all levels of Greek society avoid declaring work and skip payroll taxes, with the lower classes and those hit hardest by the crisis being the most likely to do so. High unemployment in combination with a disproportionate number of small enterprises has fostered undeclared work, with self-employed individuals comprising 32% of companies in Greece (contrasted with 14% in the EU) and firms with fewer than nine employees making up an overwhelming 96% of all Greek enterprises. As many of the other studies have insinuated, these small and self-employed businesses find it easier to avoid, not only declaring work, but also paying income taxes and VAT taxes (ILO, 2016; Eble et al., 2013; Bitzenis et al., 2016; Hassan & Schneider, 2016). Undeclared work also reduces income taxes, thereby keeping significant amounts of economic activity in the shadow economy. The ILO report further pointed out that labor inspection results and academic studies estimate the amount of undeclared work in Greece at anywhere between 46.7% and 14.6%, with typical findings of 25-35%, and it identified lack of trust in government as a core reason for such high levels, stressing again that undeclared work has been one of the key factors in Greece's large shadow economy (ILO, 2016).

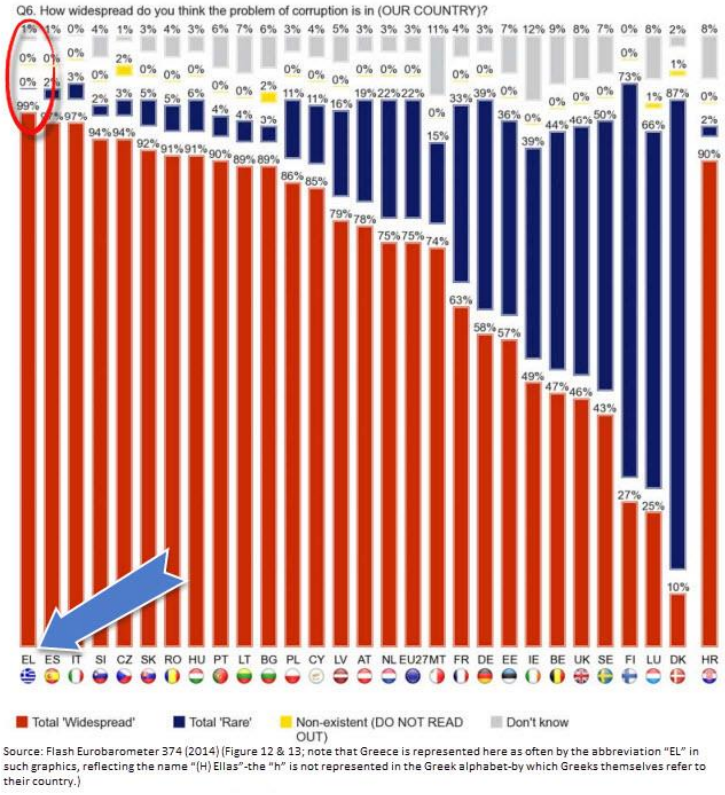
A theme that recurs in such evaluations has recently been discussed by Christos Paraskevopoulos in a 2017 paper entitled "Varieties of Capitalism, Quality of Government and Policy Conditionality in Southern Europe: Greece and Portugal in Comparative Perspective." Paraskevopoulos sought to explain why Greece has remained mired in recession while the other southern European countries hard hit by the crisis seem to have recovered. Thus, though Greece and Portugal both suffered—both being small, formerly authoritarian states with mixed market economies (MMEs)—Portugal has recovered while Greece has not; and QoG appears to be the main variable accounting for the difference. The 2017 paper expanded on an earlier work by Paraskevopoulos (2012) titled "Corruption, Inequality and Trust: the Greek vicious circle from incremental adjustment to "critical juncture?" in which he showed that increasing levels of grand and petty corruption have undermined trust in public institutions in a "vicious circle" that is primarily a recent phenomenon fueled by growing but weak public institutions financed by cheap credit and dominated by rent-seeking special interests; this state of affairs resists reform and has eroded public trust. These conclusions, which echo many of those regarding QoG and public trust made in the studies just discussed, make clear that these two critical variables must be accounted for when considering anti-corruption reforms for Greece (Kaplanoglou & Rapanos, 2012; ILO, 2016; Azariadis & Ioannides, 2015).

While this review has been able to present only a small portion of the massive amount of research into corruption in Greece, the studies discussed here are among the most comprehensive and current assessments of the phenomenon. The literature makes clear that corruption in the Hellenic Republic is a massive problem affecting all aspects of civil society. Most studies have stressed that it was a problem before the crisis and has continued to be afterward and have also argued that a piecemeal approach to fighting it characterized by numerous loop holes and light penalties perpetuates the cycle of corruption in Greece. Other factors contributing to the persistence of Greece's shadow economy include weak institutions, a complicated tax code, insufficient audit and enforcement procedures, high tax rates, and of course bribery and special favors by public servants. The result has been a wholesale erosion of public trust. Many of these studies have shared similar arguments regarding the causes of and remedies for corruption in Greece, with Paraskevopoulos's writings on trust and QoG (2012; 2017) getting to the heart of the matter (Kaplanoglou & Rapanos, 2012; ILO, 2016; Azariadis & Ioannides, 2015; TI-G, 2012; Dellas et al., 2017; Katsios, 2006).

SECTION 2. MEASURING CORRUPTION IN GREECE

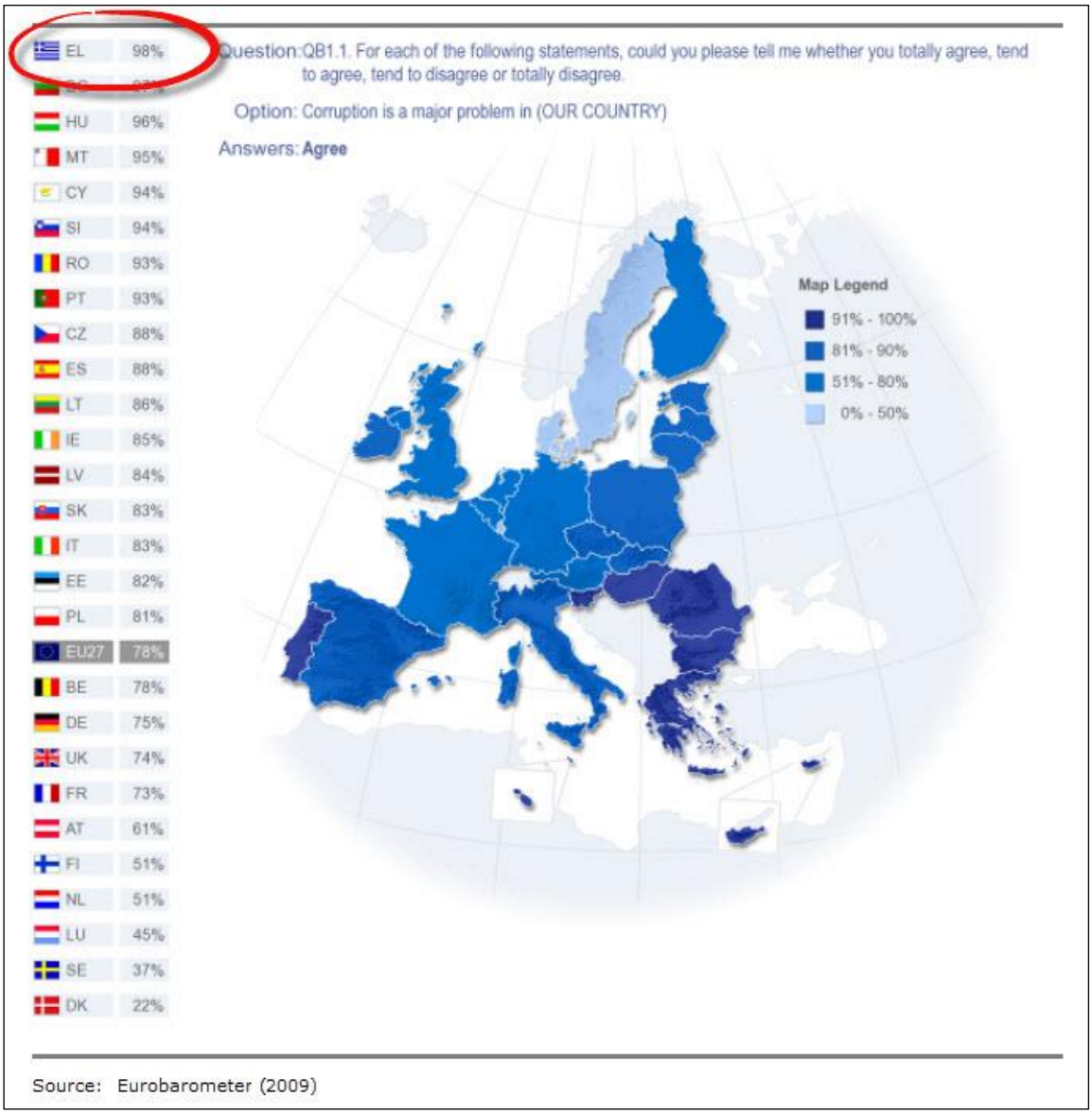
With the Greek sovereign debt crisis weakening the euro and threatening the future of the EU, there has been a desperate rush to measure and combat the country's corruption problem (Tsoukalis, 2014; Stiglitz, 2016). Long before the Greek crisis in 1995 when serious scholars were actually questioning if the phenomena of corruption was harmful to economies, TI decided to launch the Corruption Perception Index, which totally changed the debate about corruption and helped bring an unsightly problem out into the open (Galtung, 2006). The CPI's consistent indication that Greece has been suffering from a significant corruption problem came as no surprise to Greek citizens. Thus, in the European Commission's 2014 Eurobarometer survey, 99% of Greek citizens agreed that corruption was a "widespread" problem in their country (as can be seen on the far left in Figure 12). While this result might appear to represent some measure of progress—by indicating that the Greek people now realize how problematic corruption is—a Eurobarometer poll conducted five years earlier had yielded essentially the same result, with 98% of Greeks at that time answering the same question in the same way (Figure 13). In either case, compared with other EU countries, Greece had the highest number of respondents identifying corruption as a significant national issue (Eurobarometer, 2009, 2014).

Figure 12: Eurobarometer on Corruption 2014



Source: Flash Eurobarometer 374 (2014) (Figure 12 & 13; note that Greece is represented here as often by the abbreviation "EL" in such graphics, reflecting the name "(H) Ellas"-the "h" is not represented in the Greek alphabet-by which Greeks themselves refer to their country.)

Figure 13: Eurobarometer on Corruption 2009



2.1. GREECE & THE CORRUPTION PERCEPTIONS INDEX

A review of Greece's CPI scores since 1995, only confirms what Greek citizens have told pollsters before, during, and after the crisis. The score peaked in 1997 at 5.35 but since has not exceeded 5.00—or 50 using the new scale introduced in 2012. The next peak came before the crisis in 2008, with a score of 4.7 and a ranking of 57th of 180 countries (TI, 1995-2017); but even at this point Greece was the lowest of any EU country and behind most Balkan and Black Sea countries. The toxic combination of shrinking incomes and increasing taxes in the period following the crisis created powerful temptations for both government officials and private citizens to use illegal methods to increase or save money, at times including bribes, embezzlement, fraud and, especially, tax evasion (Giannitsis & Zografakis, 2015). Predictably, Greece's lowest score (on the old scale) of 3.4 came in 2011, during the height of the crisis, when it was ranked 80th of 182 countries (Figure 14).

Figure 14: CPI - Greece 1995 - 2017

Greece- Corruption Perception Index (CPI) 1995-2017												
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Score	4.04	5.01	5.35	4.9	4.9	4.9	4.2	4.2	4.3	4.3	4.3	4.4
Rank	30	28	25	36	36	35	42	44	50	49	47	54
Countries	41	54	52	85	99	90	91	102	133	146	159	180
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	–
Score	4.6	4.7	3.8	3.5	3.4	36*	40*	43*	46*	44*	48*	–
Rank	56	57	71	78	80	94	80	69	58	69	59	–
Countries	180	180	180	178	182	178	175	174	167	177	180	–

Source: TI (1995-2017)
Note: The CPI Index scores and ranks countries based on how a country's public sector is perceived to be.
Until 2011 the CPI index ranged from 0 (highly corrupt) to 10 (highly transparent).
* Since 2012 the CPI index ranged from 0 (highly corrupt) to 100 (highly transparent).

By way of comparison,[9] the EU-28 average in 2011 reached a high 6.2 and the US received an even higher score, 7.1. Then, in 2012, while experiencing the full effects of the Troika's harsh MoU measures, Greece received a score of 36 on the newly-introduced scale and dropped to 94th of 178 countries in the worldwide rankings. In 2016, the EU-28 and US averages increased to 64.6 and 74, respectively. Over the past five years, Greece has improved 14 points, with a score of 46 in 2015 and a world ranking of 58th of 167 countries, though in 2016 it dropped 2 points, with a score of 44, and slipped back to 69th worldwide before encouragingly improving by 4 points in 2017 to a world rank of 59th. What makes these lackluster results disheartening is that, during this same five-year period, the government passed a large number of laws intended to fight corruption.

While the crisis has, as discussed, fostered corruption in Greece despite such reform efforts, other southern EU countries as well as many of Greece's Balkan and Black Sea neighbors have experienced improvement. As can be seen in Figure 15, Greece's ranking has worsened since 2008, from 57th to as high as 94th but falling to 69th in 2016. In the meanwhile, the impressive ratings of the US and Portugal improved slightly, and Georgia experienced massive improvement, falling from 67th in 2008 (10 positions worse than Greece) to 44th in 2016 (25 positions better than Greece). The pattern for Bulgaria has resembled that of Greece, while Cyprus has enjoyed a consistently strong ranking despite a slip in 2016 (TI, 1995-2017).

[9] The comparisons with Greece discussed here include the 13 Balkan states, 10 Black Sea states, the EU, and the US in most of the measurement indices, and in particular Bulgaria, Cyprus, and Portugal whenever possible. These latter three states are particularly comparable because, in turn, Bulgaria is Greece's neighbor and business competitor, Cyprus shares a similar cultural history with Greece, and Portugal like Greece was hit hard by the crisis and had to deal with the MoUs.

Figure 15: CPI - Selected Countries 2008 – 2017

Corruption Perception Index (CPI) rankings, Selected Countries, 2008-2017										
Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Greece	57	71	78	80	94	80	69	58	69	59
Bulgaria	72	71	73	86	75	77	69	69	75	71
Cyprus	31	27	28	30	29	31	31	32	47	42
Georgia	67	66	68	64	51	55	50	48	44	46
Portugal	32	35	32	32	33	33	31	28	29	29
USA	18	19	22	24	19	19	17	16	18	16
Countries	180	180	178	182	178	175	174	167	177	180
Source: TI (1995-2017)										

Also instructive are comparisons of Greece with the Black Sea and Balkan states (Figure 16). In terms of definitions, the 13 Balkan Region countries (BAL-13) are Albania, Bosnia-Herzegovina, Bulgaria, Croatia, FYROM, Greece, Kosovo, Moldova, Montenegro, Romania, Serbia, Slovenia, and Turkey, while the 10 Black Sea States (BS-10) are Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russia, Turkey, and Ukraine. Many of these states are, unlike Greece, former communist countries—though Greece did go through a period of military rule from 1967 to 1974—but like Greece they have reputations for corruption, with similar CPI scores. Furthermore, while the Hellenic Republic has been a member of the EU since 1981 and is considered to have a modern economy, it has consistently fallen 2 to 3 points—or 20 or more points using the new scale—behind the EU average (TI, 1995-2017).

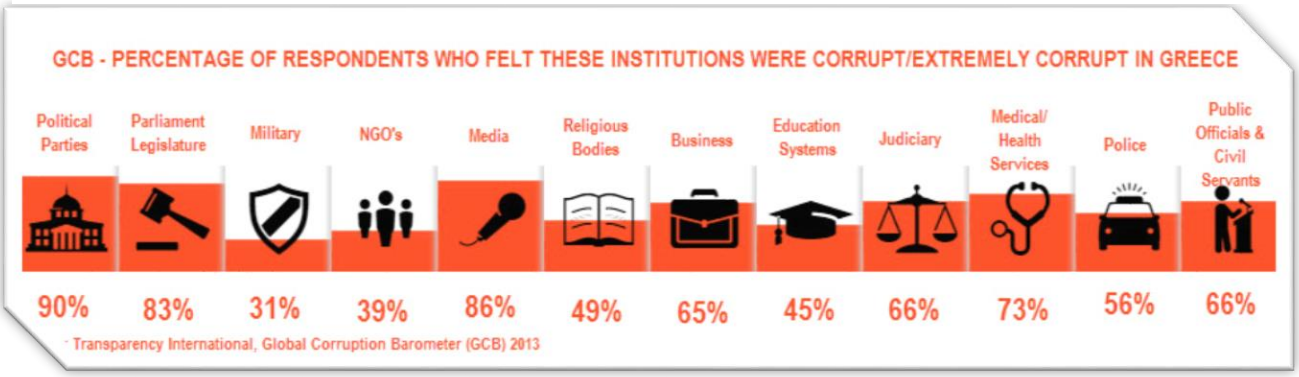
Figure 16: CPI - EU, BS-10, BAL-13 2008 - 2017

Corruption Perception Index (CPI) scores, Greece, EU-28, BAL-13, BS-10, 2008-2017										
Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Greece	4.7	3.8	3.5	3.4	36*	40*	43*	46*	44*	48*
EU-28 avg.	6.4	6.3	6.2	6.2	63*	63.6*	64.2*	65.4*	64.6*	64.6*
BAL-13 avg.	4.0	3.9	3.8	3.7	41.9*	42.3*	42.2*	42.5*	42.5*	42.8*
BS- 10 avg.	3.3	3.3	3.1	3.1	36.3*	37.5*	38*	38*	38.2*	39.1*
Source: TI (1995-2017) Note: The CPI Index scores and ranks countries based on how a country's public sector is perceived to be. Until 2011 the CPI index ranged from 0 (highly corrupt) to 10 (highly transparent). * Since 2012 the CPI index ranged from 0 (highly corrupt) to 100 (highly transparent).										

2.2. GREECE & THE GLOBAL CORRUPTION BAROMETER

In 2003, TI launched its Global Corruption Barometer (GCB), the largest such worldwide survey of public opinion, covering both the public and private sectors. The CGB evaluates 12

Figure 17: GCB - Institution Scores 2013



institutions in each country, which respondents rank on a scale from 1 (highly transparent) to 5 (highly corrupt). In the 2013 evaluation, 1,001 Greek citizens were asked the 12 questions about their country as well as whether they had ever paid a bribe for government services. As can be seen in Figure 18, of the 19 eurozone countries, Greece was the worst performer in regard to seven of the institutions, namely political parties, parliament, media, business/private sector, educational system, medical/health, and public officials and civil servants, while faring much better in regard to the military, NGOs, religious bodies, the judiciary, and the police (TI, 2013). Moreover, 22% of respondents reported having paid a bribe to receive services, up from 18% in 2010. The one positive statistic was the answer to the question, "To what extent do you agree that ordinary people can make a difference in the fight against corruption?" with an encouraging 82% agreeing, 37% strongly. Overall, then, Greek citizens perceive the level of corruption in their country to be higher than those in other countries in the region, as can be seen in Figure 17.

Figure 18:GCB Institution Scores 2013

Perception of Corruption by Institution, GCB scores, 2013												
	political parties	Parliament legislature	military	NGO's	media	religious bodies	Business /private sector	education system	judiciary	medical/health	police	public officials/ civil servants
Greece	4.6	4.3	2.9	3.1	4.4	3.4	3.8	3.3	3.9	4.1	3.6	3.9
Bulgaria	4.2	4.0	2.9	3.2	3.5	3.5	3.8	3.4	4.4	4.2	3.9	3.9
Cyprus	4.4	4.0	3.6	2.6	3.9	3.3	3.2	2.9	3.1	3.6	4.1	3.7
Portugal	4.1	3.9	3.9	3.2	3.2	3.0	3.5	3.1	3.9	3.0	3.2	3.4
USA	4.1	3.7	2.9	3.0	3.7	3.1	3.6	3.1	3.3	3.3	3.3	3.6
EU-28 avg.	4.0	3.7	2.7	2.7	3.3	2.9	3.5	2.8	3.3	3.2	3.2	3.5
BAL-13 avg.	4.2	3.9	2.7	2.9	3.4	2.8	3.5	3.4	4.0	3.9	3.6	3.7
BS- 10 avg.	3.8	3.8	2.9	2.9	3.3	2.8	3.5	3.3	3.9	3.7	3.6	3.7

Source: Transparency International, Global Corruption Barometer GCB (2013).
Note: The GCB index ranges from 1 (highly transparent) to 5 (highly corrupt). Highlighted scores indicate worst performer in each institution.

2.3. GREECE & GLOBAL COMPETITIVE INDEX

Another useful index when evaluating corruption is the World Economic Forum's Global Competitive Index (GCI), which assesses countries with respect to 12 institutions or pillars. In most respects, the GCI evaluation is not relevant to the present discussion, the exception being its first pillar, which takes into account 21 distinct aspects of institutions, including diversion of public funds, public trust in politicians, irregular payments and bribes, favoritism by government officials, and transparency in government policymaking. Additionally, respondents are asked to rank the greatest obstacles to doing business in a given country, one option being corruption. Data are obtained from the Executive Opinion Survey, which is distributed to business leaders around the globe; in 2017, it tabulated the responses of 12,775 executives to 150 questions on which they ranked their countries' performance on a scale ranging from least competitive (1) to most competitive (7) (GCI, 2003-2017). The following overview focuses on the first pillar outcomes and specifically the ranking of corruption in the multiple-choice question. The results for Greece on this index track to some extent with the CPI results. The country's score began at 4.32 in 2002/3, experienced a downward trend before the crisis with a low point of 3.86 in 2012/13, and has recovered partially with a 4.2 for 2017/18 (Figure 19) (GCI, 2003-2017). By way of comparison, in the 2017/18 report, Bulgaria ranked 49th with a score of 4.5, Cyprus 64th with a 4.3, Portugal 42nd with a 4.6, and the US 2nd with a 5.9; the EU-28 average was 4.8, the BAL-12 4.2, and the BS-10 4.3. These results show that Greece is once again lagging behind, though the main concern here regarding this index is the insight that it offers into the quality of Greek institutions.

Figure 19: GCI -Greece 2002/03-2017/18

Greece- Global Competitive Index (GCI) 2003-2017								
	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Score	4.32	4.58	4.56	4.26	4.33	4.08	4.11	4.04
Rank	38	35	37	46	47	65	67	71
Countries	80	102	104	117	125	131	134	133
	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18
Score	3.99	3.92	3.86	3.93	4.0	4.02	4.0	4.2
Rank	83	90	96	91	81	81	86	87
Countries	139	142	144	148	144	140	138	137

Source: GCI (2003-2017)
Note: Countries are ranked on a scale of 1 (least competitive) to 7 (most competitive).

The first pillar focuses on Greece's institutions and, as mentioned, includes several questions dealing with their quality and the role of corruption in them. As Greek institutions were repeatedly identified as a weakness by scholars, these results will be helpful in evaluating corruption's overall impact in Greece. Again, Greece's best scores came in long before the crisis and then dropped to a low of 3.4 in 2012/13, mirroring the pattern in the other indices. In this case, Bulgaria in 2017/18 ranked 98th with a score of 3.5 on the first pillar, Cyprus 51st with a 4.2, Portugal 43rd with a 4.4, and the US 20th with a 5.3; the EU-28 average was 4.5, the BAL-12 3.6, and the BS-10 3.8 (see

rows 1 and 2 in Figure 20) (GCI, 2003-2017). Additionally, respondents were asked to rank the following 16 factors that make it difficult to do business in Greece:

- inefficient government bureaucracy
- limited access to financing
- policy instability
- unclear tax regulations
- corruption
- high tax rates
- restrictive labor regulations
- government instability
- inadequate infrastructure
- poor work ethic of the labor force
- inadequately educated labor force
- insufficient capacity to innovate
- crime and theft
- Inflation
- foreign currency regulations
- poor public health

A review of each year's results reveals inefficient government bureaucracy, limited access to financing, policy instability, high tax rates, and corruption to be the major impediments to business in Greece. During the crisis, corruption ranked as high as second biggest problem, but over the last few years tax rates, tax regulations, and political stability moved to the top, with corruption dropping to eighth place. Rows three and four in Figure 20 display the percentage of respondents who chose corruption and its rank among the 16 factors (GCI, 2003-2017).

Figure 20: GCI -1st Pillar 2006/07-2017/18

Global Competitive Index (GCI) 1st Pillar 2006-2018													
		06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18
1	Score*	4.4	-	4.1	3.8	3.7	3.5	3.4	3.5	3.6	3.7	3.8	3.7
2	Rank	41	-	58	70	84	96	111	103	85	81	81	87
3	Percentage	6.5%	-	12%	14%	14%	13%	11.6%	6.9	4.3	5.4	3.6	5.5
4	Rank	5	-	4	3	2	3	5	6	6	6	8	7
5	Countries	125	131	134	133	139	142	144	148	144	140	138	137

Source: GCI (2003-2017)
*Note: Countries are ranked on a scale of 1 (least competitive) to 7 (most competitive).

2.4. GREECE & SUSTAINABLE GOVERNANCE INDICATORS

Another important index is the set of Bertelsmann Stiftung Sustainable Governance Indicators (SGIs)—again, QoG was repeatedly identified as a key deficiency in the scholarly studies reviewed earlier and as major cause of corruption in Greece. Like the GCI, this index covers a broad range of issues, only a few of which touch on governance and specifically the quality of a national

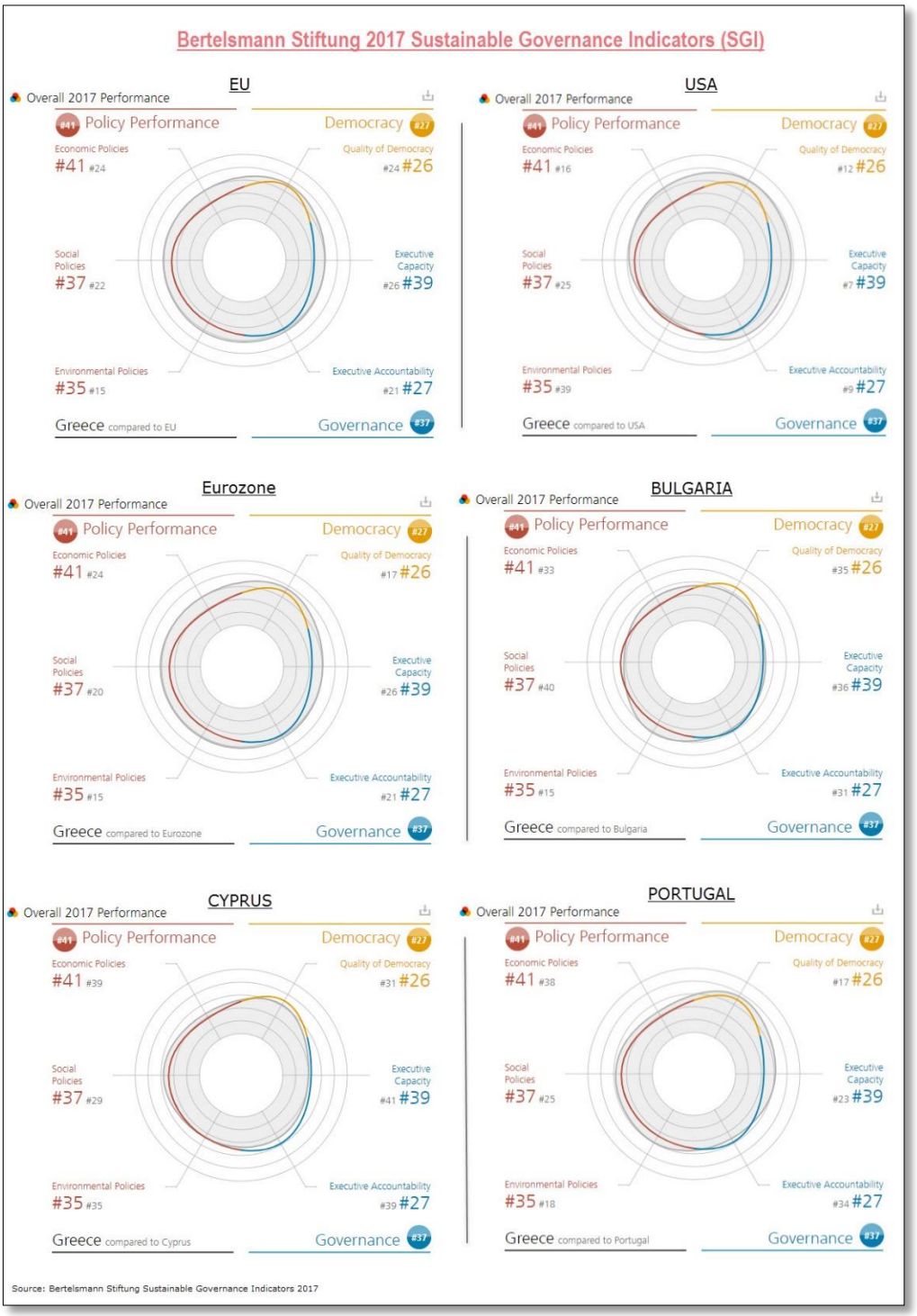
government. It ranks 41 nations which include all the OECD and EU countries; Greece belongs to the OECD and EU. For the 2017 SGIs, individuals with expertise in the various countries were asked 67 questions pertaining to three aspects of government, namely policy performance, democracy, and governance. In the present context, the survey is important for the light that it sheds on Greece's poor QoG, for the governance section includes 36 questions dealing specifically with executive accountability and capacity scored on a scale from worst (1) to best (10). Though Greece ranked a healthy 26th in terms of democracy,[10] the ongoing economic depression contributed to a last place (41st) ranking for policy performance, and governance was also a weak area for Greece, with rankings of 27th and 39th on executive accountability and capacity, respectively (Figure 21) (SGI, 2017). The lack of governance capacity could of course cause Greeks to lose trust in public institutions.

Figure 21: Stiftung Sustainable Governance Indicators -Greece

It is once more instructive to compare the Hellenic Republic with other countries, specifically the EU, USA, eurozone, Bulgaria, Cyprus, and Portugal (Figure 22), as was done with the CGI. Greece again lags far behind the US and ranks near the bottom of the EU and eurozone. The governance rankings of Bulgaria and Greece are quite similar, and Greece is just ahead of Cyprus and leads Portugal in accountability, though the latter is far ahead in governance capacity, a finding that may partly explain why it has emerged from the crisis faster than Greece (Paraskevopoulos, 2017). The 2017 SGI thus seems to corroborate the findings of other indies that Greece suffers from institutional weakness (SGI, 2017).

[10] This report did reference efforts by the Syriza-ANEL government to regulate the media through licensing and fees, which can be viewed as an attempt to control the knowledge of average citizens about governmental activities.

Figure 22: Stiftung Sustainable Governance Indicators -selected countries



Reviewing Greece's results from four separate indices has provided us with a robust look at corruption in Greece. Despite the different approaches and distinct methods, they arrived at similar conclusions about the massive amount of corruption in Greece. The comparisons of Greece with the EU, USA, BAL-13 and BS-10 countries, Bulgaria, Cyprus, and Portugal both provide beneficial

context for the situation in Greece and confirm the reliability of the overall results, which again remain consistent across the indices. In light of these statistics, it is apparent that Greece's corruption problem began well before the crisis but was exacerbated by it. It is in this context important to recall that many of the anti-corruption reforms implemented after the crisis seem to have been ineffective. The data from these indices demonstrate the importance of public institutions for the successful implementation of reforms. The weakness of Greek institutions reported in the literature is thus confirmed by Greece's low scores on indices relating to governance and public institutions and is the most likely cause of Greek citizens' lack of trust in Greek government, as discussed in Section 1.1.

2.5. ECONOMETRICAL APPROACHES

The above literature review identified numerous variables that correlate with corruption. Thus the ILO report found that high unemployment led to increases in undeclared work, while Azariadis and Ioannides reported that low QoG and lack of trust increased corruption and Priftis and Rousakis that card payments promoted compliance with VAT collections; several other studies have demonstrated that tax evasion increases when tax rates rise. Likewise, studies from around the globe have correlated high corruption with low growth (Papaconstantinou, 2013; Dreher & Herzfeld, 2005; Knack & Keefer, 1995). The following subsections accordingly explore further the possible correlation among corruption, growth, tax burdens, and QoG.

2.5.1. THE IMPACT OF CPI ON TAX BURDEN: REGRESSION ANALYSIS

The linear regression analysis presented in Figure 23 was based on the CPI from 2000 until 2016, while the Greek tax burden as a percentage of GDP was based on OECD statistics for the same period of years. Corruption negatively affected the tax burden log by 4.855 x 100 = 485.5. The effect was more significant over the period from 2000 to 2011 than over that from 2012 to 2016; the coefficient is significant statistically at the 5% level, as the *t*-statistic, *p*-value, and confidence level show (specifically, the *t*-stat is greater than 2, the *p*-value less than 0.005, and the confidence level does not include zero).

Figure 23:Regression Model - CPI and Tax Burden

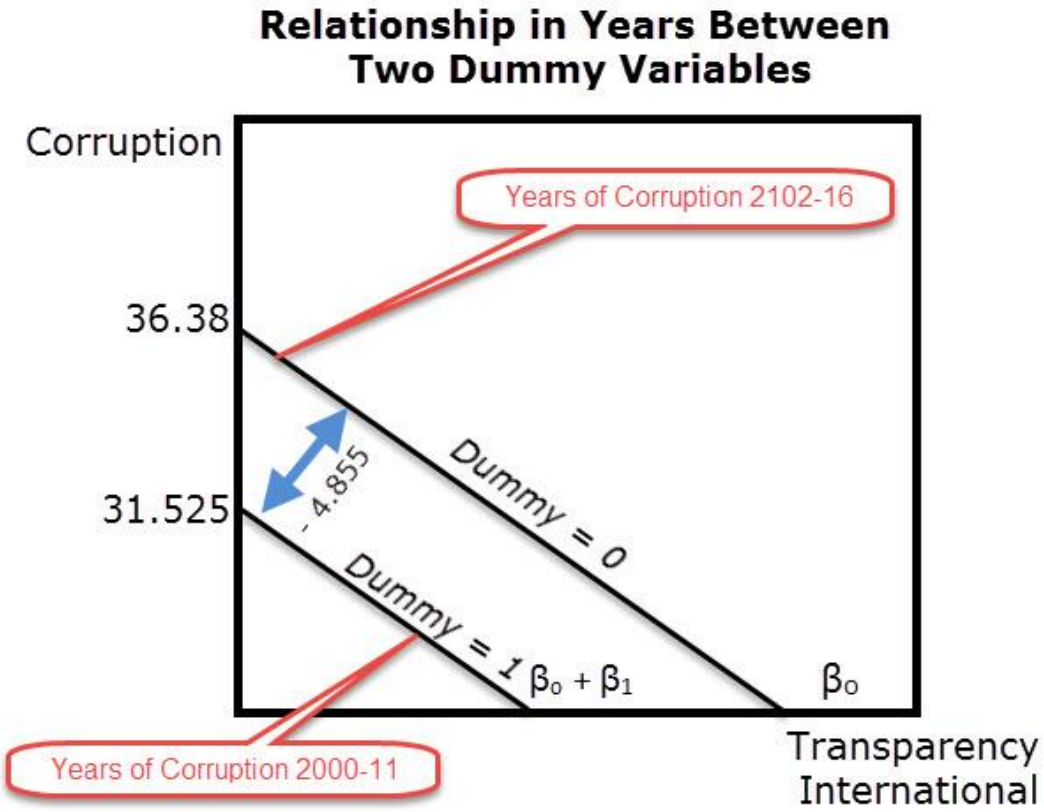
```
. regr taxbur_log1 ticor1

      Source |       SS       df       MS              Number of obs =      17
-------------+------------------------------           F(  1,    15) =   58.56
       Model |  83.1918601     1  83.1918601            Prob > F      =  0.0000
    Residual |  21.3104941    15  1.42069961           R-squared     =  0.7961
-------------+------------------------------           Adj R-squared =  0.7825
       Total |  104.502354    16  6.53139714           Root MSE      =  1.1919

------------------------------------------------------------------------------
  taxbur_log1 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
       ticor1 |      -4.855   .6344537    -7.65   0.000    -6.207306   -3.502694
        _cons |       36.38   .5330478    68.25   0.000     35.24384    37.51616
------------------------------------------------------------------------------
```

When the dummy variable has a value of 0, the tax burden log is equal to 36.38, and when it has a value of 1, the tax burden log is equal to both or 31.525, meaning that the tax burden log in the second period of 2012-2016 was 4.855 units below the 2000-2011 period (Figure 24).

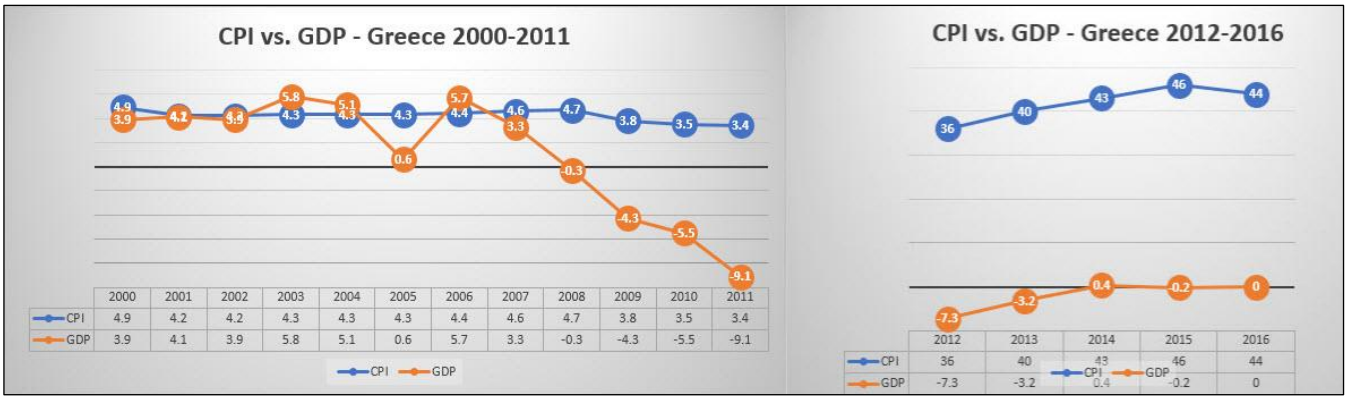
Figure 24: Dummy Variable Model



2.5.2. CPI & GDP BASIC CORRELATION

Numerous studies of numerous countries have found a negative correlation between corruption and economic growth, and this appears to be the case in Greece as well (Chene, 2014). The separate CPI data for the periods from 2000 to 2011 and from 2012 to 2016 appear to show

Figure 25: CPI & GDP Basic Correlation

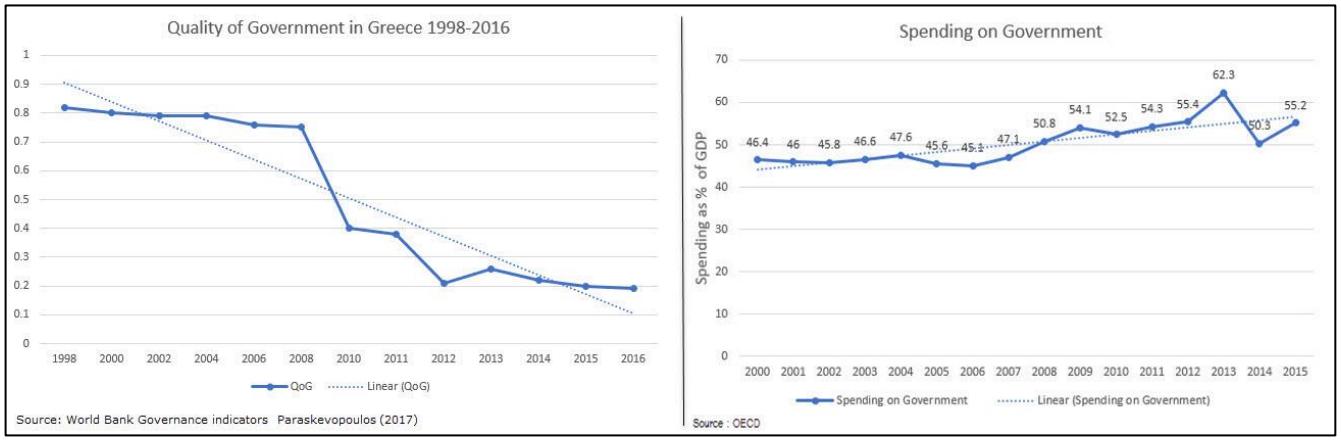


such a correlation as well. Thus, from 2000 to 2007 (left panel in Figure 25), the CPI and GDP mostly tracked together with the exception of 2005; then from 2008 to 2011 when GDP dropped dramatically downward after the crisis the CPI also fell significantly. For the years from 2012 to 2016 (right panel in Figure 25), the variables are distinct but move in a parallel direction. Although the drastic drop in GDP from 2008 to 2011 is attributable to the crisis, the CPI also shows corruption to have grown at a significant rate during the same period. Once growth leveled off, the parallel path of both the CPI and GDP suggest that improved transparency positively effects economic growth[11].

2.5.3. QoG & GOVT. SPENDING AS % OF GDP BASIC CORRELATION

Other studies have shown that a growing public sector tends to experience increasing corruption, a correlation that is explored here in the context of QoG (Papaconstantinou, 2013). Low QoG was revealed to be a key variable in Greece's corruption in both the literature and perception indices. It is an issue that goes to the heart of public trust in government and effects citizens' perceptions of the morality of tax evasion and other activities related to corruption. The continued decline in Greece's QoG rating is unmistakable (left panel in Figure 26). So also the Greek World Bank of Governance score has fallen dramatically, from a high of 0.8 in 1998 to a low of 0.19 in 2016; the turning point and major drop occurred after the crisis in 2008. Government spending as a percentage of GDP remained constant from 2000 to 2008, thus tracking with QoG. In 2008, government spending rose significantly, reaching a peak in 2013, while QoG reached a low point in 2012 and 2013. Government spending increased by 17% in 2013 before settling to a level that by 2016 was 9% higher as a percentage of GDP than it had been in 2000, while QoG dropped by 60% during the same time period. These statistics reflect the enormous difference between these two variables and indicate that the increase in government spending actually preceded a lower QoG ranking for Greece (right panel in Figure 26).

Figure 26: OoG -Greece 1998-2016 & Spending on Govt. as % of GDP 2000-2015



[11] When evaluating results of the CPI it is important to remember that year to year comparisons are problematic and not recommended by Transparency International (2016).

2.5.4. THE IMPACT OF GOVT. SPENDING ON QoG: REGRESSION ANALYSIS

A simple linear regression was conducted using the World Bank of Governance indicators for QoG and the revenue spent on government as a percentage of GDP for the period from 2000 to 2015. When government spending increased by 1%, the QoG decreased by 0.00426182 units. The coefficient is significant statistically at the 5% level as indicated by the *t*-stat, *p*-value, and confidence level (again, the *t*-stat is greater than 2, the *p*-value less than 0.005, and the confidence level does not include zero) (Figure 27).

Figure 27: Regression Model – QoG and Government Spending

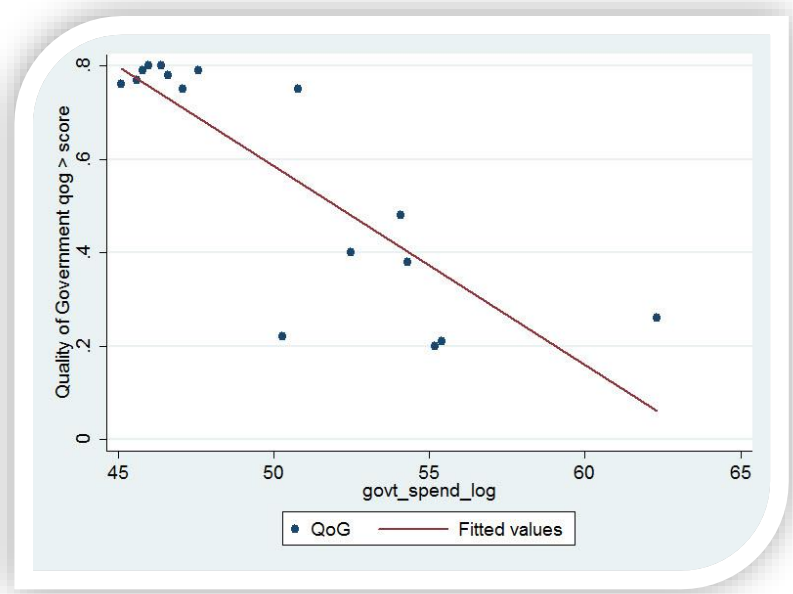
```
. regr qog govt_spend_log
```

Source	SS	df	MS		
Model	.660853122	1	.660853122	Number of obs	= 16
Residual	.284921895	14	.020351564	F(1, 14)	= 32.47
Total	.945775018	15	.063051668	Prob > F	= 0.0001
				R-squared	= 0.6987
				Adj R-squared	= 0.6772
				Root MSE	= .14266

qog	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
govt_spend_log	-.0426182	.007479	-5.70	0.000	-.0586589	-.0265774
_cons	2.715742	.3780179	7.18	0.000	1.904974	3.52651

In the regression model of corruption and tax burden represented in Figure 23, the explained power of R^2 is greater by 10%. Specifically, the R^2 in Figure 12 explains around 80% of the model, while that of Figure 27 (QoG and government spending model) explains 70%. This result is due to the fact that the dummy variable of corruption explains the impact on the tax burden better than the impact of government spending on QoG. So also the *F*-statistic difference is greater in Figure 23 than in Figure 27. The relationship represented in Figure 23 is also more linear than that in Figure 27 because there are fewer outliers (Figure 28).

Figure 28: Scatter Diagram - QoG and Government Spending



All econometric findings are limited by the availability of the data, and the results presented here are no exception. The fact is that the crisis has made quantifying corruption in Greece particularly tricky because the unprecedented drop in economic activity has impacted all areas of Greek civil society in a myriad of ways. The relatively short span of years, lack of time series data, and variation in methodologies employed by the indices complicate precise measurements as well, though these outcomes are consistent with the findings of other scholars. The overall implications are that corruption has been having a negative impact on the Greek economy and that increased government spending as a percentage of GDP has not improved QoG.

SECTION 3. COST OF GREEK CORRUPTION

There are three main costs or consequences of corruption in Greece. The first, of course, is financial: corruption erodes Greek tax revenues and the quality of government. This cost fuels the other two, inequality and population decline. The following discussion considers each of these costs in turn.

3.1. FINANCIAL COST

While it is difficult to place an exact value on the various corrupt activities in Greece, the available research offers some estimates. Empirical modeling done before the crisis estimated the value of Greece's shadow economy at anywhere from 11 to 35% of GDP. In 2016, when the GDP totaled $193 billion, that value would have been somewhere between $21.2 and $67.5 billion; given the average tax burden of 38.6%, Greece thus lost between $8.1 and $26.5 billion in tax revenue that year (Bitzenis et al., 2016). The findings of studies conducted after the crises are even more stark: TI-G (2012) has valued the total economic cost of corruption in Greece at over €70 billion ($83.6 billion[12]), which would have created $27.2 billion in tax revenue, a number that is close to the $29.2 projected by Hassan and Schneider (2016).

While the $83.6 billion figure seems incredible, Dellas et al. (2017) showed that the informal sector grew after the crisis to account for even more shadow economic activity than the TI-G (2012) report had identified. According to the former's DSGE model, Greece's shadow economy grew from 25% of GDP before the crisis to 35-40% afterward, indicating a loss of $26.5-29.7 billion annually in tax revenues (Dellas et al., 2017). Furthermore, Artavanis et al. (2015) were able, by comparing reported income on loan applications with tax return data, to show massive amounts of underreporting, particularly by professionals in the healthcare, legal, engineering, academic, and media sectors. Their model used data from 2006-2009, before the crisis, to find that the actual income of self-employed individuals was 1.75 to 1.84 times greater than their reported income, indicating that around $35 billion in income had been hidden in the shadow economy, equivalent to a revenue shortfall of approximately $13.5 billion (Artavanis et al., 2015). Additionally, undeclared work in Greece has resulted in the failure to collect almost $3.2 billion in payroll taxes annually (Bergthaler et al., 2017; Eble et al., 2013). Evasion of VAT taxes is also costing Greece revenue: from 2009 to 2013, the country had a 35% average VAT gap, equivalent to a loss of around $7.7 billion annually (Barbone et al., 2015).

Not even medical care is free from corruption in Greece. Thus TI-G (2012) reported that bribes to doctors for surgery could cost from $60 to $9,000, and Souliotis's et al. (2016) study found that 32.4% of visits to public hospitals involved payment of an under-the-table bribe in order to receive or improve services. Likewise, 36% of private dentist visits were estimated to include such shady payments, which invariably go unreported. The study estimated that Greek citizens spent approximately $1.8 billion in 2012 on such payments, or 28% of household health expenditures. At the 38.6% tax rate, the likely tax revenue leakage would exceed $600 million (Souliotis et al., 2016). The counterintuitive decline in revenue from tobacco taxes from

[12] The values of the costs in this section have been converted to US dollars for the sake of comparison using the December 2017 exchange rate of 1.20 euro to 1 dollar.

$4.68 billion in 2011 to $3 billion in 2013 despite significant increases in tax rates on tobacco products has been attributed to illegal activities; thus conservative estimates put the loss from cigarette smuggling at $716 million annually (Chionis & Chalkia, 2016). Even more troubling are losses from fuel smuggling, which cost Greece perhaps $3 billion a year (Mitrakos et al., 2014). Similarly rife with corruption are the benefit and pension systems, though it has again proved difficult to quantify the exact costs. Zacharakis et al. (2017) provided four case studies of fraud at Disability Certificate Centers, the Social Insurance Institute (IKA), and welfare offices that had been investigated by Greek anti-corruption officials; the individuals involved included public servants, doctors, insurance employees, and others who had fraudulently set up hundreds of accounts and collected over $4 million. The study provided no precise estimate of the cost of this kind of fraud, but it did suggest that it may be widespread. Figure 29 summarizes the main tax cost estimates for Greece along with the method used to calculate corruption.

Figure 29: Summary of Academic Tax Cost Estimates of Corruption in Greece

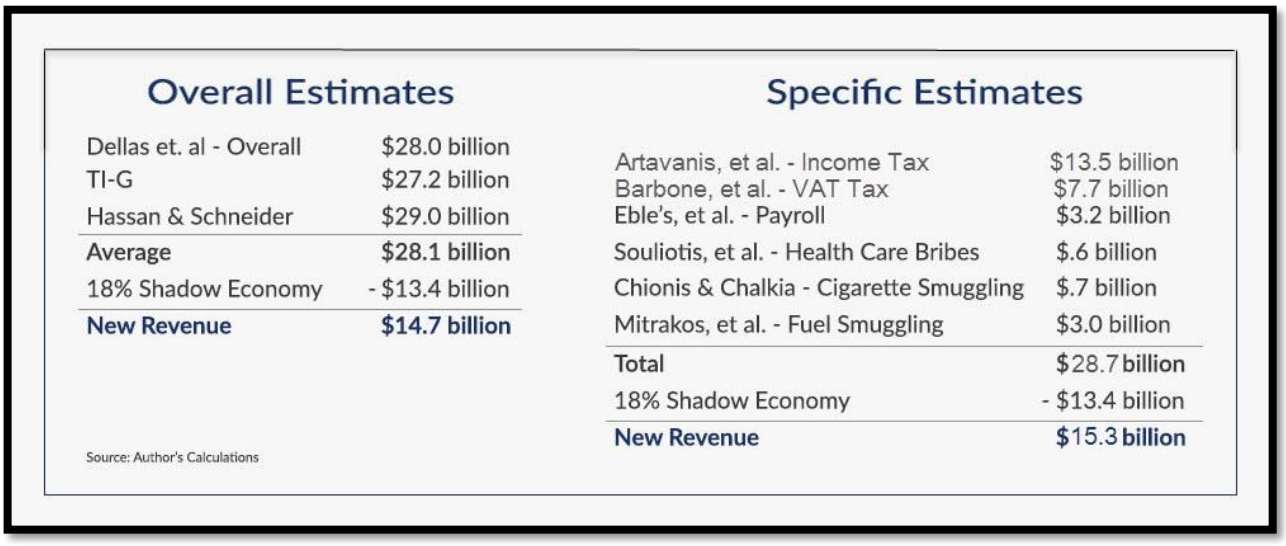
SOURCE	METHOD	TYPE of CORRUPTION	TAX REVENUE LOST
Transparency International -Greece (2012) an overall assesment of Greek corruption	Interviews & surveys	Total Economy	$27.2 billion
Hassan & Schneider (2016) estimate size of shadow economy	MIMIC	Total Economy	$29.3 billion
Dellas et al. (2017) provides estimate for size of shadow economy	DSGE model	Total Economy	$26.5 to $29.7 billion
Artavanis et al. (2015) provides estimate for self-employed tax evasion	Comparison of loan applications and tax returns	Income Tax Evasion	$13.5 billion
Bergthaler et al. (2017) & Eble et al. (2013) estimates undeclared work	Researched Labor Inspectorate (SEPE), (IKA) and (OAED) records	Payroll Tax Evasion	$3.2 billion
Barbone et al. (2015) provides estimate of VAT tax	OECD data	VAT Tax Gap	$7.7 billion
Souliotis et al. (2016) estimate under-the-table healthcare payments	surveys	Bribes	$600 million
Chionis & Chalkia (2016) estimate cigertte excise tax	Industry studies	Excise Taxes	$716 million
Mitrakos et al. (2014) estimate fuel excise tax	Idustry reports	Fule Excise Tax	$3 billion

The overall estimates of $29 billion by Hassan and Schneider (2016), $28 billion by Dellas et al. (2017), and $27 billion by TI-G (2012) provide a good starting point for calculating annual revenue losses from corruption in Greece. These figures are corroborated by tallying up the yearly losses of $13.5 billion estimated by Artavanis et al., (2015) for income tax, the VAT leakage of $7.7 billion estimated by (Barbone et al. (2015), and the $3.2 billion in undeclared work estimated by Bergthaler et al. (2017) and Eble et al. (2013); figuring in excise tax smuggling and healthcare bribery, this total comes to $28.7 billion. This a shocking amount is almost double calculations in

earlier studies of $11-16 billion, but appears to be more accurate, since the more recent research has used empirical methods to analyze bank records, tax returns, labor rates, payroll taxes, and electronic card payments. The disturbing picture of just how pervasive corruption has become in Greece is in line with Schneider's (2000) calculation that the shadow economy in most developing countries averages about 39% of GDP. It bears repeating in this context that, while the Greek economy is considered modern, it has in the aftermath of the crisis been exhibiting many characteristics of the economies of developing countries (Schneider & Enste, 2000).

Figure 29 presents well-founded estimates by serious researchers of the cost of corruption in Greece, but these figures cannot capture the full extent of Greek corruption. As noted earlier, the clandestine nature of the phenomenon makes a complete accounting of it impossible. Hospitals, tax authorities, the Social Insurance Foundation (IKA), the Public Electricity Corporation, the Workers Housing Organization (OEK), and the Ministry of Health were identified as the most corrupt public institutions in Greece on the 2010 National Survey of Corruption in Greece poll, which also reported that bribes to obtain permits, receive accreditations, avoid taxes, and even secure medical care ranged from $60 to $18,000 (TI-G, 2012). Given that the exact economic cost of kickbacks, patronage, bribes, embezzlement, nepotism, and fraud are incalculable, the enormous figures cited in this section may in fact underestimate the scope of the problem (Matsaganis & Flevotomou, 2010).

Figure 30: New Revenue Estimates from Reducing Corruption



Overall Estimates

Dellas et. al - Overall	$28.0 billion
TI-G	$27.2 billion
Hassan & Schneider	$29.0 billion
Average	$28.1 billion
18% Shadow Economy	- $13.4 billion
New Revenue	**$14.7 billion**

Specific Estimates

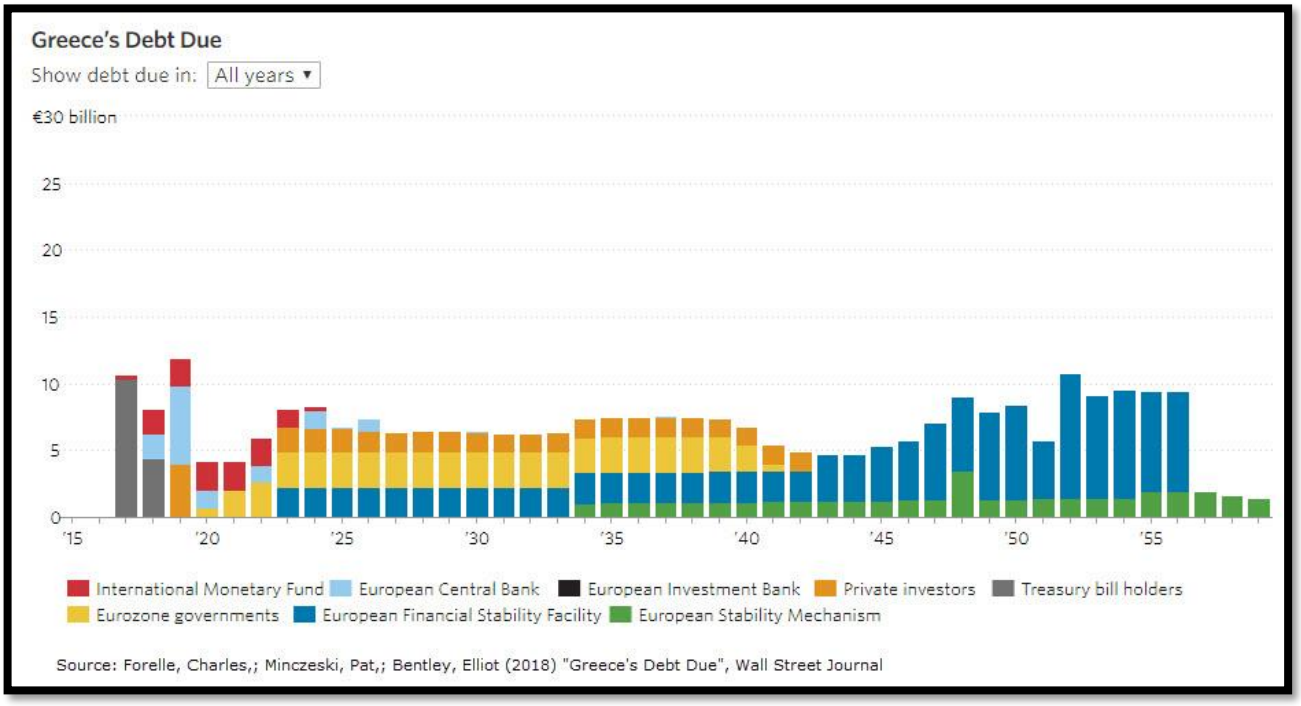
Artavanis, et al. - Income Tax	$13.5 billion
Barbone, et al. - VAT Tax	$7.7 billion
Eble's, et al. - Payroll	$3.2 billion
Souliotis, et al. - Health Care Bribes	$.6 billion
Chionis & Chalkia - Cigarette Smuggling	$.7 billion
Mitrakos, et al. - Fuel Smuggling	$3.0 billion
Total	$28.7 billion
18% Shadow Economy	- $13.4 billion
New Revenue	**$15.3 billion**

Source: Author's Calculations

It would of course be impossible to put an end to all corruption and capture 100% of the lost revenue; even in a highly transparent country like the US, the shadow economy is still valued at 9% of GDP (Hassan & Schneider, 2016). If, however, Greece were only to reduce its shadow economy to 18%, the EU average—which for Greece would mean $34.7 billion in economic activity and $13.4 billion in tax revenue—enormous sums would be transferred into the formal sector (Schneider, 2015). Subtracting the $13.4 billion from the low estimate of $28.1 billion leaves Greece with an additional $14.7 billion in revenue and when using the top-end estimate of $28.7

billion, yields a massive $15.3 billion[13] in potential additional income for the Hellenic Republic (Figure 30). Controlling corruption to this extent would allow Greece easily to keep up with its annual debt payments (Figure 31) (Forelle et al., 2018) and even to start paying down the principal. It is maddening to consider that so basic a problem as corruption became serious enough to precipitate Greece's sovereign debt crisis and indeed threaten the survival of the euro and even the EU (Tsoukalis, 2014; Stiglitz, 2016). All of the bickering, fighting, and hand-wringing within the EU over Greece and the bailouts could have been avoided if, rather than focusing on such symptoms as tax rates, pension benefits, and deficits, political leaders would have dealt with the root causes of corruption (Danopoulos, 2014).

Figure 31: Greece's Debt Due



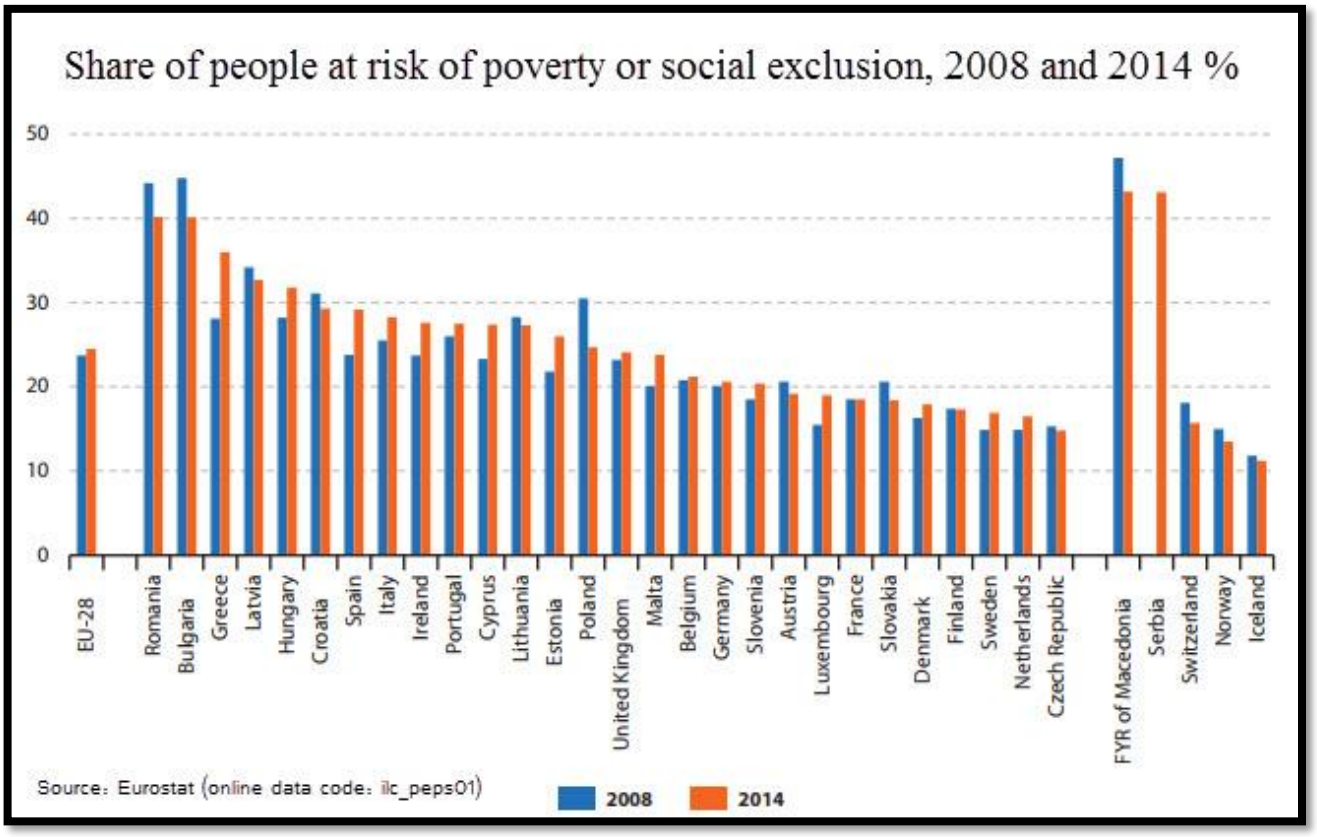
3.2. INEQALITY & POVERTY

One unpleasant consequence of the higher tax rates and cuts to government programs in Greece has been growth in the portion of the population that belongs to the lower class (TI-G, 2012). As the foregoing discussion makes clear, corruption has slowed Greece's economic recovery and contributed to the need both to reduce spending and to increase taxes. A number of

[13] These figures do not include the $720 billion that the German magazine *Der Spiegel* reported in 2011 had deposited into Swiss banks by wealthy Greek citizens (Palaiologos, 2014). Kostas Vaxevanis, the publisher of a small independent magazine, was arrested in 2012 for publishing the so-called "Lagarde list," which contained 2,059 names of wealthy Greeks who had transferred money into Swiss banks. Also associated with these accusations is the ongoing inquiry instigated by Hervé Falciani, the HSBC whistleblower who revealed that thousands of individuals from all over the EU had avoided paying taxes through the use of Swiss banks (Marks, 2018; Palaiologos, 2014). The Tax Justice Network (TJN) has corroborated the claim that Greeks are hiding money in Swiss bank accounts, estimating the figure at $24 (Greenland, 2011). The veracity of these accusations has not been determined, nor the exact amounts of money involved, but they are suggestive of the potential amount of lost revenue in Greece.

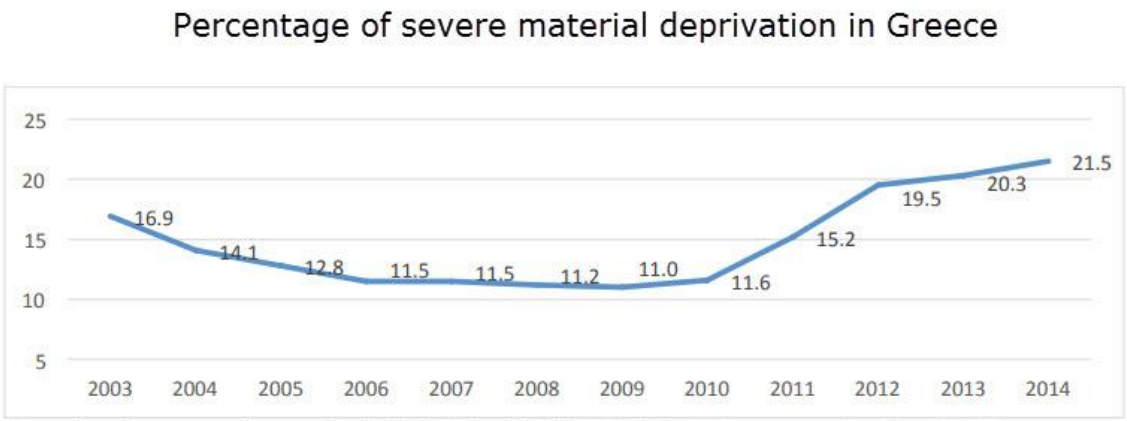
studies have suggested that the effects of corruption tend to be felt most by those who have the least (Matsaganis & Flevotomou, 2010; Chene, 2014). The decade-long depression has of course been hard on everyone in Greece, but Giannitsis and Zografakis (2015) have shown that high unemployment and tax increases have in particular impacted lower-level earners in Greece, separating citizens into haves and impoverished have-nots (Figure 32). Their research showed that younger workers with less experience/training were hard hit by the crisis, as were salaried employees and pensioners who, unable to "hide" their incomes, bore the brunt of the tax increases along with others lacking political connections or preferential treatment. Thus, for example, overall Greek income fell 24.1% from 2009-2013, while in the overlapping period from 2008-2012, prices of consumer goods increased by 11.2% (owing in part to increases in indirect taxes, primarily excise and VAT) despite an ongoing recession and an overall inflation rate of only 2.98%. The excise tax increases included 124.7% on alcohol, 12.3% on tobacco, 91.4% on gasoline, and 1,471.4% on heating oil. On top of those increases, the VAT tax on the same products was raised 4 %. Taxes

Figure 32: Europe Poverty Risk 2008 vs. 2014



on basic staples obviously hit the poor hardest, and this much is consistent with the study's overall finding that the tax/income ratio in the period from 2008 to 2012 increased 440% for the poor, 77.6% for the middle class, and 42.8% for the wealthy. Thus, while the overall costs of declining incomes and increasing taxes were much greater in total euros for the rich, these costs as a percentage of income squeezed the poor hardest (Figure 33) (Giannitsis & Zografakis, 2015).

Figure 33: Percentage of Deprivation in Greece 2003-2014

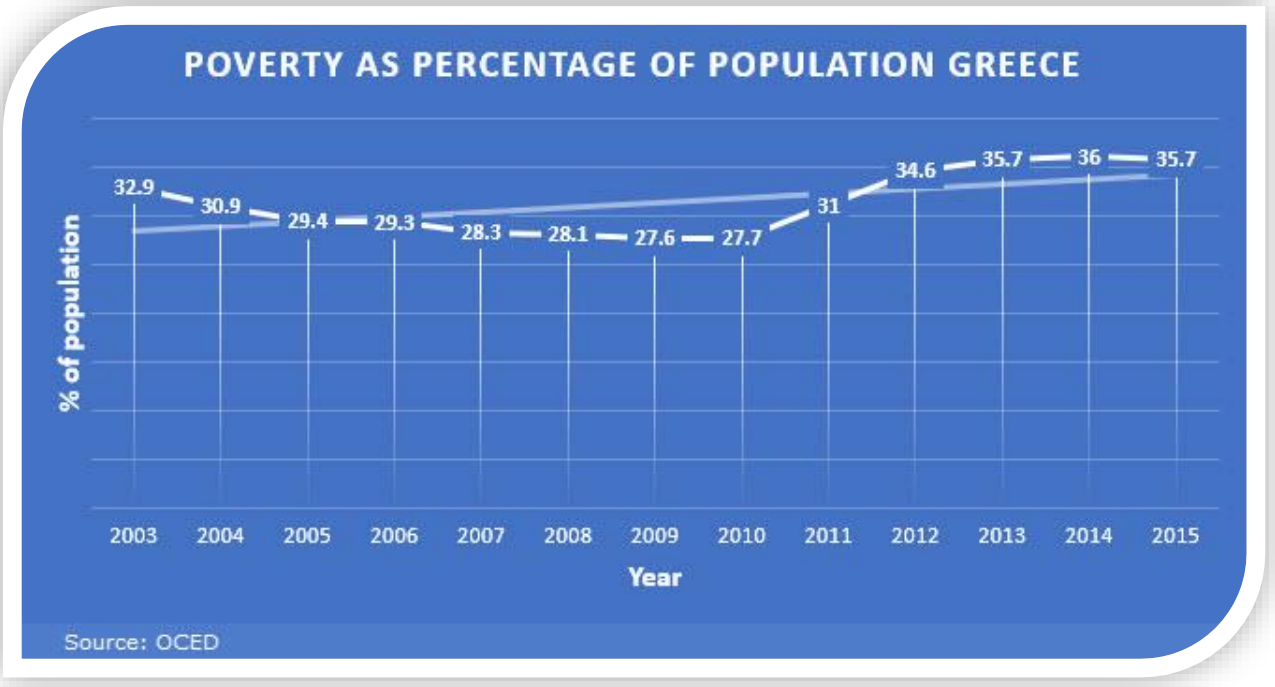


Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdsc270

Other scholars also have also made the point that indirect taxes are less equitable than the income tax, which is more progressive (Georgakopoulos, 2016). In Greece, consumption taxes represent a larger share of overall tax revenue than is the case in other similar-sized economies. This low direct/indirect tax ratio may be partly explained by the massive amount of tax evasion involving hidden income; and indeed, studies have shown a direct correlation between reliance on indirect taxes and corruption in various countries (Liu & Feng, 2015). In 2009, nearly 60% of Greek tax filers reported earning less than the threshold and were exempted from income taxes, while overall 90% reported incomes under €28,000. Amazingly, only 1,700 individuals filed taxes showing incomes greater than €250,000. The ability to hide income depends in part on the manner in which an individual is paid; thus, since salaried employees and pensioners have more difficulty hiding their incomes, tax evasion seems to be less of a problem among them (Palaiologos, 2014). Only 42% of such earners reported income of less than €10,000, but the other occupational groups are apparently "struggling" as much as pensioners, since 83% reported earning less than €10,000. Similar dynamics appear to explain the aforementioned large VAT gap and the efforts to which financially-strapped Greeks go to avoid paying VAT taxes (Kaplanoglou & Rapanos, 2012). A 2016 study likewise found that, of the 5.7 million tax returns that were filed in 2011 , 49% reported the minimum of €12,000. This group of low earners included 64% of Greece's self-employed, who declared an average income of only €4,300. This group of 2.8 million taxpayers paid around €60 million in income taxes, a mere €21.40 apiece on average. Business tax reporting shows similarly dismal results, with some 220,000 businesses claiming profits of less than €1.2 million and only 901 (less than 5%), reporting larger profits; the latter paid a whopping 61% of all business taxes and the remaining 220,000 €5,400 each on average. Thus only 8% of the population paid 69% of the personal income taxes (Georgakopoulos, 2016). Mention should also be made here of the disproportionate impact that payroll taxes seem to be having on the lower classes as well. Undeclared and incomplete wage reporting may be reducing employers' labor costs far more than they are increasing their employees' take-home pay, thereby contributing to the unequal distribution of Greece's tax burden (Matsaganis & Flevotomou, 2010). These discrepancies in reported income should be red flags for auditors; in any case, they indicate the particular impact of increased

consumption taxes on low-salaried workers and individuals living on fixed incomes (Georgakopoulos, 2016; Kaplanoglou & Rapanos, 2012).

Figure 34: Percentage of Greeks in Poverty

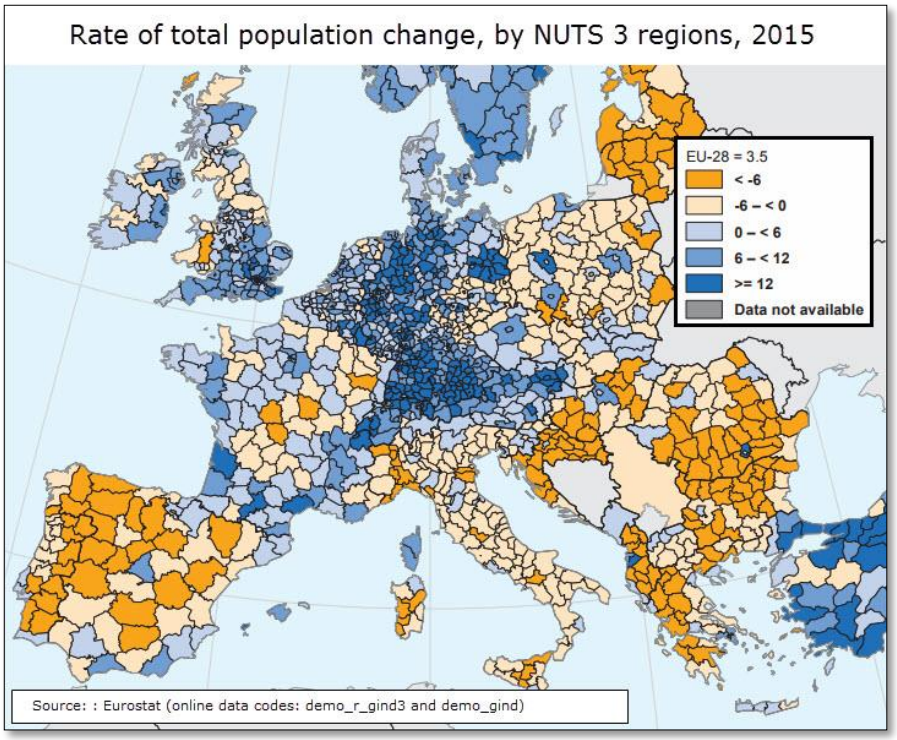


While taxes have been going up, government spending and benefits have decreased. In 2011 alone, wages in the public sector and state-owned enterprises dropped by 20-30%. Monthly pensions above €1,000 euros were reduced by 20%, and current retirees under 55 lost 40% of any pensions over €1,000 (BBC, 2011; Danopoulos, 2014). In 2014, public sector salaries and benefits were again cut, this time by €5.7 billion, while the monthly checks going to Greece's 2.7 million pensioners (about 25% of the population) were supporting 52% of Greek households. Almost half of these pensioners now have a monthly income below the poverty line. Thus, while 2% of the Greek population lived in extreme poverty in 2009, over 15% did in 2015 (Henry, 2017). The fiscal crisis may have hurt all Greek citizens, but the Troika's call for tax increases and spending cuts have further widened the gap between the haves and have-nots (TI-G, 2012). As observed earlier, corruption, while it was not the sole reason for the crisis, has sustained and exacerbated it and has increased poverty and inequality (Matsaganis & Flevotomou, 2010) (Figure 34).

3.3. POPULATION DECLINE

Another looming cost for Greece indirectly linked to corruption is population decline. As has been seen, corruption is one of the major factors responsible for prolonging the country's depression, particularly in terms of reducing tax revenues and preventing it from balancing its budget and paying off an enormous public debt—180% of GDP— that is in turn also perpetuating the crisis. Ongoing high unemployment—rates were at 23.6% overall and 47.4% for younger workers in 2016—has contributed to a mass exodus of Greeks from their homeland. Thus from 2011 to 2016, Greece lost 3% of its population, and the trend is expected to continue (Figure 35).

Figure 35: EU Population Change 2015



The population is predicted to decrease to 9.9 million by 2030 and to only 8.9 million by 2050 (Sievert et al., 2017). At the peak in 2010, Greece had 11.1 million residents; the current number of 10.7 million is the same that it was in 1998; the population has not been as low as 9.9 million since 1984 to (Figure 36).

Sievert, Neubecker, and Klingholz (2017), in their study of Europe's demographic future, early on state that "In the economy of the 21st century, the most important resources are no longer large industrial plants, farmland or mineral deposits but rather the knowledge and skills of human beings. Those countries and regions that succeed in constantly developing the sum of their inhabitants' skills—which is often referred to as human capital—can look forward to growing prosperity. The others can become losers in today's services and knowledge society" (p. 6). This is a frightening prospect for Greece; for while corruption keeps many countries from experiencing "growing prosperity," in Greece's case, the inability to curb it and pay off the public debt could bring ruin (Sievert et al., 2017).

Figure 36: Greece Population Change

Its demographic situation thus threatens to deprive Greece of essential human capital. The country already has one of the lowest fertility rates in the EU, 1.33 children per woman, and now its younger workers are emigrating at astonishing rates. The latter problem is particularly critical because those leaving are some of Greece's best and brightest. A recent study reported that some two thirds of the 280,000 to 350,000 Greeks who left the country between 2010 and 2015 had college degrees and a fourth of those were postgraduate degrees (Labrianidis & Pratsinakis, 2016). This decline is taking place despite the huge influx of refugees reaching Greek shores. With fewer babies being born and younger workers leaving, Greece will by 2050 have the lowest worker-to-retiree ratio in the EU. Today, 21% of Greek citizens are over 65 (the second highest ratio in the EU); by 2025, that number will increase to 23% and by 2050 to an enormous 30%. The country currently spends more than any other in the EU on pension benefits, a hefty 17% of GDP (Sievert et al., 2017)—and this despite the enactment of reforms that have reduced benefits[14] and extended the retirement age. Greece's retirement system is in fact bankrupt and must be supplemented with general revenue to meet its obligations each year.[15] The pension fund deficit is currently 9-10% of GDP, nearly €20 billion annually[16] (Nektarios et al., 2016). Undeclared work, tax evasion, and corruption are draining the pension system, even as lower fertility rates and a mass exodus of skilled workers looking for employment will lead to bankruptcy in the future (Sievert et al., 2017).

[14] Pensions have been cut 11 times since the 2010 restructuring (Palaiologos, 2014).
[15] In June 2015, Greece became the first developed nation to default on an IMF loan when it was unable to meet all of its payment obligations on both a $1.7 billion interest payment to the IMF and a $1.5 billion payment to its social security funds. Frantic efforts to borrow more money having failed, Greece in the end made the social security payment and let the IMF payment lapse (Myers, 2017).
[16] The deficit in Greece's pension funds is projected to reach €460 billion by 2060 (Myers, 2017).

SECTION 4. ANTI-CORRUPTION REFORMS

Nearly everyone seems to have an opinion regarding what Greeks should do to curb corruption. Websites, newspapers, and magazines are filled with articles and studies by well-intentioned economists, political scientists, and politicians explaining why Greece is so corrupt, what sorts of reforms should be adopted, and, especially, why the current reforms are not working. The EU Commission, IMF, ECB, German bankers, and EU regulators have forced Greece to adopt stringent reform measures in order to obtain bailouts for its economy, but the solutions seem to have backfired (Stiglitz, 2016). A crisis that started as a recession has turned into a depression, and the measurement indices, as well as scholarly research, seem to indicate that corruption has not improved, and indeed may have worsened, in the aftermath. Several writers have described the phenomenon as a vicious circle in which spending cuts and higher taxes produce low QoG and a lack of trust, which in turn feed corruption and tax evasion, leading to higher taxes and even larger spending cuts, and further diminishing QoG and eroding trust (Paraskevopoulos, 2012; Azariadis & Ioannides, 2015; Katsios, 2006). The result is mistrust and inequality among citizens, weakening institutions, increasing taxes, decreasing revenue, and mounting public debt (Tsalas & Monokroussos, 2017).

In considering how Greece can escape from this vicious circle, native economists Georgia Kaplanoglou and Vassilis Rapanos (2012) are among scholars who suggest that the best place to begin is with the country's inept and corrupt tax administration system (cf. Azariadis & Ioannides, 2015; Eble et al., 2013; Bitzenis et al., 2016; Artavanis et al., 2015; Hondroyoannis & Papaoikonomou, 2017). Before considering possible reforms, it is necessary to appreciate just how deeply corruption is ingrained in this institution. Especially instructive in this respect are the efforts of Diomedes Spinellis, a software engineering professor at the Athens University of Economics and Business. Spinellis's story has been well told by Yannis Palaiologos in his revealing 2014 book on the Greek crisis, *The 13th Labor of Hercules*. In 2009, the apolitical professor was, surprisingly, selected on merit through an on-line hiring initiative and placed in charge of the General Secretariat of Information Systems (GSIS) at the Ministry of Finance. Spinellis had enjoyed a highly successful academic career and maintained a stellar reputation in the field of IT and computer engineering and, having studied abroad, chose to return to Greece to demonstrate that it was possible to succeed in the IT world back at home. Spinellis's work was frequently published in top academic journals and presented at prestigious conferences, and his book on computing has been translated into six languages. At the peak of his academic career, he decided to apply for the government IT job to see if he could help bring Greece's bureaucracy into the twenty-first century (Palaiologos, 2014).

Predictably, Spinellis found the Greek tax administration system to be technologically challenged, to say the least. He quickly assembled a team of five IT experts and began working to upgrade his department's technical capabilities. In many instances, they used open source software on account of the administrative hurdles to purchasing or developing software, including the requirement for approval of officials resistant to changes to "their" system. He even found that the department had purchased a software system with the abilities to track taxpayers' information and to compare records in order to identify discrepancies, but it was not being used. Very quickly, these

efforts began yielding impressive results. The system swiftly and easily identified small businesses that were not reporting all their income, and Spinellis generated a list of suspected violators and sent it off to Greece's 275 tax offices for follow-up investigation. When little action was taken in those cases, he developed a program to track and follow up on those discrepancies a second time. Within a year, the tax offices had recovered €762 million, which sounds like a large sum until it is compared with the €38.7 billion in unpaid taxes in 2010 and €62.3 billion in 2013.

Spinellis continued to fight these battles with the tax administration bureaucrats before abruptly resigning toward the end of 2011. He cited personal reasons for his departure, but many concluded that the decisive issue was the struggle over fuel smuggling.[17] The problem was alluded to earlier; to provide a bit more detail, Greek fuel distributors had to pay a high tax rate when purchasing fuel but charge a lower tax rate to their retail customers; they were then reimbursed for the difference very quickly—within 48 hours—by the tax authorities. Spinellis found an easy way to use this system to collect taxes owed by gas stations: he simply withheld any reimbursement payments from stations that were in arrears until they settled their accounts. The success of this procedure naturally upset the petroleum industry and, despite then Prime Minister Papandreou's avowed commitment to curb fuel smuggling, a discreet move by the finance minister eliminated the differential in the taxes and thereby the need for the reimbursements, so the back taxes once more went unpaid. Spinellis resigned later that same year.

Furthermore, Andreas Drymitis, an adviser to the prime minister on IT issues, observed that, though the automated system kept uncovering cases that deserved investigation, "to his knowledge, not a single audit took place" (Palaiologos, 2014, p. 39). The former Greek ambassador to the OECD, Nikos Tatsos, who had been an adviser to several Greek finance ministers and had taught Public Finance at Panteion University, reported that he had seen numerous well-intentioned ministers work to reform the tax administration department only to see their plans ignored and reforms delayed before exiting with their proverbial tails between their legs. He described the bureaucratic scheme in military terms by saying, "You cannot go in there using a regular army, you've got sharp-shooters shooting at you left and right. It's a guerrilla war, and you need to use irregular methods to succeed" (p. 33).

The experiences of experts like Spinellis and Tatsos are illustrative of the resistance of Greek institutions to reform and the need to begin the fight against corruption by focusing on the tax administration. The problem, however, involves not only low-level bureaucrats and high-ranking politicians but also powerful special interests that exist outside the governmental institutions. In 2017, for example, Greece's special anti-corruption prosecutor Eleni Raikou[18] resigned, asserting that she had been "targeted" by "unofficial power centers" concerning her investigation of the €28 million Novartis bribery case. In most advanced countries, the resignation of a high-ranking official under such circumstances would have occasioned significant questions from the legislative or executive branches of government, but Greek political leaders kept quiet and said nary a word (Marks, 2018).

[17] Again, fuel smuggling is estimated to cost Greece $3 billion in lost tax revenue annually (Mitrakos, et al., 2014).
[18] Raikou also successful prosecuted former Defense Minister Akis Tsochatzopoulous, one of the few high-level officials to be brought to justice in Greece.

Too often in Greece reformers and anti-corruption crusaders are being ignored or intimidated by powerful politicians and special interests, the resistance to change in the Greek tax administration being the prime example. Antonakas et al. (2014) asked a series of questions of a number of officials who had been involved with corruption in the tax department and identified three primary contributing factors, namely the method for selecting tax officers, the procedures for evaluating and promoting them, and the manner in which corruption cases are adjudicated. The latter was described as most problematic, specifically the weak penalty system and the failure of many cases to result in penalties. These researchers provided three examples of the lack of discipline within the tax administration. One involved an official's use of a coworker's computer and password to issue a certificate indicating that her fiancé owed no tax to the government when he in fact owed €178,863; her transgression having been identified, the Disciplinary Council suspended her for three months without pay. Another official, having misappropriated €175,000, was suspended for six months with no pay. In a third case, the Disciplinary Council ordered no punishment at all for an official in the License Construction department found to have €465,000 in his bank account with no valid income to account for such a high balance and the deposits proved to have been received from individuals with whom he routinely dealt with in his official capacity. The other honest bureaucrats who follow the rules attribute corruption to the lack of serious consequences for those caught engaging in it, and cases like these corroborate the conclusions of the 2014 Greek Annex of the EU Anti-Corruption report regarding the disciplining of civil servants (EU Commission, 2014). Interestingly enough, interviewees for that study rated salary levels as the least influential of six factors contributing to corruption in the tax department; the main factor seems to be the combination of high rewards and low likelihood of punishment.

These conditions have given rise to the so-called "4-4-2 system" for paying taxes in Greece, in which a citizen pays 40% of his or her tax bill as a bribe to a tax official in exchange for a 40% reduction in liability, so that only 20% of what is owed reaches the government's coffers. This practice is so widespread that a former investigator with the anti-fraud unit (i.e., the SDOE) mentioned it during a panel at a tax evasion forum in 2011 (EU Commission, 2014; Palaiologos, 2014). Unfortunately for those who support reform, this mindset regarding taxation seems to be shared by the members of parliament, who in 2009 quickly dismissed a bill that would have mandated audits of professionals who report less than €20,000 in the healthcare, legal, engineering, academic, and media fields. The demise of this bill communicated to rank-and-file bureaucrats that stopping tax evasion was not a priority among Greece's top officials (Artavanis et al., 2015).

This admittedly lengthy preamble to the discussion of reform measures has served to make clear just how pervasive corruption is within the Greek government in general and within the tax administration system in particular. Since 2010, Greek politicians and officials have enacted scores of laws designed to curb corruption and have been consistent in their denunciations of it, but they have very rarely taken actions that would give force to their words (TI-G, 2012). In short, despite their insistence that corruption is a serious crime that has to be stopped, Greek leaders, when given the chance to do anything about it, have invariably failed. Laws turn into loopholes, excuses are made, and deadlines are missed; in the words of Palaiologos (2014), "it was a novel kind of (crime): not victimless so much a villain-less" (p. 30).

Some progress has been made toward reforming the tax administration, as the number of local offices has gone from 290 to 120 and the number of employees in the department has shrunk from 10,500 to 9,000 (Guillot, 2015). The ratio of Greek tax administration employees to active taxpayers has increased from 1:778 to 1:1,270, so that it is now much higher than the average of 848 for other high-income countries. At the same time, the percentage of employees involved in auditing is only 21.5%, considerably less than the 35% average for OECD countries (Kaplanoglou & Rapanos, 2012).

Tax administration in Greece, then, is in need of a complete overhaul. The following list presents some of the more pressing needs for reform (Figure 37).

- In 2012, 150,000 tax dispute cases were pending, and it can take from 7 to 10 years for a citizen to receive a decision from Greece's tax courts. According to the TI-Greece (2012) study, the Greek judicial system had over 400,000 cases pending in 2015. The slow pace of process frustrates taxpayers and fosters tax evasion, and the dispute-resolution mechanism requires particular attention (TI-G, 2012; Kaplanoglou & Rapanos, 2012; Artavanis et al., 2015; Eble et al., 2013).
- One reform mentioned in nearly all studies is simplification of the Greece tax code, the current complexity of which, as discussed above, impedes enforcement (Azariadis & Ioannides, 2015; EU Commission, 2014; Eble et al., 2013; Georgakopoulos, 2016; Kaplanoglou & Rapanos, 2012; Katsios, 2006; PwC, 2016). A complex and constantly changing tax code has been shown to confuse citizens and to decrease tax morale (Kaplanoglou & Rapanos, 2012; Liu & Feng, 2015).
- Another reform commonly advocated is a lowering of tax rates. Also as noted, tax revenue in Greece has declined since 2010 despite dramatic increases in tax rates. Many researchers have argued that this reform would decrease tax evasion and increase tax revenues (Eble et al., 2013; Georgakopoulos, 2016; Bitzenis et al., 2016; Dellas et al., 2017; Katsios, 2006).
- The lenient tax payment installment schemes represent a further problem. Nearly $1.2 billion in taxes go unpaid every month in Greece, the total value of which now exceeds 70% of the country's GDP. In an effort to recover at least some portion of these funds, the Parliament has since 2001 offered more than 50 installment plans, the qualifications for which have become progressively less stringent even as the time allowed for repayment has been increased and the interest rates decreased. As a consequence, taxpayers defer paying their taxes in anticipation of more favorable terms allowing for a reduced tax burden. Additionally, of taxpayers who agree to installment plans, 13% cease making payments before they have met their obligations (Bergthaler et al., 2017).
- Lowering consumption taxes could promote equality and lower the VAT gap (Kaplanoglou & Rapanos, 2012; PwC, 2016).
- Third-party information and risk assessment tools could be used to target audits in sectors where tax evasion is particularly high (EU Commission, 2014; Eble et al., 2013).
- Elimination of cash payments at all tax offices could also make tax evasion more difficult (EU Commission, 2014).
- Audits should be triggered automatically for any business that does not show a profit for three consecutive years (author's recommendation).

- In-depth reviews of all employees can serve as a basis for dismissing those who lack the skills necessary to do their jobs. At the same time, the pay for accountants and auditors should be increased. A combination of staff reductions and implementation of new technologies can lower costs and improve productivity (Eble et al., 2013; Antonakas et al., 2014).
- Tax officials can be motivated by cash bonuses to identify corruption and tax evasion (author's recommendation).
- Citizens can be motivated to provide information by offers of rewards, for instance a portion (perhaps 5-10%) of recovered tax revenues or fines from cases that are successfully prosecuted (author's recommendation).
- Increasing penalties and fines imposed on those who violate the laws has been shown to lower the rates of tax evasion and other types of corruption (Litina & Palivos, 2011). In Greece, tax cheaters face a low probability of detection and leniency if they are caught, as local officials reduce penalties sometimes to nothing and interest by as much as 80%, even though interest rates on penalties are not compounded. Additionally, those convicted of tax evasion receive either a 5% cash rebate if they pay immediately or can choose an installment option that allows for a 50% discount on penalties and interest. This process renders the penalties meaningless since they allow cheaters to pay an interest rate below the market rate (Eble, et al., 2013).
- Because the tax amnesties that are announced every three to five years promote tax evasion and in effect punish law-abiding taxpayers all while reducing revenue to the state, their abolition should be prioritized (Kaplanoglou & Rapanos, 2012; Eble et al., 2013).
- Numerous studies have shown that increasing the frequency of audits increases tax compliance (Tsalas & Monokroussos, 2017; Kaplanoglou & Rapanos, 2012). A Bank of Greece working paper (Tagkalakis, 2013) used an audit program designed to combat VAT evasion that was conducted from July to September in 2012 to determine whether more audits would increase compliance. In a sample of 5,157 audits, officials identified 2,853 tax cheats and 34,836 violations of tax law, for an overall 55.2% violation rate. The paper showed that the number of tax offenders decreases by 4-9% for every 1% increase in the number of audits, though the enforcement of penalties and collection of fines were identified as the paramount considerations when it came to the seriousness with which the taxpayers approached the audits (cf. Litina & Palivos, 2011; Eble et al., 2013). Likewise, a more recent audit effort focused on wealthy individuals, the self-employed, and VAT abusers, found that a 10% increase in annual audits yielded an additional €251 million in revenue (Tagkalakis, 2014).
- Closure of many of the autonomous local tax offices, at which substantial amounts of corruption take place, would help to centralize control and improve accountability (Eble et al., 2013).
- The goals of increasing efficiency and of reducing corruption can both be served by moving more transactions between citizens and public servants online (TI-G, 2012).

Figure 37: Tax Administration Anti-Corruption Reforms

Area of Govt.	Tax Administration Anti-Corruption Reforms
Tax Administration	Improving the dispute resolution mechanism and developing alternative dispute-settlement institution utilizing arbitration boards
Tax Administration	Simplifying Greece's complex tax code; lowering Greece's tax rates; Lowering consumption taxes
Tax Administration	Use third party information and risk assessment tools to target audits into sectors where tax evasion is shown to be the highest
Tax Administration	Elimination of cash payments in all tax offices
Tax Administration	Audits are automatically triggered for any business that does not show a profit for three consecutive years
Tax Administration	Purging all those who do not possess the skills necessary to do their jobs; increasing the pay for accountants and auditors
Tax Administration	Paying bonus to tax officials for uncovering tax evasion and corruption
Tax Administration	Offer any citizen who provides credible information that leads to the successful prosecution of a corruption case 5% to 10% of recovered tax collections or fines
Tax Administration	Increasing penalties and fines for tax evaders; meticulous enforcement of penalties and collection of fines
Tax Administration	Ending the lenient tax payment installment schemes
Tax Administration	Ending tax amnesties
Tax Administration	Conducting more audits
Tax Administration	Closing many of the autonomous local tax offices; more centralized control and accountability of personnel
Tax Administration	Move as many transactions between citizens and public servants to on-line and electronic means

These, then, are the major recommendations for improving Greece's tax administration. Taking now a more broad perspective, the following list includes more general recommendations for fighting corruption in other areas of Greek government. It is by no means complete, but it does address many of the concerns raised earlier (Figure 38).

- Social security benefits should be based in part on each taxpayer's total contribution rather than simply on the number of years paying into the system (Eble et al., 2013).
- Greater protection for whistleblowers would encourage those who witness government abuse to step forward (EU Commission, 2014; Artavanis et al., 2015).
- Whistleblowers could also be encouraged by awarding them a percentage of any savings earned by the government as a result of their reporting of corrupt practices or crimes (author's recommendation).
- Full disclosure of lobbying activities should be mandated, covering all gifts, trips, and meals provided to elected representatives and civil servants (EU Commission, 2014).
- Full disclosure should also be mandated for all donations and loans to candidates for elective office and to political parties (EU Commission, 2014).

- According to Tzogopoulos (2015), the Greek media is far from free, with only five families controlling a majority of broadcast and print outlets in the country. He further drew attention to the negative impact of the crisis on media revenues and explained that a combination of low licensing fees, one-year contract renewals, and a tax exemption on advertising revenue has fostered favorable coverage of Greek politicians and powerful special interests. Thus Greek banks have loaned hundreds of millions of euros to media outlets and are among the largest advertisers, so that a cozy relationship has been maintained between media outlets and the wealthiest Greeks. Along similar lines, Pavlos Eleftheriadis, in a 2014 *Foreign Affairs* article titled "Misrule of the Few: How the Oligarchs Ruined Greece," demonstrated that most media outlets are owned by petroleum companies, banks, shipping concerns, and mining companies and reported on a leaked US diplomatic cable revealing that, while the media operations consistently lose money, their purpose is "primarily to exercise political and economic influence." In other words, their media firms are in effect loss leaders for large companies seeking favorable treatment in government regulations or contracts (Eleftheriadis, 2014). Several reforms are accordingly needed to ensure a free, independent, and functioning press, the first being a limit on the number of media outlets that can be owned by a single individual or entity. Further, the length of broadcast rights licenses needs to be extended. Also needed are sunshine laws and laws that guarantee the freedom of the press in general when reporting on government corruption[19] (SGI, 2017; Eble et al., 2013; EU Commission, 2014).
- Transparency in the procurement process can be improved by empowering the Supreme Audit Council to oversee government contracts and purchases (Azariadis & Ioannides, 2015; EU Commission, 2014). Also effective would be a ban from public contracting for three to five years on firms found to have engaged in corruption or tax evasion (Tsalas & Monokroussos, 2017).
- Transparency could further be promoted by allowing businesses to make payroll tax payments electronically and requiring that public works contracts explicitly forbid the use of undeclared workers by subcontractors; publication of a list of companies that had broken the rules would hopefully discourage all companies from engaging in corrupt practices. Also along these lines, inspections should target sectors in which undeclared work is most likely to occur with increased fines and sanctions (ILO, 2016).
- A 12-year term limit for members of parliament has been proposed as a means of curbing political corruption (Azariadis & Ioannides, 2015).
- Also useful in this respect would be reductions in the immunity protections extended to members of parliament and other high-ranking public officials (EU Commission, 2014).
- Abolishing the special statute of limitations for ministers and lengthening the statute of limitations would provide prosecutors with sufficient time to bring corruption cases to trial (EU Commission, 2014).

[19] As mentioned earlier, in 2012, Kostas Vaxevanis, the publisher of a small independent investigative journalism magazine, was arrested for publishing the so-called Lagarde list, which contained 2,059 names of wealthy Greek business persons who had transferred money out of the country and into a Swiss bank (Palaiologos, 2014). While Vaxevanis was arrested, the investigation into the depositor's actions has stalled, and the resignation of Greece's special anti-corruption prosecutor Eleni Raikou in March 2017 stands to slow the investigation even more (Marks, 2018).

- Full transparency would require complete disclosure of the assets held by all ministers, members of parliament, high-level government officials, and even low-level bureaucrats involved in decision-making that affects the public—and their spouses. Such measures would need to include an independent verification mechanism for declaring assets (EU Commission, 2014).
- A thorough review of all civil servants should be conducted that takes into account their backgrounds and training in light of current productivity levels in an effort to identify those who are unqualified for their positions or are not producing the results that their positions require (TI-G, 2012).
- School textbooks should address the negative aspects of corruption; awareness of these issues could also be promoted through essay contests for students of all ages focused on the impact of corruption on families, communities, businesses, and government (author's recommendation).
- State workers should be prohibited from participating in political activities, either through volunteering or contributing to candidates or political parties (author's recommendation).
- All anti-corruption agencies and positions should be brought under the control of a single agency (TI-G, 2012).

Figure 38: Overall Anti-Corruption Reforms

Area of Govt.	Overall Anti-Corruption Reforms
Social Security	Reform Social Security so that contribution not years affects Social Security benefits
General Law	Include curriculum on the negative aspects of corruption in school textbooks and sponsor essay contests for students of all ages on the harm of corruption
General Law	More protection for whistleblowers; Allow whistleblowers to keep a percentage of the savings from any practices or crimes they report
General Law - Lobbying	Full disclosure of lobbying activities including gifts, trips and meals provided to elected representatives and civil servants
General Law - Campaign	Full disclosure of campaign donation and loans to candidates and political parties
General Law - Media	Limiting how many media outlets one person/entity can own; extending the length of broadcast rights licensees; improve sunshine laws and protect freedom of the press
General Law - Procurement	Empower the Supreme Audit Council to oversee all government contracts and purchases
General Law - Procurement	Firms caught in corruption/bribing or not paying taxes should be banned from public contracting for three to five years
General Law- Labor	Move to electronic payments; require public works contracts to include elimination of undeclared workers in all subcontractors; increases fines and sanctions
General Law - Parliament	Adopt a 12-year Term limit for members of parliament; loss of office and pension if convicted of corruption
General Law - Parliament	Reduce/eliminate immunity protections (stature of limitations) for members of parliament, ministers and other high ranking public officials
General Law - Parliament	Full asset disclosure for all ministers, members of parliament, high government officials and even low-level bureaucrats who are in decision making positions with the public
General Law	Purging all those who do not possess the skills necessary to do their jobs or are not performing their job to accepted standards
General Law	Prohibit state workers from participating in candidate campaigns or political party activities
General Law	Combine all anti-corruption agencies and positions under one agency

If discussing, recommending, and passing reforms were sufficient to stop corruption, Greece would be the most transparent country in the world (Danopoulos, 2014), for since 2010 it has enacted a plethora of new laws and regulations. The indices demonstrate, however, that transparency has not improved (TI, 1995-2017; GCI, 2003-2017; SGI, 2017; TI, 2013). Why has Greece been unable to reduce corruption? It appears to be a lack of will. So it was that, after two years spent overseeing the country's National Integrity System Assessment, evaluators concluded that the legal framework for combating corruption was "to a great extent, adequate" but went on to suggest that a "crisis in values" was the fundamental problem (TI-G, 2012, p. 177). Other scholars have harkened back to Greece's Ottoman past and suggested that the roots of modern corruption are to be found in resistance to foreign occupation (Cambanis, 2014; Palaiologos, 2014; Danopoulos, 2014). There is in any case no doubt that weak institutions and complicated rules and regulations impede reform measures; it was in part for this reason that the SGI index ranked Greece 39th of 41 countries in terms of executive capacity (SGI, 2017). The situation has failed to approve for many

reasons, but in any case corruption and the prolonged economic depression continue to have a negative impact on Greek citizens (Danopoulos, 2014).

CONCLUSION

The Greek sovereign debt crisis and its effects on the eurozone brought the country's financial difficulties to the attention of the world. Excessive borrowing and inept administration by the government were quickly identified as the main causes of these difficulties. The Troika made any bailout funds for Greece contingent on spending cuts, tax increases, and structural reforms. With no other options and no one to blame but themselves, the Greeks were forced to accept these unwelcome austerity measures and the ensuing economic hardships that followed. The crisis that led to a worldwide recession has grown into a depression for Greece (Economides et al., 2017).

Now, seven years after the crisis, with its economy having shrunk by 25%, Greece continues to languish in the economic doldrums while its neighbors have for the most part recovered and are enjoying economic growth and decreases in unemployment. European leaders, along with political scientists and economists, have long been aware of Greece's history of significant corruption, but, before the crisis, few were concerned because only the Greeks themselves seemed to be suffering. In the current global economy, however, Greek corruption has come to weaken the euro and, according to some observers, is threatening the very future of the EU (Tsoukalis, 2014; Stiglitz, 2016).

The effort to measure and find an effective cure to combat corruption in Greece has accordingly been hurried and intense. In 1995, long before the Greek crisis, when serious scholars were still questioning whether corruption is in fact harmful to economies, Transparency International launched its Corruption Perception Index, which has consistently shown that Greece has a significant corruption problem. The literature review on corruption in Greece presented above corroborates this conclusion and documents significant exacerbation of the problem in the aftermath of the crisis. Using surveys, interviews, and research into tax records, credit applications, labor inspections, and audit reports, empirical studies have provided credible estimates of the extent to which corruption is reducing Greek tax revenues. Earlier studies valued the shadow economy at between $21.2 and $67.5 billion annually, translating into a loss in revenue of $8.1 to $26.5 billion, while more recent studies have valued it at almost 40% of GDP or around $83.6 billion, which translates into a $28 billion loss in tax revenue. Former Prime Minister Papandreou, on the other hand, suggested a considerably higher loss of $36 billion to tax evasion and missed social security contributions (Greenland, 2011). Other studies indicated that over a third of Greek work goes undeclared, and the effects of the capital controls that led to increased electronic payments and higher VAT collections corroborate estimates of Greece's VAT gap at some 30-50%. Media and scholarly estimates of the size of Greece's shadow economy before the crisis have placed it at around 20-25% of GDP, and more recent research on the informal sector lends strong support to the assertion by Dellas et al. (2017) that the Greek shadow economy has grown to 35-40% since the crisis. Scholars have also pointed to Greece's low QoG and eroding public trust as explanations for its corruption problem.

Figure 39: Greece's CPI Score Compared to Others

The CPI results were confirmed by the other three indices evaluated above. These indices painted a similar picture of a Greece beset by corruption before the crisis, and each showed an uptick in corruption afterward and little or no improvement following the implementation of anti-corruption reforms. In 2016, Greece was ranked 69th on the CPI, second to last among EU countries and behind Cuba, South Africa, and Rwanda. Of the 12 institutions rated by the GCB, Greece received the lowest score on seven in comparison with other EU, BAL-13, and BS-10 countries, though it was still just above the world average on many of them. The GCI scores followed a similar pattern, with Greece experiencing an enormous decrease following the crisis and never recovering. Today, the country is ranked 87th in the world, with a GCI score lower than the EU, BAL-13, and BS-10 averages. On the crucial first pillar, dealing with government institutions, Greece also ranked 87th, with a mere 3.7 score out of a possible 7. So also on the SGI, Greece lagged other EU countries, ranking last of 41 in policy performance and 39th in government capacity, statistics that again help to explain the low QoG and eroding public trust identified in the literature. The unprecedented drop in economic output made conclusive results extremely difficult to obtain in the linear regression and basic correlation analyses presented here. Nevertheless, despite the ongoing depression and changes in the methodologies used by some of the indices, the regression analysis indicated a positive relationship between corruption and Greece's increasing tax burden and no relationship between increased government spending and QoG. The basic correlation analysis similarly associated decreasing transparency with reduced GDP. It was further observed that, even as government spending increased by 9% as a percentage of GDP, Greece's QoG score dropped by 60%.

Like the author of this paper, readers may have been especially surprised by the staggering impact of corruption on Greek tax revenues. Even shrinking Greece's $83.6 billion shadow economy to the EU average of 18% would reduce the currently estimated $28 billion in tax losses by $13.4 billion, leaving an additional $15.7 billion for Greece to easily meet its debt obligations and to provide tax relief that could further shrink the shadow economy, the influence of which has resulted in the higher taxes that are hitting Greece's poorest citizens the hardest. This growing inequality both fuels feelings and mistrust in the government and drives many of Greece's most talented young people to go abroad in search of a better life. Since 2011 alone, some 360,000 Greeks, or 3% of the population, have taken this path. Of those who have stayed, more than a third are living below the poverty line, some of them turning to illicit means to make ends meet. This vicious cycle will eventually ruin Greece if something is not done to stop it.

The task is a formidable one. Putting an end to corruption in Greece will take more than the passage of additional reforms, for, in the words of the TI-G (2012) assessment quoted above, "the current legal framework is, to a great extent adequate" (p. 177). While this paper has highlighted

dozens of specific proposals for increasing transparency, improving the QoG, and restoring the public trust, none has the power to instill in political leaders, civil servants, or average citizens the will to act. Only the Greek people can fix their broken system and, though they have elected five different governments since 2009, these leaders have so far proved unwilling to tackle the culture of corruption in the Hellenic Republic. Corruption in Greece continues to be sustained by a combination of average citizens trying to survive in a shattered economy, public servants compensating for drastic pay cuts, politicians worrying about re-election, and powerful special interests protecting their wealth and the status quo.

I will close with a personal reflection on the US that can provide some perspective on the Greek dilemma. Americans are no more honest than Greeks; and conversely the 3 million Greek nationals living and working in the US are widely regarded as intelligent, hardworking, and honest citizens. Like Greeks, many Americans have lost trust in government. We too wait in long lines hoping that a disinterested bureaucrat will help us at the post office, licensing bureau, or social security branch. We see our veterans being mistreated while big banks obtain multi-billion dollar bailouts. We know people who receive a monthly disability check but work for cash during the week and ride horses on the weekends. Young people are frustrated as payroll taxes increase and they realize that soon there will only be three active workers to support each social security retiree. Workers offer discounts for home repairs if owners will pay in cash, and used cars are sold by individuals for cash so that the buyers can lower their sales tax owed from the purchase. American politicians make promises to get elected and break them once in office. In short, Americans love their country, but many distrust their government and believe that they are not getting their money's worth from the taxes that they pay.

Nevertheless, most Americans pay their taxes, and few resort to bribes. We are far from perfect, and our estimated 9% shadow economy makes clear that not everyone follows the rules, but there is one major reason that Americans pay taxes at a higher rate than Greeks: we fear getting caught. We know that the punishment for those found to have cheated on their taxes is inescapable, that the fines are high, and that the courts cannot be bought off. In technical terms, Americans may not have a high tax morale, but they demonstrate a high degree of tax compliance. The Internal Revenue Service (IRS) is an inflexible government agency that is despised by most Americans, for when a taxpayer is in arrears, its agents show no mercy, placing liens on all of his or her property apart from the primary residence. Declaring bankruptcy can protect an American citizen from creditors, but not from debts owed to the government. IRS agents are empowered to shut businesses down and sell off assets, and they are not concerned that loss of a business can make it impossible to pay a tax bill. Unpaid taxes accumulate penalties and interest at considerably more than the going market rate. There is very little leeway; the collection system is harsh and stringent, and taxpayers who become entangled in it are known to suffer embarrassment and mental anguish that has driven some even to suicide. Only 1% of all taxpayers are audited, but the process involves a detailed account of a taxpayer's financial life. Tax agents for their part are awarded bonuses and promotions for finding unpaid taxes and otherwise increasing compliance. The IRS also rewards anyone who reports a citizen for tax fraud some 15-30% of the funds recovered; thus in 2015 some 87,000 "patriots" informed on their fellow Americans and collected some $103 million in rewards for their efforts (Orem, 2016).

What Greece needs now, is what I suspect it has always needed. It is what the whole world needs, but unfortunately, is in short supply of namely─leadership. The Greeks need leaders who will set pride and self-interest aside for the greater good, leaders who will enforce the laws fairly by making cheaters pay and sticking to the rules. While I was in the US Marine Corps, an old colonel once told me, "Don't expect what you don't inspect." An aggressive detection effort is needed if corruption is to be curbed, for it is hard to stop cheating when there is no fear of being caught. The Marine Corps has another saying that applies to stopping corruption: "Never underestimate the power of negative reinforcement." People rarely change their ways voluntarily, and rewards are seldom enough; change typically involves pain. When others see a rule-breaker punished, it encourages them to play by the rules; conversely, when rule-breakers face no consequences, it encourages those who have been following the rules to join the violators so as to enjoy the benefits of rule-breaking. Corruption is contagious.

While some observers blame the harsh Ottoman occupation—which ended almost 200 years ago—for instilling in Greece an enduring culture of corruption, what is needed now is not an assessment of blame but rather to call this problem out for what it is (Danopoulos, 2014). Greeks engage in corruption because they believe that they are unlikely to be caught and that, even if their misdeeds are detected, they are unlikely to be punished. Greek corruption is not hereditary; Cypress shares a Hellenic heritage but is much more transparent than Greece, and as noted earlier Greeks are respected and admired for their virtue and honor in America and all over the world. For an example of a country that has broken with its past in this way, one need only look to Georgia, once a highly corrupt communist state but whose citizens found a way to change their mentality and embark on a new path of transparency. So also in Greece there are a great many honest people working to change the culture of corruption, as evidenced by the 82% of respondents to a recent GCB poll of Greeks who agreed that "average people can make a difference" (TI, 2013). There is, then, hope that Greeks still believe that this problem can be fixed, even if the status quo has been hard to alter. Hopefully, those who oppose corruption will have the opportunity to unite behind a leader who is committed to equitable enforcement of Greece's laws, who will fight corruption and put fear into the hearts of lawbreakers. In this light, it is worth repeating the Mark Twain quotation that serves as the epigram this paper: "There are several good protections against temptations, but the surest is cowardice." As this axiom suggests, the key factor in fighting corruption in Greece is enforcement.,

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