

DEPARTMENT OF BALKAN, SLAVIC AND ORIENTAL STUDIES
MASTER'S DEGREE IN POLITICS AND ECONOMICS OF
CONTEMPORARY EASTERN AND SOUTH-EASTERN EUROPE

DISSERTATION TITLE:

**CORRUPTION AND CRISIS: A COMPARATIVE
ANALYSIS OF THE GREEK HEALTH SECTOR**

Katsana Apostolia Elissavet

M04/15

Supervisor: Owen O'Donnell

27/10/2015

ABSTRACT

Economic crises and resultant austerity measures impact on the financing and administration of health systems with potential consequences for corruption in that sector. This dissertation examines the hypothesis that the economic crisis that has afflicted Greece since 2009 has affected corruption in the health sector. After reviewing the relevant literature, the dissertation focuses on Greece's performance regarding health sector corruption using Transparency International's Global Corruption Barometer (GCB). First, the country's scores for health sector corruption are compared to those of other South-Eastern European and EU member-states. Second, data from 22 countries are used to examine whether changes in health sector corruption are related to changes in economic indicators and health system financing. Inconsistent with the hypothesis that corruption increases in times of economic crisis, there is no relationship between health sector GCB scores and changes in GDP. The share of health financing that come from out-of-pocket payments is the factor that is most strongly (positively) associated with health sector corruption.

TABLE OF CONTENTS

1. INTRODUCTION	1
2. LITERATURE REVIEW	3
2.1. CORRUPTION: CAUSES AND CONSEQUENCES	3
2.2. CORRUPTION IN THE HEALTH SECTOR	4
2.3. INFORMAL PAYMENTS	6
2.4. INFORMAL PAYMENTS IN THE GREEK HEALTH SECTOR	8
3. ECONOMIC CRISIS AND THE GREEK HEALTH SECTOR	11
3.1. THE ECONOMIC CRISIS IN GREECE	11
3.2. THE IMPACT OF THE ECONOMIC CRISIS ON THE GREEK HEALTH SECTOR	12
4. METHODOLOGY	15
5. COMPARATIVE ANALYSIS OF CORRUPTION IN THE GREEK HEALTH SECTOR	17
5.1. COMPARISON WITH SOUTH-EASTERN EUROPE	17
5.2. COMPARISON WITH EUROPEAN UNION MEMBER STATES	21
6. REGRESSION ANALYSIS	25
6.1. DATA DESCRIPTION	25
6.2. REGRESSION ANALYSIS RESULTS	30
7. CONCLUSION	36
8. REFERENCES	38

LIST OF FIGURES

<u>FIGURE 1A</u>: SEE – DECREASE IN HEALTH SECTOR	
CORRUPTION	17
<u>FIGURE 1B</u>: SEE – INCREASE IN HEALTH SECTOR	
CORRUPTION	18
<u>FIGURE 1C</u>: SEE – NO TREND	18
<u>FIGURE 2A</u>: SEE – DECREASE IN PUBLIC SECTOR	
CORRUPTION	19
<u>FIGURE 2B</u>: SEE – INCREASE IN PUBLIC SECTOR	
CORRUPTION	20
<u>FIGURE 2C</u>: SEE – NO TREND	20
<u>FIGURE 3A</u>: EU – INCREASE IN HEALTH SECTOR	
CORRUPTION	21
<u>FIGURE 3B</u>: EU – DECREASE IN HEALTH SECTOR	
CORRUPTION	22
<u>FIGURE 4A</u>: EU – INCREASE IN PUBLIC SECTOR	
CORRUPTION	23
<u>FIGURE 4B</u>: EU – DECREASE IN PUBLIC SECTOR	
CORRUPTION	23

LIST OF TABLES

<u>TABLE 1.1:</u> GCB HEALTH SECTOR SCORES – DESCRIPTIVE STATISTICS	25
<u>TABLE 1.2:</u> GCB HEALTH SECTOR SCORES, 2004 AND 2013 ..	27
<u>TABLE 1.3:</u> GCB PUBLIC SECTOR SCORES – DESCRIPTIVE STATISTICS	27
<u>TABLE 1.4:</u> GCB PUBLIC SECTOR SCORES, 2009 AND 2013	28
<u>TABLE 1.5:</u> COVARIATES	29
<u>TABLE 2.1:</u> LEAST SQUARES REGRESSION OF HEALTH SECTOR CORRUPTION (GCB) SCORE	32
<u>TABLE 2.2:</u> LEAST SQUARES REGRESSION OF PUBLIC SECTOR CORRUPTION (GCB) SCORE	34

1. INTRODUCTION

Over the last 6 years, there has been a rise in the level of corruption within the Greek health sector. The Global Corruption Index of Transparency International, which is on a scale of 1 to 5, with 1 demonstrating very low levels of corruption and 5 very high levels, increased from 3.5 in 2007 to 4.1 in 2013 for the Greek health sector. The latter score is even higher than that of 2004, when Transparency International began to examine corruption within the health sector in a number of countries. The increase in corruption within the Greek health sector coincides with the period of economic crisis, which has been deeper and substantially more severe in Greece than in other European countries. The austerity policies implemented as a consequence of the crisis have led to budget cuts and a dramatic decrease in public health expenditure. Pharmaceutical expenditure was also reduced, cutbacks were made in medical personnel, while the remaining staff suffered a loss in their income. This dissertation considers whether the economic crisis and the policies resulting from it has contributed to the rise in corruption within the Greek health sector.

Even before the crisis period, the Greek public health sector was considered to be highly prone to corruption, especially through informal payments to doctors. In order to avoid waiting lists, gain better treatment, or even on doctors demands, many patients were persuaded or forced to make side-payments. During the crisis period it possible that the reduction in physicians' salaries has led to an increase demand for informal payments, and raised levels of corruption. The purpose of this dissertation is to explore this hypothesis. Towards this aim a review of the most relevant and recent literature on corruption within the health sector will first be presented. Attention will subsequently be given to the economic factors leading up to the Greek economic crisis and on the changes that occurred in the health care sector during it. This will help explain why the crisis may have impacted on the health care system's corruption levels. The dissertation will continue with a comparative analysis of corruption in the Greek public health care system and in both European Union member-states and South-Eastern European countries. The comparison will be developed further through a regression analysis

across countries and time based on Transparency International's Global Corruption Barometer. Finally, the conclusion section will summarise the findings and indicate areas that require further debate and research.

2. LITERATURE REVIEW

2.1. CORRUPTION: CAUSES AND CONSEQUENCES

Although the effects of corruption are evident in most aspects of economic activity, scholars find it rather difficult to provide an exact definition of the term. Due to its complex nature and its many different forms, corruption is considered as a phenomenon that is hard to comprehend and measure. According to Transparency International, corruption can be defined, rather generally, as “the abuse of entrusted power for private gain” (Papapanagos, 2015: 12).

Corruption lies in the relationship between rent-seeking and government policy. More specifically, when the existing regulatory framework is not implemented effectively by governmental officials, various parties may be willing to bribe them, thus achieving their goal of obtaining rents. One main source of government-induced rents are restrictions on trade, such as import licenses (Mauro, 1996). Another significant source of rents, and subsequently corruption, are government subsidies (including tax expenditures) and price control. The final potential source of rent-seeking behavior related to government policies are relatively low public sector salaries, which may encourage civil servants to take bribes, particularly if there is a relatively low cost of being caught and dismissed (Mauro, 1996: 15).

The most important economic consequence of corruption is the potential reduction of growth through the distortion of markets. Corruption can become an obstacle to private investment, entrepreneurship and innovation due to low security of property rights (Fiorentini, Zamagni, 1999: 559). Corruption is also strongly linked to institutional inefficiency and low quality of public infrastructure and services (Fiorentini, Zamagni, 1999: 695). Moreover, in situations where rent-seeking provides higher opportunities than productive work, it is possible that talented and highly educated individuals will engage in such practices, thus causing a further negative impact on growth (Mauro, 1996: 18). Corruption can affect the composition of government expenditure as a result of public officials undertaking types of expenditure that allow them to collect bribes (Mauro, 1996: 20). When it takes the form of tax

evasion or improper use of tax exemptions, corruption can cause loss of tax revenue (Mauro, 1996: 19). It is also likely to increase transaction costs, and create perverse incentive structures (Serritzlew, Mannemar Sønderskov, Tinggaard Svendsen, 2014: 125). Apart from the economy, corruption can have a negative impact on society itself, mostly by undermining the rule of law and political stability, weakening the legitimacy of political institutions, sustaining inequality and hindering social cohesion (Papapanagos, 2014: 11).

2.2. CORRUPTION IN THE HEALTH SECTOR

In some states, corrupt practices can be detected in almost every sector of public activity. However, the health sector is considered to be one of the most vulnerable, due to the complex network of relationships between all participants. Around the globe almost 3 trillion US dollars is spent on the provision of medical services. Much of this is financed through taxation¹. Within the European Union, more than 1 trillion euro is spent on health care. The amounts spent reveal not only the high cost of functioning healthcare systems, but also the significance of potential losses from corrupt practices. These include informal payments, bribery, paying and receiving kickbacks, embezzlement, collusion in public procurement and regulatory capture (European Commission, 2013: 20).

Health services are susceptible to corruption for a number of reasons. High levels of information asymmetry are a typical characteristic of most healthcare systems (Lewis, 2006: 4). The large number of actors within the health system and the complexity of the relationships between them increases the opportunity for corrupt practices. Corruption can arise from health providers' responsibility for choosing services on their patients' behalf. The decentralization and individualized nature of medicine can become an obstacle to standardising and monitoring service provision and procurement, especially when the capacity for regulation is limited (Rădulescu, Alexandru, Miu, 2008: 44). Furthermore, in contrast to most consumer goods' markets,

¹ http://archive.transparency.org/global_priorities/other_thematic_issues/health

the procedure of pricing in medical care is highly nontransparent. Market supply and demand do not necessarily determine the optimal price of products and services. Due to pre-financing, such as insurance, it is common for the payer and the recipient of healthcare not to be the same person. This reduces the consumers' incentive to check the provision of medical goods and services. The diversity of services and outlays, the scale and expense of procurement, the nature of health care demand, as well as the vast flows of public money sustaining healthcare systems, provide incentives and opportunities for corruption (Vian, 2002: 2).

While corruption is most probably present in all healthcare systems around the world, the way in which it manifests depends, to a certain extent, on the methods through which medical services are financed and controlled. State-controlled health systems are vulnerable to corruption through informal payments, absenteeism and drugs being diverted for resale. On the other hand, in privately funded healthcare, insurance fraud, poor quality of treatment, as well as unethical procurement and distribution of pharmaceutical products appear to be the most common corrupt practices². The main corruption risks arising from tax-financed healthcare include a high degree of diversion of public funds at ministerial levels, as well as an increased possibility of informal payments, corruption in procurement, and low-quality services through abusive practices (U4 Anti-Corruption Resource Centre, 2008: 7). Corrupt practices associated with social and private insurance finance include excessive medical treatment, billing fraud and diversion of funds. Out-of-pocket payments are vulnerable to overcharging and inappropriate prescribing of services, as well as pocketing of official fees by employees after collecting them from patients. The degree of corruption in a healthcare system does not depend exclusively on the means of financing and regulation. "Corruption in healthcare is less likely in societies where there is broad adherence to the rule of law, transparency and trust, and where the public sector is ruled by effective civil service codes and strong accountability mechanisms" (Savedoff, Hussmann, 2006: 4). Corruption in medical services has been attributed both to underfunding of the health sector, poor quality of governance, as well as socio-cultural

² http://archive.transparency.org/global_priorities/other_thematic_issues/health/health_systems

factors, including customs such as tipping and expressing gratitude through small payments (Tambor, Pavlova, Golinowska, Sowada, Groot, 2013: 2).

Corruption in healthcare can have serious consequences for population health and economic development. Corrupt governments tend to invest where procurement contracts offer more opportunities for the extraction of larger bribes. Hence, investments may also tend to favour construction of hospitals and purchase of expensive, high-tech equipment over primary health care programs such as immunisation and family planning (U4 Anti-Corruption Resource Centre, 2008: 8). Medical services and procurement of equipment can be provided at above market prices, while the quality of services decreases significantly, since less resources are available for staff salaries, operations and maintenance. Practices such as embezzlement and procurement fraud drain funding from health budgets, thus resulting in demotivated healthcare providers, low quality of care and reduction in the availability of services (Lindelow, Sernells, 2006: 10). Corrupt, incompetent doctors may drive out skillful doctors, thus leading to a “brain drain” of medical personnel (European Commission, 2013: 29). According to data from the U4 Anti-Corruption Resource Centre, “corruption has a significant, negative effect on health indicators such as infant and child mortality, even after adjusting for income, female education, health spending, and level of urbanization” (U4 Anti-Corruption Resource Centre, 2008: 10).

2.3. INFORMAL PAYMENTS

Out of the many forms of corruption, informal payments are considered to be one of the most common practices in health systems. Informal payments are made in exchange for treatment that the patient is entitled to at no cost, or a lower price. They may also be made to secure privileges or special treatment, including earlier appointments and bypassing of waiting lists (European Commission, 2013: 16). It is not always clear if informal payments are indeed a form of corruption, due to the fact that, in some states, their legal position is controversial. In other cases, the term “informal” is problematic,

as they are demanded by the official authorities, and thus they are entirely formal (Cohen, 2012: 287).

The ways in which the phenomenon takes place depend on a series of different characteristics, as well as the relationships that develop between them. Firstly, the initiators of the procedure can be patients willing to express gratitude, providers requesting payments on a personal or institutional level, or even a combination of both. Secondly, informal payments can be expressed either in a material form, such as money or material gifts, or in the form of services (European Commission, 2013: 31). Furthermore, recipients of informal payments vary from medical institutions as a whole to a single member of their medical staff or administrative personnel. In contrast to recipients, payers are limited mostly to the patients themselves or their relatives. Moreover, informal payments function either as expressions of gratitude for the treatment provided, accompanied by the positive attitude of the payer, or as extra fees in order to achieve basic services, commodities, basic access or quicker access and better quality.

As a form of systemic corruption, informal payments allow public officials to raise their income, evade taxation and avoid fulfilling their obligations towards the state (Lewis, 2000: 5). In most cases, informal payments are a direct outcome of a failure of government. In many state-funded systems, joint financing, providers and administrators are accountable to no one, and consumers have no capacity to ensure accessible, efficient, and acceptable healthcare. Many governments have proven themselves unwilling or unable to adjust to declining overall incomes or government revenues. One of the most well-known examples of such situations are transition economies, in many of which unrealistic state guarantees, in addition to a decline in public funding, have created a significant gap between promised and delivered healthcare (Jones, 2006: 157).

From a more anthropological aspect, informal payments are related to a certain mentality and the local culture. Based on studies made in transition countries, informal payments are given to health providers as gifts or expressions of gratitude, and only after a patient has been given full and proper treatment on every level. It is also suggested that distrust in the political system and state institutions are strongly related

to such behavior (Cohen, 2012: 294). Moreover, payments are much more common in hospitals and doctors' clinics than in ambulatory settings, while in certain areas, such practices are lawful (Lewis, 2000: 1). In the majority of these situations, there is no apparent relationship between informal payments and the patient's desire to gain priority over others. To the contrary, Szende and Culyer argue that informal payments are usually made based on providers' demands or expectations (Szende, Culyer, 2006: 263).

2.4. INFORMAL PAYMENTS IN THE GREEK HEALTH SECTOR

Greece is one of the EU member-states where corruption, and informal payments in particular, is considered to be most widespread in the all parts of healthcare system (Liaropoulos, Siskou, Kaitelidou, Theodorou, Katostaras, 2008: 74). In order to comprehend the extent of the problem, it is important to become familiarised with the ways in which the Greek medical sector functions. The country's National Health System was established in 1983, with an aim of expanding coverage and reducing inequities in finance, access and resource allocation (Liaropoulos et al., 2008: 73). Today, it is a dual system that receives funding on a 60%-40% basis from public and private sources (Kaitelidou, Tsirona, Galanis, Siskou, Mladovsky, Kouli, Prezerakos, Theodorou, Sourtzi, Liaropoulos, 2013: 23). In 2010, expenditure on healthcare accounted for 9.84% of GDP (Hellenic Statistical Authority, 2015: 2). Furthermore, in 2010, 66% of the total health expenditure was financed publicly; out of which 35% was financed through the general government revenue and 65% through social security funds (Kaitelidou et al., 2013: 23).

The Greek national healthcare system is considered to be problematic in a number of respects. In spite of various efforts at reform, it is still highly centralised and yet clientelistic. It is characterised by fragmentation in coverage, low access to some medical services and yet overuse of some expensive inputs, included brand-name medicines (Liaropoulos et al, 2008: 73). Out-of-pocket payments finance almost 40% of total health expenditure, making “the Greek Health System [is] one of the most

“privatised” among European Union (EU) countries. The extent of informal payments is evident in the widespread use of the term “fakelaki” (small envelope) to refer to under-the-table payments towards doctors (Liaropoulos et al, 2008: 74). The extent and magnitude of the phenomenon is well documented. A 2008 study of 336 patients treated in public hospitals found that 36% reported making at least one informal payment to a doctor. 19% of the sample considered the payments as extra fees, while 17% described them as voluntary expressions of gratitude. This research discovered extremely low resistance of both physicians and patients to respectively receive and pay informal payments. Only 4% of doctors refused a payment and the same percentage of patients refused to pay an additional fee when asked to (Liaropoulos, Siskou, Kaitelidou, Theodorou, Katostaras, 2008: 5). Respondents’ answers to the survey revealed much information about the reasons behind informal payments. 42% of the sample stated that the payments were made due to their fear of receiving poor quality care, while 20% reported that the payment was made after the physician demanded it. Culture also seems to play a role. 18% of respondents made a payment on the basis that “everybody does it” (Liaropoulos et al., 2008: 6). Moreover, the nature of the illness defines whether providers request informal payments, in order for their patient to be admitted quicker through the intermediation of a third party (usually another doctor). Characteristically, 48.5% of the respondents’ admission was labelled as “urgent”, and in 40% of the cases reported, access to public healthcare was obtained after the involvement of a third person. Apart from doctors, though, informal gift payments are made to nurses, nurse assistants, and other para-medical personnel (Liaropoulos, et. al., 2008: 7).

Another study demonstrated the magnitude of the problem by focusing specifically on maternity health. Out of the 160 women, three quarters reported that an informal payment was made for the delivery of their child. More than half reported that payment was requested by the obstetrician. The mean payment was 1549€, out of which 701€ was a formal payment and 848€ was an informal amount (Kaitelidou, Tsirona, Galanis, Siskou, Mladovsky, Kouli, Prezerakos, Theodorou, Sourtzi, Liaropoulos, 2013: 2). On average, the total payment was equivalent to 42% of a family’s monthly household income.

Informal payments in public hospitals are estimated to account for almost 10% of the black economy in the Greek health sector (Liaropoulos, et. al., 2008: 74). The studies mentioned above highlight only certain aspects of this problematic issue. Further attention is deserved, since it constitutes a form of systemic corruption in medical services. Unfortunately, “because of the patchy development of health coverage and the fact that it has never been comprehensive, informal payments developed as a complement to public funding” (Liaropoulos, et. al., 2008: 74).

3. ECONOMIC CRISIS AND THE GREEK HEALTH SECTOR

3.1. THE ECONOMIC CRISIS IN GREECE

Greece was the EU country affected most by the global economic crisis of 2008. This precarious situation reached a peak in 2010, when the Greek economy was faced with a large fiscal and balance of payments deficit, a significant rise in public debt and the continuous deterioration of its competitiveness (Economou et. al., 2014: 100). Previous fiscal imbalances, a large foreign financial surplus, uncontrolled public spending for the oversized public sector and tax evasion are some of the reasons that exacerbated the effects of the global economic crisis in Greece.

In 2010, the Greek government requested assistance from the European Commission, the European Central Bank (ECB) and the International Monetary Fund (IMF) on both an economic and a technical level. The activation of a series of support mechanisms led to the adoption of austerity measures, including a stricter income policy, an increase in both direct and indirect taxation and a drastic curtailing of public expenditure. Based on data from the Hellenic Statistical Authority, Eurostat and World Bank, during the period from 2008 to 2013, Greece's GDP declined from €242 billion to €181 billion (-25%). GDP per capita was also reduced from €21,800 in 2008 to €16,500 in 2013 (-24%) GDP declined by 9% in 2011 alone. The budget deficit reached a peak of 15% of GDP in 2009, while the country's debt increased from 112.9% of GDP in 2009 to 173.8% in 2013. The need for servicing of the debt led to the signing of the two economic adjustment programmes and the consequent austerity measures. Government expenditure fell from \$71,847 billion to \$48,425 billion in 2013 (-67%), while at the same time taxation rates rose both for employees (22%) and self-employed (26%). Taxation on goods and services also increased, since a 23% Value Added Tax was imposed on wide range of products.

Moreover, the economic crisis and the associated austerity have had a significant social impact. According to data from the OECD, between 2007 and 2012, total household income decreased by almost 30%, with an average loss of 4,400 euros

per person³. Pensions also fell dramatically, while unemployment rates rose from 8% of the total labour force in 2008 to 27% in 2013. During the same period, youth unemployment exceeded 50%. Finally, based on the Better Life Index of the OECD, the top 20% of the population earned six times as much as the bottom 20%, while 23.6% of the population was at risk of living below the poverty line.

3.2. THE IMPACT OF THE ECONOMIC CRISIS ON THE GREEK HEALTH SECTOR

Since the beginning of the economic crisis, the Greek health sector has undergone a series of changes, in order to comply with the standards set after the signing of the Memorandums of Understanding of 2010 and 2012. The main objective was to reduce public health spending to a minimum of 6% of the country's GDP. Based on data published in 2014 by the Hellenic Statistical Authority (ELSTAT), during the period from 2009 to 2012, total health expenditure decreased from € 23.2 billion to € 17.7 billion (- €5.5 billion), while public health expenditure was reduced from €16.1 billion to €12 billion (- €4.2 billion)⁴. Compared to 2009, public health expenditure decreased by 12.8% in 2010, 2% in 2011 and 12.6% in 2012. When it comes to public health spending expressed as a percentage of GDP, Greece exhibited a significant rise from 5.85% in 2008 to 6.78% in 2009. This change coincides with the beginning of the country's GDP decline, and throughout the crisis period this percentage did not fall below the limit of 6%. An important consequence from the reduction in public health expenditure was the change in private household health spending trends. According to the OECD, from 2003 to 2008, private household health expenditure followed a positive trend: it rose from \$741 per capita in 2003 to \$1,206 per capita in 2008. However, within the first year of the crisis, this amount dropped to \$907 per capita and continued to follow a negative trend ever since, thus reaching \$798 per capita in 2013.

³ <http://www.oecd.org/greece/OECD-SocietyAtaGlance2014-Highlights-Greece.pdf>

⁴

http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A2103/PressReleases/A2103_SHE35_DT_AN_00_2012_01_F_GR.pdf

Within the context of public health expenditure reduction, the terms of Memorandum of Understanding required that hospital and pharmaceutical expenditure should be significantly constrained. According to the most recent data from the OECD, Government funding towards public hospitals was reduced from €7.2 billion in 2009 to €6.6 billion in 2012, while, in comparison to 2009, pharmaceutical spending decreased by 10.1% in 2010, 9% in 2011 and 18.4% in 2012. After the signing of the MoUs, pharmaceutical expenditure was set to not exceed the limit of €2.44 billion in 2013 and €2 billion in 2014. For this reason, this particular area underwent the largest reduction (from €5.2 billion in 2009 to €2.96 billion in 2012) (Economou et al, 2014: 4).

Medical staff have been severely affected by the reduced public hospital funding. According to the Union of Public Hospital Physicians of Athens and Piraeus (EINAP), almost 6000 doctors have been removed from their positions since the beginning of the crisis, while the remaining staff members suffered serious salary cuts. A 2012 Law reduced all public servants' average monthly⁵. Physicians' unions referred to this law as the "3rd Memorandum", due to the fact that the cuts in their salaries were extremely high. The same legislation introduced a tax of 36% on the average on-call hourly wage. The average yearly wage of the head of hospital departments fell by 35% (from €55,997 in 2010 to €36,825 in 2013), while that of a consultant physician declined by 38% (from €54,305 in 2010 to €34,152 in 2013). Interns' salaries also decreased by almost 26% (from € 22,008 in 2010 to €16,275 in 2013), while major cuts were also applied to on-call working hour wages (EINAP). This negative trend in the Greek public hospital physicians' salaries could act as an important cause for an increase in informal payments (Larsson, 2010: 29).

Policy changes have also led to many consequences for patients, the most important of which has been the rise in their percentage contribution to medicine payments. A recent study also claims that the economic crisis has led to "increased rates of child poverty and undernutrition, HIV among those who inject drugs, suicides and suicide attempts, and stillbirths. [...] To reduce costs, cancer screening has been cut and the management of cancer, as with many other disorders, has suffered from serious

⁵ http://www.eina.gr/old/Law/n4093_2012_mnimooinio3.pdf

drug and medical shortages” (The Lancet, 2015: 104). In addition to the above, cuts in social benefits caused serious economic difficulties to people suffering from physical or mental disabilities. It has been estimated that almost 30% of the Greek population turn to Non-Governmental Organisations for medical services (Ifanti, Argyriou, Kalofonou, Kalofonos, 2013: 11). Finally, a significant part of the working force that was made redundant has also lost all health insurance provided through employment. These groups are presented with further obstacles in their effort to access healthcare services, since their members are burdened with extra healthcare costs, both formal and informal.

Overall, as a result of the crisis, public health care expenditure has been reduced significantly leading to a series of problems for both medical staff and patients. These difficult conditions create the need for extra medical funding, either from the state or from the patients themselves. In such a context, informal payments could be encouraged by physicians, and they could be used by patients as a method of gaining better treatment.

4. METHODOLOGY

In order to explore whether the economic crisis has had an effect on the level of corruption in the Greek health sector, a series of corruption measures will be examined. Firstly, Transparency International's Global Corruption Barometer (GCB) is "the largest world-wide public opinion survey on corruption. It addresses people's direct experiences with bribery and details their views on corruption in the main institutions in their countries" (Transparency International, 2013: 3). The GCB solicits opinions regarding the effectiveness of government in the fight against corruption and the willingness of citizens to get personally involved in the process of combating corruption. In contrast to Transparency International's Corruption Perception Index, which measures perceptions of corruption by experts on a general level, the GCB survey is directed at the public and offers them the opportunity to express their experiences of corruption in specific sectors⁶. The GCB scores are scaled from 1 to 5, with 1 indicating the minimum level of corruption and 5 the maximum level of corruption. The first GCB survey took place in 2003, and the latest research (8th edition) was conducted in 2013. For the last survey, 114270 people in 107 countries were surveyed. The areas covered included 12 institutions: 1) Political Parties, 2) Parliament and Legislature, 3) Military, 4) Non-Governmental Organisations, 5) Media, 6) Religious Bodies, 7) Business and Private Sector, 8) Education System, 9) Judiciary, 10) Medical and Health Services, 11) Police and 12) Public Officials and Civil Servants.

In order to explore whether health sector corruption is related to economic circumstances of a country, it is not enough to examine the experience of Greece during the period of economic crisis. Comparison with similar data on corruption from other countries is necessary. For this purpose, data have been collected from 22 states chosen to belong to one of two categories. The first of which are the states of Eastern and South-Eastern Europe (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Georgia, Israel, Lithuania, Macedonia (Former Yugoslav Republic), Moldova, Poland, Romania, Russia, Serbia, Turkey and Ukraine). These states belong

⁶ http://www.transparency.org/files/content/pressrelease/GCB2013_FAQs_EN.pdf

to the same region and exhibit similar levels of corruption in the public health sector, although they did not experience the crisis as severely as Greece. The second category includes countries of Western Europe belonging to the European Union which experienced substantial or severe economic crisis (France, Ireland, Italy, Portugal and Spain). In the majority of these states, corruption levels are much lower than those of the Greek health care sector.

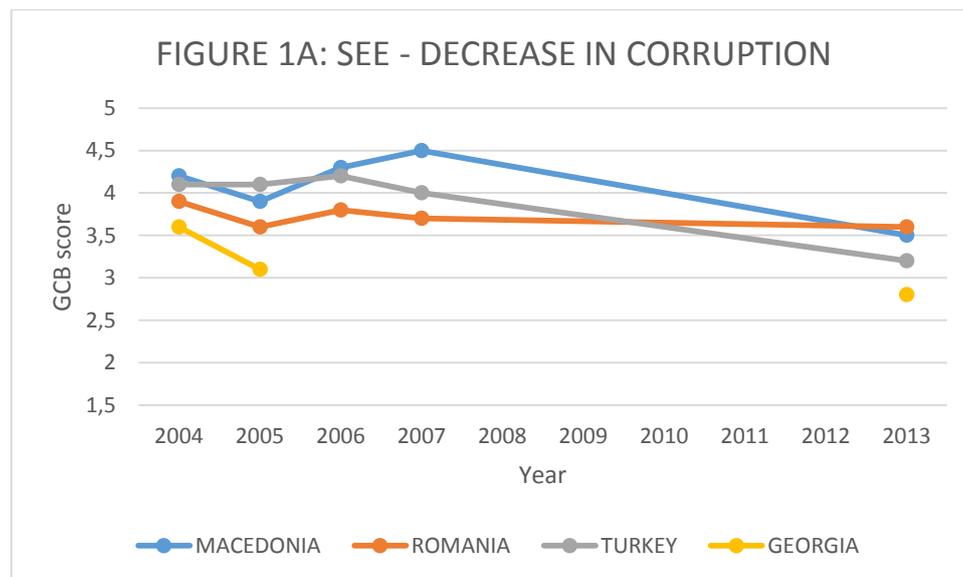
In order to consider whether health sector corruption increases in times of economic crisis, particularly in Greece, two main types of analysis are undertaken. First, the GCB levels of Greece from the period 2003-2013 are compared with those of other countries, both from the Eastern and South-Eastern European region and the EU region. Second, the GCB corruption index is regressed on log GDP and a number of other potential determinants of corruption. The hypothesis is that health sector corruption rises when the economy slows. The analysis is descriptive and does not allow testing of whether changes in GDP have a causal impact on health sector corruption. However, some potential confounders and time invariant differences in corruption across countries are controlled for.

5. COMPARITIVE ANALYSIS OF CORRUPTION IN THE GREEK HEALTH SECTOR

5.1. COMPARISON WITH SOUTH-EASTERN EUROPE

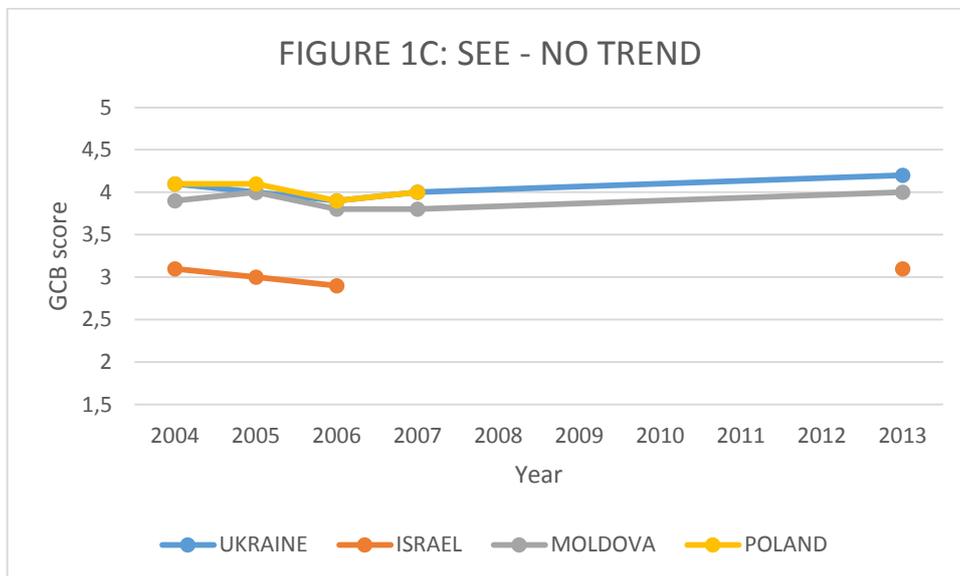
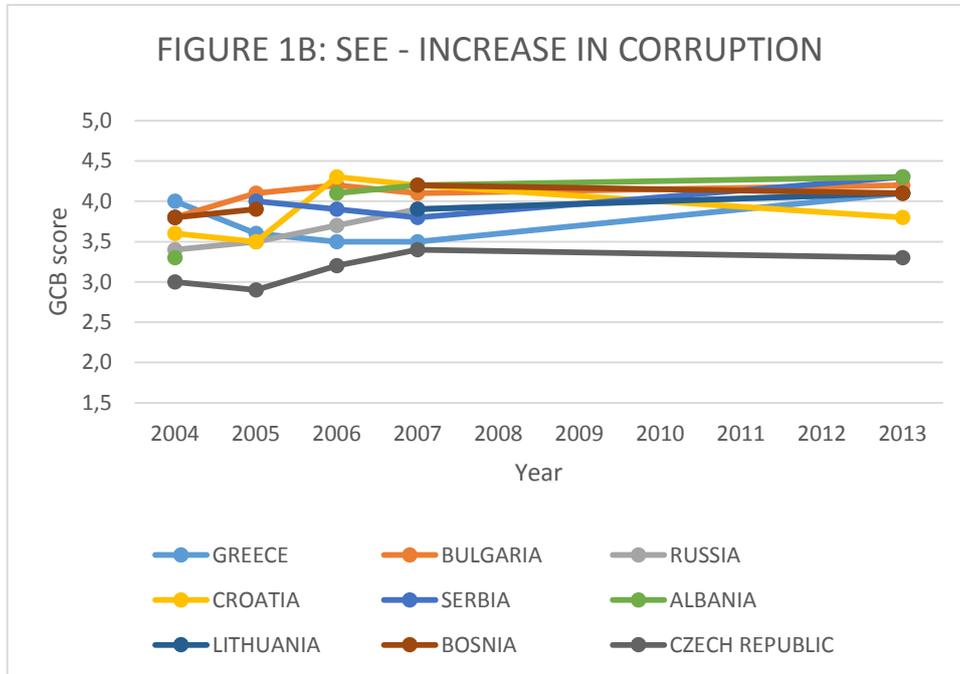
The GCB offers data on corruption in the health sector for the years 2004, 2005, 2006, 2007 and 2013. To examine trends within the period 2007-2014, GCB scores on the public sector and civil servants will be used. This covers corruption within public hospitals, as well as other public services.

The countries with the highest corruption levels in 2013 are Serbia and Albania, both of which exhibit a score of 4.3, while the lowest GCB score is that of Georgia (2.8). Greece has the 5th largest score of the group (4.1). Out of the 17 countries examined, only in 4 was there a negative trend in the GCB score indicating falling levels of corruption in the health sector between 2004 and 2013 (Figure 1A).



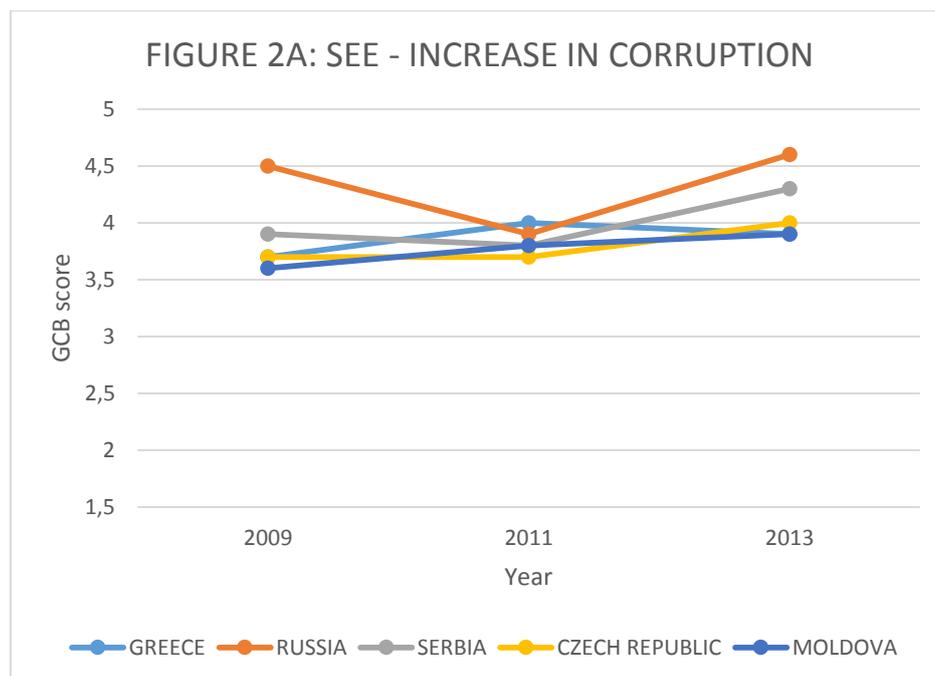
Romania, Macedonia, Turkey, and Georgia managed to reduce corruption in their medical services during the period from 2004 to 2013. The most positive example is Turkey, in which the GCB score fell from 4.1 in 2004 to 3.2 in 2013, indicating a large amount of progress in tackling corruption within the health sector. In contrast, in

Greece, along with Russia, Bulgaria, Croatia, Serbia, Albania, Lithuania, Bosnia, Czech Republic, health sector corruption increased (Figure 1B), while Poland, Ukraine, Israel and Moldova's scores do not follow a clear trend (Figure 1C).



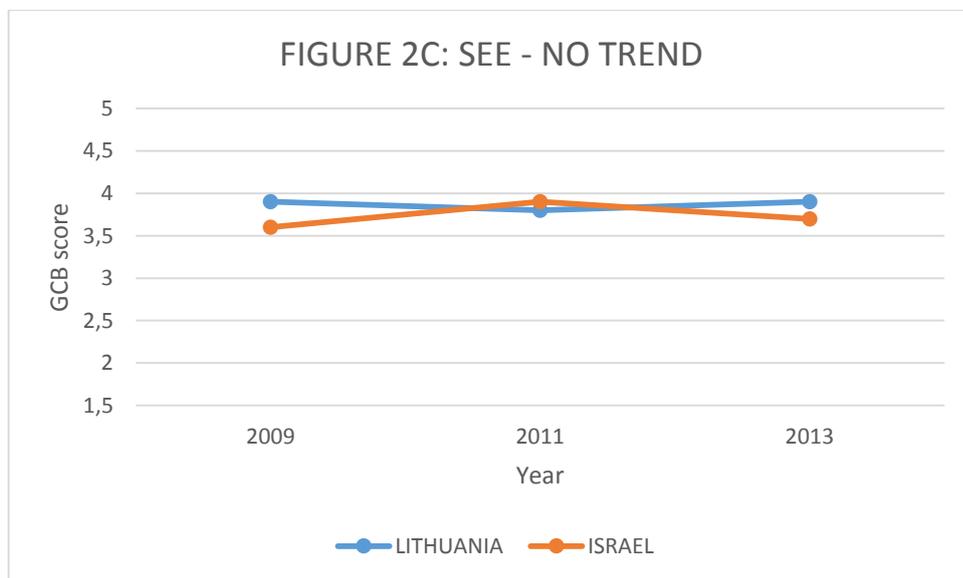
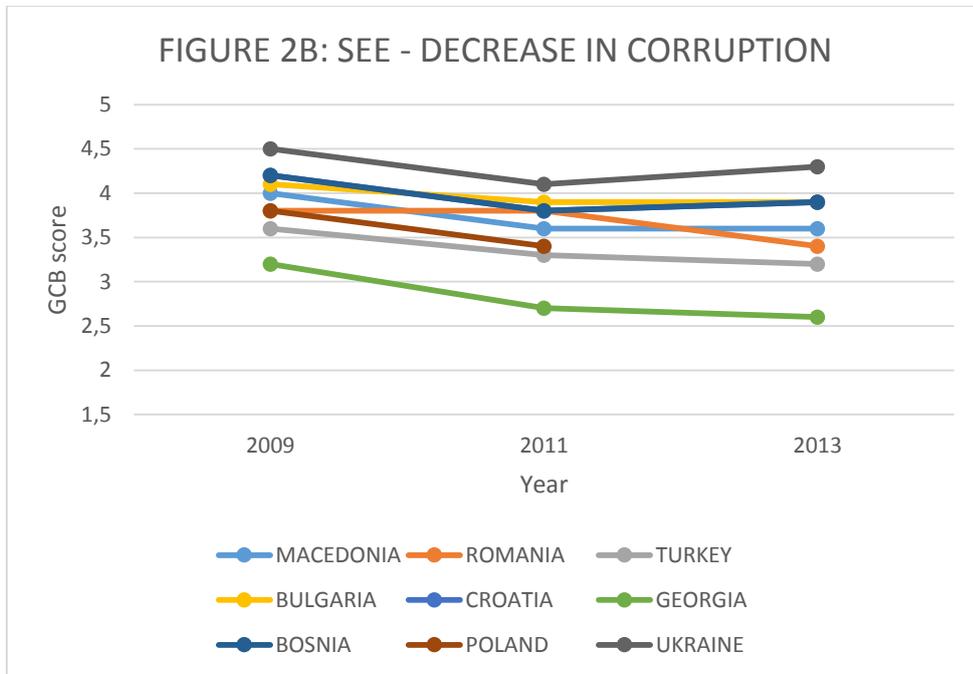
Albania provides the most dramatic example of worsening corruption with the index increasing from 3.3 in 2004 to 4.3 in 2013. Greece is one of the few countries that managed to lower its corruption level before gains were reversed in the period up to 2013. So, even though there was effectively no change between 2004 and 2013, close examination reveals that much progress had occurred in fighting corruption before the crisis broke out in 2008.

The country with the highest level of corruption in the whole of the public sector in 2013 was Russia (4.6). Again, Georgia exhibits the lowest score (2.6), while Greece again ranks 5th from top with a score of 3.9. Out of the 16 countries of Eastern South-Eastern Europe (Albania is not included due to lack of data) public sector corruption increased in 5 of them: Greece, Russia, Serbia, the Czech Republic and Moldova (Figure 2A). The largest increase appears to have taken place in Serbia: its GCB score rose from 3.9 in 2009 to 4.3 in 2013.



The GCB scores for Macedonia, Romania, Turkey, Bulgaria, Croatia, Georgia, Bosnia, Poland and Ukraine all follow a negative trend indicating reduced corruption in the whole public sector (Figure 2B). Georgia is the country with the largest decrease

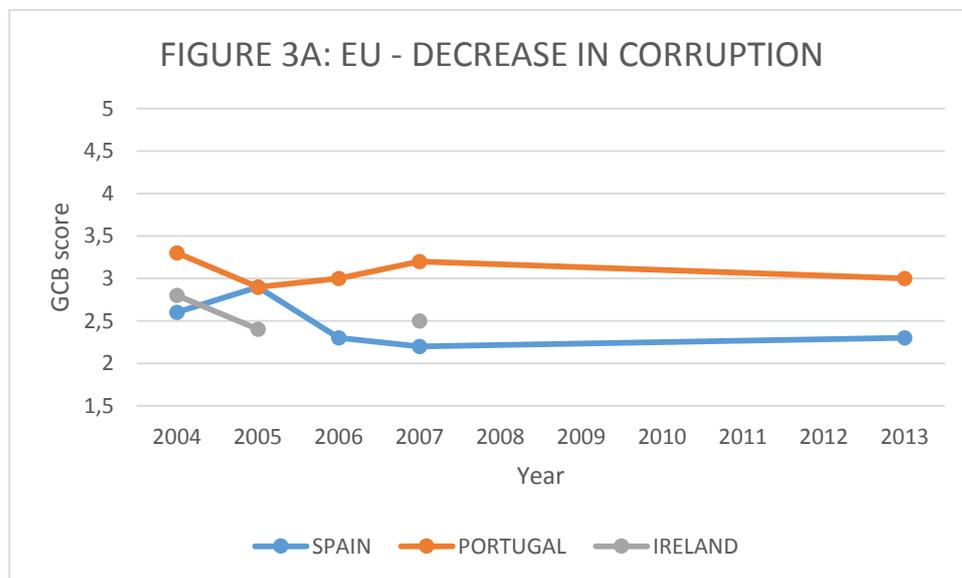
in its GCB score: it fell from 3.2 in 2009 to 2.6 in 2013. Lithuania and Israel do not appear to follow a consistent trend in their GCB scores (Figure 2C). In contrast to its performance in the health sector, Greece exhibited no clear change in corruption on the whole public sector.

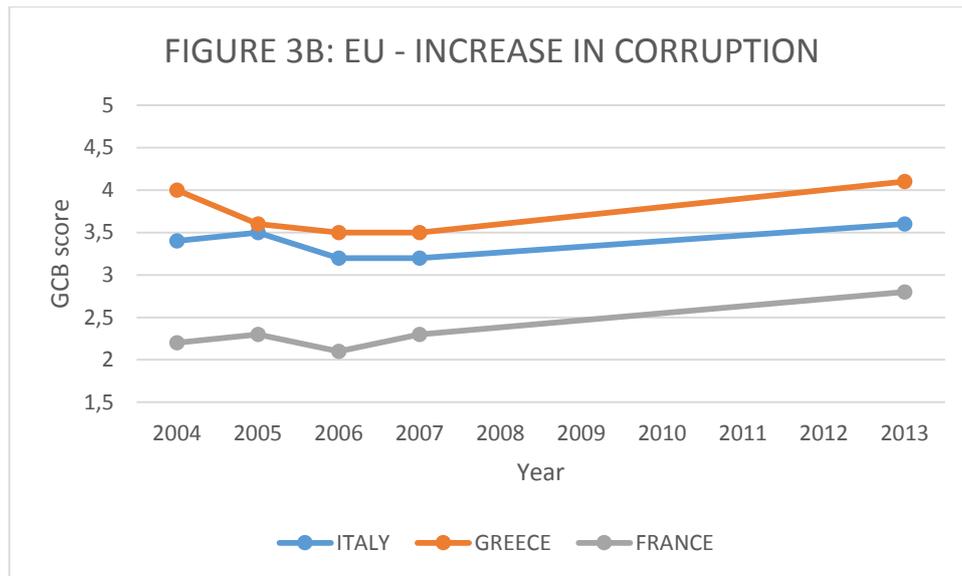


Based on all the above, Greece appears to be one of the most corrupt South-Eastern European countries. In both the health care sector and the public sector, it ranks fifth out of seventeen states. In the medical services field, previous gains in reducing corruption appear to have been reversed during the period of economic crisis in Greece. But the same trend is observed for the majority of South-Eastern European countries, which suggests that it is not the result of economic crisis.

5.2. COMPARISON WITH EUROPEAN UNION MEMBER-STATES

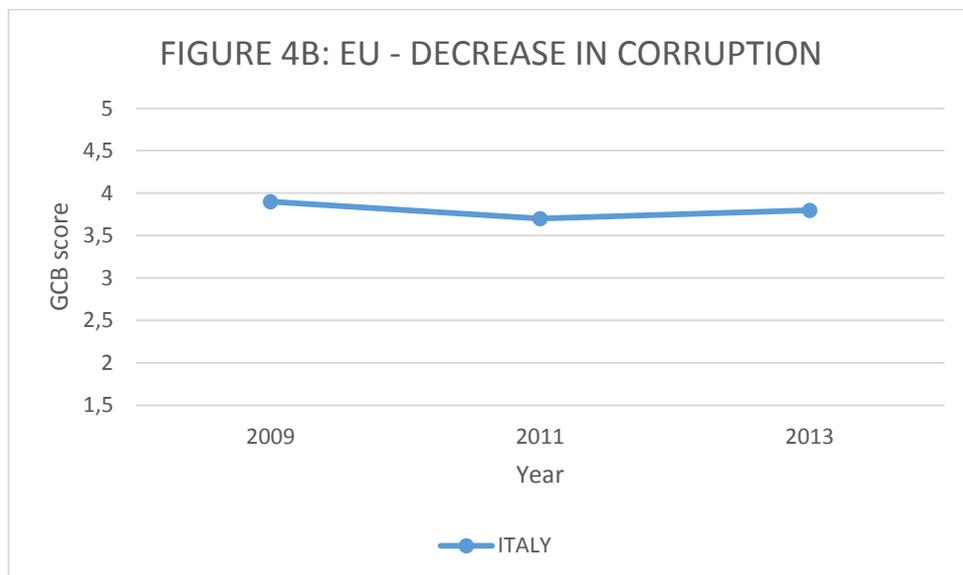
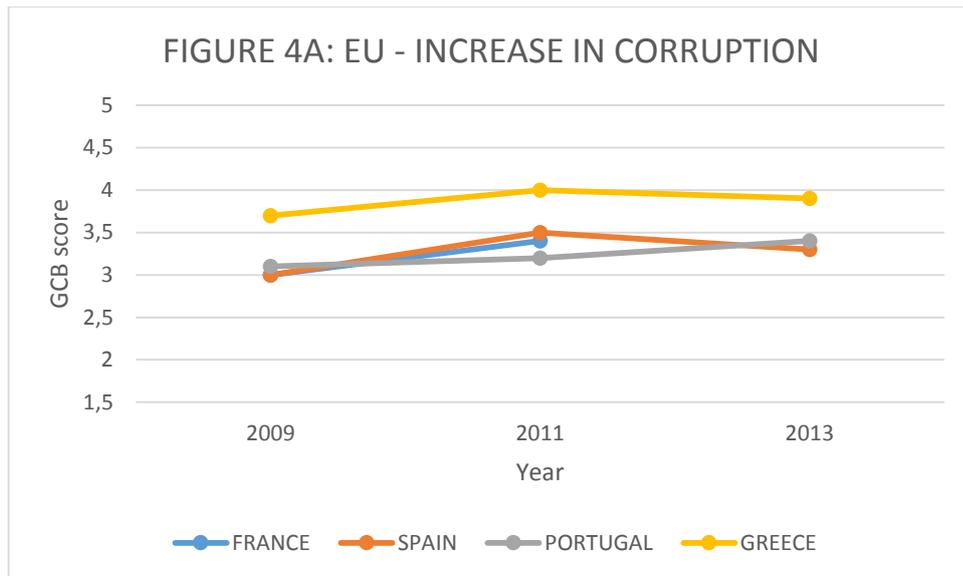
In 2013, health sector corruption was substantially higher in Greece (4.1) than in all the other five EU member-states affected by the economic crisis that are considered. Corruption is lowest in Spain (2.3). As in Greece, health sector corruption increased in Italy and France between 2004 and 2013 (Figure 3A), while it fell in Spain, Portugal and Ireland (Figure 3B).





Given that, after Greece, the three latter countries were the EU countries most severely impacted by the economic crisis, these trends suggest that health sector corruption is not responsive to economic recession. However, in the crisis period from 2007 to 2013 corruption increased for all four countries for which data are available. During this period, the largest increase is exhibited in Greece. In contrast to the South-Eastern European countries, all EU member-states belonging to the sample managed to lower their corruption levels up until 2007. Greece in particular reached a score of 3.5, before it rose abruptly to 4.1 in 2013.

For the years 2009, 2011 and 2013, the GCB provides data on the performance of this group's countries regarding corruption in their public sector. After sorting the data, Greece appears once more as the state with the most corrupt public sector after achieving a score of 3.9 in 2013. Despite these levels, Greece does not appear to have a significant lead, since its difference with the follower Italy is only one decimal point (3.8). The lowest score is exhibited by Spain (3.3).



Apart from Italy, all the other EU member-states follow a positive trend in their GCB scores (Figures 4A, 4B - Ireland is not included due to lack of data). Moreover, an examination of each country's performance over time does not show much fluctuation in the scores. The largest increase appears in the case of France, the corruption levels of which rose by 0.4 point from 2011 to 2013 (no available data for 2009). Italy, on the contrary, managed to decrease its overall corruption levels only by 0.1 points (from 3.9 in 2009 to 3.8 in 2013). From the data, it appears that Greece has

made some very slight progress in the fight against corruption. After an increase from 3.7 in 2009 to 4 in 2011, it reduced its GCB score to 3.9 in 2013.

Overall, in comparison to five EU member-states also impacted by the economic crisis, Greece exhibits higher levels of corruption. This is evident mostly in the field of health and medical services. The rise in the GCB scores for most of the EU countries after 2007 may be an indication of a connection between the crisis and corruption, and this is further supported by the particularly abrupt increase in Greece that was most severely impacted by the crisis. However, over the period 2004 to 2013, health sector corruption fell in three member states that were strongly affected by the crisis.

6. REGRESSION ANALYSIS

6.1. DATA DESCRIPTION

In order to determine whether there is a relationship between corruption in the health sector and economic activity, I regress the GCB scores against a series of economic indicators to explain variation across countries and time. Since the GCB on the health sectors does not offer data for the most crucial years of the crisis, two analyses are undertaken: in the first, the independent variable is the GCB score for the health sector, and in the second the independent variable is the GCB score for the public sector. All analyses are conducted with the use of the statistical software Stata©, version 13.

The data are for the 22 countries and period of 9 years (from 2004 to 2013) considered in the previous chapter. The objective is to explain the variation in corruption across countries and across years.

Before moving on to the regression analyses, it is important to describe how corruption varies across time and countries. In the previous chapter this was done separately for two groups of countries, with Greece's relative position within each emphasised. Here, I concentrate on the variation in corruption across all countries and across time. This is the variation that will be explained by the regression analysis that follows. Table 1.1 presents descriptive statistics of the GCB health sector scores of each year.

Year	Mean	Standard Deviation	Minimum score	Maximum score
2004	3.52	0.54	2.2	4.2
2005	3.46	0.57	2.3	4.1
2006	3.57	0.66	2.1	4.3
2007	3.63	0.65	2.2	4.5
2013	3.62	0.59	2.3	4.3

In 2004, the mean score was 3.52, with France having the lowest score (2.2) and Macedonia the highest (4.2). In 2013, the mean score was only slightly higher than in 2004 at 3.62, and the score ranged from 2.3 in Spain to 4.3 in Serbia and Albania. ($\mu=3.62$, number of observations=20). From the data, it is clear that corruption levels in the health sector are not changing significantly over time. In each year, the standard deviation is only about one sixth of the mean. The small standard deviation implies that variability is low and most observations are concentrated near the mean. Also, the fact that there are no considerable alterations in both the mean or the standard deviation of each year indicates that no important increase or decrease in corruption levels generally is occurring over time. Corruption in the health sector varies more across countries than it does across time.

Table 1.2 shows the GCB health sector score of each country and its ranking in both 2004 and 2013. In 2004, the countries with the lowest levels of health sector corruption were France, Spain, Ireland and the Czech Republic. Many EU member-states, such as France or Italy, have low corruption scores. Most South-Eastern European states, including Ukraine and Turkey, have higher corruption levels than those of the EU member-states. Those with the highest levels of corruption were Poland, Turkey, Ukraine and Macedonia. In 2013, corruption was lowest in Spain, France, Georgia and Portugal, and highest in Bulgaria, Ukraine, Albania and Serbia. The ranking of countries by health sector corruption is reasonably stable. The country that managed to lower its corruption levels the most during the examined time period was Turkey (-0.9), followed by Macedonia and Georgia. The highest rise occurred in Albania, the corruption of which rose by 1 point. Russia and Bulgaria also presented a rise in their GCB scores (+0.7, +0.4). By comparing its scores in 2004 and 2013, Greece's position does not seem to have changed significantly over time, since its overall score has only risen by 0.1 points. However, as depicted in Figure 3A, during the years in between, the country's corruption levels had fallen significantly before they abruptly rose again in 2013.

Table 1.2.: GCB Health Sector Scores, 2004 and 2013			
Country	2004 Score	Country	2013 Score
France	2.2	Spain	2.3
Spain	2.6	France	2.8
Ireland	2.8	Georgia	2.8
Czech Republic	3	Portugal	3
Israel	3.1	Israel	3.1
Albania	3.3	Turkey	3.2
Portugal	3.3	Czech Republic	3.3
Italy	3.4	Macedonia, FYR	3.5
Russian Federation	3.4	Italy	3.6
Croatia	3.6	Romania	3.6
Georgia	3.6	Croatia	3.8
Bosnia and Herzegovina	3.8	Moldova	4
Bulgaria	3.8	Bosnia and Herzegovina	4.1
Lithuania	3.8	Greece	4.1
Moldova	3.9	Lithuania	4.1
Romania	3.9	Russian Federation	4.1
Greece	4	Bulgaria	4.2
Poland	4.1	Ukraine	4.2
Turkey	4.1	Albania	4.3
Ukraine	4.1	Serbia	4.3
Macedonia, FYR	4.2	Ireland	-
Serbia	-	Poland	-

Descriptive statistics of the GCB scores of corruption in the public sector are given in Table 1.3. As in the case of corruption in the health sector, public sector corruption does not appear to change exceptionally over time. As in the field of medical services, corruption in the public sector varies more across countries than across time. Country rankings of corruption in the public sector in 2009 and 2013 are given in Table

1.4. Most EU-member states appear to have lower corruption levels than those of the South-Eastern European states. In comparison to their GCB health sector scores, Spain, France and Russia appear to have higher corruption levels in their public sector for the year 2013 (+1, +0.8, +0.5 respectively). In turn, although Greece's GCB scores for the public sector have risen (+0.2), it cannot be included in the countries which presented a substantial change in corruption over time. Both in 2009 and 2013, Greece ranked in middle positions amongst the countries of the sample (8th and 13th lowest corruption levels).

Year	Mean	Standard Deviation	Minimum score	Maximum score
2009	3.79	0.43	3	4.5
2011	3.63	0.35	2.7	4.1
2013	3.72	0.42	2.6	4.3

Table 1.4.: GCB Public Sector Scores, 2009 and 2013				
Country	2009 Score		Country	2013 Score
Spain	3		Georgia	2.6
Portugal	3.1		Turkey	3.2
Georgia	3.2		Spain	3.3
Moldova	3.6		Romania	3.4
Israel	3.6		Portugal	3.4
Turkey	3.6		France	3.4
Czech Republic	3.7		Macedonia, FYR	3.6
Greece	3.7		Israel	3.7
Romania	3.8		Italy	3.8
Poland	3.8		Moldova	3.9
Serbia	3.9		Lithuania	3.9
Lithuania	3.9		Greece	3.9
Italy	3.9		Croatia	3.9
Macedonia, FYR	4		Bulgaria	3.9
Bulgaria	4.1		Bosnia	3.9
Croatia	4.2		Czech Republic	4
Bosnia	4.2		Ukraine	4.3
Russian Federation	4.5		Serbia	4.3
Ukraine	4.5		Russian Federation	4.6
France	-		Poland	-

For the 2013 data, the Spearman correlation coefficient between the GCB scores in the health and public sectors is 0.8256 (p-value=0.000) , indicating a very high and significant positive correlation between the GCB scores in the health and the public sectors of the countries of the sample. This confirms that corruption in the public sector is a good proxy for corruption in the health sector.

The independent variables used to explain variation in corruption are listed in Table 1.5 along with their means and standard deviations.

Name of variable	Variable content	Mean	Standard Deviation
loggdp	Log of Gross Domestic Product (GDP) per capita	9.15	1.05
debt	Public debt as a percentage of GDP	48.44	32.56
hexpgdp	Total health expenditure as a percentage of GDP	7.99	1.76
ooptotexp	Out-of-pocket health expenditure as a percentage of total health expenditure	29.62	14.50

6.2. REGRESSION ANALYSIS RESULTS

The GCB health sector corruption score is regressed on the covariates listed in Table 1.5, along with dummy variables for each country and each year to allow for time invariant differences in the level of corruption across countries and any time trend in corruption that is common across countries respectively. The data used are for 2005, 2006, 2007 and 2013, and since 2005 is used as the base year, all year effects will be interpreted in relation to the average level of corruption in that year. Spain is used as the reference country since it is the state with generally the lowest GCB score. Coefficients of all the other countries will be interpreted in comparison to the corruption level of Spain.

The logarithm of GDP is the covariate of main interest. It is included to examine whether health sector corruption does change with the state of the economy. Debt levels as a percentage of GDP increase during times of economic crisis. In order for the debt to be serviced, expenditure on various sectors of public activity, including health, must

be reduced. This variable is included to examine whether there is any relationship between the debt burden and health sector corruption. Changes in health sector funding could lead to variations in corruption. Funding and salary cuts may drive medical staff to engage in corrupt practices in order to compensate for any losses. Total health expenditure as a share of GDP is included in the regression. Finally, the review of the literature revealed that health systems that are more reliant on out-of-pocket financing appear to be more prone to corruption. Out-of-pocket payments as a share of total health expenditure is therefore included in the regression.

Ordinary least squares estimates are presented in Table 2.1.

Table 2.1.: Least Squares Regression of Health Sector Corruption (GCB) Score				
Variable name	Coefficient	Standard Error	t	p-value
loggdp	0.173	0.259	0.67	0.508
debt	0.006	0.004	1.81	0.075
hexpgdp	0.030	0.658	0.46	0.649
ooptotexp	0.020	0.009	2.28	0.026
Year (base 2005)				
2006	0.014	0.086	0.16	0.871
2007	0.043	0.116	0.37	0.713
2013	-0.164	0.205	-0.80	0.426
Country (base Spain)				
Bosnia and Herzegovina	1.727	0.659	2.62	0.011
Bulgaria	1.774	0.579	3.06	0.003
Croatia	1.842	0.302	6.09	0.000
Czech Republic	1.174	0.272	4.31	0.000
France	-0.083	0.309	-0.27	0.790
Georgia	0.282	0.899	0.31	0.755
Greece	0.620	0.281	2.21	0.031
Italy	0.575	0.283	2.03	0.047
Lithuania	1.731	0.423	4.10	0.000
Macedonia, FYR	1.834	0.614	2.99	0.004
Moldova	1.622	0.955	1.70	0.094
Poland	1.750	0.349	5.02	0.000
Portugal	0.384	0.208	1.85	0.070
Romania	1.861	0.517	3.60	0.001
Russian Federation	1.574	0.520	3.03	0.004
Serbia	1.577	0.544	2.90	0.005
Turkey	1.823	0.384	4.75	0.000
Ukraine	1.927	0.752	2.56	0.013
cons	-0.320	2.670	-0.12	0.905

R-squared = 0.8723
Number of observations = 88

The estimates show that health sector corruption does not vary significantly with changes in log GDP levels. This is inconsistent with the hypothesis that corruption increases in times of economic recession. At the 10% level of significance, corruption is positively associated with changes in public debt as a percentage of GDP levels. However, this does not necessarily indicate that an increase in the percentage of debt leads to a rise in corruption. High debt and corruption could be characteristics of countries with weak administration, a situation not always related to economic crises. Corruption is most strongly correlated with the proportion of total health expenditure that is financed by out-of-pocket payments. Countries with health systems that are heavily dependent on out-of-pocket payment financing exhibit higher levels of corruption. This is consistent with the hypothesis presented in the literature review, according to which states that rely on out-of-pocket payments for a large share of their health financing are more prone to corruption. However, it is not clear from the analysis whether reliance on out-pocket payments raises corruption or the latter is responsible for the increase in the share of out-of-pocket payments.

The lack of significance of the year effects confirms what was evident from the descriptive statistics - there is no time trend in health sector corruption. There are, however, substantial and significant differences across countries. For example, conditional on the covariates, the level of corruption in X is points higher than it is in Spain.

The same regression analysis is conducted for the GCB public sector scores using data on this index for 2009, 2011 and 2013. The year 2009 is considered to be the base year, Georgia, the state with the lowest level of public sector corruption, is used as the reference country and so all country coefficients indicate differences in corruption between the respective country and Georgia.

Variable name	Coefficient	Standard Error	t	p-value
loggdp	-0.283	0.416	-0.68	0.502
debt	0.007	0.005	1.45	0.156
hexpgdp	0.114	0.114	1.00	0.325
ooptotexp	0.043	0.018	2.35	0.026
Year (base 2009)				
2011	-0.144	0.106	-1.36	0.184
2013	-0.099	0.132	-0.75	0.46
Country (base Georgia)				
Bosnia and Herzegovina	2.810	0.748	3.76	0.001
Bulgaria	2.790	0.655	4.26	0.000
Croatia	3.974	0.655	4.26	0.000
Czech Republic	3.897	1.416	2.75	0.007
France	3.045	1.895	1.61	0.119
Greece	2.331	1.751	1.33	0.193
Italy	3.141	1.832	1.71	0.097
Lithuania	3.377	1.102	3.06	0.005
Macedonia, FYR	2.820	0.795	3.55	0.001
Moldova	1.534	0.388	3.95	0.000
Poland	3.191	1.231	2.59	0.015
Portugal	2.066	1.517	1.36	0.183
Romania	3.587	1.188	3.02	0.005
Russian Federation	3.213	0.772	4.16	0.000
Serbia	2.420	0.718	3.37	0.002
Spain	2.809	1.558	1.80	0.082
Turkey	3.480	1.310	2.66	0.013
Ukraine	2.724	0.548	4.97	0.000
cons	0.991	3.772	0.26	0.795

R-squared = 0.9102
Number of observations = 55

The regression estimates are presented in Table 2.2. As with the health sector, corruption in the public sector generally is not significantly correlated with log GDP. In contrast to the health sector, the GCB scores for the public sector is not associated with changes in debt percentages even at the 10% level of significance. This means that there is no relationship between public debt and variation in public sector corruption. Again, corruption is significantly positively correlated with the share of health financing that comes from out-of-pocket payments. This can be explained in two different ways. The first is that the GCB scores for the public sector are substantially determined by the GCB scores for the health sector. Hence, a positive correlation of out-of-pocket payments with the health sector corruption results in a positive correlation of the same variable (out-of-pocket payments) with public sector corruption. The second, and less likely due to the inclusion of country effects, is that there is another factor correlated with both out-of-pocket payments and corruption. Moreover, as in the case of medical services, year differences are not significant. Finally, with the exceptions of France, Greece, Italy, Portugal and Spain, the difference in corruption levels of countries in comparison to Georgia seem to be significant. For example, conditional on the covariates, public sector corruption is 1.927 points higher in Ukraine than it is in Georgia .

7. CONCLUSION

Corruption is considered to be one of the most difficult issues to tackle, due to its complexity, its different forms and the various areas of economic activity in which it manifests. In the health sector, corruption results in the loss of valuable resources and the problematic functioning of health systems, especially when those are publically funded. After the emergence of the economic crisis in 2008, many states were faced with austerity measures, most of which affected policies regarding public expenditure. In the case of Greece, major reforms and budget cuts led to difficulties in the operation of its public health system. This dissertation aimed at identifying a possible relationship between the economic crisis and corruption in the Greek health services. Corruption increased after 2008 as the economy plunged deeper into recession and austerity measures became more severe. But simultaneous change does not amount to evidence of an impact of economic crisis on health sector corruption. The process of testing assessing the hypothesis involved the collection of data from a sample of 22 countries, out of which most belong to the South-Eastern European region, while the rest are European Union member-states. After comparing Greece's performance to these countries, a regression analysis was run, in order to identify and explain the variation of corruption across countries and time, and to examine whether health sector corruption does, in general, increase when the economy slows. The regression analysis finds no significant relationship between corruption and changes in GDP. Corruption does increase when debt as a proportion of GDP does but it is not clear that this reflects any causal relationship. The only robustly significant relationship identified from the regression is between reliance on out-of-pocket payments to finance health care and corruption. Health systems which base a large amount of their funding on out-of-pocket payments tend to be more corrupt.

Overall, there is little or no support for the hypothesis that the economic crisis resulted in a rise in the corruption levels of the Greek health care sector. Corruption is likely caused more by the structure of health financing and the efficiency of health care administration rather than by temporal changes arising from the business cycle. This

proposition could lead to a set of further hypotheses concerning the determinants of corruption within the health sector that would benefit from further research.

REFERENCES

- Ades, Alberto - Di Tella, Rafael, *Competition and Corruption*, Institute of Economics and Statistics Discussion Papers 169, University of Oxford, 1994
- Cohen, Nissim, Informal Payments for Health Care - The Phenomenon and its Context, *Health Economics, Policy and Law*, Vol. 7, Issue 3: 285 – 308, 2012
- Economou, Charalampos – Kaitelidou, Daphne – Katsikas, Dimitris – Siskou, Olga – Zafiropoulou, Maria, Impacts of the Economic Crisis on Access to Healthcare Services in Greece with a Focus on the Vulnerable Groups of the Population, *Social Cohesion and Development*, Vol. 9, Issue 2: 99-115, 2014
- European Commission, *Study on Corruption in the Healthcare Sector*, Publications Office of the European Union, Luxembourg, 2013
- Facey, Karen, *Health Technology Assessment Glossary*, INAHTA Secretariat, Stockholm, 2006
- Fiorentini, Gianluca – Zamagni, Stefano, *The Economics of Corruption and Illegal Markets: Volume I*, Edward Elgar Publishing Ltd, UK, 1999
- Hellenic Statistical Authority, *Greece in Figures 2014*, Statistical Information and Publications Division, Piraeus, 2014
- Hellenic Statistical Authority, *System of Health Accounts – Year 2013*, Statistical Information and Publications Division, Piraeus, 2015
- Ifanti, Amalia – Argyriou, Andreas – Kalofonou, Foteini – Kalofonos, Haralabos, Financial Crisis and Austerity Measures in Greece: Their Impact on Health Promotion Policies and Public Health Care, *Health Policy*, Vol. 113: 8-12, 2013
- Jones, Andrew, *The Elgar Companion to Health Economics*, Edward Elgar Publishing, UK, 2006

- Kaitelidou, Daphne – Tsirona, Christina – Galanis, Petros – Siskou, Olga – Mladovsky, Philipa – Kouli, Eugenia – Prezerakos, Panagiotis – Theodorou, Mamas – Sourtzi, Panagiota – Liaropoulos, Lykourgos, Informal Payments for Maternity Health Services in Public Hospitals in Greece, *Health Policy*, Vol. 109: 23-30, 2013
- Kelley, Robert, *Where Can \$700 Billion In Waste Be Cut Annually From The U.S. Healthcare System?*, Healthcare Analytics - Thomson Reuters, USA, 2009
- Larsson, Rickard, *Informal Payments for Health Care: A Threat to Human Security?*, Thesis for the Master's Programme "Global Studies", Lund University, Lund, 2010
- Lewis, Maureen, *Governance and Corruption in Public Health Care Systems*, Centre for Global Development, Working Paper Number 78, Washington DC, 2006
- Lewis, Maureen, *Who Is Paying for Health Care in Eastern Europe and Central Asia?*, Human Development Sector Unit, Europe and Central Asia Region, World Bank Publications, Washington DC, 2000
- Liaropoulos, Lykourgos – Siskou, Olga – Kaitelidou, Daphne – Theodorou, Mamas – Katostaras, Theofanis, Informal Payments in Public Hospitals in Greece, *Health Policy*, Vol. 87: 72-81, 2008
- Lindelow, Magnus – Serneels, Pieter – Lemma, Teigist, *The Performance of Health Workers in Ethiopia: Results from Qualitative Research*, World Bank Policy Research Paper 3558, World Bank Publications, Washington DC, 2005
- Mauro, Paolo, *The Effects of Corruption on Growth, Investment, and Government Expenditure*, IMF Working Paper No. 96/98, International Monetary Fund Publication Services, Washington D.C., 1996
- Papapanagos, Harry, *Lecture notes for the lesson "Economics in Eastern and South-Eastern Europe"*, University of Macedonia, Thessaloniki, 2014

- Papapanagos, Harry, *Lecture notes for the lesson “Economics in Eastern and South-Eastern Europe”*, University of Macedonia, Thessaloniki, 2015
- Papapanagos, Harry, *Transparencies for the lesson “Economics in Eastern and South-Eastern Europe”*, University of Macedonia, Thessaloniki, 2014
- Rădulescu, Irina – Gabriela, Alexandru Gheorghe, Miu Anca, Inside the Core of Corruption from the Health System, *Buletinul Universității Petrol – Gaze din Ploiești*, Vol. 60, No.1: 43-50, 2008
- Savedoff, William - Hussmann, Karen, *Why are health systems prone to corruption?*, Global Corruption Report, Transparency International, 2006
- Serritzlew, Søren – Mannemar Sønderskov, Kim – Tinggaard Svendsen, Gert, Do Corruption and Social Trust Affect Economic Growth? A Review, *Journal of Comparative Policy Analysis: Research and Practice*, Vol.16, No.2: 121-139, 2014
- Szende, Agota - Culyer, Anthony, The inequity of informal payments for health care: the case of Hungary, *Health Policy*, Vol. 75, Issue 3: 262–271, 2006
- Tambor, Marzena – Pavlova, Milena – Golinowska, Stanisław – Sowada, Christoph – Groot, Wim, The formal-informal patient payment mix in European countries. Governance, economics, culture or all of these?, *Health Policy*, Vol. 113, Issue 3: 284-95, 2013
- The Lancet, The Greek Crisis, *The Lancet*, Vol. 386, Issue 9989: 104, 2015
- Tomini, Sonila – Groot, Wim – Pavlova, Milena, *Informal payments and intra-household allocation of resources for health care in Albania*, Presentation for the Maastricht Graduate School of Governance, Maastricht University, 2007
- Transparency International, *Global Corruption Report 2013*, “Transparency International” International Secretariat, Berlin, 2013

- U4 Anti-Corruption Resource Centre, *The Characteristics of Corruption in Different Health Systems*, World Health Organization, 2008
- Vian, Taryn, *Corruption and the Health Sector*, USAID Publications – Sectoral Perspectives on Corruption, Washington D.C., 2002
- Zavras, Dimitris – Tsiantou, Vasiliki – Pavi, Elpida – Mylona Katerina – Kyriopoulos, John, Impact of Economic Crisis and Other Demographic and Socio-economic Factors on Self-rated Health in Greece, *The European Journal of Public Health*, Vol.22, Issue 2: 206-210, 2012

DATA SOURCES

- Global Corruption Barometer: Data from the year 2004
- Global Corruption Barometer: Data from the year 2005
- Global Corruption Barometer: Data from the year 2006
- Global Corruption Barometer: Data from the year 2007
- Global Corruption Barometer: Data from the year 2009
- Global Corruption Barometer: Data from the year 2010
- Global Corruption Barometer: Data from the year 2013
- World Bank Database
- International Monetary Fund (IMF) Database
- Organisation for Economic Co-operation and Development (OECD) Database
- World Health Organisation (WHO) Database
- Eurostat Tables Graphs and Maps (TGM) Interface table