IMK
Macroeconomic Policy Institute

The IMK is an institute of the Hans-Böckler-Stiftung

STUDY

Nr. 58 • January 2018 • Hans-Böckler-Stiftung

CRISIS MANAGEMENT IN GREECE

The shaping of new economic and social balances

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Abstract

The aim of this study is to explore the impact of the crisis and crisis-induced policies on incomes, inequality and poverty in Greece, to detect the types of adjustment and to show why prevailing perceptions and attitudes caused a heavy economic, social and political cost. Based on extensive income and tax data it investigates the changing relationship between labour, capital and pension income, changes in direct, indirect and property taxation, and their incidence on pre- and post-tax inequality and competitiveness between 2008 and 2012-13. It examines also the losers and the winners and the resulting social reclassifications within the Greek society, the multifaceted types of poverty and inequality and the changing relations between the haves and the haves-not. The analysis distinguishes property and income by main sources at the deciles level, and for the top 1% and 0.1% of the income distribution, at the household and individual level. It covers the period 2008-2015, depending on the available data. It is shown that many economic and social outcomes were the result of deficient approaches and ideological inflexibilities coupled to established political interests, making the exit from the crisis more complicated and painful.

A first version of this study was published in March 2015 (Giannitsis and Zografakis 2015). The present edition comprises a deeper and more synthetic analysis and some completely new topics: privileged tax exemptions, structure and taxing of realestate, contribution of female employment on household's income, changes in employment patterns, evolution of the top incomes, effects of low-cost loans before the crisis and their impact on incomes and the banking sector after 2010.

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October 2017

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INTRODUCTION

After falling into the crisis in 2009, Greece experienced fundamental changes not only in its economic, social and political environment, but also and most importantly in the value system of society. During these years, individuals, households and businesses saw their situation unravel: their jobs, incomes, social status, their children's future, their relations with the State, their relationship with their property, their perspectives, their ideological and conceptual value system, the country's place within Europe, the Balkans and the world, everything that previously seemed stable and granted, all were shaken in an unprecedented way and at an unprecedented speed.

This near-decade was not only a period of deficits, over-indebtedness, economic collapse, tensions with lenders, unraveling. It was also nearly ten years when Greek society and policy, as well as European actors, were unable to fathom what had gone and was still going wrong and how a society, its political system and international actors (the Troika, the IMF, European institutions) had possibly for years –before and after 2009 – failed in their policy choices.

Failure did not start in 2009. In 1999, Greece repaid the last instalment on its accumulated foreign debt that had led to the International Financial Control of 1898. This makes one hundred years of international control and supervision, one hundred years of redemption for the mistakes of 19th-century governments. This seems to have not been registered in individual or collective memory. The length of time until 2009, when the new debts accumulated, mainly after 1974, and brought the country back to bankruptcy conditions, was a few decades, of which the most critical period was less than five years (2006-2009). It is because of this period and the choices then made that Greek society will again remain under international supervision for an indefinite period. How can we account for the debacle of these years in the context of the overall environment that Greece faced? Was it a matter of historical government incompetence, collective missteps, or a combination of national and wider decisions, where 'wider' refers to the lending practices of

international banks and the inefficient policy choices of European governments and institutions?

While this book focuses on crisis-stricken Greece, its aim is also to explore how the crisis management model worked in the case of Greece and what lessons can be drawn from a wider perspective. Our findings describe the reality that emerged both from choices made and from choices not made. We seek to identify the weaknesses, the strengths and other relevant aspects of the crisis management model adopted, the mistakes made, the vacuum of political and economic rationale concealed under ambiguous political rhetoric, to examine the consequences of many of the policies implemented and to show why several of these choices were as shortsighted as those that had led to the crisis in the first place, which forms of adjustment have been successful and which not, and why a number of perceptions and attitudes that prevailed caused a heavy cost for the country.

The difficulty of this endeavor arises from the fact that many changes are interconnected in multiple ways, and 'successes' are the flipside of adverse developments. This is mostly visible in the elimination of the fiscal and external imbalances on the one hand and recession, unemployment, plunge in investment and incomes on the other. It is less visible in the relationship linking fiscal consolidation and recession with the increases in non-performing loans to about 45% of total bank lending outstanding or to about EUR 95 billion, in tax arrears, from about EUR 30 billion at the onset of the crisis to about EUR 98 billion by mid- 2017, or in social security contribution arrears to about EUR 25 billion in the same period. These figures sum up to about EUR 250 billion, affect many other economic and social variables and hinder the return to normality.

As mentioned, the policies conducted from 2009 onwards were not only the choices of governments; to a crucial extent, they were imposed by Greece's lenders, the "Troika", including one of the major international organisations, the IMF. Precisely for this reason, a critical assessment would have more general relevance for the design and implementation of policies to support the countries concerned in overcoming their problems, with as less economic, social and political pain and destabilisation as possible.

In a few years, the combined impact of the crisis and of these policies overturned existing dynamics and long-established practices, some of which should have been addressed by national policies themselves years ago in order to avoid the severe disequilibria and collapse that followed. Regardless of their intentions, some of these policies had a stabilising effect on the economy, society and politics, while others had a destabilising effect or, more precisely, often one policy was stabilising in one aspect and at the same time destabilising in another aspect. In the end, they caused major complications, the fallout of which is now visible in a country that still, after so many years of crisis, is struggling to recover.

However, policies are not made in a social vacuum and it would be pointless to disregard their links to the dynamics that built up in society and shaped developments during or even before the crisis. In fact, how society perceived the crisis, which role was played by which parts of society and political and social forces and what impacts and risks were entailed, all have been closely interconnected with the policy responses and have influenced developments.

A deeper investigation into the specific mechanisms and decisions that generated the crisis and shaped the responses to it, as well as into the political and social forces driving these processes, involves a tracing back to the various serious or less serious impasses that together make up the long chain of the national failure. Few, if any, chronic and structural weaknesses became the target of a strong national effort to tackle, let alone reverse, in these years. For an important part of Greek society, the concepts of structural transformation, evolution and adaptation to the reality of the actual world system, which have long been central to Growth and Development Policies, took on negative connotations or were distorted. Instead, they were replaced by inaction and insistence on the same expectations and corrupt or dead-end practices, beliefs or values that led to the crisis and continued to prevail, only disguised as something new and different, in the years of crisis. Such fake transformation could not but lead to the same poor results, or to even worse results, as each time the starting point was worse. In a rapidly changing world, Greek political and social forces refused to make any significant change to address

a number of chronic problems such as the informal economy, tax evasion, corruption in the public or private sector, central pathologies of governance, significant and persisting inequalities or malfunctioning institutions. We refused to see that central policy choices would sooner or later bring the society to a breaking point: the dam would fall apart, and we would need far more changes, efforts and cost to compensate for our long inaction. In most cases, the pressure to change the status quo came from outside or from the reality itself, as in the case of the pension system. Every time the results were poor, either due to bad design and failure to grasp the constraints and degrees of freedom and assess social costs and benefits over time or due to rejection by governments and various interest groups.

This picture reflects the essence of what happened in these years. It also reflects the difficulties to an unambiguous strategy for overcoming low growth and stagnating prospects in the foreseeable future. This is due to a systemic and collective failure to see or accept the winning choices and opportunities in the contemporary world. Worse yet, the history of these years shows that successive entrapments in illusory thinking led to a point where it was hard to aspire to anything different from what was offered to Greece as an option and where the possibility of collective action to achieve a fast turnaround seemed to be undermined.

Our approach goes beyond economy and politics. It is also about the national situation, the national interests and the most disappointing developments after the restoration of Democracy in 1974; it is about our society and its weaker parts, the youth and the future of the country, poverty and inequality, the relationship with Europe and its cultural and broader values to which Greece has historically contributed, the many risks that have been emerging at an alarming pace and, last but not least, Democracy itself. Nevertheless, our analysis relies mostly on facts that document the major economic and social problems, their political repercussions and policy implications. What we aim to provide is a deeper insight into the link and causality between the short- and the long-term dimension of policy making and social choices and into the nexus between the economic crisis and the underlying social and political dynamics. Every now and then, on the path

followed by the country, new monster gates opened. In fact, we Greeks opened many of them, they did not open by themselves. And whoever in a democratic society chooses the role of spectator and shifts responsibility for what happens to others “above” or “outside” – governments, parties in power and opposition forces, various other groups, Europe, IMF – becomes an accomplice to this monster-generating process.

An important question that emerges from the above and many points examined in this book refers to the relationship of domestic versus external factors with developments in the economy, society and politics. The discussion regarding the driving forces behind the course of a country is actually very old and recurring in different forms at different times. The interplay between the two sets of factors is important, but in the case of Greece domestic choices have been the most decisive, especially until the crisis, but also to a significant degree after 2009. When governments and major social forces resort to excessive debt ignoring basic choices that would shore up against adverse developments, or, for the purpose of scoring a momentary and misleading political victory, choose the path of conflict with Europe without knowing or caring for the chances of success amid an unequal balance of powers, disregarding the long-term social and national cost of these choices, the deadlock is inevitable. When overcoming this deadlock is attempted through other deadlock options, the problem is only amplified. Before but especially during the crisis, there have been many such policies which, without denying the adverse impact of external factors, surely could have been avoided, thereby preventing the extent, intensity and the most unfair aspects of the crisis in the country. When conflict becomes a tool for legitimising power, the results for society are disastrous.

Finally, the matter is also about the responsibility of each player for the fate of this country, not only in terms of what determined the past but also from a forward-looking perspective, in terms of what can be done now. Certainly, this points in the direction of governments, the entire political system of the country and those having the power to influence developments. However, it also points in the direction of society as a whole and its members, however small their share of responsibility may be. Otherwise, we would accept that society and citizens are abstract and passive beings with no role, no influence,

and just follow and go along with what is done, said or decided by a system over and above them. If this were true, it would be like blindly going along with any outcome and giving up on our role as citizens. Such an attitude would have severe consequences for those who adopt it or even for those who don't, and serious implications for the quality of Democracy in a country as well.

Has the crisis been a game changer? Clearly it has been and in many ways, some of which we attempt to highlight in the following chapters. At a general level, it can be said that the crisis tore the "veil of ignorance"[1], awakening us to a reality which we can no longer say that we did not know, did not understand, it was not our fault, we did not learn. Besides, this game changing has had a very tangible dimension: locking Greek society in a stagnating trajectory, which has lasted for eight years and could last for years to come.

The debate about the country's prospects is often punctuated with occasional and short-lived dashes of optimism about an actual or hypothetical small increase in GDP or investment. These are useful insofar as they generate hope, and offer political gains to those who invoke them, especially when they are real and not virtual. But they are not sufficient to change the course of the country. What is needed is not a meager rise of growth around a flat trend, but a fundamental change of path in the mid-term and the capability to confront the new economic, social and environmental risks that accumulate on the horizon amid a deteriorating global, European and regional geopolitical environment. This requires tremendous effort, since the starting conditions today are much more unfavourable than before the crisis, meaning that a far larger part of a reduced GDP and personal income have now to be devoted in achieving the same societal targets (growth, employment, poverty reduction).

The question that often arises is why other countries managed to escape relatively quickly from the crisis or from the risk of successive failures; how they gradually reduced their risks without severely harming their cohesion and stability; and how they prevented Gramsci's monsters from hijacking their history.

[1] According to Rosanvallon (2014), p. 235.

This question cannot be answered by the argument that Greece entered the crisis with much worse conditions. This is partly correct. Even this, however, shows however a gap of economic and political capacity in the pre-crisis period. Thus, while several countries suffered from the crisis, Greece's suffering was manifold. So the question remains: "Why this asymmetric pattern?" As always, there is no single explanation. What is for sure is that at the core of the Greek failure lies a deeper, systemic disruption of the link between political capacity, growth performance and structural change. This explains why in the run-up to the crisis, Greek governments relied on increasingly higher borrowing, creating a huge fiscal bubble, in their aim to demonstrate economic and, hence, "political success". This fiscal bubble was proved to be much more sizeable, complex, dangerous and painful than the property or banking bubbles in Ireland, Spain or Cyprus.

Even today, there is a silent recourse to the palliative remedy of borrowing, driving us deeper and deeper in debt, which at the same time is attacked as heinous and intolerable while, on the other hand, the lenders are blamed for not lending the country more so that the economy can recover! Between 2010 and 2016, public debt increased by more than EUR 25 billion, despite the PSI of EUR 100 billion, the fact that debt servicing was financed by the Memoranda and Agreements and that the banking sector fell under the control of international actors. However, the role of international credit in the economy, in its pre-crisis form, is over. The return of the country to international financial markets, when achieved, will be associated with much less borrowing possibilities and higher capital cost than in the past. This means that, unless endogenous mechanisms of growth and production capacities are strengthened, the country faces a risk of remaining in low-flight mode.

After the effects of the crisis have spread to every aspect of social reality, it is essential to acknowledge faults, problems and risks, to break with mistakes and to build a collective will to move from destructive to constructive paths. "Collective" refers to the existence of a critical mass of society that is really willing to "do something", in fact something than can translate into reality in the foreseeable future and not remain in the realm of utopia. This is not at all self-evident. As a society we are not famous for cherishing collective

values, European or national; we have no steady vision or even knowledge of how to build a solid future; we reject essential ingredients of success, such as cooperation; we refuse to learn from, let alone follow, successful paradigms. We reject any measures that seem painful, discrediting them as anti-popular, immoral or destructive, and only after many years and costs we come to realise how wrong we have been to reject them. And this happens over and over again. Furthermore, after eight years, from an economic and political point of view, the society is fragmented, with weak cohesion and sense of collectivity. A fractured society and a weak collective critical mass for change are not a convincing recipe for success.

In this book we have included very extensive statistical material which, apart from serving as necessary support to our analysis, can be useful for other researchers to mine in the future, perhaps reaching different conclusions.

We are aware that some points of our analysis will be liked and some disliked by the same parts of the political or ideological spectrum. The points to be liked are probably the convenient ones, while the points to cause dislike or discomfort are those showing that reality is far from one-sided and escapes the prefabricated dominant perceptions that tend to pigeonhole it into futile black-and-white categorisations.

The problem is not so much ideological but rather a problem of interests and power games. Delving into these years, one point is unequivocal: even amid the crisis, the choices made by the forces in power, as well as by the forces with an influence on power, most prominently including the media and influential individuals, have typically had one main goal: to prevent, at any collective cost, a disturbance of established balances of power, positions and benefits, and preserve political conditions that, despite any differences, led the country and, hence, the collective interest to collapse. All these years showed that such choices failed to pull society into a more promising future or support the new, “weaker realities”, and that the economic, political, intellectual and social elites were reluctant to accept that they had to confront their own mistakes. In this situation, a society cannot compose itself, it can only decompose.

Very often it is argued that the country and its people must “touch bottom” before rising again and that in the history of the country sharp ups were the outcome of sharp downs, as if a cause-effect relationship exists. When bottom is touched, the upturn will start quasi-automatically. This view is naïve, vindictive, unfair, unhistorical and extremely dangerous. It is unfair because the mistakes and ill-advised decisions made before and during the crisis were not predetermined – this would be a convenient excuse. It is unhistorical, because there are innumerable examples of societies that understood their weaknesses and reacted decisively to avoid further plunge and others that paid a price of long years of backwardness for their inability to change course. Again, this price was not a necessity. It reflected the combined costs of weak social and political capabilities and self-interest, behind which there may be different reasons and explanations each time. The above view is also extremely dangerous politically, because a dislocated society is prone to the emergence of forces and situations that can not only erode Democracy, human rights or the existing, however flawed, rule of law and hard-won rights, but also prove destructive both for those who have put their hopes on them and those who haven’t. Examples abound, within and outside the national context.

Unlike the above view, the problem is that the country has a long history of successive collapses, which do not seem to have become part of our historical memory or to act as a deterrent to similar situations in future. It appears that, once we manage as a nation to move forward and aspire to a better future, then “something happens” and we tend to forget the lessons learned by experience and lose any sense of moderation, risk awareness, collective responsibility or sound judgment, thereby soon inviting our own doom. How else can one explain the fact that in sixty-five years (1945-2009), in contrast to any other country, Greece experienced four huge, internally generated, national defeats: civil war (1946-1949), dictatorship (1967-1974), invasion to Cyprus (1974) and economic collapse (after 2009)?

In many important issues, our approach allowed us to look into unknown aspects of how policies worked and what impact they had on economic and political developments. A number of these findings are in sharp contrast to many conventional stereotypes

constructed and prevailing in public opinion. Some of the most significant findings are the following:

- The Greek society today is very different than before the crisis, from both an economic and a social point of view: unprecedented income cuts, more than 1.1 million unemployed persons, migration outflows of working age population that seem to have reached about 420,000 between 2008 and 2015, at least 800,000 new pensioners in 2008-2015 (adding pension applications still pending), and a contraction of over 60% in investment which bodes badly for growth in coming years.
- Between 2008 and 2012, and even till today, income from dependent labour suffered the largest reduction in absolute terms (EUR 12 billion or 27.4% of total 2008 labour income), while income from other sources was subject to much larger reductions in relative terms.
- Labour income and capital income fell by 27.4% and 37.7%, respectively, income transfers for pensions, which do not represent productive activity, increased (by EUR 3.3 billion or 13%) in the economy as a whole, although at household level they recorded a decline. The ratio of national expenditure on pensions to labour income (see Table 4.9) increased from 49.3% in 2008 to 76.7% in 2012. This change is fundamental to the intrinsic balance of the economic, social and political environment within which we are expected to get out of the crisis.
- What worsened more than anything else as a result of the crisis was poverty, with a broadly-based pauperisation of Greek society, in the sense of a collapse of incomes across most income groups. Relative poverty, which is a common measure of poverty, also increased, but due to the overall pauperisation the increase was smaller than what would be expected. However, apart from the increase in poverty, the 'intensity of poverty' also increased significantly, meaning that even in relative terms the poor became poorer than the rest of society.
- Poverty patterns have also changed, with a shift from older ages, especially pensioners, to children, younger and middle ages, particularly the families with one, two or more unemployed persons. Policy responses to poverty remained stuck to

obsolete, pre-crisis patterns and, lacking a solidarity dimension, have led to regressive redistribution effects and larger inequality. The reason is that a retargeting of policy towards the new categories of poor would jeopardise the clientele relationships of the political system and would entail political cost of an uncertain size.

- Inequality in society as a whole increased less than what is commonly believed and argued, as has also been the case in other crisis countries of the euro area. In fact, inequality had declined by 2010 and started to rise slightly in 2011. The factors behind this limited increase in total inequality were, first, the fact that pension cuts were much higher for medium-sized and especially for higher pensions, thereby contributing to a significant reduction of inequality within the category of pensioners, representing about 16% of GDP or 2.7 million people, and second, the significantly larger income reduction for higher income groups.

  However, the slight increase in inequality had only a limited impact, because it occurred amid conditions of growing poverty and overall pauperisation of a large part of Greek society, particularly in terms of absolute poverty, but also in terms of relative poverty. We consider that in conditions of sharp income contraction, even an unchanged inequality means essentially higher inequality. Moreover, aggregate or average figures for society as a whole mask major changes (positive or negative) in inequality within individual segments. The issue of inequality is very crucial from a political and economic perspective, given that even before the crisis inequality in Greece was much higher than in most other EU countries and played a significant role in how society evolved in the run-up to and during the crisis.

- Two new and acute forms of inequality are identified, which are not reflected in the income-related indices and other figures examined:
  - First, a growing inequality between Greece and European or other countries, which over the same period showed improved performance and therefore progressed at a time when Greece regressed. In terms of income alone, although GDP in 2016 fell to the level of 2003 (back by 16 years), Greece's convergence to the EU-15 countries has retreated to pre-1970 levels (back by

more than 47 years). This development is not an abstract relationship. It has a profound impact on the country's weight in the international system, as well as on the manner in which it can cope with the fundamental shifts in the global economy and participate more actively in the development of key drivers of growth (knowledge, technology, competitiveness, business and production innovation, new forms of economic activity, a well-functioning state and society). In a broader perspective, the crisis marked the interruption or even reversal of a convergence that had been underway in terms of per capita GDP between member countries of the EU and the beginning of a divergence process, causing significant uncertainties, dissatisfaction and affecting the stability of Europe itself.

- Second, a growing internal divide can be observed in terms of knowledge, education, information about the contemporary world, the geopolitical context of the country, capabilities to understand the new ways of dealing with new and old problems and achieving growth under difficult conditions. This internal social divide is deepening, trapping more and more human and social forces within a dual structure that, regardless of income levels, is split by dangerously diverging characteristics and abilities regarding expectations and knowledge about the direction in which the country needs to move. Indifference or inability to understand the new serious risks and threats emerging on the horizon means that society's preparedness to deal with such threats is also minimal. In other words, deepening income and social divides lead to divergent attitudes regarding efforts to overcome the crisis. Large parts of society are interested only in redistributive policies, while others give emphasis on a policy mix geared towards growth, transformation and social policies as well.

- The finding that is most contrary to popular wisdom is that the crisis hit all strata, lower, middle and upper. Our investigation of many interactions and figures shows that all saw their income decline sharply and their condition deteriorate or even

collapse. As an overall conclusion, reality appears to be very different from stereotypical representations.

Considering the complexity of the problem, we tried to capture it in relatively simple terms, centred around a key question: what were the aggregate income losses, respectively, for the "bottom" (60% of the population), the "middle" (30% of the population), the "top" (10% of the population) and the "very top" (1% and 0.1% of the population) brackets of the household distribution between 2008 and 2012. A more detailed investigation is contained in Chapter 13.

Aggregate income losses and gains during the crisis period

Deciles	Total of households		Total of the same households	
	Income losses (-)/gains (+) between 2008 and 2012 (EUR billions)	% change	Based on 2008 income (EUR billions)	Based on 2012 income (EUR billions)
1st -6th (60%)	-5.1	-18.1	0.3	-12.1
7th-9th (30%)	-7.1	-16.1	-8.3	-6.6
10th (10%)	-11.7	-26.9	-15.9	-5.2
Total (100%)	**-23.9**	**-20.6**	**-23.9**	**-23.9**
Top 1%	-5.5	-40.5	-7.8	-1.6
Top 0.1%	-3.3	-58.1	-4.2	-0.7

Source: Calculations based on tax data.

The central finding is that income reductions were EUR 5.1 billion for the lower income strata, EUR 7.1 billion for the middle and EUR 11.7 billion for the upper income strata. These percentages correspond to 16%-18% of the 2008 income of the middle and lower groups combined, 27% of the higher group and 40%-58% of the top decile or percentile.

In column 4 of the table, we refine this picture to identify the income losses for "the same households", comparing their position before the crisis (2008) to that at the end of the reviewed period (2012)[2]. Using 2008 as a starting point, the conclusion is now somewhat different: the lower 60% group of households does not seem to have suffered any losses (+0.3%). Rather, the losses are mainly concentrated in the middle 30% (EUR 8.3 billion) and the top 10% (EUR 15.9 billion). Finally, the figures in Column 5 of the table show the

[2] On the methodology, see Chapter 2.

income losses of each group by 2012 versus its 2008 income. Once again, a different pattern arises, showing the huge losses suffered by the new members of lower and middle groups. Those households that in 2012 are classified in the lower group have lost EUR 12.1 billion or 50% of the total income lost. Obviously, in 2008 these households belonged to the middle or higher group. These figures refer to market incomes (before taxation and transfers). Further reductions have been imposed to all strata by the significant increase of all tax rates.

Our findings show that, from a social perspective, a major upheaval has taken place: an explosive deterioration in the income and social position of a large number of households, which from middle or higher income brackets plunged down to lower or even to the lowest brackets. The collapse in middle incomes radically changed the status of the middle strata, dismantling values and anchors. Moreover, the income losses faced by all strata have caused a huge mistrust in politics and loss of confidence in the country's prospects.

These developments highlight a central problem of a macroeconomic nature that has never been given serious consideration. The losses of middle and higher income groups represent 79% of the total income losses. In this measure, they impact on the recession, the fall of investment, unemployment and the overall negative economic environment in the country. The impact of this macroeconomic effect is not limited to these groups only; it involves an entrenchment or aggravation of major social problems, which ultimately shape the economic and social reality of all strata and the country in general.

The data also show that there is not one, but many big problems, each of a different nature but interacting with one another, and that these problems are not specific to certain social groups but spread across all parts of society. On the one hand, the evolution of low incomes raises serious social policy and solidarity concerns and issues; on the other, the evolution of middle and higher incomes has severe macroeconomic implications, related to saving, investment, growth prospects and exit from the crisis. None of these issues can be tackled as long as the two sets of concerns are seen in isolation from each other. Moreover, an asymmetric response would only affect further

the macroeconomy, as the recovery of confidence, investment, expectations, competitiveness and growth feeds back to the social landscape and vice versa.

Apart from the domestic economic environment, it is also necessary to consider the relevant international parameters. In the context of globalisation, the challenge for a country like Greece is how to cope with realities outside the control of policy. This is nothing new. Historically, all countries and not only the weaker ones have faced constraints from the external environment. In such circumstances, what a country needs to do is design policies that factor in these wider constraints. We find that the drivers of growth are likely to change over time, and only societies that can in a timely manner work out ways of adjusting have the collective ability to identify and exploit the emerging opportunities, promote necessary change and move on an upward path. Those that cannot will be bogged down to their problems and lag behind. The history of countries and societies is full of examples of upward paths and reversals. Any society that has overcome a major crisis has managed to do so by setting in motion policies that created resilient and effective conditions for growth.

Today, in Europe and beyond, and of course in Greece, we can see a rise of social and political forces that nurture fanaticism, authoritarianism, blind conflict, and irrationalism. Ultimately, we find that the central problems are not only economic or social. They are also political, because they pose serious risks to Democracy and, as developments have shown, these risks emerge in several member countries of the EU. The political faults that led to the crisis and prolonged its duration tend to evolve into incapacity of Democracy to protect itself. Within five years, the political and social landscape in Europe, including Greece, and elsewhere has changed dramatically. Against this backdrop, without a change of policies and attitudes and a reorientation towards eradicating the root causes of the current predicament, the ground will be fertile for confrontational politics or – which is more dangerous – for political swings towards forces that only wait an indifferent, exhausted and despaired society to fall as ripe fruit into their hands. In such circumstances, authoritarianism surges, along with various situations that never in history have done any good to the societies that fell under their spell. In the end, the cost of

destruction in passive societies has always been very heavy both for those who thought to be unconcerned and for those who didn't.

The issues discussed in the following sections of this book encompass so many aspects that even an attempt to briefly mention them here would make this introduction too long and tiresome. So let us just close by extending our warm thanks to Mr. Haris Theocharis, former Secretary General of Public Revenue, who provided us access to a unique wealth of raw and original tax data, without which a large part of this book could not have been completed; Professor Panos Tsakloglou for his invaluable help; and all those who in one way or another contributed to this endeavour. Special thanks are due to Professor Gustav Horn, Director of the Macroeconomic Policy Institute (IMK) of the Hans-Böckler Foundation, Berlin, and his associate Dr. Rudolf Zwiener, for their cooperation and support, which led to a first version of this study published in English on the Institute's website. With their support that original version has been extensively revised, updated and expanded into the present edition. It goes without saying that we, as authors, retain all responsibility for the analysis that follows.

CHAPTER 1

OBJECTIVES OF THE STUDY

The key focus of this book is on the policies by which the Greek governments and foreign lenders have responded to the crisis since 2009 and their impact on the economic and political level, in particular on inequality and poverty. The issue has been at the heart of political and social debate all these years. However, the arguments and evidence put forth in the public debate were mostly misguided and, in a number of respects, counterfactual.

By examining the main policies pursued during the crisis (fiscal consolidation, internal devaluation, new direct and indirect taxes, property taxes, wage and pension cuts, institutional changes), we have sought to investigate the redistributive effects on inequality at an aggregate, but also at a detailed level (deciles, top 1% and 0.1%) in the aim to show which economic strata, and to what extent, have been hit or favoured.

A significant and distinct feature of the following analysis is that it is based on actual and detailed income data drawn from tax records for the period 2008-2012, broken down by source and level of income. Hence, the results do not reflect subjective aspirations or generalisations. The data we used enabled us to investigate the impact of the crisis and the crisis policies on the various sources of income and the cost they entailed for each group, as well as their influence on inequality. In essence, we examine the factors behind the marked shifts in the income structure of Greek society, in particular the effects on the poorer, medium and richer strata. Further, we were able to combine these income data with data on unemployment, tax measures, wage and pension cuts and thus also calculate the impact of particular policy measures on the risk of poverty and social exclusion.

Some further questions that this book aims to answer are the following:

- In which ways have solidarity and equality considerations triggered policy intervention amid a crisis affecting income and employment severely and across the board?
- Which specific interventions could support solidarity and equality and for which social groups?

- Does it matter whether inequality is the outcome of market forces or of policy decisions?
- Does growing inequality exert corrosive effects on other critical social, economic or political variables?
- What are the distributional consequences of fiscal austerity measures? Does the extent of fiscal adjustment restrict the policy tools to be used?
- How does the distribution of the adjustment burden impact on growth and the efforts to exit the crisis?

After eight years of recession, Greece has remarkably succeeded in eliminating its two major imbalances: external and fiscal. This was achieved through painful measures regarding wages and pensions, labour relations, layoffs and weakening of social protection. Nevertheless, the country is still in a very fragile and uncertain state: fiscal adjustment has as yet failed to drive the economy into a growth trajectory, while the fallout of the crisis has spread from the economy to the social and the political level with further important implications.

A more general question concerns the direction of the cause-effect relationship between the crisis, inequalities, pauperisation and policy making. The question is whether policy making has facilitated or impeded the adjustment process and the conditions for exiting the crisis. The cumulative decline of GDP by 26% between 2009 and 2016 shows that adjustment policies have not yet led to positive growth rates, which since 2014 have oscillated around zero.

The specific impact of austerity policy on growth is crucial, because growth is the second important factor of a successful fiscal rebalancing. The answer is not easy. Success or failure in addressing macroeconomic imbalances, growth and the crisis is associated not only with a wide variety of economic factors, but also with governance efficiency, external interventions or the social reactions and the perceptions which prevail or are generated by ideologies, political rhetoric, knowledge, established social attitudes and stereotypes. It is also associated with the capability of the political system, the society and in the case of Greece also the Troika to judge and decide between two future, hypothetical, prospects and their hypothetical consequences: one of 'no change' and one involving different types of policies and changes.

In many cases, reactions were, directly or indirectly, incited by the political forces themselves. As it turned out, society and political forces had to choose between preserving the old balances of interests and disregarding the systemic weaknesses inside the country and the major changes shaping their external and internal environment. None of these options is static. Each has a

different impact, in fact entailing several and not easily distinguishable developments. The big problem arises when expectations lead to choices which, prima facie, appear to be mild and acceptable, but at a later stage prove to have painful results, create impasses and act as traps. In the case of the crisis, the way in which each time this dilemma was answered had huge repercussions on the dynamics of the crisis and on developments at the economic, social and political level.

Finally, the findings of this analysis and our attempt at a synthetic presentation seek not only to explain some of the most crucial social effects of the crisis and policy making in Greece, but also to show the impact of these effects on policies which have been implemented during the crisis.

CHAPTER 2

DEFINITIONS AND METHODOLOGICAL ISSUES

2.1 Conceptual clarifications

Inequality and solidarity are at the centre of this approach. The term "solidarity" is open to many definitions and interpretations, economic, sociological and political ones. Beyond its economic content, solidarity also encompasses broader aspects of life[3] that are decisive for the status of a citizen, even if they cannot always be quantified. From an economic viewpoint, in times of expanding growth, solidarity is supposed to be associated with state interventions aimed to change the functional distribution of income in favour of weaker income groups.

Against this background, we will focus on the impact of the crisis on income distribution, inequalities and poverty and on the policies implemented which have altered the relative position of various social groups during the crisis period. In practice, the distinction between policy- and market-induced effects is difficult. The effects of the crisis are partly independent from the implemented macro-economic or fiscal policies, but partly have been also shaped by government policies. In many cases it is possible to identify the effects of policy on certain categories or income (wages and salaries, pensions, unemployment benefits, etc.) or the effects of the crisis itself (e.g. shrinking incomes from independent employment or business activities). However, it is practically impossible, at least within the scope of this analysis, to distinguish the effects of the crisis into those generated mainly by specific policy choices and those resulting from developments at the level of the macroeconomy.

[3] Deacon and Cohen (2011), Smith and Laitinen (2009), Sabbagh (2003).

Regarding the concepts of inequality and solidarity, the following remarks have to be made:

a) The relationship between solidarity and inequality is not unequivocal. What kind of changes could justify the use of the term “solidarity”? Under typical assumptions, higher solidarity is expected to lead to lower inequality and vice versa. Nevertheless, solidarity measures, depending on their weight and the context within which they are taken, could be associated with increasing, decreasing or stable inequality.

b) Stable inequality should not be seen as a linear, equal shift in the position of all sections of society whereby all keep their relative position. In conditions of shrinking incomes, unchanged indicators of inequality could mean a heavier relative burden on the lower income groups compared with the higher ones and an exacerbation of social inequality. The interpretation of an unchanged value of the inequality index is not the same when the cycle is upward, flat or downward. Social groups that move lower down the distribution ladder or even approach the poverty line as their incomes shrink e.g. by 10% are not in the same relative position as before versus the upper groups, which (hypothetically) would also see their incomes fall by 10%.

   In practice, the same proportional or disproportional change in the relative position (in terms of income, tax burden, etc.) allows different interpretations of the evolution of inequality and solidarity, depending on the groups affected by this change. The same relative or absolute changes in income or property reflect different, not similar sacrifices. Moreover, inequality measures indicate only the income-related aspects of the relative positions of individuals, households and/or social groups. They underestimate or even disregard the non-monetary and other effects of the policy measures, such as the impact of long-term youth unemployment on the social and political inclusion and the value system of this age group, as well as on brain drain.

c) The question of inequality and solidarity in Greece cannot be analysed overlooking the fact that, even during the crisis, significant tax evasion practices or state-facilitated tax aversion prevail across a large number of professions and income levels. A closely related phenomenon concerns tax exemption or tax privileges of specific occupations. Moreover, a distinction has to be made between tax evasion at the individual and the aggregate level. By definition, the gain from tax evasion at the individual level or at the level of society as a whole is very asymmetric across big and small tax evasion. Still, this does not mean that even medium or

small tax evasion cannot have a significant negative impact from a macro perspective. Section 2.4 presents data on tax evasion at various income levels, enabling to assess the macroeconomic-fiscal impact of the widespread large, medium and small tax evasion.

d) Alongside tax evasion, there is also the phenomenon of occupation-specific tax exemptions or tax privileges (e.g. for farmers). Given such phenomena, any results regarding the impact of solidarity measures and government policy should be interpreted with great caution, and this does not only hold for the findings of this study. For the same reason, Chapter 9 provides an in-depth and multi-faceted discussion of agricultural income taxation and its impact on inequality.

e) We argue that a distinction should be made between solidarity at the micro- and the macro-level, respectively. A range of policies and measures, such as unemployment benefits, wage and pension cuts, new taxes or abolition of tax reliefs, have a distinct impact on citizens or households. In these cases, solidarity policies have a direct effect on the units concerned – the "micro-level". In contrast, other policies affect the macroeconomic and social structures and directly or indirectly have also serious implications for solidarity and equity, which should therefore be distinguished from those arising as a result of the policy measures at the "micro-level". Certainly, the many difficulties in identifying those macro-policies that are relevant for solidarity and equity and analysing their impact on households or individuals increase the complexity of the analysis.

f) The distinction between solidarity at the micro- and the macro-level raises further questions. An important issue is not only what decisions have been taken, but also what could have been done to avoid adverse effects. A case in point refers to policy mixes which affected unemployment or poverty or caused a deeper recession with serious adverse repercussions on incomes and living standards. For instance, a fiscal consolidation that is not accompanied by an effort to enhance public investment may lead to lower deficits but at the same time affects future growth, incomes, pensions and employment; hence, it has a significant long-term impact on inequalities and solidarity, even if it is not possible to assess the extent and direction of its influence. Equally, failure to increase the productivity of the public sector or to initiate policies conducive to the transformation of the productive base has similar implications. The sequencing of policies can also exert very different effects on solidarity, inequality, fiscal consolidation and recession. Further, the continuous unsustainable deficits

in the pension system and the pension cuts have profound interrelations with solidarity issues. Such questions are very significant, but are hard to answer accurately. Still, they are worth raising, insofar as they help to highlight real social problems.

g) The analysis of the solidarity aspect of anti-crisis policies should take into account a time dimension, referring to the duration of the policies or measures adopted. Political decisions, once made, have occasionally a very contradictory fate. At some point in time, the government introduced measures which at the time appeared to be fair for broader social groups or at least more unfavourable for the economically stronger groups. At a later stage, however, either on the government's initiative or because the institutional underpinnings of some policies were defective or even because the overall institutional framework was misinterpreted or misused by legal institutions or court rulings, several measures were overturned (see Chapter 5.3). In such cases, the solidarity expressed by the initial decision was offset. In the presence of such conditions, it makes a big difference whether we look at government policy measures over a narrow time horizon, or whether we expand the horizon and the array of institutions and bodies involved in decision making or, perhaps more crucially, unmaking.

h) An assessment regarding solidarity cannot ignore the past situation. If significant changes before the crisis caused severe social or economic imbalances, which require re-balancing policies, as in the case of pension policies, the implications on solidarity cannot be judged by abstracting from past developments, especially if such developments contributed to the crisis.

Considering all these aspects, we argue that solidarity implies inclusiveness, choices leading to more equal burden-sharing and support to the economically and socially weaker groups. Crucially, in conditions of crisis, situations arise with asymmetric effects across different social groups. Policy measures can introduce new elements of solidarity which mitigate, without eliminating, the inequality impact of the crisis. Put to the test of social reality, the outcomes of these policies can be found to be asymmetric, with some social groups having moved to a worse position than before relative to other groups, although this position might have been even worse without the policy intervention. Such conditions and comparisons create grey areas where it is easy to slide one way or the other. They also raise questions which are extremely hard to answer with any degree of certainty. The approach followed in this analysis is to point out such situations, where detected, irrespective of the ability to provide a clear

answer as to whether solidarity exists or not. In short, solidarity has to be assessed on a comprehensive and not a partial basis.

A more general conclusion from the above observations is that different policies and measures can exert opposite effects on solidarity and inequality, and what matters is their overall "net" impact. Albeit theoretically correct, the estimation of some type of "net impact" of results is not feasible, given that changes vary in form or sign and do not have a common measure of comparison. We only mention it here to warn against taking partial conclusions as general and final, when the actual conditions are much more nuanced and complex from a social, economic and political perspective.

2.2 Methodology

The methodology used in this study involves several steps.

First, we examine the fiscal consolidation strategy that has been followed in Greece, in particular the extent to which the reduction of the high budget deficits has been based on expenditure- or revenue-led adjustment policies and what the implications of this policy mix were for a number of issues (period 2006-2016).

Second, we analyse the income changes during the period from 2008 to 2012 or, in some cases, a couple of years later, as well as the particular role of female employment in supporting the household income during the crisis.

Third, we examine the impact of State intervention through direct, property and indirect taxation and the tax incidence on incomes and income distribution (period 2008-2012). A specific analysis covers the taxation of agricultural income (2008, 2012, 2014) and of real estate property.

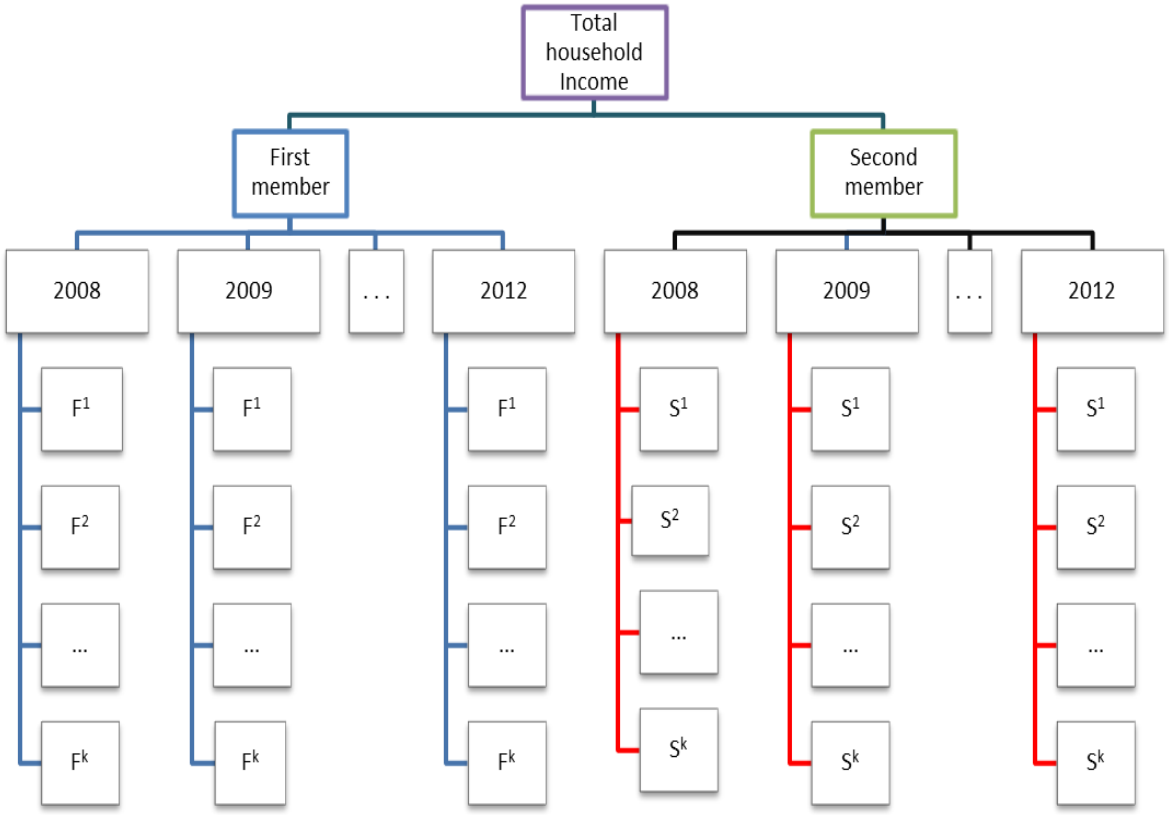
Fourth, our focus shifts to inequality and to how market changes and policy interventions impacted on inequality at the general level but also at a more detailed level. We measure inequality both before- and after-tax, as well as inequality in real estate property and the different evolution at the bottom and the top of the income distribution (period 2008-2014/5).

Fifth, an 'index of despair' has been constructed, reflecting the degree of 'despair' felt by households with employees and/or unemployed members, when their income declines or when their members become jobless (period 2008-2014).

Finally, an attempt has been made to combine all our results and define which social groups were ultimately the losers and the winners of the crisis. We identified low, medium and high incomes, the changes that occurred within each group and the shifts across the economic stratification of society (period 2008-2012).[4]

The data sources

Our analysis will mainly rely on a tax dataset described below, complemented by certain data from the National Accounts, as well as from fiscal, employment, poverty and inequality statistics. The tax dataset has the following structure:



As seen in the figure, each household POP_j (j = 1, 2, ..., N) has one (F) or two members (F, S) which earn income from various sources k (k = 1, 2, ..., R). For each year (t = 2008, 2009, ..., 2012) we

[4] The results refer to the total population of Greece. Immigrants are included to the extent they submit tax returns.

know the income of each member originating from each source: the income of the first member is $F_{t,j}^k$, while $S_{t,j}^k$ is the income of the second member, if any.

The analysis will develop at three levels.

- The first level refers to aggregate figures regarding the aggregate family income in the country as a whole and investigates changes in total income, also broken down by source, i.e. total income from wages/salaries, pensions, rents, etc.

Total annual (family) income, nationwide, for each year	$\sum_{k=1}^{R}\sum_{j=1}^{N} F_{t,j}^k + S_{t,j}^k$
Total (family) income by source of income, nationwide, for each year	$\sum_{j=1}^{N} F_{t,j}^k + S_{t,j}^k$
The personal income of each taxpayer, by source of income, for each year	$\sum_{j=1}^{N} F_{t,j}^k$ for the first member, $\sum_{j=1}^{N} S_{t,j}^k$ for the second member

- At the second level, we shift from the notion of aggregate total income to the notion of average income for all taxpayer households or individuals included in the year examined.

Average income, nationwide, for each year	$\sum_{k=1}^{R}\sum_{j=1}^{N} F_{t,j}^k + S_{t,j}^k \Big/ \sum_{j=1}^{N} POP_j$
Average family income, by income source, of all taxpayers, for each year	$\sum_{j=1}^{N} F_{t,j}^k + S_{t,j}^k \Big/ \sum_{j=1}^{N} POP_j$
Average family income of groups of households on the basis of their main source of income for each year (where N1 is a subset of N, e.g. households of employees, households of pensioners, etc.)	$\sum_{j=1}^{N1} F_{t,j}^k + S_{t,j}^k \Big/ \sum_{j=1}^{N1} POP_j$

Average personal income, by income source, of taxpayers who earn income from the respective source, for each year (where N2 and N3 are subsets of N, e.g. employees, pensioners, etc.)	$\sum_{j=1}^{N2} F_{t,j}^{k} \Big/ \sum_{j=1}^{N2} POP_j \ \ and \ \ \sum_{j=1}^{N3} S_{t,j}^{k} \Big/ \sum_{j=1}^{N3} POP_j$

The third level focuses on the analysis of data exclusively for the same households or individuals for the years examined, to identify the impact of the crisis on the same population of households or individuals. The general evolution of incomes is one thing, but it is socially and politically very different and important to examine the extent of changes that occurred for the same households or persons.

The analysis of 'all households', in particular at a decile level, provides us with average income figures, revealing the income structure within the society in the years under review. It indicates the level of income, and its changes over time, of the households associated with each decile in each reference year and shows the income disparity over time and across deciles. These average figures only partly refer to the same household; for the most part they refer to very different households or persons, which in other years were classified in a different decile. Consequently, changes regarding average income at a decile level often mask considerably different developments at the level of the same units of reference.

The difference between these two methodologies, i.e. examining the evolution of the income of "all households" versus the income "the same households" over time, is of great interest. The households/individuals that have income from a given source, e.g. from wages, pensions, self-employment, dividends, rents, etc., are not the same across years. Thus, if the focus is on all who have income from one source or even all sources together, each year comprises different households. The magnitude derived in this case is useful because it shows the social and economic stratification of society as a whole, e.g. what level of income from wages or self-employment prevailed in the total of households with income from these two sources in each given year. Given that the calculations are made at the level of deciles, one can see what income and from which source corresponds to each such socio-economic group, compared with an earlier or subsequent year. On the other hand, if one considers not the total of households each year, but only those households/individuals that had income from a particular source in all years of the crisis, the picture changes. In this case, we can see how income figures have evolved for exactly the same

households or individuals, and it is possible to assess the impact of the crisis or policy measures on a more homogeneous basis. By this methodology, we can estimate with much more certainty the size of the decrease (or increase) in the wage, pension, rent income, agricultural income, pensions or total income for the same households. Purely for simplicity purposes, we chose to present only the data for the 'same households' and, in some cases, for the 'same individuals'.

2.3 The data

a) Tax data

The tax data used in this study have been derived from a very representative sample of personal income tax records and refer to all the information (other than personal) reported by the taxpayers in the relevant fields of their tax returns, including presumed or imputed income. To ensure random sampling, we picked five random numbers from 00 to 99 and then from the database of the General Secretariat of Information Systems we retrieved the personal income tax returns of taxpayers whose Tax Identification Numbers (TINs) ended with these numbers, for the fiscal year 2013[5]. This made a total of 261,351 income tax returns, representing by definition 5% of the total. The total comprised 5,227,020 taxpayers for the years 2008 to 2012, with 2,368,132 persons as second members and 2,414,200 children, suggesting an aggregate number of 10,009,352 individuals.

Subsequently, for the same (anonymised) households and individuals, we retrieved from the database the tax returns of the four previous fiscal years (2009 to 2012) and the data concerning the tax due and imputed income as determined by the tax authority after the processing of the tax return.[6]

Finally, from a different database compiled for property taxation purposes we retrieved for these TINs (and the TIN of the second member of the household, if applicable) information on the

[5] Fiscal years refer to incomes and taxes of the previous year.

[6] It should be noted that these data refer to the tax due. Whether these taxes are actually paid and generate tax revenue is uncertain. On the basis of rough estimates from the Ministry of Finance, there are serious delays with tax payments.

"objective" value[7] of real property owned by the taxpayer and, separately, his/her spouse, and the property tax corresponding to each taxpayer.

These data cover nearly the total population. The 2,480,600 households receiving wages-salaries in 2008 comprise 2,993,100 individuals, which represent nearly 100% of the dependent employment in the same year. The 2,023,360 households in 2012 comprise 2,444,200 individuals.

On the basis of this dataset, the following calculations have been made:

- We have calculated the aggregate value of nine income sources plus total income: 1. wage/salary; 2. pension; 3. business and commerce activities; 4. independent activities/self-employment; 4. agriculture, 5. agricultural subsidies (often merged with agricultural income); 6. income from property (rental); 7. dividends and interest; 8. unemployment benefits and 9. total income[8].
- Based on this taxonomy, we have calculated the changes in the mean annual value of the household's income by income source, during the years 2008-2012. Further, a calculation has been made on the value and the changes in each of these variables by deciles, as well as for the top 1% and 0.1%. In this context, we also estimated the weight of each income source in total income for each decile. For practical reasons, in some cases, deciles have been merged into groups (e.g. 1^{st}-5^{th} , 6^{th}-7^{th} , 8^{th}-10^{th} , or 1^{st}-5^{th} and 6^{th}-10^{th} and 1%, 0.1%.
- Basically, the results refer to households. However, for specific purposes, we have made additional calculations with regard to individual persons, in order to obtain a more precise and detailed view on a range of issues (e.g. average wage/salary and pension, inequality issues, etc.).
- The tax burden (income and property taxes) on each of these income groups and each decile has been estimated, both in absolute (amounts of taxes) and in relative terms (taxes relative to income).
- The results of this analysis have been used to estimate also the number of households under the line of poverty and the changes during the crisis.

[7] Zonal property values is the term used in the MoU.

[8] Some of these incomes are very low and for practical reasons have not been presented, since their omission had no impact on the results (see Table 11.7).

- Three inequality indices have been estimated (Gini index, Theil index, Mean Log Deviation) for nine income sources for the five years examined. Each of them shows a different sensitivity in respect of inequality changes. Therefore, the use of all of them covers a broader spectrum of inequality movements. In addition, other inequality indices have been estimated (P90/P10, S90/S10 and the relation of the top 1% and $1^0/_{00}$ to the lowest or the two lowest deciles).

- We have arranged statistical data so as to show the income evolution over the period 2008-2012 for exactly the same households with regard to wages/salaries and total earnings. In particular, we have investigated the changes in the income position of each income decile for these income sources from two different angles:

  (a) how the household incomes of 2008 changed by 2012 for the same households, ranking the deciles on the basis of 2008 incomes, in the aim to understand where these households had been in 2008 and where they stand in 2012; and

  (b) the opposite evolution, based on the household incomes of 2012 ranked by deciles, and estimating the incomes of the same households during each of the previous years back to 2008. This approach shows the significant shifts which took place within the groups of wage/salary earners as well as the total population of taxpayers during the years of the crisis.

All calculations have been made for all five years and for all deciles, enabling to identify the broader changes within the various occupations, income sources and deciles and the differences across the various groups. For reasons of simplicity, results are presented mainly for the first and the last available year. Table 2.1 shows the number of households with income from each of seven main income sources for 2008 and 2012 and the changes that have occurred between these years.

The table suggests that, in 2012 relative to 2008, 457,240 less households declared income from wages/salaries, while significant declines can be observed in other sources of income, with the exception of pensions: the number of households declaring pension income rose by 305,780.

An obvious conclusion from these data is the significant decline of nearly all activities, either because of firm closures, increased unemployment or because of shifts from one activity to another (e.g. from dependent to independent status or vice versa, from commercial to other form of activity).

Table 2.1 Number of households by income source and changes 2008-2012

Income sources	2008	2012	Change 2012/2008
Wages/salaries	2,480,600	2,023,360	-457,240
Pensions	1,755,940	2,061,720	+305,780
Agriculture	1,078,880	1,000,420	-78,460
Independent activities	399,820	365,700	-34,120
Commercial activities	693,940	484,500	-209,440
Dividends-Interest	1,520,840	1,459,080	-61,760
Rental income	1,354,700	1,305,000	-49,700
Total	5,227,020	5,227,020	-
Total excluding households with zero income	5,010,680	4,868,780	-141,900

Source: Calculations based on tax data.

b) Employment and unemployment data

Based on employment and unemployment data, an "index of despair" has been constructed and estimated, measuring the degree of exclusion or ***"degree of despair"*** of households. The criteria used were the number of unemployed members of each household, the duration of unemployment and the presence of employed household members. The results refer to the period from 2008 to the second quarter of 2014. The index has been estimated for the total population and for different groups of households according to the characteristics of the household head (education, occupation, type of employment, sector of employment, etc.). We visualised the results in the form of an apartment building with five floors, estimating the number of households living on each floor and the risks faced by each type of household with a deterioration of its position during the crisis. We also examined the position of households by distinguishing the risks of members working in the public sector or having high education as against the other ones.

c) Reports on Household Budget Surveys (HBS, 2009-2015) and Surveys on Income and Living Conditions (EU-SILC, 2009-2016)

Based on data from the Greek Household Budget Survey and the EU Statistics of Income and Living Conditions Survey for the years 2009 to 2015/16, we investigated changes in poverty and inequality.

2.4 Tax evasion: the central problem of the country and its relevance for our findings

The problem of tax evasion and the multifarious preferential tax treatment of broad segments of the population has been a key factor behind the chronic fiscal deficits and the collapse of the country's fiscal and macroeconomic stability. The persistent historical gap of about six to eight percentage points of GDP between budget revenues and expenditures, which has fuelled debt and deficits, can to a large part be attributed to excessive public expenditure but also to tax evasion, tax exemptions and tax privileges.

Tax evasion is prevalent across occupations and business activities (see Chapter 4), but also across large income groups irrespective of occupation. A large number of employees, independent professionals, pensioners and earners of dividends, interest, rents, etc. have more than one source of income, some of which are subject to more and others to less stringent tax compliance checks. Wage/salary and pension incomes shoulder a disproportionately large part of the tax burden because of fewer tax evasion opportunities and higher tax rates. Practically, they are paying taxes not only for their own income but also for the income of those who continue to benefit from an unfair and economically and politically corrupt model of fiscal and economic policy. Although efforts to tackle certain forms of tax evasion are likely to have had some success, it seems that success in one area has been partly offset by increasing tax evasion in other areas (e.g. increased tax evasion in regional Greece or in VAT). Indeed, the policy implemented was not geared to fighting tax evasion but rather to extracting more and more taxes from existing, and compliant, taxpayers.

The problem of tax evasion is compounded by the many preferential tax schemes applying to various categories of income, which are lawfully tax-exempted or treated favourably. The impact on the economy and inequality is the same in either case. Apart from the taxation of agricultural income, which is specifically discussed in a later chapter, along with several other categories, the level of the tax-exempt threshold is a major issue. In Greece, this threshold excludes 55% of all households from the tax base, compared with less than 25% in other EU countries. The issue is not just a matter of numbers; additional dimensions have also to be considered, e.g. what benefits are derived by households in different strata from the spending side of the budget in exchange for the taxes they pay.

The type of data we used here (tax data) are seen by well-known researchers[9] as having distinct advantages over other commonly used sources of expenditure or income data (e.g. Household Budget Surveys), despite their known weaknesses mainly associated to tax evasion. Piketty, for one, uses tax data in his analysis. It is well known that no source is without problems, so the question is how the data are used and how the disadvantages of each source can be addressed by comparisons with available alternative sources.

The advantages of tax data are significant:

a) One advantage is their vast scope: in the case of Greece, the sample of 5% is representative for all 5.2 million tax records covering almost 10,000,000 people.

b) Only tax data include the very rich and the extremely rich (the top 1% and 0.1%), which are underrepresented in other surveys.

c) Household responses to surveys are subjective, and there is a high potential of inaccurate responses, intentional or not. Interviewees are often afraid to state their true incomes, for obvious reasons, and probably are also reticent to state even their declared incomes.

d) Tax records on the other hand include a huge amount of data, which cannot be concealed or, if they can, concealment is comparatively small (salaries, pensions, income for which formal documents are issued, dividends, interest income, etc.). This is not a given with survey-based sources. Consequently, these data provide at least a threshold of income as derived from documents, that, beyond doubt, has been earned. We also know which incomes are lawfully not declared (as was the case with agricultural and interest incomes or as is still the case with incomes subject to special tax schemes). Given that a very large number of households, apart from any income they may have from sources associated with higher tax evasion, have also income from the above-mentioned low tax evasion sources, a considerable part of the total income of households with income from self-employment and professional activities is reflected quite realistically in the data.

That said, tax evasion and its potential impact on the findings and conclusions is a concern of such analyses internationally. Yet, we believe that a nationwide income dataset for five consecutive years, broken down into income deciles and types of activity, with additional data on the

[9] Atkinson (2015), p. 51 ff., Piketty (2014), p. 347 ff.

distribution of real estate property, the tax burden across broad tax categories, tax exemptions and plenty of other information, is a very strong starting point. Other subjective or impressionistic perceptions of tax evasion can be considered, but when it comes to quantification and specific estimates, are arbitrary without any practical value.

Keeping these considerations and caveats in mind, we believe that the data and calculations presented here provide a safe minimum estimate of incomes, distributions and developments over time. In addition, however, we have tried to determine the size and importance of tax evasion drawing on a thorough investigation by other researchers[10], who estimated tax evasion and actual average income for the years 2006 and 2010 (EU-SILC data) for each decile of the income distribution. We used these estimates for 2010 in order to compare the tax data we used with the EU-SILC income data and assess the size of tax evasion in lower and higher income groups.

In Table 2.2, in addition to the estimate of the discrepancy between declared income and estimated actual income (12% overall, varying across deciles), we compared the tax data we used with the EU-SILC income data and found that the declared income we used was about 21%-40% higher than the estimations in the EU-SILC, with the exception of the lowest (1st) decile and the top 0.1%. This finding could mean that the actual tax data used in this study contain a smaller percentage of tax evasion than those estimated in the EU-SILC. However, we do not consider these figures to be realistic either, as tax data include a high, albeit uncertain, percentage of tax evasion as well. Besides, personal income taxation does not cover the significant areas of indirect taxation and evasion of VAT, which however have an impact on corporate income and on personal income from self-employment, independent or commercial activities.

Combining the estimates of tax evasion with the income figures in Table 2.2, a second important finding is that the concealment of income in the top (10th) decile reaches EUR 9,023 per household and, in aggregate, exceeds the income concealment for the first eight deciles (1st to 8th) taken together, which is EUR 8,767.

The estimates in the above study point to another very significant dimension of the problem: tax evasion is, in percentage terms, clearly higher in the top decile and the top 1% and 0.1%; it is also

[10] Matsaganis, Leventi and Flevotomou (2012). Bühn and Schneider (2012) provide estimations of tax evasion in Greece (among other countries), suggesting that tax evasion is 21.8% in indirect taxes, 37.6% in self-employment and 5.8% in personal income tax.

high in the lowest decile, and it is high also in absolute terms per household in these deciles, but for the economy as a whole 81% of the income concealment is accounted for by deciles 1-9 and only 19% stems from the 10th decile. Nevertheless, due to the higher tax rates on high incomes, the tax loss from the 10th decile is much greater than 19%, and the same should hold for the hidden incomes of the top 1% and 0.1%.

Table 2.2 Average undeclared income per household by decile for 2010 (in EUR)

Deciles	Pre-tax income in this research 2012	Income based on EU-SILC 2010	Undeclared income per household based on EU-SILC	Aggregate undeclared income for all households	Tax data in this research as % of EU-SILC income data
	(1)	(2)	(3)	(4)	(5)
1st	1,171	2,277	523	523	117
2nd	4,546	4,416	491	1,014	136
3rd	6,701	6,402	752	1,766	155
4th	9,090	8,862	894	2,660	123
5th	11,710	10,689	865	3,525	134
6th	14,551	13,080	1,258	4,783	121
7th	17,974	16,389	1,791	6,574	135
8th	22,746	21,011	2,193	8,767	135
9th	30,691	27,649	2,506	11,273	140
10th	62,549	56,795	9,023	20,296	137
Top 1%	165,542	152,517	37,961		133
Top 0.1%	517,268	352,991	106,339		169
Total	**18,173**	**16,739**	**2,016**		**136**

Sources: Columns (1), (4) and (5): calculations based on tax data; columns (2) and (3): Matsaganis, Leventi and Flevotomou (2012).

Considering that the average burden of income tax and solidarity tax, based on 2012 tax data (see Table 7.2), is 21.2% for the top (10th) decile and 8.6% for deciles 1-9 taken together, the average tax evasion per household is EUR 970 for 90% of households and EUR 1,913 for the top 10% of households. Therefore, for the economy as a whole, 33.6% of total tax evasion is accounted for by the first nine deciles and 66.4% by the 10th decile. The above figures provide an order of magnitude. They also suggest that, despite the widespread perception that all income strata have gains from tax evasion, the latter works to a much greater benefit to the top income stratum and to the detriment of the whole economy.

This finding shows also that, from a macroeconomic point of view, the problem of reduced fiscal revenue, which is a source of key fiscal and other major imbalances, principally needs to be addressed with a focus on higher incomes, but without ignoring that the contribution of other

strata to total tax evasion is about 33%. Under the prevailing historical legacy and cultural perceptions in the country, the success of such a policy is politically extremely difficult, and a fragmented, selective and accidental intervention will continue to face significant problems.

CHAPTER 3

ADJUSTMENT POLICIES TO TACKLE THE FISCAL AND COMPETITIVENESS CRISIS

The Greek economy entered a recession in 2008. However, it was only in 2009 when the macro-indicators revealed the real extent of deep fiscal imbalances. By then, the general government deficit had soared to 15.6% of GDP (adjusted to 15.2% with the National Accounts revision of 2014) and was found to be much higher than the figure previously notified (5.2%). In fact, Greece was hit by two profound crises: a fiscal and a competitiveness crisis. The first action to address the large fiscal deficit and the skyrocketing debt/GDP ratio was taken in spring 2010, initially with national measures and some months later with the first Memorandum of Understanding (MoU) between the Greek government and the Troika (ECB, IMF, European Commission), which was followed by a second MoU in 2012 and additional Agreements in 2015 and 2017. The central policy adopted in all these documents was that the fiscal and the competitiveness crisis had to be tackled through a tough fiscal consolidation and an "internal devaluation" process, mainly through drastic wage and salary cuts, liberalisation of the labour and the services market, in particular in transport services, the opening up of closed professions, reforms in pricing practices, licensing provisions, etc.[11]

3.1 Dilemmas and choices of fiscal consolidation

The fiscal derailment in 2009 was so dramatic that it would be unreal to even think that the imbalances created could have been addressed without fiscal consolidation. The question is the

[11] Zografakis and Spathis (2011).

type of consolidation and its effectiveness and impact on employment, growth, competitiveness, income distribution, inequality and poverty. These impacts depend on a wide range of factors, such as whether the fiscal consolidation is pursued by reducing expenditure or by increasing revenue, the duration of the consolidation process, developments in growth rates and interest rates, the characteristics of governments (newly elected or long-serving, closer to or farther from the centre), their ideological background and cognitive capabilities, the level of debt relative to GDP, etc[12].

Among these factors, we considered it important to examine both the intensity of the consolidation, i.e. the duration and size of the deficit reduction, and the role of spending and revenue, not only during the consolidation period from 2010 onwards, but also during the period 2006-2009, when imbalances peaked and led to the 2009 crisis. In particular, it is necessary to investigate whether the fiscal derailment in 2009 was due to the collapse of revenues or to soaring expenditure, although either answer would not predetermine the appropriate policy response to the problem. Faced with these imbalances, policy had to consider a number of tradeoffs, such as:

❖ A front-loaded versus a back-loaded consolidation, i.e. should the measures be taken upfront or be sequenced over a longer period?

❖ Does the type of consolidation matter, and to what extent, for the effectiveness of the policy itself, particularly in terms of its impact on GDP and its recessionary effects?

❖ In the context of a front-loaded or back-loaded strategy, what should be the optimal duration of the consolidation in order to achieve the most satisfactory fiscal and growth outcomes? A longer duration means protracted deficits, so the next question is how much additional borrowing from lenders would be necessary and feasible (given the additional deficits that a longer adjustment period would imply) and what the implications for debt and growth would be.

❖ Does it matter whether fiscal consolidation relies on expenditure reductions or tax increases or a combination of the two? And which individual categories of expenditure or revenue have actually been used for that purpose, given that each category has a different multiplier effect on GDP change and all choices are not equivalent in terms of their impact on growth or other relations.

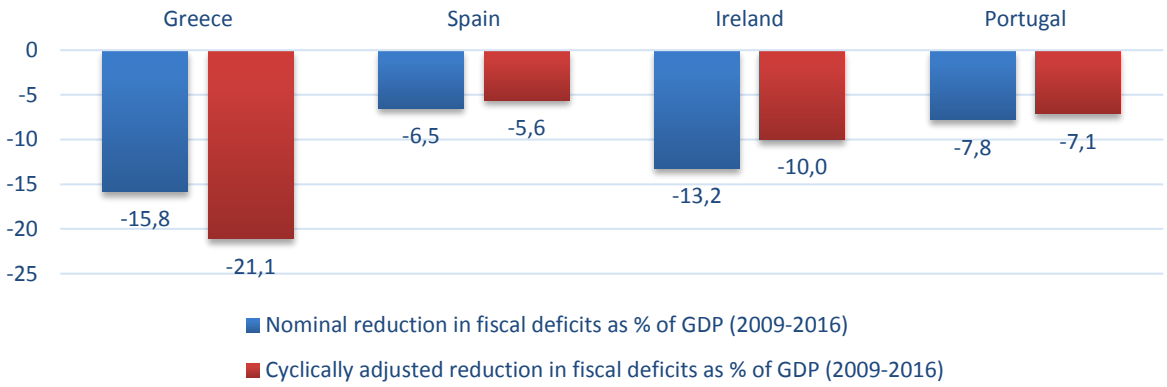
[12] Molnar (2012).

3.1.1 The intensity of adjustment

The fiscal consolidation imposed in Greece was front-loaded, although several studies show that back-loaded fiscal consolidations are more likely to succeed and deliver sustainable outcomes than front-loaded ones[13]. In fact, it was a "big bang" adjustment[14], meaning that a large and rapid reduction of the deficit was achieved within a very short time span. The deficit shrank by 4.1 percentage points of GDP in 2010 (from 15.2% to 11.1%). This compares with a deterioration of 5.7 percentage points between 2008 and 2009 (from 9.5% to 15.2%).

The adjustment effort of Greece was enormous, both in absolute terms and in comparison to the other countries in crisis (see Chart 3.1). Greece's nominal fiscal consolidation between 2009 and 2016 was equivalent to 15.8 p.p. of GDP, against 6.5 p.p. for Spain, 7.8 p.p. for Portugal and 13.2 p.p. for Ireland[15]. Due to the recession, the cyclically adjusted fiscal consolidation was significantly higher: 21.1 p.p. in Greece, 5.6 p.p. in Spain, 7.1 p.p. in Portugal and 10.0 p.p. in Ireland.

Chart 3.1 Nominal and cyclically adjusted reduction of fiscal deficits in Greece and in other crisis countries (as a percentage of GDP)



Source: European Commission, Cyclical Adjustment of Budget Balances, Spring 2017.

Greece recorded the single largest gap between nominal and cyclical adjustment (5.3 percentage points of GDP as against 0.7 p.p. to 0.9 p.p.in Spain and Portugal and 3.2 p.p. in Ireland), implying that, in the midst of a severe recession, it had to pursue an even tougher pro-cyclical (recessionary) policy, leading to deeper recession, weakening the impact of consolidation on the

[13] Baldacci at al (2004).

[14] Ibid.

[15] The divergences between the countries in Chart 3.1 are even more pronounced if the comparison remains focused on the period 2009-2012/2013.

deficit/GDP and debt/GDP ratios and undermining the fiscal consolidation effort. This makes the fiscal outcome achieved within a period of five years even more remarkable and exceptional.

One could argue that eliminating deficits by nearly 16 percentage points of GDP within seven years was a remarkable achievement. The conclusion is correct. However, it simplifies or even ignores the overall cost to society and the additional negative effects of this achievement, which, in addition to a contraction of GDP of around 26%, mainly took the form of a devastating increase in unemployment due to the recession, a collapse of incomes and rising poverty and inequalities. These impacts were mainly economic. To understand or evaluate the overall situation that has emerged as a consequence of the big bang consolidation, it is necessary to relate such partial aspects with the big picture. Beyond its economic impact, the strategy pursued co-influenced subversive developments at the political level, with the emergence of far-right forces, political instability, social tensions, political errors and other setbacks of all that period, implying much more complex and higher costs.

The crucial question is whether a longer duration combined with a milder and more gradual adjustment could have led to a weaker recession and thus have prevented such a violent and sharp decline in living standards in Greece, without additional adverse effects on debt and deficits in the medium and long term[16].

We argue that, against the backdrop of the deep recession and strong imbalances which characterised the Greek economy in 2009-2010, the significant deterioration and prolongation of the recession, as well as its repercussions on other aggregates, could to some extent have been avoided. A milder adjustment would have prevented this catastrophic course, and within a period of, say, ten years, and provided that the policy mix would be effective, the outcome could have been better, both for lenders and for the country itself: better debt servicing and much less negative effects on the real economy and on social conditions. However, given the large volume of the additional loans that would be needed and the low credibility of the Greek side's commitment to implement efficient policies, this choice was a non-starter to lenders. In practice, the final outcome with the successive MoUs, Agreements and Programmes between 2010 and

[16] The unrealistically short duration of the adjustment and the positive effect of a longer adjustment are highlighted by many researchers, e.g. Monokroussos and Thomakos (2013), Manessiotis (2013) and several analyses in international literature.

2017 took much more time than originally forecasted while these agreements were also some form of a de facto gradual approach, but in a much less efficient way.

The severe deterioration of all economic and social indicators since the outbreak of the crisis, was determined (a) by the type of fiscal consolidation strategy and (b) by failure to tackle structural weaknesses and return to positive growth rates. This was decisive for the highly recessionary impact of the consolidation process. It is well known that the success of a fiscal consolidation is not only determined by the size of deficit reduction but also by satisfactory growth rates. Rebalancing cannot be achieved by improving the numerator (fiscal deficit) or denominator (GDP) only. Failure in either term of the fraction leads to a failure of the adjustment as a whole. Fiscal improvement without growth, or vice versa, undermines the goal of adjustment itself.

In essence, the mere size of the fiscal consolidation could not but lead to recession. This is a given. Nevertheless, a number of questions have to be answered: did the crisis management policy itself aggravate the recession insofar as it neglected, opposed, or did not care to promote complementary policies that would alleviate or improve the recessionary outcome of the fiscal strategy? Was the type of adjustment effective for growth? What other changes were made to improve the determinants of growth and were they made in a timely manner? Were the political climate and confidence such as to enable a faster normalisation of the economy? Could the bank holiday and the capital controls in 2015, the non-performing loans, the flight of deposits have been avoided or contained? Could a more pragmatic stance at the political and social level have made a positive difference in the environment that prevailed in the country? This is just an indicative list of factors referring to key policy aspects, which may not be measurable, but have a very strong impact on growth dynamics and on the response to the crisis.

Although the policy outcome depended on such a broad array of factors, the choices made during the crisis were consistently one-sided: on the part of lenders, insistence on the reduction of nominal government deficits; on the part of Greek governments and large swaths of society, general opposition to any complementary policies that would help the country deal with the deep recession. It would not be an exaggeration to say that in both the European and Greek approach to the management of the Greek crisis, the goal of growth was totally absent.

The Greek side was dominated by a stubborn reluctance to cut through the numerous inefficient and unjust relationships, inequalities or occupation-specific privileges of the pre-crisis period, given the perceived political costs; it was thought possible to keep everything as it had been

before the crisis, although this situation was a cause of the crisis. Of course, the dramatic drop in incomes, employment and living standards gave rise to a justified feeling that no more sacrifices were possible. Still, a morbid attitude took hold, whereby any change was dubbed a "sacrifice" no matter if this "sacrifice" could be also a necessary investment or a prerequisite for recovery. Such attitudes made the adjustment more painful and longer and, together with other factors, contributed to seven years of disappointing results. Ultimately, the inability to promote or support changes that would be important for achieving growth and a faster exit from the crisis failed also to preserve the status quo and led to a vicious circle of continued deterioration, successive further cuts, growing opposition, renewed deterioration and so forth.

3.1.2 The contrasting impact of revenue- and expenditure-led fiscal policy and the management of the fiscal crisis

The duration of a fiscal consolidation is influenced by many factors, such as the composition of the adjustment, the country's initial conditions, attitudes or the economic and social impacts of the various policies. We consider that in the case of Greece the revenue-expenditure composition of the deficit reduction policy has been crucial for the effectiveness of the consolidation process. For this reason, the relative weight of expenditure and revenue, respectively, as an adjustment tool both before and during the crisis is examined below. Between 2006 and 2008, the fiscal deficit ratio rose gradually by 3.3 percentage points of GDP; by 2009 this rise had come to 9.5 percentage points (from 5.6% in 2006 to 15.1%, see Table 3.1). Concerning expenditure, a breakdown into interest payments, investment expenditure and other primary expenditure is provided in Table 3.1.

Chart 3.2 illustrates the contribution of each of four factors (revenue, interest payments, investment expenditure and other primary expenditure) to the soaring of fiscal deficits in 2006-2009 and, correspondingly, to their reduction in the years 2009-2016. The data in Tables 3.1 and Chart 3.2 reveal a deep asymmetry across the drivers of fiscal destabilisation in 2006-2009 and those of the rebalancing until 2016. Among the former, the single most important is government expenditure, with a contribution of 90.9%. This naked-eye observation would suggest the appropriate consolidation path from 2009 onwards with a focus on the key drivers of destabilisation, notably government consumption (“other expenditure”), unless for other reasons this approach posed risks or was inappropriate. As will be shown, however, a very different

approach was followed instead. The policy choice, at least until 2013 and again from 2015 onwards, was in favour of a fiscal consolidation that maintained a high level of expenditure-to-GDP ratio and relied on tax hikes as a means of reducing deficits.

Table 3.1 Key fiscal aggregates of general government

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
General government deficit											
EUR bn	-13.0	-15.6	-24.6	-36.0	-25.3	-21.3	-17.0	-4.6	-6.5	-3.2	1.3
as % of GDP	-5.9	-6.7	-10.2	-15.1	-11.2	-10.3	-8.9	-2.5	-3.7	-1.8	0.7
General government expenditure (total)											
EUR bn	98.3	109.5	123.0	128.5	118.6	112.4	105.9	93.3	90.0	88.0	86.2
as % of GDP	45.1	47.1	50.8	54.1	52.5	54.3	55.4	51.7	50.6	50.1	49.0
General government revenue											
EUR bn	85.3	93.9	98.4	92.5	93.3	91.1	88.9	88.7	83.5	84.8	87.5
as % of GDP	39.2	40.4	40.7	38.9	41.3	44.0	46.5	49.1	46.9	48.3	49.7
Interest payments											
EUR bn	9.6	10.5	11.7	12.0	13.2	15.1	9.7	7.3	7.1	6.3	5.6
as % of GDP	4.4	4.5	4.8	5.0	5.9	7.3	5.1	4.0	4.0	3.6	3.2
Gross fixed public capital formation:											
EUR bn	12.5	11.3	13.5	13.6	8.3	5.1	4.8	6.2	6.5	6.8	5.5
as % of GDP	5.7	4.9	5.6	5.7	3.7	2.5	2.5	3.4	3.7	3.9	3.1
Support to the financial sector (bank recapitalisation)[17]											
EUR bn							-5.3	-19.2		-7.2	
as % of GDP							-2.8	-10.6		-4.1	

Note: Interest payments and gross fixed public capital formation are included in general government expenditure. Expenditure for bank recapitalisation, on the other hand, is excluded from general government expenditure, hence from general government balance data.

Source: ELSTAT, Annual National Accounts and Main Aggregates of General Government.

Between 2009 and 2016, current primary expenditure[18] declined significantly in absolute terms (by around EUR 27.8 billion), but as a percentage of GDP the reduction was only 0.7 percentage points of GDP. Thus, while - unlike the other factors which contributed to deficit reduction - the expenditure/GDP ratio (current expenditure excluding investment expenditure and interest payments) contributed 91.3% to destabilisation in 2006-2009, in the subsequent rebalancing phase it continued to exert a negative impact till 2015. It was only in 2016 that this figure turned

[17] This item concerns expenditure for the recapitalisation of financial institutions and their impact on the General Government balance. In accordance with the provisions of the MoU, it is not included in expenditure or government deficit figures, therefore it has been deducted from the respective data in Tables 3.1 and 3.2.

[18] Total expenditure excluding investment expenditure and interest payments, which are presented separately in order to distinguish the impact of each of these categories to the fiscal outcome.

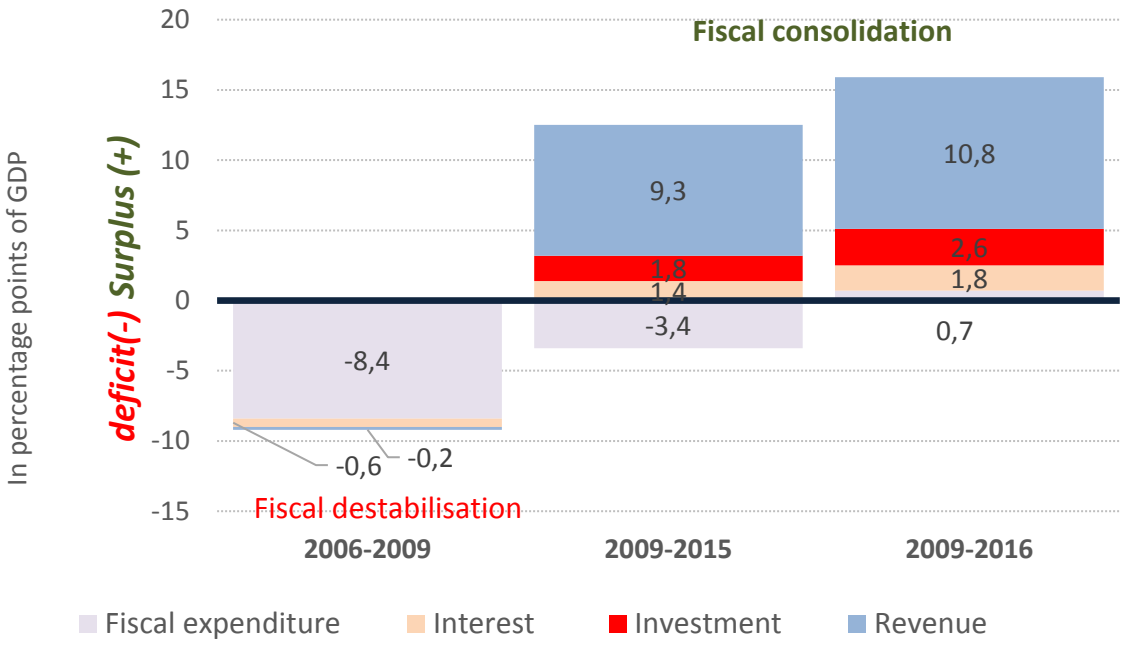
to be positive by just 0.7 percentage points. Hence, the contribution of expenditure cuts relative to the GDP to rebalancing took the form of diminishing deficits till 2015 and was extremely limited (Chart 3.2).

Table 3.2 Factors of fiscal destabilisation and consolidation

	In percentage points of GDP		
	Fiscal destabilisation	Fiscal consolidation	
	2009-2006	2015-2009	2016-2009
Fiscal expenditure (excluding interest payments and investment)	-8.4	-3.4	0.7
Interest	-0.6	1.4	1.8
Investment	0	1.8	2.6
Revenue	-0.2	9.3	10.8
Deficit (-) / Surplus (+)	**-9.2**	**9.1**	**15.9**

Source: See Table 3.1

Chart 3.2 Factors of fiscal destabilisation and consolidation



Note: Fiscal expenditure excluding interest payments and investment.
Source: See Table 3.1

In fact, taxpayers were sent the bill for the imbalance caused by the exorbitant rise in government spending from 2006/7 to 2009. While the shortfall of revenue as a percentage of GDP had an only marginal contribution (0.3 percentage points) to the fiscal derailment between 2006 and 2009,

the 14.5 p.p. reduction of the deficit/GDP ratio between 2009 and 2016 was largely achieved through a 10.8 p.p. increase in the revenue/GDP ratio, which represents 69.9% of the total adjustment for 2009-2015 (Chart 3.2). If revenue as a percentage of GDP had remained unchanged at its 2009 level (38.9%), as was the case with expenditure, it would have been EUR 19.1 billion lower in 2016 (EUR 68.4 billion instead of EUR 87.5 billion). This difference measures the additional tax burden on society as a result of the consolidation policies chosen by governments.

Lower interest payments, as a percentage of GDP, resulted from the facilities granted to Greece by its lenders under the MoUs. These reduced the fiscal burden by 1.8 percentage points of GDP relative to 2009 and 4.1 p.p relative to 2011 when these facilities started to be implemented and contributed to fiscal consolidation by 20.6 p.p. (2009-2015 period). Cuts in public investment expenditure contributed by 2.6 p.p. of GDP to consolidation (2009-2016 period). After the increased taxes they were the factor with the second highest contribution to fiscal rebalancing. Obviously, the continuous decrease in public investment (in absolute and relative terms) for so many years has a very adverse impact on the growth performance of the economy.

The theoretical and empirical literature on the asymmetric impact of higher taxes and lower expenditure on GDP provides mixed conclusions. Several analyses find that fiscal consolidations that are based on expenditure cuts appear to be more effective and less costly in terms of GDP contraction than revenue-based strategies, and the difference in effect between the two strategies is often found to be very large[19]. A problem is that expenditure cuts are mainly focused in social expenditure and compensation of public sector employees. The European Commission finds that, in practice, expenditure cuts target grants and subsidies, investment, capital transfers and intermediate consumption expenditure.

Other analyses[20] argue that if there is scope for cutting expenditure and increasing taxes with a less negative impact on growth (e.g. environmental taxes, property taxes, VAT or sales taxes), effective consolidation is also possible. It should also be noted that the impact of each strategy depends not only on the type of fiscal consolidation but also on many complementary policies or other accompanying measures. Beyond that, the problem in the case of Greece is further complicated by the fact that the shock of the crisis has been not only fiscal: either from the outset,

[19] Alesina et al. (2015), Alesina and Ardagna (2009), von Hagen et al., (2002), Guichard et al. (2007).

[20] Tsibouris et al. (2006).

or as the crisis unfolded, compounding factors were at play, such as the liquidity shock as a result of the banking crisis, political uncertainty and social tensions, shrinking external trade, the impact of the social security system on the deterioration of public finances and the economy[21], etc., the combination of which weighed heavily on the overall outcome.

In the analysis that follows, it was not possible to measure specifically the impact that the strategy followed had on the path of GDP. However, the choice of a front-loaded strategy, centered on tax increases, explains the evolution of tax burdens (which is discussed in detail in Chapters 7 to 9) and to some extent the negative effects on growth, employment, income distribution and poverty. The question whether a more balanced strategy would have had less adverse effects cannot be answered without specific analysis and data.

Furthermore, tax hikes raise another issue: "fairness". Kaplanoglou et al.[22] argue that "fairer" taxation tends to have a more positive effect on GDP growth. In our analysis, based on tax data, we find that in some areas the element of fairness was present, in many other areas not so. The large extent of tax evasion or the preferential tax treatment of certain income categories acted to widen the tax burden gap across Greek society. In an effort to reduce the deficits without caring to implement an effective tax reform, taxation was increasingly heavier for lower incomes, which suffered disproportionate disposable income losses than higher incomes.

More generally, the contrast between the high and increasing tax/GDP ratio and the unchanged expenditure/GDP ratio reflects a fundamental asymmetry in the consolidation policy. It represents a peculiar imbalance, whereby policy (governments and Troika), disregarding the economic and social consequences, charges society with a significant price for its triple failure: to reverse the fall of the economy, to cope with the structural phenomena of widespread tax evasion and tax privileges and to restore the role of public expenditure for the production of collective services rather than a mechanism for buying political votes.

3.1.3 Salaries and pensions in the fiscal consolidation process

The calculation of the contribution of the various expenditure categories to fiscal rebalancing from 2010 onwards shows vividly the dead-end practice extensively used during those years: the

[21] Giannitsis (2016).

[22] Kaplanoglou, Rapanos and Bardakas (2013).

significant cuts in the central government wage bill (from EUR 18 billion in 2009 to EUR 12.5 billion in 2016) helped to reduce the deficit ratio by just 0.5% between 2009 and 2016 (Table 3.2)[23]. On the other hand, expenditure to cover pension expenses regarding public servants, in absolute terms, far from being contained, actually increased by 33.3%, i.e. from EUR 2.7 billion to EUR 3.6 billion, and contributed by 0.87 percentage points to the worsening of the deficit ratio.

A more detailed breakdown of government expenditure (excluding interest payments and spending under the Public Investment Programme) into salaries and pensions shows that expenditure related to social security (pensions to public sector employees plus transfers to cover the deficits of social security funds) was a significant factor in the emergence of the crisis. It had a strong impact on the 2006-2009 deficit increases, representing almost half of the corresponding contribution of primary expenditure. The respective contribution of the increase in expenditure for government sector salaries was 9% (0.8 p.p./8.9 p.p. of GDP, see Table 3.3). Even in the stabilisation phase (2009-2015), social security expenditure (public sector pensions and deficits of the pension funds), in contrast to the positive contribution of the cut in the government wage bill (-0.7 p.p. of GDP, see last column in Table 3.3), had an upward effect (+0.9 p.p of GDP or a contribution of 8.2%) on deficits, thus more than offsetting the positive effect of all other categories on fiscal consolidation.

Table 3.3 Contributions of revenue and expenditure to fiscal destabilisation and stabilisation

	2006-2009	2009-2015
	In percentage points of GDP	
State Budget Balance on a cash basis	**-8.9**	**11.0**
Total State Budget revenue	-1.7	8.0
Total State Budget expenditure	7.2	-2.5
Primary expenditure of Ordinary Budget	6.1	-1.4
Wages General Government	0.8	-0.7
Pensions General Government	0.6	0.9
Social security and healthcare	3.7	0.2
Operating expenditure	0.5	-0.8
Other resources, Reserve	0.5	-1.1

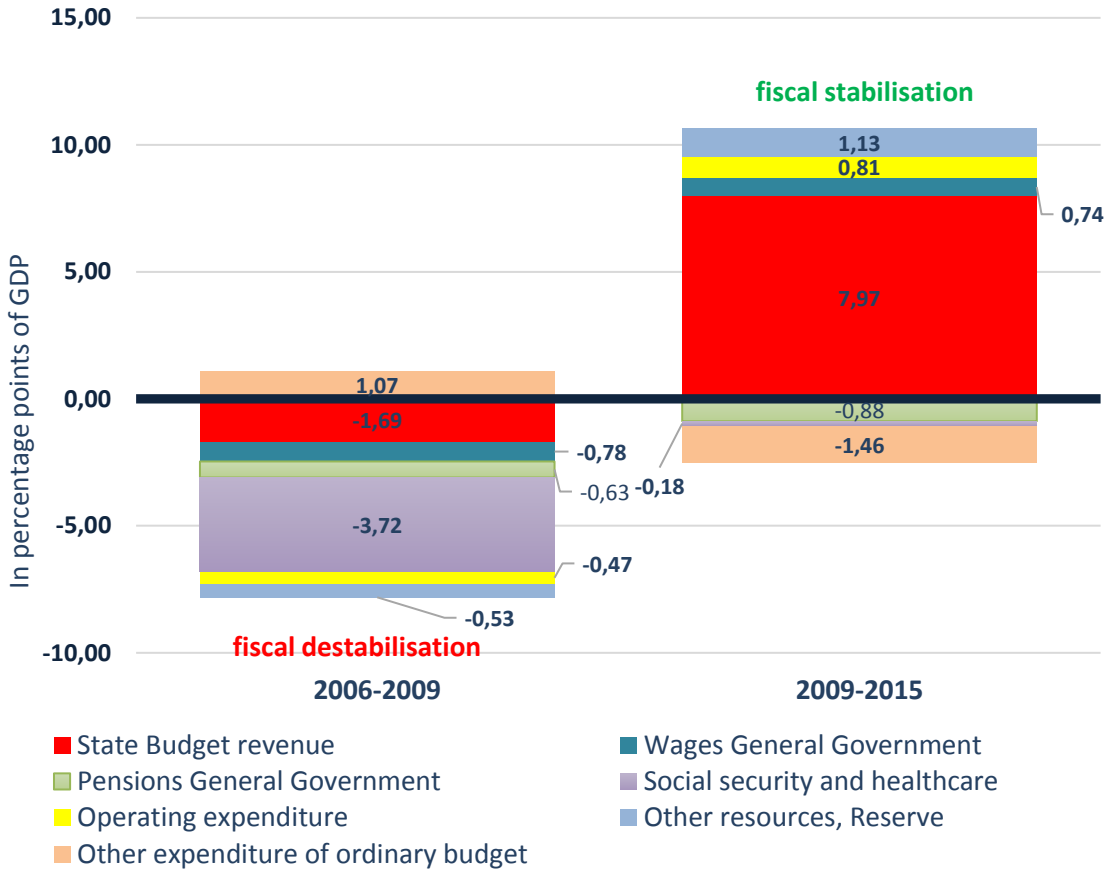
Source: Introductory Reports on the State Budget (actual outcomes).

As a result, the reduction of the deficits necessitated more painful choices and, at the individual level, greater income losses than would have been required without such a policy. In other words, the State curtailed salaries to save expenditure, but at the same time forced - or generously

[23] 2015 was the last year with available data on fiscal expenditures for wages and pensions.

allowed - a large number of employees to retire, thus offsetting the impact of wage cuts and public employment reduction.

Chart 3.3 Contributions (as % of GDP) of revenue and expenditure to fiscal destabilization and stabilization



Source: Introductory Reports on the State Budget (actual outcomes).

3.2 The fiscal consolidation strategy as a factor of inequality

Table 3.4 provides an overview of the impact of this strategy on various social groups[24]. The lower social strata saw their tax burden rise by 337.7% between 2008 and 2012, while the corresponding increase for the upper deciles was 9%. In absolute terms, both the higher and lower incomes paid the same additional taxes (around EUR +1.1 billion) between 2008 and 2012. The average tax

[24] Chapters 7 and 11 provide a very extensive analysis of the impact of taxation on income distribution.

burden on low incomes rose from 2.5% to 9.4%, while the corresponding figure for higher incomes fell from 97.5% to 90.6%.

Table 3.4 Tax burden on lower and higher income deciles

	Average tax burden per household, in EUR		Total tax burden for each group of deciles, in EUR millions		% change
	2008	2012	2008	2012	2012/2008
Direct taxes					
Lower income deciles (1-5)	103.3	233.2	269.9	609.6	125.9
Higher income deciles (6-10)	4,722.0	4,298.5	12,341.1	11,234.1	-9.0
Property taxes					
Lower income deciles (1-5)	20.2	307.1	52.8	802.6	1,420.1
Higher income deciles (6-10)	80.1	937.9	209.3	2,451.1	1,071.1
Total					
Lower income deciles (1-5)	123.5	540.3	322.6	1,412.1	337.7
Higher income deciles (6-10)	4,802.1	5,236.3	12,550.4	13,685.2	9.0
Structure (%)					
Lower income deciles (1-5)	2.5	9.4			
Higher income deciles (6-10)	97.5	90.6			

Source: Calculations based on tax data.

This pattern of adjustment had a number of consequences on equality and solidarity:

- It shifted the burden of adjustment from the public sector to the private sector. It is clear that the choice to increase revenues to finance the leap of public current expenditure during the years of the crisis reflected a strategic choice: to preserve and protect an oversized public sector at any cost. The result was a significant additional tax burden on society coupled with massive unemployment in the private sector affecting both employees and self-employed. In terms of solidarity, we are faced with a close entanglement between the political system and public administration at the expense of significant collective interests (causing instead poverty, unemployment, prolongation of the crisis, inequality).

  This policy had much more destructive effects on the productive base of the economy than a spending-led adjustment process or a more balanced mix between revenue and expenditure. It left intact an inefficient public administration which had failed to build up efficient social and/or development structures and to prevent a severe disruption of the economic, social and finally also political structures.

- Besides economic considerations and economic rationality issues, such an adjustment approach was profoundly unfair from a social perspective. Chapter 7 of this study shows

the additional tax burden imposed on citizens as a result of the revenue-led adjustment strategy and the particular social groups which have been hit, while Chapter 10 focuses on the relationship between unemployment and poverty, which fundamentally transformed basic social conditions for large parts of the Greek society.

3.3 The question of fiscal multipliers

The question of the success of the programme, when the Greek economy after a fall of 26% of GDP continues to stagnate sounds ironic. Politically and economically, the question is about the factors which determined this outcome. One of the major issues on which the debate has focused are the "mistakes" on the part of creditors, in particular the IMF, in estimating the fiscal multipliers for the reduction of the deficit.

Under conditions of fiscal consolidation, the question of the multiplier refers to the contractionary effect on GDP (and the recession) from a reduction in the fiscal deficit by one percentage point of GDP. The initial estimate of the International Monetary Fund, which was endorsed by the other members of the Troika, was that a reduction in the deficit by one unit of GDP would result in a smaller decline in GDP (about 0.5 unit)[25]. Consequently, the reduction of the deficit from a level of around 15.6% in 2009 to zero was expected to cause a GDP decline of about 8%. As it turned out, by 2015, the reduction of the deficit by about 12 percentage points of GDP was accompanied by a decline in GDP of about 26%, i.e. more than double the expected outcome.

It had also been estimated that the fiscal consolidation policy and the gradual return of the country to a balanced budget position, in contrast to the downward effect on GDP, would also have an indirect upward impact by restoring a climate of confidence in the economy and competitiveness and creating positive expectations which would feed into growth ("expansionary" fiscal consolidation). This could lead to new investment initiatives, capital inflows, higher exports and increased consumption. This was not the case, not only because this expectation was rather unrealistic, but also because all that time the adjustment policy was inconsistent, going back and forth, did not guarantee stability, not even in the medium term, did not move in line with the targets set and was implemented in a domestic environment

[25] Gechert, Horn and Paetz (2017) on the underestimation of the impact of fiscal multipliers on growth and fiscal consolidation in the European crisis countries.

characterised by increasing pauperisation, social tensions and strong political opposition to any adjustment effort.

The question whether the reduction of fiscal deficits should best be pursued through tax increases or expenditure cuts is closely related to the question of fiscal multipliers. Each expenditure or revenue category is associated with a different multiplier and therefore has a different impact on the size of the adjustment. In addition, the multiplier can vary depending on how the relevant revenue or expenditure category is used and on the complementary conditions prevailing on the economic and political scene. For instance, the multiplier is very different if a tax increase is combined with a decline in investment by 10% or 30%.

Analyses focusing on Greece[26] argue also that, in terms of the impact on GDP, fiscal consolidation would have best been pursued through an increase in taxes/revenues rather than expenditure cuts, as in the former case the negative result from an additional tax unit would be a one unit decline in GDP, compared with 1.89 units in the case of expenditure cuts.

Such estimates, as noted by the authors themselves, present many problems, such as the fact that fiscal consolidation takes place in an environment characterised by extremely strong fiscal imbalances, doubts about the ability of governments to meet their commitments, credit crunch conditions, a liquidity shock and high interest rates for those who have access to liquidity and a huge increase in taxes (by about 90% relative to 2008/9). As a result, the tax burden rose sharply in a very short time span, private investment shrank dramatically, public investment also declined, all leading to a pauperisation of society. All this happened in conditions of inefficient management of the crisis by the European as well as the Greek side. Therefore it is no surprise that the aggregate effect of these factors on GDP seriously exacerbated the negative impact of the fiscal consolidation.

Nevertheless, the question whether an expenditure-based adjustment or a more balanced combination of expenditure cuts and tax increases would be preferable remains open. The fact that due to many important additional parameters the actual multiplier of the tax increases is not the same as the GDP decline initially estimated does not answer the question whether the outcome would have been better with a different revenue-expenditure mix.

[26] Monokroussos and Thomakos (2013).

Some further considerations in this regard are the following:

❖ Post-crisis governments chose to considerably reduce expenditure under the Public Investment Programme (by about 60%, see Table 3.1). The negative impact on growth from this cut is highlighted in both the general literature and analyses of fiscal consolidation in Greece[27].

❖ The increase in the tax burden was extremely high and moreover, in relative terms, affected significantly more the lower incomes (see Chapters 3.2 and 7), resulting in a general destabilisation of expectations, certainties and prospects in a large part of society. On the other hand, the incomes of medium and higher groups suffered large losses, in absolute terms. This further aggravated the negative impact on household consumption and business investment.

❖ The underestimation of the negative impact of the banking crisis, in particular the liquidity squeeze, the cost of capital and the overhanging threat of capital controls, which were ultimately imposed in mid-2015, deepened the negative impact of fiscal tools. The aggregate effect of all these factors was an unprecedented recession, which took a toll on the economy in many ways (unemployment, poverty, etc.), causing the collapse of the adjustment process itself.

❖ For a number of years before the crisis, economic growth had been largely debt-driven, with increasing fiscal deficits and more and more public and private borrowing. With the onset of the crisis, this source of growth was hardly available. Tax increases were substituted instead as a means to finance government expenditure, which as a percentage of GDP had reached an unprecedented level in 2009. This was a desperate attempt to keep the fiscal bubble created by pre-crisis borrowing, through increased taxes. However, this was not possible without serious consequences for the recession, which became strongly felt.

3.4 The policy management of the competitiveness crisis

The continuous deterioration of the trade balance and current account balance caused by weak competitiveness was the second major dimension of the Greek crisis. At the core of the competitiveness crisis was the continuous deterioration of the trade and current account

[27] Manessiotis (2013), p. 60, Monokroussos and Thomakos (2013).

balances. The trade deficit was as high as 18.6% of GDP in 2000, 17.8% in 2007 and 12.7% in 2009[28]. The factors underlying this development were several. Certainly, labour costs played a significant role. According to estimates, unit labour cost growth in Greece was some 8 percentage points higher than in the euro area in the period 2001-2007 and real average compensation per employee was 14 percentage points higher, respectively[29].

Table 3.5 Exports of goods in EUR billions and as a percentage of GDP

	2008	2009	2013	2014	2015	2016
Exports of goods -excluding fuels and ships						
- in EUR bn	14.9	13.4	17	17.1	17.9	18.2
- as % of GDP	6.2	5.6	9.4	9.6	10.2	10.3
Exports of goods including fuels						
- in EUR bn	18.3	19.5	26.5	26.2	24.6	24.3

Source: Bank of Greece data on exports.

Restoring Greece's external balance was necessary from a macroeconomic perspective. The wage cuts became for the Troika a key policy tool for restoring competitiveness. The cuts were implemented mainly from 2011[30] onwards, through several interventions, either directly in the institutional framework of wage determination or indirectly through measures that dismantled many provisions of labour protection. In the next chapter we will show that the average wage reduction in the private sector, cumulatively for the years 2008-2015, reached 17.3%.

Despite the marked decline in labour costs in the years 2010-2012, the competitiveness of the economy did not seem to have improved until 2015. In the following years, however, exports of goods, excluding oil products because of their price volatility, were in 2016 about EUR 3.3 billion or 22% higher than before the crisis[31] (2008). Due to the large GDP contraction, these exports represented a growing share of GDP (from 6.2% in 2008 to 10.3% in 2016). The market share of

[28] For a detailed analysis on the pattern of specialisation of Greece and other South European countries, their competitiveness by product groups and the determinants of the competitiveness level, see Giannitsis et al. (2009).

[29] Ibid, pp. 120-121.

[30] Similar wage cuts have already been imposed for employees of general government and public utilities since 2010 as part of fiscal consolidation in order to reduce government expenditure and deficits.

[31] Fluctuations do not allow safe conclusions to be drawn. In the first half of 2016, exports of goods were slightly lower than in the corresponding period of 2015, reversing the upward trend.

Greek products in international markets remained stable at 0.17%, unchanged from 2004[32]. Also, import penetration reached 24.5% of GDP in 2015, compared with 23.4% in 2009[33]. Measured by indicators that also take imports into account, competitiveness shows considerable statistical improvement, due mainly to the recession and lower imports of investment equipment, intermediate and consumer goods and much less to strong exports. This performance is significant, although disproportionally weak compared with the labour cost reductions that have been imposed[34]. During the period 2010-2016 wages fell by a cumulative EUR 26.1 billion, contributing, together with other factors, to a decline in domestic consumption by EUR 58.6 billion. During the same period, the increase in exports of goods (excluding oil products and ships, Table 3.5), as already noted, was EUR 3.3 billion.

A remarkable change concerns the composition of exports. While the overall world market share remained stable, as indicated, there was a decline in the market share of labour-intensive products (-0.5 percentage points between 2009 and 2014) and a slight rise in technology-intensive products (+0.03 percentage points). This development is a paradox: wages were drastically reduced, but exported labour-intensive products further lost competitiveness, while exports of medium to medium-to-higher technology products, less dependent on labour cost and with a weaker competitive base, improved their competitiveness. At the level of the global market, these figures are of course insignificant, but they are interesting at the level of Greek exports and their structure, as they show a positive small shift towards technology intensive exports, which rose despite the wage cuts[35].

The structural dimensions of the low export intensity was highlighted by us in a very detailed study of the technology content of Greek exports[36]. Competitiveness on the basis of relative labour costs in total economy (real effective exchange rate based on unit labour cost) evolved in such a way that the losses of the period 2002-2010 had been recouped by 2013-2014, and there

[32] Bank of Greece, Annual Report (2015), p. 122.

[33] OECD (2015), p. 299.

[34] Of course, one should take into account that, while labour costs fell, the cost of capital (interest) increased significantly, economies of scale were lost because of lower demand, bank liquidity shrank sharply, and the cost of political instability increasingly weighed on the economy. All these adverse factors are likely to have fully offset the benefits of improved cost competitiveness.

[35] Bank of Greece, ibid. p. 122.

[36] Giannitsis et. al. (2009).

was further improvement in 2015-2016. Even more favourable were the developments in competitiveness vis-à-vis the countries of the euro area[37].

Table 3.6 Annual changes in aggregate wage income and total consumption (in EUR billions)

	Changes in compensation of employees	Changes in national final consumption
2010	-2.7	-10.2
2011	-8.9	-17.2
2012	-7.2	-14.6
2013	-6.4	-10.5
2014	-1.4	-3.5
2015	-1.3	-3.1
2016	+1.7	+0.4
Total	**-26.1**	**-58.6**

Sources: ELSTAT and Bank of Greece.

The issue of wage cuts is an illustration of the stubbornness and failure of the policies imposed by the lenders. The point is not that labour cost competitiveness did not deteriorate during the 2000s; as mentioned above, wage growth outpaced the rise in productivity, implying that a corresponding adjustment was necessary[38]. The point is that the extent of wage cuts was excessive from an economic point of view, and this for four reasons: first, because according to our estimates the cuts exceeded the necessary level by at least 10 percentage points; second, because they led to a contraction of domestic demand much greater than the increase in exports, resulting in a squeeze on growth, difficulties with fiscal consolidation, higher unemployment and shrinking revenue from social security contributions; third, because in the same period the rising capital cost, the drying-up of liquidity, the loss of economies of scale, the increase of energy costs and political instability largely outweighed the impact of wage cuts; and fourth, because the most important factor for the losses in competitiveness besides labour cost was the weak technology and knowledge base of Greek production and exports (structural competitiveness). The persistent pattern of low knowledge and technology intensity and low-skilled labour intensity leads to low competitive advantages. This factor is increasingly visible as the real effective exchange rate of the economy returns to the levels prevailing in the early 2000s[39].

[37] Bank of Greece, ibid. p. 111.

[38] This is a common finding in many analyses, see e.g. Giannitsis et al. (2009).

[39] Ibid. and Zografakis and Kastelli (2015). Böwer, Michou and Ungerer (2014) identify as the main causes of Greece's low export performance weaknesses in the sectoral composition of exports and in the relevant domestic institutional framework.

In sum, the emphasis on excessive wage cuts as a tool to restore competitiveness, coupled with total lack of action to strengthen the technological and productive base of the economy, fails to improve "structural competitiveness", which is key to enhancing the export sector and its impact on growth in conditions of stagnating domestic demand. On the contrary, this combination merely prolongs the functioning of a low-growth, low-skill productive base and explains why, as is often asked, Greece has not been able to achieve export-led growth.

CHAPTER 4

THE IMPACT OF THE CRISIS ON INCOMES

Sharp income reductions and soaring unemployment rates have been the most severe economic consequences of the crisis in Greece. At the macro-level, Gross Domestic Product contracted by 26% between 2009 and 2015[40]. The collapse of incomes has not only been the result of the recession, but also of three distinct compounding factors: (a) policy decisions by the government and the Troika to cut wages and pensions and to impose a radical deregulation on the labour market; (b) bold fiscal consolidation, which led to a deep recession affecting income levels, demand and unemployment across the whole economy; and (c) broader political stances on various issues, such as the protection of the public sector from the most adverse impact of the crisis, reluctance to address inefficiencies as well as the political choice for revenue-led adjustment policies, all of which had adverse effects on income levels and distribution.

The fall in GDP certainly masks different reductions across the income categories that make up GDP, given the different impact of the recession on individual income groups (employees, self-employed, business activities, rents, dividends, profits, agricultural activities, pensioners) as well as the different elasticities of demand or labour intensity across economic activities. Equally, some types of income, mainly salaries and pensions, have been subject to very strong government cuts, while for the other income categories the effect was due to the impact of the crisis.

Household income declined during the crisis under the effect of a range of factors, such as:

- Closures of small and medium-sized firms, unemployment and move from the status of self-employed to unemployed. Between 2008 and 2013 the unemployment rate increased from 7.8% to 27.6%. The number of unemployed persons increased to 1.330 thousand, but

[40] The tax dataset used in this study refers to the period 2008-2012, during which the GDP contracted by 21.3%.

declined slightly in the following years (1.131 thousand in 2016). About 648 thousand were previously dependent employees and 352 thousand previously self-employed persons (in commercial/business activities, independent activities, agriculture, tourism, construction, SMEs, etc.) (2015 data). They represented, respectively, 24.5% and 22.1% of total dependent employment and total self-employment in 2008. The largest losses of dependent employment jobs are recorded in manufacturing (153 thousand), construction (193 thousand) and commerce (57 thousand). Additionally, employment in the public sector decreased by 67 thousand.

- Changing employment conditions and a shift from full employment to various part-time or temporary employment forms. The number of underemployed persons (15-64 years old), implying low-wage jobs and remuneration, increased by 169 thousand persons (from 99 thousand in 2008 to 268 thousand persons in 2015), representing, respectively, 2.1% and 7.3% of total employment. Briefly, during the crisis, besides unemployment, an extensive shift from full employment to low-pay employment took place, affecting the relevant wage-related income figures.

- Cuts of wages as a result of policy decisions regarding public employees and institutional changes in the labour market. The salaries of public employees have been cut by 7.7% between 2008 and 2015. The respective figure for employees in the business sector was 17.3% for the non-banking sector and 21.3% for the banking sector.

- Very limited access to the labour market by young people or inactive persons who started searching for a job. The number of unemployed youths (15-29 years) increased between 2008 and 2015 from 170.5 to 333.7 thousand persons (an unemployment rate of the respective population of 16.2% and 41.3%).

Besides its impact on incomes, the crisis led also to a substantial loss of capital values, in particular with respect to real estate property, shares and bonds. The Bank of Greece estimated that the nominal value of houses declined by about 41% between 2008 and 2015 (see Chart 8.1 in Chapter 8). Equally, the capitalisation of banking and non-banking companies listed in the Athens Stock Exchange decreased from 59.4 billion euro (2008) to 22.0 billion euro (2011), increasing to 38.7 billion euro by end-2013, mainly as a result of the injection of about 39 billion euro into the banking sector (recapitalisation of banks). Overall, a capital amount of at least 15 billion euro regarding solely the listed companies has been lost. A new capitalisation of all four systemic banks

took place by end 2015, amounting to EUR 13.4 billion. The haircut on Greek government bonds in 2012 led to significant capital losses for many individuals and in particular Pension Funds[41] and, hence, for larger parts of society. In addition, a large number of productive units closed down during the crisis, implying the destruction of significant, even if not easily quantifiable, parts of the production capital. Other capital-related incomes such as rental income, dividends and interest experienced significant reductions as well.

Methodologically, however, the destruction of fixed capital assets or the diminution of capital values should not be simply compared to the fall of employment-related incomes. The two figures are complementary but distinct destructive outcomes of the crisis. They show that the impact of the crisis has many parameters and complex aspects, which affect the questions of inequality and solidarity. Any further analogy, however, between wage-related and capital-related income would be methodologically questionable, for the additional reason that both real estate prices and the Stock Exchange before the crisis gained from exceptionally high or speculative price increases. Real estate prices jumped by 161% between 1997 and 2008[42], while also the index of the Athens Stock Exchange rocketed before the crisis by 105% above its average level of 2003-4.

Our aim is to explore the extent of the change in each income category and the differences across categories. In both of these cases, our primary focus is on the "functional distribution of income", i.e. the income earned by households and individuals from their participation in the production process plus the award of pensions. Wage-related income was hit by income cuts mainly till the end of 2012 or 2013, depending on the activity. Even then it is not easy to distinguish the extent to which income cuts were the result of market developments or of policy interventions in the labour market. In the following years, income reduction was the result mainly of the expansion of temporary or part-time employment or of unemployment and not of specific political decisions.

In a second step (Chapter 7), we examine how these incomes have changed as a result of tax policy and to what extent disposable income differs from market income in comparison with the pre-crisis period. As already mentioned, all these years, the imposition of higher and higher and new types of taxation, in the form of direct, indirect or real estate taxes, has been a key policy tool for fiscal consolidation. This tax intervention alters the "functional distribution of income" and leads to the "personal distribution of income", which shows the "disposable income" that

[41] In any case the government covered the deficits of the Funds.

[42] Bank of Greece, Annual Reports.

ultimately remains in the hands of the individual or the household. Conversely, the disposable income of specific population groups should be increased by any subsidies or social benefits in cash paid by the State to citizens or households (e.g. unemployment benefit, agricultural subsidies, other social benefits) so that the two magnitudes can be comparable. In practice it is not feasible to calculate all these income support categories, but the most important among them (agricultural subsidies, unemployment benefits, etc.) have been taken into account, and the remaining gaps have a very limited impact on our results.

In any case, pre-crisis and pre-tax income relationships did not only reflect the market performance of wage earners, self-employed, farmers, or individual groups or subgroups. They were an extremely complex construction, which was also determined by countless state interventions, regulations and clientele-type favourable income provisions for specific professions, such as engineers, lawyers, archaeologists, road carriers, pharmacists, etc. When the crisis hit incomes, the outcome was not only determined by the different manner in which each occupational category was impacted by the crisis and Troika or government interventions. In addition to these differences, there was also the unequal manner in which governments have treated each larger or smaller group with new decisions from 2010 onwards. The new equilibrium was characterised not only by an absolute fall in incomes but also by significant changes in the relative positions of individuals and households across the income scale. Thus, cases of unjustified or overly favourable treatment for special groups have emerged as a result of government and Troika decisions or court rulings in a wide range of income relationships. A striking example was the obligation of millions of home owners to obtain various certifications against the payment of officially determined fees to engineers.

A significant methodological and substantive issue concerns the reference households or individuals. Based on the data we have, it is possible to estimate income developments in two ways: (a) for ‘all households’ or individuals that, for each year, have income from a given source; and (b) for each income category for the ‘same households’ or individuals during the crisis, starting from 2008 or another year (see Chapter 2.2 on Methodology).

The investigation was conducted for all the years from 2008 to 2012[43], but for the sake of simplicity the findings only for the years 2008 and 2012 and occasionally 2010 are reported here. 2008 is a representative year for the pre-crisis income situation, without being the year with the highest income before the cuts began, while 2012 is the last crisis for which detailed tax and income data are available. 2010 was added because, although the recession began in 2008, many incomes continued to rise until 2010. When the 2012 income is compared with that of 2008, the change is typically smaller than when compared with 2010.

In exploring income developments by main income source, the following criteria are used:

- first, developments in the main sources of income for the country as a whole;
- second, developments in income by main source for the same households; and
- third, examination at the level of individual deciles, total and top 1% and 0.1% of households/individuals, thus enabling conclusions on inequality and income distribution.

Analyses at the level of deciles and top 1% and 0.1% are particularly important and original elements of this study. Within each decile and major social category (dependent labour, pensioners, self-employed, farmers, etc.) there are dramatic variations during the crisis. Consequently, the decile approach provides detailed information regarding the income changes in different strata.

It should be noted that the individual incomes from each source and in each decile do not add up to the total income of households or individuals under consideration. As a rule, this total income of households or individuals comprises income from more than one source. Thus, any change identified in any single income category does not necessarily reflects the change of the household's total income position. The latter is shown in Table 4.1, which refers to the total income of all households from all income sources. However, below we examine how the overall income situation of households with employees or pensioners evolved compared with other

[43] In 2017, some additional tax data were released referring to 2015. These data are not comprehensive, it is not clear whether they are final and do not have the same classification to enable comparisons. According to these data, total taxable income was EUR 73.9 billion, down by 38.8% from 2008 and 21% from 2012. Total (pre-tax) wage and salary income was EUR 32.1 billion, down by 32.8% from 2008 and 7.6% compared to 2012. Total income from pensions was EUR 24.5 billion, down by 4.9% from 2008 and 15.7% from 2012. These figures raise many questions. The fall in GDP between 2012 and 2014 was 8.5% and the reported decrease in total taxable income (21%) is disproportionately high. The income declines between 2008 and 2012 were consistent with the GDP contraction; this consistence seems to be temporarily reversed in 2014. Thus, for a number of reasons some piecemeal data for 2014 can only be used as complementary information and should be treated with caution.

households, even though these households may also have income from other sources. It is also interesting to examine to what extent the reduction of income from one source is linked to an increase of income from another source, e.g. a wage reduction but a pension increase, or a wage reduction for one member, but a wage increase for another household member. Without taking duly into account such data, it is easy to make wrong interpretations.

Another point to be made is that the lowest (1st) decile often shows significant or abnormal increases or decreases, which give rise to questions. This may be due to different reasons each time, such as:

- It has been observed, not only in Greece but also internationally, that the lower and the highest deciles include comparatively more significant tax evasion than intermediate deciles. In the case of Greece, the introduction of income presumptions or "objective" expenditure in 2010[44] resulted in 105,000 taxpayers being taxed for a higher income than their declared income. These taxpayers had declared a total income of EUR 460,000,000; after the introduction of imputed income, their income came to EUR 950,000,000.
- A change in status (e.g. a farmer who declares zero or negligible income but retires and cannot conceal pension income) can lead to a very significant increase in income. The same may apply for self-employed persons as well as to other categories of workers who conceal incomes.
- There are often delays between retirement and the start of pension payments; in the meantime, retirees declare zero income or lower than their accrued pension entitlements (cases where pensioners receive 50% of their basic wage in the form of an advance payment).
- The lowest decile includes a large number of underage household members who submit a separate tax return because they own some estate (e.g. acquired through parental gifts). If in subsequent years they get a job, the increase in their income will be significant given the low starting level, even if their earnings are not very high in absolute figures.

Finally, it is pointed out that a much more detailed presentation of statistical data, calculations and clarifications, which for the sake of simplicity are not included here, can be found in our study:

[44] With Law 4172/2013, both the income presumptions and the calculation of tax deductions have changed and become even stricter, compared with the milder criteria applicable under Law 3842/2010.

Greece: Solidarity and Adjustment in Times of Crisis (Hans Böckler Stiftung, IMK, Study 38, March 2015)[45].

4.1 The great upheaval of income hierarchy

Table 4.1, below, shows the evolution of income for all households in the country with a breakdown by decile but also for the total as well as for the top 1% and 0.1%, with three different approaches:

- Under the first approach (left-hand part of the table) we classify all households in deciles based on their total income, from the poorest (1st decile) to the richest (10th decile) for 2008, 2010 and 2012. In 2008, for example, households classified in the first decile had an average income of EUR 1,247, which rose to EUR 2,653 by 2010 and declined to EUR 1,150 by 2012. Households in each decile or in the top 1% or 0.1% in 2008 or 2010 or 2012 are not necessarily the same in the three years examined at the left-hand part of the table. Some households have moved to upper and some to lower deviations.
- Under the second approach (middle section of the table) we look at the evolution of household income from 2008 to two subsequent years, 2010 and 2012. For example, households of the 1st (poorest) decile in 2008 had, on average, an income of EUR 1,247. Two years later, in 2010, these same households declared an average income of EUR 6,187 and then in 2012 EUR 5,575. It should be recalled that in the middle part of Table 4.1, households are classified on the basis of their 2008 income.
- Under the third approach (right-hand part of the table), households are classified in deciles on the basis of their income in 2012. In this case the evolution of household income is shown, starting from 2012 and going back to 2008. For example, households in the 1st decile in 2012 had an average total income of EUR 1,150. Two years earlier, these same households declared an average income of EUR 7,827, while in 2008 their income was EUR 8,462.

For households as a whole, under all three approaches, there is a decrease of 22.6%. This decrease, however, varies widely across deciles, depending on the perspective adopted each time.

[45] http://www.boeckler.de/pdf/p_imk_study_38_2015.pdf.

The columns in the middle and right-hand sections of the table would have been identical with the columns in the left-hand section, had the impact of the crisis on income been the same across all households in the country. The significant discrepancies observed indicate the major re-ranking among households that occurred during these years:

- Households that are in the three lowest deciles in 2008 experienced an income increase in the subsequent years 2010 and 2012 (middle section of Table 4.1). This increase is due solely to the contribution of presumed incomes as calculated by tax authorities for the years after 2008. However, most of the households that anyway declare very low incomes, with or without presumed income, are below the poverty line.

Table 4.1 Evolution of annual total income of households including imputed income (in EUR)

Deciles	Classification of all households in the country based on their income in each year				Classification of all households in the country based on their 2008 income				Classification of all households in the country based on their 2012 income			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	1,247	2,653	1,150	-7.7	1.247	6.187	5.575	347.1	8.462	7.827	1.150	-86.4
2nd	5,423	5,999	4,503	-17.0	5.423	7.728	6.877	26.8	9.257	9.113	4.503	-51.4
3rd	8,294	8,665	6,653	-19.8	8.294	9.648	8.460	2.0	9.695	9.792	6.653	-31.4
4th	10,942	11,427	9,021	-17.6	10.942	11.881	9.915	-9.4	11.974	12.112	9.021	-24.7
5th	13,645	14,314	11,624	-14.8	13.645	14.647	12.105	-11.3	14.313	14.797	11.624	-18.8
6th	17,146	17,708	14,444	-15.8	17.146	18.086	14.736	-14.1	17.254	17.715	14.444	-16.3
7th	21,632	22,111	17,829	-17.6	21.632	22.132	17.686	-18.2	21.765	21.944	17.829	-18.1
8th	27,990	28,359	22,537	-19.5	27.990	28.061	21.855	-21.9	28.128	27.752	22.537	-19.9
9th	38,733	38,605	30,358	-21.6	38.733	38.004	29.037	-25.0	37.060	37.024	30.358	-18.1
10th	86,034	78,044	60,727	-29.4	86.034	71.512	52.598	-38.9	73.178	69.810	60.727	-17.0
Total	**23,109**	**22,789**	**17,884**	**-22.6**	**23.109**	**22.789**	**17.884**	**-22.6**	**23.109**	**22.789**	**17.884**	**-22.6**
Top 1%	265,855	203,091	155,286	-41.6	265.855	160.784	110.695	-58.4	189.385	160.270	155.286	-18.0
Top 0.1%	1,106,894	597,865	461,680	-58.3	1.106.894	417.960	295.115	-73.3	599.759	426.353	461.680	-23.0

Source: Calculations based on tax data.

- In households that are in the three lowest deciles in 2012, income has contracted significantly compared with earlier years (right-hand section of Table 4.1). The three poorest deciles in 2012 have income below the poverty line, while in earlier years (as we will see in other chapters) many of these households had significantly higher incomes. The income loss would have been even greater if we had not taken into account presumed incomes, which implied "increased" incomes for some of these households from 2008 onwards, as mentioned above.
- In intermediate deciles (5th to 8th) a decrease of about 15%-25% can be observed under all three approaches.

- Households classified in the top (10th) decile in 2008 or in the top 1% and 0.1% suffered the largest income losses (38.9%, 58.4% and 73.3%, respectively), compared with their peers in the left-hand section of the table. It would be very interesting to see below what was the main source of income that collapsed in these households, causing them significant income losses.
- Households classified in the top (10th) decile or in the top 1% in 2012 suffered the smallest income losses (17% and 18%) compared with lower income households or their peers in the left-hand section of the table. This means that these categories include newcomers that have moved up from lower 2008 deciles. These newcomers of 2012 either have increased their income relative to 2008 or have experienced smaller income losses than the wealthy households of 2008. In fact, a new group of very wealthy households emerged, overtaking households that were previously at the top of the income ranking.

The finding about the significant income loss recorded in the rich versus the poor deciles when the onset of the crisis (2008) is used as a starting point, in contradiction to the finding of a significant reduction in the incomes of poor deciles versus the richer ones when the starting point is the end of the period under review (2012), will be a recurring motif in the next sections. This apparent contradiction has a logical explanation, which varies across sources of income. When we classify households in deciles in 2012, from the poorest to the richest, the households who lost a significant part of their income (due to dismissal or large wage cuts or loss of income from self-employment or from capital/business activity, etc.) will find themselves in lower deciles. These households had much higher incomes in the past, so their income reductions appear to be large. By contrast, the households whose income increased or remained the same in the crisis period will be found in higher deciles, and the comparison with their past incomes shows an improvement. As we will see in other chapters of this study, each decile, apart from households that see their incomes fall, includes households with rising incomes. When the starting point is 2008, the averages mask the size of the losses. But when the starting point is 2012, the losers of the crisis are largely to be found in the new poor deciles.

4.1.1 Income from labour

Income from labour is divided into income from wages and salaries and income from self-employment.

(a) Income from wages and salaries

Average income from dependent labour per household shows an average decrease of 30.7% in the period 2008-2012 (Table 4.2). This development concerns those specific households that in 2008 had income from wages/salaries. In fact, this income reduction is not driven by lower wages/salaries only: the 2008 population of households includes employees who by 2012 had shifted to unemployment or temporary or part-time employment, or even had to work on a freelance basis (often spurious self-employment). The number of households with employees fell by 457,000 between 2008 and 2012, but it is unclear to what extent this reduction is due to the flexible forms of employment, to retirement or change of type of employment.

Table 4.2 Evolution of annual wage income of households (in EUR)

Deciles	Classification of households based on their 2008 wages				Classification of households based on their 2012 wages			
	Average wage income				Average wage income			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	2,604	4,330	3,396	30.4	7,706	6,404	1,703	-77.9
2nd	5,849	6,010	4,556	-22.1	8,029	7,273	4,399	-45.2
3rd	8,782	7,786	5,864	-33.2	9,659	9,531	7,346	-24.0
4th	11,028	9,786	7,181	-34.9	11,061	11,765	10,301	-6.9
5th	13,226	12,212	9,340	-29.4	13,608	14,375	12,455	-8.5
6th	16,149	15,403	12,189	-24.5	16,549	16,921	14,581	-11.9
7th	19,588	18,377	14,272	-27.1	19,653	20,063	17,314	-11.9
8th	24,241	22,127	16,313	-32.7	23,535	24,283	21,539	-8.5
9th	32,838	29,965	22,150	-32.5	30,044	32,077	29,005	-3.5
10th	58,468	51,839	38,242	-34.6	50,674	55,709	53,037	4.7
Total	**19,277**	**17,783**	**13,350**	**-30.7**	**19,052**	**19,840**	**17,168**	**-9.9**
Top 1%	123,052	103,910	79,113	-35.7	100,581	113,734	117,110	16.4
Top 0.1%	299,720	231,497	172,917	-42.3	213,606	245,238	266,452	24.7
Number of households: **2,480,600**					**2,023,360 (-18.4% relative to 2008)**			

Source: Calculations based on tax data.

The reduction is not evenly distributed across income categories. In the lowest decile there is actually an increase of 30.4% in total income, although if we compare the income of these households with that of 2010 rather than 2008, we find a decrease of 21.6%[46].The smallest reduction is recorded in the 2nd decile, followed by the 6th and 7th deciles, and a larger one

[46] It should be noted that, even amid the crisis, income increases are quite normal, as one can take up a first job, get a promotion, start another paid activity, achieve a higher-yield asset allocation, etc.

in the 10th decile, including the top 1% and 0.1%. However, the two lowest deciles whose income seems to have performed better are also below the poverty line. Below the poverty line is also the third decile, which records a higher-than-average fall in its income.

Table 4.2 can also be read from another perspective. With 2012 as a starting point, the right-hand section of the Table shows the employment income earned by households in earlier years. The average reduction for the total employee household sample is just 9.9%, much lower than what we found when we examined the evolution of these incomes from 2008 to 2012. Why this big difference? The answer is because, in classifying households in 2012 using as a criterion the existence of wage/salary income, we excluded all the households whose members lost their jobs or retired. As a result, the vast majority of these households (2,023.4 thousand) appear to have retained their jobs throughout the crisis, and changes in incomes reflect only wage/salary cuts and not total wage loss due to unemployment.

The differences between the deciles are substantial. The 10th decile includes households that in 2012 have been found to maintain the highest wage/salary income; their average income increased by 4.7%. Among them, the richer and the extremely rich (1% and 0.1%), saw their income rise by 16.4% and 24.7%, respectively. The incomes of poor employee households moved in the opposite direction; these households have lost 24% to 77.9% of their total income by 2012 employees.

(b) Income from self-employment

The average income reduction in this category was 41% between 2008 and 2012, much larger than in the case of dependent employment income (left-hand section of Table 4.3). In this category too, the three lowest deciles see more favourable income developments (increase or much smaller decrease), as in the case of wage/salary income. In the higher deciles, the decrease is more homogeneous (40%-45%), peaking at 51.5%-56% for the top 1% and 0.1%. This development shows how much the crisis has affected the wide array of industries and professions included in this category (engineers, architects, lawyers, financial consultants, realtors, but also various technicians and artisans such as carpenters, tilers, electricians, painters or plumbers).

Households that had income from self-employment at the beginning of the crisis were about 399.8 thousand. Irrespective of how they weathered the crisis, retaining their jobs or not, their income has fallen by 41%. Looking at the 2012 sample of self-employed households (right-hand section of the table), their number has declined by about 24.3% (to 302.8 thousand) and their income reduction compared with 2008 is only 1.7%. In fact, households in the 9th and

10th deciles declared higher incomes in 2012 (up by 8.8% and 21.7%, respectively) and the top 1% and 0.1% even higher (41.8% and 33.4%, respectively).

Table 4.3 Evolution of household annual income from self-employment (in EUR)

Deciles	Classification of households based on their 2008 declared income from self-employment				Classification of households based on their 2012 declared income from self-employment			
	Average income from self-employment				Average income from self-employment			
	2008	2010	2012	12/08%	2008	2010	2012	12/08%
1st	168	451	514	205.7	1,211	997	134	-88.9
2nd	494	591	486	-1.6	2,429	1,954	448	-81.5
3rd	1,073	1,311	840	-21.7	2,857	2,258	960	-66.4
4th	1,846	1,521	1,019	-44.8	3,768	3,608	1,846	-51.0
5th	3,108	2,663	1,984	-36.2	3,939	4,060	3,200	-18.8
6th	5,161	4,824	2,877	-44.2	5,660	6,429	4,800	-15.2
7th	8,438	7,947	4,727	-44.0	10,493	11,792	7,773	-25.9
8th	12,918	12,717	7,776	-39.8	14,322	16,980	12,629	-11.8
9th	20,882	20,034	12,621	-39.6	19,305	24,345	20,996	8.8
10th	56,558	51,889	32,414	-42.7	43,360	57,010	52,769	21.7
Total	**11,064**	**10,394**	**6,526**	**-41.0**	**10,734**	**12,943**	**10,555**	**-1.7**
Top 1%	148,560	118,410	72,016	-51.5	96,831	128,109	137,306	41.8
Top 0.1%	350,329	243,544	154,240	-56.0	239,996	271,981	320,093	33.4
Number of households: 399,820					**302,800 (-24.3% relative to 2008)**			

Source: Calculations based on tax data.

In short, in the upper part of the income ladder, high incomes continue to improve. What has changed is that some households have lost income and have moved to lower deciles, while others have seen their incomes increasing and they have taken the places left by the former. According to tax data, in 2012, one in five self-employed households declares a significant increase in income (about 60,000 households, with incomes ranging from EUR 21,000 to EUR 320,000). On the other hand, a large majority of self-employed households (60% or 180,000) declare income of below EUR 5,000. Half of these 180,000 households declared incomes of below EUR 1,000.

We believe that the data of Table 4.3 reflect one of the crucial problems of Greek society: significant tax evasion. In all deciles of self-employment income, even in the top 1% and 0.1%, the absolute amounts of income declared are not just lower, but a mere fraction of the income declared in the case of wages/salaries. Therefore, in addition to the true income loss caused by the crisis, there is also extensive concealment of income. One could say many things about the extent of tax evasion, but without hard evidence anything would be arbitrary and would not lead to a reliable estimate. Of course, assuming that the size of tax evasion, as a

percentage of total true income, remains broadly stable over the period, the income loss is still substantial, but probably less than 41%. However, the loss varies across types activity, as other occupations have experienced a devastating loss of income and others a milder one. In addition, we are not sure whether this assumption reflects appropriately the reality.

It is recalled that the incomes shown in the above tables are before tax. They reflect the "functional distribution of income," as a result of the functioning of markets and the position of each individual in the production process. Disposable income, i.e. the personal distribution of income resulting from State interventions, is a different magnitude and is discussed in Chapter 7 on taxation.

4.1.2 Income from capital

Income from capital comprises income from commercial/business activities and investment (rents, dividends and interest). Agricultural (business) incomes are also deemed income from capital[47], but given the several specificities of their tax treatment are discussed separately and more thoroughly in Chapter 9.

Income from capital, all individual sources combined, fell by 37.7% between 2008 and 2012 (with falls ranging from 20.3% for rents to 53.6% for dividends and interest). As the corresponding decline in labour income was 27.4%, the ratio of labour income to capital income improved (from 128% to 149%, see Table 4.9).

These figures refer to country-wide aggregates and do not show the evolution at household level. Thus, for income from capital, we examined the changes in incomes between 2008 and 2012 using the same methodology as for income from employment (above) and income from pensions (below).

Broken down by source, the changes were as follows (Tables 4.4-4.7):

- Income from commercial/business activities: -58.8%
- Rental income: -28.7%
- Income from dividends and interest: -68.5%
- Agricultural income: + 21.0%.

A more detailed discussion of the developments is provided below.

a) Income from commercial activities

[47] The earnings of dependent agricultural workers are included in wages/salaries.

This category records one of the largest average income falls between 2008 and 2012. Already by 2010, when the recession has well set in, about 15.5% of income has been lost relative to 2008. At the level of deciles, we can observe a strong correlation between the level of average income and size of income decrease: the higher the income, the larger the decrease, which reaches 73%-81% for the top 1% and 0.1%. The lowest decile once again records an increase in average annual income, which however is just EUR 1,066 (in 2012) and in many cases may simply indicate the application of income presumptions by the tax authority.

Table 4.4 Evolution of household annual income from business activities (in EUR)

Deciles	Classification of households based on their 2008 declared income from business activities				Classification of households based on their 2012 declared income from business activities			
	Average income from business activities				Average income from business activities			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	616	2,023	1,066	73.2	4,911	4,507	318	-93.5
2nd	1,962	3,176	1,513	-22.9	5,576	5,711	1,121	-79.9
3rd	3,513	4,191	1,993	-43.3	6,474	6,699	2,114	-67.3
4th	5,369	5,609	2,628	-51.1	7,693	8,154	3,355	-56.4
5th	7,465	7,725	3,465	-53.6	8,733	9,794	4,883	-44.1
6th	9,885	9,206	4,135	-58.2	10,373	11,761	6,764	-34.8
7th	12,787	11,072	5,160	-59.7	12,600	14,133	9,178	-27.2
8th	16,291	13,975	6,690	-58.9	13,989	16,567	12,568	-10.2
9th	22,981	18,614	9,175	-60.1	18,637	22,125	18,306	-1.8
10th	53,243	37,892	19,465	-63.4	32,823	41,022	42,590	29.8
Total	**13,411**	**11,348**	**5,529**	**-58.8**	**12,181**	**14,047**	**10,119**	**-16.9**
Top 1%	142,672	81,935	38,480	-73.0	65,016	82,682	108,008	66.1
Top 0.1%	330,830	103,496	62,004	-81.3	118,497	135,885	227,845	92.3
Number of households: 693,940					**484,500 (-30% relative to 2008)**			

Source: Calculations based on tax data.

Within this group, the average annual income of the four to five lowest deciles is below or slightly above the poverty line[48]. The average total income (EUR 5,529) appears to be 41.4% of the average wage income, 40% of the average income from pensions and 85% of the average income from self-employment[49]. This is indicative of a massive concealment of income, as in the case of the self-employed, although in this case the crisis has truly led to

[48] Of course we should note that the incomes considered here on the basis of their sources do not add up to the total incomes of households. This is why for the two major income categories, employees and pensioners, we also discuss their incomes other than from their main source.

[49] Down from 70%, 91% and 121% respectively in 2008.

extensive income losses and business closures[50]. In both cases, the reduction appears to be very significant, and is also evidenced by the widespread closedowns of mini-shops and activities.

Table 4.4, with all of the above-mentioned problems, can be also read from another perspective. Its right section shows the households that maintained their business activity during the crisis. Their number has fallen by 30% (from 693,940 to 484,500), but households with the highest incomes from this source in 2012 are considerably better off. As we move towards higher deciles, the losses are smaller, and in the 10th decile there is actually an increase in households' declared incomes in 2012, up by 29.8%. This increase comes to 66.1% and 92.3% for the top 1% and 0.1%, respectively.

The conclusion to be drawn is that many households which have remained in business (or started a new business after 2008) saw their income rise or were forced to improve their tax compliance. In any event, in this income source too, there have been significant rerankings, at least at the upper parts of the income ladder. In 2008 there were 694 households (top 0.1%) with an average income of EUR 330,830 from business activities. By 2012, their number has fallen to 485 households (top 0.1%) and their average business income is EUR 227.8. From the households classified in the top 0.1% in 2008, only one part coincides with the corresponding 2012 group.

b) Rental income

Rental income[51] fell by 28.7% between 2008 and 2012 (Table 4.5). In this case, the most significant income decreases are recorded in the 10th decile and in the top 1% and 0.1% (-34% to -42.5%). In very low deciles there is an increase in household income from rents, which of course involves very small amounts.

c) Income from dividends and interest

The volume of dividend and interest income fell by 53.6% between 2008 and 2012. This category of income recorded the largest decrease for households that earned dividend and

[50] The number of households with income from business declined from 693.9 thousand in 2008 to 484.5 thousand in 2012. This decline reflects closure of businesses, retirements, or change of employment status (e.g. transition to dependent employment).

[51] Until 2012, rental income used to be added to other household income and taxed at the rates applicable from time to time, subject to tax-free thresholds. From 2013 onwards, it is taxed separately from the first euro, according to a two-tiered tax structure: income of up to EUR 12,000 is subject to a rate of 10%, while income of more than EUR 12,000 is subject to a rate of 33% (Articles 39 and 40, Law 4172/2013). In subsequent years the second tier was split into two, i.e. income of between EUR 12,001 and EUR 35,000 and of 35,000+, and the tax rates were specified at 35% and 45%, respectively.

interest income (-68.5%) in 2008, with the higher deciles facing very large income reductions of 70% to 82%. This has been the result of the collapse of business profitability during the crisis -and certainly until 2012- but also of the significant changes in deposits. Apart from a collapse in deposit rates, there was also a flight of deposits that were either transferred abroad or remained in cash in Greece resulting, in any event, in a significant loss of yields.

Table 4.5 Evolution of annual rental income of households (in EUR)

Deciles	Classification of households based on their 2008 declared rental income				Classification of households based on their 2012 declared rental income			
	Average rental income				Average rental income			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	192	376	351	82.7	584	496	180	-69.2
2nd	621	935	796	28.2	1,106	1,058	560	-49.4
3rd	1,276	1,638	1,296	1.6	1,804	1,831	1,107	-38.6
4th	2,115	2,341	1,832	-13.4	2,516	2,641	1,829	-27.3
5th	3,010	3,121	2,313	-23.2	3,039	3,295	2,650	-12.8
6th	3,916	3,843	2,818	-28.0	3,916	4,131	3,472	-11.3
7th	5,123	5,013	3,741	-27.0	4,725	5,165	4,444	-6.0
8th	7,065	6,893	5,075	-28.2	6,321	7,044	6,082	-3.8
9th	10,872	10,533	7,829	-28.0	9,777	10,798	9,219	-5.7
10th	31,231	28,707	20,606	-34.0	26,826	28,652	24,700	-7.9
Total	**6,541**	**6,339**	**4,665**	**-28.7**	**6,051**	**6,501**	**5,415**	**-10.5**
Top 1%	95,473	83,047	57,267	-40.0	78,946	82,264	70,772	-10.4
Top 0.1%	236,208	189,972	135,792	-42.5	204,427	205,886	172,052	-15.8
Number of households: **1,354,700**					**1,305,000 (-3.7% relative to 2008)**			

Source: Calculations based on tax data.

According to the data in Table 4.6, in 2008, about 70% of dividend and interest income is concentrated in the 10th highest decile. These households declare an average income of EUR 75,562 from dividends and interest. Turning to the higher income brackets, the top 1% of households with dividend and interest income (15,200 households country-wide) had an average income of EUR 426,192 in 2008, accounting for 40% of total interest and dividend income. Finally, in the top 0.1%, in which 1,520 households are classified, the declared income averaged EUR 2,394,395, with a share of 22% in the country-wide total of EUR 3.6 billion in 2008. In 2012, both the number of households and the level of dividends and interest rates at the top of the income ladder have fallen. In the 10th decile in 2012, on average, households receive EUR 32,894, with a share of 63.6% in the country-wide total, while in the top 0.1% income has declined to an average of EUR 162,177, corresponding to 31.3% of the total. In both the top 1% and the top 0.1%, interest and dividend income has on average shrunk to one

third of 2008 income. It should be noted that the top (0.1%) interest and dividend earners of 2012 see smaller losses on their portfolio (-21.6%) compared with households with lower value portfolios.

Table 4.6 Evolution of household annual income from dividends and interest (in EUR)

Deciles	Classification of households based on their 2008 declared dividend/interest income				Classification of households based on their 2012 declared dividend/interest income			
	Average income from dividends and interest				Average income from dividends and interest			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	108	658	994	818.5	2,005	1,028	52	-97.4
2nd	374	638	941	151.6	2,351	1,582	316	-86.6
3rd	848	1,179	1,112	31.2	2,419	1,414	613	-74.7
4th	1,288	1,523	1,042	-19.1	2,388	1,561	968	-59.5
5th	2,000	1,844	1,503	-24.8	2,795	1,744	1,328	-52.5
6th	3,064	2,365	1,662	-45.7	3,390	2,396	1,861	-45.1
7th	4,325	3,074	1,459	-66.3	4,186	2,635	2,747	-34.4
8th	6,976	4,832	2,929	-58.0	3,995	3,057	4,030	0.9
9th	12,289	6,525	3,724	-69.7	6,893	4,945	6,879	-0.2
10th	75,562	29,122	18,296	-75.8	46,706	28,411	32,894	-29.6
Total	**10,685**	**5,179**	**3,363**	**-68.5**	**7,713**	**4,879**	**5,169**	**-33.0**
Top 1%	426,192	146,859	92,546	-78.3	232,245	147,009	162,177	-30.2
Top 0.1%	2,394,395	574,496	428,358	-82.1	952,120	653,125	746,892	-21.6
Number of households: **1,520,840**					**1,459,080 (-4.1% relative to 2008)**			

Source: Calculations based on tax data.

Admittedly, this income category is likely to suffer from statistical weaknesses, as the declaration of interest and dividend income in tax returns was not mandatory before the crisis, and it is thus questionable to what extent data for pre-crisis years provide an accurate comparison. Underreporting issues aside, the factors mentioned above remain valid and have had a very negative impact on this income.

d) Agricultural income

The case of agricultural income is unique in that it is the only category to show an increase between 2008 and 2012. This is mainly due to the fact that agricultural incomes include agricultural subsidies, which are declared but are tax exempt under the Greek tax system. The number of beneficiaries of agricultural subsidies in tax data has risen over time, mainly in the context of the requirement to disclose the origin of funds before buying property, therefore an unknown but large part of the increase in agricultural incomes is basically of a statistical

nature. In fact, introducing the year 2010 into the comparison, we find that also these incomes decreased by 17.3% between 2010 and 2012.

Table 4.7 Evolution of household annual agricultural income and subsidies (in EUR)

Deciles	Classification of households based on their 2008 declared agricultural income and subsidies				Classification of households based on their 2012 declared agricultural income and subsidies			
	Average agricultural income and subsidies				Average agricultural income and subsidies			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	30	106	98	225.6	115	110	30	-73.8
2nd	78	213	203	161.5	230	180	82	-64.3
3rd	143	341	316	121.3	323	331	169	-47.6
4th	245	591	545	122.9	557	591	335	-39.9
5th	418	948	866	106.9	770	844	630	-18.1
6th	733	1,503	1,359	85.4	1,244	1,467	1,146	-7.9
7th	1,325	2,425	2,243	69.3	1,790	2,365	2,033	13.6
8th	2,531	4,379	3,825	51.1	3,146	4,354	3,738	18.8
9th	5,374	8,325	7,108	32.3	5,518	8,529	7,330	32.9
10th	17,315	22,423	17,559	1.4	14,565	25,512	22,874	57.0
Total	**2,819**	**4,125**	**3,412**	**21.0**	**2,826**	**4,428**	**3,837**	**35.8**
Top 1%	46,917	56,237	44,484	-5.2	34,191	64,516	62,974	84.2
Top 0.1%	101,248	107,857	94,752	-6.4	75,545	135,059	138,551	83.4
Number of households: **1,078,880**					**1,000,420 (-7.3% relative to 2008)**			

Source: Calculations based on tax data.

It should be noted that the households appearing to receive agricultural incomes in 2008 or 2012 are not the same as agricultural households or, more broadly, households for which agriculture is their main source of livelihood. In general, agricultural incomes have increased across all deciles, especially the lower ones. However, due to extensive tax evasion or preferential tax treatment, declared incomes are probably far from reality. Compared with other income categories, agricultural income appears to be the lowest of all, with the exception of rental income, and broadly equal to dividend/interest income.

A more detailed approach to agricultural income is provided in chapter 9, examining all relevant variables (subsidies, land ownership and rights, taxations).

4.1.3 Pension income

Pensions are income from transfers and, as such, are not classified as income from labour or capital. Based on aggregate country-wide tax data, pension income increased by 12.8% between 2008 and 2012, driven by several factors: (i) the number of pensioners increased sharply between 2008 and 2012 (above 400,000 persons); (ii) the pension cuts at the personal

level were, on a weighted average basis, smaller than the losses seen in most other sources of income, and definitely in labour income and capital income; (iii) pensions and salaries continued to rise until 2010, before the cuts started; and (iv) the multiple main and supplementary pensions awarded often more than offset the reduction in a particular type of pension.

Table 4.8 Evolution of household annual income from pensions (main and supplementary) (in EUR)

Deciles	Classification of households based on their 2008 declared pension income				Classification of households based on their 2012 declared pension income			
	Average income from pensions				Average income from pensions			
	2008	2010	2012	12/08 %	2008	2010	2012	12/08 %
1st	3,381	5.100	5.250	55.3	4,009	4,368	3,384	-15.6
2nd	5,463	6.317	6.328	15.8	5,326	5,723	5,678	6.6
3rd	6,867	7.739	7.756	12.9	6,333	6,876	7,075	11.7
4th	8,408	9.109	8.981	6.8	7,768	8,402	8,730	12.4
5th	10,259	10.809	10.445	1.8	9,153	10,080	10,717	17.1
6th	12,301	12.864	12.354	0.4	10,839	11,990	13,014	20.1
7th	14,984	15.387	14.654	-2.2	12,702	14,202	15,534	22.3
8th	19,069	19.304	17.923	-6.0	15,896	17,884	18,673	17.5
9th	25,420	25.114	22.307	-12.2	20,651	23,560	22,945	11.1
10th	40,594	38.669	32.177	-20.7	30,988	35,540	35,345	14.1
Total	**14,675**	**15.041**	**13.817**	**-5.8**	**12,363**	**13,859**	**14,103**	**14.1**
Top 1%	63,907	58.767	46.781	-26.8	42,597	54,030	53,990	26.7
Top 0.1%	89,868	79.978	59.941	-33.3	52,901	78,823	74,070	40.0
Number of households: **1,755,940**					**2,061,720 (+17.4% relative to 2008)**			

Source: Calculations based on tax data.

For a total population of 1,755,940 pensioner households[52], the average reduction in pension income between 2008 and 2012 was 5.8%. Comparing 2012 with 2010 instead of 2008, the decrease is 8.1% (see Table 4.8). This small percentage is surprising, especially when compared with the falls of between 28.7% and 68.5% in all sources of income other than agricultural one. It is also well known that, for a large number of pensioners, pensions were reduced by between 16% and 55%, depending on the pension provider and their level; still, the average reduction shown here is well below these percentages[53].

[52] These may include more than one pensioner each.

[53] Giannitsis (2016), p. 72 ff.

Taking a closer look at a decile breakdown, an increase in the six lowest deciles can be seen (ranging from very small to 55.3% for the lowest decile), while a significant decrease is only seen in the 9th decile and up. More specifically, as shown in Table 4.8, households receiving pensions in 2008, without taking into account households with new pensioners thereafter, suffer an average decrease of 5.8% in their pension income. This decrease is visible from the 7th decile up. In households receiving the highest pensions in the country in 2008 (the top 0.1%), the average annual pension income is reduced from EUR 89,900 to EUR 59,900. Four years later, in 2012, the number of pensioner households has risen to 2,061,720. In these households, on average, pension income appears to be higher by 14.1% than in 2008.

The explanation that can be given has many dimensions:

- Perhaps a second member of the household retires, adding to the household income from pensions increases, irrespective of whether the amount of each pension is reduced.
- When farmers (or other self-employed) start to receive pension from the Agriculture Pension Organisation (or other pension funds), they also start to declare this income, whereas previously the income they declared was zero or negligible.
- Many pensioners are entitled to a second (primary or auxiliary) pension after their main pension is approved[54]. In such cases, these pensions may have been curtailed, but the total pension income increases when the auxiliary pension or a second main pension is added. Thereby the reduction in overall pension income appears to be less than in each individual pension.

Regardless, the evolution of pension income, in comparison with GDP and other incomes, suggests significant changes in income distribution. Pensions corresponded to 10.7% of GDP in 2008 and 15% in 2012, before falling to 13.8% in 2014 (according to the above data)[55]. In fact, there is a very significant redistribution of income from work and capital to pensions, which during the crisis increased their share in total GDP, at the expense of all other key sources of income. Since pensions do not arise from work, business activity or previous investment in capital but are the result of income subtracted from labour and capital income, the above finding suggests that incomes from work and capital, in addition to the losses they

[54] According to statistics released through the press, 955,000 persons receive two pensions, 336,800 three pensions and 60,600 four pensions (main and auxiliary). See *Kathimerini*, 7 February 2016.

[55] The aggregate amount of pensions (not only as declared in tax returns) corresponded to 12.5% of GDP in 2008, 16% in 2012 and 16.4% in 2014. See Giannitsis (2016).

suffered as a result of the crisis, were further reduced through increased taxation because ot the increased deficits of the social security system.

4.2 Main findings

The above findings describe a complex and differentiated reality with regard to the effects of the crisis on incomes. The crisis has hit all income categories, with the exception of agricultural income; however, the latter warrants careful investigation as to what is actually the case, due to its special regime as well as to data imperfections. An approach to economic and social costs exclusively centred on the extent of income reductions in the various income categories would be inaccurate. Cost is a very important and complex concept involving many aspects that need to be examined in order to avoid over-simplifying interpretations[56].

Table 4.9 Total annual declared income from each source (in EUR millions)

	2008	2012	% change	2008-2012 Change
1. Wages and Salaries	47,817.8	34,736.5	-27.4	-13,081.3
2. Pensions	25,767.6	29,077.3	+12.8	3,309.7
3. Income from business activities	9,306.1	4,902.8	-47.3	-4,403.3
4. Income from self-employment	4,423.7	3,196.2	-27.7	-1,227.5
5. Income from agricultural activities and subsidies	3,041.4	3,838.3	+26.2	796.9
6. Income from dividends, earnings	16,250.7	7,542.5	-53.6	-8,708.2
7. Rents	8,861.2	7,066.3	-20.3	-1,794.9
8. Other incomes	5,320.4	3,121.7	-41.3	-2,198.7
9. Total income (1-8)	**120.788.9**	**93.481.6**	**-22.6**	**-27,307.3**
10. Income from capital (3+5+6+7)	37,459.4	23,350.0	-37.7	-14,109.4
Ratio	**2008**	**2012**	**Diff.**	
11. (1) / (10)	1.28	1.49	+0.21	
12. (1) / (4)	10.81	10.87	+0.06	
13. (1) / (4+10)	1.14	1.31	+0.16	

Source: Calculations based on tax data.

Before we move on to these issues, we can sum up some findings:

❖ A highly asymmetrical evolution of taxable incomes from labour and capital.

Wages and salaries fell by 27.4% in the period 2008-2012, while the corresponding fall in capital income was 37.7%. Thus, the ratio of wage/salary income to capital income increased

[56] A wider assessment of what "lower or higher cost" means and by whom it was borne, is provided in Chapter 13.

from 1.28 in 2008 to 1.49 in 2012. For 2013 we do not have tax data. However, as dependent employment income declined by 10.6% in 2013 relative to 2012 and GDP showed a smaller decline (6.1%) in the same period, the above trend may have weakened.

❖ Asymmetrical developments across sources of income, with different effects on the total family incomes of employees, pensioners, farmers, self-employed and entrepreneurs, respectively.

Comparing the evolution of incomes of all households by source of income between 2008 and 2012, the impact of the crisis seems to have been very heterogeneous. If we distinguish the sources of income into those that have recorded substantial or smaller reductions or increases, the following picture arises:

❖ **Income sources that recorded substantial reductions:**

1. Income from dividends and interest, down by 53.6% (from EUR 16.3 billion to EUR 7.5 billion);
2. Income from commercial/business activities, down by 47.3% (from EUR 9.3 billion to EUR 4.9 billion);
3. Other income (including income from securities, income from abroad, unemployment benefits and imputed income), down by 41.3% (from EUR 5.3 billion to EUR 3.1 billion).

❖ **Income sources that recorded relatively smaller reductions:**

1. Income from independent activities, down by 27.7% (from EUR 4.4 billion to EUR 3.2 billion);
2. Wages, salaries and other compensation of employees, down by 27.4% (from EUR 47.8 billion to EUR 34.7 billion);
3. Income from property, down by 20.3% (from EUR 8.9 billion to 7.1 billion)

❖ **Income sources that recorded increases:**

1. Agricultural income, including income support for farmers and compensation payments, increased by 26.2% (from EUR 3.0 billion to EUR 3.8 billion);
2. Income from pensions increased by 12.8% (from EUR 25.8 billion to EUR 29.1 billion).

The comparison of household income from wages/salaries and other sources shows that in 2008, despite the cuts, the average income from wages was much higher than the average income from any other source of income in all deciles, with the exception of pension income (Table 4.3) and dividend income in the highest (10th) decile (average income EUR 75,562). Limited changes were observed in respect of this leading position in 2012 relative to 2008, with pension income exceeding the average income from wages in the two lowest deciles (1st and 2nd). In 2012 the average income from wages was again higher than the average income from any other source of income in all deciles, except the incomes of the richest 1%[57] and 0.1% for some other income sources.

This finding touches on the core of many fundamental factors of imbalances in the Greek economy, such as issues of unequal tax treatment, tax evasion, pauperisation and over-taxation. Instead of cutting government expenditure, which had led to the fiscal crisis in the first place and should participate in the fiscal consolidation effort, the adjustment increasingly relied on additional taxation, without even taking serious steps to combat tax evasion and address cases of tax privileges and preferential treatment. The finding that household income from wages (and pensions) is in absolute terms higher than most other income sources, and this is so both for the lower and for the upper income brackets is difficult to accept as representing economic reality. We can only assume that this picture implies widespread tax evasion and avoidance, even during the crisis[58]. Of course, tax evasion exists in respect of wages too, but this happens to a comparatively lesser extent and mostly relates to income from labour in the informal sector.

Moreover, it should be taken into account that there is a large number of taxpayers who report themselves as independent (lawyers, engineers, etc.), but in fact are inactive, causing therefore the average income to appear lower than it actually is. In contrast, there are workers with depended employment who are forced by their employers to be paid as independent service providers and thus declare income from self-employment, although they are actually employees.

[57] For each source of income, 1% and 0.1% of the distribution (the richest groups) comprise the highest-income 1% and 0.1% of households. Based on total income, these groups number 52,250 and 5,250 households, respectively, throughout the country.

[58] One indication of this is that total declared income/GDP fell from 49.9% in 2008 to 48.2% in 2012, although the tax base was broadened.

❖ A fall in the number of households that earn income through the market and a corresponding increase in the number of households with unemployed, non-economically active or retired members.

Based on Table 2.1, households earning income from pensions (main and auxiliary) in 2012 rise by 17.4% in four years. In 2008, there are 1,755.9 thousand households with at least one member declaring income from pension. In 2012 this number increases to 2,061.7 thousand.

On the other hand, the number of households that earn income through the market decreases, with the numbers of households with at least one employee declined by 18.4%, with at least one member having income from business or independent activities by 30.2% and 24.3% respectively. As we will see below, many have moved to pensioner status. The less lucky moved to unemployment status. This development foreshadows a dramatic deterioration in Greece's already adverse demographic ageing indicators and dependency ratios.

The relative impact of the crisis on individual social groups can be estimated by calculating the loss of income from each income source cumulatively for all years between 2008 and 2012. Income from all sources declined between 2008 and 2012 by EUR 27.3 billion; nearly half of this decline (48% or EUR 13.1 billion) involved wage and salary income.

The cumulative loss of wage and salary income was 70% higher than the combined losses of income from business activities, self-employment and rental, which fell by a cumulative EUR 7.4 billion. The second largest loss (EUR 8.7 billion) concerned income taxed separately[59] (dividends and interest). By contrast, increases were recorded in aggregate incomes from pensions and agricultural activities. More detailed data on these developments are provided in Table 4.9.

❖ Income changes and upheavals of the income hierarchy.

The changes that occurred in all income categories and in total income resulted in strong upheavals in the households' position in the income hierarchy, which are not readily visible from the above tables. In any given decile, an average change may mask widely divergent developments within this decile. Thus, e.g. in Table 4.1, the average change (-14.8%) in the 5th decile does not mean that all households in that decile have seen their income fall at that

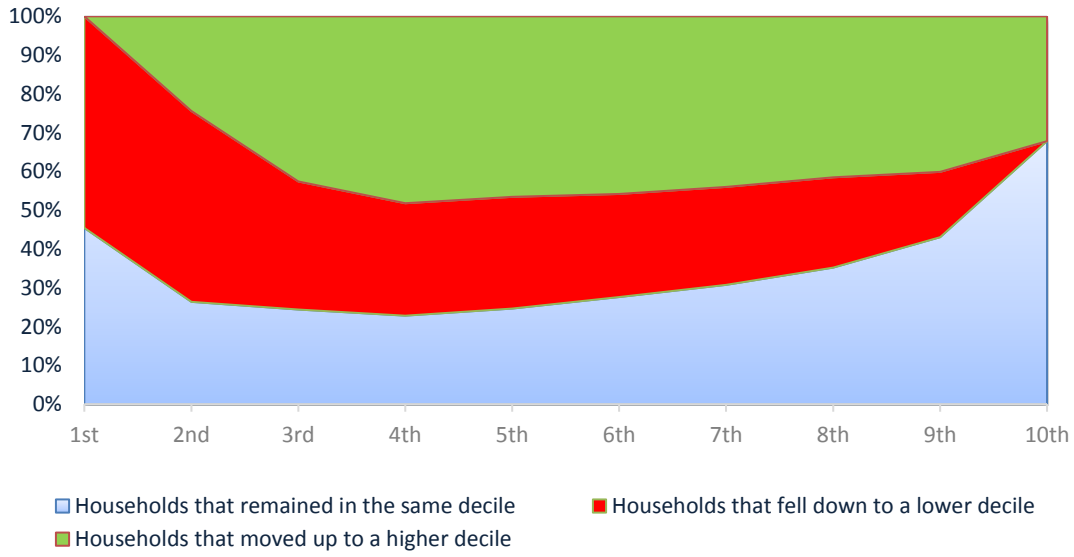
[59] It should be noted that in previous years taxpayers were not obliged to declare income from dividends and interest, given that such income was taxed at source. However, after the introduction of an extraordinary solidarity tax, calculated on the total income of taxpayers, the declaration of income from dividends and interest became mandatory.

rate; values close to average, far above average or even zero are quite possible within any decile. The same applies to any other value in any table and for any decile. Of course, the households that experienced strong negative or positive changes relative to the average for the relevant household group, moved to lower or higher deciles over time.

Looking at the household income hierarchies not on the basis of 2008 incomes but those of 2012 in comparison with 2008, we can often find that, unlike many conclusions on the evolution incomes from 2008 to 2012, the lower deciles of 2012 appear to have suffered a very substantial loss of income, and the higher deciles the opposite. This development is due to the fact that the low deciles of 2012 bring together households from all (low, medium and high) deciles of 2008, whose income has decreased sharply. The opposite is the case with the highest deciles of 2012.

Chart 4.1 reflects the income changes recorded in 2008-2012. On the horizontal axis, households are classified in deciles on the basis of 2012 income, from the poorest (1st) to the richest (10th), and the vertical axis shows the percentages of households that have moved or stayed in the same decile in which they were classified in 2008. It should be noted that the chart does not reflect changes within deciles (changes in income that do not entail cross-decile movement). The changes shown in the chart refer to relative positions on the income ladder. A household may be found in a higher position, although its income has declined (because the income of some other households has fallen significantly).

Chart 4.1 Movements of households across deciles in 2012 relative to 2008



Source: Calculations based on tax data.

According to Chart 4.1:

1. A number of households remained in 2012 in the same income position as in 2008. Probably their incomes dropped considerably, however, due to general pauperization, they maintained the same relative position. The first group retaining its relative position is the group of households classified in the richest (10th) decile, with 68% of them retaining their position. The second group concerns households of the poorest (1st) decile, of which 45% remained trapped in poverty and deprivation.

2. The same chart shows households which in 2012 are worse off, having moved down the income ladder. A large number of households fell to lower deciles in 2012. But the fall pervades across all the low and middle income strata. On the other hand, as we move to higher deciles, the number of households found to be worse off is decreasing.

3. Finally, a number of households climb the income ladder. These households are found in all deciles, and some of them moved to the highest decile in 2012. As mentioned earlier, moving to a higher decile does not always translate into higher incomes.

4. About 37% of households move up and 29% of households move down the income ladder.

CHAPTER 5

DEPENDENT LABOUR INCOME DURING THE CRISIS

5.1 Households with employees and their income changes

In most households, the total income comes from more than one source. As wages and wage developments are a major driver of total income and dependent labour has been hit substantially by unemployment, wage cuts and labour market deregulation, this chapter focuses on the evolution of the total income of households with employees.

Table 5.1 Total income of all households with employees, by income source (in EUR millions), and percentage changes

Deciles	Wages			Pensions			Agricultural income		
	2008	2012	% change	2008	2012	% change	2008	2012	% change
1st - 5th	10,290.7	7,325.5	-28.8	1,095.0	1,044.1	-4.6	417.6	442.3	5.9
6th - 7th	8,864.6	6,453.5	-27.2	511.7	412.3	-19.4	120.0	122.3	1.9
8th – 10th	28,662.6	20,957.5	-26.9	971.7	681.4	-29.9	115.5	109.8	-5.0
1%	3,051.7	2,368.0	-22.4	31.9	30.2	-5.3	1.2	2.1	73.9
0.1%	743.3	538.2	-27.6	4.1	4.3	5.4	0.1	0.0	-64.4
Total	47,817.8	34,736.5	-27.4	2,578.4	2,137.8	-17.1	653.1	674.4	3.3

	Business activities			Self-employment			Rental income		
	2008	2012	% change	2008	2012	% change	2008	2012	% change
1st - 5th	1,440.0	765.2	-46.9	546.0	437.5	-19.9	866.2	714.3	-17.5
6th - 7th	642.3	300.1	-53.3	379.5	308.4	-18.7	523.9	381.1	-27.3
8th – 10th	664.1	319.1	-52.0	1,168.3	673.5	-42.3	1,306.0	895.1	-31.5
1%	12.1	10.4	-13.9	62.7	31.0	-50.5	95.1	68.8	-27.7
0.1%	0.9	0.9	1.3	4.3	3.1	-29.0	19.1	17.4	-8.7
Total	2,746.4	1,384.4	-49.6	2,093.8	1,419.4	-32.2	2,696.1	1,990.4	-26.2

	Dividends – Interest			Other income		Total income		
	2008	2012	% change	2008	2012	2008	2012	% change
1st - 5th	1,896.4	983.9	-48.1	15.5	573.8	16,567.3	12,286.6	-25.8
6th - 7th	1,445.3	531.9	-63.2	2.9	82.4	12,490.2	8,591.9	-31.2
8th – 10th	3,613.5	1,625.0	-55.0	20.1	120.9	36,521.7	25,382.4	-30.5
1%	652.5	455.8	-30.1	3.5	12.7	3,910.6	2,979.1	-23.8
0.1%	357.4	321.1	-10.2	1.2	4.3	1,130.3	889.3	-21.3
Total	6,955.1	3,140.7	-54.8	38.5	777.1	65,579.3	46,260.8	-29.5

Source: Calculations based on tax data.

The term "households with employees" or “employee households” refers to households that in 2008 and 2012 had at least one member in a dependent employment relationship, irrespective of whether they had income also from other sources or not.

Table 5.2 Structure and changes of incomes of employees

	Breakdown of income in 2012 (in EUR billions)	% of total income of households	Contribution to the 2012/2008 reduction (%)
Wages	34.74	75.1 (72.9)*	+67.7
Pensions	2.14	4.6 (3.9)	+2.3
Agricultural income	0.67	1.5 (1.0)	-0.1
Business activities	1.38	3.0 (4.2)	+7.1
Self-employment	1.42	3.1 (3.2)	+3.5
Rental income:	1.99	4.3 (4.1)	+3.7
Dividends-Interest	3.14	6.8 (10.6)	+19.7
Other income	0.78	1.7 (0.1)	-3.8
Reduction from 2008	-19.32	100.0 (100.0)	100.0

*Within parentheses, the respective percentages for 2008.

From the data in Tables 5.1 and 5.2, some key findings can be derived:

- The share of wage/salary income in total income of employee households is on average 72.9% in 2008, rising moderately to 75.1% in 2012.
- The highest shares of wage/salary income in total income are observed for the upper deciles (8th-10th), followed by the intermediate deciles (6th-7th). In both of these groups, these shares increased during the crisis period, while those of the lower deciles declined.
- After wages, the most important sources of income are interest-dividends, pensions and income from commercial/business activities, followed by rental and self-employment income and, for 2012, also unemployment benefits (classified in “other income”).
- The fall in the aggregate income of these households stems, in order of importance, from the decrease in income from wages, interest-dividends and commercial/business activities. Pensions exert an upward effect on total income and so do unemployment benefits. A smaller negative impact stems from “other sources” of income.

- Table 5.1 shows that the percentage decline in total income is smaller for the top 1% and 0.1% than that for the three groups of deciles.

Disaggregated at household level (Table 5.3), data suggest that the average income per household with employees from all sources was EUR 26,437 in 2008, falling to EUR 22,863 in 2012 (-13.5%). The strongest falls are recorded in the 1st and 2nd deciles (-26.2% and -22.5%), followed by the middle part of the income distribution (6th-8th deciles, earning between EUR 19 thousand to EUR 28 thousand in 2012) in which income reduction ranged between 16.0% and 19.6%. In contrast, the incomes of the top 1% remained virtually unchanged (-1.7%), while those of the top 0.1% rose by a substantial 23.7% between 2010 and 2012.

Table 5.3 Average total income of households with employee members (in EUR)

Deciles	2008	2009	2010	2011	2012	2012/2008 % change	2012/2010 % change
1st	10,024	9,873	11,180	9,096	8,256	-17.6	-26.2
2nd	11,022	11,924	12,049	10,302	9,343	-15.2	-22.5
3rd	12,860	13,547	14,505	13,405	12,285	-4.5	-15.3
4th	14,954	15,608	16,239	15,041	14,085	-5.8	-13.3
5th	17,932	19,166	19,587	18,041	16,754	-6.6	-14.5
6th	21,940	22,859	22,875	21,065	19,225	-12.4	-16.0
7th	28,414	28,459	28,917	25,711	23,238	-18.2	-19.6
8th	33,974	35,761	33,282	29,783	28,001	-17.6	-15.9
9th	41,740	43,591	40,970	37,391	34,849	-16.5	-14.9
10th	71,516	72,631	70,905	64,546	62,601	-12.5	-11.7
Total	26,437	27,342	27,051	24,439	22,863	-13.5	-15.5
Top 1%	157,685	148,242	149,855	140,414	147,334	-6.6	-1.7
Top 0.1%	455,758	349,343	355,796	350,160	440,242	-3.4	23.7

Note: Each column shows the decile classification of households with employee members based on their wage income.
Source: Calculations based on tax data.

The comparatively heavier losses suffered by very low incomes, primarily consisting of wages, probably does not so much reflect the wage cuts introduced, which for low wages were rather small, but rather the transition of a significant number of household members to unemployment or to lower-paid temporary or part-time work.

5.2 The uneven evolution of employee incomes

The term “pauperization of population” usually creates the impression that all individuals (or households) move one more steps down the income ladder and have less and less income as the

years go by. If this is true for all of them, then the relative position of each person or household will remain exactly the same; the number of the poor will remain the same, and so will the size of income inequality. The balance is not disturbed, with the poor remaining poor and the rich remaining rich, while income distances remain unchanged. This is the case if the median individual (the one in the middle of the income distribution) shifts downward, without overtaking or being overtaken by another individual. This picture could be seen as a fair distribution of the cost of the crisis. Theoretically, all households are in solidarity and share the cost in equal measure: an individual at the top of the income ladder faces a wage/salary reduction of say 20%, which may translate into a few thousand euro, and an individual in lower sections of the ladder will also face a corresponding reduction of 20%, which may involve a few euros if that individual's wage is low or extremely low. Of course, for the very poor employee these few euros lost represent a heavier sacrifice (loss of utility) than the much more euro for the very highly paid employee.

In the analysis that follows, the reference unit is the individual (the employee, in particular) rather than the household as in other chapters of this book. Examining the wage/salary income at household level, the large deviations may be mitigated when, for example, a household member receives much higher wages than another wage earner in the household. In addition, a decline in household wage/salary income may be due to a wage cut, job loss or retirement in respect of one or more employee members of the household. On the other hand, an increase in household wage/salary income may also be due to the fact that a previously unemployed member has found a job. The analysis in this and other chapters of this book seem to confirm the important role of family-pooled annual earnings in reducing inequalities at the individual level[60].

It is therefore important to examine wage/salary income as it developed in the first five years of the crisis for which statistical data are available. The changes to be observed will be solely due to fluctuations in wages, since we have chosen to examine exclusively those who work as employees employed in all five years (2008-2012). This excludes new hirings and firings, i.e. individuals who in any intermediate year of that period found a job (thus likely to be less paid than older recruits) or started the period as employees but became unemployed thereafter. Rather, the focus is on the bulk of employees in the country who retained their jobs, despite the difficult and adverse

[60] Vacas-Soriano and Fernandez-Macias (2017), p. 33 ff.

economic conditions. In households with two members who declare income from dependent employment, each member is considered separately.

A potential criticism of this approach is that it does not capture cases of spurious self-employment or bonuses to highly paid staff that do not appear as salary income. The inclusion of the former is difficult, as the tax data do not allow to distinguish them from true self-employment.

On the basis of the tax data used, the individuals who are employees in all five years are 1,951,165. These are classified from the lowest paid to the highest paid, according to the wages/salaries they receive in 2008 and in 2012, respectively. These two classifications are nothing but two different income ladders.

For simplification reasons, we have divided employees into three broad groups:

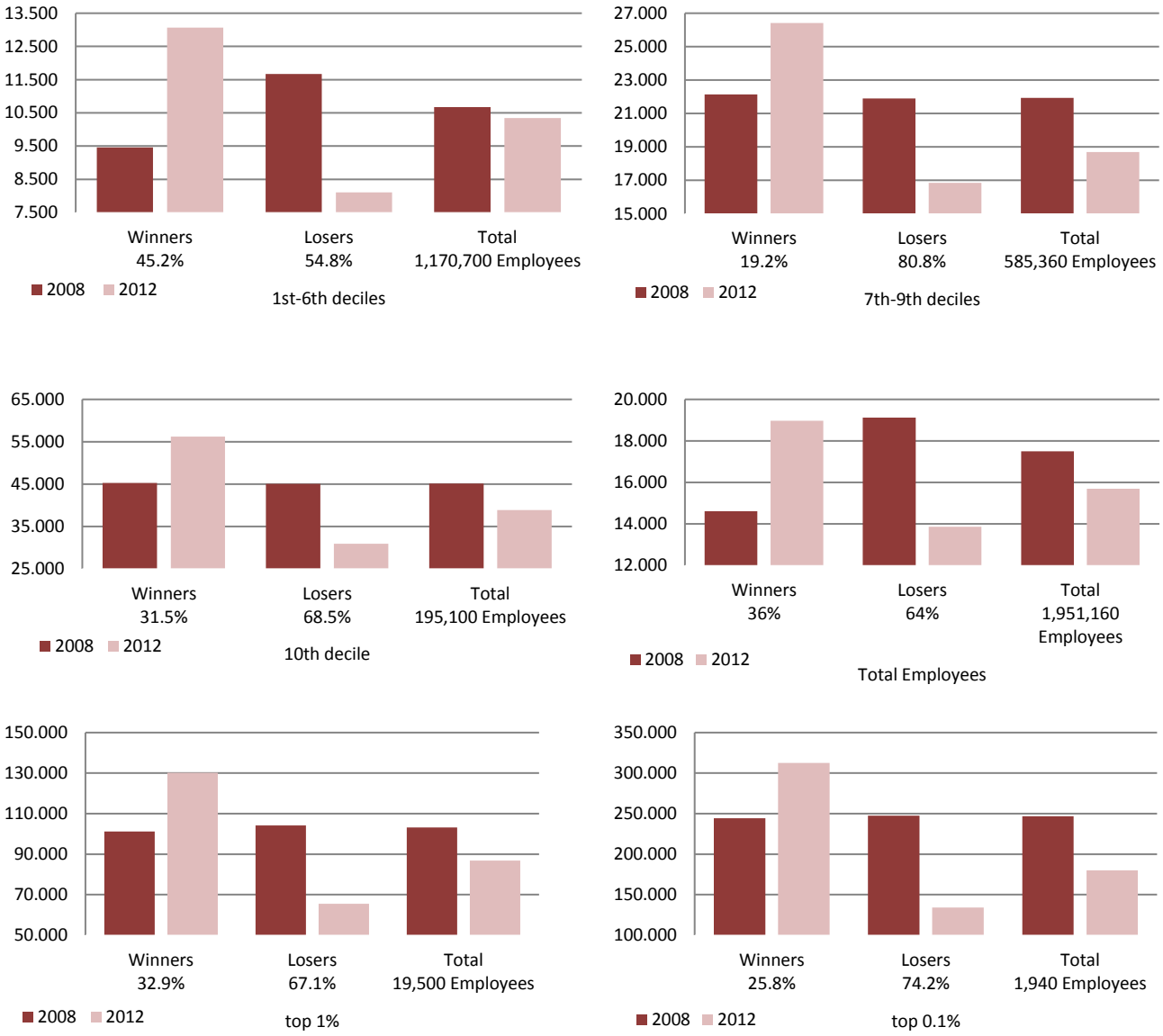
- The first group comprises low-paid employees. This group occupies the lower 60% of the ladder and is the larger in number, with a total of 1,170,700 employees.
- The second group occupies the next 30% up the ladder, with a total of 585,360 employees. We could assume that this group is the middle class of employees, but such a characterisation would probably be quite risky.
- The third group, the highest paid 10% of employees, occupies the upper rungs of the income ladder. Within this group, it is very interesting to look at the top-paid employees. To this end, we can focus on the top 1% (19,500 employees) or, alternatively and more precisely, on the top 0.1% (1,940 employees country-wide).

The different panels of Chart 5.1 reflect the evolution of the average wage/salary of the groups mentioned above, each time identifying the employees who are winners or losers, depending on whether their wage/salary have increased or decreased since 2008. According to these data, we observe that, while every group includes winners and losers, the differences are considerably smaller on aggregate for any given group or the population as a whole. More specifically:

- In the low-paid group, the average wage/salary has not changed significantly, falling from slightly above EUR 10,500 in 2008 to slightly below EUR 10,500 in 2012. In between (2010), it had exceeded EUR 11,500 euro, before falling back to close to its 2008 level. However, this development between 2008 and 2012 does not concern all the low-paid employees. For 45.2% of them, wages/salaries increased on average from EUR 9,500 to EUR 13,000, while 54.8% saw their wages/salaries decrease from EUR 11,500 to about

EUR 8,000. The pattern emerging from these data is that, within the low-paid group, employees who started as lower paid were better off at the end of the period than those who started as higher paid. For the group as a whole, however, these differences are less pronounced.

Charts 5.1 The wage level in 2008 and the new wage level in 2012 for groups of employees (in EUR)



Source: Calculations based on tax data.

- In the second group (7th to 9th deciles), the picture is totally different. Most importantly, the losers are much more than the winners (80.8% and 19.2%, respectively). Both start from the same average wage/salary (EUR 21,000), but the winners will end up with an average wage/salary of more than EUR 26,000 in 2012, while the losers with an average

wage/salary of just below EUR 17,000. Due to the fact that the losers sub-group represent a higher share, the average wage/salary for the “middle class” of employees as a whole has fallen significantly in 2012 compared with 2008.

- ❖ It could be expected that the higher-paid group would be the one to have been hit the hardest by the economic crisis. This holds true, but only for 68.5% of this group, who saw their average wage/salary fall by EUR 15,000 (from EUR 45,000 in 2008 to EUR 30,000 in 2012). By contrast, for 31.5% of high-paid employees, the average wage/salary increased by an average of EUR 10,000 over the same period (from EUR 45,000 in 2008 to above EUR 55,000 in 2012). The picture does not change significantly when examining the highest paid: within this subgroup, for one in three in the top 1% and one in four in the top 0.1%, the crisis did not slow down the continuous upward trend of their wages/salaries.

In conclusion, the wage/salary cuts that began at the start of the crisis were indeed of a redistributive character, as the largest cuts concerned high wages/salaries. But that does not apply to all cases. For significant groups of employees, the opposite is the case. Some of them had substantial wage/salary increases, at a time when unemployment rates in the country were over 27%. Chart 5.1 provides a snapshot of the income ladder in 2008: it depicts the position of employees before the crisis and tells us that some have descended and some others have climbed few or more rungs. Some of them have moved to another group. Some "middle-income" employees have been delegated to the low-paid group and some, few in number, have been elevated to the high-paid group. There is mobility everywhere. The new income ladder, based on wages/salaries as they stood in 2012, is presented in the panels of Chart 5.2.

According to Chart 5.2, some key conclusions can be drawn:

- The low-income class of 2012 sees on average its wage/salary fall markedly, from about EUR 12,000 in 2008 to less than EUR 9,500 in 2012. The majority of this group (790,000 employees) receive an average annual wage/salary of just over EUR 8,500 in 2012, down from EUR 14,000 in 2008; these are the losers of 2012 and have every reason to be exasperated. However, included in the same group are also low-paid employees whose wages/salaries have increased, resulting in a narrowing of intra-group pay gaps.

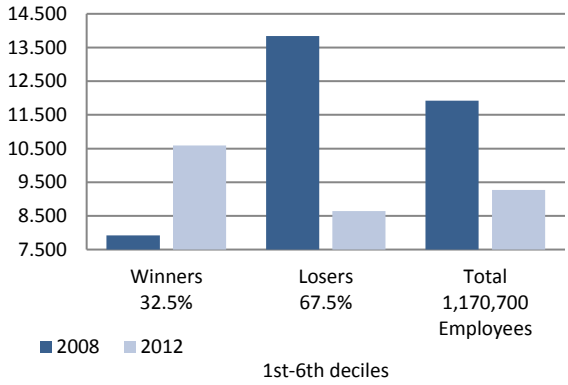
- In the new “middle class”, the average wage/salary is slightly above EUR 19,000 in 2012, down by EUR 3,000 relative to 2008. The winners/losers ratio is the same (35%/65%) as for the low-income employees.
- The picture changes when we turn to the high-paid employees. Here the winners/losers ratio is much higher (59%/41%), driving the wage/salary increase between 2008 and 2012 observed for this group as a whole. The higher we move up the income ladder, the winners are more and more. In fact, the highest paid employees in Greece have an average salary of slightly less than EUR 240,000 in 2012, up from about EUR 200,000 in 2008; of these, 76% saw their wage/salary increase by EUR 100,000.

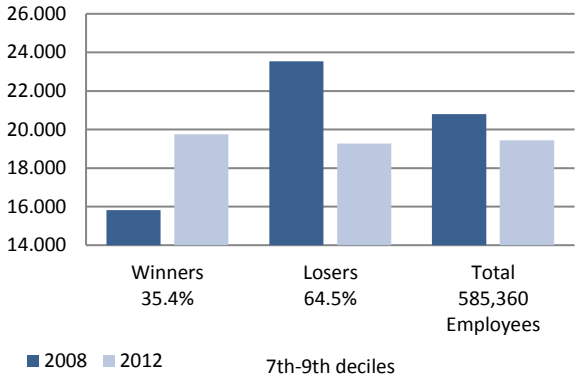
The results would at first glance seem surprising. In the top 1% and 0.1%, wages/salaries appear to have increased. On average, the same employees with very high salaries/wages in 2012 had very high salaries/wages in 2008 too, and employees with very high wages in 2008 have on average high wages in 2012. However, major reclassifications have occurred, which are masked by averages. There are employees who are found to receive extremely higher wages in 2012 than in previous years, and vice versa. For some of them, for example highly paid public sector employees, income policy imposed drastic pay cuts, which apart from monthly reductions also entailed the abolition of the so-called 13th and 14th salaries (Christmas, Easter and holiday bonuses). On the other hand, there were highly paid employees (either in the private or in the broader public sector) who were not subject to a cut or abolition of these bonuses. The crisis, therefore, changed even the relative position of employees within the same income group. Some moved up and others down the income ladder, and certainly moving down to the low deciles has been the most painful change.

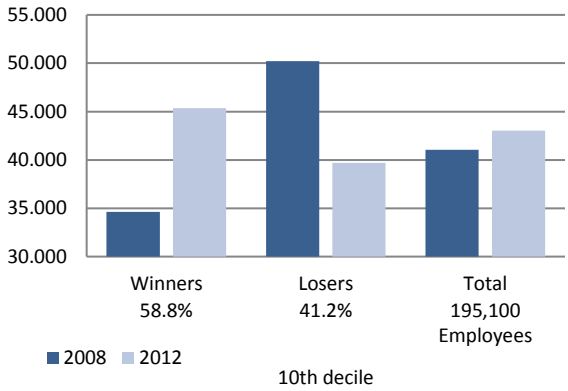
An investigation of wage developments during the years of the crisis highlights certain forms of discrimination, e.g. against private sector employees compared with those working in the public sector. In other chapters of this book, we attempt to outline the profile of individuals who fall one or several steps down the income ladder and those who move up.

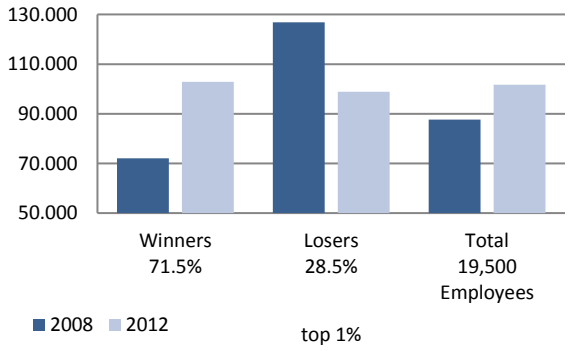
Further, during the crisis period strong conflicts of interests and power struggles, led to divergent and unfair developments not only across groups but also, and most importantly, within each group, at the expense of the weaker social strata.

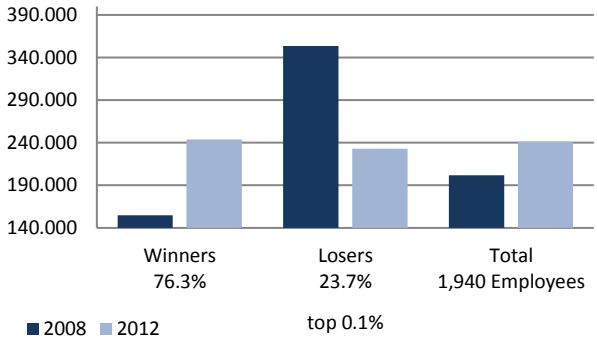
Charts 5.2 The wage level in 2012 and the pre-crisis wage level for groups of employees (in EUR).











Source: Calculations based on tax data.

5.3 The diverging patterns of labour and pension income

Looking at the evolution of wage and pension incomes at an aggregate level for the whole economy in the period 2008-2012, the former decreased by 27.4% and the latter increased by 12.8% (Table 4.9). The juxtaposition of these two opposite trends highlights two types of discrimination:

- an asymmetrical treatment of employees in the private versus the public sector; and
- the introduction or maintenance of incentives for a mass exodus of workforce to retirement.

Behind this policy was an effort to cushion the public sector from the most adverse effects of the crisis, even if this implied that the private sector would be called on to bear the brunt of the fiscal adjustment. Thus, the private sector shouldered a heavy burden as a result of several cumulative and compounding predicaments: unemployment (dependent and independent jobs), wage cuts, business closures, a collapse of all types of income, new forms of inequality, a plunge of thousands of individuals and households into poverty or of poor households into deeper poverty, loss of job security with an increasing use of part-time or temporary work arrangements, payroll and other arrears outstanding for months and the dismantling of labour relations and labour protection.

In the public sector, the most important adverse measures were the successive cuts in the earnings of employees, non-renewal of temporary employment contracts (e.g. internships), several months' delays in the award of pension to new retirees, a drastic curtailment of pensions exceeding EUR 1,000-1,200. In terms of wages, cuts in the public sector were smaller than in the non-banking private sector (a cumulative 13.2% vs. 23.3%, respectively, for the period 2009-2013)[61], except for employees in public utilities (-32.9%). Furthermore, employees in the public sector did not experience layoffs or the devastating effects on the production system from the closure of firms. As a supplement to that policy, especially in the context of the 2010 pension law, thousands of employees (mostly, but not exclusively, civil servants) covered by public insurance schemes continued to benefit or even were encouraged to take early retirement, having the right

[61] Data from the Bank of Greece, Annual Report 2015. The figure for the public sector refers to outlays for wages and salaries per employee, while for the other sectors it refers to average gross nominal earnings. The corresponding decrease for salaries in the banking sector was 19.4%.

to pay for "notional" years, thus avoiding the painful experience of unemployment and income collapse that hit about one million private sector employees between 2009 and 2013.

Effectively, pension income substituted, to a large extent, for labour income, with the result that a much lower decline was seen in the sum of pension and labour income. The two combined fell from EUR 73.6 billion in 2008 to EUR 58 billion in 2016[62], or by 21.1%, compared with declines of 27.4% in labour income for 2008-2012 only and of 38.6% in total declared income during the same period.

Besides the very different wage cuts imposed on employees in the public and the private sector, additional differences hit employees in the private sector based on age. According to data from the new Pension Authority (Single Social Security Fund -EFKA)[63], different age groups of employees experienced different wage/salary reductions between 2009 and 2016, as follows:

- ages 15-24: -42.5%;
- ages 25-34: -34.0%;
- ages 35-54: -25.0%;
- ages 55 and over: -18.1%

Overall, these changes led to two interrelated effects:

- ✓ a mass shift of employees in the public and private sectors out of the labour market into retirement, often in the form of early retirement; and
- ✓ a significant divergence between wages and pensions.

The unequal treatment of employees in the private versus those in the public sector is not only manifest in the wide differences in the size of wage cuts imposed on each sector; it is also linked with three additional elements: (a) the different starting levels of wages in each of the two sectors, as public sector employees typically receive significantly higher wages/salaries; (b) the reversal of wage cuts for large segments of public sector employees; and (c) court decisions that also reversed salary cuts.

(a) The unequal starting levels for employees in the public and private sector

[62] Tax data published in 2017. There is no distinction between pension and labour income, thus a more detailed comparison with our figures is not possible.

[63] Published in the Athens daily *Kathimerini*, 30 June 2017.

The uneven salary cuts in the public and private sectors during the crisis were imposed on wages that were already unequal across the two sectors. Research on the public and private sector pay gap has shown that Greece has one of the largest pay gaps in favour of the public sector[64], or even the largest[65], and the wage differential being estimated at above 35% or even higher, the largest part of which cannot be explained by employees' characteristics[66]. Given that in the 2009-2013 period the average reduction in wages was 19% in the business sector and 8% in the public sector, the gap between the two widened from 35%[67] to more than 55%.

(b) Non-implementation of wage cuts in the public sector

Although legislation on wage cuts was meant to apply to almost the entire public sector and public enterprises, in practice different rules were applied in a number of public sector companies or organisations, in which the legislated cuts were simply not implemented. In addition, within the narrow public sector (central government), an estimated number of about 66 thousand ministry employees were initially subject to cuts, which were later reversed by refunds of up to EUR 1,000 per month dubbed as "personal pay difference". This amount represented a significant rise as a percentage of their new, lower salaries. In addition, other measures were implemented which increased the total salary of public sector employees.

(c) Court interventions and inequalities

An additional, equally important, disparity arises from the fact that Supreme Court rulings in 2014 or following years cancelled the wage cuts for large segments of public sector employees (judiciary, military, law enforcement, university teachers, medical staff), restoring their salaries to their previous levels. This further exacerbated the already existing inequality. Whereas a GDP contraction of about 25% would necessitate a fair allocation of the costs among the citizens, these court rulings defied this common sense rule and instead developed strong new inequalities. In fact, given that they favour certain highly privileged groups of employees, they represent the exact opposite of what solidarity and fair burden-sharing are all about. The effects of this reversal

[64] De Castro, Salto and Steiner (2013), Depalo, Giordano and Papapetrou (2014), Christofides and Michael (2013), Christopoulou and Monastiriotis (2014).

[65] Christofides and Michael (2013).

[66] Depalo, Giordano and Papapetrou (2013).

[67] Assuming this to be a reasonably accurate estimate.

is not reflected in the figures presented here, as they became visible starting from the incomes of 2013, but still cannot be ignored.

CHAPTER 6

The significant contribution of women to household income

6.1 The data

The main question we are trying to answer in this chapter is whether women's lower, on average, wages, as well as their greater labour market flexibility in the past (e.g. higher incidence of part-time work relative to men) have helped them to maintain their jobs to a greater extent than was the case with their male counterparts.

From the tax data base, we have selected all the couples in which both members work in depended employment. We follow them over time and see how their incomes evolve and how their working lives change.

A methodological problem to be solved concerns the reference year for selecting the above couples. If 2008 is chosen, couples both members of which were hired after 2008 would be excluded. These couples should not be omitted from the scope of our analysis. If 2012 is chosen, then couples both members of which became unemployed due to the crisis or retired would be excluded. On the other hand, if we focus on those couples both members of which have maintained their jobs throughout the period reviewed (2008-2012), we would exclude the previous two categories.

Consequently, all three distinct groups of couples have to be monitored:

- For the first group of couples, the reference year is 2008, i.e. both the husband and wife must have received income from dependent employment in 2008. After 2008, in some couples, for either of the spouses the sources of income have changed or wage/salary income is no longer declared. In the latter case, we assume that the individuals in question have retired (as they

now declare pension income) or lost their jobs (as they cease to declare wage income) or are in a transitional state (they retain their employment, possibly accepting informal pay).

- For the second group of couples, the reference year is the final year (2012) of the period under review. Again, we select all couples on the basis of the criterion that both members receive wage income in 2012. We examine their working lives in previous years and their incomes before the financial crisis broke out. This group of couples is different from the previous group in that it comprises couples whose members may have no wage income in 2008, but found a job thereafter. Moreover, couples whose members have become unemployed or pensioners are excluded from the second group, as can also have happened with some couples in the first group.

- The third group comprises those couples where both members receive income from independent employment in all the years of the period (2008-2012). Households in the third group are included in the first or second groups.

6.2 Income losses at an aggregate level

As seen in Table 6.1, prior to the crisis (in 2008), households in which both members were employees were 520.9 thousand in the country as a whole, with an average annual total income of EUR 41.9 thousand. In the poorest couples (1st decile), the average annual income did not exceed EUR 12.2 thousand, while in households with the highest total incomes (10th decile), the average annual income was EUR 111.000, 9.1 times higher than for the first decile. In the 10th decile, the dispersion of household incomes is very high, with strong differences observed within the decile. For example, the households in the top 1% (5.2 thousand households) had an average annual income of EUR 284.2 thousand in 2008. Further, even within this richest centile, income dispersion remains high. Among these richest households, the top 0.1% (the richest 520 households) had an average annual total income of over EUR 980,000 in 2008.

Looking at these same couples four years later (i.e. in 2012), their average total income has fallen by 22.4%, without any major differences across deciles, with the exception of the very rich households (10th decile, top 1% and top 0.1%) where the income decrease is significantly higher than for the total population (29.8%, 43.3% and 43.1%, respectively).

The reduction in total income is due to many factors. In most couples, wages were curtailed, with some of them also being subject to the abolition of the 13th and 14th salaries. In some other households, the husband or the wife or both moved to pensioner status, entailing lower income. Finally, there are some households that have been hit by the crisis even worse. This refers to cases where the husband, the wife or both have lost their jobs, with their wage income reduced to zero.

The conclusion to be drawn from the above analysis is that the economic crisis, in addition to its impact on the income levels of employees, has also had a redistributive effect, since the economically stronger couples were hit the hardest. However, the above picture changes drastically if we use as reference year, instead of the first year (2008) of the period reviewed, the final year (2012).

In the first section of Table 6.1 we started our analysis by selecting couples in which both members work as employees in 2008. In the second section of the same table we select couples in which both members work as employees in 2012. The couples are now 421.4 thousand, 100,000 less than in 2008. This lower number of couples is explained by the fact that some households have members that either lost their jobs or retired and are therefore by definition excluded from the group of households with both members working as employees in 2012. These households are again recorded on the basis of their 2012 incomes, and poor households in 2012 again occupy the first decile, while the richest are found in the upper places.

We observe that the poor couples of 2012 have lost 28.7% of the total income they had in the past (2008). By contrast, the richest households of 2012, i.e. those classified in the 10th decile, see their incomes decrease by only 6.7%. In the total population of this group, the average income drops by 7%. However, in rich and extremely rich households (top 1% and 0.1%), incomes have decreased by 10.1% and 26.3%, respectively. Comparing the income losses across poor and rich couples, significant differences can be observed. The poor couples of 2012 have suffered greater losses than the poor couples of 2008, while the opposite is the case with the rich couples. In the first section of the table, the income losses are due to wage cuts, layoffs and retirements. Within each decile, some couples have faced large income reductions, but averages reduce the size of the losses because there are couples whose incomes are rising over the same period. In the second section of the table, the income losses are solely due to wage cuts, since, as mentioned earlier, couples with unemployed members are excluded. But why do the losses now appear larger in the poor and smaller in rich couples? The answer is that the new lower deciles now

concentrate all those couples from higher deciles that have seen the highest income losses, as shown on the left-hand section of the table.

Table 6.1 also shows the income changes for couples that retain their jobs throughout the period (c and d). The changes observed are due solely to changes in wages. The decrease in income for the 300.7 thousand households falling within this group is 12.2%. With 2008 as a reference year, there is a rather fair distribution of the burden of the crisis. However, when the reference year is 2012, after the couples that have experienced the largest income losses have moved to the lower deciles, the picture changes dramatically. The couples classified in the lower deciles have lost almost one third of their 2008 incomes. In contrast, the rich couples of 2012 (top 0.1%) have increased their income by one third.

Table 6.1 Evolution of average annual income of couples working as employees (in EUR)

	Average income of households in EUR		
	2008	2012	% change
a. Both members of the couple work as employees in 2008 (520,940 couples)			
1st decile (the poorest)	12,239	9,958	-18.6
10th decile (the richest)	110,960	77,909	-29.8
Total	**41,940**	**32,542**	**-22.4**
Top 1%	284,202	161,118	-43.3
Top 0.1%	980,081	557,254	-43.1
b. Both members of the couple work as employees in 2012 (421,400 couples)			
1st decile (the poorest)	13,722	9,782	**-28.7**
10th decile (the richest)	100,737	94,005	-6.7
Total	**38,512**	**35,813**	**-7.0**
Top 1%	258,781	232,699	**-10.1**
Top 0.1%	1,128,028	831,758	**-26.3**
c. Both members of the couple work as employees throughout the period (300,680 couples)-using 2008 as the starting point			
1st decile (the poorest)	14,182	14,852	**4.7**
10th decile (the richest)	108,111	90,147	**-16.6**
Total	**43,858**	**38,507**	**-12.2**
Top 1%	263,625	205,974	**-21.9**
Top 0.1%	903,656	771,555	**-14.6**
d. Both members of the couple work as employees throughout the period (300,680 couples)- using 2012 as the starting point			
1st decile (the poorest)	17,920	11,741	**-34.5**
10th decile (the richest)	99,489	97,425	**-2.1**
Total	**43,858**	**38,507**	**-12.2**
Top 1%	216,043	237,675	**10.0**
Top 0.1%	662,155	887,439	**34.0**

Source: Calculations based on tax data.

Although in the above table, three fourths of the couples remain the same in the three different versions, the results are significantly different. On average, in couples in which both spouses have maintained their jobs, the income reduction is considerably smaller. The poor couples of 2008, insofar as their members did not lose their jobs, also record the smaller losses. Some couples with significant reductions in their income fell down to low deciles in 2012 (new poverty). The poor employee couples of 2012 include couples previously belonging to the middle-income class.

There are also significant shifts within the subgroup of rich couples. Those in the top 1% move to the top 0.1%, pushing the "old" rich couples in the opposite direction, lower down. In the turmoil of the economic crisis, some of the "new" rich couples -but less rich relative to 2008- record income gains of 34% when, on the other hand, some other couples (disproportionately more in number) record losses of the order of 34.5% and are violently pushed below the poverty line.

In sum, we observe that:

* Those couples that were not hit by unemployment during the crisis or did not retire, record small average income losses (part b of Table 6.1).
* In 2012, however, a new generation of poor couples emerges. These couples have suffered considerable losses, with the result that in 2012 they have fallen down from the higher income brackets of previous years to the bottom of the income distribution (part b of the table).
* The couples classified in the pre-crisis period as rich and all the more so the extremely rich have suffered large losses of their total income, compared with lower-income couples (part a of the table).
* A new group of couples is found at the top of the income scale in 2012, having increased their incomes relative to the past. These very rich and extremely rich couples have overtaken the "old" rich couples of the pre-crisis period (part d).

6.3 Wage and salary income losses

In this chapter, we decompose dependent employment income into the parts contributed by the husband and the wife, respectively. Table 6.2 illustrates the contribution of male and female wage income to the total income of the couple. In 2008, on average for all couples, the husband's wage

represents half (50.2%) of the total income of the couple, and the wife's 34.9%, while the remaining 15% relates to income from other sources.

The wages of men in the 10th decile in 2008 are 7.5 times higher than the wages of men in the 1st decile. On the other hand, women in the 10th decile are paid 6.1 times more than women in the 1st decile. The wage inequality recorded in 2008 is higher among men than among women.

Table 6.2 Evolution of wages for couple members and shares in total household income

Deciles	Wife's wage [in EUR and as % of total household income]											
	2008		2012		%		2008		2012			
	EUR (1)	% (2)	EUR (3)	% (4)	(3)/(1)	% (4)-(2)	EUR (5)	% (6)	EUR (7)	% (8)	(7)/(5)	% (8)-(6)
Part A. - Using 2008 as the starting point												
1st	6,502	53.1	3,762	37.8	-42.1	-15.3	4,693	38.3	3,282	33.0	-30.1	-5.4
10th	48,498	43.7	32,669	41.9	-32.6	-1.8	28,494	25.7	19,338	24.8	-32.1	-0.9
Total	**21,059**	**50.2**	**14,449**	**44.4**	**-31.4**	-5.8	**14,621**	**34.9**	**10,108**	**31.1**	**-30.9**	**-3.8**
Top 1%	95,854	33.7	62,416	38.7	-34.9	5.0	40,688	14.3	24,823	15.4	-39.0	1.1
Top 0.1%	213,204	21.8	166,050	29.8	-22.1	8.0	63,090	6.4	38,450	6.9	-39.1	0.5
Part B. - Using 2012 as the starting point												
1st	7,909	57.6	4,122	42.1	-47.9	-15.5	3,350	24.4	3,976	40.6	18.7	16.2
10th	43,346	43.0	44,706	47.6	3.1	4.5	24,552	24.4	27,322	29.1	11.3	4.7
Total	**19,801**	**51.4**	**17,936**	**50.1**	**-9.4**	**-1.3**	**11,928**	**31.0**	**13,093**	**36.6**	**9.8**	**5.6**
Top 1%	80,098	31.0	89,298	38.4	11.5	7.4	37,526	14.5	45,168	19.4	20.4	4.9
Top 0.1%	155,685	13.8	185,400	22.3	19.1	8.5	82,631	7.3	97,381	11.7	17.9	4.4
Part C. - Both members of the couple work as employees - using 2012 as the starting point												
1st	9,482	52.9	4,873	41.5	-48.6	-11.4	6,871	38.3	4,905	41.8	-28.6	3.4
10th	48,204	48.5	48,498	49.8	0.6	1.3	29,469	29.6	28,816	29.6	-2.2	0.0
Total	**22,331**	**50.9**	**19,424**	**50.4**	**-13.0**	**-0.5**	**16,096**	**36.7**	**14,457**	**37.5**	**-10.2**	**0.8**
Top 1%	95,288	44.1	102,624	43.2	7.7	-0.9	47,798	22.1	50,259	21.1	5.1	-1.0
Top 0.1%	221,737	33.5	265,629	29.9	19.8	-3.6	117,362	17.7	130,571	14.7	11.3	-3.0

Source: Calculations based on tax data.

For couples classified in the lowest (1st) decile and the highest (10th) decile, wage income, as a percentage of the total income of couples, is lower than average. That is, in the very poor as well as in the very rich couples, the share of wages in total income is slightly smaller than in the other couples. In very poor couples, this development stems exclusively from the husband's wage, while in the very rich couples it is attributed to both the husband and the wife.

In the couples considered above, both members are employees in 2008. However, due to the crisis or the fact that some members may have become eligible for pension and retired, the losses of wage shares are partly or fully offset by increases in pension shares for each member

individually. Apart from the replacement of wages by pensions, a large number of household members lost their jobs, so their wage incomes have been reduced to zero. According to the table below, wage income losses (31.4% for men, 30.9% for women) are much higher than the losses in total income (22.4%). As will be shown, the picture changes when we exclude couples with two employee members.

Section b of Table 6.2 shows the share of wages in the total income of the couple when couples are classified on the basis of their 2012 income. In the poorer deciles, higher wages are recorded for men, along with a rising contribution of women to wage income (from 31.0% in 2008 to 36.6% in 2012 on average for the total population). The wages now earned by men in the 10th decile in 2012 are 10.8 times higher than those earned by men in the 1st decile; this implies a significant increase in inequality among men employees (3.3 times higher). On the other hand, women in the 10th decile are paid 6.9 times more compared with women in the 1st decile, indicating an increase of inequality by 0.8 percentage points compared with 2008. On the basis of the above, we conclude that:

- Within couples, men almost always receive higher wages than women.
- In poor couples, men lose a significant part of their wage income, resulting in broadly similar contributions of the two members to family income. In general, the lower the total income of couples, the higher the share of wages in family income, which suggests that dependent employment is closely linked to the income of the poorer couples, and a disruption of this link puts the household at risk.
- At the end of the reviewed period (2012), the wife's wage income is 9.8% higher compared with her pre-crisis income (2008) or average, while in low income groups this increase comes to as much as 18.7%. By contrast, over the same period the husband's income is on average lower by 9.4% and, in low incomes, by a massive 47.9% (see Table 6.2). In light of these developments, and considering the changes mentioned above, it is clear that the wife is the member of the couple who found a job to support family income. This support is sometimes reflected in the smaller pay cuts she faces in comparison with the husband and some other times in her - obviously successful - effort to find a job. In both cases, the pay gap closes in low incomes. Although the wife's wage is low and the percentage increases involve small amounts, still this income keeps the household above the poverty line. Otherwise, if the wife's

wage had developed in line with that of her husband or the effort to find a job had not been so successful, then certainly the couple would have fallen below the poverty line.

The increase of 9.8% of the wife's income (average for all households) corresponds to EUR 1,165 and offsets 62.5% of the husband's income loss (EUR 1,865). Moreover, women did not face so large wage cuts as men did (9.4%). If they had, their income would have fallen by EUR 1,121. Therefore, the positive difference between women and men from changes in wage income was a total of EUR 2,286, which means that household income, instead of dropping by 8.1% compared with 2008, was only 2.8% lower.

- In the richest decile, wage incomes increase for both men and women (3.1% for men and 11.3% for women). The increases are even larger in the very rich and extremely rich couples. The economic crisis does not seem to have affected these couples, at least not in terms of wage income.

How do wage levels turn out within couples when they retain their employment throughout the period? Part c of Table 6.2 illustrates the changes. Specifically:

- For the total of couples, in 2012, the wage shares of income are not significantly different between men and women. The husband's wage accounts for 50.4% of the couple's income, and that of the wife 37.5%. Prior to the crisis, the shares were 50.9% and 36.7%, respectively.
- Men's wages, when couples fall down to the lower income brackets, have suffered the largest losses, compared with smaller losses for women's wages. It could be argued that wage cuts in men were the main cause of the couple's downward course.

The couples found in the highest income brackets in 2012 (the richest 1% and 0.1%) that retained their jobs throughout the period enjoy higher wages than they had in 2008. These are the most favoured couples: not only they faced no job loss, but also their wages increased during the crisis.

6.4 Convergence or divergence in gender remuneration

Table 6.3 reflects the gender pay gap at the beginning and the end of the period under review. In 2008, men's wages were 44% higher than those of women, with some differentiation within

income brackets. Specifically, in the 1st decile the pay gap is significantly smaller than in the 10th decile (39% and 70%, respectively). In the very rich and extremely rich households, the gender gap is exceptionally high (136% and 238%, respectively, for the top 1% and the top 0.1%).

Some years later, in 2012, the gap appears to have narrowed by 7 percentage points on average for the whole population (from 44% to 37%). We observe that the gap is eliminated in the poorest decile and decreases considerably in the second decile, meaning that the husband and the wife contribute equivalent wage income to the household (left-hand section of Table 6.3).

Based on the above analysis, it is evident that in lower incomes, when the needs are high, women try to top up the household budget with their own wage income. The gap within the same couples is smaller in very low income brackets. Once again it is clear that in the poor couples of 2008 (1st decile) the pay gap has narrowed by 25 percentage points (middle section of Table 6.3).

On the other hand, in couples that in 2012 are found to be poor, the pay gap has narrowed by 39 percentage points. In these couples, women now contribute more than men, with men's wages falling one percentage point short of women's wages (from 1.38 in 2008, the gap narrowed to 0.99 in 2012) (right-hand section of Table 6.3).

Table 6.3 Gender pay gap

	Gender pay gap (Average ratio of male to female wages, %)								
	Different households			Same households with 2008 classification			Same households with 2012 classification		
	2008	2012	Change in the gap	2008	2012	Change in the gap	2008	2012	Change in the gap
	(1)	(2)	(1)-(2)	(3)	(4)	(3)-(4)	(5)	(6)	(5)-(6)
1st	1.39	1.04	-0.35	1.40	1.15	-0.25	1.38	0.99	-0.39
2nd	1.44	1.36	-0.07	1.47	1.32	-0.15	1.45	1.28	-0.17
3rd	1.49	1.44	-0.05	1.45	1.34	-0.11	1.38	1.31	-0.07
4th	1.48	1.35	-0.13	1.40	1.32	-0.08	1.33	1.26	-0.07
5th	1.45	1.30	-0.14	1.29	1.27	-0.02	1.28	1.20	-0.08
6th	1.34	1.25	-0.10	1.25	1.22	-0.02	1.27	1.22	-0.05
7th	1.30	1.26	-0.04	1.23	1.22	-0.01	1.28	1.25	-0.03
8th	1.26	1.27	0.00	1.24	1.23	-0.01	1.30	1.27	-0.03
9th	1.41	1.35	-0.06	1.40	1.41	0.01	1.40	1.36	-0.04
10th	1.70	1.64	-0.07	1.65	1.60	-0.05	1.64	1.68	0.05
Total	**1.44**	**1.37**	**-0.07**	**1.39**	**1.34**	**-0.04**	**1.39**	**1.34**	**-0.04**
Top 1%	2.36	1.98	-0.38	2.08	1.94	-0.13	1.99	2.04	0.05
Top 0.1%	3.38	1.90	-1.48	2.60	2.67	0.07	1.89	2.03	0.15

Source: Calculations based on tax data.

Table 6.3 documents the effort made by women during the crisis to support the couple's incomes when these fell or were at a risk of falling to a very low level.

6.5 Findings and conclusion

The analysis suggests that the rich, and especially the very rich, households, based on incomes from dependent employment, have almost been left untouched by the crisis, recording either very small losses or significantly higher incomes. By contrast, a large part of the households that at the end of the crisis find themselves in the lower places of the income distribution are the biggest losers. Their members, to a large extent, have lost their jobs or now earn significantly reduced wages.

During the crisis, the pay gap between men and women living in the same households has narrowed. The narrowing is shown to be highest in the households with the lowest incomes. The significant income losses that couples faced during the crisis largely stem from the wages of men. Women supported family income either because they found employment or because they faced smaller losses in the level of their wages.

According to tax data, low-income couples have significantly higher numbers of men and women who have lost their jobs. On the other hand, in high-income couples, a large proportion of men and women retired. Thus, poor couples have shifted to unemployment, while rich couples of employees have shifted to pensioner status.

During the crisis, whenever a member of the couple was looking for a job, the success rate was higher among women than men. The poorer the couple, the higher the proportion of women entering the labour market relative to men. In other words, in couples that have very low incomes because of wage cuts or losses, the woman supports the family income by finding employment.

Table 6.4 Number of married men and women that found a job during the crisis

	Men	%	Women	%	Total
2009	13,417	28.7	33,278	71.3	46,695
2010	22,185	38.6	35,339	61.4	57,524
2011	16,552	40.1	24,705	59.9	41,257
2012	17,796	46.4	20,553	53.6	38,349
2013	30,619	50.5	30,032	49.5	60,651
2014	38,988	48.4	41,638	51.6	80,626

Source: Calculations based on ELSTAT Labour Force Survey for the second quarter of each year.

The findings from the processing of tax data are in line with the findings of ELSTAT Labour Force Surveys, suggesting that significantly more married women than married men have found employment during the crisis, especially in its early years which coincide with the period covered by the tax data used here (Table 6.4).

CHAPTER 7

THE REDISTRIBUTIVE IMPACT OF DIRECT AND INDIRECT TAXATION

7.1 State intervention: Direct taxes and tax incidence

Income redistribution and changes in the relative position of households were not only the outcome of the recession. State interventions were the second more important factor affecting inequality, poverty and the allocation of the cost of the crisis through new taxes, changes in tax rates or in tax-exempt thresholds on household incomes. Table 7.1 provides an overview of direct tax revenues in the period 2008-2016. The changes recorded are dramatic. In 2016, for income which on average is one fourth lower than before the crisis, households pay taxes which, as an absolute aggregate amount, are equal to the taxes before the crisis (2008). Inevitably, direct taxes to GDP and to market household's income rose significantly and continuously (by 3.2 p.p. of GDP between 2008 and 2016.

Table 7.1 Direct tax revenue (in EUR millions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
I. Direct taxes	20,863	21,431	20,224	20,318	21,096	20,058	20,465	19,936	20,711
A. Income tax	16,670	16,589	14,288	12,934	13,311	11,489	12,207	12,148	12,676
- personal income tax	10,816	10,841	9,398	8,285	9,970	7,971	7,849	7,872	8,011
- corporate income tax	4,211	3,813	3,167	2,760	1,715	1,681	2,655	2,895	3,478
- special categories	1,643	1,935	1,722	1,888	1,627	1,837	1,703	1,381	1,187
B. Property taxes	486	526	487	1,172	2,857	2,991	3,474	3,180	3,533
C. Direct taxes for past years	2,077	2,446	2,874	1,911	1,812	2,826	1,928	1,700	1,623
D. Other direct taxes	1,630	1,870	2,575	4,301	3,116	2,752	2,855	2,909	2,879
as % of GDP									
Direct taxes	**8.6**	**9.0**	**8.9**	**9.8**	**11.0**	**11.1**	**11.5**	**11.3**	**11.8**
Income tax	6.9	7.0	6.3	6.2	7.0	6.4	6.9	6.9	7.2
- personal income tax	4.5	4.6	4.2	4.0	5.2	4.4	4.4	4.5	4.6
- corporate income tax	1.7	1.6	1.4	1.3	0.9	0.9	1.5	1.6	2.0
Property taxes	0.2	0.2	0.2	0.6	1.5	1.7	2.0	1.8	2.0

Note: The data for 2016 are provisional.
Sources: Ministry of Finance, State Budget, various years, and Bank of Greece.

In order to investigate the impact of government tax policies on inequality, we have estimated the following specific relationships:

- the effect of income tax on the income of low, middle and upper income strata;
- the effect of taxes on income taxed independently[68,69];
- the effect of the introduction of a new property tax in 2010;
- the effect of the solidarity tax[70] introduced in 2013 retroactively as from 2010 for incomes above EUR 12,000;
- the effect of the additional special levy on property (EETIDE) introduced in autumn 2011;
- the effect of increased indirect tax rates introduced in 2010 and 2011 (VAT, special consumption taxes on fuel, etc); and
- the effect of the elimination of various tax exemptions/deductions as from 2011[71].

The level and incidence of individual taxes

In Tables 7.2 and 7.3 we show the mean value of each tax in absolute terms and as a percentage of total income for 2008 and 2012 and for each decile. The following conclusions can be drawn:

a) Although the mean declared income declined by 23.1%, *income tax* as a percentage of total income increased from 8% to 9.5% (up by 1.5 p.p.).

b) Following the additional tax measures (EETIDE and solidarity tax), the average total tax burden, grew from 10.4% to 15.9% (i.e. by 5.5 percentage points[72]). This translates into a very substantial increase in the tax burden. However, the increased tax incidence was particularly painful for poor households, as well as for households with no income (e.g. unemployed households) that were taxed for the first time as a result of EETIDE.

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[68] This concerns dividends and profits that are taxed at source. It was only in 2012 that it became mandatory to declare these incomes, as they are also subject to the solidarity tax. Taxes on these incomes are thus not included in the data set used here and have been estimated by the authors. Without such an estimation, taxes as a ratio of dividend income, especially for the upper decile, appear to be much lower than they actually are. Due to these imperfections, the results for 2012 are more realistic, but are not fully comparable with those of previous years, when declaration of some incomes had been optional.

[69] Dividends and interest were taxed at a flat rate of 25% and 10%, respectively. Taxes on these incomes increased in 2013, but this does not affect our results, which focus on incomes and taxes until 2012. As the amount of dividends and interest cannot be estimated with certainty, and for many years their declaration to the tax office was not mandatory, we assumed an average tax rate of 25%.

[70] The tax rate is increased from 1% to 4% (5% for persons holding political or public office), depending on the level of income.

[71] The tax deductions concerned mainly health expenses, pension contributions, mortgage interest payments, private insurance premium payments, house rents and house rents for students. Many of these deductions have been reduced or abolished for incomes of 2013.

[72] These percentages are very different if EETIDE is not included (see the table).

c) The tax burden increased significantly from 1.5% to 8.1% for incomes at the bottom (deciles 1-5) and at the top (from 19.3% to 30.4% for the top 1% and from 17% to 30% for the top 0.1%). In contrast, the change of the tax burden for all middle incomes was lower than the average increase.

d) It is shown that *tax exemptions* represent a benefit of less than 1% of total taxable income. However, the positive incidence on the two lower income groups is much more important (5.4% and 1.4% respectively), meaning that the abolition of many tax exemptions in 2013 have had a marginal impact on the tax burden in general, but a much higher impact for the below-the-poverty-line incomes.

e) The average tax/income rate for dividends and interest declined from 2.2% to 1.6%. Higher than average reductions concerned the top decile as well as the top 1% and 0.1% incomes.

f) To specify the incidence of property taxation on incomes, it is necessary to distinguish between two different taxes:

   * the tax on large property, the incidence of which was marginal in both the years examined (0.21% and 0.48% for 2008 and 2012, respectively, see Tables 7.2 and 7.3) The increase was relatively higher for the top decile and the top 1% and 0.1%; and

   * the *special levy on property*[73] imposed in autumn 2011, which had a much higher incidence. The average incidence of this property tax on incomes was 2.95%, but shows an inverse relation to the inc*ome* level, as a result first of its linear character and second, because lower deciles have a higher share in property than in income (see Chapter 8).

g) The incidence of solidarity tax was about 1.4% of total taxable income and was paid by the wealthier groups, for which the average burden was between 2.3% and 3.5%. According to Table 7.2, the imposition of the solidarity tax generated additional tax revenues which in 2012 were 2.8 times as high as the revenues from the large property tax (EUR 245, on average per household, versus EUR 87 for the large property tax).

h) The comparison of after-tax income between 2008 and 2012 shows an average decrease of 27.8% (last column, Table 7.2), with deciles 1-5 experiencing an income loss of 22.3%, while the top 1% and 0.1% lost 50.8% and 65.3% respectively.

In sum, the pre-crisis before-tax average income decreased by 23.1% but the additional burden (5.4 percentage points of GDP or an increase of taxation by 52.9%) caused a total income

[73] The property tax and the special levy on property (EETIDE) were merged into one new property tax in 2014, which extended the tax base to additional types of property. However, our tax and income data do not allow a quantifiable assessment of its incidence. It can be assumed that the overall incidence has slightly increased, but the distribution among households has changed, because the tax base has been extended to land and other types of rural property.

reduction of 27.8%. However, in absolute terms, the bulk of the taxes are paid by the upper income deciles (8-10), which contributed 79.3% of total taxes in 2012 and 88.3% in 2008. On the other hand, 50% of households with the lower incomes contributed 9.4% to the total (direct) tax burden, which is particularly high compared with the corresponding figure (2.5%) in 2008 (see Table 7.10, at the end of the chapter).

Table 7.2 Key data on income and taxes (in EUR)

Deciles	Average total pre-tax income		Average tax exemptions		Average income tax		Average tax on incomes taxed separately		Average property tax	
	2008	**2012**	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**
1st	1,276	1,171	43	63	8	78	15	18	20	22
2nd	5,484	4,546	65	62	9	65	45	41	17	17
3rd	8,366	6,701	87	59	10	80	62	47	19	15
4th	11,009	9,090	119	75	13	204	62	64	20	20
5th	13,763	11,710	146	84	191	455	102	84	25	23
6th	17,307	14,551	182	94	613	724	158	103	32	31
7th	21,860	17,974	223	113	1,189	1,207	226	143	42	38
8th	28,300	22,746	277	144	2,041	1,951	304	209	55	60
9th	39,194	30,691	362	197	3,675	3,126	458	330	76	102
10th	89,755	62,549	464	316	11,197	9,432	3,750	1,846	196	541
Average	**23,631**	**18,173**	**197**	**121**	**1,895**	**1,732**	**518**	**287**	**50**	**87**
1st-5th	7,980	6,644	92	69	46	176	57	51	20	19
6th-7th	19,584	16,263	202	104	901	965	192	123	37	35
8th-10th	52,416	38,662	368	219	5,638	4,837	1,504	795	109	234
top 1%	290,238	165,542	501	536	30,885	28,754	24,703	10,429	540	2,325
Top 0.1%	1,259,382	517,268	545	736	60,121	64,856	153,181	56,221	1,329	7,969

Deciles	Additional tax measures		Total tax incidence		Mean after-tax income		% change of after-tax to before-tax income		% change of after tax income
	Average burden from EETIDE	Average solidarity tax							
	2012	**2012**	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**	**2012/08**
1st	280	0.0	43	398	1,233	773	-3.4	-34.0	-37.3
2nd	252	0.0	72	375	5,412	4,171	-1.3	-8.3	-22.9
3rd	263	0.0	91	405	8,275	6,297	-1.1	-6.0	-23.9
4th	305	0.0	94	594	10,915	8,496	-0.9	-6.5	-22.2
5th	338	30	318	930	13,446	10,780	-2.3	-7.9	-19.8
6th	389	99	803	1,346	16,504	13,205	-4.6	-9.3	-20.0
7th	496	133	1,457	2,017	20,403	15,957	-6.7	-11.2	-21.8
8th	621	305	2,400	3,147	25,900	19,599	-8.5	-13.8	-24.3
9th	813	445	4,209	4,816	34,985	25,875	-10.7	-15.7	-26.0
10th	1,599	1,437	15,143	14,855	74,612	47,694	-16.9	-23.7	-36.1
Average	**536**	**245**	**2,463**	**2,888**	**21,169**	**15,285**	**-10.4**	**-15.9**	**-27.8**
1st-5th	288	6	124	540	7,856	6,103	-1.5	-8.1	-22.3
6th-7th	442	117	1,130	1,682	18,454	14,581	-5.8	-10.3	-21.0
8th-10th	1,011	729	7,250	7,606	45,166	31,056	-13.8	-19.7	-31.2
Top 1%	3,448	5,331	56,128	50,288	234,111	115,255	-19.3	-30.4	-50.8
Top 0.1%	7,807	18,142	214,630	154,996	1,044,752	362,273	-17.0	-30.0	-65.3

Source: Calculations based on tax data.

Table 7.3 Tax exemptions and tax burden as % of pre-tax income

Deciles	Tax exemptions		Income tax		Tax on income taxed separately		Property tax	
	2008	2012	2008	2012	2008	2012	2008	2012
1st	3.3	5.4	0.6	6.6	1.16	1.56	1.56	1.87
2nd	1.2	1.4	0.2	1.4	0.83	0.91	0.31	0.37
3rd	1.0	0.9	0.1	1.2	0.74	0.70	0.23	0.22
4th	1.1	0.8	0.1	2.2	0.56	0.71	0.18	0.22
5th	1.1	0.7	1.4	3.9	0.74	0.72	0.18	0.20
6th	1.1	0.6	3.5	5.0	0.91	0.71	0.19	0.21
7th	1.0	0.6	5.4	6.7	1.03	0.79	0.19	0.21
8th	1.0	0.6	7.2	8.6	1.07	0.92	0.19	0.26
9th	0.9	0.6	9.4	10.2	1.17	1.08	0.19	0.33
10th	0.5	0.5	12.5	15.1	4.18	2.95	0.22	0.86
Average	**0.8**	**0.7**	**8.0**	**9.5**	**2.19**	**1.59**	**0.21**	**0.48**
1st-5th	1.2	1.0	0.6	2.7	0.72	0.77	0.25	0.29
6th-7th	1.0	0.6	4.6	5.9	0.98	0.76	0.19	0.21
8th-10th	0.7	0.6	10.8	12.5	2.87	2.06	0.21	0.61
Top 1%	0.2	0.3	10.6	17.4	8.51	6.30	0.19	1.40
Top 0.1%	0.0	0.1	4.8	12.5	12.2	10.9	0.11	1.54

Deciles	Additional tax measures		Total tax incidence		After tax income	
	Average tax burden from EETIDE	Average solidarity tax				
	2012	2012	2008	2012	2008	2012
1st	23.9	0.00	3.36	33.98	96.6	66.0
2nd	5.55	0.00	1.31	8.26	98.7	91.7
3rd	3.92	0.00	1.09	6.04	98.9	94.0
4th	3.36	0.00	0.85	6.54	99.1	93.5
5th	2.89	0.26	2.31	7.94	97.7	92.1
6th	2.68	0.68	4.64	9.25	95.4	90.7
7th	2.76	0.74	6.67	11.22	93.3	88.8
8th	2.73	1.34	8.48	13.83	91.5	86.2
9th	2.65	1.45	10.74	15.69	89.3	84.3
10th	2.56	2.30	16.87	23.75	83.1	76.3
Average	**2.95**	**1.35**	**10.42**	**15.89**	**89.6**	**84.1**
1st-5th	4.33	0.09	1.55	8.13	98.5	91.9
6th-7th	2.72	0.72	5.77	10.34	94.2	89.7
8th-10th	2.62	1.89	13.83	19.67	86.2	80.3
Top 1%	2.08	3.22	19.34	30.38	80.7	69.6
Top 0.1%	1.51	3.51	17.04	29.96	83.0	70.0

Source: Calculations based on tax data,

The tax burden imposed on the lowest-income groups was strongly asymmetric, at the disadvantage of the low incomes and those who comply with their tax obligations. It can be argued that the tax burden on the incomes and property of the richest strata or even the moderately rich ones had been unduly low or absent before the crisis. However, the burden imposed during the crisis on these two groups as well as on the lowest income groups was strongly asymmetric at the disadvantage of the low incomes and those who comply with their tax obligations, irrespective of their position in the income hierarchy. Of course, we know that both in Greece and elsewhere the

very low and the very high income deciles exhibit a high prevalence of tax evasion. The above finding should therefore be viewed in this context. Furthermore, one should also consider whether the pre-crisis tax burden (on income or property, e.g. inheritance/parental gift taxes) was unreasonably low or non-existent. In many cases it was. But the onerous tax reforms implemented during the crisis created many social, macroeconomic and political problems and occurred in an extremely adverse economic environment and very abruptly. The combination of all these factors made the adjustment particularly painful, long and even less effective, when economic criteria are combined with social and political ones.

It is evident that different perspectives allow different conclusions on the relative impact of tax policy on redistribution and inequality. Overall, as will be shown in Chapter 11, after-tax inequality is lower than before taxation, but remains still high in absolute terms.

7.2 The redistributive impact of the increases in VAT and excise taxes

The previous section discussed the additional impact of personal direct tax on market income. In this section, we will examine the overall incidence of the increases in indirect taxes introduced as part of increasing fiscal consolidation measures. The question is: How have the higher indirect taxes weighed on the already squeezed household incomes? In which direction have the rates of value added tax (VAT) and excise taxes affected income inequality during the current crisis? The growing weight of tax revenue as a percentage of GDP, which we have mentioned, makes the additional effects on which we are focusing in this chapter a significant part of the total fiscal consolidation during the crisis.

According to the literature, the overall burden of indirect taxation in the case of Greece can be represented by a curve that has an inverted U shape, where households in the middle of the income distribution face relatively higher total tax rates. This is the combined effect of strongly progressive and strongly regressive taxes rather than an addition of taxes with similar

redistributive features[74]. Taxes on food, tobacco, housing and health are regressive, while taxes on clothing, household appliances, leisure and transport are strongly progressive.

Table 7.4 Indirect tax revenue (in EUR millions)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Indirect taxes	30,222	28,293	31,042	28,632	26,083	24,556	23,776	23,781	25,108
A. Transaction taxes	20,060	17,874	18,495	17,790	15,687	14,673	14,233	14,262	15,209
VAT	18,243	16,582	17,374	16,887	14,956	13,856	13,618	13,629	14,707
- on oil products	2,299	1,907	2,653	2,847	2,567	2,224	2,055	1,754	1,594
- on tobacco	657	681	779	844	729	682	632	662	644
- other	15,287	13,994	13,943	13,197	11,659	10,950	10,930	11,213	12,469
Other transaction taxes	1,817	1,292	1,121	903	731	817	615	633	502
B. Consumption taxes	9,048	9,569	11,822	10,131	9,625	8,995	8,702	8,760	8,835
- on insurance premiums	345	358	404	379	352	316	305	313	393
- on passenger car registrations	842	473	249	100	52	56	86	110	172
- excise tax on energy	3,690	4,374	5,698	4,653	4,464	4,230	4,113	4,175	4,126
- other excise taxes	2,836	2,924	3,382	3,509	3,114	2,906	2,809	2,752	2,747
- road duties	997	1,046	1,591	1,117	1,305	1,183	1,119	1,123	1,092
- other consumption taxes	338	394	498	373	338	304	270	286	305
C. Other indirect taxes	1,114	850	725	712	770	888	850	760	1,064
Indirect/Direct tax ratio	1.45	1.32	1.53	1.41	1.24	1.22	1.16	1.19	1.21
As a % of GDP									
Indirect taxes	12.5	11.9	13.7	13.8	13.6	13.6	13.4	13.5	14.4
- VAT	7.5	7.0	7.7	8.2	7.8	7.7	7.7	7.8	8.4
- Consumption taxes	3.7	4.0	5.2	4.9	5.0	5.0	4.9	5.0	5.1
Indirect taxes as a % of tax revenue	59.2	56.9	60.6	58.5	55.3	55.0	53.7	54.4	54.8

Note: The data for 2016 are provisional.

Sources: Ministry of Finance, State Budget, various years, and Bank of Greece.

With specific regard to excise taxes, their redistributive impact is less straightforward[75], while taxes on clothing, household equipment, recreation and transport are strongly progressive. Excise taxes put a disproportionately heavy burden on medium-income groups, while the three lowest deciles and the top decile are not affected so much. Overall, excise taxes are rather progressive, but it makes more sense to look at individual excise taxes. Thus, the redistributive effect of excise taxes on alcoholic beverages consumed at home is progressive, but quantitatively low**.** By contrast, the effect of the excise tax on tobacco products is quantitatively significant and also strongly regressive. Excise taxes on heating fuel are also regressive. The most progressive and quantitatively significant among excise taxes is the one levied on private vehicle fuel. In contrast,

[74] Kaplanoglou and Newbery (2003).

[75] Mitrakos and Tsakloglou (1999), Tsakloglou and Mitrakos (1998).

higher prices on heating oil exert negative effects on social conditions and cause both the number of poor households and total inequality to increase[76].

Table 7.5 Evolution of VAT rates during the crisis

Effective from:	VAT rates			
	Regular rate	Reduced rate	Super-reduced rate	Island regions
01.04.2005 (Law 3336/05)	19%	9%	4.5%	13%, 6%, 3%
15.03.2010 (Law 3833/10)	21%	10%	5%	15%, 7%, 4%
Effective from 01.07.2010 (Law 3845/10)	23%	11%	5.5%	16%, 8%, 4%
From 01.01.2011 (Law 3899/10)	23%	13%	6.5%	16%, 9%, 4%
From 20.07.2015 (Law 4334/15)	23%	13%	6%	16%, 9%, 4%
From 01.06.2016 (Law 4389/16)	24%	13%	6%	16%→24%, 9%→13%, 4%→6%

Table 7.5 shows the evolution of VAT rates in the period reviewed, during which VAT rates were raised by four to six percentage points for the standard rate and the reduced rate and by two percentage points for the super-reduced rate. Similar increases have been made in the more favourable VAT rates that apply in island regions of the country. The upward adjustments of tax rates were accompanied by transfers of products and services from the reduced VAT rate to the standard rate[77], as well as from the reduced rate to the super-reduced rate. During that period, excise tax rates on alcohol, tobacco, energy and motor vehicles were increased too[78].

7.2.1 The changes in indirect taxes

A broad picture of changes in excise taxes shows the following:

The situation until 2008:

- In a typical alcoholic beverage, the share of excise tax in the final price was 29%, that of VAT was 16% and the remaining 55% was the initial pre-tax price.

[76] Aggelopoulou and Zografakis (2010).

[77] The latest adjustment of rates by Law 4334/2015 is limited to goods and services subject to reduced VAT rates of 13% and 6%. Basic commodities, which continue to be subject to reduced VAT rates of 13% and 6%, are now only bread, milk, meat (excluding beef), fish, olive oil, cheese, pasta, flour, cereals, vegetables, medicines, books, electricity, water, articles for the disabled. By contrast, all the remaining items are transferred to the higher VAT rates.

[78] For three groups of products, i.e. alcoholic beverages, tobacco products and energy products, respectively. They were: for alcoholic beverages, from EUR 1,135/100 lt to EUR 2,550/100 lt (+124.7%); for tobacco products, from 57.5% to 67.1% (up by 12.3 percentage points); for gasoline, from EUR 350/1,000 to EUR 670/1,000 lt (+91.4%); and for heating oil, from EUR 21/1,000 Lt to EUR 330/1,000 lt (+1,471.4%). This section does not deal with motor vehicle-related excise duties.

- In tobacco, excise tax accounted for 73.5% of the final price.
- In energy products, the shares of taxes in the final price were 60% for gasoline, 48.5% for diesel and 21.2% for heating oil.

Changes in 2012:

- In a typical alcoholic beverage, the share of excise tax in the final price has risen to as much as 44%, while the share of VAT has reached 19%, implying that the initial pre-tax price accounts for just 37% of the final price[79].
- In tobacco, excise tax accounts for 89.6% of the final price[80].
- In energy products, the shares of taxes in the final price are 64% for gasoline, 46.4% for diesel and 43.1% for heating oil.

The sharp increase in the tax component of the final price of heating oil is due to the equalization of its tax rate to the (higher) rate applicable to diesel oil with a view to discouraging the practice of smuggling heating oil for diesel because of the tax rate differential. Through this equalization, the excise tax on heating oil has increased by 15.7 times.

7.2.2 The impact of higher VAT and excise taxes on tax receipts

The VAT and excise tax hikes coincided with the marked decline in household incomes. As household consumption expenditure fell, the higher indirect taxation failed to translate into a rise in tax revenue. According to Table 7.4, indirect taxes yielded 59.2% of total tax revenue in 2008. By 2016, this percentage had fallen to 54.8%, implying a cumulative decline of 4.4 percentage points since 2008. The most important in terms of tax revenue is VAT, which yielded EUR 18.2 billion in 2008 (see Table 7.4), EUR 15 billion in 2012 (EUR 3.2 billion less than in 2008) and EUR 14.7 billion in 2016 (EUR 3.5 billion less than in 2008).

The excise tax hikes did not deliver the expected results either, although these taxes increased their share in total tax revenue, from 17.7% in 2008 to 20.4% in 2012. Excise tax revenue was EUR

[79] IOBE (2013).

[80] IOBE (2014). Further increases in VAT and excise taxes were introduced in 2016, which could not be taken in account.

9 billion in 2008, EUR 9.6 billion in 2012 and EUR 8.8 billion in 2016 (EUR 800 million less than in 2008, despite the higher rates).

As seen in Table 7.4, although the ratio of indirect taxes to direct taxes rose in 2010 (1.53) due to the sharp increases in VAT and excise tax rates that year, thereafter it fell significantly to 1.2 in 2015/16. This development is solely attributable to a decline in indirect tax revenue (21.4% in the period 2008-2015 and 17% in 2008-2016, respectively) on the back of lower consumer spending due to shrinking household incomes, as well as, to a very large extent, much larger tax evasion in VAT and relevant income tax in Greece's regional areas. During the same period, direct tax revenue decreased overall by 24%, mainly due to reduced revenue from income taxes (EUR 12.7 billion in 2016, down from EUR 16.7 billion in 2008). By contrast, property taxes increased by 554% and other direct taxes by 70.9%. These two tax categories almost offset the lower income tax revenue (Table 7.1).

Table 7.6 Percentage contribution of individual taxes to total tax revenue

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change 2012-08	Change 2016-08
Direct taxes	**40.8**	**43.1**	**39.4**	**41.5**	**44.7**	**45.0**	**46.3**	**45.6**	**45.2**	**3.9**	**4.4**
Income tax:	32.6	33.4	27.9	26.4	28.2	25.8	27.6	27.8	27.7	-4.4	-4.9
- personal income tax	21.2	21.8	18.3	16.9	21.1	17.9	17.7	18.0	17.5	-0.1	-3.7
- corporate income tax	8.2	7.7	6.2	5.6	3.6	3.8	6.0	6.6	7.6	-4.6	-0.6
- special groups	3.2	3.9	3.4	3.9	3.4	4.1	3.8	3.2	2.6	0.2	-0.6
Property taxes	1.0	1.1	0.9	2.4	6.1	6.7	7.9	7.3	7.7	5.1	6.7
Other direct taxes	7.3	8.7	10.6	12.7	10.4	12.5	10.8	10.5	9.8	3.1	2.5
Indirect taxes:	**59.2**	**56.9**	**60.6**	**58.5**	**55.3**	**55.0**	**53.7**	**54.4**	**54.8**	**-3.9**	**-4.4**
Transaction taxes	39.3	35.9	36.1	36.3	33.2	32.9	32.2	32.6	33.2	-6.1	-6.1
- VAT	35.7	33.3	33.9	34.5	31.7	31.1	30.8	31.1	32.1	-4.0	-3.6
Consumption taxes	17.7	19.2	23.1	20.7	20.4	20.2	19.7	20.0	19.3	2.7	1.6
Other indirect taxes	2.2	1.7	1.4	1.5	1.6	2.0	1.9	1.7	2.3	-0.6	0.1
Total tax revenue	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**		

Sources: Ministry of Finance, State Budget, various years.

These developments give rise to the recurring question about the extent to which the significant increase in taxes in such a short time span and amid recession has contributed to the worsening of the recession, hence to a greater reduction in tax revenues, thereby undermining the fiscal consolidation effort. The answer to this question is not straightforward. Moreover, any answer should not ignore the widespread tax theft or tax evasion which, irrespective of whether it was limited or expanded during the crisis, remains a fundamental economic and social reality, impacting on policies, the functioning of the State and macroeconomic adjustment.

7.2.3 Changes in income inequality following the increases in VAT and excise tax rates

For assessing the impact of changes in indirect taxation on income distribution, we classify households on the basis of their consumption expenditure. Assuming that the marginal utility of consumption is positive but diminishing, individuals save and dissave in different phases of their life cycles, seeking to adjust their consumption to the changes of their income. Consequently, current consumption can be considered as a reliable indicator of the long-term welfare of the population. Moreover, household consumption expenditure forms the base of indirect taxes (VAT, excise taxes), the redistributive impact of which we are trying to estimate. The general approach adopted is as follows: We initially estimate total expenditure per household, as well as expenditure on alcohol, tobacco, heating fuel and motor fuel. Then we calculate the distribution of household expenditure following the increase in VAT and excise taxes.

We assume that the price elasticity of demand is -1, i.e. households maintain a constant level of expenditure and adjust the quantities purchased[81]. Then, for each of the above categories of expenditure, we calculate the share of excise taxes and VAT in the retail price. Households are classified into deciles based on the distribution of equivalent consumption expenditure, using the so-called "OECD-modified equivalence scales".

To compare inequality in the distribution of equivalent consumption expenditure before and after the increases in VAT and excise taxes, we use the Gini index (G), the Theil index (T) and mean log variation (N). Subsequently, using the technique of inequality decomposition by expenditure category, we estimate the contributions of the individual increases in VAT and excise taxes to total inequality and the elasticity of total inequality to changes in individual indirect taxes. For estimating the redistributive impact of indirect tax increases, we use micro-data from the Household Budget Survey (HBS) conducted by the Hellenic Statistical Authority (ELSTAT) for the years 2009-2013, referring to incomes earned in the years 2008 and 2012, respectively.

Before turning to the analysis of income inequality, it is worth pointing out that households' consumption habits and behaviours changed significantly in the period reviewed. Faced with shrinking incomes and higher indirect taxes, households, in particular low- and medium income ones, either shifted to cheaper heating solutions or chose not to buy oil and partly or fully forego

[81] Kaplanoglou and Newbery (2003).

heating in their homes. In particular in the years 2012-2014, in many apartment buildings, the issue of central heating caused a lot of friction among tenants as some of them were unable to pay the increased communal heating bills, and thus the central heating was not turned on throughout the winter. Many households turned to electrical heating appliances or to solid fuels (firewood, pellets, etc.), causing an acute smog phenomenon in large urban centres. In response to this problem, given its serious implications for public health, the government introduced heating oil subsidies for low-income households and also lower prices electricity during the weekends when air pollution peaked. It could be said that smog was the 'silent protest' of households that could not afford to buy heating oil. However, as in the case of social benefits, many tax evaders who declare low income became eligible for these subsidies, while on the other hand very poor households could not afford to pay for the unsubsidized part of the cost. Also, many households avoided using their cars in order to save on fuel while a significant number, faced with higher road duties and costs of private car transport, even had their cars deregistered.

Table 7.7 Deciles of annual expenditure (total and selected items)

Deciles	Average annual expenditure in EUR		% change	Percentage share of expenditure											
				Alcoholic beverages		Wine		Tobacco		Motor fuels		Heating oil		Solid fuels	
	2008	2012	2012/ 2008	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012
1st	4,262	3,218	-24.5	0.44	0.24	0.42	0.68	2.04	2.85	1.85	1.91	5.07	3.10	1.98	2.86
2nd	6,318	4,793	-24.1	0.52	0.53	0.36	0.64	3.30	2.52	3.65	3.05	4.19	2.81	1.26	2.12
3rd	7,864	5,904	-24.9	0.49	0.55	0.46	0.70	3.42	3.01	4.23	4.34	3.45	3.52	0.68	2.20
4th	9,404	6,861	-27.0	0.51	0.56	0.46	0.67	3.89	3.62	5.43	5.31	2.73	2.88	0.38	1.87
5th	10,909	7,921	-27.4	0.52	0.63	0.44	0.59	3.54	3.34	5.05	5.31	2.62	2.71	0.40	2.24
6th	12,544	9,198	-26.7	0.69	0.75	0.34	0.56	2.91	3.50	5.16	6.37	2.58	3.22	0.30	1.78
7th	14,456	10,565	-26.9	0.51	0.85	0.42	0.53	2.75	3.71	5.40	6.29	2.31	3.16	0.21	1.28
8th	17,043	12,504	-26.6	0.60	0.72	0.40	0.57	2.29	3.28	4.89	7.12	2.01	2.49	0.29	0.97
9th	21,311	15,872	-25.5	0.45	0.76	0.35	0.73	2.01	3.26	4.64	6.30	1.73	2.52	0.15	0.94
10th	36,161	29,647	-18.0	0.49	0.86	0.49	0.94	1.41	1.79	3.50	4.79	1.21	1.68	0.09	0.27
Average	**14,027**	**10,648**	**-24.1**	**0.52**	**0.73**	**0.42**	**0.71**	**2.43**	**2.89**	**4.43**	**5.46**	**2.21**	**2.53**	**0.34**	**1.20**

Source: Calculations based on ELSTAT's Household Budget Survey data.

Looking at these changes, especially among poor households, the redistributive impact of the increase in excise taxes appears less negative than what one would expect. However, it cannot be overlooked that this not-so-gloomy picture masks adverse consumption choices on the part of many households[82]. In fact, poor households seem to have been affected less severely, but this is only because they significantly cut down on their expenditure or changed their consumption

[82] See also Kaplanoglou and Rapanos (2014).

habits[83], which reduced their standard of living in ways not captured by income distribution indicators.

At the same time, there has been a surge in illicit tobacco and liquor trade[84], resulting in a significant loss of tax revenue. The higher the tax rates, the stronger the incentive for illicit trade, as more gains are involved.

According to Table 7.7, average household expenditure fell by 24.1% between 2008 and 2012. The largest falls are recorded in households between the 4th and 8th deciles (inverted U-shaped curve, as mentioned above). It should be noted that in volume terms the actual decline in household consumption expenditure is even higher, as prices rose by 11.2% in the 2008-2012 period.

These findings do not change with the fall in inflation (3.9%) between 2012 and 2015. For the period as a whole, price developments remained unfavourable for households, especially for low-income ones. Between 2008 and 2015, the consumer price index rose by 6.8%, with far stronger increases recorded in beverages (40.7%), housing (17.9%) and transport (14.2%). By contrast, price declines were seen in durable consumer goods (-4.6%), recreation (-6.4%) and education (-6.1%). Food prices moved in line with the overall index (+6.8%). The large increases in the prices of beverages, housing and transport were due to higher excise duty and VAT rates.

Table 7.8 shows the indirect tax burden on average household expenditure per decile. In the first (poorest) decile, total expenditure is EUR 3,218 in 2012. Of this amount, EUR 435 are the indirect taxes that would have been payable under the tax regime in place until 2008, while EUR 108 are the additional indirect taxes following the increase in the rates of excise duties and VAT.

Prior to 2008, the tax burden on total household expenditure was 15.8% and came to 18.6% after the indirect tax increases. For the population as a whole, therefore, the additional burden of indirect taxes reaches 3.35 percentage points, again reflecting the inverted U shape, indicating that households in the middle of the distribution face a heavier burden. The additional burden from the increase in excise duty and VAT rates affects proportionately less households in the two lowest deciles (1st and 2nd) but also in the highest (10th) decile compared with all other deciles in between. Faced with this additional burden, poor households cut back on their spending, which

[83] Santamouris et al. (2014).

[84] Pavlou et al. (2013) and Denchev et al. (2014).

is another aspect of the phenomenon of pauperisation of new social strata. In the new landscape, after-tax expenditure inequality deteriorates somewhat, rising from 5.6 to 5.7 based on the S80/S20 index[85].

Table 7.8 Deciles of annual equivalent expenditure for 2012 income and tax burden following increases in excise taxes and VAT

Deciles	Average annual equivalent expenditure in EUR		Share of excise taxes and VAT in average annual expenditure based on 2008 tax rates (in EUR)			Additional share of excise taxes and VAT after the tax rate increases (in EUR)		
	After VAT & excise taxes	Before VAT & excise taxes	Excise taxes	VAT	(3)+(4)	Excise taxes 2013/08	VAT 2013/08	(6)+(7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1st	3,218	2,675	101	334	435	28	80	108
2nd	4,793	3,992	171	472	643	42	115	157
3rd	5,904	4,830	272	596	868	64	142	206
4th	6,861	5,574	365	688	1,053	72	163	235
5th	7,921	6,450	409	793	1,202	80	190	269
6th	9,198	7,385	543	940	1,483	107	222	329
7th	10,565	8,460	634	1,094	1,728	125	252	377
8th	12,504	10,043	754	1,280	2,034	131	297	428
9th	15,872	12,777	893	1,660	2,552	162	381	543
10th	29,647	24,482	1,168	3,077	4,245	217	703	920
Average	**10,648**	**8,667**	**531**	**1,093**	**1,624**	**103**	**254**	**357**
Total (EUR mn)	44,489	36,210	2,219	4,568	6,786	429	1,063	1,493
S80/S20	**5.7**	**5.6**	**7.6**	**5.9**	**6.3**	**5.4**	**5.5**	**5.5**

	Percentage share							
Deciles	After VAT & excise taxes	Before VAT & excise taxes	Excise taxes	VAT	(3) + (4)	Excise taxes 20'13 to 2008	VAT 2013 to 2008	Excise taxes +VAT
1st	**100.0**	83.13	3.14	10.38	**13.51**	0.86	2.49	**3.36**
2nd	**100.0**	83.30	3.57	9.86	**13.42**	0.87	2.40	**3.27**
3rd	**100.0**	81.80	4.61	10.09	**14.70**	1.09	2.41	**3.49**
4th	**100.0**	81.24	5.32	10.02	**15.35**	1.05	2.37	**3.42**
5th	**100.0**	81.43	5.17	10.01	**15.17**	1.01	2.39	**3.40**
6th	**100.0**	80.30	5.91	10.22	**16.12**	1.17	2.41	**3.58**
7th	**100.0**	80.08	6.00	10.35	**16.35**	1.18	2.39	**3.57**
8th	**100.0**	80.32	6.03	10.23	**16.26**	1.04	2.38	**3.42**
9th	**100.0**	80.50	5.62	10.46	**16.08**	1.02	2.40	**3.42**
10th	**100.0**	82.58	3.94	10.38	**14.32**	0.73	2.37	**3.10**
Average	**100.0**	81.39	4.99	10.27	**15.25**	0.97	2.39	**3.35**

Source: Calculations based on ELSTAT's Household Budget Survey data.

[85] The ratio of the income of the 9th and 10th deciles to that of the 1st and 2nd deciles.

Based on the above analysis, and taking into account the changes in income as well as changes in property taxes, we could underline the following findings:

- Greek households, on average, suffered an income loss of 23.1% between 2008 and 2012 (Table 7.9). Moreover, with substantially lower incomes, they were required to pay almost the same amount in income tax (2008: EUR 10.8 billion, 2012: EUR 10 billion), but also significantly higher property taxes. To these changes we should add the impact of increased indirect taxation on disposable income.
- Low-income households (i.e. on average the three lowest deciles) suffered a smaller loss of income in the 2008-2012 period compared with the average household (-17.9%). However, the part of their income loss as a result of taxes was higher (-11.5%) than for the average household (-8.8%), which is solely attributable to the higher burden of property taxes (6.5% compared with 3.2%). This burden caused the average income of low-income households to shrink by 29.4%.

Table 7.9 Income reductions (%) as a result of the crisis and new tax burdens

	'*Average*' Greek household	Low income household
Reduction of pre-tax income: 2008-12	-23.1%	-17.9%
Additional tax burden (2012/2008) from increases in:		
- Indirect taxes	2.26%	1.66%
- Property taxes	3.21%	6.46%
- Indirect taxes	3.35%	3.37%
Total income reduction as a result of taxes	**-8.82%**	**-11.49%**
Total reduction in average income: 2008-12	**-31.92%**	**-29.39%**

Source: Compilation of the findings of this research.

- These estimates do not include the negative impact of inflation on real income. Prices increased by 11.2% in 2008-2012, suggesting a further decline in real income. Subtracting the impact of indirect taxes on inflation (3.35%), to avoid double counting, the net downward effect of inflation on pre-tax income is about 5%.

Table 7.10 Aggregate data on income and taxes for the total of households (in EUR millions)

Deciles	Total amounts in EUR millions															
	Total pre-tax income		Tax exemptions		Income tax		Tax on income that are taxed separately		Property tax		Additional tax measures		Total tax burden		Total income after taxes	
											EETIDE	Solidarity tax				
	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	2012	2012	2008	2012	2008	2012
1st	667	612	22.2	32.9	4.3	40.6	7.7	9.6	10.4	11.5	146.3	0.0	22.4	208.0	645	404
2nd	2,866	2,376	34.1	32.3	4.8	34.0	23.7	21.7	9.0	8.7	131.8	0.0	37.5	196.2	2,829	2,180
3rd	4,373	3,503	45.4	30.8	5.0	41.6	32.4	24.5	10.1	7.9	137.4	0.0	47.5	211.4	4,325	3,291
4th	5,755	4,752	62.1	39.0	6.7	106.7	32.2	33.6	10.3	10.5	159.8	0.0	49.2	310.6	5,706	4,441
5th	7,194	6,121	76.2	44.1	99.7	237.6	53.4	43.8	13.0	12.0	176.7	15.9	166.1	485.9	7,028	5,635
6th	9,047	7,606	95.2	49.2	320.2	378.3	82.6	54.0	16.8	16.2	203.5	51.8	419.6	703.7	8,627	6,902
7th	11,426	9,395	116.3	59.2	621.6	630.9	118.1	74.5	21.9	20.0	259.0	70.0	761.6	1,054.2	10,665	8,341
8th	14,792	11,889	144.8	75.,3	1,066.8	1,020.0	159.0	109.4	28.5	31.3	324.7	159.5	1,254.2	1,644.9	13,538	10,244
9th	20,487	16,042	189.4	102.9	1,920.7	1,634.2	239.4	172.6	39.8	53.0	424.8	232.8	2,199.9	2,517.5	18,287	13,525
10th	46,915	32,694	242.6	165.4	5,852.7	4,930.0	1,960.0	964.9	102.3	282.7	836.0	751.3	7,915.0	7,764.9	39,000	24,930
Total	**123,521**	**94,991**	**1,028.3**	**631.2**	**9,902.5**	**9,053.8**	**2,708.5**	**1,508.5**	**262.0**	**453.6**	**2,800.0**	**1,281.3**	**12,873.0**	**15,097.3**	**110,648**	**79,893**
1st-5th	20,855	17,364	240.0	179.2	120.5	460.6	149.4	133.1	52.8	50.5	752.0	15.9	322.6	1,412.1	20,532	15,951
6th-7th	20,473	17,001	211.5	108.4	941.8	1,009.1	200.7	128.5	38.7	36.1	462.5	121.8	1,181.2	1,758.0	19,291	15,243
8th-10th	82,194	60,626	576.8	343.6	8,840.2	7,584.2	2,358.4	1,246.9	170.6	367.0	1,585.5	1,143.7	11,369.2	11,927.2	70,825	48,699
1%	15,168	8,651	26.2	28.0	1,614.1	1,502.7	1,291.0	545.0	28.2	121.5	180.2	278.6	2,933.2	2,628.0	12,235	6,023
0.1%	6,574	2,700	2.8	3.8	313.8	338.5	799.6	293.5	6.9	41.6	40.8	94.7	1,120.4	809.1	5,454	1,891

Source: Calculations based on tax data.

CHAPTER 8

REAL ESTATE PROPERTY, ITS DISTRIBUTION AND TAXATION

The present chapter deals with the changing tax burden on real estate property in Greece and how this property is related to the distribution of income, in particular income from capital (rents, interest and dividends). It also discusses the role of bank credit during the pre-crisis period, when excessive growth of mortgage loans caused house prices to soar and triggered a process that had all the characteristics of a bubble, resulting in recent years in household over-indebtedness and a huge stock of non-performing loans, threatening private property ownership and the viability of banks. If the sovereign debt crisis and the resulting haircut on Greek government bonds gave rise to the first wave of banking shock that led to the first recapitalisation of banks, the second wave was triggered by a private debt crisis, with non-performing loans rising to as much as 43% of total private sector loans by 2015, from 15% in 2011.

A feature that differentiates real estate property in Greece versus many other developed countries[86] is the fact that real property ownership and owner occupation are broadly based across the population. This can be historically explained by chronic instability and uncertainty – as a result of ineffective policies – affecting especially the economically weaker households, which saw precaution investment in a house as the only option for protecting their savings. Over a long period of time, continuing to the present, economic policy was conducted in a way that in the short term produced favourable outcomes but in the long run undermined income and currency stability. The decline in the value of the national currency was the invisible cost paid by society and the country for this type of policy. This cost kept accumulating for a long time and its most obvious aspect was the weakening of the drachma through continuous depreciation and

[86] See http://www.bankofgreece.gr/BogEkdoseis/2012_AGORA_AKINHTON_II.pdf and the individual contributions contained therein.

devaluations. Between 1975, when the Bretton Woods system of fixed exchange rates collapsed, and early 1998, before the drachma joined the Exchange Rate Mechanism, the Greek currency lost 88% and 92% of its value vis-à-vis the dollar and the German mark, respectively. In addition to adverse exchange rate developments, real deposit rates were often negative during that period, in particular until the late 1980s, leading to capital losses on savings placed in bank deposits.

A second factor behind savers' predilection for real estate was the widespread tax evasion surrounding and preferential tax treatment of real property (illegal building, favourable parental gift and inheritance taxation, absence of real property ownership taxation). The precariousness, small size, low competitiveness and overall functioning of Greek businesses probably worked in the same direction, in the sense that they did not offer to small and medium-sized savers a trustworthy investment alternative, in the form of shares or other securities, unlike what is the case in countries with strong, stable and expanding firms.

8.1 Real property in Greece: a comparison with other countries

Research on the distribution of property within various countries[87] focuses on total wealth, including real assets, financial assets (deposits, stocks, bonds, etc.), cars and other durable consumer goods. Also, where possible, a distinction is made between gross and net-of-debt wealth. For Greece, detailed data are available for real property only, which is estimated to account for about 88.3% of the total wealth of Greek households[88]. This compares with 75% for a set of 18 OECD countries for which total wealth estimates are available. Obviously, real property represents an overwhelming share of total wealth in Greece, much higher than in other countries and can thus be used as a good proxy for the total wealth of Greek households.

The most salient features of the distribution of property in Greece are its comparatively little concentration in the upper income deciles relative to other countries[89] and a weak correlation

[87] OECD (2015), Piketty (2014), Bank of Greece (2012).

[88] Piketty (2014), p. 264.

[89] See also Iara (2015), in particular pp. 3 and 27 ff.

between property and income. Households in the lowest 40% of the property distribution account for 8.1% of total property and 27% of total income (Table 8.1). For the 18 OECD countries, the respective figures are, on average, 3% of total property and 20% of total income[90]. On the other hand, households in the highest 10% of the property distribution in Greece own 44.1% of property, while the highest 10% of the income distribution accounts for 33.5% of total income (2012), as against OECD-18 averages of 50% for property and about 25% for income, respectively. From a different perspective households in the lowest 40% of the income distribution in Greece own about 25% of total property (2012) and 11.6% of total income (Table 8.2).

The nominal value of property, in particular real property that has been acquired through borrowing, greatly overestimates its true value. It is therefore necessary, where possible, to measure net wealth, i.e. the nominal value less outstanding mortgage loans. In terms of average net wealth per household, Greece ranks 16th among the 18 OECD countries. However, the two lower deciles of the income distribution in Greece, i.e. the bottom 20% of income, appear again to own a higher share of total household net wealth than their counterparts in Belgium, France, Germany, Luxembourg, Norway, Portugal or the United States. Conversely, the two higher income deciles (the top 20% of income) have a lower share than the corresponding households in the above countries[91]. Data on net wealth disprove the notion that the average Greek household is richer in real property than comparable households in other countries. It is true though that households in the lower deciles have a higher share, in some cases even in absolute terms, of total property in the country than the corresponding households in several other countries, while the opposite is true for the higher deciles.

8.2 Basic data on real estate property in Greece

In several advanced countries, property, just like income, is seen as an asset that has to be subject to the rules of tax progressiveness and contribute to the financing of public spending for the production of collective goods and services and to preventing long-term overconcentration of wealth and strong, structural and unfair inequalities.

[90] Ibid., p. 34.

[91] Ibid., pp. 243 and 248. These OECD data refer to net wealth and thus differ from those reported in the tables below, which refer to gross wealth.

In Greece instead, real property has hardly been treated by policy as an asset which, just like income, should contribute its fair share in tax revenues towards mitigating income and property inequalities. This favourable treatment is reflected, inter alia, in the very low parental gift and inheritance taxes. Before the crisis, real property was burdened by levies payable to local authorities and a tax on large real property corresponding to 0.2% of GDP. Greece had one of the most lenient real property tax regimes in the OECD or the EU in 2010[92], and even this small tax burden concerned, in a very fragmentary and selective way, the owners of large real estate. Moreover, the inadequate control mechanisms and the extensive tax evasion or the numerous lawful exemptions rendered this tax quite ineffective. After the crisis broke out, successive increases in real property taxes brought their ratio to GDP to over 1.7%, which ranks Greece among the five EU countries with the heaviest taxation of immovable property[93]. Following the further increase in real property tax in 2016, Greece should now top the list, with the highest average property tax burden as a percentage of GDP.

The issue of real property taxation has been hotly debated in Greece, especially since the start of the crisis. The first comprehensive -in the sense that it had a much wider scope beyond large real estate only- taxation of real property was introduced in 2010, when, under the pressure of fiscal deficits, the unified property tax (ETAK) was replaced by a new Tax on Large Real Estate, applying to properties of an aggregate value of EUR 200,000 or more per taxpayer. This tax was supplemented in 2011 by a tax payable through electricity bills (EETIDE), which applied across the board, with some specific exemptions, justifiable or not. Subsequently, in 2014, the two taxes were merged into a unified tax on real property ownership (ENFIA).

The controversy regarding the taxation of real estate, its method, base and scope reflects clientele politics on the part of successive governments. The criteria have changed again and again, since property tax and the tax system in general have never been the subject of a coherent, efficient, socially fair and growth-oriented policy approach.

Against this background, the following questions will be examined:

- What is the distribution of real property in Greece?
- How is the accumulation of real property associated with the income of its owners?

[92] Norregaard (2013), Appendix/Table 3.

[93] European Commission (2014), p. 87.

- What has been the actual impact of real property taxation on disposable income during the crisis, and what are its other characteristics?

8.2.1 Methodological remarks

The focus on real property means that other types of wealth (savings, investments, stocks, cars, leisure craft, etc.) remain outside measurement. Although cars, leisure craft and aircraft are declared for tax purposes and used as income presumptions, their monetary valuation is not feasible. Regarding real estate, the most comprehensive source of information are the personal and corporate property tax returns (Form E9). These returns cover all real properties, residential or other. Their shortcomings are that the data refer to gross values and that the objective values used during the crisis are typically significantly higher than market values.

On the other hand, a significant advantage of these data is that they reflect largely the relative distribution of real estate property across the society and can be associated with the income of the households owning the property. Furthermore, they can be associated with income from property (rents) or income from capital (dividends and interest), in order to compare with income from labour or other sources (i.e. pensions) and allow a rough estimation of the structure of other property excluding real estate (i.e. households' financial assets), as derived indirectly from interest income and dividend yields. Consequently, the results should be treated with some caution.

8.2.2 The distribution of real estate property

The distribution of real estate property was calculated on the basis of the tax returns submitted by a very large proportion of natural persons - in theory, all owners of real estate property. As a first step, households were classified into deciles, according to the nominal value of their total property. The columns of group (1) of Table 8.1 provide the sum total of the value of real property for each decile. These figures add up to a country-wide total of EUR 460.8 billion in 2008 and EUR 472 billion in 2012[94].

[94] Given that objective values remained unchanged between these two years and building activity has collapsed since 2009, the small size of this change can be easily explained.

Table 8.1 Decile classification of households based on their real estate property, and incomes corresponding to these deciles (in EUR)

	Total value of real estate property (in EUR millions)		Average value of real estate property (in EUR)		Average rental income (in EUR)		Average income from dividends and interest (in EUR)		Average income (in EUR)		Total income (in EUR millions)	
	(1)		(2)		(3)		(4)		(5)		(6)	
Deciles	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012
1st	2,247	2,524	6,021	6,539	306	269	1,093	584	13,298	11,830	4,963	4,567
2nd	6,396	7,098	17,137	18,386	436	381	1,218	625	14,622	12,863	5,458	4,966
3rd	10,867	11,824	29,114	30,628	554	453	1,403	709	16,320	14,093	6,091	5,441
4th	15,744	16,846	42,181	43,639	726	576	1,684	765	18,043	15,094	6,735	5,827
5th	21,351	22,599	57,205	58,538	856	682	1,740	886	19,983	16,468	7,458	6,357
6th	28,245	29,621	75,671	76,727	1,076	873	2,520	982	22,631	17,761	8,447	6,857
7th	37,580	39,173	100,679	101,474	1,471	1,135	2,680	1,269	25,279	20,000	9,436	7,721
8th	51,733	53,665	138,606	139,008	2,041	1,659	3,581	1,671	29,398	22,867	10,972	8,828
9th	78,564	80,681	210,482	208,986	3,550	2,824	5,678	2,332	35,598	26,753	13,287	10,328
10th	208,112	207,918	557,582	538,592	11,855	8,820	17,561	7,848	61,414	41,894	22,922	16,173
Total	460,840	471,951	123,467	122,251	2,287	1,767	3,916	1,767	25,658	19,962	95,770	77,065
Top 1%	58,812	57,391	1,575,878	1,486,810	37,306	26,240	77,963	32,136	155,437	89,121	5,801	3,440
Top 0.1%	14,589	13,849	3,921,849	3,587,801	82,706	54,462	201,878	132,967	347,016	231,707	1,291	894
Share of top 1% in total			12.8	12.2	16.3	14.9	19.9	18.2	6.1	4.5		
Share of top 0.1% in total			31.8	29.3	36.2	30.8	51.6	75.3	13.5	11.6		

	Percentage structure of total property		Percentage structure of total income		Percentage share of rental income in total income		Percentage share of dividend/interest income in total income		Rental income as a percentage of property value	
Deciles	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012
1st	0.49	0.53	5.2	5.9	2.3	2.3	8.2	4.9	5.1	4.1
2nd	1.39	1.50	5.7	6.4	3.0	3.0	8.3	4.9	2.5	2.1
3rd	2.36	2.51	6.4	7.1	3.4	3.2	8.6	5.0	1.9	1.5
4th	3.42	3.57	7.0	7.6	4.0	3.8	9.3	5.1	1.7	1.3
5th	4.63	4.79	7.8	8.2	4.3	4.1	8.7	5.4	1.5	1.2
6th	6.13	6.28	8.8	8.9	4.8	4.9	11.1	5.5	1.4	1.1
7th	8.15	8.30	9.9	10.0	5.8	5.7	10.6	6.3	1.5	1.1
8th	11.23	11.37	11.5	11.5	6.9	7.3	12.2	7.3	1.5	1.2
9th	17.05	17.10	13.9	13.4	10.0	10.6	15.9	8.7	1.7	1.4
10th	45.16	44.06	23.9	21.0	19.3	21.1	28.6	18.7	2.1	1.6
Total	100.00	100.00	100.0	100.0	8.9	8.9	15.3	8.9	1.9	1.4
Top 1%	12.76	12.16	6.1	4.5	24.0	29.4	50.2	36.1	2.4	1.8
Top 0.1%	3.17	2.93	1.3	1.2	23.8	23.5	58.2	57.4	2.1	1.5

Source: Calculations based on tax data.

The columns of group (2) in Table 8.1 show the average value of real property per household in each decile. For the country as a whole, the average property value per household is EUR 122.3 thousand (2012). For the lowest decile of the **property** distribution, the average is EUR 6,500, while for the highest (10th) decile it is EUR 538,6 thousand. Much larger figures correspond to the top 1% and 0.1% of the distribution.

The above data broadly coincide with data published in the press[95], presumably referring to 2014, and suggesting that the aggregate "objective" value[96] of real estate property of 5.6 million taxpayers was EUR 530.5 billion. Also, according to the same source, 45.8% of this total was held by the top 10% of taxpayers with the highest value of property, and 14% was held by the top 1%. The figures in Table 8.1 show that the top 10% owned 44.1% of total real property and 21% of total income, while the top 1% owned 4.5% of total declared income in 2012, compared with 6.1% in 2008.

Using income rather than property as a criterion for classifying households into deciles, the top 10% of households in 2012 account for 25.7% of total property and 33.5% of total income. Some further important findings arising from these data are the following:

- The six lower deciles of the real property distribution (60% of households) account for 19.2% of total real property (2012). In particular, households in deciles 1-2 account for 2.6% of total income, but 12.5% of total property. From the 6th to the 10th decile, the income share exceeds the property share, with the exception of the top 1%, which accounts for 12.2% of total property, but only 4.5% of total income. This pattern is more manifest in the top 0.1%. Based on the income classification, the five lower deciles (50% of households) have therefore a significantly higher share in total property than based on the real property classification in Table 8.1 (35.2% of total income, compared with 12.9% of total property).
- The two highest deciles (9th and 10th) (i.e. 20% of the population) account for 17.1% and 44.1%, respectively, of total real estate, and the top 1% accounts for 12.2%.
- Still, property inequality in Greece is well below that observed in various advanced economies (France, Germany, United Kingdom, Italy, United States)[97], where the lower 50% of households own less than 5% of total property and the top 10% has a share of between 60% and 70%[98]. In one of the next sections, an attempt is made to indirectly measure wealth other than real estate, i.e. financial wealth, which shows a significantly higher degree of inequality than immovable property. Factoring in this consideration,

[95] Athens newspaper *Imerisia*, 9-10 May 2015.

[96] The formal term is 'zonal property values'.

[97] Piketty (2014), p. 318. However, it should be recalled that Piketty's estimates refer to total wealth, which in theory includes several types of assets other than real property.

[98] Ibid., p. 420-432.

inequality of total wealth, comprising real estate, deposits and securities, is higher than what we found for real estate.

- According to the data of Table 8.3 and Piketty's classification[99], Greece seems to exhibit a weak or medium degree of property inequality. Of course, there is always the problem of comparability of real property statistics across countries. Nevertheless, the above observations remain valid and relevant, even if caution is warranted for the reasons already mentioned.
- Between 2008 and 2012, the distribution remains fairly stable, except for a slight decrease in concentration in the highest 10th decile and in the top 1% and 0.1%, which likely reflects a downward trend of households to dispose of assets in view of the significant increase in property taxes.
- Despite their comparatively high share in property, lower deciles (1-3) have comparatively very low average total income, which is below or around the poverty line. However, as will be shown in a following section, high mortgage borrowing capacity may be associated with concealment of income.

As a result of this peculiar distribution, the three "poorer" deciles have a very high proportion of income from capital (rents, dividends and interest) compared with the middle or even the higher deciles, except the very high. However, in absolute amounts, these rent and dividend-interest incomes are very low (EUR 84 to 420, for deciles 1-3 in 2012) and, moreover, as a percentage of the value of real property (return on capital), represent very low yields. Does this indicate a concealment of income by strata that have accumulated significant wealth? Or rather does it indicate the existence of real property that is simply owner-occupied? Without detailed data, this peculiar situation can only be identified, but not interpreted.

8.2.3 A comparison between the distribution of real estate property and incomes

Table 8.2 shows the structure of household income and real property for 2008 and 2012. Unlike Table 8.1, the classification criterion is the level of the average income, rather than the average value of real estate, for each decile. Thus we can see the average income that corresponds to each decile and the corresponding value of real property. This comparison is based only on households

[99] Ibid., p. 308.

that have real estate. For practical reasons, data on all households, whether they own real estate on not, are not provided.

Table 8.2 Decile classification of households based on their incomes, and property values corresponding to these deciles

	Average value of property (in EUR)		Total value of property (in EUR millions)		Total rental income (in EUR millions)		Total dividend/interest income (in EUR millions)		Total income from rents, dividends and interest (in EUR millions)		Total income (in EUR millions)	
Deciles	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**	**2008**	**2012**
1st	70,120	76,366	26,164	29,480	175	58	47	26	222	84	549	208
2nd	60,404	75,818	22,553	29,270	266	316	118	121	385	437	2,243	1,748
3rd	69,577	70,178	25,969	27,093	345	280	172	140	516	420	3,427	2,913
4th	75,018	81,194	28,001	31,344	394	352	256	188	650	540	4,573	4,042
5th	85,407	85,943	31,877	33,179	503	381	353	225	856	606	5,808	5,192
6th	100,831	97,787	37,636	37,752	624	459	494	276	1,118	735	7,268	6,398
7th	116,679	113,718	43,552	43,900	774	578	598	352	1,372	930	9,074	7,850
8th	139,316	136,113	51,998	52,548	990	785	820	511	1,810	1,296	11,605	9,809
9th	177,582	171,730	66,284	66,298	1,269	1,087	1,210	771	2,478	1,857	15,769	13,067
10th	339,743	313,665	126,806	121,087	3,196	2,528	10,547	4,212	13,744	6,739	35,454	25,837
Total	123,467	122,251	460,840	471,951	8,537	6,822	14,615	6,822	23,152	13,644	95,770	77,065
Top 1%	1,575,878	1,486,810	58,812	57,391	1,392	1,013	2,910	1,240	4,302	2,253	5,801	3,440
Top 0.1%	3,921,849	3,587,801	14,589	13,849	308	210	751	513	1,059	723	1,291	894

	Percentage structure of property		Percentage structure of income		Percentage structure of rental income		Percentage structure of dividend/interest income		Percentage structure of income from rents, dividends and interest	
Deciles	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012
1st	5.68	6.25	0.6	0.3	2.1	0.8	0.3	0.4	1.0	0.6
2nd	4.89	6.20	2.3	2.3	3.1	4.6	0.8	1.8	1.7	3.2
3rd	5.64	5.74	3.6	3.8	4.0	4.1	1.2	2.1	2.2	3.1
4th	6.08	6.64	4.8	5.2	4.6	5.2	1.8	2.8	2.8	4.0
5th	6.92	7.03	6.1	6.7	5.9	5.6	2.4	3.3	3.7	4.4
6th	8.17	8.00	7.6	8.3	7.3	6.7	3.4	4.0	4.8	5.4
7th	9.45	9.30	9.5	10.2	9.1	8.5	4.1	5.2	5.9	6.8
8th	11.28	11.13	12.1	12.7	11.6	11.5	5.6	7.5	7.8	9.5
9th	14.38	14.05	16.5	17.0	14.9	15.9	8.3	11.3	10.7	13.6
10th	27.52	25.66	37.0	33.5	37.4	37.1	72.2	61.7	59.4	49.4
Total	100.00	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Top 1%	12.76	12.16	6.1	4.5	16.3	14.8	19.9	18.2	18.6	16.5
Top 0.1%	3.17	2.93	1.3	1.2	3.6	3.1	5.1	7.5	4.6	5.3

Source: Calculations based on tax data.

The existence of real property is often associated with the existence of other capital assets held in the form of deposits and securities (stocks, bonds, etc.). In such cases, the real property or the property income are supplemented by financial holdings and returns. Data on the absolute amount of deposits are available only for the whole economy and the entire population. However, we investigated this relationship using as a proxy for the value of deposits and securities the level of rental income and income from interest/dividends in individual deciles (Table 8.1). The average income from each of these two sources was, for the entire population, exactly the same in 2012 (EUR 1,767 annually). However, a comparison with the figures for 2008 shows that

interest/dividend income was, in that year, significantly higher than rental income (EUR 3,916 annually, compared with EUR 2,287, respectively). As a percentage of total income, rental income, remained stable (8.9%) between 2008 and 2012, but income from dividends/interest almost halved (from 15.3% to 8.9%), reflecting a fall in corporate profitability, the collapse of the government bond market, and possibly a tapping into accumulated savings or a shift away from bank deposits towards liquid assets that do not yield interest income.

Overall, in the richest (10th) decile of the real property distribution, as well as in the top 1% and 0.1%, we observe large amounts of annual income from rents and interest/dividends (EUR 29,400 for the 10th decile, up to EUR 284.6 thousand for the top 0.1% in 2008), which moreover represent a very high percentage of the total income of these groups (between 47.9% for the 10th decile and 82% for the top 0.1% in 2008).

This picture probably reflects the moderate degree of inequality of property distribution across the population. Piketty classifies a value of 0.58 in property inequality as "medium inequality" – noting also that "low inequality" has never been observed[100].

Having in mind that the structure of dividend/interest income is only an approximation of the structure of assets held in the form of shares and deposits, in Table 8.2 we can see the structure of real property, total income and dividend/interest income per decile. By comparing the shares of these variables, the following remarks can be made:

- The two upper deciles (9th and 10th) of the real property distribution concentrate 61.2% of real estate.
- The top 1% and 0.1% of the real property distribution clearly have a larger share in total securities and deposits than the country average: with a real property that is 12.2 times higher than the country average, the top 1% has 18.2 times more income from securities and deposits. The respective factors for the top 0.1% are 29.3 and 75.3.
- In the very low deciles (mainly 1-3), the concentration of real property (4.5% of the total) is significantly lower than the concentration of income from securities and deposits. On average, the dividend/interest income of these households corresponds to 36.2% of the country average, while their real property corresponds to only 15.1% of the country average.

[100] Ibid.

Chart 11.8 (Chapter 11.5) shows the values of the Gini inequality index for real property, income and specific sources of income. A key finding is that property inequality is much higher than income inequality. Inequality in income from real and financial property (rents, interest, dividends) as a sum is clearly higher than in total income, although within this aggregate value interest and dividend income reveal much lower inequality, obviously due to the dramatic fall in deposit and share yields during the crisis. Also in the same period, the distribution of real property across 'households with real property' showed an only slight downward change, while the change was stronger among 'all households', probably because a number of households had to sell their real property in order to meet urgent needs, or to avoid the burden of real property taxation.

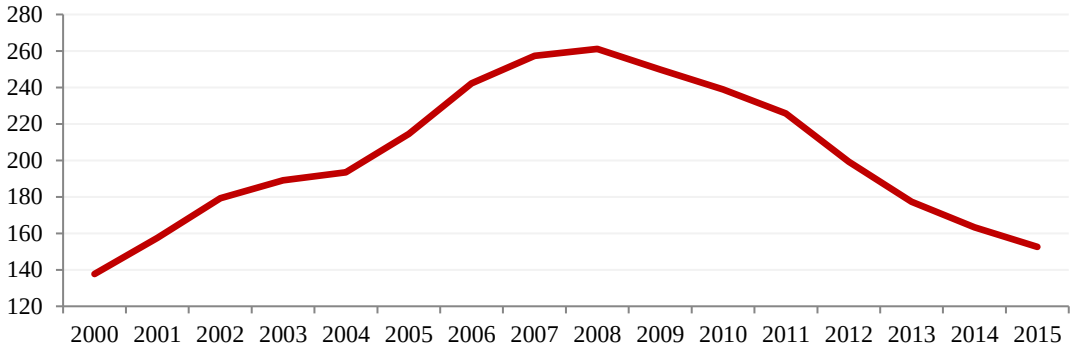
8.3 Bank credit, real estate market and non-performing housing loans

This section examines the relationship between bank credit and real property formation in the period after 2003 till the crisis, and the way in which bank loans contributed to increasing the real property and the liabilities of households. This approach allows us to obtain a view on a key mechanism which triggered the growing stock of non-performing loans ("red loans", as they are commonly called in Greece), which, during the crisis, impaired banks' viability and capacity to finance surviving businesses and the recovery of the economy.

With euro area participation, two new factors emerged that made investment in real property even more attractive:

First, households' access to housing (and other) loans at historically low interest rates for Greece, coupled with the ample liquidity that Greek banks could obtain from the international market and the lack of effective control on mortgage (or other) credit expansion. Having abundant liquidity, banks offered a profusion of consumer, housing and business loans. The cost of borrowing (interest rates) declined significantly, encouraging a large number of households to take out mortgage or consumer bank loans. At the time, there seemed to be a kind of political will to satisfy the housing needs of the economically weaker as well as of better-off strata via the banking system, ignoring the risks lurking in the long term.

Chart 8.1 House price index in Greece



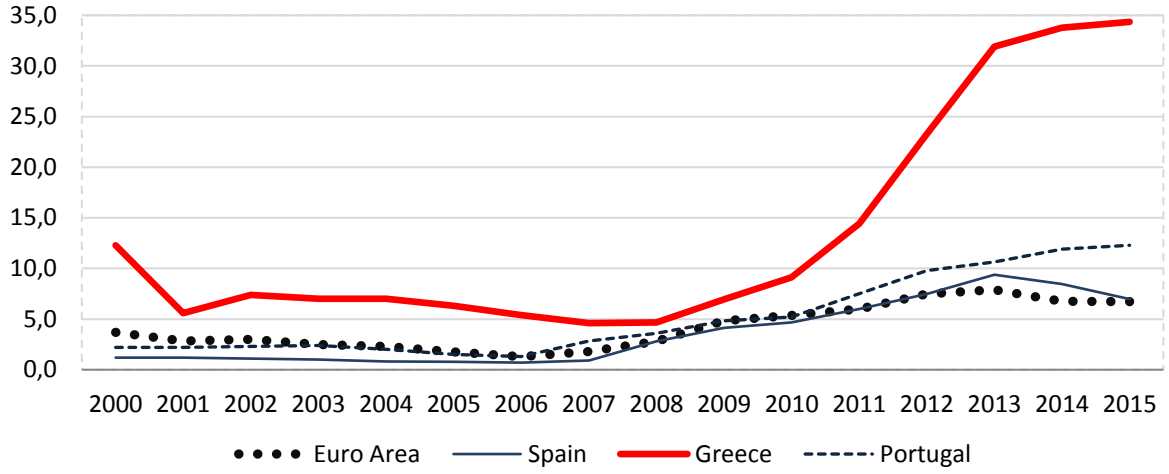
Source: Bank of Greece.

Second, this process of continuous credit expansion fuelled the classical upward spiral in real estate prices, making borrowing even more attractive and easier as a tool for acquiring real estate. The increases in real property valuations (capital gains) significantly outpaced GDP growth. The house price index rose by 87.5% between 2000 and 2008. With the crisis, this trend was reversed, and prices fell by a cumulative 42% in the 2008-2015 period, coming close to their 2001 levels by 2015, as shown in Chart 8.1.

The interaction of bank credit expansion and the crisis resulted, as early as in 2009, to a build-up of non-performing loans which gradually took on explosive proportions, reaching 35% of total housing loans in 2015 (the official figure probably understates the size of the problem), compared with no more than 13% in other crisis countries (Portugal, Spain - see Chart 8.2). Chart 8.3 plots the growth rate of housing, consumer and other loans of households between 2004 and 2015 against GDP growth over that period. Between 2000 and 2009, the mortgage loans increased by 713% and corresponded to 34% of GDP, up from 8% in 2000[101].

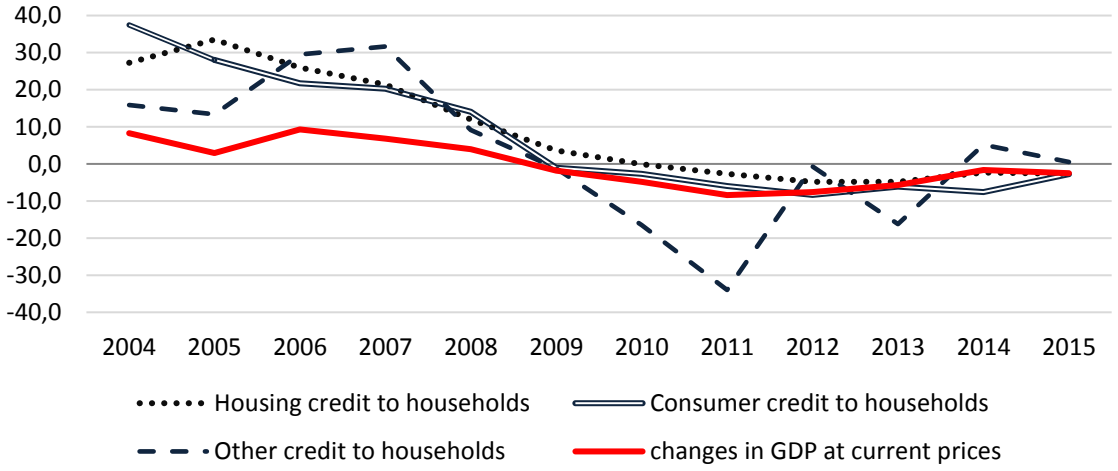
[101] These rates are higher than the rate of change in GDP even after 2009 and until about 2013, but this is likely to reflect outstanding interest payments and default interest that add to the total outstanding amount.

Chart 8.2 Non-performing loans as a percentage of total loans



Source: World Bank.

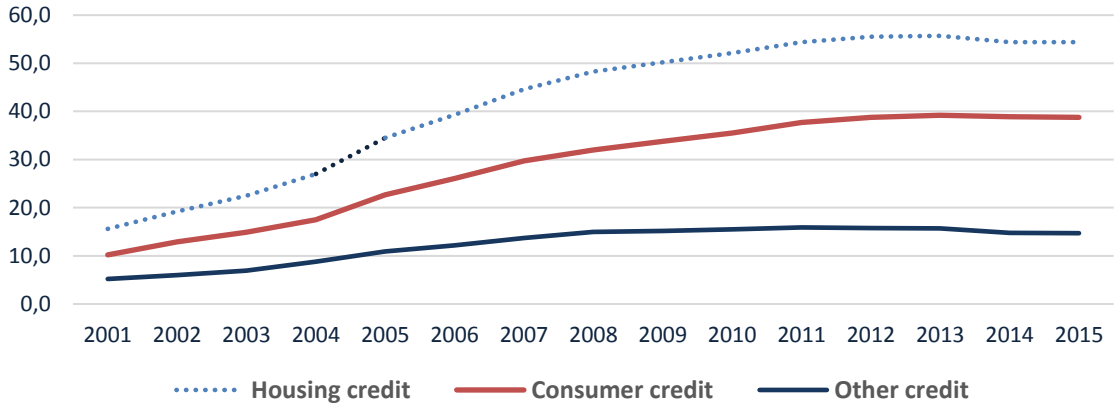
Chart 8.3 Changes (%) in housing, consumer and other credit to households (end-of-period) and changes in GDP at current prices



Sources: Bank of Greece and European Economy, Autumn 2015, Statistical Annex,

Chart 8.4 shows the substantial expansion of all types of credit that took place in the pre-crisis years. Credit expansion was much stronger in housing loans compared with consumer, business or other loans.

Chart 8.4 Housing, consumer and other credit to households as % of GDP at current prices



Sources: Bank of Greece and European Economy, Autumn 2015, Statistical Annex.

Table 8.3 provides a decile classification of households which in the 2003-2008 period took on a loan for first home purchase. Under distinct codes in their tax returns, taxpayers declare the total outstanding amount of their loans and the loan repayments they made during the reference year (specifying the amounts of interest payments and total debt servicing payments for principal and interest). In fact, households have an incentive to declare their loan obligations, because a part of interest payments is deducted from taxable income.

The data in Tables 8.3 to 8.6 and Chart 8.5 refer only to mortgage loans for first home purchase and the economic profile of households with such loans. Therefore, they cover only a part of total mortgage loans, unlike Charts 8.2-8.4 which include data on total mortgage loans. The discussion that follows focuses on mortgage loans for first home purchase.

Households' first home loans are divided into two periods: before and after 2003. The available data used below are based on the 2008 household income tax returns, referring to incomes earned in 2008. They thus provide a picture of outstanding loans for first home purchase and borrowers before the economic crisis broke out.

More specifically, in 2008, 450,300 households had outstanding loans for first home purchase, in a total amount of EUR 41.5 billion. For 262,080 of these households, the loans were contracted after 2003 and represent a total outstanding amount of EUR 27 billion, as calculated in 2009, implying that pre-2003 loans amount to EUR 14.5 billion. It should also be noted that it is possible to identify whether the loan is in an early or late stage of repayment, given that in the later years of the maturity of a loan, borrowers pay mostly principal, while in the early years they pay mostly interest.

The decile classification of households in Tables 8.3 and 8.5 is based on the income level or the outstanding amount of the loan, examining the same households in both cases.

Starting with post-2003 loans, households are classified into deciles based on their 2008 income. As shown in Table 8.3, the average income of households that had borrowed to purchase a first home was EUR 34,398 in 2008. The average amount of these loans was EUR 102,789 and the average objective value of total property was EUR 99,436. These households paid, on average, EUR 3,645 for interest and EUR 2,649 for principal in 2008[102].

In the 1st decile, where the poorest households with a first home loan are classified, the average income is about EUR 6,000, the value of property is EUR 67,000 and the outstanding amount of loans is EUR 79,000. In all deciles from the 1st to the 8th, the amount of the loans is higher than the objective value of the property. Only in the 9th and 10th deciles is the amount of the loans less than the value of the property.

Table 8.3 Decile classification of households that obtained a first home loan in 2003-2008, based on 2008 income (in EUR)

Deciles	Average income 2008	Average value of property 2008	Average value of property 2012	Average value of loans 2003-08	Interest payments 2008	Principal payments 2008	Loans /Income 2008	Loans/ Property 2008	Principal and interest payments /Income 2008
1st	6,071	67,217	70,633	79,121	2,625	1,822	13.03	1.18	0.73
2nd	13,173	69,033	73,729	81,271	2,755	1,489	6.17	1.18	0.32
3rd	17,651	71,709	75,212	87,793	3,070	2,169	4.97	1.22	0.30
4th	21,396	76,441	78,310	88,955	3,242	1,967	4.16	1.16	0.24
5th	25,225	77,024	80,656	93,137	3,354	1,419	3.69	1.21	0.19
6th	29,716	93,364	97,023	100,410	3,622	2,670	3.38	1.08	0.21
7th	35,034	96,715	100,933	106,760	3,788	2,536	3.05	1.10	0.18
8th	41,684	107,750	110,925	112,297	4,094	3,131	2.69	1.04	0.17
9th	51,956	135,184	141,572	119,585	4,230	2,984	2.30	0.88	0.14
10th	102,083	199,938	208,457	158,561	5,668	6,309	1.55	0.79	0.12
Total	34,398	99,436	103,744	102,789	3,645	2,649	2.99	1.03	0.18

Source: Calculations based on tax data.

This could be explained by the fact that the market value taken into account by the bank was well above the objective value; consequently, the loan-to-value ratio appears to be far above par. In addition, it is likely that borrowers were able to demonstrate income in excess of what they disclosed in their tax returns, thereby making up for the adverse loan-to-value ratio. Of course,

[102] The last official list with the objective values of real estate was published in 2008 and remained unchanged throughout the whole period till 2006, despite the increasing gap versus the market values. Even this revision in 2006 did not bridge the existing gap.

when both real estate market valuations and incomes collapsed with the crisis, banks faced a problem of under collateralisation, leading to a rising stock of non-performing loans.

Looking at the data of Table 8.3, one can be puzzled at how, before the start of the crisis, a number of these loans could possibly be serviced with the declared incomes of the respective borrowers. Households with an average annual income of EUR 6,000 would have to pay EUR 4,447 annually, accounting for 73% of their income. On the other hand, the average loan obtained per household is hardly different from the value of its property. Most households at the time could and did borrow from banks for a first home purchase up to an average amount of EUR 80,000-93,000 in the case of lower 50% of the income distribution and of up to EUR 100,000-158,000 in the case of the upper 50% (deciles 6-10). A huge difference between the amount of loans and income can be seen in the lowest decile (13 times higher) and partly in the 2nd to 4th deciles (4 to 6.2 times higher). These figures make it reasonable to assume that the actual incomes of these groups exceeded their declared taxable incomes, enabling banks to extend disproportionately high amounts of loans.

In Table 8.4 the decile classification of households is based on the amount of mortgage loans instead of the income criterion used in Table 8.3. The households with the lowest amounts of loans are classified in the 1st decile and those with the highest amounts are classified in the 10th decile. While in individual deciles the figures differ from those shown in Tables 8.3 and 8.4, they remain the same for the total of households, since, as mentioned, they refer to the same households.

According to Table 8.4 and Table 8.3, some key findings can be derived:

- In the case of households with high mortgage loans for home purchase (over EUR 80,000), the loans were potentially (in the event of negative developments such as those that emerged) under-collateralised. This applies to 50% of households. The size of under-collateralisation is determined by the difference between the actual values of real property before and during the crisis. It should be noted that in the upper income deciles the loan-to-income and loan-to-value ratios were significantly higher, therefore riskier, in cases of high amounts of loans (7th to 10th deciles) than in lower loans (Table 8.4).

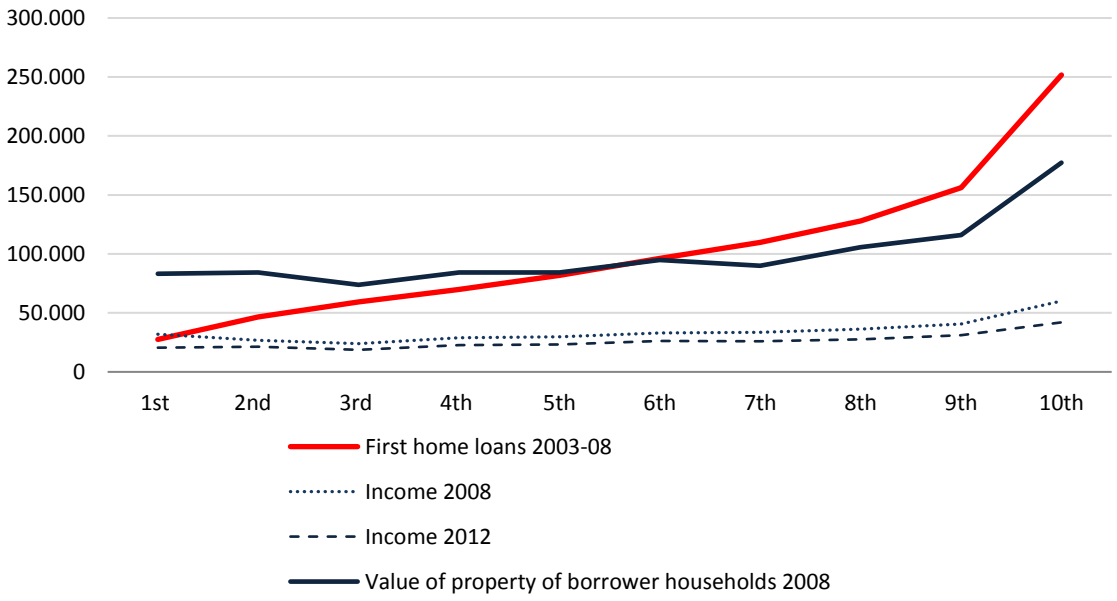
Table 8.4 Decile classification of households based on the amount of first home loans obtained in 2003-2008 (in EUR)

Deciles	Amount of loans	Average annual income		Change 2012/2008	Value of property	Loans /Income	Loans/ Property
	2003-08	2008	2012	%	2008	2008	2008
1st	27,494	31,812	20,557	-35.4	83,209	0.86	0.33
2nd	46,683	26,773	21,215	-20.8	84,317	1.74	0.55
3rd	59,378	23,942	18,685	-22.0	73,814	2.48	0.80
4th	69,935	29,064	22,646	-22.1	84,279	2.41	0.83
5th	81,943	29,708	23,228	-21.8	84,390	2.76	0.97
6th	96,184	32,882	26,212	-20.3	94,822	2.93	1.01
7th	109,814	33,429	25,993	-22.2	90,020	3.29	1.22
8th	128,059	36,179	27,609	-23.7	105,585	3.54	1.21
9th	156,242	40,586	30,985	-23.7	115,999	3.85	1.35
10th	251,710	60,101	41,975	-30.2	177,349	4.19	1.42
Total	102,789	34,398	25,907	-24.7	99,436	2.99	1.03

Source: Calculations based on tax data.

- On average, all households that took out a loan for first home purchase saw their income shrink by 24.7% between 2008 and 2012 (Table 8.4). In this context, debt servicing became increasingly difficult. Many households stopped debt repayments to banks. The decline in incomes continues in the next years, and the problem is growing.

Chart 8.5 First home loans and value of property of borrower households, per decile of loan amount (in EUR)



Source: Calculations based on tax data.

- With loans in arrears, borrowers face the additional cost of default interest and also the general increase in interest rates during the crisis. Banks on the other hand face higher credit risks amid falling housing market valuations that deteriorate under-

collateralisation. As shown in Chart 8.5, the loan-to-value gap is already high for households with large amounts of loans. After 2008, this gap widens further.

- Neither the level of income nor the amount of the objective value of the property appears to be a crucial criterion for banks to determine the amount of the loan to be granted. Rather, the primary criterion appears to have been the collateral value, with banks assuming that the market value of the property was significantly higher than its current objective value and this adequately secured their claim, without wondering if there was an overvaluation or a "real property bubble" in the market. For as long as the country's fiscal problems were "swept under the carpet", credit to households for home purchase continued to flow uninterrupted. The problems started with the onset of the crisis, when real property values began to fall.

Table 8.5 includes all loans obtained by households for first home purchase, according to their tax returns of 2013 (referring to 2012 incomes). The average area of this first home is about 89 square meters. According to the data in the table, interest payments are now less than principal payments, since this table includes outstanding amounts of older loans, as opposed to Table 8.4, which shows recent loans for which interest payments were higher.

Table 8.5 Decile classification of households with a first home loan, based on 2012 income (in EUR)

	Average annual income			Value of property	Amount of loans	Interest payments	Principal payments	Loans/ Income	Loans /Property	Principal and interest payments /Income	Surface area of house (square metres)
	2012	2008	2012/ 08 %	2012	2012	2012	2012	2012	2012	2012	2012
1st	4,095	15,246	-73.1	74,724	78,462	1,492	3,741	19.16	1.05	1.28	78.6
2nd	11,315	18,256	-38.0	74,287	72,716	1,497	3,245	6.43	0.98	0.42	78.9
3rd	15,418	21,547	-28.4	84,800	75,465	1,667	3,697	4.89	0.89	0.35	80.9
4th	18,877	25,026	-24.6	86,670	78,424	1,765	4,180	4.15	0.90	0.31	82.0
5th	22,427	29,583	-24.2	93,294	78,657	1,830	4,039	3.51	0.84	0.26	84.4
6th	26,378	32,412	-18.6	99,037	84,342	1,883	4,715	3.20	0.85	0.25	87.1
7th	31,093	37,221	-16.5	105,086	142,762	2,049	5,055	4.59	1.36	0.23	88.6
8th	36,769	43,840	-16.1	122,438	91,939	2,111	5,592	2.50	0.75	0.21	93.4
9th	44,887	52,819	-15.0	158,864	90,597	2,041	6,086	2.02	0.57	0.18	97.5
10th	77,204	80,223	-3.8	216,532	127,974	2,537	9,620	1.66	0.59	0.16	115.0
Total	28,846	35,617	-19.0	111,572	92,134	1,887	4,997	3.19	0.83	0.24	88.6

Source: Calculations based on tax data.

The decile classification of households is based on 2012 incomes. We can observe that the incomes of the poorest households (1st decile) are down by 73.1% in 2012. These households have an average annual income of EUR 4,095, while the cost of servicing their loans is EUR 5,233;

the total outstanding amount of their loan is 19 times higher than their annual income and 105% of the value of their property. In addition to households in the 1st decile, those in the 2nd decile also face a significant debt servicing burden, which represents 31% to 42% of their reduced income -to the extent that there is no undeclared income. For all households, the average debt servicing cost as a ratio of income increased by 6 percentage points from 18% in 2008 to 24% in 2012.

8.4 Real estate, household debts and property taxation

In the previous section (see Table 8.5), we showed that household mortgage loans accounted for approximately 83% of the value of their total real property in 2012. For low-income households (the lower 40% of the total), this percentage was between 89% and 105%. If this percentage was seemingly high before the crisis, because the objective values were significantly lower than market values, this relationship was reversed after the crisis. Loans represent a significantly higher percentage of the objective value of the property, which has declined considerably in market terms. In addition, for this group of poorer households, loan repayments in 2012 represent a very high percentage of pre-tax income (128% for the lowest decile and 31%-42% for the 2nd to 4th deciles), which in fact has fallen by 25%-73% since 2008. Overall, the indebtedness of these strata is a factor that must be taken into account in interpreting the more general social and political problems that have arisen in the country after the crisis. Exacerbating this unfavourable relationship, real property tax (EETIDE, ENFIA) was introduced, applying to the gross value of property. This tax is levied on total gross property, while the net value is, on average, only 17% of the nominal value. It is reasonable to assume that due to the phenomenon of tax evasion, income is underestimated. Assuming that the size of this underestimation remains stable throughout the period, the burden revealed by the combination of the data provided above is significant, both for households and the banking system. The landscape of household borrowing was drastically changed by the crisis. A significant number of households faced not only lower salaries or unemployment for one or more of their members, but also high real estate taxes and debts to banks, which in the context of a frozen real estate market were extremely difficult or impossible to service.

Against this background, one could reasonably argue that it would be fairer to tax the value of real estate net of debt. Taxation of gross value has a very negative impact on middle and low income deciles, in which the value of loans as a ratio of the value of real property (see Table 8.5) is markedly higher than for high deciles.

However, this option also has a serious disadvantage: it involves unfavourable treatment of those households which have prudently managed their income and wealth, did not borrow to acquire a durable consumer asset such as a dwelling or, if they did, they did so by reducing consumption and increasing their savings. Putting an asymmetric burden on them relative to indebted property owners would be discriminatory, would reward excessive and wasteful consumption versus savings and would encourage behaviours that are detrimental to the functioning of the economy and society. Also, as mentioned, the taxation of real estate, excluding financial assets that are predominantly held by high income deciles, risks deteriorating rather than reducing, wealth inequality.

8.5 Concluding remarks

The distribution of real property in Greece, and the relationships that have been indentified, throw into sharp relief the dilemmas and contradictions that have arisen in the implementation of higher real property taxation in the years of the crisis (EETIDE, ENFIA). Those with the lower incomes (e.g. the lower 50%) have a disproportionately higher share in property (31.9% of the total), but their income status (18.3% of the total) is hindering a proper fulfillment of their property tax obligations. In addition, these lower income strata saw their incomes fall dramatically during the crisis, while their share in deposits (10.4%) also appears to be lower than their share in total income (18.3%, see Table 8.2). For these strata, the exorbitant taxation of real property does not only mean a substantial increase in their tax burden; it also means that they lack income or sufficient savings to pay for this tax.

In upper income strata, the reverse pattern can be observed. Their share in total real property is proportionately smaller than their share in total income. These strata are already significantly burdened by real property tax, in relative and absolute terms. The transfer of a significant part of the additional tax burden to the middle and high income strata, which have a comparatively smaller share in real estate, would raise concerns on tax efficiency or even tax justice.

From another point of view, it has been found that ownership of real estate, in particular owner-occupied real estate, is typical of middle income strata – in the case of Greece, of lower strata too – while richer strata are characterised by property diversification, also investing in financial assets. The heavy tax burden on real property and the zero burden on financial assets is a discrimination that deteriorates the relative position of the middle strata, generating higher inequality in society[103].

More generally, irrespective of their decile classification, a significant but uncertain number of households face excessive tax burdens on real property and fail to pay their taxes, accumulating tax arrears and thereby jeopardising their assets and income in the future. However, a generalised real property tax is essential in a modern and fair tax system. In Greece, all income groups were accustomed to not having to pay any such tax. So, today, this tax seems too much to them and there is a general negative reaction, which is to a great extent also due to the great exaggerations or injustices in its implementation. A well-thought rationalisation of such a sensitive tool of economic policy and social balance could eliminate many of the problems that we mentioned above.

In conclusion, the picture emerging from the above shows a society in which real property has a much smaller degree of inequality than in other European countries. Low and middle income strata have an asset basket, which mitigates the asymmetry, relative to the top of the distribution, that characterizes the corresponding strata in other countries. But this also shows the limits of the effectiveness of real property taxation. Excessive taxation, which does not take into account all the economic and social parameters, cannot but have adverse consequences for the social structure of the country, with far-reaching implications. Is such an effect politically desirable? The "right" answer is probably negative, with the qualification that we ignore the extent of tax evasion.

More generally, the conclusion goes beyond strictly fiscal questions. Real property tax (and not just local authority levies), in the countries where it is imposed, has a generalised, "fair" and redistributive character. That said, the size of the burden cannot ignore the income situation and the crisis conditions in the real estate market, which are prohibitive for the liquidation of assets. On the other hand, the tax cannot be limited, as has been the case for many years, to some "large

[103] Iara (2015), pp. 12-13.

real estate", because this narrows the base of the tax. In the conduct of policy, striking a balance between tax justice, the income and financial situation of taxpayers and the need to not disturb fundamental relationships that crucially hold society together is a key condition for success.

CHAPTER 9

AGRICULTURAL INCOME TAXATION AND INEQUALITY

In our analysis of income developments, we divided households into employee households, pensioner households, self-employed households, etc. and similarly categorised individuals as employees, pensioners, self-employed, rentiers, unemployed, etc., according to their main source of income. Agricultural income is another such source, and its evolution, in aggregate terms and based on tax data, was discussed in Chapter 4. However, a more nuanced approach is warranted, trying to identify sectoral/occupational characteristics which, as we will explain, are of particular importance as far as agricultural income is concerned.

This chapter focuses on farmers, who make up an occupational group with peculiar characteristics, unclearly self-reported occupational identity and privileged relationships with the political system. This focus is not easy to achieve: as we will see below, the notion of farmer is not clearly defined. Things are further complicated when, after the "farmer", we go on to examine the income derived from this sector, i.e. agricultural income. The difficulty arises from the fact that agricultural income is not earned by farmers solely, but by wider social groups. When, for example, we examined wages or pensions, incomes uniquely corresponded with employees or pensioners, respectively. In the case of agricultural income, the income earner, i.e. the producer of agricultural products (or the owner or right-holder of agricultural land), does not always coincide with what is commonly understood and referred to as "farmer".

An additional feature of agricultural income, which complicates the problem even further, is its composition. Agricultural income comprises two main components: (i) income from the sale of agricultural products; and (ii) subsidies received from the state, acting as an intermediary between the recipients and the EU funds. Each of these components has been subject to a different tax treatment in the past and will most likely continue to be so in the future. Income from the sale of agricultural products is imputed or determined on the basis

of receipts and expenses books kept by farmers (accounting determination). Subsidies, on the other hand, have been and will in the future remain tax-exempt for a large proportion of recipients, while for some other recipients they are expected to be taxed beyond a certain threshold.

The following analysis starts with the problems surrounding the taxation of agricultural incomes, including the identity of farmer. The ambiguity of the definition of farmer enables other groups, some of which are not directly related to agriculture, to benefit from favourable tax treatment. The analysis then turns to the distribution of agricultural land. This distribution largely determines the income accruing to land right holders. The high inequality of the distribution of agricultural land is expected to be consistent with high inequality of agricultural income distribution. But how can we measure agricultural income? The study compares the calculation of income, based on the standard production value, with the respective income declared for tax purposes during the period under review. Using these two separate statistical sources, we estimate the evolution of agricultural incomes over time, either by size of agricultural holding (farm) or by source of income. Apart from these two statistical data sources, we examine the macroeconomic aggregates of the sector based on national accounts data. Finally, using raw data, we specifically discuss the distribution of subsidies, which reflects the (very unequal) distribution of land. The investigation could not have been complete without comparing with the level and sources of any additional, non-agricultural income received by households.

9.1 Problems in estimating agricultural income and the definition of farmer

In an effort to tax agricultural income, an imputation system was introduced in recent years, using specific coefficients that vary across regions, products and type of farming. This method of calculation entailed a significant underestimation of agricultural income, hence undertaxation of producers (whether professional farmers or not).

As we will see below, this system of determining agricultural income favours farmers who have high and very high agricultural incomes. Moreover, it also favours taxpayers whose main incomes arise from other sources, supplemented by agricultural income.

A second problem is the definition of professional farmer. To this day, the criteria for defining professional farmer have been an issue of political controversy. Why distinguish someone who

is predominantly a farmer ("professional farmer") from other workers who also maintain cultivated land and produce agricultural products but are not primarily farmers? Professional farmers used to enjoy favourable tax treatment. They used to claim the exclusive allocation of Common Agricultural Policy (CAP) direct support, although they were a minority of the total of recipients of subsidies, which also includes self-employed persons and pensioners who are engaged in farming as a secondary activity. Limiting the scope of subsidies to professional farmers only would significantly increase the subsidy allocations to individual recipients. However, such a policy option is not available under the EU rules governing the guarantee function of the CAP (Pillar I – direct payments to farmers), which allocates most of the total available resources. Regarding rural development policy (Pillar II), Member States have wider discretion and may exclude persons whose farming is not their primary occupation.

Turning back to the criteria, under the latest legislative amendment of 2014, a professional farmer is one who qualifies for registration in the Register of Farmers and Farm Business, i.e. owns an agricultural holding; is professionally engaged in agricultural activity; devotes at least 30% of his/her total annual working time and derives at least 35% of his/her total annual income; and is insured with the Farmers' Insurance Organisation (OGA). A professional farmer may thus have significant income from other sources. Conversely, a large number of workers or pensioners from other sectors of the economy may supplement their total income with income from crop and livestock production without qualifying as farmers.

According to this definition, the category of professional farmers includes a sizeable group of citizens who, while not meeting the minimum conditions, benefit from a favourable agricultural income tax regime. The actual number of these citizens who, without being farmers, have income that enjoys privileged tax treatment, is unknown. This category includes many people who have leased agricultural land to farmers or even have some undeclared employment. Some of them may no longer live in rural areas and have moved to urban centres, retaining however the status of farmer and the accompanying tax privileges if at some time in their lives they qualified as such[104].

9.2 The distribution of agricultural holdings

Agricultural income is related to the distribution of agricultural holdings (farms), while the unequal distribution of cultivated land across producers also leads to an unequal distribution

[104] Damianos (2015).

of the part of total income that is derived from agricultural activity. Of course, in many cases, a given area of farm land may have different yields and productivity according to the type of farming and location. For example, one acre of a greenhouse cultivation of vegetables in southern Crete yields a multiple value in products than one acre of grain farm in the Thessalian Plain; similarly, a one-acre pasture has lower yields than a one-acre olive tree farm.

Figure 9.1 illustrates the Lorenz curves showing inequality of the ownership of farm land (including pastures) and the inequality of gross imputed agricultural income. Statistical information is derived from the processing of primary country-wide data, suggesting that the total number of agricultural holdings in Greece exceeded 800,000 in 2011 (OPEKEPE[105] database).

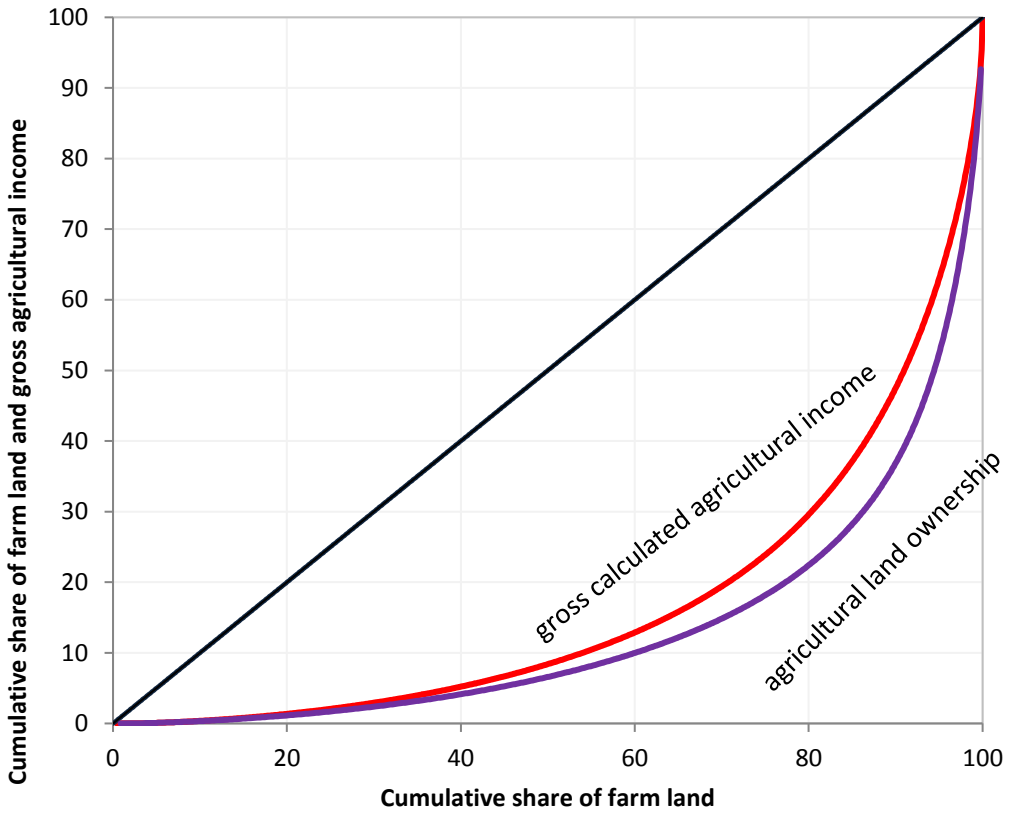
The farther away the curve is from the diagonal, the higher the level of inequality Conversely, if the curve coincides with the diagonal, we would recognize this as perfect equality of distribution (either in the possession of land or in the value of the products that is distributed to producers). The horizontal axis of the chart shows the cumulative shares in the country's active farm land, as classified by size from the smallest to the largest. Each farmer/producer is deemed to have one holding. The vertical axis shows the cumulative shares in terms of the number of holdings. For example, 40% of holdings (i.e. 40% of farmers/producers) own about 5% of the total area cultivated in the country. In the absence of farm land size inequality, 40% of the farmers/producers would have owned 40% of the country's total farm land.

According to the chart, 90% of farmers hold 40% of active farms, while the remaining 10% own 60%. This inequality is expected to be slightly less if we exclude pastures, which are typically larger than crop farms.

The high inequality of the distribution of agricultural holdings leads to high inequality of the income derived from their exploitation. As this income is determined indirectly, using certain indicators, we call it calculated "gross imputed income". As seen from the chart, the inequality of such calculated imputed income is lower than that of farm land. This is due to the different yields, as mentioned above. Still, it remains significant, since 90% of farmers receive only half of the total imputed income, with 10% of farmers receiving the other half. For comparison purposes, it is noted that 90% of taxpayers receive 79% of total income, based on country-wide tax data.

[105] Payment and Control Agency for Guidance and Guarantee Community Aid.

Chart 9.1 Inequality curves of agricultural land ownership and gross calculated agricultural income



Source: Calculations based on primary data from the Integrated Administration and Control System (IACS), OPEKEPE (Payment and Control Agency for Guidance and Guarantee Community Aid).

Given the high inequality in the distribution of agricultural land and income, we cannot consider that there is such thing as “representative" farmer. Neither the "statistical mean" nor the "median farmer" can be taken as representative of all farmers in the country. On the basis of the above chart, there is a large number of "farmers" who possess a small piece of land and, at the same time, a small number of farmers (10% of all farmers) who hold large agricultural land and receive high income. This high inequality will emerge again, in other versions, in the next sections.

9.3 The distribution of household income by size of agricultural holding

The high inequality of the distribution of the gross imputed family agricultural income gives us a hint about the distribution inequality of net family agricultural income, i.e. income net of operating costs (other than the earnings of family members working in the farm) and

depreciation of fixed assets. To estimate this net family income, we use data from the Eurostat Farm Accountancy Data Network (EU-FADN). Statistical information is collected through a survey in a representative sample of all agricultural holdings conducted every year in all Member States.

According to Table 9.1, the average net family agricultural income was EUR 11,518 in 2012. More than half (52%) of this is accounted for by EU subsidies, highlighting the importance of the support provided to family agricultural income through subsidies.

Farmers are the occupational group that has benefited the most from EU participation. In addition, Greek farmers are among the most favoured in the EU in terms of the size of support they receive.

Classifying farms by economic size based on the standard production value of each farm, we can observe that 83.1% of farms have a standard production value of between EUR 2,000-25,000[106]. For these farms, the average net family income in 2012 is EUR 8,907 annually, 53.6% of which corresponds to subsidies. The remaining 16.9%, with a standard production value of over EUR 25,000, have an average net household income of EUR 24,301, 49.3% of which is accounted for by subsidies.

Table 9.1 Net family agricultural income and subsidies by economic size of farm in 2012 (in EUR)

Farm size bands (standard production value, in EUR)	Population of farms	Structure %	Family agricultural income	Subsidies	Subsidies as % of agricultural income
2,000 - 8,000	125,780	38.5	6,015	3,233	53.7
8,000 - 25,000	145,780	44.6	11,403	6,105	53.5
2,000 - 25,000	**271,560**	**83.1**	**8,907**	**4,775**	**53.6**
25,000 - 50,000	38,700	11.8	21,231	10,692	50.4
50,000 - 100,000	13,550	4.1	27,587	13,471	48.8
100,000 - 500,000	2,950	0.9	49,488	22,061	44.6
500,000+	70	-	MΔ	MΔ	-
25,000 - 500,000	**55,270**	**16.9**	**24,301**	**11,982**	**49.3**
Total	**326,820**	**100.0**	**11,518**	**5,991**	**52.0**

n.a.: not available.

Source: European Commission, Farm Accountancy Data Network (FADN - RICA).

[106] The sample excludes holdings with a standard production value of below EUR 2,000. This implies that, also including small holdings, the average family income should be less than EUR 11,518.

The net family income in Table 9.1 is a tentative estimate of the amount of income that farm holders would normally have been declared. Table 9.2 illustrates the declared income and the differences between estimated and declared incomes. The table is divided into three parts:

The first part shows the total amounts declared per income source, as disclosed on the E1 tax form, separately for the first member, the second member and the household as a whole. The second part of the table shows the average income declared per income source, and the third part shows the number of taxpayers (households).

Table 9.2 Declared agricultural income and number of taxpayers

	1st member		2nd member (wife)		Total (households)	
	2008	**2012**	**2008**	**2012**	**2008**	**2012**
Total declared agricultural income in EUR millions (All farmers)						
Net income of sole proprietorship based on tax books and records	122.0	98.1	24.3	20.6	146.3	118.7
Net income from participation in a joint agricultural holding	0.8	0.8	0.2	0.1	0.9	0.9
Net income based on the objective system	1,488.5	1,217.7	494.2	442.7	1,982.7	1,660.3
Total net declared income	1,611.2	1,316.6	518.7	463.3	2,129.9	1,779.9
Subsidies	711.7	1,571.1	199.8	503.8	911.5	2,074.9
Total income and subsidies					**3,041.4**	**3,854.8**
Average declared agricultural income by farmer in EUR						
Net income of sole proprietorship based on tax books and records	7,034.6	5,777.6	5,016.6	3,884.8	6,918.6	5,515.5
Net income from participation in a joint agricultural holding	2,014.1	1,655.0	1,413.3	596.3	2,226.0	1,589.0
Net income based on the objective system	1,825.4	1,644.9	1,224.6	1,153.2	1,854.9	1,680.7
Total net declared income					1.991.7	1,800.3
Subsidies	5,455.6	5,420.9	3.515.1	3.841.0	5.302.7	5,309.0
					2,819.1	**3,853.1**
Taxpayers who declared agricultural income under the respective codes of Form E1						
Based on tax books and records	17,340	16,980	4,840	5,300	21,140	21,520
In a joint agricultural holding	380	480	120	160	420	560
Based on the objective system	815,420	740,240	403,580	383,860	1,068,900	987,860
Total number of taxpayers who declared agricultural income					1,069,360	988,680
Total number of taxpayers who declared subsidies	130,460	289,820	56,840	131,160	171,900	390,820
Grand total of taxpayers					**1,078,880**	**1,000,420**

Source: Calculations based on tax data.

In 2008, the total agricultural income declared through the accounting books and records kept by taxpayers amounted to EUR 146.3 million. In 2012, this income appears to have declined by 18.9% to EUR 118.7 million. However, a much higher amount of declared agricultural income arises from the income imputation system: EUR 1,982.7 million in 2008, falling by 16.2% to EUR 1,660.3 million in 2012. Throughout the period, as already mentioned, subsidies

are not taxed[107] and are not subject to the solidarity tax. The recipients of subsidies and compensation have no other incentive to declare such amounts on their income tax returns (Form E1) except as additional information to justify the origin of funds for an actual or potential purchase of property assets.

Including subsidies, the declared net agricultural income amounted to EUR 3 billion in 2008, rising 26.7% to EUR 3.9 billion in 2012 (upper part of the table). This increase is solely attributable to the subsidies declared by recipients after 2008. However, it should be pointed out that it does not reflect an actual increase in the subsidies received, but rather in the subsidies declared. Taxpayers keeping accounting books and records were 21,140 in 2008 and 21,520 in 2015, declaring an average amount of subsidies of EUR 6,919 in 2008 and EUR 5,516 in 2012 (middle part of the table). Farmers who declare their income through accounting books and records and who would, in theory, be expected to be the largest farm holders represent 2.2% of all taxpayers who declared agricultural incomes in 2012.

Most taxpayers with agricultural incomes opt for the imputed income system. This was the case with 1,068.9 thousand households in 2008, falling to 987.9 thousand in 2012. These households declared an average income of less than EUR 2,000 in 2008 and 2012 (EUR 1,855 in 2008 and EUR 1,681 in 2012, see the middle part of the table). What changes over time, and influences (as reflected in the tax data) average total agricultural income, is the more than double number of taxpayers declaring the subsidies received (171,900 taxpayers in 2008, 390,800 in 2012). Juxtaposing the two tables, it appears that the agricultural income declared for tax purposes is a fraction of the actual income.[108] The income declared by the overwhelming majority of farmers is lower than that of very small farms.

Failure to capture actual incomes favours large farms. If e.g. for a small farm the gain from income concealment ranges from a few euro to EUR 5,000 annually, for a large farm it can be close to or even higher than EUR 30,000. In the former case, the undeclared income is below the tax-exempt threshold, so the small farm would not pay tax anyway. In the case of a large

[107] Under a law adopted in 2015, all subsidies and aid are excluded from net income if they do not exceed EUR 12,000, and any part in excess of that threshold is added to the income of subsidy recipients.

[108] Under an agreement in 2013, the Troika imposed on Greece an agricultural tax reform, envisaged to be implemented as from financial year 2014, which did not happen, not even in 2015, as Greece refused to implement the reform. It was agreed that the net income from agricultural activity, including support and subsidies, was not different from that arising from any other business activity on the basis of an accounting determination of receipts and expenses. In practice, a tax rate of 13% was introduced on incomes earned in 2015, based on receipts/expenses accounting, but even today taxable agricultural income is underreported for various reasons. Damianos (2015).

farm, on the other hand, the concealment of income results in a high loss of tax revenue (tax evasion).

9.4 Distribution of agriculture income during the crisis years

How have net family agricultural incomes evolve during the crisis? Table 9.3 shows developments between 2008 and 2012, when the income per farm fell, on average, by 15.3%, with the highest losses being recorded in medium-sized farms (EUR 8,000-100,000).

Table 9.3 Evolution of family agricultural income by farm size

	% change				
Farm size bands (standard production value, in EUR)	2009/ 2008	2010/ 2009	2011/ 2010	2012/ 2011	2012/ 2008
2,000 - 8,000	-12.6	9.8	-8.1	3.5	**-8.7**
8,000 - 25,000	-14.5	9.0	-9.8	-7.3	**-22.1**
25,000 - 50,000	0.7	3.5	-10.7	-9.0	**-15.3**
50,000 - 100,000	4.8	-1.8	-20.9	-14.6	**-30.4**
100,000 - 500,000	32.1	-8.7	-41.0	23.3	**-12.2**
500,000+	-	-	-	-	**-**
Total	**-3.7**	**5.7**	**-11.7**	**-5.8**	**-15.3**

Source: European Commission, Farm Accountancy Data Network (FADN - RICA).

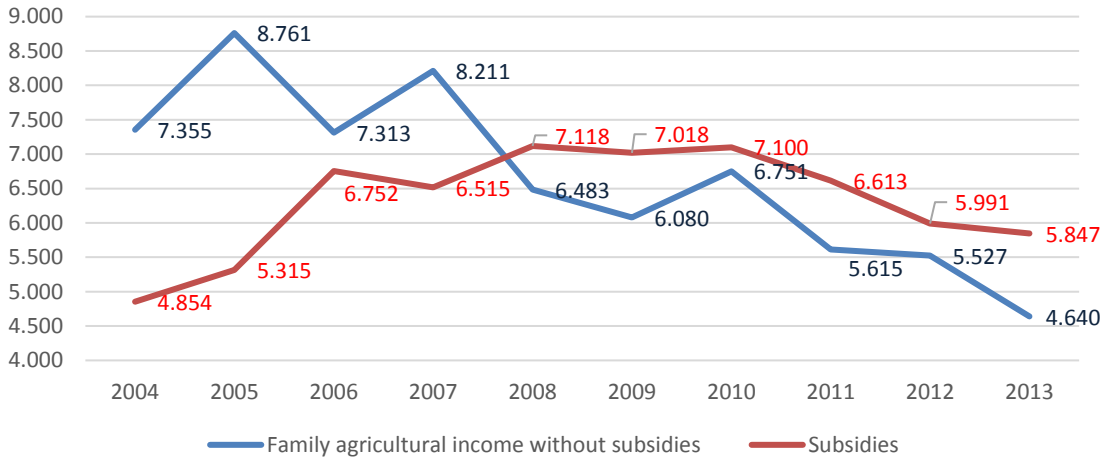
Based on the accounting determination of income, small farms face the lowest losses (-8.7%). 2011 seems to have been the worst year for agricultural income, which fell by 11.7% on average and by 41% for very large farms. These losses are partly due to the reduction of agricultural subsidies (Chart 9.2).

Chart 9.2 shows the two components of family agricultural income and their contributions over time. According to the chart, in the first three years of the crisis (2008-2010) the losses are small, but they become larger from 2011 onwards.

More importantly, after 2008, subsidies account for the bulk of agricultural income, outweighing receipts from the sale of products. The opposite was the case before the economic crisis. This change in the pattern can to a large extent be attributed to the impact of the economic crisis (e.g. higher taxes on production, liquidity constraints that have led producers to cut down production, weaker competitiveness, etc.).

Thus, despite their reduction, subsidies are a major component of agricultural income. In 2004, the ratio of agricultural sales income to subsidies was 1.5; in 2013, it is 0.8, with subsidies being now much higher than the income from sales.

Chart 9.2 Evolution of family agricultural income (2004-2013) in EUR



Source: European Commission, Farm Accountancy Data Network (FADN - RICA).

In coming years, the reduction of agricultural income support, coupled with declining agricultural incomes, is likely to lead to controversy over who should be entitled to subsidies.

9.5 Agricultural accounts and broader macroeconomic aggregates

Based on the aggregates of the agricultural sector, as compiled by the Hellenic Statistical Authority (ELSTAT) through the Economic Accounts for Agriculture (EAA), the Gross Value of Production at basic (current) prices has changed only slightly overall during the crisis period, with small fluctuations across years. Consequently, it is important to identify the changes in the various components of the economic accounts, in order to calculate the net entrepreneurial income.

According to Table 9.4:

- The net value added at basic prices is down by 5.2% in 2012 relative to 2008 and by only 3.4% for the entire period (2008-2014).
- Taxes on production have more than doubled (from EUR 206,000,000 in 2008 to EUR 485,000,000 in 2014).

- Compensation of employees, a large part of which concerns wages of immigrant workers, has fallen considerably from EUR 905,000,000 in 2008 to EUR 597,000,000 in 2014, reflecting lower labour costs. An ad hoc survey on the labour market position of immigrants and their children, conducted by ELSTAT in 2014 among people aged 15-64, suggests that 34,638 workers with a migrant background are employed in crop farming, livestock and fishing activities. These immigrant primary-sector workers account for 9.6% of all immigrant workers in the country.
- The total amount of subsidies has gradually decreased, from EUR 2.9 billion in 2008 to EUR 2.5 billion in 2014 (row 6).
- Interest expenses have decreased. Probably, some agricultural households have stopped repaying the loans they obtained in the past, while their debts continue to exist.

Table 9.4. Economic accounts for agriculture, at current prices (in EUR millions)

	2008	2009	2010	2011	2012	2013	2014
(1) Output of the agricultural industry at basic prices	10,745	10,388	10,567	10,431	10,587	10,515	10,583
(2) Intermediate consumption	5,277	4,744	4,951	5,315	5,305	5,442	5,410
(3) Gross value added at basic prices: (1)-(2)	5,468	5,644	5,617	5,116	5,282	5,073	5,173
(4) Consumption of fixed capital	1,459	1,529	1,522	1,477	1,483	1,390	1,302
(5) Net value added at basic prices: (3)-(4)	4,009	4,115	4,095	3,639	3,799	3,684	3,871
(6) Other subsidies on production	2,906	2,859	2,793	2,697	2,644	2,495	2,506
(7) Taxes on production	206	141	140	288	292	490	485
(8) Income of factors of production: (5)+(6)-(7)	6,709	6,833	6,748	6,047	6,151	5,689	5,891
(9) Compensation of employees	905	803	764	721	664	627	597
(10) Net operating surplus (8)-(9)	5,804	6,030	5,984	5,327	5,487	5,062	5,295
(11) Rent payments	523	500	496	492	497	489	485
(12) Interest payments	175	179	162	160	130	141	138
(13) Net entrepreneurial income: (10)-(11)-(12)	5,107	5,350	5,326	4,675	4,861	4,432	4,671
Annual nominal changes	**08/07**	**09/08**	**10/09**	**11/10**	**12/11**	**13/12**	**14/13**
Output of the agricultural industry at basic prices	-1.69	-3.32	1.72	-1.29	1.49	-0.68	0.64
Gross value added at basic prices	-9.89	3.23	-0.49	-8.92	3.25	-3.96	1.97
Net value added at basic prices	-15.26	2.65	-0.50	-11.13	4.40	-3.04	5.09
Income of factors of production	-9.30	1.84	-1.25	-10.38	1.71	-7.50	3.55
Compensation of employees	-11.79	-11.28	-4.89	-5.60	-7.94	-5.45	-4.89
Net operating surplus	-8.90	3.88	-0.76	-10.98	3.02	-7.75	4.60
Net entrepreneurial income	-9.77	4.76	-0.46	-12.21	3.96	-8.82	5.41

Source: ELSTAT, Economic Accounts for Agriculture.

The above changes suggest a fall of 4.8% in net entrepreneurial income (from EUR 5.1 billion in 2008 to EUR 4.9 billion in 2012). This fall is smaller at farm level, given that the number of farms has declined – and so has headcount employment in the primary sector, as we will see

below – reflecting the fact that some farms are abandoned and others are consolidated into larger holdings.

In both versions of the evolution of agricultural income (either at farm level or at macroeconomic level based on national accounts), the losses during the period under review are less than 15%. That said, we point out that the decrease in the net entrepreneurial income in Table 9.4 is roughly equal to the decrease in subsidies.

According to Labour Force Survey data, persons employed in the primary sector were 513.8 thousand in 2008; four years later, they are 33.3 thousand less. The largest decrease is recorded for family business assistants, while on the other hand there is a rise in employee jobs, most of which, as already mentioned, are taken by immigrants[109].

This pattern is likely to be explained by the fact that, in view of declining household incomes, household members look for jobs outside the farm and are replaced by low-pay immigrants (Table 9.5).

Table 9.5 Number of workers in crop farming, livestock production and fishing, broken down by employment status (in thousands)

	2008	2009	2010	2011	2012	2013	2014	2015	2012-2018
Self-employed with staff	40.3	45.9	46.6	41.7	32.8	22.4	23.8	29.9	**-18.7**
Self-employed without staff	320.0	333.3	343.4	318.5	316.4	334.1	329.3	315.4	**-1.1**
Employees	38.5	48.2	52.7	47.7	45.9	44.5	45.2	46.1	**19.2**
Contributing family members	115.1	105.5	101.6	92.7	85.4	80.1	81.6	74.4	**-25.8**
Total	**513.8**	**532.9**	**544.2**	**500.7**	**480.5**	**481.0**	**479.9**	**465.7**	**-6.5**
Percentage share in total economy	11.1	11.7	12.4	12.3	13.0	13.7	13.6	12.9	**16.7**

Source: ELSTAT, Labour Force Survey.

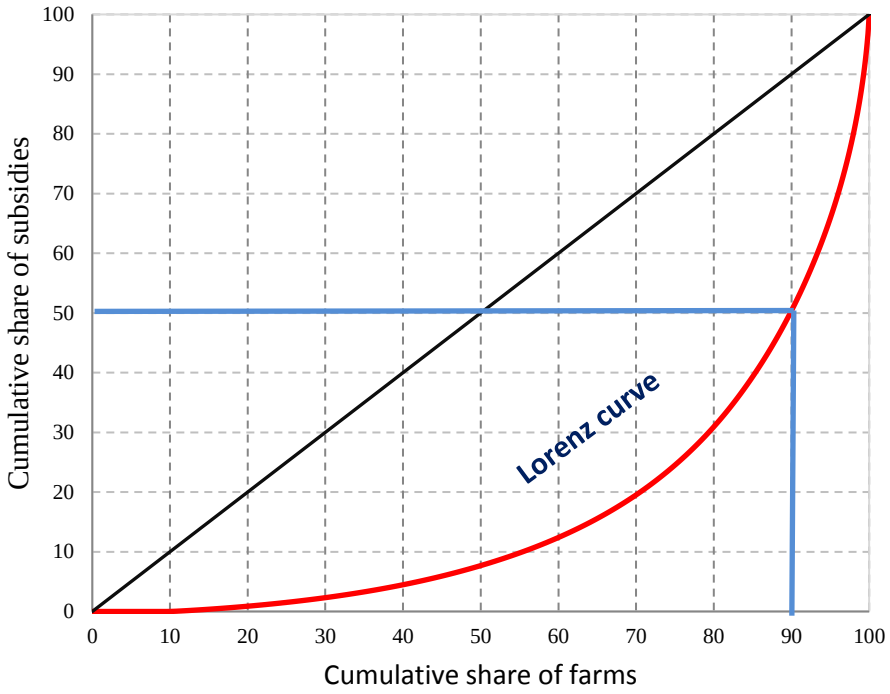
As a result of the crisis, the job losses in other sectors of the economy are proportionally higher than in the primary sector, leading to an increased share of agriculture over time. The comparatively limited size of these job losses, which are mainly due to inherent characteristics[110] of the primary sector rather than to the impact of the crisis, has signalled and raised hopes that the agricultural sector could become one of the most dynamic in the economy, with the agri-food industry acting as the engine driving the Greek economy to a growth path. Indeed, to some extent, the prospects of Greek agriculture are more favourable than those of other sectors. The primary sector, for example, is set to receive increased flows

[109] Kasimis and Zografakis (2014).

[110] As is the case in all EU Member States, the primary sector is characterised by an ageing population and an unfavourable exit-to-entry ratio, resulting in a gradual decline in total employment in the sector (Damianos and Vlachos, 2014).

from the EU's Structural and Investment Funds. These funds will make a significant contribution to economic recovery and job creation, especially in the current context of squeezed liquidity[111].

Chart 9.3 Inequality curve of subsidies



Source: Own calculations based on primary data from the Integrated Administration and Control System (IACS), OPEKEPE (Payment and Control Agency for Guidance and Guarantee Community Aid).

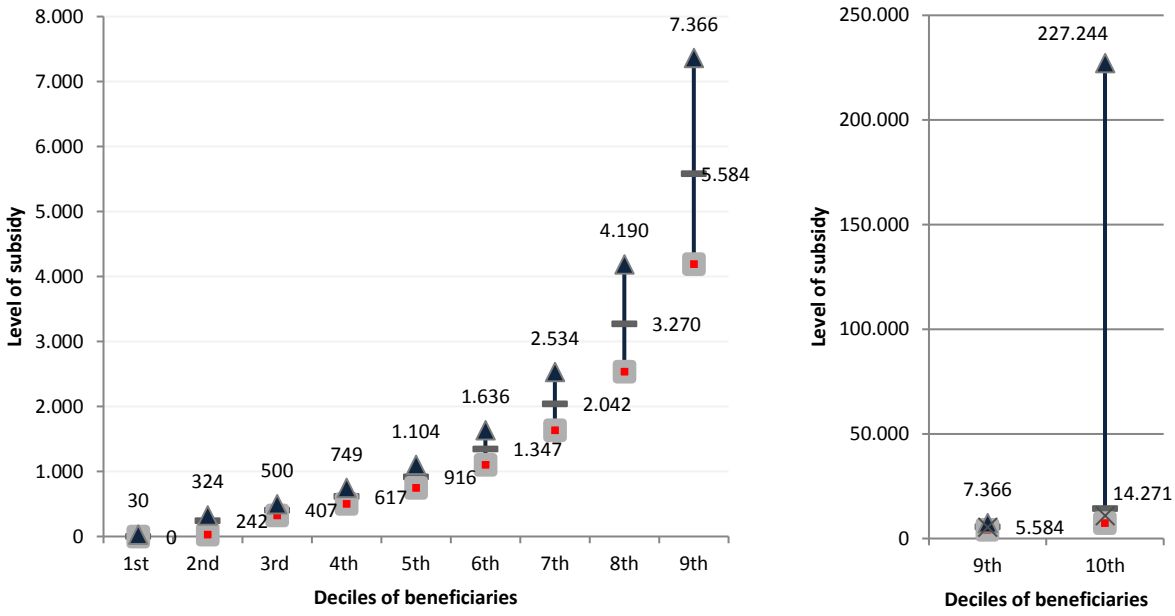
9.6 The distribution of subsidies across recipients: a story with many interpretations

The next question we will try to answer is how subsidies are distributed across recipients. The amount of subsidy entitlement depends on the size of the farm and the type of farming. According to Chart 9.3, 50% of all direct support is absorbed by the largest 10% of farms. This picture of unequal distribution remains unchanged throughout the period under review. The vast majority of farmers received support of less than EUR 5,000 annually each, with half of

[111] Kasimis et al. (2015).

them receiving up to EUR 1,000. On the other hand, fewer than 8,000 farmers received more than EUR 20,000.

Chart 9.4 Distribution of subsidies to recipient deciles based on the level of subsidy (2011)



Source: Calculations based on primary data from the Integrated Administration and Control System (IACS), OPEKEPE (Payment and Control Agency for Guidance and Guarantee Community Aid).

In the left chart we have placed 90% of the beneficiaries of subsidies. The scale has a maximum range of EUR 8,000, with the 9th-decade beneficiaries receiving an average of EUR 5,584 (with a minimum price of EUR 4,000 and a maximum of EUR 7,366). In the right chart we have placed the 9th decade beneficiaries as well as the 10th decade beneficiaries for comparability purposes to highlight the extent of the overall disparity. The scales in the two charts vary considerably and this is perceived by looking at the 9th decade beneficiaries depicted on both charts.

As shown in Chart 9.4, each decile comprises 80,342 recipients. 80% of them received subsidies ranging from EUR 30 to EUR 4,190 (on average); of these, 40% received up to EUR 750. Farmers classified in the 9th decile received subsidies ranging from EUR 4,190 to EUR 7,366, making an average of EUR 5,584. The differences between the recipients of the 10th decile and the other recipients are large. The subsidies to the recipients in the 10th decile range from EUR 7,366 to EUR 227,244 and average EUR 14,271, which is nearly three times the respective average for the 9th decile.

Table 9.6 Decile distribution of agricultural subsidies (2011)

Deciles	Number of recipients	Average subsidy (in EUR)	Minimum amount of subsidy (in EUR)	Maximum amount of subsidy (in EUR)	Median	Total amounts of subsidies (in EUR millions)	Structure %
1st	80,332	0	0	30	0	0.01	0.0
2nd	80,375	242	30	324	251	19.5	0.8
3rd	80,321	407	324	500	405	32.7	1.4
4th	80,345	617	500	749	613	49.6	2.2
5th	80,345	916	749	1,104	911	73.6	3.2
6th	80,341	1,347	1,104	1,636	1,333	108.2	4.7
7th	80,344	2,042	1,636	2,534	2,022	164.0	7.1
8th	80,344	3,270	2,534	4,190	3,226	262.7	11.4
9th	80,342	5,584	4,190	7,366	5,486	448.6	19.5
10th	80,343	14,271	7,366	227,244	11,026	1.146.6	49.7
Total	803,432	2,870	0	227,244	1,104	2.305.5	100.0
Top 1%	8,034	36,427	24,348	227,244	32,086	292.7	12.7
Top 0.1%	803	68,211	52,915	227,244	62,467	54.8	2.4

Source: Calculations based on primary data from the Integrated Administration and Control System (IACS), OPEKEPE (Payment and Control Agency for Guidance and Guarantee Community Aid).

Table 9.6 provides a detailed picture of the decile distribution of subsidies.

- According to the table, the top 1% of recipients (the richest centile, 8,034 recipients) receive, on average, EUR 36.427 and, overall, account for 12.7% of total subsidies. Looking at the 0.1% of recipients (the richest thousandth), we observe that for 803 recipients the average subsidy is EUR 68,211.
- The subsidies received by 250,000 recipients are equal to those received by the 803 largest recipients. Until 2014, the subsidies were fully tax-exempt. During the crisis, the EU paid every year to Greece, in the form of income support, amounts totaling EUR 2.5-2.9 billion.
- While a large part of agricultural households face a survival problem, either temporarily or permanently, due to their low incomes, the bulk of public support – whether national, in the form of tax reliefs or fuel subsidies, or from the EU such as direct support – is not channeled towards smaller farms, but towards the larger ones. The CAP is implemented in a way that favours high-income farmers, since it is based on the "historical model" that mainly supports larger farms located in the "productive" regions of the country[112].

[112] Damianos (2015).

Before concluding the analysis of the distribution of subsidies across recipients, we should note that subsidies are also unequally distributed across types of farming. Table 9.7 shows the shares of each type of farming in the high subsidies of the 9th and 10th deciles.

We observe that, while 'other arable crops' account for 8.1% of the country's total farms, they receive 12.1% of the 9th-decile subsidies and 17% of the 10th-decile subsidies. Cotton and mixed ruminant farms are also among the most favoured. By contrast, olive-growing farms, representing 44.1% of all farms, have a share of only 7.2% in the 10th decile of subsidies.

Table 9.7 Breakdown of high subsidies by type of farming

	Share in 9th decile	Share in 10th decile	% share in total subsidies
Other arable crops	12.1	17.0	8.1
Cotton	7.6	16.8	3.8
Mixed grazing livestock	9.4	10.6	3.4
Cereals	11.7	9.7	10.1
Olive trees	18.2	7.2	44.1
Mixed cropping	6.6	6.6	4.2
Cattle	2.1	6.2	1.3
Sheep	6.1	5.5	2.4
Other permanent crops	8.7	5.4	9.6
Mixed livestock	4.2	3.9	1.8
Mixed crops-livestock	2.5	3.5	1.4
Goats	4.1	3.5	1.4
Other vineyards	2.3	2.0	1.3
Tobacco	1.6	0.6	1.0
Citrus fruit	1.1	0.6	1.9
Vegetables & Flowers	0.6	0.3	1.1
Wine	0.5	0.2	1.2
Unclassified	0.4	0.2	1.8
Granivores (Pigs - Poultry)	0.0	0.0	0.1
	100.0	100.0	100.0

Source: Calculations based on primary data from the Integrated Administration and Control System (IACS), OPEKEPE (Payment and Control Agency for Guidance and Guarantee Community Aid).

Finally, significant differences are also seen in terms of the regional distribution of subsidies. For example, while the farms in the Thessaly region account for 9.5% of the country's farms, their shares in the 9th and 10th deciles of subsidies are markedly higher (12.7% and 20.8%, respectively). For more than one-fifth of the subsidies paid to the richest (10th) decile, the recipients are located in Thessaly. Also favoured, although to a lesser extent, are the regions of Central and Eastern Macedonia. At the other end of the spectrum, the recipients whose farms are located in the Peloponnese are the least favoured (Table 9.8).

Table 9.8 Regional breakdown of high subsidies

Administrative region	Share in 9th decile	Share in 10th decile	% share in total subsidies
Eastern Macedonia and Thrace	10.5	11.7	7.7
Central Macedonia	19.0	22.2	14.8
Western Macedonia	3.7	4.1	3.0
Thessaly	12.7	20.8	9.5
Epirus	3.0	2.1	3.3
Ionian Islands	1.9	0.9	3.1
Western Greece	11.5	9.1	11.6
Central Greece	7.8	9.2	8.1
Attica	0.4	0.3	1.1
Peloponnese	11.2	6.3	14.2
North Aegean	2.3	1.8	4.4
South Aegean	1.2	0.7	2.7
Crete	14.8	10.9	16.5
	100.0	100.0	100.0

Source: Own calculations based on primary data from the Integrated Administration and Control System (IACS), OPEKEPE (Payment and Control Agency for Guidance and Guarantee Community Aid).

9.7 Agriculture income vs. other incomes

Based on the processing of tax data, it appears that a large proportion of all farms in Greece declare very low incomes from agricultural activity. In fact however, the average total income of these households, adding non-farm income and agricultural subsidies, is often substantially higher than their farm income. In Table 9.9, the households that declare agricultural income are classified according to the level of such income. These are the same households as in Table 9.2, except that here we add their declared incomes from other sources.

Up to the 7th decile, 755.2 thousand households declare an average annual agricultural income of EUR 389. The average subsidies they receive are just EUR 36. We recall that, as already noted in Table 9.2, this figure is underestimated, since only a small number of households declared the subsidies received in 2008.

What is more important, however, is that agricultural income represents a very small part of the total income of these households. These are mainly households of employees and pensioners that also have income from the primary sector.

The incentive for not declaring their true primary-sector incomes is high, because these incomes would be taxed at higher tax rates in line with the level of total incomes, which averaged EUR 22,550 in 2008 (see Table 9.9).

Table 9.9 Income sources of households declaring agricultural income and subsidies in 2008 (in EUR)

Deciles	Households in thousands	Income from:								Total income	
		Agriculture	Subsidies	Wages	Pensions	Business activities	Self-employment	Rents	Dividends, interest, etc.	2008	2012
1st-7th	755.2	389	36	7,531	7,161	2,114	710	1,865	2,740	22,550	18,305
8th	107.9	2,143	388	4,203	4,463	1,485	294	1,368	2,882	17,226	15,299
9th	107.9	4,270	1,105	3,221	3,076	1,330	198	924	3,454	17,578	16,076
10th	107.9	10,608	6,707	2,105	1,669	1,020	159	787	4,964	28,017	24,331
Total	1,079.9	1,974	845	6,224	5,934	1,863	562	1,613	3,053	22,067	18,384
Top 1%	10.8	21,947	24,970	2,292	1,388	985	249	1,016	9,748	62,595	52,254
Top 0.1%	1.1	47,615	53,633	1,377	1,094	2,670	221	1,656	25,813	134,079	103,879
		% structure								Change in income 2012/2008 (%)	
1st-7th	70%	1.7	0.2	**33.4**	**31.8**	9.4	3.1	8.3	12.2	**-18.8**	
8th	10%	12.4	2.3	**24.4**	**25.9**	8.6	1.7	7.9	16.7	**-11.2**	
9th	10%	**24.3**	6.3	**18.3**	**17.5**	7.6	1.1	5.3	**19.7**	**-8.5**	
10th	10%	**37.9**	**23.9**	7.5	6.0	3.6	0.6	2.8	17.7	**-13.2**	
Total	100%	8.9	3.8	**28.2**	**26.9**	8.4	2.5	7.3	13.9	**-16.7**	
Top 1%	1%	**35.1**	**39.9**	3.7	2.2	1.6	0.4	1.6	15.6	**-16.5**	
Top 0.1%	0.1%	**35.5**	**40.0**	1.0	0.8	2.0	0.2	1.2	19.3	**-22.5**	

Source: Calculations based on tax data.

The same can be assumed to be true of households classified in the 8th decile. The difference from the past is that now their average agricultural income is higher and reaches EUR 2,143. For the 9th and mainly the 10th decile, agricultural income is the main income of households. Actually, if we look at the richest of them, i.e. households classified in the top 1% of subsidies, we can see that their average declared agricultural income reaches EUR 21,947 in 2008, while their subsidies are, on average, EUR 24,970 (see Table 9.9).

Multiple employment is therefore found in households with small-sized farms, as suggested by their agricultural income data.

Table 9.10 shows the respective incomes in 2012. The number of taxpayers declaring subsidies has more than doubled in 2012; accordingly, subsidies appear higher than in 2008. Households classified in the 10th decile declare, on average, an agricultural income of EUR 8,949 and subsidies of EUR 13,926. Their total income is 9.3% higher in 2012 relative to 2008, but this increase may reflect a base effect associated with the under-declaration of subsidies in past years.

On the other hand, households classified in the top 1% and 0.1% record significant increases in 2012 compared with 2008, which are also partly due to agricultural income other than

subsidies. However, the subsidies declared in the high deciles are disproportionately higher than the corresponding agricultural incomes. This disproportion may suggest that a significant part of agricultural income is concealed.

It should be noted that, based on the data in Table 9.10, the income from agricultural activity is more unequally distributed than the total income of households.

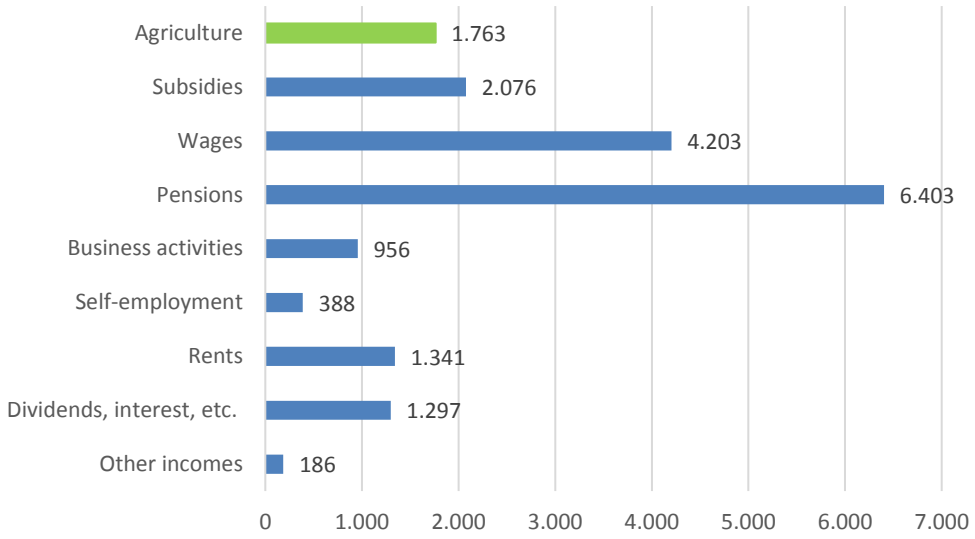
It is also worth noting that income from pensions is the most important income source of households that declare also agricultural income. Thus, in 2012, the share of pensions has increased (to 34.4%, from 26.9% in 2008) and the share of the second most important source, i.e. wages, has declined (from 28.2% in 2008 to 22.6% in 2012). The third most important source of income is commercial/business other than agricultural activity. Finally, in all deciles, income from property (rents) and interest/dividends is a significant component of total income.

Table 9.10 Income sources of households declaring agricultural income and subsidies in 2012 (in EUR)

Deciles	Households in thousands	Income from:								Total income	
		Agriculture	Subsidies	Wages	Pensions	Business activities	Self-employment	Rents	Dividends, interest, etc.	2008	2012
1st-7th	700.3	428	205	5,053	7,478	1,058	490	1,569	1,639	22,623	17,919
8th	100.0	2,068	1,670	2,801	5,303	665	128	916	1,009	17,357	14,560
9th	100.0	3,619	3,712	2,227	3,903	758	157	780	1,110	17,891	16,266
10th	100.0	8,949	13,926	1,617	2,450	732	166	725	1,232	27,264	29,797
Total	1,000.4	1,763	2,074	4,202	6,400	956	388	1,341	1,383	22,088	18,606
Top 1%	10.0	23,017	39,957	2,006	1,377	1,136	424	849	1,646	54,798	70,412
Top 0.1%	1.0	48,611	89,940	1,192	1,527	1,830	132	1,524	1,591	111,554	146,347
		% structure								Change in income 2012/2008 (%)	
1st-7th	70%	2.4	1.1	**28.2**	**41.7**	5.9	2.7	8.8	8.0	**-20.8**	
8th	10%	14.2	11.5	**19.2**	**36.4**	4.6	0.9	6.3	5.8	**-16.1**	
9th	10%	22.2	22.8	13.7	24.0	4.7	1.0	4.8	6.0	**-9.1**	
10th	10%	**30.0**	**46.7**	5.4	8.2	2.5	0.6	2.4	3.9	**9.3**	
Total	100%	9.5	11.1	**22.6**	**34.4**	5.1	2.1	7.2	7.0	**-15.8**	
Top 1%	1%	**32.7**	**56.7**	2.8	2.0	1.6	0.6	1.2	2.3	**28.5**	
Top 0.1%	0.1%	**33.2**	**61.5**	0.8	1.0	1.3	0.1	1.0	1.1	**31.2**	

Source: Calculations based on tax data.

Chart 9.5 Total declared incomes of households declaring agricultural income (2012) in EUR millions



Source: Calculations based on tax data.

Chart 9.5 illustrates the total income received by households declaring also agricultural income. In 2012, for example, the total income of all households in the country that declared agricultural income came to EUR 18.6 billion. Of this amount, the contribution of agricultural income, including subsidies, is only 20%. The remaining 80% relates to income from other sources.

9.8 Agricultural income as a factor of inequality

If agricultural subsidies were to be added to total household income, the tax revenue that could potentially be collected by the State would be close to EUR 500,000,000 annually. Of this amount, EUR 375,000,000 (82% of revenue) would be payable by the richest 10th decile. At household level, the additional tax burden would be very little for the lower deciles, while for the first seven deciles as a whole (70% of households) would be EUR 45 on average. For the remaining 30% of households, the average additional burden would range between EUR 350 for households in the 8th decile and EUR 3,500 for the richest 10th decile. For the top 0.1%, the burden would be EUR 18,000. The gain, therefore, from the non-taxation of subsidies is very unequally distributed across the households. It should be noted that if the taxation of subsidies were subject to the threshold of EUR 12,000, which was introduced during the period under review (i.e. taxing only subsidies that are higher than EUR 12,000), households in the richest 10th decile would again be the ones to gain. The gains for other

agricultural households would be low and the tax revenues, in this case, probably insignificant. In fact, over the period 2009-2014, some EUR 3 billion could have flowed into public coffers (about EUR 500 million annually), rather than benefiting a small group of agricultural households and having the other taxpayers cover this amount.

9.9 Findings and conclusions

Unlike other employment categories, it seems that there is no such thing as "representative farmer". More precisely, we could talk about the representative small farmer and the representative large one.

The former, with low income (either agricultural or from multiple employment), is very close to the poverty line[113]. The income support he/she receives is very low, unlike the other representative farmer. Tax revenues are expected to increase only slightly by the declaration of the true agricultural incomes of this large group of farmers. By contrast, the declaration of the true agricultural income by the small group of farmers with large incomes is expected to generate more tax revenue.

The gains from the non-declaration of true incomes are distributed across farmers in the same unequal manner as income support.

Crop land and pastures, agricultural producers, farmers, agricultural incomes and income support are concepts that, although closely related, are not identical. Those referred to as primarily farmers or professional farmers, or crop growers and livestock breeders, are only a part of agricultural producers, which means that only a part of the agricultural income and income support is received by them. The other agricultural producers, multi-employed farmers or multi-active farm households, are another group.

Drawing a dividing line between those who are primarily farmers and those who are less so is a difficult and complicated task, since the differences are not clear-cut. In recent years, especially during the crisis, these issues often feature on the political debate agenda. The dividing line would help towards a favourable tax regime to counterbalance low agricultural incomes, reduced income support, as expected in the future, and increased production costs.

The distribution of the possession of land, in particular crop land and pastures, is characterised by high inequality, mirrored by inequality in the distribution of income support in the form of

[113] Zografakis and Karanikolas (2012), Karanikolas and Zografakis (2008).

subsidies, which have increasingly become the major and safest part of agricultural income. This inequality is also linked to inequality in the regional distribution of income support, with some regions in the country favoured more than others as a result of the size of farms and number of recipients they comprise.

It would not be too risky to assume that the fall in the total income of farmers (whether farming is their main activity or not) is due to the fall in their incomes from other sources rather than in their agricultural incomes.

Looking at Eurostat farm accountancy data (EU-FADN) at farm-level or, alternatively, macroeconomic data from ELSTAT's Economic Accounts for Agriculture, we can see that agricultural income has at times risen or fallen considerably. Based on both different measurements, we conclude that, cumulatively over the period under review, agricultural income must have dropped by less than 15%.

Nevertheless, the very rich agricultural households (the top 1% or 0.1%) declare increased agricultural incomes in 2012 relative to 2008. In addition, they declare increased income support, thus their overall income appear significantly higher in 2012.

If we select from our tax data base those households[114] whose declared income from agricultural activity (without subsidies) is 35% or more of their total declared income, we observe that only 178.3 thousand households fell into this category in 2008, compared with 167.5 in 2012. In 2008, the average agricultural income of the above "purely agricultural households" was EUR 6,409, while in 2012 it fell by 21.8% (to EUR 5,010 on average). These households declared subsidies that, on average, were EUR 946 in 2008 and EUR 2,144 in 2012. These households receive 47.6% of the total declared agricultural income in 2012, and only 17.1% of total subsidies.

[114] In fact this criterion refers to individuals and not to households.

CHAPTER 10

SOCIAL PAUPERISATION, PRECARITY AND THE STRUCTURE OF POVERTY

Recession, unemployment, precarity, shrinking incomes and increased taxes raise the question as to the impact of the crisis on poverty and inequality. Poverty and inequality are different notions: a given level of poverty may be associated with different levels of inequality. Chapters 10 and 11 deal with these two aspects, the specific forms they take and their interrelationship. The severity of the crisis led however to a much broader phenomenon: pauperisation. Large sections of society –nearly all social groups– lost significant part of their income. The new social landscape has to be differentiated from the typical changes in poverty under normal conditions. Moreover, given the crisis dynamics we could reverse the question about the causality between crisis and poverty or inequality and ask how poverty and inequalities, as developed during the crisis, affected the dynamics of the crisis itself, economically, socially and politically.

10.1 Poverty: typology and definitions

The contraction of GDP by 26% and of average disposable income by nearly 40%, coupled with high unemployment and expansion of precarious forms of employment signaled, by definition, a marked "pauperisation" of Greek society. The concept of pauperisation differs from the concept of "poverty". Poverty refers to the difference between the average income in a society and the low income received by the weaker part of that society. It shows what part of society, and to what extent, falls short of the "average" level of income prosperity. If income in a society declines significantly across the entire population, as is the case with Greece, we are faced with pauperisation. In this case relative poverty, in the narrow sense of the term, does not necessarily rise: it may increase, decrease or remain unchanged.

The following concepts of poverty definition have to be distinguished:

❖ “**Relative poverty” (poor relative to others)** is defined as the share of people below the poverty line. The concept of relative poverty is the most commonly used in the various social statistics and analyses. The poverty line, also referred to as the ‘at-risk-of-poverty’ threshold, is set at 60% of the national median equivalised disposable income. The “median" is somewhat different from the "mean", as it refers to a household that is precisely in the middle of the distribution of households according to their total income on a scale from the poorest to the richest. The number of households with lower income than that of this median household is exactly the same as the number of households with above-median income. Researchers who attach more weight to outliers (extremely high or extremely low income values) prefer to use the mean equivalised income instead, which takes into account all the incomes of the sample. The median income, on the other hand, does not take into account extreme values, as it is based solely on the income of the median household.

Relative poverty can be estimated also on the basis of total household expenditure instead of the income of its members. Based on Household Budget Survey data, ELSTAT estimates relative poverty rates taking into account imputed income and/or expenses (e.g. imputed rents, own consumption, etc.).

❖ **The concept of "equivalised” income** has to do with how the household income is attributed to its members. The income earned and expenditure made by the head of household are considered to ensure a part of the standard of living of the other members (e.g. housing, housing costs, transport). According to the prevailing methodology, each household member owns the same income, corresponding to the equivalised income. That is, each member of the household is assumed to enjoy the same standard of living as the other members of the household. Thus, the income that corresponds to each person is an indicator of its standard of living. The equivalised income is commonly determined using the modified OECD scale, which gives a weight of 1 to the head of household (first adult), 0.5 to each of the other adult members (aged 14 and over) and 0.3 to each child aged under 14. To determine the equivalised income for a household with two children aged under 14, we divide the total household income by 2.1 (1 + 0.5 + 0.3 + 0.3). We can see that the equivalised income differs from per capita income: to derive the per capita income we should divide by 4, i.e. the number of household members.

❖ **The "total disposable income"** is calculated by adding the net incomes (from all sources of income) earned by all members of the household, after deducting taxes and adding transfers.

❖ **"Absolute poverty"** is defined as the share of people whose income is deemed to correspond to conditions of severe deprivation of basic goods and services. Before the recent crisis, the concept of absolute poverty has been eliminated from the social policy vocabularies of the developed countries of the world, as it was thought that, since the late 20th century, there are no more people living in absolute poverty in advanced economies. Unlike relative poverty, there is no established or objective definition of absolute poverty, which is defined each time on the basis of subjective perceptions related to the national economic and social conditions. Some define absolute poverty as the lack of essential means of subsistence, such as nutrition (a minimum amount of calories), clothing, shelter, education, etc. The World Bank adopts an alternative definition, whereby absolute poverty refers to the proportion of the population living on less than a specified amount of dollars a day. The OECD[115] sets this amount at USD 1.25 a day, calculating the proportion of the population of the developing economies of the world below this poverty line. Obviously, absolute poverty is much below the relative poverty line.

❖**"Anchored poverty rates"** calculate the extent to which the actual income of individuals or households is below the poverty line of a past year, e.g. 2008. This measure provides an indication of whether the living standard of lower income groups improves over time or not. Put otherwise, it measures the share of the population that would now be more/less exposed to the risk of poverty if the comparison is based on past conditions (standard of living). This comparison is aimed to capture changes over time in the risk of poverty, in absolute rather than relative terms, keeping the poverty line in terms of real purchasing power constant over time. This approach shows how the current group of the poor compares to those who were classified as poor at a given point in the past. In this case, the comparison is not made with the rest of society (the non-poor) or with the past income situation of the actual poor themselves. Rather, their current standard of living is compared with that enjoyed by the group of the poor in the past.

Under conditions of deep pauperisation of a society such a comparison by definition gives very significant anchored poverty rates, which are much higher than the relative poverty rates. However, the analysis of poverty beyond its descriptive dimension has mainly a normative one: it is instrumental for designing anti-poverty policies, restoring, at least partly, the income lost by the most disadvantaged strata and reducing the social gap between the haves and the haves-not.

[115] OECD (2013).

Such policies entail solidarity and support from the rest of society, who however in conditions of pauperisation have also experienced substantial income losses over the same period and are also much poorer now than before the crisis. The use of anchored poverty rates can complement the analysis of pauperisation, but under the specific conditions can hardly be used for policy purposes. In this case, policy making is faced with a complex dilemma, as the mitigation of anchored instead of relative poverty while benefiting the lower income groups would also shift large parts of the low to middle classes into poverty.

❖ A different form of **poverty is based on the proportion of people with material deprivation and low work intensity subject to three conditions:** a) the at-risk-of-poverty rate, b) the proportion of people facing severe material deprivation[116] and c) the proportion of the population living in households with very low work intensity[117]. The composite indicator, which measures the percentage of the population at risk of poverty or social exclusion, is defined as the percentage of the population that are in at least one of the above three conditions. This indicator has become a key benchmark for the assessment of progress against the poverty target of the Europe 2020 strategy, i.e. to reduce the number of Europeans living below national poverty lines by 25%, lifting 20 million people out of poverty.

The share of the population at risk of poverty or social exclusion is significantly higher in Greece during the crisis than in other countries due to the significant increase in the proportion of the population that face material deprivation or low (and often zero) work intensity.

❖ **The "poverty gap"**: In addition to dividing people into poor and non-poor, it is also important to investigate the "poverty gap" or the relative depth of poverty. The poverty gap refers to the income situation of people below the poverty line and is defined as the distance of their real income from the poverty line[118]. In other words, the poverty gap indicates how poor is a poor

[116] The indicator measures the proportion of people living in households that cannot afford at least four of the following nine items: (1) mortgage or rent payments, utility bills, hire purchase instalments or other loan payments; (2) one week's holiday away from home; (3) a meal with meat, chicken, fish or vegetarian equivalent every second day; (4) unexpected financial expenses of EUR 540; (5) a telephone (including mobile); (6) a colour TV; (7) a washing machine; (8) a car; and (9) heating to keep the home adequately warm.

[117] The indicator measures the share of the population aged 18-59 living in households where the members of working age worked less than 20% of their total potential during the previous 12 months. For further analysis, see ELSTAT, Statistical Bulletin, Poverty risk (SILC), various years.

[118] The at-risk-of-poverty rate gap refers to the income situation of people found below the poverty line or at-risk-of-poverty threshold and is calculated as the difference between the median equivalised disposable

person, which is measured by how much income would need to be transferred in order for such person to reach the poverty line. Speaking of the poor person, we choose to take as such the person who is in the middle of the distribution of the poor (the median poor person).

A key question is whether, and to what extent, the poor of the past coincide with the current poor. If the profiles of the two differ, poverty reduction policies should, accordingly, be retargeted to different social segments. For example, the policies to reduce poverty which were implemented in the past sought to increase the income of low pensioners, by introducing a social solidarity allowance (EKAS), given that this group constituted the hard core of poverty at that time. Today's policies to reduce poverty should instead focus on other social groups, such as younger unemployed persons who, as we will see later, now form the hard core of poverty in the years of the crisis.

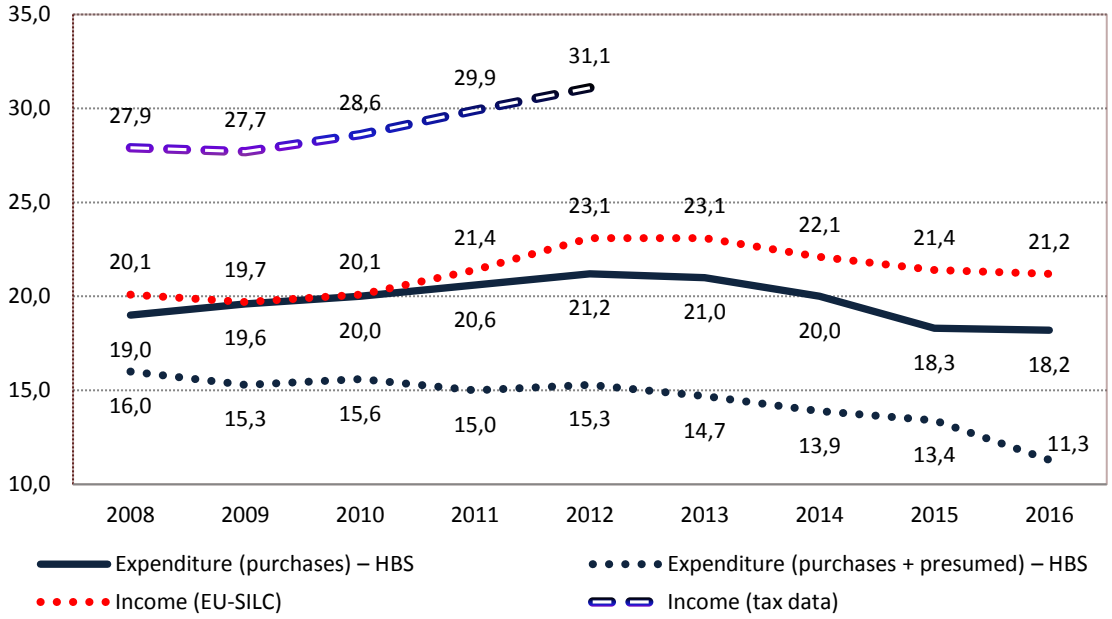
10.2 The evolution of "relative poverty" in the crisis

Despite the substantial contraction of GDP and of many income types, relative poverty in Greece, based on EU-SILC data, rose by about three percentage points (from 20.1% in 2008 to 23.1% in 2012-13) and declined to 21.2% in 2016. Given that the population groups that are presumed to be poor or live in extreme poverty, such as the homeless, people in institutions, illegal immigrants, nomadic Roma populations, are underestimated or not included in the sample surveys (EU-SILC and HBS), we can confer that the poverty rates are underestimated. The problem of measuring the true rate of poverty is further complicated if these vulnerable groups, along with some new ones, have expanded during the crisis. On the basis of fragmentary statistics or anecdotal evidence of these recent years, such as the numbers of homeless people and people receiving food and medicines from social grocery stores and pharmacies or free meals offered by the Church or the municipalities, as well as ELSTAT's estimates of high rates of unemployment among immigrants, it can be assumed that the population of the above groups has increased significantly. To these vulnerable groups we should add a new group of households that emerged out of the current economic crisis: the households that abruptly fell into conditions of extreme poverty, from a medium- or high-income status they had in the past. These households, for psychological

income of people below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold. It is expressed as a percentage of the at-risk-of-poverty threshold.

reasons or for reasons of social stigma, often tend to hide their current dire economic position, keeping their doors closed to statistical services. In view of all the above factors, we believe that the degree of underestimation of the poverty rate must have increased during the crisis compared with pre-crisis years, implying that the share of the population at risk of poverty is even higher than what is reflected in the relevant indicators.

Chart 10.1 Relative poverty rate in Greece on the basis of EU- SILC, Household Budget Surveys and tax data



Sources: ELSTAT, Household Budget Survey and EU-SILC data; and calculations based on tax data (Ministry of Finance database).

Chart 10.1 shows the relative poverty rates on the basis of statistical data from three different sources: (i) the EU-SILC, which is the main source of reference for comparative statistics on income distribution and social exclusion across EU Member States; (ii) the Household Budget Survey (HBS), where the relative poverty rate is calculated on the basis of household expenditure rather than income, and in two versions, with and without imputed expenditure; and (iii) tax data. In the latter case, due to the nature of tax data, income equivalisation is not applied; also, the reference unit is the household and not the individual, resulting in a higher median income. It is worth noting that the **change** in relative poverty as calculated on the basis on tax data differs to derived from EU-SILC data (+3.2 percentage points versus +1.1 percentage points, respectively).

According to Chart 10.1, during the 2008-2016 period, the relative poverty rate:

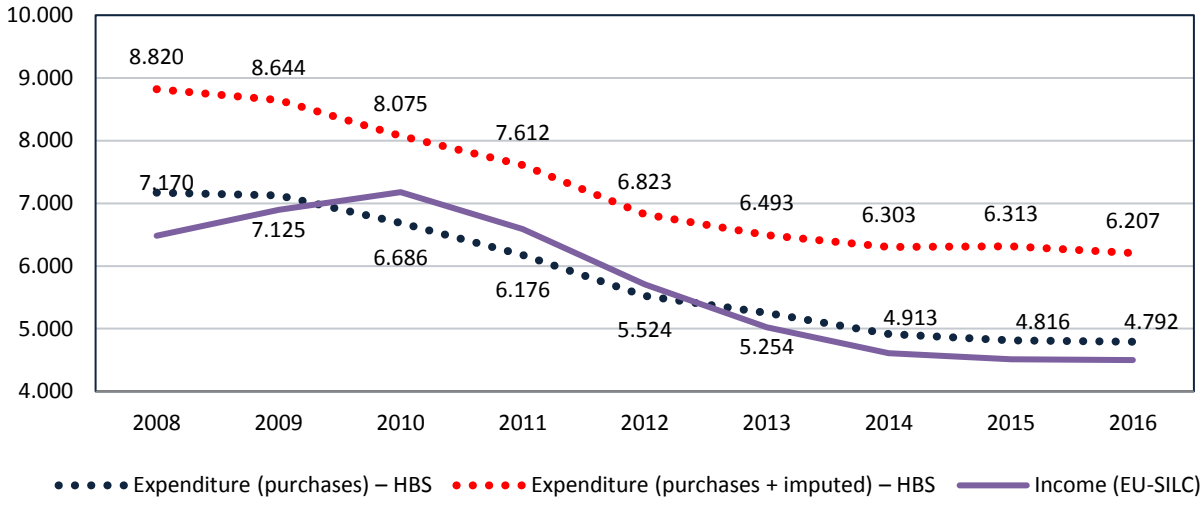
• rises by 3 percentage points between 2008 and 2012 (from 20.1% to 23.1%), but then falls to 21.2% (2016) when measured by the income-based indicator (EU-SILC, tax data);

• rises (more moderately) by 2.0 percentage points between 2008 and 2013 when measured by the expenditure-based index using HBS data, but declines by 0.8 p.p. between 2013 and 2016; and

• falls by 4.7 percentage points, when imputed income is added to expenditure.

The question is: how can we explain the statistical change in poverty by only 3 p.p. and even more by 1.1 p.p. during the crisis? A first explanation is that, as large parts of society have suffered significant income losses, the relative poverty line has shifted downwards. A second explanation is that persons who were poor in 2008 fell to even more intense poverty in the following years. Further, the poor households of the pre-crisis period, which may have suffered smaller income losses relative to households with medium and higher incomes, were found marginally above the poverty line in 2012. Finally, statistical errors are always an explanation not to be excluded.

Chart 10.2 Poverty line (for one individual on the basis of income, expenditure for purchases and total expenditure including presumed expenditure (in EUR).



Source: ELSTAT.

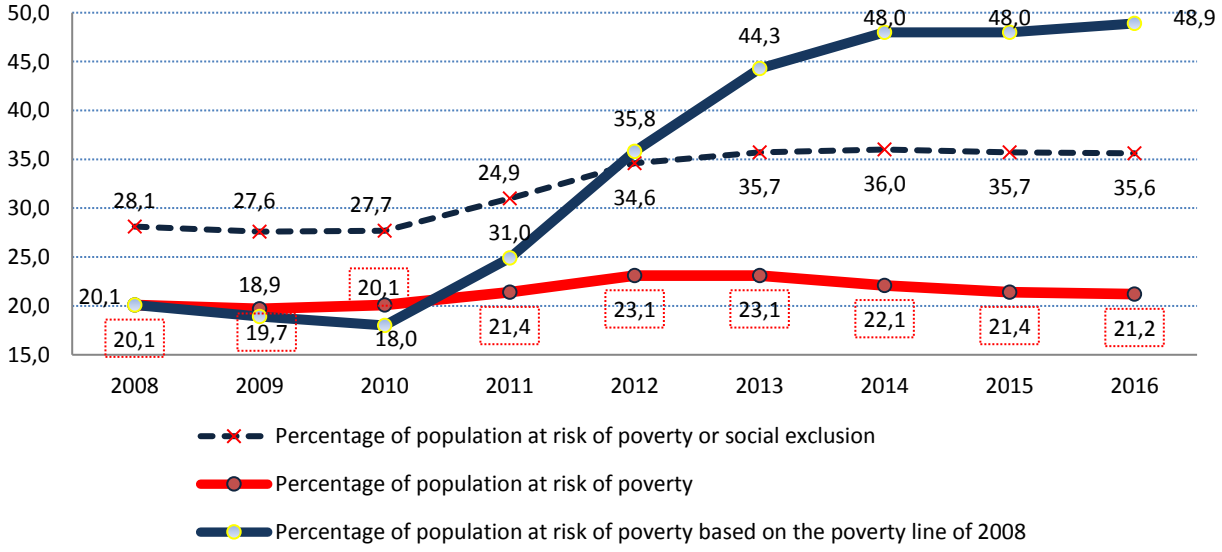
This is illustrated in Chart 10.2, showing at-risk-of-poverty thresholds. E.g. an individual with an annual income of EUR 6,200 in 2008 is classified as poor in that year. His/her income is below the at-risk-of-poverty threshold, which is EUR 6,480 according to EU-SILC data. Four years later, in 2012, the individual's income has fallen to EUR 5,800. Nevertheless, he/she is now classified as

non-poor, as his/her income is above the at-risk-of-poverty threshold, which is now EUR 5,708. We thus see that, despite a decline in the income of a poor person in the past, the same person four years later, with a lower income, is nevertheless classified as non-poor.

Given the surprisingly small increase in the poverty rate, the media, social networks, political forces and others often prefer to use either the at risk of relative poverty concept and social exclusion or the anchored relative poverty rate as calculated in comparison with the poverty line before the crisis. Both of these indicators show a different pattern regarding the share of the population at risk of poverty (Chart 10.3).

Adding the two conditions of poverty risk (material deprivation and low work intensity), the share of the population at risk of poverty or social exclusion increases significantly after 2010. This increase is close to 8 percentage points (from 28.1% to 36% or 3.9 million people), compared with only 2 percentage points without the two additional risk conditions. However, this figure does not mean that 36% of the population in 2014 is below the poverty line or represents poor households. Rather, and most importantly, it suggests that there has been a rise in the risk of falling below the poverty line, as low work intensity is likely to lead to low or zero income in the near future. The risk of poverty is associated also with the increase in the share of the population facing e.g. debt servicing problems, which means increasing risks lying ahead.

Chart 10.3 Percentage of population at risk under three alternative definitions



Source: Eurostat.

The indicator referring to the share of the population at risk of poverty based on an anchored poverty line referring to 2008 in Chart 10.3 shows an increased poverty by about 28 percentage points. Its level suggests that 48% of the country's population in 2014 would be exposed to a risk of poverty, based on the living standards of 2008. The question is whether it would be possible to restore the standard of living of 2008 for such a large part of the population after such a fall of GDP caused by the crisis, how and to what extent.

The change of 28 percentage points in anchored poverty is significantly higher than in other crisis countries, notably Spain, Portugal and Italy[119]. Moreover, unlike Greece, these three countries have managed to keep poverty stable or even to reduce it until 2012, but thereafter it has risen in these countries too[120].

Table 10.1 shows data on the "at-risk-of-poverty threshold", the poverty rate and the number of poor households for the years 2008 to 2012. We have pointed out elsewhere that some sources of income seem to be associated with extensive tax evasion. Assuming, however, that tax evasion as a percentage of the total remains stable over the period, the change in the risk of poverty reflects reality rather closely.

Table 10.1 Poverty line and at-risk-of poverty rate for the years 2008-12

	2008	2009	2010	2011	2012	12/08 %
Poverty line (in EUR)	8,766.9	9,062.4	9,159.3	8,371.0	7,756.1	-11.5
At-risk-of poverty rate	27.9	27.7	28.6	29.9	31.1	
Number of poor households (in thousands)	1,460.4	1,450.4	1,494.1	1,563.9	1,627.8	+11.5

Source: Calculations based on tax data.

The tax data we use allow us to examine who were the poor of 2008 and who are the poor of 2012. For the pre-crisis poor, we record how their incomes develop in the next years, during the crisis; for the poor of 2012, we historically trace back the incomes they used to earn before they were found in a difficult position.

It follows (Table 10.2) that, in 2008, the median poor household had an income of EUR 4,856.1. This means that approximately 730,000 (half the population of poor households, Table 10.1) had

[119] Gutierrez (2014), pp. 6 and 34.

[120] Ibid., p. 13.

less income than that, while the remaining population of poor households (about 730,000) had a higher income than that and up to the at-risk-of-poverty threshold (EUR 8,766.9 in 2008, Table 10.2). The poverty gap is determined at 44.6%. This means that if we transfer income corresponding to 44.6% of the poverty threshold income, the median poor household will reach the threshold and will no longer be poor (44.6% x 8,766.9 = 3,910, therefore 3,910 + 4,856 = 8,766).

Table 10.2 Poverty line, average income of the poor of 2008 and poverty gap

	2008	2009	2010	2011	2012	2012/08 % change
Poverty line (in EUR)	8,766.9	9,062.4	9,159.3	8,371.0	7,756.1	-11.5
Median income of the poor of 2008	4,856.1	5,754.8	6,008.6	5,797.5	5,427.0	+11.8
Average income of the poor of 2008	5,144.4	6,700.9	7,280.5	6,825.0	6,557.2	+27.5
Poverty gap of the poor of 2008	44.6	36.5	34.4	30.7	30.0	

Source: Calculations based on tax data.

The average income of all poor households in 2008 has increased by 27.5% in 2012. The poverty gap has narrowed to 30%, which means that if we transfer an income of EUR 2,326 (30% x 7,756), the average poor could reach the poverty line of 2012, which was EUR 7,756.1. Table 10.2, in line with the evolution of the average income of the poor of 2008, suggests that part of the poor were found above the poverty line in 2012.

According to Table 10.3, in 2012 the median poor household had an income of EUR 3,600, i.e. less than the corresponding income of the poor household of 2008. Although the poverty threshold has shifted downwards by 11.5%, the poverty gap (and the corresponding intensity of poverty) has increased significantly and stands at 53.6%. This means that, under the new conditions, to pull the poor person out of poverty, a transfer of an income equivalent to 53.6% of the poverty threshold (i.e. an income of EUR 4,156) will be needed (instead of 44.6% in the previous case). This means that the intensity of poverty in 2012 and onwards has increased not only in absolute terms, but also in relative terms as compared to 2008.

The picture becomes clearer if we look at the historical evolution of the incomes of the poor of 2012. We observe that in 2008 their average income reached EUR 9,069.9, which is above the poverty threshold of 2008. A part of the 2012 poor were not poor in 2008.

Table 10.3 Poverty line, average income of the poor of 2012 and poverty gap

	2008	2009	2010	2011	2012	2012/08 % change
Poverty line (in EUR)	8,766.9	9,062.4	9,159.3	8,371.0	7,756.1	-11.5
Median income of the poor of 2012	6,575.0	6,629.6	6,145.0	5,052.2	3,600.0	-45.2
Average income of the poor of 2012	9,069.9	8,961.8	8,486.7	6,365.9	4,342.3	-52.1
Poverty gap of the poor of 2012	25.0	26.8	32.9	39.6	53.6	

Source: Calculations based on tax data.

To what extent do the poor households 2012 coincide with those of 2008? In 2008, the number of poor households was 1,460 thousand (poverty rate: 27.9%), while in 2012 it rose to 1,628 thousand (poverty rate: 31.1%). Of these poor households, 1,047 thousand remain poor in both periods (Table 10.4). In 2012, another 581 thousand are added, while 414,000 households that were poor in 2008 moved above the poverty line in 2012. More generally, during the crisis, not only the poverty rate has increased. For those who are poor in 2012, the intensity of poverty is higher than for the poor of 2008, meaning that more of them fall short of 60% of the median income of the poor.

Table 10.4 Classification of the poor households of 2008 and 2012

	Poor in 2012					
	YES	NO	Total	YES	NO	Total
Poor in 2008	*In thousands*			*% structure*		
YES	**1,047**	**414**	1,460	20.0	7.9	27.9
NO	**581**	3,185	3,767	11.1	60.9	72.1
Total	1,628	3,599	5,227	31.1	68.9	100.0

Source: Calculations based on tax data.

The fall of households into conditions of poverty is related to serious changes in the components of their incomes. We examined which sources of income contributed the most to the decline of family incomes and to the poverty of 2012. The most important sources behind the income losses of the poor of 2012 compared with the poor of 2008 were wages, income from commercial activities and dividend/interest income. In Table 10.5 we can see how much the shares of these incomes in the total income of 2012 declined and how much weight they had in the incomes of 2008.

Table 10.5 Average income of the poor households of 2008 and 2012, broken down by source

Income from:	The poor of 2008		The poor of 2012		Difference in percentage points
	in EUR	% structure	in EUR	% structure	
- wages	1,581.3	30.7	973.3	22.4	-8.3
- pensions	1,935.5	37.6	1,670.0	38.5	0.8
- agriculture	278.2	5.4	294.5	6.8	1.4
- business activities	371.8	7.2	273.8	6.3	-0.9
- self-employment	142.8	2.8	101.8	2.3	-0.4
- real estate property	491.5	9.6	442.9	10.2	0.6
- dividends / interest	318.9	6.2	249.2	5.7	-0.5
- other	24.3	0.5	336.8	7.8	7.3
Total income	**5,144.4**	**100.0**	**4,342.3**	**100.0**	

Source: Calculations based on tax data.

10.3 Concluding remarks

Looking at the findings on income changes (Chapters 4 and 5), tax incidence (Chapters 7 to 9), unemployment trends, mortgage indebtedness of many households (section 8.3) and poverty, it is realistic to argue that about one third of the poor in 2012 comes mainly from social strata which before the crisis were classified in deciles 3 to 8, without excluding individual cases from higher strata. The majority of the pre-crisis poor apparently fell into more intense poverty conditions, while a large part of the low-to-middle or middle classes changed status.

In the years of the crisis, poverty not only became deeper, but changed characteristics:

❖ Poverty has affected mostly the age group 18-25 (highest poverty rate: 21.5%), children (age group under 18: poverty rate 18.7%), age group 25-65 (15.4%) and more than the 65+ persons (8.6%)[121]. Poverty in these older age groups declined between 2008 and 2012 from 22.3% to 15.1%. Hence, the poor of the crisis differ from the poor in the past. The latter belonged mainly to the groups of farmers, low income pensioners, unemployed, single parent families. The new poor can be found in young people and families with one, two or more unemployed members, irrespective of age.

[121] OECD (2016), Table 1.

❖ The relationship between poverty, employment situation and age suggests that the key determinant of poverty is unemployment. The group of pensioners recorded a significant decline in poverty[122]. This finding emerges clearly from all relevant analyses, and is also reflected in the evolution of incomes as discussed in other parts of this study.

❖ The drastic fall in the wages of the younger generation, in conjunction with the upheaval of the pension system, triggered a strong tendency on their part towards undeclared employment. Wages in the range of EUR 300 to 600 subject to increased taxes (VAT, direct taxation, etc), social contributions up to 38%, without any certainty for the future pension status of the employee, linked to precarity, and the need to cover other unemployed members of the household lead young people to ask for undeclared employment in the aim to secure a higher take-home wage. The adverse impact of such a widespread behaviour is not limited to the employee, but affects also social security and fiscal figures.

❖ Poverty did not increase only because of income changes. It was affected also by the curtailment of social public expenditure, e.g. for health (from 9.8% of GDP in 2009 to 8.2% in 2015). This is a significant adverse change on top of the decrease of disposable incomes by about 40% on average. The reduction of social expenditure, to the extent that it is unrelated to the fight of corruption or inefficiencies, affects mostly the weaker strata, exerting negative effects on their health state.

❖ In the years of the crisis, there has been not just a reduction in income and an increase in the poverty of wider social segments. Equally important, but of a different order, has been the extensive economic and social upheavals for a large number of households that shifted to different income and social levels within a very short time. The crisis has created new social hierarchies in a very short span of time. In a previous chapter, we identified the huge income losses suffered by those who in 2012 were found in the lower deciles (-86.4% in the 1st, -51.4% in the 2nd, and -31.4% in the 3rd decile, Table 4.1).

❖ Finally, both poverty and the social upheavals mentioned above, in conjunction with specific forms of inequality that pre-existed under conditions of prosperity and new ones that emerged, have had a very negative effect on political stability: they have led to fundamental changes in the

[122] Data from ELSTAT.

architecture of the political system and the emergence of extreme political affiliations[123]. In turn, these developments have raised new obstacles to an exit from the crisis, deepened income reductions, brought about a squeezing of more and more taxes out of compliant taxpayers through direct taxation, as well as out of all taxpayers through indirect taxation.

[123] For the impact of inequality on political stability from a more general perspective, see Alesina and Rodrik (1994), Thorbecke and Charumilind (2002).

CHAPTER 11

THE QUESTION OF INEQUALITY

11.1 Inequality and social divides: looking beyond indices and aggregates

Inequality in a country can be examined from three different angles: the endogenous driving forces and the level of inequality in that country; the impact of globalisation on inequality; and in the case of Greece, also the interactive relation between inequality and the crisis. Even before the crisis, inequality was often a significant issue of political debate and academic research at a broader scale, including international organisations. The increased attention that inequality has received during the crisis can be explained not only by its social impact but mainly by its recognised importance as macroeconomic and systemic factor that affects growth, demand and investment, macroeconomic imbalances and as a source of divides within and between societies and of social and political turmoil in various countries.

Greece ranks high in terms of income inequality, even before the crisis. It held the 9th place among OECD countries both in 2007 and 2014 (Gini coefficient of equivalised household disposable income). However, unlike the global trend towards greater inequality, inequality in the country decreased slightly between the mid 1990s and 2008.

Between 2009 and 2012/3, with the GDP contraction, the rise in unemployment and wage and income cuts, income inequality began to rise slightly in 2012, stabilizing in subsequent years (see Table 11.1). The Gini coefficient, from its pre-crisis levels of between 0.331 and 0.343 prior to the crisis (2007-2009), reached 0.345 in 2014, before falling back to 0.342/3 in 2015-16.

This finding is in contrast to the prevailing perception. However, similar trends are also observed in other crisis countries, such as Italy and Ireland, while inequality in Portugal was lower in 2015 than in 2007-2009. Spain was the only of these countries to experience a marked increase in inequality (from 0.324 in 2008 to 0.345 in 2016). How can the slight increase in inequality in Greece be explained? A broadly unchanged degree of inequality amid conditions

of strong economic and social turmoil, such as in the years of the crisis, when millions of households and individuals change position on the income scale –and often social status, too- is very puzzling.

The picture is statistically correct but economically distorted. The distortion arises from the fact that inequality indices (Gini or others) measure total inequality, disregarding partial relationships. However, an overall indicator is a statistical picture that cannot reflect the significant upheaval experienced by those whose position has worsened dramatically or those whose position has improved. This has led us to look for more convincing interpretations regarding the factors that keep the overall inequality stable. Examining more specific indicators of inequality, e.g. in respect of wages, pensions, other sources of income, income for men and women, etc., we have found that in many cases the overall result is substantially different from more specific aspects of reality.

In our Introduction and in Chapter 13 we examine the different ways in which low, middle and high income strata shared the income losses or gains from the crisis. As we note in the analysis of income changes (Chapters 4 and 5), reference to aggregates or averages conceals significant differences in the reality experienced by large sections of society and leads to incorrect policy conclusions. Let us consider an extreme hypothetical example: if a major part of society or a large part of the upper or the middle strata fall down to lower income levels but at the same time their place is taken by other households that were previously at the bottom of the income pyramid, the inequality index would remain stable. One will think that nothing has changed. In reality, however, the balances in the economy and society will have been fundamentally shaken. Significant sections of society will have seen their world upset, for the better or for the worse. In this case, even if we statistically find stability, this is not truly a world of stable inequality.

In addition to the observed slight deterioration in income inequality, significant old or new divides were reinforced or emerged during the crisis, between:

- those who have income and those who have not any, mostly due to their exclusion from the labour market;
- those who fully declare their income for tax purposes and those who, even during the crisis, can hide income;
- those who can use their institutional power to recoup a significant part of their income losses and those who have no such chance;

- those who still enjoy preferential tax exemptions or state-facilitated tax avoidance, although some groups among them have remarkably improved their economic position during the crisis, and the remaining taxpayers;
- those who, thanks to political interventions, have only mildly been affected by the crisis and those who continue to struggle, lagging behind;
- those who have been pauperized and those who are now better off than before;
- those who have been less affected by the crisis and could improve their incomes either because of successful choices or because they entered the labour market for the first time and those who fell into poverty or unemployment;
- the older cohorts of workers and pensioners (especially after the pension reform of 2016), the wages and pensions of which were reduced much less than for younger cohorts.

In the years of the crisis a further factor emerged which may statistically have a downward effect on overall inequality, but actually represents a new strong and growing type of inequality: brain drain of educated people aged mostly between 18 and 50. The extent of the phenomenon is significant, and estimates are for 430 thousand people for 2008-2014, i.e. about 7% of the population aged 20-60 (2011 population data). These people leave the country to avoid the effects of poverty, inequality, unemployment, lack of meritocracy and corruption in employment mechanisms. The combination of a very low level of domestic wages, very high social security contributions (between 25% and 38%), increased income and property taxes and indirect taxes, the low level of collective services in the areas of health, education and security, and the strong likelihood that the pension system will have collapsed by the time when they need it, are important push factors. On the other hand, the possibility of access to labour markets within the EU promises a better future for young people. Statistically, by reducing the number of unemployed people with zero labour income or of those with low income, emigration leads to an improvement of the inequality index. Brain drain is, however, itself a result of major inequalities in Greek society today and a source of future long-term inequalities both within the country and between Greece and other countries, as the decline in skilled human resources undermines the growth potential. Moreover, compared with the emigration flows of the first post-war decades, there is a significant difference: today, more and more young people, even at the young age of 16 or 17, plan to leave the country as soon as they complete their secondary education.

Consequently, an analysis of the impact of the crisis on inequality (or vice versa) needs to go far beyond inequality indices, given that the level and trends of inequality are not only determined by developments in market or disposable income; to a substantial degree they

are also determined by many other fundamental qualitative factors, such as the rule of law, government effectiveness, the functioning of the judiciary, meritocracy, the control of corruption, the creation of opportunities, fairness and trust in the social and political environment. Such factors can be much more important in reducing or increasing inequality and its impact on economic growth or the macro economy in general.

11.1 Inequality and the crisis in Greece

Inequalities have been a crucial factor behind the fiscal derailment and the fall of the Greek economy into crisis. Their origin is to be found in deep-rooted power relations within the society, established ideologies, perceptions and interests or wider heterogeneous alliances which influenced the public administration, the media or the political institutions including the judiciary.

The crucial interconnection between inequality and crisis is associated with the following consequences:

First, a huge and systematic long-term gap between tax revenues and public expenditure, which ranged between six and eight percentage points of GDP annually, leading to an exponential increase in public debt. A gap of such size could not but mathematically lead to a build-up of debt to about 120% of GDP in two decades. Indeed, the systematic and extensive tax evasion or avoidance by many large groups, the legally enshrined preferential tax treatment of several occupational categories, as well as contribution evasion, have all been factors behind the accumulation of high fiscal deficits over a longer period and, by extension, higher government borrowing and over-indebtedness. As already mentioned, the direct or indirect involvement of public administration and political forces in arrangements that overlooked, amnestied, tolerated or even actively supported the phenomena described above has by itself exacerbated the consequences of this situation. One can also identify countless legislative interventions that establish preferential income or property tax treatment, generating new inequalities, e.g. the extremely favourable tax treatment of parental gifts, inheritances, farmer income or other categories. Both of these factors have nurtured significant inequalities within society, playing a crucial role in both the accumulation of the imbalances that led to the 2009 crisis and in the country's impasse and inability to overcome the crisis after 2009.

Second, the high and growing weight of government expenditure on pensions in the years from the early 2000s to the present. The pension system itself is characterised by very strong

inequalities[124], generating deficits that are covered by the budget (16%-18% of GDP between 2008 and 2015). Thus, the growing deficits of social security were also associated with growing inequalities, which besides income favored also other types of inequality: partial and preferential access to subsidised income, low age-related eligibility requirements, access to pensions with asymmetrically low contributions, and other similar phenomena.

Third, a bias of excessive government expenditure in favour of areas that are typically associated with corruption or inefficiency (health system, public sector procurement and recruitment, etc.). Such expenditures, financed through government borrowing or taxation, were dictated by sheer political expediency, lacked any meaningful collective goal and created conditions of over-indebtedness, thus being a source of additional strong inequality within society.

Inequality was determined also by a range of other factors regarding the structure of the productive base, public administration and political system, among which the following should be highlighted:

- The structure of market incomes as well as the differences between salaries in the public and the private sector (Chapter 5), between the top and the bottom (section 11.3) and across sectors or types of firms (e.g. the financial sector, manufacturing, services, large and small to medium-sized firms, etc.).
- The oligopolistic structure or imperfect competition in several markets of the Greek economy, along with discretionary government interventions that ensure economic rents for specific, organised occupational groups. The great importance of different implicit protectionist regimes regarding a number of goods and services industries, including the agricultural sector, manufacturing, energy, transport and construction, specific groups of public employees (e.g. archaeologists) is reflected in the stubborn resistance from all governments and self-interested social groups to the introduction of more competitive conditions in these areas.
- The high share of non-tradables in the Greek economy, which by definition are sheltered from international competition. The weak export orientation strongly differentiates the case of Greece from other EU countries and suggests that for a large number of small and medium-sized businesses inward rather than outward orientation is much more profitable.

[124] Tinios (2010), in particular Chapter 8, and Giannitsis (2016).

- Austerity and income policy during the crisis which led to significant discrimination between young and older employees, in particular considering that an increasing part of new employment is low-paid part-time or temporary employment. Changes in wages by age between 2009 and 2016 were as follows (source: data from the Pension Authority as published in the press):
  - ages 15-24 : -42%
  - ages 25-29 : -36.5%
  - ages 30-24 : -31.0%
  - ages 35-39 : -26.1%
  - ages 40-45 : - 7.1%
- The broad social tolerance to inequality, related to the underground economy and tax evasion thanks to which numerous small and/or medium-sized activities manage to survive. The lax social attitude is easy to explain: almost all activities and incomes, with the exception of pensions, take advantage from tax evasion or avoidance. Even dependent employment in the underground economy has a significant share, in particular regarding small and medium-sized firms and activities or specific industries (tourism, construction, etc.).

The economic and social structure that emerges out of such conditions is based on countless small inefficiencies and unequal compliance with the official rules of the game, which favour a productive base with weak competitive and growth capabilities. In contrast, a large part of the growth impetus of a modern economy is related to the capabilities of businesses, research centres and other institutions to create technological, organisational or marketing differences, which can trigger complex chain reactions in industries or business clusters, fostering growth, employment, competitiveness and cumulative benefits to the economy. Firms or persons enjoying moderate or small institutionally awarded privileges and advantages try to preserve them, resisting and obstructing changes that could transform production and employment patterns. By so doing, they reinforce conditions of unequal distribution of income, opportunities and prospects, with an adverse impact on growth and competitiveness. Ultimately, the institutional and regulatory framework is the result of low quality and high self-interestedness in the country's governance structures, greatly affecting the degree of inequality in the economy and society and, ultimately, the quality of democracy and the rule of law.

11.2 Intergenerational equity, a highly unequal pension system and the crisis

Perhaps the greatest inequality, which is at the center of Greek society and has played a decisive role in both the emergence and the long duration of the crisis, is intergenerational inequality. Its most important manifestations are the accumulation of a huge external debt until 2009, but also after 2009, and the deficitary social security system. Both have evolved at the expense of younger generations, affecting them for long years to come. However, the intergenerational inequality of the social security system in particular, through the deficits and debts, which feed into budget deficits and public debt, has been a decisive factor behind the crisis.

After 2000, public expenditure for the pension system[125] deteriorated sharply, both in absolute figures and as a percentage of GDP, rising from EUR 7.4 billion or 5.2% of GDP in 2000 to EUR 31.2 billion or 10.4% of GDP in 2012. Cumulatively, between 2001 and 2009, this expenditure came to EUR 133 billion and from 2010 to 2014 EUR 96.4 billion, accounting for 83.6% and 405% of the respective increases in public debt over these periods. In essence, the refusal to accept even limited forms of rationalisation in the social security system before and during the crisis was one reason why the social security system evolved into a key driver of fiscal destabilisation.

An analysis of the more specific inequalities associated with the social security system and how they led to its collapse is not possible in the context of this book.[126] Nevertheless, we will briefly focus on two key issues of inequality related to the latest pension reform (2016):

(a) The unequal distribution of the Group Funding Ratio (GFR) among insured persons. This ratio expresses the relationship between the present value of the average pension to be paid to a group of insured persons and the present value of the contributions they have paid in the past. A ratio value of above 100 suggests subsidisation of this group of insured by society through taxes, while a value of below 100 implies actuarial unfairness and a burden on that group to the benefit of other pensioners. For near all groups, the GFR was in 2011 near or above 100% (average

[125] Coverage of the deficits of social security funds and public expenditure for public sector pensioners.

[126] A detailed analysis is provided in Giannitsis (2016).

weighted: 150%). It started to decline as a result of the measures taken during the crisis and is expected to come to 89% by 2019.

The relationship for the various groups of pensioners is as follows[127]:

Pension Fund	GFR 2011	GFR 2014	GFR 2019 (estimation)
Farmers (IKA)	268%	214%	203%
Main Fund (IKA)	133%	141%	121%
Commercial activities	83%	54%	49%
Civil servants	186%	148%	82%
Independent professions	143%	76%	57%
Banking sector	97%	77%	39%
Public Power Corporation	123%	93%	45%
Telecom Corporation	99%	86%	41%
Weighted average	150%	121%	89%

Source: Papamichail (2017).

(b) The structurally unequal treatment of pensioners with fewer years of insurance and lower contributions versus those with longer insurance periods and higher contributions. Pensioners with limited insurance time (previously 15 years, 20 years with the new 2016 system) and low earnings and contributions receive significantly higher income replacement. The replacement rate is inversely proportional to the annual net income declared. It starts from 99.3% (for lower incomes and contributions) and falls to 40.4% for higher incomes. Also, access to the minimum pension with limited insurance time has been maintained, combined with a comparatively much higher replacement rate and low total contributions. By contrast, at the higher pension levels, with more pensionable years and significantly higher annual and total contributions, the replacement rate is much lower. This asymmetry has been a key driver of contribution evasion for a huge number of pensioners until the crisis and will continue to favour contribution evasion in the future – this is already visible. Both of these arrangements exacerbate structural inequalities, which, in addition to their social impact, undermine the viability of the pension system itself and, by extension, crucial economic, social and political relationships.

[127] Papamichail (2017).

11.3 The haves-more and the haves-not in the crisis

Market income distribution represents the central driver of inequality in a market economy. In Chapter 4 we investigated how the different incomes changed during the crisis. The data shown reflect also the inequality in earned income across different social segments. In this section we investigate the relationship between the top and the bottom incomes and their evolution during the years of the crisis. Based on the available data, the group of the 'bottoms' can be determined by reference to the lowest decile or the two lowest decimals. The two lowest deciles provide a better basis for assessment than the lowest decile that is characterised by several shortcomings: it includes an uncertain but not insignificant number of highly tax evading households, which declare extremely low incomes, to which presumed income is added on the basis of living standards (houses, cars, etc.). It also includes under-age children with very low incomes, etc. The group of the 'tops' can be defined as households belonging to the highest (10th) decile and the top 1% of the population with the highest income. The latter is of course included in the 10th decile, but if one compares the income of the 10th decile with those of the 9th or 8th decile, the large income differentiation is found to occur mainly in the top 1% of households.

Below we examine the income changes experienced by these income groups and compare them with the average for the total population and with each other. This approach enables us to see how the crisis has affected the very rich and the weaker income groups and whether, and how, the inequality relationship between the two groups has changed.

Tables 11.1 and 11.2 show:

- the relationship between average *total income per household* for the same income groups (the lowest 20%, top 10% and the top 0.1%) for 2008, 2010 and 2012; and
- the same relationships for individual incomes (wages, pensions, independent employment, commercial activities).

We find that:

- The inequality between the top 10% or the top 0.1% and the lowest 20% is extremely high (25.8 to 21.5 times higher average income in the top 10% and 79.7 to 54.9 times in the top 0.1%, respectively for the three years examined).
- The three ratios we calculated (top 10%/lowest 20%, top 1%/lowest 20% and 1%/10th decile, respectively) show lower inequality in 2012 compared with 2008. The ratio of the average household income in all these groups to the average income of all

households also shows a decrease between 2008 and 2012, suggesting that the above three income categories lost more than the middle strata (3rd to 9th decile) taken together.

Table 11.1 Average total income per household (in Euro)

	2008	2010	2012	Change 2012 to 2008 in (%)
(a) Lowest 20%	3,335	4,326	2,827	-15.2
(b) Highest 10%	86,034	78,044	60,727	-29.4
(c) Top 1%	265,885	203,091	155,286	-22.6
(d) Average total income, all households	23,109	22,789	17,884	-41.6
Ratio (b) / (a)	25.8	18.0	21.5	
Ratio (c) / (a)	79.7	47.0	54.9	
Ratio (c) / (b)	3.1	2.6	2.6	
(a) to (d) in %	0.14	0.19	0.16	
(b) to (d) in %	3.7	3.4	3.4	
(c) to (d) in %	11.5	8.9	8.7	

Source: Calculations based on tax data.

- Moving from total income to individual sources of income, we find that households which in 2008 were classified in the 'bottoms' have suffered much more significant income losses regarding wages and income from commercial/business or independent activities, in comparison with both the top 10% and the top 1%. As a result, the ratio of the average income from wages, independent activities and commercial activities of the richest 10% and the richest 1% to the corresponding average income of the lowest 20% increases for all categories of income, implying higher inequality. The only category where this does not happen is pensions, given that the imposed pension cuts affected these higher income brackets much more strongly than the lower ones.
- A very important finding is the strong inequality within the non-employee income category (independent and commercial activities) in which the top 10% earns income that is 41% to 181% higher than the corresponding income of the lowest 20%[128], while the ratio between the top 1% and the lowest 20% is exorbitant (150.7% to 471.8% times higher). Within wages, the high wages (the top 10% and 1%) are 13.8 to 38.4 times than those of the lower deciles, once again suggesting significant inequality

[128] A similar high inequality would also be found in the case of dividend-interest income, which is not shown in Table 4.

between the top 1% ratio and the lowest decile, but much lower than for other income categories with the exception of pensions which show much lower inequality.

Table 11.2 Ratio between income of the top and the bottom in specific income sources

Ratio of:	Wages		Pensions	
	2008	2012	2008	2012
(a) Top 10% to lowest 20%	13.8	17.4	9.2	7.8
(b) Top 1% to lowest 20%	29.1	38.4	14.5	11.9
(c) Top 1% to highest 10%	2.1	2.2	1.6	1.5
Ratio of the average wage or pension in the lowest 20% to the average total wage or pension	0.2	0.2	0.3	0.3
Ratio of the average wage or pension in the highest 10% to the average total wage or pension	3.0	3.1	2.8	2.5
Ratio of the average wage or pension in the top 1% to the average total wage or pension	6.4	6.8	4.4	3.8

Ratio of:	Independent activities		Commercial activities	
	2008	2012	2008	2012
(a) Top 10% to lowest 20%	170.9	181.3	41.3	59.2
(b) Top 1% to lowest 20%	448.8	471.8	110.7	150.0
(c) Top 1% to highest 10%	2.6	2.6	2.7	2.5
Ratio of the average wage or pension in the lowest 20% to the average total wage or pension	0.0	0.0	0.1	0.1
Ratio of the average wage or pension in the highest 10% to the average total wage or pension	5.1	5.0	4.0	4.2
Ratio of the average wage or pension in the top 1% to the average total wage or pension	13.4	13.0	10.6	10.7

Source: Calculations based on tax data.

11.4 Income inequality before and after taxes

The magnitude and timing of the changes in incomes, employment, recession, taxes and other policy interventions were very heterogeneous across and within income and social groups. Consequently, total inequality is the result of divergent trends at different levels and types of income and mask serious and conflicting differences across income and occupational groups. Therefore, we have broadened the scope of inequality assessment to include more relationships, based on different criteria and indicators:

- First, we focused on inequality and its changes within the various types of income (wages, pensions, commercial activities, independent employment, agriculture, etc.).

- Second, we calculated income inequality before and after personal direct taxes (income tax and real estate tax[129], see Table 11.3). Primary incomes before direct taxation are found to have been strongly affected by the crisis although in very different manners, with some incomes mainly affected by recession or unemployment and others by both the macro-economy and certain policy decisions (notably through wage and pension cuts). Market income was then affected by tax and transfer policy. As noted in Chapter 3, additional taxation has been the main policy tool for fiscal consolidation. Tax changes took the form of successive waves of tax hikes that knocked individuals and businesses, workers, the unemployed, the youth and the elderly off their footing.
- Third, we analysed inequality focusing on specific population or occupational groups, such as: (a) those who retained their depended employment throughout the 2008-2012 period; (b) the population who had income in all the years of the period reviewed (2008-2012), excluding individuals or households declaring zero income in any of these years; and (c) wages of men and women and their evolution during the crisis. These distinctions have enabled us to see how inequality has changed for population subsets that have been able to maintain certain characteristics, such as income from work or pensions or have lost their income. Each of these distinctions leads to a different result, helping to understand how inequality or other characteristics evolved in different segments of the population.
- Fourth, we measured inequality on the basis of the Gini and Theil indices and on mean log deviation[130]. We also used the indicators regarding the shares of the top 10%, 1% and 0.1% to the total. As Piketty notes, "the concepts of deciles and centiles are rather abstract […] But the beauty of deciles and centiles is precisely that they enable us to compare inequalities that would otherwise be incomparable, using a common

[129] Separately for income tax and property tax, in the latter case also separately for the period before the introduction of EETIDE in 2011 and thereafter.

[130] Each inequality indicator corresponds to a different Social Welfare Function and is thus more or less sensitive to different types of transfers. For this reason, we deemed it appropriate to measure and analyse the inequality of a distribution using three indicators, namely the Gini coefficient, the Theil index and Mean Log Deviation (MLD), also known as second Theil index. These indicators have been selected to satisfy all the axioms or properties that are seen as most desirable according to the literature and which cover various types of sensitivity to changes in overall inequality. Specifically, MLD is relatively more sensitive to changes near the bottom of the distribution, the Theil index is sensitive to changes near the top of the distribution, and the Gini coefficient is relatively more sensitive to changes around the median of the distribution. Thus, the combined use of these indicators satisfies a wide range of preferences regarding the responsiveness of an indicator to different types of transfers. For more detailed data on inequality indicators, see the earlier version of the present study at http://www.boeckler.de/pdf/p_imk_study_38_2015.pdf.

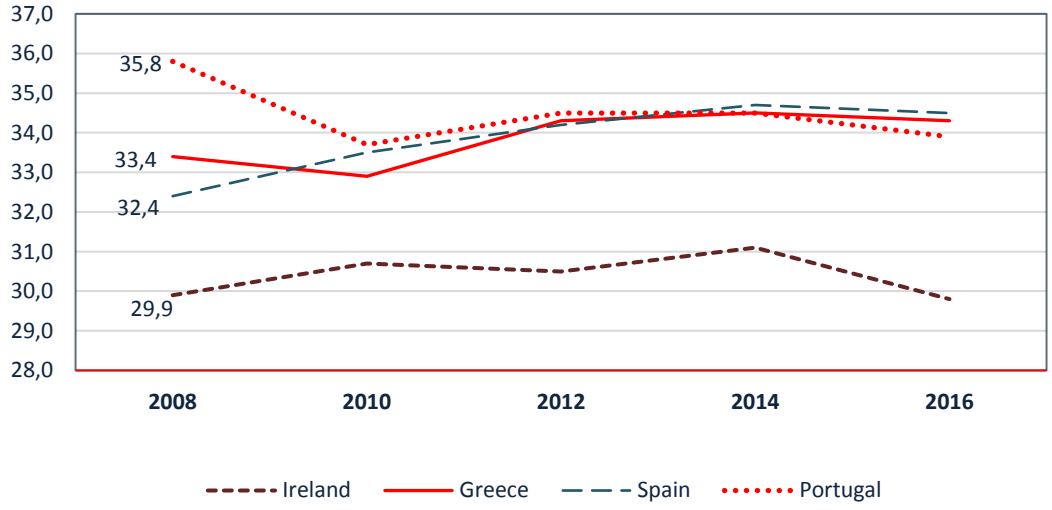
language that should in principle be acceptable to everyone". More specifically, the highest (10th) decile is a world of its own. It comprises people whose income (or property) is two to three times higher than the average, but also dozens of times higher. For this reason it is enlightening to divide this highest decile into subgroups. A very interesting subgroup is the highest centile (top 1%), comprising the best paid and the highest 0.1%, with households or individuals earning tens of thousands of euro a month. It should be noted that the individuals earning the highest 10% (or 1% or 0.1%) of wage income are not the same as those owning the highest 10% (or 1% or 0.1%) of property (see Chapter 8). In addition, it is important to note that these individuals change year after year during the crisis. New individuals take the positions of others on the income or the property distribution scale.

11.4.1 Trends in total inequality

Total inequality is examined from a dual perspective: (i) comparing Greece's inequality index with inequality in other countries; and (ii) looking at the changes of inequality in the country at different points in time.

In Chart 11.1 we have included the four crisis countries for 2008-2014. For all these countries, we can see that the downward trend is reversed and inequality started to rise again, in a different year in each country, from 2011 onwards.

Chart 11.1 Evolution of the Gini coefficient in Greece and comparable countries[131]



Source: Eurostat.

[131] For Ireland the value of the index for 2016 refers to the year 2015.

Table 11.3 Inequality indices (Gini and S80/S20) for Greece based on various sources

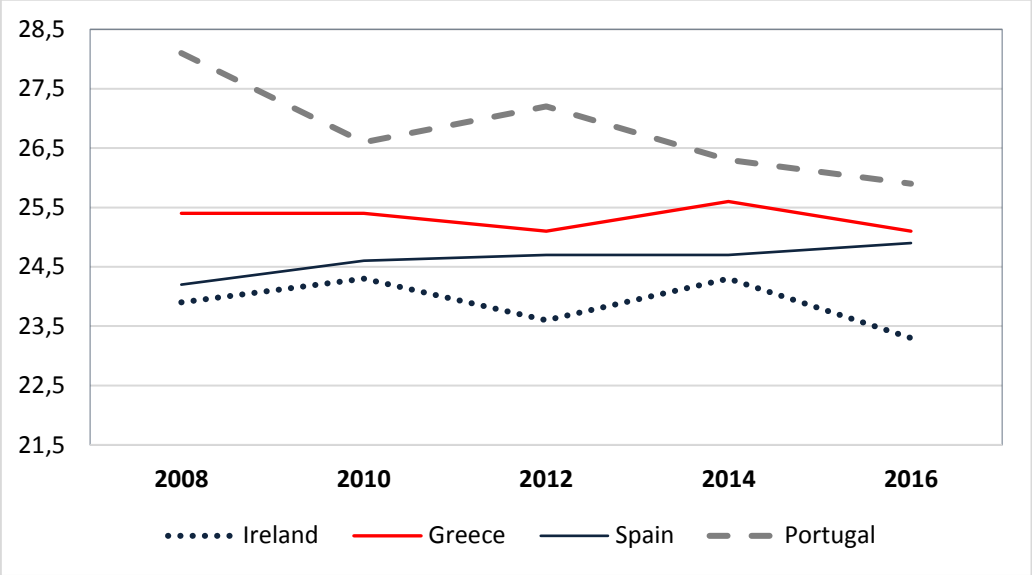
	Gini coefficient			S80/S20		
	EU-SILC	OECD	Greek Ministry of Finance	Household Budget Survey	EU-SILC	OECD
	Disposable income	Pre-tax income and subsidies	Tax data	Purchases	Disposable income	Disposable income
2007	34.3	49.9	…	…	6.0	5.6
2008	33.4	50.0	48.7	5.5	5.9	5.6
2009	33.1	50.3	46.8	5.4	5.8	5.6
2010	32.9	52.2	46.5	5.5	5.6	5.9
2011	33.6	54.9	45.6	5.5	6.0	6.2
2012	34.3	56.4	46.4	5.9	6.6	6.2
2013	34.4	56.5	…	5.7	6.6	6.3
2014	34.5	56.0	…	5.7	6.5	6.4
2015	34.2	…	…	5.6	6.5	…
2016	34.3	…	…	…	6.6	…

Sources: ELSTAT and OECD.

The results regarding total inequality in Greece are reported in Table 11.3, and the following key findings arise:

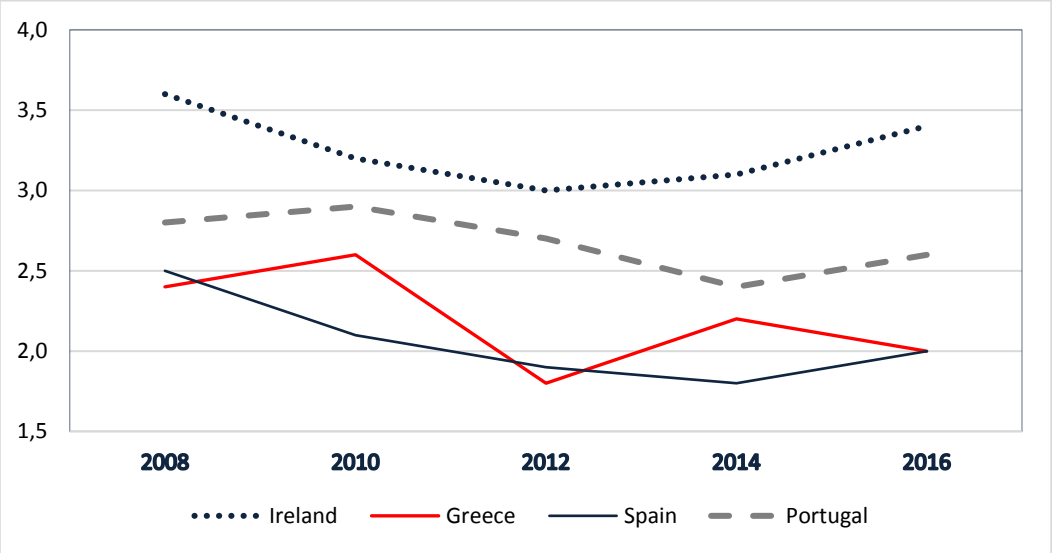
- ✓ Total inequality decreased slightly till 2011 and recorded a slight increase if comparison is made between 2008 and 2013. EU-SILC suggests that inequality in Greece, measured by the Gini index, increased by just one percentage point (from 0.334 to 0.343) between 2008 and 2016 and, despite the large income fluctuations until about 2011-2012, has remained remarkably stable over time.
- ✓ A comparison with other crisis countries shows that the share of the highest decile in total income remains stable in Greece, has visibly decreased in Portugal and increased slightly in Ireland and Spain (Chart 11.2). By contrast, the income share of the poorest decile declined between 2008 and 2014 (Chart 11.3) in all countries. However, these findings differ from those based on the tax data we used in our analysis, which indicate that the share of the richest decile decreased from 38% in 2008 to 34.4% in 2012, while the share of the poorest decile also fell, but its levels are anyway so low (0.54% and 0.64%, respectively) that the notion of increase or decrease makes little sense. It should also be noted that the very small income shares of the sections of the population that are not captured by tax data (Roma, homeless, etc.) cannot possibly justify this large divergence.

Chart 11.2 Share of the richest (10th) decile in total income



Note: For Ireland the value of the index for 2016 refers to the year 2015.
Source: Eurostat.

Chart 11.3 Share of the poorest (1st) decile in total income



Note: For Ireland the value of the index for 2016 refers to the year 2015.
Source: Eurostat

✓ Based on the EU-SILC, the S80/S20 index, i.e. the income share of the richest 20% as a ratio to the share of poorest 20%, rose from 5.9 to 6.6, obviously because the incomes of the two lowest deciles recorded a larger decline compared with the two highest deciles, and in contrast with the remaining deciles. This picture regarding total income and total

population remains the same if tax data are used instead[132]. Table 11.3, for comparison purposes, summarises the values of the Gini and the S80/ S20 indices from a variety of sources and/or analyses. The trend towards lower inequality until 2010 is confirmed by all estimates of the Gini index.

- ✓ The slight increase of inequality after 2011 is in contradiction with the general perception that inequality increased significantly during the crisis. Of course, a much greater reduction in the pre-tax income of the richest compared to the poorest or middle-sized households should logically lead to lower rather than stable, or even slightly higher, inequality. The above counterintuitive finding needs interpretation. As we discussed in Chapter 7 on taxation, the reduction in inequality that would have been expected to result from the asymmetric reduction of low, middle and high incomes seems to be offset by a comparatively much higher tax burden on lower incomes. For the lowest 50% of taxpayers the tax burden increased from 1.6% to 8.1% (+6.5 percentage points), while the corresponding increase in middle and high incomes was 4.5 and 5.9 percentage points, respectively (See Table 11.4). In absolute terms, the lowest 50% was charged in 2012 with EUR 1,090 million more taxes than in 2008, for an income that was 17.5% lower. Middle incomes were charged with EUR 575 million. If all incomes had been burdened as before the crisis, the financial result would have been EUR 5.2 billion less in tax revenue. In essence, those pre-tax incomes which experienced the smallest reductions were subject to a higher tax burden, with the result that inequality (after taxation) remained stable or even increased.

Table 11.4 Income reduction and changes in taxes and the tax burden for low, middle and high incomes (2008 and 2012, all households)

Deciles	Income reduction (%)	Change in taxes (in EUR millions)	Tax burden as % of total income	
	2012/2008	2012-2008	2008	2012
1st - 5th	-17.5	+ 1,090	1.6	8.1
6th- 7th	-17.0	+ 575	5.8	10.3
8th- 10th	-26.2	+ 558	13.8	19.7

Source: Calculations based on tax data.

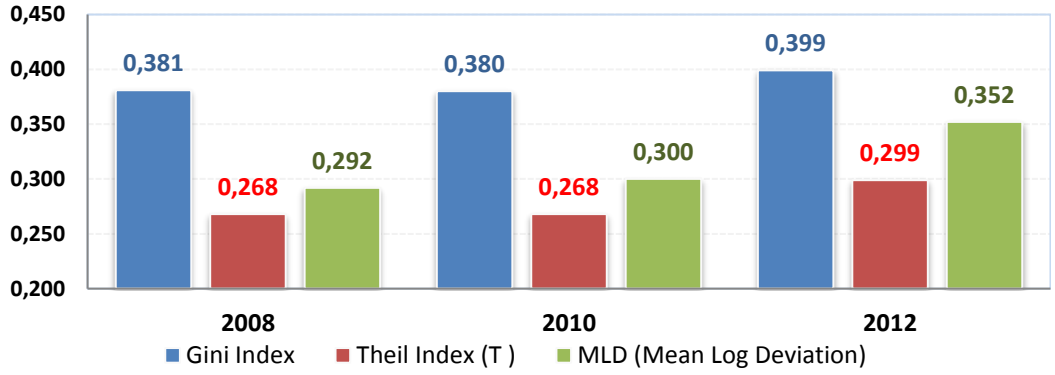
[132] These findings differ to some extent from other measures of overall inequality, all based on EU-SILC or Household Budget Survey (HBS) data. Indicators based on tax data fail to capture various grants and subsidies, income transfers or social benefits to weaker groups, all of which contribute to lower inequality. However, these items not only represent tiny fractions of incomes but have also shrunk in recent years as a result of the crisis.

11.4.2 Changing inequality within incomes

Looking beyond the total inequality index, we investigated the changes in inequality within and across income categories. To this end, we calculated inequality indicators on the basis of the income declared between 2008 and 2012 for each source of income separately (wages, pensions, self-employment, business activities, etc.), for each year and, in addition, separately for the first and the second member of the household. This shows how inequality within each income source evolved over time, within the household (male and female), but also how it compares with other income sources. The main findings are the following:

(a) Wages: Wage distribution inequality increased by 2-3 percentage points between 2008 and 2012, based on the Gini index. The same finding emerges from the Theil and MLD indicators, which however record a stronger increase in inequality over the same period (3-6 percentage points), suggesting that wages were pressed down to lower levels or, more likely, more employees were found with lower wages (Chart 11.4).

Chart 11.4 Wage inequality indices for the total of employees in the country



Source: Calculations based on tax data.

The factors that caused wage income of different households to shrink or to be reduced to zero or to rise significantly have been discussed extensively in previous sections. Our findings show a decline in inequality for the "all households" aggregate, a significant increase in inequality when calculated on the basis of wages at individual level and a considerable decline in inequality within the group of pensioners, especially at the individual level and to a lesser extent at the household level.

Wage inequality is significantly higher for males than for females, while during the crisis this gap increased by about half percentage point (Chart 11.5). As we saw in Chapter 6, women are, on average, lower-paid than men. The gender pay gap declined however by 4 to 7 percentage points between 2008 and 2012.

Chart 11.5 Gini coefficients for the wages of the 1st and 2nd household members

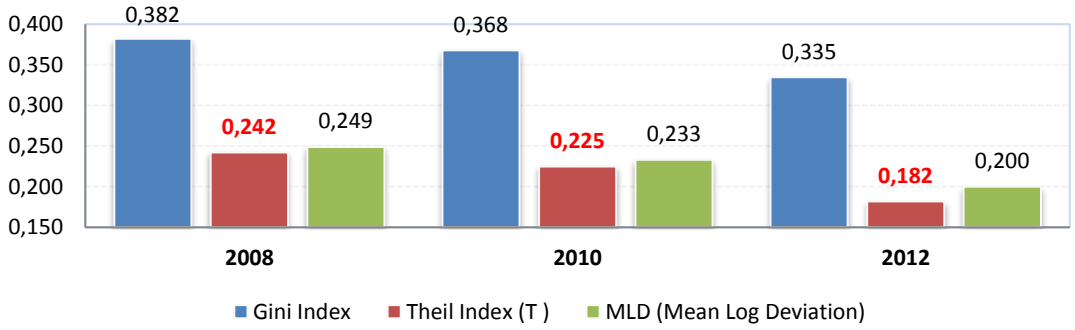
Source: Calculations based on tax data.

The changes in wage inequality, either for the household as a whole or separately for its first and second members, refer to a changing population. The number of employees has declined over time [133] due to the fact that a part of them retired and another part fell into unemployment. Meanwhile, some unemployed persons who found a job are added as new employees. The job losses during the crisis are more severe for men than for women. The jobs of the first household members (mostly males) fell by 21.6%, compared with only 9.4% for the second members, exclusively females. This is attributable to the higher labour market flexibility exhibited by women during the crisis (see Chapter 6) and suggests a narrowing of the gender employment gap in the crisis period.

(b) Pensions: Inequality indicators were also calculated for a changing number of pensioners. From 2,155.5 thousand in 2008, the number of pensioners came to 2,521.5 thousand in 2012, up by 406 thousand. Pension inequality moved in the opposite direction compared with wages. For the total pensioner population, pension inequality declined significantly: the relevant Gini index fell from 0.382 in 2008 to 0.335 in 2012. The cuts made, especially in high pensions, significantly reduced inequality. It is also clear that the attribution of pensions was an important factor that helped to mitigate the negative impact of the crisis on incomes and to reduce inequality, even if this exerted a critical destabilising effect on the social security system (Chart 11.6).

[133] Falling by 75.3 thousand in the first year, by 86 thousand in the second (2010), by 208.7 thousand in the third (2011) and by 178.9 thousand in the fourth (2012), to stand at 2,444.2 thousand at the end of 2012, i.e. 548.9 thousand less employees than in 2008.

Chart 11.6 Pension inequality indices for the total of pensioners in the country



Source: Calculations based on tax data.

(c) In the "other" family income sources: income inequality is significantly high. The most unequally distributed are dividend-interest income, income from agriculture and income from self-employment. In some of these sources, inequality remains unchanged throughout the period (0.73 for family agricultural income, 0.68 for income from independent activities, 0.60 for income from real estate), in others inequality increases (in income from commercial activity: from 0.54 in 2008 to 0.58 in 2012), and finally in some other sources there is a decline (income from dividends-interest: from 0.80 in 2008 to 0.74 in 2012). At the ends of the distribution there are strong changes in dividend-interest income and agricultural income. According to Chart 11.7, only the pension inequality index is lower than the overall income inequality index. By contrast, inequality is significantly higher in all other income sources with the exception of wages, where inequality is over 3 percentage points in 2012.

Chart 11.7 Gini coefficient per income source of households

Source: Calculations based on tax data.

It can be noted that wage and pension inequality (Chart 11.7) appears to be higher within households than across employees and pensioners as individuals (Charts 11.4 and 11.6). The reason is that when both members of the household have high earnings, either wages or pensions, the disparities between rich and poor households become stronger and inequalities appear higher.

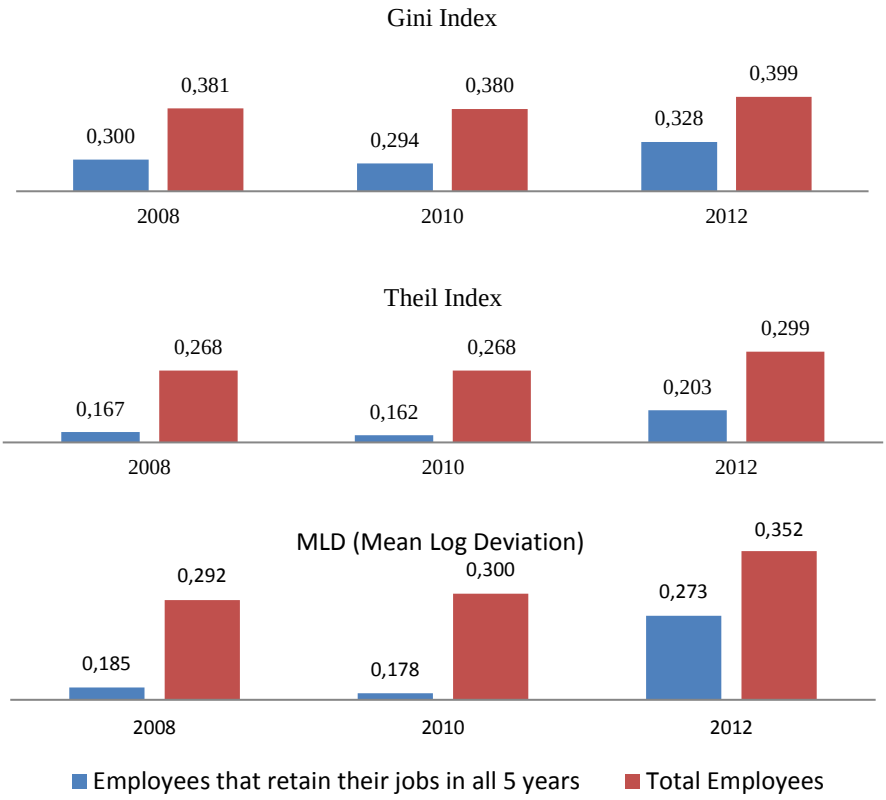
(d) Wage and pension inequality from two different perspectives: The previous estimates were made taking into account the total income of all households or individuals from each source of income in the years 2008-2012. In addition, we examined developments regarding only employees and pensioners that retained their wage or pension incomes throughout these five years. The group of employees who retained their employment comprises 1,951.2 thousand employees and the group of pensioners, respectively, 2,008.3 thousand.

According to Chart 11.8, the group of steady employees has a Gini index of 0.328 in 2012, while the total population of employees has a much higher inequality index (0.399) in the same year. This large difference in equality indicators across the "steady employees" subsample and the "all employees" sample is due to the fact that the distribution of the "all employees" sample includes, at its bottom end, the new employees who find low-paid employment (entry-level wage) and, at its top end, employees who will soon retire and, in the last year of their career, have higher pay than other employees. As a result the inequality of the distribution is higher than for the "steady employees" subsample.

The same trend and conclusions regarding inequality emerge from the use of the Theil index and Mean Log Deviation. Using Mean Log Deviation, which is sensitive to changes at the bottom end of the distribution, both groups reveal significant increases in inequality (from 0.185 in 2008 to 0.273 in 2012 for the "steady employees" subsample and from 0.292 in 2008 to 0.352 in 2012 for the "all employees" sample). This suggests strong pressures at the lower end of the distribution in both groups. Many employees, in order to keep their jobs, accept lower wages than in previous years. The differences are more pronounced in men than women.

Unlike the number of employees, the number of pensioners has risen year after year. In 2008, according to tax data, 2,155.5 thousand people receive pensions, while five years later, in 2012, their number increases to 2,511.5 thousand.

Chart 11.8 Wage inequality indices for a stable sample of employees and for the total



Source: Calculations based on tax data.

For pensioners receiving pension all five years as well as for the total of pensioners the picture is different. Both groups of pensioners show a decline in inequality, and the gap between the two are very small (less than one percentage point). The large inequality gap in wages seems to be closing in retirement. Whether this involves forms of unequal treatment due to higher contributions by high-paid employees during their employment is a question that can be asked but not answered in the context of this analysis.

Chart 11.10 Pension inequality indices for a stable sample of pensioners and for the total

Source: Calculations based on tax data.

(e) Property inequality: The concept of property theoretically covers both real, financial (deposits, securities) and other property (valuables, consumer durables such as cars, yachts, etc.). As data on the distribution of financial assets are not available, we calculated inequality indices for real property only, which is declared in a special form (E9) for tax purposes[134]. We distinguish two subsets: the first concerns the value of the real property of those households that declare such property and the second concerns the total of households, whether they have real property or not. This approach enables us to see the level of inequality, on the one hand, across only those who own real estate and, on the other, across the entire society.

Inequality in real property ownership (at household/family level) seems to have remained broadly unchanged, showing only a slight downward trend, although it exceeds inequality in incomes (as measured for total income and most of the individual income types). As it could be expected, inequality measured by the Gini index is higher when all households with and without property are aggregated (0.69) than when only property-owning households are considered (0.58). In both cases, inequality decreases slightly (-2.8%) between 2011-12 and 2009-10.

Table 11.5 Gini coefficient for total real estate property, total income and capital income

Households	2008	2012	Change
Real estate property (among those having such property)	0.589	0.578	- 0.011
Real estate property (among those having or not having such property))	0.707	0.688	- 0.019
Total income	**0.487**	**0.464**	**- 0.023**
Rental income	0.616	0.599	- 0.017
Income from dividends-interest	0.797	0.742	- 0.055

Source: Calculations based on tax data.

11.4.3 Taxation and inequality

The above inequality measurements refer to income before taxation. Based on these data we detect whether, how much and in which direction, taxation changed pre-tax inequality.

The following income concepts and the respective inequality indices have been measured:

a) Initial pre-tax total income (row 1)
b) Income as declared to the tax authority[135],

[134] The total value of real estate in this analysis is the sum of the "objective" value of the property derived from the relevant E9 tax forms and should not be confused with the total value of the property of the entire population, which is a wider concept.

[135] The difference from (a) is that there are incomes which households are not required to declare.

c) Taxable income (row 3)[136],

d) After-tax income (row 4),

e) After-tax income minus tax deductions (row 5),

f) Net income 1 (after tax income excluding the effect of property tax for 2012 row 6),

g) Net income 2 (net income 1 including the effect of the special property levy (EETIDE) introduced in 2011, row 7)[137].

Measuring inequality indices for all these specific income types depicts the specific effect of each particular tax factor on inequality. Table 11.6 shows the different inequality indices and their change between 2008 and 2012. The following conclusions are drawn:

- Taxable income as a percentage of the total declared income increased significantly from 75.8% (2008) to 91.6% (2012) (row 3 divided by row 1), probably due to the abolition of tax-exempt thresholds.
- Between 2008 and 2012, the income tax incidence increased from 9.9% to 15.1% (rows 8 and 9). As a result, pre-tax income declined by 23.1% (row 1), while after-tax income [net income 2] decreased by 27.5% (row 7).

Table 11.6 Income inequality index before taxes and after indirect taxes

		Country total (in EUR millions)			Average household income in EUR		Gini coefficient		
		2008	2012	% difference	2008	2012	2008	2012	Difference
Initial pre-tax income	(1)	123,521	94,990	-23.1	23,631	18,173	0.451	0.437	-0.015
Declared in tax returns (Form E1)	(2)	98,029	80,243	-18.1	18,754	15,352	0.481	0.499	0.018
Taxed income	(3)	93,574	86,993	-7.0	17,902	16,643	0.479	0.413	-0.066
(3) minus income tax	(4)	83,671	77,939	-6.9	16,007	14,911	0.442	0.377	-0.065
(4) plus tax exemptions	(5)	84,352	78,450	-7.0	16,138	15,009	0.443	0.377	-0.066
Income net of direct tax and property tax	(6)	111,329	83,205	-25.3	21,299	15,918	0.424	0.401	-0.023
Income net of direct tax, property tax and, for 2012, EETIDE	(7)	111,329	80,658	-27.5	21,299	15,431	0.424	0.405	-0.019
% change (6)/(1)	(8)	-9.9	-12.4				-0.027*	-0.036*	
% change (7)/(1)	(9)		-15.1					-0.032*	

(*) These figures refer to the absolute difference of the value of the Gini coefficient before and after taxes in 2008 and 2012.

Source: Calculations based on tax data.

[136] The difference from (b) is that there are special arrangements whereby not all declared income is taxable.

[137] Net income 1 and 2 are intended to identify the impact of property tax on income inequality.

- Inequality, measured by the Gini index, decreased for all types of incomes between 2008 and 2012. The value of the index after income and property taxes (excluding EETIDE, which did not exist in 2008) fell by 0.027 points in 2008 and by 0.036 points in 2012 (row 8). An important role in this fall was played by the solidarity tax imposed on higher incomes.
- Property taxation, which was increased significantly in 2011, had an unexpected effect on inequality: it led to a slight increase of inequality because the share of the lower income deciles in property is higher than their share in total income. The tax was presented as a progressive tax, because it was imposed also on property which was exempted from the existing property tax, but, as it turned out, it affects disproportionately the lower income groups. In Table 11.6 it can be observed that, while the inequality before the special property levy (EETIDE) declines by 0.036 percentage points in 2012 compared with the pre-tax inequality and also compared with 2008, this change is limited to 0.032 percentage points following the imposition of EETIDE[138].
- The increase of indirect taxes had only a marginal negative impact on inequality and redistributive effect. That said, the indirect tax hikes did have a negative impact, mostly on low incomes. However, this effect is not reflected in changes in income inequality, as poor households were forced to reduce their spending on goods the prices of which rose significantly due to higher excise taxes and adjust their consumption pattern, to some extent compromising their life quality (in terms of heating, transport, environmental pollution).
- Irrespective of the changes in inequality resulting from the tax system, it is shown that after-tax inequality is still very high by industrialised world standards. The Gini index takes values of 0.481-0.499 for pre-tax income and remains above 0.40 for net after-tax incomes. Such values are indicative of deep inequalities within the Greek society, despite the decrease observed between 2008 and 2012[139].

The discussion of after-tax inequality should be complemented by an uncommon factor: tax arrears. In the years after 2010, tax arrears grew significantly. By 2012, they had climbed to EUR 55 billion and further to EUR 94.5 billion by mid-2017 (an average annual increase of

[138] Given that ENFIA, which replaced the previous property tax system, has in fact incorporated the characteristics of the previous taxes, the picture can be considered to be representative also for the years after 2012 till 2015.

[139] See Cingano (2014).

about EUR 8 billion). The distribution of these tax arrears is significantly unequal, as shown in the following data:

Table 11.7 Tax arrears: Amount and number of tax debtors

Level of arrears (Individual level)	Number of debtors	Total amount (billion EUR)	% of total
Over EUR 1.0 million	7,296	74.0	79.7
EUR 50 thousand to 1.0 million	60,662	10.5	11.3
Less than EUR 50 thousand	4,244,323	8.4	9.0
TOTAL	4,312,287	92.9	100.0

Source: Independent Authority for Public Revenue (as published in the press on 24 March 2017).

These figures show that, irrespective of the formal tax obligations at the individual or total level, large parts of the taxes are not paid. A very limited number of persons (1.6% of the total) owe, on average, very high or moderately high tax arrears, which cumulatively represent 91% of the total. These tax debtors are either unable or unwilling to comply with their tax obligations. In any case, these numbers show that had these arrears been lower, the tax burden, its distribution, inequality relations, the fiscal adjustment and the macroeconomic or other imbalances in general could have been in a much different shape than they actually are.

CHAPTER 12

Unemployment, poverty and the new face of "*despair*"

The analysis of income figures has highlighted the inequalities developed during the crisis and their distribution across individual income groups and sources. This approach, however, still leaves a gap: it ignores a number of households and people who have no income to declare and are therefore not included in the statistical data base used. Therefore, it cannot provide information on a number of qualitative elements regarding solidarity and inequality.

This chapter aims to partly address this weakness using a different source of data and a different methodology. A central tool of the analysis carried out in this chapter is what we have termed "index of despair". The index reflects the degree of pressure felt by households with employed and unemployed members when their income from dependent employment declines or when their members lose their jobs. The index places greater emphasis on the changes in low pay and takes into account unemployment benefits. Most importantly, however, the index of despair focuses on family wage income, to which all his employed members contribute with their wages. We expect that this family income provides some degree of protection to unemployed or non-economically active household members. It should be noted that the index does not capture other circumstances (e.g. presence of children and/or non-economically active adults) that might create additional problems to already distressed households.

The index of despair enables to answer questions such as the following:

- How can we measure the "despair" of households during the crisis, when they suffer income losses and face the risk of unemployment?
- Who are the most affected by "despair"?
- How has despair evolved during the crisis? Is it distributed in a socially fair manner or do some groups shoulder a heavier burden? In particular, how are the layoff notices distributed?
- What kind of protection and solidarity is offered to those who are hit the most?

- Is solidarity associated with the welfare state? Is it citizen solidarity or family solidarity?

12.1 From the "unemployed person" to the household with unemployed members

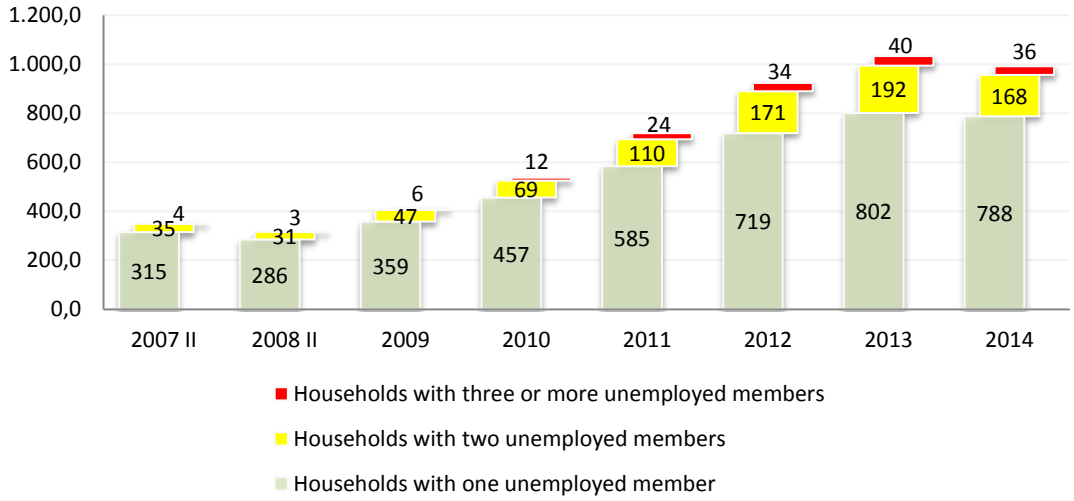
To answer the above questions, it is appropriate from a methodological point of view to shift the focus of analysis from the concept of the "unemployed person" to the concept of "household with unemployed members". The consequences of unemployment, income cuts or switches to a new job are different when viewed from the different perspectives of an individual person or of the household in which such person lives, especially if he/she is the "head of the household". Participation in the labour market is a key factor in preventing situations of poverty, deprivation and social exclusion, as social inclusion mechanisms incorporate both the employment status and the level of pay, i.e. wages.

Chart 12.1 shows the number of households with one, two, three or more unemployed members for the 2007-2014 period. Data from the Labour Force Survey indicate the following:

- ✓ In 2008, 286 thousand households reported at least one unemployed member, increasing to 788 thousand in 2014. 2013 is the peak year during the crisis, with increases recorded for all sub-categories of households with unemployed members. A small improvement can be seen in 2014. Among these households, 31 thousand reported having two unemployed members in 2008. In 2014, this number has reached 179 thousand.
- ✓ In addition, in 2008, there were 3 thousand households with more than two unemployed members. In 2014, this number has reached 40.2 thousand.
- ✓ The largest increase in this number is recorded in 2013 and is broadly based across all sub-categories of households, followed by a small improvement in 2014.

If one unemployed member in a household is causing a problem, this problem becomes much bigger when the unemployed members increase to two or more especially if the head of the household is unemployed. In this case we are at the hard core of unemployment.

Chart 12.1 Number of households (in thousands) with unemployed members: 2007-2014

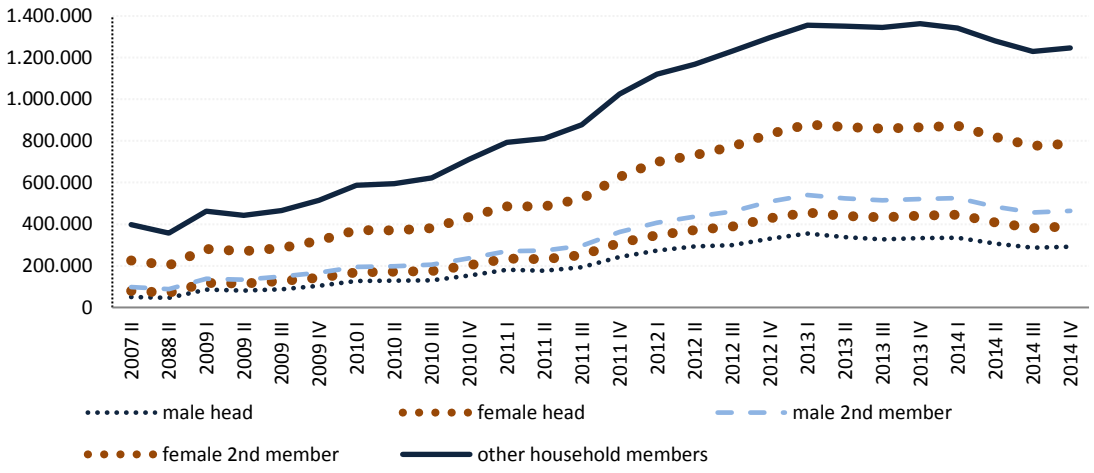


Source: Calculations based on ELSTAT's Labour Force Survey data.

The share of household heads who are unemployed during the crisis in the total number of unemployed persons rises from 19.8% in the second quarter of 2008 to 31.3% in the fourth quarter of 2014, peaking at 33.6% in the first quarter of 2013. This development is another indication of the adverse impact of the current crisis on the profile of unemployment, which seems to have hit the hard core of the Greek family (heads of households).

According to Chart 12.2, in the fourth quarter of 2014, there were 292,000 unemployed male heads of households (245.8 thousand more than in the second quarter of 2008) and 98.1 thousand unemployed female heads of households (73.5 thousand more than in the second quarter of 2008).

Chart 12.2 Number of unemployed members by category: 2007-2014



Source: Calculations based on ELSTAT's Labour Force Survey data.

As far as unemployment is concerned, the continuing significant increase in the number of unemployed persons in Greece over the last six years is accompanied by other worrying aspects. Prior to the crisis, unemployment was mostly concentrated in women and younger household members. This gradually changed, and the absolute number of unemployed males rose sharply and reached the number of unemployed female that increased at a slower pace.

Against this background, the degree of anxiety/despair in households should probably vary: it is likely to be lower when the household includes other members who have a job and can support with their income the unemployed members of the household, or dramatically high (total despair) when all members of the household, including the head, are unemployed and none of them receives an unemployment benefit.

12.2 The index of despair

The index of despair reflects the intensity of despair among the households of the employed and the unemployed. In essence, the index reflects the effect of fiscal adjustment, recession and labour market policies, which have led to wage cuts and job losses[140].

Methodology for the construction of the index of despair

The reference population comprises households of employees or unemployed persons. That is, it excludes households of non-employees or pensioners. The reason for this exclusion is the fact that the Labour Force Survey (LFS) does not provide information on the level of income of such members, which thus cannot be classified. The households that were selected earn their income solely from wages/salaries, unemployment benefits, or both.

The index is based on primary data from ELSTAT's quarterly Labour Force Surveys, conducted on an annual sample of 120,000 households. The reference period runs from the first quarter of 2009 to the first quarter of 2014.

The index ranges between extreme values of zero and one. A value of zero is assigned to households reporting that none of their members is unemployed and that the monthly wage of each employed member is more than EUR 1,000. A value of one is assigned to households reporting that all their active members are unemployed and none of them receives any unemployment benefit. The latter households are identified as being in a state of absolute despair.

The score of each household depends on the individual scores of all its active members. Specifically, each active member scores the maximum value of one if he/she is unemployed and does not receive any unemployment benefit. Otherwise, the score is gradually lower if this member at least receives an unemployment benefit or has a low-paid job, and drops further in inverse proportion to the level of his/her labour income. A member scores the minimum value of zero if his/her monthly wage exceeds the EUR 1,000 threshold.

Accordingly, each economically active member of the household is assigned one of the following values:

1	if unemployed and not receiving any unemployment benefit
0.8	if unemployed and receiving an unemployment benefit
0.6	if employed and receiving a monthly wage of less than EUR 499

[140] Zografakis and Mitrakos (2012), Zografakis (2014).

0.4	if employed and receiving a monthly wage of between EUR 500 and EUR 699
0.2	if employed and receiving a monthly wage of between EUR 700 and EUR 999
0	if employed and receiving a monthly wage of EUR 1,000 or higher

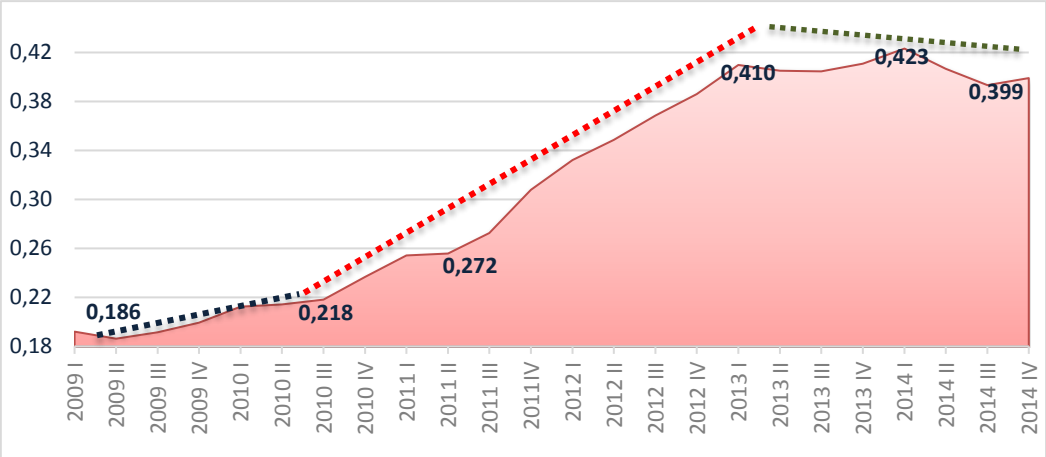
The total score of each household is the average of the individual scores of its active members. Children and non-economically active members in the household (students at all levels of education, soldiers, persons incapable of work, housewives, etc.) are not taken into account in the calculation of the index. The index is calculated for different groups of households according to the characteristics of the household head (e.g. level of education, age, region of residence, skills, occupation, sector or activity, years of service, nationality, type of employment, etc.).

Looking at the evolution of the index (Chart 8.4), we can make two important observations.

- Between the second quarter of 2009 and the first quarter of 2013, the index of despair was on a constant upward trend, rising from 0.186 to 0.423, i.e. by 121%. The value of 0.423 for 2014 (first quarter) suggests a very high level of despair. Of course, as shown in another part of this analysis, many households (with employed and unemployed members) earn incomes from various sources other than wages and unemployment benefits, which are not recorded by the Labour Force Survey. Notwithstanding this caveat, the findings reported below remain valid, suggesting that the conclusions should be seen in combination with each other.

- Three distinct periods can be identified in the evolution of the index. In the first period, up to the third quarter of 2010, the index increased on average by 2% quarter-on-quarter. It seems that in its initial phase the economic crisis did not affect so much the index of despair.

Chart 12.3. Evolution of the index of despair (average for the total of households of employees)



Source: Calculations based on ELSTAT's Labour Force Survey data

In the second period, up to the first quarter of 2013, developments were dramatic, with the index rising quarter-on-quarter by 7% on average. It is worth noting that in just three months, between the third and the fourth quarter of 2011, the index increased by as much as during the entire first period. Finally, in the third period (second quarter 2013 to fourth quarter 2014), the index showed for the first time some stabilisation or a slight improvement[141]. Although the index still remained at high levels (0.405-0.404) in the first quarter of 2014, it began to decline thereafter and reached 0.399 in the fourth quarter of 2014.

An examination of the index of despair, combined with demographic and other characteristics of the head of household, leads to four main conclusions:

- The index of despair in 2014 is higher than the average in those households whose head has one of the following characteristics (Table 12.1):
  - ✓ is aged up to 34 years or over 55 years;
  - ✓ has a low educational level (up to secondary education);
  - ✓ works part-time;
  - ✓ is an immigrant;
  - ✓ is unemployed or non-economically active.
- During the economic crisis the index of despair increased significantly more, relative to the overall index, for those households whose head has one of the following characteristics (Table 12.1):
  - ✓ is aged 25 to 44 years;
  - ✓ has a low educational level;
  - ✓ is an immigrant;
  - ✓ is non-economically active.

  When the head of household is employed, the index of despair is low. The years of experience, skills, private/public sector of employment, type of employment and sector of employment are associated with a higher likelihood that the head has a job.
- When the head of the household is unemployed, the degree of despair is overwhelmingly higher, verging on absolute despair (index 0.86).

[141] The implementation of a social employment programme for the unemployed in 2013 (prioritising households with more unemployed members), together with the introduction of an unemployment benefit for long-term unemployed subject to eligibility requirements, led to a slight improvement in the index of despair.

Table 12.1 Evolution of the index of despair depending on the different characteristics of the household head

Average value of the index	2009	2014	Difference	Average value of the index	2009	2014	Difference
	0.19	**0.41**	**0.21**		**0.19**	**0.41**	**0.21**
Age				**Sector of employment**			
Up to 24	**0.33**	**0.51**	0.18	Public sector	0.08	0.17	0.09
25 - 34	0.20	**0.45**	**0.25**	Private sector	0.16	0.26	0.11
35 - 44	0.17	0.38	**0.21**	**Full/Part-time employment**			
45 - 54	0.19	0.39	**0.21**	Full-time employment	0.12	0.21	0.09
55 +	0.21	**0.46**	**0.25**	Part-time employment	**0.34**	**0.46**	0.12
Years of service				**Sector of activity**			
Up to 2	0.19	0.32	0.12	Primary sector	**0.24**	0.36	0.12
3 – 6	0.15	0.23	0.08	Secondary sector	0.16	0.28	0.12
7- - 10	0.13	0.23	0.10	Tertiary sector	0.11	0.21	0.10
11 +	0.10	0.19	0.10	**Nationality**			
Education				Greek	0.18	0.39	**0.21**
Primary	**0.27**	**0.55**	**0.29**	Albanian	**0.25**	**0.51**	**0.26**
Secondary	0.20	**0.43**	0.23	Other immigrants	**0.26**	**0.52**	**0.26**
Tertiary	0.12	0.28	0.16	Other foreign citizens	**0.22**	0.39	0.17
Skills				**Employment condition**			
High	0.06	0.13	0.08	Employed	0.13	0.23	0.10
Medium	0.15	0.27	0.11	Unemployed	**0.80**	**0.86**	0.06
Low	**0.23**	0.35	0.12	Economically inactive	**0.27**	**0.55**	**0.28**

Source: Calculations based on ELSTAT's Labour Force Survey data.

The data show that as the economic crisis unfolds, it does not only affects the most vulnerable; it increasingly hits also people (e.g. civil servants) who before the crisis felt that they were safe and protected by the institutional framework, or workers who believed that their high skills shielded them from future risks. This can explain why many young people with high educational qualifications migrate abroad in search of work and better pay, seeing that their studies cannot guarantee favourable employment prospects.

12.3 The "apartment building" in which the households live

For the purpose of this analysis, households have been classified according to their index of despair into five groups depending on household size, enabling us to examine any households for which the index takes very high values that are masked by averages. To visualise this

classification, we use the metaphor of an apartment building, the structure of which has the following characteristics:

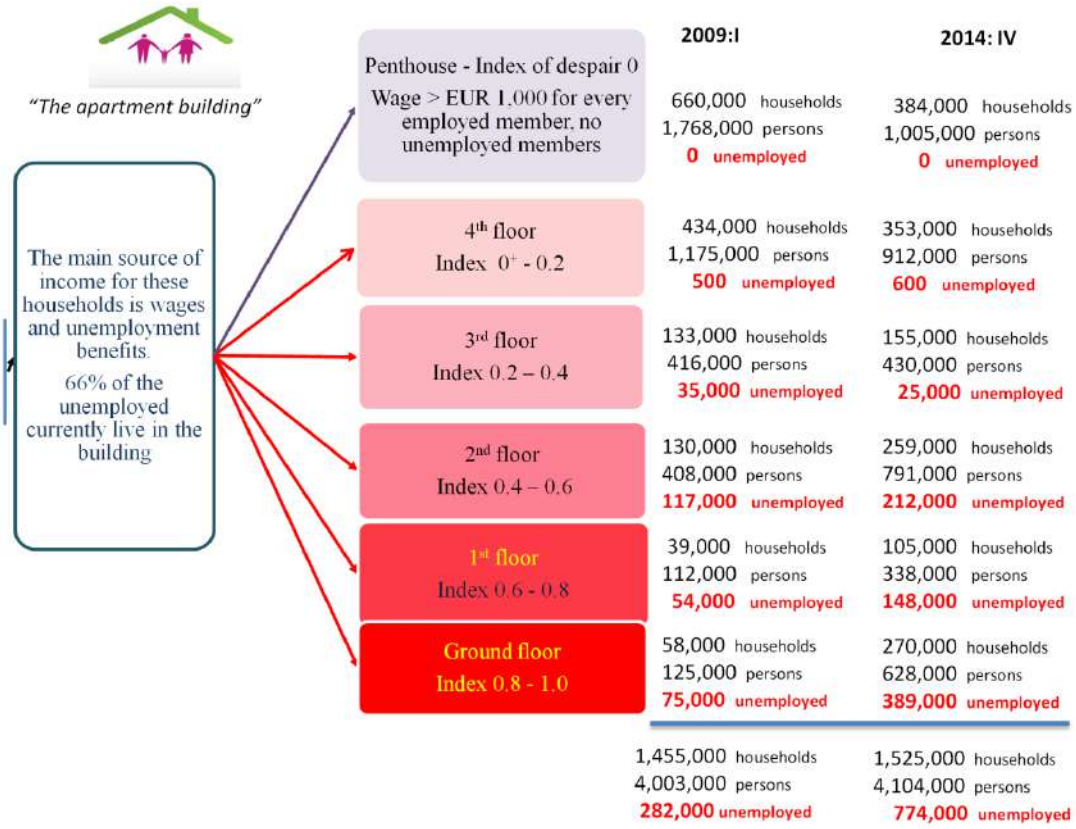
- The building has five floors (ground floor and four upper floors) and a penthouse (Figure 12.1).
  - The tenants of the ground floor are the households with an index of despair higher than 0.8, meaning that most of the economically active members of the household are unemployed. Moreover, few of these unemployed persons receive unemployment benefits.
  - On the first floor we find households with index values between 0.8 and 0.6, i.e. households consisting of some employed members that earn wages around the minimum pay and more unemployed persons, receiving unemployment benefits.
  - As we climb to higher floors, the index decreases, and finally, in the penthouse we find households having no unemployed members and earning wages higher than EUR 1,000.
  - In the penthouse, the index takes the value of zero. Nevertheless, as we will see below, even the residents of the penthouse are not untouched by the economic crisis.
  - The building also has a basement. There we can find people who sleep on sidewalks, households of illegal immigrants, socially excluded persons and, generally, parts of the population that are not recorded by surveys or captured by statistics.

With time, we can observe two types of movements:

- The first type of movement is horizontal. This is the case when a household moves into or out of the building. Households leave the building if their members who are employees retire, or if unemployed members find non-salaried jobs, e.g. as self-employed. Households move into the building, if their members lose their non-salaried jobs (employers, traders, self-employed, etc.) and become unemployed. Households move into the building if any of their members lose their (non-employee) jobs and are now unemployed (former employers, merchants, self-employed, independent professionals, etc.). In 2014, the people who live in the building are 4,100,000, up by 100,000 from 4,000,000 before the start of the economic crisis.
- The second, and most important, type of movement is vertical, when households move from upper floors and the penthouse to lower floors down to the ground floor. When a household member loses his/her job, when his/her wage is reduced and gradually falls below EUR 1,000, below EUR 700 or below EUR 500, when the duration of unemployment

benefits ends and their payment is discontinued, then the degree of despair of the household rises, and the household takes the elevator to a lower floor. When all household members lose their jobs, the household ends up on the ground floor of the building. Living on a specific floor is thus not a given during the crisis. Certainly, one cannot rule out movements from lower to higher floors. Even amid the crisis, there are some unemployed persons who find jobs.

Figure 12.1 The apartment building of employees and unemployed persons



Source: Calculations based on data from ELSTAT's Labour Force Surveys.

In the fourth quarter of 2014, this notional building houses 66% of the unemployed in the country or 774 thousand unemployed persons, compared with 282 thousand in the first quarter of 2009. In particular, on the ground floor of the building we find 268.9 thousand households with 628 thousand persons, of which 389 thousand are unemployed, 97 thousand are children and 135 thousand are non-economically active. In other words, more than half of the unemployed people in the building live on the ground floor.

Among the 268.9 thousand households living on the ground floor, 172.5 thousand have one unemployed member each, 77.6 thousand have two unemployed members and 18.8

thousand have more than three. Within five years, these figures have increased by more than five times.

The remaining unemployed people of the country (34%) live in households outside the building. They live with members that are self-employed or receive a pension and therefore are better-off than the unemployed who live on the ground floor of the building.

As the economic crisis lasts longer, the indices deteriorate: in the building there is an increase in the number of tenants on the lower floors; on the other hand, upper floors are home to less and less households (gradual pauperisation). For example, the number of tenants in the penthouse has shrunk by 763 thousand (or 276 thousand households). These households moved to lower floors during the crisis or, if they were extremely unlucky, went right down to the ground floor.

An additional question concerns the immigrants in Greece, who as a group are faced with even more difficulties than the Greek households. The index of despair of these households was in 2014 (1st quarter) 0.55, against 0.40 of the Greek ones. Equally, in 2014, 16.6% of immigrant households lived in the ground floor of the building, against 10.1% in 2009 (1st quarter). A similar aggravation occurred in the first floor (an increase from 19.3% to 23.8% correspondingly). The immigrant households' share in the upper three floors is equally reduced by about 10 p.p.). Lastly, about 6.2% of those living in the penthouse (2014) were immigrant households, against 8.1% in 2009.

The aggravated index of despair in immigrant households can be better understood by examining also the corresponding unemployment rates. Unemployment of immigrants who remained in the country increased significantly more than that of Greek nationals. In 2014 it was 36.7% (26.4 p.p. higher than in 2009) against 27% (+17.8 p.p.) respectively.

12.4 Households living on upper floors

As can be seen in Table 12.2, the building houses 1,042 thousand people employed in the private sector and 605.2 thousand employed in the public sector. 43.8% of public sector employees (265 thousand people) live in the penthouse of the building, compared with 23.6% of private sector employees (245.9 thousand people).

A significant proportion of public sector employees (30.9%) live on the fourth floor, mainly due to the reduction in their salaries to below EUR 1,000. These households do not face unemployment problems. By contrast, those public sector employees who, in smaller

numbers, live on lower floors (8.7% on the third floor, 13.7% on the second and 2.7% on the first floor) have an actual problem of unemployment in respect of some members of their households.

Overall, 76.7% of households in which the head of household is a public sector employee live on the two upper floors, whereas the corresponding figure for heads who work in the private sector is 58.4%. This percentage increases to 87% if there are two public sector employees in the household.

Table 12.2 An overview of the apartment building in the first quarter of 2014 (in thousands)

	Employees			Heads of household				
	Private sector	Public sector	Total	Private sector	Public sector	Unemplo-yed	Inacti-ve	Total
Ground floor	5.9	0.8	6.6	1.6	0	257.1	41.9	300.6
1st floor	76.7	16.5	93.2	30.1	9.1	79.6	7.8	126.5
2nd floor	225.5	83	308.5	133.1	51.5	64.5	14.9	264
3rd floor	187.2	52.6	239.8	101.4	30.1	6.2	15.7	153.4
4th floor	300.9	187.3	488.2	200	119.7	0	16.9	336.6
Penthouse	245.9	265	510.9	173.2	178.3	0	18.8	370.3
Total	**1,042.0**	**605.2**	**1,647.2**	**639.4**	**388.7**	**407.3**	**116.0**	**1,551.4**

	Households with two public sector employees	Unemployed persons	% of unemployed persons receiving unemployment benefit
Ground floor	0	438.0	6.0
1st floor	0.3	168.4	30.4
2nd floor	5.1	218.2	9.1
3rd floor	9.5	29.5	52.3
4th floor	41.2	0.1	0.0
Penthouse	59.0	0	
Total	**115.1**	**854.2**	**13.2**

Source: Calculations based on ELSTAT's Labour Force Survey data.

The data shown in Table 12.2 suggest that indeed public sector employees enjoy a double protection, compared with other workers, in terms of both their permanence in the labour market and the social system and the evolution of their earnings.

Of course, also households living in the penthouse have probably seen significant reductions in their earnings (such as the abolition of Christmas and other bonuses and allowances, abolition of tax breaks, cuts in salaries, imposition of special contributions, etc.). As long as

their earnings remain above EUR 1,000 per employee, these changes do not affect their index of despair and the floor on which they live.

Table 12.3 depicts the changes in jobs on the basis of primary insurance provider. The upper panel of the table shows that out of the 1,098 thousand jobs lost, only 8.2% (90 thousand) were jobs in the narrowly defined public sector (central government). On the other hand, the jobs lost for employees insured by non-public funds, reached 1,008 thousand. On the second panel of the table, we can see how many of these employees flowed into unemployment or retirement.

Based on the self-reported employment status of respondents in the Labour Force Surveys, the number of pensioners increased by 338 thousand in the same period. Of these, 116 thousand (34.4%) have health insurance provided by government, while 222 thousand (65.6%) are insured by other funds. Pensioners of the civil servants' pension scheme seem to have increased by 48.5%, while for pensioners of other funds the increase was significantly less (14.1%).

Based on the two panels of Table 12.3, the jobs lost in central government do not translate into more unemployment, but rather more pensioners. Conversely, of the jobs lost outside the central government only two represent flows into retirement and the remaining eight represent flows into unemployment.

Table 12.3 Change in the number of employees and pensioners

	Change in the number of jobs: 2014-2008			*% shares of employees*	
	In thousands	% change	% share	*2008*	*2014*
Central Government	-90	-14.7	8.2	12.7	14.1
Other funds	-1,008	-23.9	91.8	87.3	85.9
Total	-1,098	-22.8	100.0	100.0	100.0
	Change in the number of pensioners: 2014-2008			*% shares of pensioners*	
	In thousands	% change	% share	*2008*	*2014*
Central Government	116	48.5	34.4	13.2	16.5
Other funds	222	14.1	65.6	86.8	83.5
Total	338	18.6	100.0	100.0	100.0

Source: Calculations based on data from ELSTAT's Labour Force Surveys.

The changes and movements in the building during the period 2008-2014 are shown in Table 12.4. The number of employees fell by 403 thousand and the number of unemployed persons increased by 573 thousand, of which 299 thousand are heads of household. The jobs lost in

the private and public sectors were 293 thousand and 110 thousand, respectively. On the two upper floors the changes have been negative, signaling the declining numbers of tenant households and their members. In contrast, on lower floors, the sign is positive. Quarter-on-quarter, households move downward when one of their members remains jobless or a new jobless person is added or the wages of their employed members are reduced, or all of these circumstances occur.

12.5 Households living on lower floors

Households living on the ground floor of the building are at a high risk of despair, *as their vast majority is unemployed*. Within these households there are no retired or self-employed persons, but only few employees, many more unemployed, children and non-economically active members (Table 12.4).

The responses to the question of the Labour Force Surveys (LFS) for the first quarter of 2014 "what were your income sources of income during the previous quarter?" are shown in Table 12.5. Respondents may indicate more than one source of income. In 2009, the number of individuals on the ground floor was 141,000; in 2013, it peaked at 729,000, before falling to 649,000 in 2014.

Table 12.4 Evolution of the composition of households living on the ground floor of the building (in thousands)

	Employees	Unemployed persons (without unemployment benefit)	Unemployed persons (with unemployment benefit)	Children (aged 0-14)	Economically inactive	Total
2009	0.5	77.6	4.5	25.1	33.1	140.9
2010	0.8	115.0	8.8	37.6	54.2	216.5
2011	2.3	193.5	18.7	63.9	84.7	363.2
2012	7.0	324.1	28.3	106.6	116.9	582.9
2013	7.7	416.7	26.0	129.3	148.9	728.6
2014	6.0	379.1	19.1	103.0	141.6	648.8

Source: Calculations based on ELSTAT's Labour Force Survey data.

Financial support "from persons which are not household members" is reported as the primary source of income by 54.2% of heads of households on the ground floor of the building. Importantly, 94% of these households reports this support as their only source of income.

For 8.2% of respondents, support "from other household members" was reported as their primary income source (and as the only source for 84% of them), while for 4.9% of respondents the primary income source was "income from property".

Only 19.3% reported "benefits or allowances" from the state as their primary income. Most of the respondents who did not indicate support "from persons which are not household members" as their primary source of income cited that source as their secondary source. As already mentioned, the ground floor of the building is home to about one third of the unemployed in the country.

Turning to the secondary source of income, 49.2% of respondents reports that a significant part of their needs are met with help from persons which are not household members".

The answers are different upstairs, as there are some employees and more unemployed persons receiving unemployment benefits. Thus, among the heads of households living on the first floor, 36.3% report as their primary income source support from other household members, 35.7% unemployment benefits and 12.3% support from persons which are not household members. On the second floor, the labour income of other household members is crucial, being reported by 63.5% as the primary income source.

Table 12.5 Income sources of households with an unemployed head which live on the lower floors of the building (reported primary source, first quarter 2014)

	Ground floor	1st floor	2nd floor
– From work	0.9	0.2	1.2
– From old age pension	2.1	0.7	0.6
– From survivor's pension	7.8	0.2	0.5
– From disability pension	1.4	0.0	0.0
– From property	4.9	6.9	6.3
– From other members of the household	8.2	36.3	63.5
– From persons which are not members of the household	54.2	12.3	4.8
– From state benefits/allowances	9.5	35.7	14.4
– Do not know/Do not answer	11.1	7.7	8.7
Total	100.0	100.0	100.0

Source: Calculations based on data from ELSTAT's Labour Force Surveys.

The above data suggest that inter-household solidarity remains a relatively strong institution and, along with informal family networks, continues to play a significant role in protecting the unemployed in Greece. The extremely limited scope of the social safety net becomes evident

from the fact that only a very small percentage of households meet their needs using income support from the welfare state.

12.6 Households living on the ground floor

The question that arises next is whether the above findings are in line with that of other, more poverty-focused, social surveys (SILC, HBS). The results of these surveys, due to their nature, become available with a lag of almost one year relative to the data underlying the indices of despair. To what extent do the SILC and HBS surveys confirm this picture? What are the incomes of households with unemployed members, in particular households with an unemployed head? Is there a connection between the unemployment situation of the head and/or other members with poverty? Have the poverty rates of households with an unemployed head increased during the crisis? To what extent does the unemployment benefit really support these households?

In Table 12.6, based on data from income tax returns submitted in fiscal years 2011-13 (referring to income earned in the years 2010-2012), we consider only those income tax returns in which taxpayers state that they receive unemployment benefits (228.8 thousand, 303.0 thousand and 343.1 thousand tax returns, referring to incomes earned in 2009, 2010 and 2011, respectively). It is worth noting that in 53.4 thousand tax returns taxpayers declare income from unemployment benefits for all three of the above years.[142]

Table 12.6 Distribution of unemployment benefits across income deciles of households in 2012

	Total expenditure for unemployment benefits	Total income of households receiving unemployment benefits		Average unemployment benefit	Average income	Unemployment benefit/ income
Deciles	in EUR millions	in EUR millions	% share in total income	in EUR	in EUR	
1st-5th	475.3	902.0	21.2	2,770	5,257	53%
6th-10th	513.3	3,360.2	78.8	2,992	19,584	15%
Total	988.6	4,262.1	100.0	2,881	12,421	23%

Source: Calculations based on tax data (Ministry of Finance database).

As a next step, on the basis of their total income, households were classified into deciles of income distribution and ranked from the poorest to the richest. In the year 2012, EUR 988.6 million were given to the unemployed (column a) and the average annual level of the

[142] These are mostly cases of workers in the tourism industry employed in the summer season and receiving unemployment benefits during the other months of the year.

unemployment benefit was about EUR 2,881 per entitled person (column e). In the lower five deciles, corresponding to the lowest incomes, unemployment benefits account for a large share of total income (53%). As we move towards middle-income and richer households, the share of unemployment benefits in total income declines to 15%.

Table 12.6 shows that a large proportion of total expenditure on unemployment benefits ultimately goes to households having income above the country's average. Of a total amount of EUR 988.6 million spent on unemployment benefits in 2012, only EUR 475.3 million was received by unemployed persons living in low-income households (deciles 1-5), while EUR 513.3 million went to unemployed persons classified in higher-income deciles (6-10). According to Table 12.2, only 6% of the unemployed on the ground floor of the building receive an unemployment benefit. For this reason, only 9.5% of households on the ground floor cite unemployment benefits, including some other types of financial support, as their most important source of income in their responses to the surveys (Table 12.5).

The above picture is confirmed for poor households with an unemployed head, based on data from the HBS and EU-SILC surveys. In three years, the number of these households increased by 177.5 thousand. Before the crisis, in 2009, households with an unemployed head faced an additional poverty risk of 6.4 percentage points relative to the total population of households. Three years later, this additional risk rose by 16.7 percentage points. While in the country as a whole the poverty rate did not change significantly, the population of households with an unemployed head rose dramatically.

The link between unemployment and the poverty conditions of a household becomes patently clear when we also include the employment situation of all the economically active members of the household. According to EU-SILC data, the poverty rate of a household is closely related to the work intensity of its members. When work intensity is very high in the household, the poverty rate is particularly low (e.g. 7.8% in 2008 or 4.1% in 2014). On the other hand, when work is very low, the poverty rate is exceptionally high (38.3% in 2008, 41.9% in 2014).

CHAPTER 13

THE WINNERS AND THE LOSERS: THE OLD AND THE NEW ORDER

A key finding throughout our analysis is that the collapse of the Greek economy was followed not only by severe income losses, unemployment and poverty, but also by extensive internal shifts across and within low, middle and high income groups. As a clear-cut line separating one group from the other is lacking, we will follow a division used in the literature, with a slight variation. This will ensure comparable results to those for other countries or other time periods. Following Piketty, households are divided into three classes, the lower, the middle and the upper class (including the top 1% and 0.1%). The first five deciles with the lowest incomes comprise the lower class, the next four deciles (6-9) the middle class and, finally, the richest (tenth) decile the upper class. According to Piketty[143], Europe (as an aggregate of countries) in 2010 exhibited medium inequality, where the top 10% (the upper class) received 35% of total income (from labour and capital), the middle 40% (the middle class) received 40% of total income and, finally, the bottom 50% (the lower class) received the remaining 25% of total income. Our approach follows this distinction, but is different in that for the lower class we take the first six deciles, therefore the middle class comprises only the next three deciles (7-9) instead of the next four in Piketty. Specifically:

- The lower class comprises 60% of households in the country (the six deciles with the lowest incomes). We assumed that no household in this class has an income higher than the mean income in the country. That is, the highest income of "the lower class" should be less than the mean income in the country. The average income of the lower class corresponds to about 40% of the mean income in the country. This class includes all the poor households (the first 2-2.5 deciles with the lowest income) as well as households that are above the poverty line (from the 3rd to the 6th decile).

[143] Piketty (2014), Chapter 7, Table 7.3.

- The middle class comprises the next 30% of households (from the 7th to the 9th decile), and its population is half the population of the lower class. The households of the middle class have incomes that are three times higher than the incomes of the lower class, while the high incomes are up to twice the average. The threshold for classifying a household in the middle class is 2008 income of more than EUR 18,204.
- The upper class, which is the top 10% of the population, has an income threshold of EUR 44,891 for 2008. The average income of the upper class is three times higher than that of the middle class and nine times higher than that of the lower class.

Table 13.1 provides an overview of the three classes before the onset of the crisis (2008) till 2012. The average income of the lower class increased by 1% in 2012 relative to 2008, that of the middle class declined by 18.9%, while that of the upper class fell even more strongly (-36.6%). A first reading suggests that income reductions, resulting either from policy or from market developments, are in line with a sense of social justice, as higher incomes seem to have suffered heavier losses. This finding has as a starting point a conventional assumption, which is not self-evident: that the income distribution existing before the crisis is fairer and therefore its deterioration is unfair. The validity of this assumption depends on several factors that are often ignored or overlooked, such as the existing preferential tax treatment, tax evasion, rent awards, etc.

In a second reading, we can discern that each class is divided into households that saw their incomes increase during the crisis (the winners) and those that saw their incomes decline (the losers). In the lower class, 44.2% of households had an income increase (+61.9%), while 52% had a reduction (-37.8%). In the middle class, 21.6% of households had an increase (+30%) and 78.4% had a reduction (-31.6%). A more uneven picture emerges for the upper class, where 14.8% of households had an increase of 33.5% in their income, whereas 85.2% had a decrease of 47.2%. The conclusion is that averages obscure both large reductions and large increases, creating winners and losers within each class even during the crisis.

As the losers and the winners had a different composition of their incomes, the contribution of each income source to this outcome was investigated. The weight of labour income is found to be broadly the same across all three groups (ranging from 41% to 46%). The losers in the lower class have a high weight of wages and a lower weight of pensions compared with the winners. In the middle class the opposite is the case: it is the winners that have a higher weight of wages and a lower weight of pensions. The remaining sources of income provide a mixed picture, playing a complementary role for both employees and pensioners. In the upper class,

the winners partly rely on income from wages and less on income from pensions. In this class, income from capital has a much higher weight than in the other two, although in the low and middle classes income from capital (rents, interest, dividends) accounts for 13%-16% of total income. The losers of the upper class had income mainly from capital, as well as from labour.

Table 13.1 The winners and the losers: the pre-crisis income classes (2008)

	in %	Average income 2008	Difference of income 2012/2008		Wages	Pensions	Income from business activities and self-employment	Income from capital	Other income
		in EUR	*in EUR*	*% change*	*Shares in the total income of2008*				
The bottom 60% of households									
Winners	44.2	7,950	4,924	61.9	38.5	36.1	12.0	12.5	1.0
Losers	52.0	10,578	-4,002	-37.8	42.4	30.0	13.8	13.5	0.3
Total*	100.0	9,030	93	1.0	40.9	32.4	13.1	13.1	0.5
The next 30% of households ---------- income threshold: 18,294									
Winners	21.6	26,791	8,043	30.0	51.7	18.9	12.6	16.2	0.5
Losers	78.4	28,431	-8,978	-31.6	44.2	27.8	12.5	15.3	0.1
Total	100.0	28,077	-5,300	-18.9	45.8	26.0	12.5	15.5	0.2
The top 10% of households ----------income threshold: 44,891									
Winners	14.8	74,060	24,777	33.5	50.1	6.8	17.3	25.6	0.1
Losers	85.2	84,636	-39,931	-47.2	35.1	12.7	15.0	37.2	0.1
Total	100.0	83,070	-30,352	-36.6	37.0	11.9	15.3	35.7	0.1
Total of households									
Winners	34.5	14,339	6,363	44.4	45.7	23.6	13.4	16.7	0.6
Losers	63.3	27,189	-10,691	-39.3	40.0	21.9	13.8	24.1	0.1
Total	100.0	22,148	-4,569	-20.6	41.3	22.3	13.7	22.5	0.2

* Excluding a small number of households with very low incomes that have remained unchanged throughout the period, which therefore cannot be classified as winners or losers.

Source: Calculations based on tax data.

The upper class is totally heterogeneous. The general picture presented in Table 13.1 for the top decile conceals marked differences. For this reason, in Table 13.2 we further divided the households of the top decile into four fractiles. The first fractile comprises the lowest 50% (P90-95), the second the next 40% (P95-99), the third the next 9% (P99-99.9) and, finally, the fourth fractile comprises the wealthiest 1% (P99.9-100). The threshold income of the top 0.1% is EUR 351,437 for 2008, that is 7.8 times higher than the income of those in the lowest 5% of the same top decile. This figure is 15.9 times higher than the mean income of all households in the country and 39 times higher than the mean income of the group of households holding the lower 60% of total income.

As we climb these four income fractiles within the top decile, income from wages/salaries and pensions declines, whereas income from capital increases. The top 0.1% has no resemblance to the remaining three fractiles of the top decile; it mostly includes rentiers and some highly paid executives. In the other fractiles we can also find business executives with quite high pay

levels or combinations of highly paid employees and pensioners who also receive income from capital. Finally, in the 0.9% fractile, but also in other fractiles, we can find households receiving high incomes from both business and independent activities (doctors, lawyers, etc.). A high relation seems to exist between income from wages and total income. Basically, the winners have a high income share of wages in all fractiles. Even in the wealthiest 0.1% the salaries of the winners represent 25.4% in their total income, compared with a mere 6.7% for the losers of the same group. Increased wages/salaries offset declining income from capital. In high incomes not only did wages/salaries not decline as for the vast majority of employees, but they also increased.

Table 13.2 Income composition of the pre-crisis upper income class (2008): winners and losers

	in %	Average income 2008	Difference of income 2012/2008		Wages	Pensions	Income from business activities and self-employment	Income from capital	Other income
		in EUR	*in EUR*	*% change*	*Shares in the total income of2008*				
The bottom 5% of the upper income class (P90-95) ---------- income threshold: 44,891									
Winners	15.0	51,265	14,420	28.13	54.7	11.5	14.6	19.1	0.1
Losers	85.0	51,415	-16,460	-32.02	48.9	21.9	11.9	17.3	0.0
Total	100.0	51,392	-11,831	-23.02	49.7	20.4	12.3	17.5	0.0
The next 4% of the upper income class (P95-99) ----------income threshold: 60,060									
Winners	15.4	78,118	23,825	30.50	52.5	5.4	19.0	23.1	0.1
Losers	84.6	78,214	-32,017	-40.94	40.7	13.9	17.4	27.9	0.1
Total	100.0	78,199	-23,428	-29.96	42.5	12.6	17.7	27.2	0.1
The next 0.9% of the upper income class (P99.0-99.9) ----------income threshold: 116,238									
Winners	11.9	160,877	56,746	35.27	41.7	2.2	22.2	33.9	0.0
Losers	88.1	168,619	-96,175	-57.04	23.5	4.6	22.9	48.8	0.3
Total	100.0	167,694	-77,905	-46.46	25.6	4.4	22.8	47.1	0.2
The top 0.1% of the upper income class (P99.9-100) ---------- income threshold: 351,437									
Winners	8.0	728,097	636,020	87.35	25.4	0.8	7.8	65.4	0.6
Losers	92.0	1,134,257	-932,639	-82.22	6.7	0.4	4.9	87.7	0.3
Total	100.0	1,101,577	-806,425	-73.21	7.7	0.4	5.0	86.5	0.3

Source: Calculations based on tax data.

Tables 13.1 and 13.2 show the income groups and the composition of their incomes before the crisis. At the same time, they record income changes during the crisis for each group. If the range of average changes in individual income sources was wide, it is even wider for changes at household level. In 2012 the picture of the groups is completely different from that in 2008. Households whose incomes increased probably crossed the income thresholds and

joined higher income groups, and vice versa. Moreover, there are significant shifts also within income groups.

Table 13.3 The income classes of 2012

	in %	Average income 2012	Difference of income 2012/2008		Wages	Pensions	Income from business activities and self-employment	Income from capital	Other income
		in EUR	*in EUR*	*% change*	*Shares in the total income of 2012*				
The bottom 60% of households									
Winners	32,3	9,100	2,718	42.6	36.6	40.0	8.1	14.0	1.3
Losers	63.9	6,962	-7,383	-51.5	37.1	39.0	10.4	13.2	0.3
Total	100.0	7,397	-3,840	-34.2	36.9	39.3	9.5	13.5	0.7
The next 30% of households ---------- income threshold: 15,951									
Winners	36.7	23,472	6,685	39.8	43.8	25.6	11.5	18.0	1.2
Losers	63.3	23,611	-10,548	-30.9	36.2	44.9	6.6	12.2	0.1
Total	100.0	23,559	-4,220	-15.2	39.0	37.8	8.4	14.4	0.5
The top 10% of households ----------income threshold: 36,502									
Winners	40.7	68,461	22,851	50.1	41.7	9.0	19.0	29.8	0.6
Losers	59.3	55,406	-32,547	-37.0	39.0	27.2	10.5	23.1	0.2
Total	100.0	60,722	-9,991	-14.1	40.2	18.8	14.4	26.2	0.4
Total of households									
Winners	34.5	20,702	6,363	44.4	41.2	22.6	13.6	21.6	1.0
Losers	63.3	16,498	-10,691	-39.3	37.3	37.8	8.8	15.9	0.2
Total	100.0	17,578	-4,569	-20.6	38.9	31.6	10.7	18.2	0.5

Source: Calculations based on tax data.

Obviously, during the crisis a significant transformation of the "old" income groups occurred. The "new" income groups are different relative to 2008, while the thresholds have shifted downward. Tables 13.3 and 13.4 reflect the new situation. Similarly as Tables 13.1 and 13.2 did for 2008 and developments in the years that followed, Tables 13.3 and 13.4 depict the situation in 2012 and trace developments back to 2008.

The income of the "new" households of the lower class of 2012 has decreased by 34.2%. The corresponding income for the new middle and upper classes has fallen by 15.2% and 14.1%, respectively. The winners within the lower class have simply improved their incomes in 2012 without moving up to another class. Instead, part of the losers of the lower class, whose incomes on average halved (-51.5%), have fallen down from the middle class and in 2012 find themselves in the lower class.

In the middle class, an only small part of the winners come from the lower class, having an income gain of 39.8% on average. These households crossed the threshold and joined the middle class. Also, a part of the losers in the middle class come from the upper class. The upper class also includes households formerly belonging to the middle class. This is due both to increased incomes (by 50.1% on average) and the lower threshold (EUR 36,502, down from

EUR 44,891). Most households in the lower class of 2012 are now at a disadvantage, as they have lost quite a lot of what they used to have in the past and also have lost more than the other classes. The same picture holds for the middle class, where some households (a minority) have gained, while the majority (63.3%) have suffered major adverse shocks. Generally, six tenths of those included in each class have experienced a severe deterioration of their position.

Table 13.4 Income composition of the upper income class in 2012: winners and losers

	in %	Average income 2012	Difference of income 2012/2008		Wages	Pensions	Income from business activities and self-employment	Income from capital	Other income
		in EUR	*in EUR*	*% change*	*Shares in the total income of 2012*				
The bottom 5% of the upper income class(P90-95) ----------income threshold: 36,502									
Winners	33.3	41,641	11,862	39.8	46.9	15.5	15.4	21.9	0.3
Losers	66.7	41,582	-17,094	-29.1	41.4	37.2	7.2	14.2	0.1
Total	100.0	41,601	-7,459	-15.2	43.2	30.0	9.9	16.7	0.2
The next 4% of the upper income class(P95-99) ----------income threshold: 48,048									
Winners	45.1	62,431	18,693	42.7	45.2	10.2	19.5	24.7	0.4
Losers	54.9	59,800	-30,151	-33.5	40.6	26.1	11.8	21.5	0.1
Total	100.0	60,987	-8,119	-11.7	42.7	18.8	15.3	23.0	0.2
The next 0.9% of the upper income class(P99.0-99.9) ----------income threshold: 88,504									
Winners	60.1	122,467	42,348	52.9	40.2	3.9	24.7	30.8	0.4
Losers	39.9	119,483	-110,523	-48.1	35.1	7.7	17.9	39.0	0.3
Total	100.0	121,276	-18,683	-13.3	38.2	5.4	22.0	34.0	0.4
The top 0.1% of the upper income class(P99.9-100) ---------- income threshold: 225,666									
Winners	62.8	487,607	265,797	119.8	20.3	0.9	12.5	64.3	2.1
Losers	37.2	417,835	-808,487	-65.9	14.6	1.6	9.3	72.6	1.9
Total	100.0	461,677	-133,458	-22.4	18.4	1.1	11.4	67.1	2.0

Source: Calculations based on tax data.

Turning to income composition, the main differences between 2008 and 2012 are summarised as follows:

- The share of wages/salaries fell in 2012, both in the lower and the middle classes (by 4 and 7 percentage points, respectively, Tables 13.2 and 13.4). Instead, the share of pensions increased. Also, the shares of income from independent activities and commercial activities declined.
- The wage share increased in the upper class of 2012 and so did the pension share, while the share of investment income shrank. The upper class, from a class of rentiers, has become a class of highly paid employees and pensioners, who also receive income from capital. However, significant changes are also noticed among the households of the wealthiest decile. As seen in Table 13.4, in P90-95, i.e. in the lowest 50% of the top decile, the share of wages declines, while the shares of pensions and capital rise.

In the next 40% (P95-99) the share of pensions mostly increases, with a corresponding decline in income from capital. The increase in the wage share observed when examining the wealthiest decile as a whole applies for the top 9% (P99-99.9) and especially the top 1% (P99.9-100). In the top 0.1%, the picture is broadly the same: the share of wages rises (from 8% to 18%) and the share of income from capital declines (from 87% to 67%).

The very uneven distribution of income across the three broad income classes is illustrated in Table 13.5. In 2008 the lower class received one quarter of total income in the country, the middle class (30% of the population) received 38%, while the upper class (10% of the population) received 37.5% of total income. Within the upper class, 99% of households received 25.7% of total income and the remaining 1% received 11.8% of total income, split out by 6.8% and 5% respectively between the top 0.9% and the top 0.1% of the population.

In 2012, the lower class has increased its share in total income by 0.7 percentage points. This increase stems mainly from investment income. In the middle class, the share in total income has increased by 2.2 percentage points due to the increase in the shares in pension income and in income from capital. Besides, the middle class accounts for approximately half of all pensions.

Table 13.5 Income distribution across income classes (2008 and 2012) in %

		Total income	Wages	Pensions	Income from business activities and self-employment	Income from capital
Lower class P0-60	2008	24.5	24.2	35.6	23.4	14.3
	2012	25.2	24.0	31.4	22.4	18.8
	Difference	0.8	-0.2	-4.2	-1.0	4.5
Middle class P60-90	2008	38.0	42.1	44.4	34.8	26.2
	2012	40.2	40.3	48.0	31.3	31.7
	Difference	2.2	-1.9	3.6	-3.5	5.4
Upper class P90-100	2008	37.5	33.6	20.0	41.8	59.5
	2012	34.5	35.7	20.6	46.3	49.6
	Difference	-3.0	2.1	0.5	4.5	-9.9
P90-95	2008	11.6	14.0	10.6	10.4	9.0
	2012	11.8	13.2	11.2	10.9	10.9
	Difference	0.2	-0.8	0.6	0.5	1.8
P95-99	2008	14.1	14.5	8.0	18.2	17.1
	2012	13.9	15.3	8.2	19.8	17.5
	Difference	-0.2	0.7	0.2	1.6	0.4
P99-99.9	2008	6.8	4.2	1.3	11.3	14.3
	2012	6.2	6.1	1.1	12.7	11.6
	Difference	-0.6	1.9	-0.3	1.4	-2.7
P99.9-100	2008	5.0	0.9	0.1	1.8	19.1
	2012	2.6	1.2	0.1	2.8	9.6
	Difference	-2.3	0.3	0.0	1.0	-9.5

Source: Calculations based on tax data.

The upper class has increased its shares in income from wages, independent activities and commercial activities. Overall, in 2012, 10% of the population receives about one third of total income, one third of wages, one fifth of pensions, half of income from commercial activities and independent activities and five tenths of income from capital. The data show that in 2012 there is a very slight improvement in inequality. The degree of inequality, according to Piketty, would rank Greece among "high inequality" countries and has remained high also during the crisis. Moreover, it should be pointed out that in the wealthiest decile the most severe shocks affect the top 0.1%, as these households were the main recipients of capital income. By contrast, the first fractile of the top 10% (P90-95) has maintained a constant share (up by 0.2 percentage points) in total income.

Table 13.6 shows the changes in the "average income" of each class between 2008 and 2012. Unlike Tables 13.1-13.10, the criterion here is not the evolution of the income of the same household in the bottom, middle or top class between 2008 and 2012, but the change in the average income received by the "old" and the "new" income classes. The data show the differences which we discussed. The "bottoms" had two percentage points higher losses than the middle (18.1% versus 16.1%) and as we move to higher deciles, the losses are greater, reaching 58.1% in the top 0.1%.

Table 13.6 Income changes in the "new" classes versus the "old" classes

	Lower class	Middle class	Higher class: the top 10% of households					Total of households
	The bottom 60% of the income distribution of households	The next 30% of households	The next 5% of households	The next 4% of households	The next 0.9% of households	The next 0.1% of households	Total of upper-class households	
	P0-60	P60-90	P90-95	P95-99	P99-99.9	P99.9-100	P90-100	
Total	-18.1	-16.1	-19.1	-22.0	-27.7	-58.1	-26.9	-20.6

Source: Calculations based on tax data.

The conclusions from the detailed examination of trends of inequality and from the comparison of the tops and bottoms clash with a number of standard perceptions. The most important of these conclusions are the following:

- First, regardless of its different measurements in the various analyses and calculations, inequality remains a serious factor in Greek society, although a number of individual policy measures, particularly in the area of pensions, represented an attempt to protect the most vulnerable social groups.

- Second, gains and losses are recorded in all three broad social groups (lower, middle and upper classes). The economically stronger groups suffered much more significant losses, both in absolute and in relative terms, while the losses of the bottoms were of a lesser size, but more painful because they affected either low income or involved large falls down mainly from the middle class to the lower one. The finding that gains and losses co-exist in each and every class is very important, as it is at odds with the dichotomous perception that either gains or losses affected one or the other group.
- Third, the apparently limited change in overall inequality during the crisis masks several countervailing forces. In particular, severe income reductions could be seen both in lower and in higher incomes but also within these classes. Therefore, a relatively small change in total inequality indices conceals significant divergent developments in different population groups.
- Fourth, redistribution or compensation policies or policies to address the social impact of the crisis have to fight new realities and new forms of poverty and inequality. The old realities have been overthrown. Therefore, policies geared towards older patterns of poverty or inequality risk intensifying inequalities or leaving difficult realities unaddressed.

The above conclusions and the strong differentiations they bring into light are, in our view, one of the most important contributions of this study. Highlighting the changes in the very low and the very high income brackets, which are not captured by the usual analyses of survey results, is very crucial for any attempt to understand the multiple and complex shifts that occurred in the country's economic and social fabric during the crisis.

CHAPTER 14

CONCLUDING REMARKS

The analysis of economic dynamics and policy choices over the period of the crisis showed a significant impact on incomes, employment and inequality. During these years, new inequalities, divides and balances emerged in Greek society. The policies followed helped to eliminate Greece's fiscal and current account imbalances, but at the same time led to a severe deterioration in crucial economic and social parameters. Thus, the success on the one front has to be judged against the significant cost regarding employment, poverty, inequality, efficient governance and, foremost, many years of recession and stagnation. The question is why this poor result? What was done wrong or was not done at all?

In various sections of our analysis, we attempted to give answers, even if for only some parts of this complex reality. The impacts are too many and too diverse to funnel into a straightforward conclusion. Yet, our analysis, apart from the specific findings reported in the individual sections, allows a number of overarching conclusions to be drawn:

One main conclusion is that the high level of inequality in Greece before the crisis remained stable and even worsened slightly during the crisis. Regarding specific income categories inequality increased in wages/salaries and income from commercial/business activities. The limited change in overall inequality during the crisis is the net result of divergent developments in various categories of incomes and in taxation. Besides, in conditions of strong pauperisation across society, this statistical stability of inequality has effectively tipped the balance for the worse, given that high inequality has persisted amid growing poverty and total pauperisation of a substantial part of Greek society, mainly in terms of "absolute poverty", but also partly in terms of "relative poverty". By this down-spiralling, the "bottoms" drifted much farther apart from the "tops", even if they had suffered relatively lesser income losses.

Our findings suggest also that during the crisis deep divides have been created in Greece between different categories of employment, professions, pensioners and socio-economic strata, and that additional forms of inequality continued to exist or emerged, such as:

- Inequality in the applicable tax regime.

- Inequality in the applicable social security regime, given the existence of contribution exemptions and a disproportionate contributions/earnings relationship for several categories of employees or because of interventions which affected seriously the viability of the pension system itself.
- Inequality in the evolution of wages/salaries and pensions; inequality is much lower among older cohorts of workers and becomes much higher when more recent cohorts are included.
- Inequalities in access to a number of professions, due to long-established barriers to entry or government-awarded rents or privileges, statutory fees and protected activities (mainly but not exclusively engineering activities). As a result of many such distortions, production costs increase, leading, in the case of tradables, to lower competitiveness and a squeeze on wages in order to offset these higher non-labour costs and the concomitant competitiveness losses.

It was found (Table 6.3), that inequality after taxes compared with pre-tax inequality was limited by 6.0% in 2008 and by 7.1% in 2012, showing that government intervention did mitigate inequality. However, given the profound upheavals that occurred during this period, the fact that the government's inequality-reducing contribution increased by merely one percentage point between 2008 and 2012 is a very poor performance. It is an indication that the additional tax burden was imposed on the same population of taxpayers, failing to expand the tax base and reduce tax evasion. If amid conditions of drastic reductions in low and higher incomes, the tax burden mainly affects the same population of taxpayers and hardly those people who in one way or another evade, or affects evenly the tops and the bottoms, it is ultimately regressive and leads to more inequality, with socially adverse results. And if, as we saw, low incomes face a significantly heavier tax burden, then the regressive character becomes even more pronounced.

Taxation, as shown in our analysis, has been the predominant tool of fiscal adjustment. The dimensions described above would have not been so large if the burden of taxation had been shared by all. This has not been the case, either because tax evasion is still extremely high or because large swaths of Greek society, especially in regional areas, are self-exempted with impunity or enjoy statutory exemptions from old and new tax burdens. In essence, a significant number of households and individuals refuse to comply to any change to the rules of the game that applied in the past and played a major role in the emergence of the crisis; governments, on the other hand, tacitly go along with this refusal. All these phenomena make any adjustment and especially growth-oriented policies extremely difficult. Unless the higher

inequality in the country is addressed and the burden of coping with the crisis is distributed in an equal, fair and effective manner across the high and the middle strata – or even the low ones where reasonable and especially if these are only statistically and not truly "low" – the problem will persist.

Unlike taxation, the evolution of government spending seems to have had an upward effect on inequality. Government expenditures on health, disability, child and family, unemployment, social exclusion, all declined between 2008 and 2014, from a total of EUR 28.7 billion to EUR 20.4 billion (-29%). With particular regard to unemployment, which by 2014 and 2015 had risen to a multiple of the 2008 figure, expenditure fell from EUR 2.8 billion to EUR 1.8 billion. These changes did not affect everyone the same.

Real estate property, a likely source of strong inequalities, seems to be distributed unevenly, but less so than in other countries. Property inequality indices are higher than those of income inequality, but have remained stable or declined over time. Furthermore, unlike many other European countries, Greece is characterised by a significant share of low and middle income strata in total real estate property. However, real property, which had for decades been used also by medium and low income groups as a primary tool for protecting savings from political or economic disarrays, has become a trap for these same groups, which in the crisis period faced a heavy property tax burden.

Our analysis focused on changes in incomes and the impact on inequality and poverty. However, we could detect additional factors, which also affected significantly incomes, poverty and inequality, such as the mortgage loans contracted by households at a time when their income levels and prospects were very different. During the crisis, a significant number of households have been affected by unemployment or income cuts, while they were faced with a high debt to banks, which was very difficult or impossible to service.

These findings are different and complex aspects of one and the same reality and highlight an urgent need for a broad range of political choices, of which we will focus on the following three:

(a) Designing and implementing policies to stimulate growth. This choice is urgently necessary for a number of reasons: first, growth will enable a gradual exit from poverty; second, it will lead to an improvement of macroeconomic aggregates linked to the level of GDP (government deficit and debt ratios, new investment); and third, it will allow a return to conditions of higher and better paid employment and more social convergence.

Growth is a complex economic and political process in which capital and other inputs (labour, knowledge, technology, innovation, natural resources) are mobilised at a given time in order to promote investment, employment and output. To these factors are added the degree of inequality, the level of corruption, the effectiveness of the State and government policies - along with the Troika's policies - the ability to design strategies and set objectives, the ability to understand the multiple interactions between relationships, developments and problems. Inequality and these 'other' factors jointly affect the typical independent variables of the growth function (labour, entrepreneurship, investment, innovation, etc.), thus determining not only directly but also indirectly and significantly the growth capabilities and the overall performance of a country.

In the context of this reasoning, it is very important to mention also a further driver of growth: the liquidity of the economy, given that liquidity constraints were one major factor behind the collapse of many firms, production activities, exports and employment. The contraction of GDP and the crisis definitely played an important role. However, a critical role was also played by the government's insistence on maintaining a high level of public expenditure which had soared in the years before the crisis. Unable to finance public spending with the Troika loans, the government raised significant amounts from banks, squeezing domestic liquidity. This was not a necessary consequence of the crisis. A different adjustment strategy would not have had such a strong negative impact on growth, employment and incomes and would have made possible a milder tax burden. Hence, it is the political choices that led to this result and exacerbated the adverse economic and social impacts.

(b) Effectively tackling tax evasion, contribution evasion, preferential tax exemptions or tolerance on the part of the government towards these phenomena, which remain a major factor behind inequality and the crisis in Greece. Several years into the crisis, the already high tax evasion seems to have become even higher, as whole categories of incomes, mainly in regional Greece and in tourist areas, continue to tax evade as if there is no crisis and as if solidarity in the sharing of tax burdens means, for some, significant income losses and, for others, an opportunity to increase their income and evade taxes and social security contributions.

(c) Focus on raising the productivity and efficiency of the State, eliminating political corruption and the costs associated with an invisible corruption tax that these conditions impose on the economy and society. The combination of excessive taxation, extensive tax evasion and high expenditure-to-GDP ratio is not sustainable and is a major factor behind many of the problems and challenges mentioned above. Unless the state is re-organised so that a part of the fiscal

rebalancing can be shifted to the expenditure side and away from taxes, which during the crisis bore the brunt of fiscal consolidation, the country will remain trapped in a quagmire, just nudging a little up or down.

In our approach, we left out a key element: the relationship between macroeconomic developments and the country's system of production. In another analysis, we have argued that the crisis in Greece was largely determined by the weaknesses of its productive base and its policies in the areas of growth and competitiveness[144]. A detailed investigation of this link is beyond the scope of this book. Nevertheless, just like anything that remains outside the frame, its absence does not mean an absence of a strong causal relationship. The weak base in terms of knowledge, education, technology, modern forms of production, adaptability, production structures and job-creation capacity, entrepreneurship, as well as the failure to pursue an efficient growth policy are key to understanding how the crisis emerged and developed, why Greece is still in the current situation and why it is still facing high risks and uncertain prospects. For decades, growth policy was consistently synonymous with a policy attitude that downplayed the importance of the real economy and focused on monetary and financial games and clientele-oriented policies. However, in conditions of meltdown without emphasis on the production base, redistribution means that everyone, the weak and the less weak, become even weaker.

These problems were not central elements of policy during the crisis. But the relationship between inequality, growth and an efficient State is important, as growth is a crucial factor in the success of fiscal adjustment and stabilisation. Fiscal consolidation without growth is doomed to fail and vice versa.

In the preceding analysis, income changes have been detected mainly for the period 2008-2012 and other topics for the period 2008-2015/6, depending on data availability. Regardless of dates, we believe that the central conclusions do not change. Probably, with the tax and pension reforms of 2016, the capital controls and the political instability and uncertainty that prevailed, there has been a deterioration and certainly not an improvement. More recent data (till 2016) from the EU-SILC Survey on inequality and income distribution show that not only the Gini index remained stable between 2012 and 2016 but also the share of each decile in total income remained nearly unchanged. Hence, the above position seems to be largely confirmed.

[144] Giannitsis (2013).

Last but not least, the outcome of the crisis is directly linked with national or European policy inefficiencies. Inefficient or bad policies can lead to a deepening and prolongation of the crisis, a multiplication of the cost to the citizens, creation of new obstacles, a wider diffusion of the consequences at the social and political level. In other words, they can lead to “inverse solidarity”, insofar as “inefficiency” is not accidental but is the result of policies that exhaust themselves in managing political balances and power interests.

These developments raise the question whether the severity of the crisis could have been mitigated. Could the government’s or the Troika’s policy limit the depth of the recession and the pauperisation of wider social strata? A contraction of GDP by one percentage point would mean a gain of EUR 2 billion. The gap between the actual fall of 26 percentage points and any better alternative would have significant social and economic benefits.

This in turn raises another important question: what happens when inequalities and “inverse solidarity” deepen not so much as a result of the crisis, but rather as a result of the choices and omissions of policy intervention? What happens when the new “normal” becomes worse and worse through the fault of policy which, in the face of this deterioration, invoke a need for additional “solidarity” among social groups but do everything to undermine such solidarity? The answer is: greater and deeper fragmentation and division of society, blocking the way out of the crisis and back to a more positive trajectory. Ultimately, the problem is not only whether the State in Greece can cope with the consequences of the crisis. The problem is “what State”, what governance, what political forces and balances, what policies? This question brings us to the heart of the impasse: Many important and necessary changes in the country entail significant changes in the conduct of policy itself and the functioning of public administration at all levels. Indeed, at the point where we are now, the changes required are so many that they necessitate not just piecemeal or random interventions in some area or other, but a far-reaching "paradigm shift" both in the way of governance and in the functioning of other poles of power in the economy. What are the chances that the power system that is itself a central part and the root cause of the crisis will want to act against the interests, practices, obsessions, micro- and macro-equilibria it represents in order to overcome the problem?

There is a factor which can partly explain, but not justify, some of the important developments that have taken place: the concept of path dependency. Path dependency, determined by the past behaviours and outcomes (in the economy, politics, business, technological change, etc.) often locks a country in a certain path, increasing the cost of changing course. This relationship creates inherent limitations to the possibility of major changes, reforms and reversals across

a wide range of factors, such as technological change, political relations, social attitudes, growth-related actions. This gives a sense of a pessimistic determinism. However, several examples from history have also shown that path dependency is not deterministic and that turnarounds can and do happen, when attitudes and aspirations change. The timing of such exceptional path-breaking changes is unpredictable, but whenever they occur, they create real chances to “turn an impasse into an opportunity”. The process is not exogenous, nor does it come from nowhere. It is mainly determined by the ability of a society, its economic, social and political forces to understand developments, steer them in the right direction, and work collectively to overcome the obstacles along the way. When such conditions are in place, the adverse impact of path dependency can be overcome. After all and despite all structural weaknesses and the present situation, Greece achieved a high position in the global hierarchy of development precisely because it proved to be equipped with important growth-generating capabilities. The issue is a fundamental question of what type of governance can allow a country to successfully navigate through the risks and challenges and shape its future in a rapidly changing world.

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Impressum

Publisher: Hans-Böckler-Stiftung, Hans-Böckler-Str. 39, 40476 Düsseldorf, Germany
Phone: +49-211-7778-331, IMK@boeckler.de, http://www.imk-boeckler.de

IMK Study is an online publication series available at:
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ISSN: 1861-2180