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Students' Comprehension of the Greek Economic Crisis through an Introductory Macroeconomics Course

Summary: The purpose of the paper is to report on the effectiveness of macroeconomic courses in informing and educating Greek students during an actual economic crisis. To achieve this end, we rely upon an introductory macroeconomics course that focuses upon the severe Global Financial Crisis that got underway in 2008. We conducted a survey for examining how well Greek students understood the effects of this deep and prolonged crisis. What is innovative about our testing is that we undertook a statistical evaluation of responses of two cohorts of students drawn from Spring, 2014 and 2015 - as the crisis intensified from one year to the next. To the very best of our knowledge, such an exercise had not yet been attempted; namely, of measuring students' comprehension of a crisis and comparing the valuations of two cohorts of students as this particular crisis grew increasingly severe. Our findings suggest that students were confident that they achieved a comprehensive understanding of the variables underlying the Greek Economic Crisis. As the crisis escalated, students place increased importance on their university as a main source of information that influenced and helped in forming their perceptions of the economic crisis. However, our findings suggest that the university courses did not serve as their primary source of their information. In conclusion, the crisis helps to exposed gaps in the undergraduate curriculum that could be remedied through bringing in a better selection of up-to-date class materials.

Keywords: Greek economic crisis, Student's comprehension, Introductory macroeconomics, Teaching macroeconomics, Global financial crisis.

JEL: A22.

Economic events, such as the 2008 Global Financial Crisis (GFC) that destabilized the world economy producing the most severe economic downturn since the Great Depression, should trigger a reorientation of economics and a revolution in macroeconomic thinking (Manfred Gärtner, Björn Griesbach, and Florian Jung 2013). The purpose of the paper is to test the Greek students' comprehension of the economic crisis through an introductory macroeconomics course by incorporating in the teaching the GFC. For this purpose, a survey was conducted examining how Greek students attending introductory macroeconomics course can explain the significant event that ravaged their country's economy recently and what credit they give to the university macroeconomic course in their understanding of the crisis. The analysis of the data is provided

by presenting descriptive statistics (means and standard deviations of the 2014 and 2015 samples) for the variables of interest. *T*-tests have been carried out for checking whether, for each variable of interest, the difference in the 2014 and 2015 sample means provides evidence of a change in the students' behavior over time. What is also innovative about this testing is the statistical evaluation of responses of two cohorts of students, Spring 2014 and 2015, as the crisis intensifies from one year to another. To the best of our knowledge, such an exercise of finding students' comprehension of the crisis – and comparing the evaluations of two cohorts of students as the crisis intensifies – has not yet been attempted. Likewise, we are not aware of any previous and related literature that uses the same methodology in assessing the impact of the GFC on Introductory Macroeconomics syllabi. Teachers of economics would benefit from these dynamic results, as they provide the material for creating an introductory macroeconomics syllabus and textbook relevant to the needs of the students; in a way that students of macroeconomics can apply their academic knowledge to real-life economic phenomena.

The structure of the paper is as follows: Section 1 focuses on the extent that the macroeconomic theory incorporated the GFC and how this is reflected in the teaching content and macroeconomics textbooks. Section 2 presents the methodology, data, and results of the survey administered to introductory macroeconomic students at a Greek University. The last section concludes interpreting the survey results to the teaching of macroeconomics.

1. Macroeconomics and the Real World

Macroeconomics events influence the lives and the well-being of the citizens of any country. Macroeconomists painstakingly analyze the main determinants of the dominant aggregate trends in the economy in terms of GDP the short-run fluctuations (business cycle) and the long-run path of economic growth, unemployment, inflation, and international transactions (Brian Snowdon and Howard R. Vane 2005, p. 1). Macroeconomic theory is the result of an evolutionary process of interaction between alternative ideas, conflicting models, and significant economic events. It is based on specific models, aiming to interpret and define the complex economic phenomena. The new Classical, Real Business Cycle, and Dynamic Stochastic General Equilibrium (DSGE) macroeconomic models dethroned the macro theory of the 1960s, which was characterized by the absence of empirical evidence and provided limited policy guidance (Richard P. F. Holt, J. Barkley Rosser Jr., and David Colander 2011, p. 365). However, the dominant models particularly the DSGE do not contribute to a better understanding of the complex economic phenomena and do not include policy application, generating frustration to the policymakers (Colander 2011, p. 303). Colander et al. (2009) argue that since the 1980s, economists adopt models that exclude the key factors that drive outcomes in asset and other markets, such as the heterogeneity of decision rules, revisions of forecasting strategies, and changes in the societies. The standard equilibrium models rely on the inherent stability of markets and in any case, instability is regarded as a temporary phenomenon. It is within this background that economists failed to predict a systemic crisis of 2008, generating frustration to people for their welfare

reduction and raised feelings of disapproval for economists that did not warn them about what was coming (Colander et al. 2009; Colander 2011).

The contemporary world after the period of “the great moderation”, a time of remarkable macroeconomic stability in advanced economies characterized by low and stable inflation and steady increasing growth, experienced a severe financial crisis of extraordinary magnitude, while its impact is still evident. Although this real-life economic event can be compared to the Great Depression in the size of the downturn, this is not the case regarding its influence in sparking off a breakthrough in the field of macroeconomics, as it ensued in the 1930s. Indeed, in the 21st century macroeconomics and finance literature, “systemic crisis” is not found in economic models; the existing theory failed to envisage and identify ways of tackling this exceptional phenomenon (Colander et al. 2009). In this setting, the GFC should challenge economists to anticipate and model “systemic crisis”, to track the complex dynamics of economic systems and the key determinants that produce instabilities in the modern economic environment. These developments must also be included in the teaching of macroeconomics, as the new generation of economists, professionals, and policymakers demand better knowledge of the processes driving market outcomes. After all, the GFC has brought to the fore the need to reconsider how the financial systems are regulated (Colander et al. 2009, p. 250). The GFC also stimulates a rethinking in the focus of economics textbooks, as students and essentially economic reality demand this adjustment.

Economic crises always have an impact on textbook writing. Textbooks are of high importance for incorporating the major changes in economics (Tim Thornton 2018). For example, the oil crisis in the 1970s transformed economic theory from demand-side to supply-side based predominantly on monetarism, undermining Keynesianism in textbooks. The prevalence of monetarism in economic policy and economic theory became evident in textbooks, pointing out that textbooks introduce changes in macroeconomic thinking; nevertheless, it takes some time. The Keynesian cross model gradually gave way to the AS-AD model (Poul Thøis Madsen 2013, p. 198). Indeed, some textbooks rejected Keynesian analysis altogether. Then again, “I think it is pretty hard to explain most governments’ responses to the crisis and recession without a healthy dose of Keynes” (Alan Blinder 2010, p. 386).

The approach taken by Blinder (2010) in rewriting economics textbooks to incorporate the GFC “is to embed the necessary changes by trimming and planting around the edges of the basic textbook framework”. Once the dominant neoclassical teaching paradigm is supplemented by elements of the GFC, “it will provide a solid pedagogical approach to thinking about both (as to) what went wrong” (Blinder 2010, p. 390). Consequently, it appears that the GFC does not require the development of an entirely new conceptual framework. It can easily be inserted in textbooks without adjoining the GFC into the general economic framework and without discussion of the possible inefficiency of markets, especially financial markets (Madsen 2013). Madsen (2013) analyzed 12 textbooks and demonstrated that the alteration due to the GFC is rather superficial and descriptive in nature talking down its importance, as the GFC is presented in boxes or as a specific chapter or just added with no link to the original text. Overall, Madsen (2013) concludes that all 12 textbooks remain, in various degrees, inadequate in incorporating the GFC with an effective pedagogical focus,

impacting on the overall teaching of introductory macroeconomics. Currently, in 2020, to our knowledge, there are no other Introductory Macroeconomics textbooks that incorporate the GFC, apart from Blanchard's Macroeconomic textbook 7th edition of 2017, although it is recommended for Intermediate Macroeconomics courses, and Charles I. Jones (2014).

Although the 2008 GFC did not lead to the evolution of a new dominant approach in macroeconomics, it raised questions about the prevailing paradigm, and its failure to predict the crisis and its effects. Even Olivier Blanchard, the well-known representative of the mainstream approach to macroeconomics, always standing at the crossroads of the frontier of academic research, regarding the teaching of macroeconomics and the implementation of macroeconomic policies, expressed very careful critiques of the intellectual framework to which he has contributed (Emiliano Brancaccio and Francesco Saraceno 2017, p. 345). "This crisis was a traumatic event which we all had to question many cherished beliefs", said Olivier J. Blanchard (2015). Besides, "it would have been intellectually irresponsible and politically unwise to pretend that the crisis did not change our views about the way the economy works" (Blanchard 2015, p. 2). This included questioning various assumptions on the role of fiscal policy, including the size of the multipliers, the use of unconventional monetary policy measures and macroprudential tools, capital flows and measures to control them, labor market policies, and the role of micro and macro flexibility. "And being in a position to question gave me the opportunity to make a difference", said (Blanchard 2015, p. 1). In this context, Blanchard proceeded to a series of innovations in the latest edition of his macroeconomics textbook published in 2017. One of which is the replacement of the traditional AS-AD model with an analysis called "IS-LM-PC" for incorporating the instabilities problems (Brancaccio and Saraceno 2017).

The exception to the rule is Jones (2014) who makes a conscious effort to incorporate what he names the "Great Recession", referring to the GFC, in his macroeconomics textbook. Jones (2014) devotes Chapter 10 titled "The Great Recession: A First Look" and Chapter 14 titled "The Great Recession and the Short-Run Model". With these two chapters, Jones (2014) allocates pages in explicating the GFC in terms of the recent macroeconomic shocks (housing prices, the global saving glut, subprime lending and the rise in interest rates, the financial turmoil of 2007-2009, oil prices), macroeconomic outcomes in Chapter 10, while Chapter 14 concentrates on the financial considerations in the short-run model, and policy responses to the financial crisis. Jones' effort should be applauded, as it is the only known attempt to incorporate the GFC in a macroeconomics textbook at the level and length that the issue deserves.

Hence, the GFC provides vast opportunities for textbook writers that directly influence the teaching of economics to demonstrate that the economics discipline is valued, to reveal the importance of macroeconomics in societies, and to satisfy the need of students attending macroeconomic courses for a comprehensive understanding of the complicated real world. Then, after graduation, they will have the chance to pursue monetary benefits such as high wages, promotion, and securing their employment position (Anastasia Pseiridis, Theodore P. Lianos, and George Agiomirgianakis 2018, p. 277). Although there is a severe dissatisfaction expressed by employers on the current skills of economics graduates, in particular as regards their ability to think critically and applying knowledge to real-world settings (Georg Strasser and Marketa

Halova Wolfe 2014). Consequently, both students and employers demand knowledge of economic realities, currently regarding the GFC, a fact that professors and textbook authors will have to realize quickly and respond appropriately (Colander 2010). Any reforms in economics education should respect that students are confronted with real problems and seek to find the “right” answers. There is an increase of student and academic organizations and entities to advance changes within economics and economics teaching, but this is not yet a jointly organized effort (Thornton 2018, p. 8).

The financial crisis that unfolded in 2008 was not just a United States issue, as many European countries thought at the onset of the crisis. The financial crisis originated in the US as a result of the bursting of the housing bubble and the growth of subprime mortgage defaults, impacting the stability of the financial market. The financial crisis is attributed to various market and regulatory failures, as well as a macroeconomic environment of cheap credit during the pre-crisis period (Eric Helleiner 2011, p. 67). The crisis affected the world’s best-known financial centers, generated a collapse of international trade, and a broader economic downturn that involved all regions of the globe (Helleiner 2011, pp. 68-69). The US subprime crisis was transformed into a sovereign debt crisis in the Eurozone, revealing the unsustainable nature of public debt in the European economies. Although the crisis spread all over the EU, the countries of the periphery, Greece, Portugal, Ireland, Spain, and Cyprus, were mostly hurt. In the aftermath of the GFC, the outburst of the Greek Economic Crisis (GEC) in 2010 was the first of the euro-periphery economies hit by the crisis. The GEC exposed the low competitiveness, trade imbalances, and fiscal mismanagement of the Greek economy, which accompanied by the Eurozone structural flaws undermined the viability of the Greek economy (Kevin Featherstone 2011, p. 195). Greece lost access to the international financial markets, reaching a solvency crisis. Since then and up to 2018, financial assistance in the form of bailout loans were provided to Greece through the three Economic Adjustment Programmes (EAPs) in 2010, 2012, and 2015. Funding was conditional upon the implementation of an exceptionally vigorous fiscal consolidation and structural reforms package imposed by the IMF, European Commission and the European Central Bank (“Troika”). The EAPs included free market-austerity policies, privatization, and institutional reforms. The conditionalities reformed the labor market, tax policy, and social welfare, in concert with privatization. However, the austerity policies further deepened the crisis reducing the GDP by a quarter, considered to be the largest contraction of any OECD country over the post-War period (Eirini Andriopoulou, Alexandros Karakitsios, and Panos Tsakloglou 2017, p. 1). Households budgets contracted due to tax increases, internal devaluation (in the form of severe reductions in wages, salaries and pensions), reduction in the relative unit labor costs, and the generated losses in terms of output and employment. The long-term unemployment rate skyrocketed at 26.3 per cent on average during 2013-2015 (Eurostat 2018a)¹, as well as, the poverty rate. The people at risk of poverty or social exclusion accounted for 36% of the Greek population in 2014, the highest record during the years 2008 and 2017 (Eurostat 2018b)². During the crisis years, the Greek society was forced to finance the state’s debt at the expense of society’s welfare. The students, the participants

¹ Eurostat. 2018a. Database. <https://ec.europa.eu/eurostat/data/database> (accessed September 18, 2018).

² Eurostat. 2018b. People at Risk of Poverty or Social Exclusion by Age and Sex. http://appsso.eurostat.ec.europa.eu/nui/show.do?lang=en&dataset=ilc_peps01 (accessed Oktober 25, 2018).

in this survey experienced the aforementioned austerity conditions that transformed dramatically the social, economic, and political life of their country. The instructor is concerned to ascertain the extent to which the Introductory Macroeconomics course raised student's interest and critical skills for assessing the measures taken by the Greek government for managing the GEC and achieving the goals set by the EAPs. With all the above in the background, a survey was conducted to reveal how students of introductory macroeconomics comprehend and are in the position to apply their academic knowledge to the major event that ravaged their country's economy, the GEC. The survey results can contribute to the formation of a macroeconomic syllabus and textbook that incorporates the GFC.

2. Survey of Introductory Macroeconomic Students 2014 and 2015

Methodology and Socio-Demographic Data

The same survey was handed out to introductory macroeconomics students in Spring 2014 and Spring 2015 at a university in Greece, to determine the knowledge gained by students about the GEC.

The reason why the study is restricted for only two years of data is that the professor teaching the Introductory Macroeconomics course and chief investigator of the study, John Marangos, was reassigned to upper-level courses. *Alas*, the following years the newly assigned professor did not continue teaching the course with the aforementioned characteristics, subsequently, the study had to be abandoned.

The teaching in the macroeconomic course incorporated discussion of the GFC and the influence of current economic events on Greek citizens using macroeconomic tools. The course was taught by John Marangos in both years, consequently, the students were exposed to the same abilities of the professor as a macroeconomist and the same pedagogical skills as an educator. Nevertheless, to make meaningful comparisons with the teaching economics literature, it is necessary to assume that the pedagogical abilities between professors teaching, in our case Introductory Macroeconomics, is regarded somehow homogenous. Specifically, the most and least competent educators are considered similar regarding their teaching abilities. Thus, in this study, we adopt what is common in the literature, that the professor is homogenous regarding his teaching abilities, what matters are the non-teaching abilities issues of the Introductory Macroeconomics taught to students³.

The questionnaire was distributed in a hard copy form in the last class of the semester in Spring 2014, while the survey in Spring 2015 was distributed electronically, at the end of the class which explains its smaller participation. The students were enrolled in a compulsory subject of Introductory Macroeconomics in the Department of Balkan, Slavic and Oriental Studies of the University of Macedonia in Thessaloniki. Student enrollment in the course in Spring 2014 was 242, while in Spring 2015 it was 103. The University has over 15,000 students, while the Department has over 1400 students. The socio-demographic background of the students participating in the survey (age, year of study, employment, city of the original residence, attendance) with the appropriate scrutiny is presented further below.

³ We are grateful to an anonymous referee for bringing up this issue.

The course, as already mentioned, was taught by the same professor, using the same syllabi and textbook, in both cohorts. In the final course evaluation organized by the University administration in hard copy format, with 74 valid questionnaire responses, the question “Was the subject of the course interesting and useful for your studies?”, had an average in a 5-point Likert scale of 4.22, in Spring 2014. While in Spring 2015 with 38 valid questionnaire responses, the same question, received an average of 4.37. The different sizes of the sample in each year (121 students in 2014, while 43 students in 2015) may hamper the possibility of identifying statistical differences in the answers between the two years of data, something that is acknowledged in some cases.

As the GEC intensified year by year by surveying two different cohorts of introductory macroeconomics students, we can assess students' effort in explaining a real-life complex economic phenomenon, and their view regarding the contribution of the university course in this effort. Utilizing a 5-point Likert scale, the independent variables created a matrix for comparative evaluation.

Although keeping the survey anonymous, a set of questions intended in extracting demographic information about respondents (age, year of study, employment, city of the original residence, attendance) was included in the survey. The demographic data are presented in Table 1.

Table 1 Socio-Demographic Characteristics

| | Obs. 2014 | Obs. 2015 |
|--|-----------|-----------|
| Age group | | |
| 18-20 | 107 | 37 |
| 21-23 | 11 | 3 |
| 44-26 | 1 | 0 |
| ≥ 27 | 2 | 3 |
| Year of university studies | | |
| 1 st | 107 | 40 |
| 2 nd | 6 | 2 |
| 3 rd | 2 | 0 |
| 4 th | 0 | 0 |
| 5 th | 6 | 1 |
| Employment status | | |
| No employment (student) | 112 | 36 |
| Part-time employment (< 30 hours per week) | 8 | 4 |
| Full-time employment (> 30 hours per week) | 1 | 3 |
| Place of original residence | | |
| Athens | 2 | 0 |
| Thessaloniki | 75 | 41 |
| Other big city | 4 | 1 |
| Small city | 22 | 0 |
| Country village | 18 | 1 |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

The socio-demographic characteristics of the students in the 2014 and 2015 samples are presented in Table 1, and are as follows: the majority of the students in both samples are between 18 and 20 years old (107 students, or 88% in 2014; 37 students, or 86% in 2015), in the first year of the university studies (107 students, or 88% in 2014; 40 students, or 93% in 2015), and they are not employed in any form (112 students, or 93% in 2014; 36 students, or 84% in 2015). The majority of the students grew up in Thessaloniki (75 students, or 62% in 2014; 40 students, or 95% in 2015), the location of the university in which the survey took place.

The data presented in Table 2, describes the attendance rate for the introductory macroeconomics course, with the respective variable taking on values from 1 to 5 which correspond to 0-20%, 21-40%, 41-60%, 61-80% and 81-100% rates of attendance. The mean value of the rate of attendance is 4.430 for 2014 and 4.474 in 2015, implying that the respondents in the two samples attended more than 81% of the lectures of the introductory macroeconomics course. To check whether the difference in the two-sample means provides evidence of a change in the students' behavior over time, a *t*-test can be carried out. In particular, the *t*-test conducted for the difference in sample means indicates that the students' rate of attendance in the macroeconomic lectures did not change over time ($t = -0.221$), thus making the comparisons between the two cohorts of students feasible.

Table 2 Students' Rate of Attendance of the Introductory Macroeconomics Course

| Rate of attendance | | Obs. 2014 | Obs. 2015 |
|--------------------|-------|-----------|-----------|
| Description | Value | | |
| 0-20% | 1 | 2 | 2 |
| 21-40% | 2 | 5 | 0 |
| 41-60% | 3 | 10 | 6 |
| 61-80% | 4 | 26 | 0 |
| 81-100% | 5 | 78 | 30 |
| Mean 2014 | 4.430 | | |
| Mean 2015 | 4.474 | | |
| St. dev. 2014 | 0.929 | | |
| St. dev. 2015 | 1.109 | | |

Notes: Number of observations in the 2014 (2015) sample: 121 (38).

Source: Authors' calculations.

Survey Results

Table 3 describes the students' beliefs about their level of understanding of the factors that triggered the GEC. Specifically, as shown in Table 3, the students believe that they have a good level of understanding of the factors underlying the GEC (mean value 2.926 for 2014 and 2.907 for 2015), and there is an indication that this belief has not changed from one year to the next ($t = 0.145$).

Tables 4-5 provide information on the factors affecting the students' attitudes towards the GEC. The students' main sources of information about the GEC are presented in Table 4. Here, the respondents are allowed to report more than one source of information and the figures presented in the table are in the form of ratios of the number of students reporting a certain information-source to the total number of students

in the sample. In 2014, 57.0% of the students responded that TV News is the main information source. The Internet ranks second as the main source of information in 2014 (43.0%), followed by Family/Friends (39.7%), University (34.7%), Newspapers (14.0%), and Other (0.8%). The importance that the students attribute to the various information sources appears to have changed in 2015, as the Internet now ranks first; followed by TV News (62.8% of the students reported the Internet as a main information source, whereas the respective percentage is 44.2% for TV News). The University now ranks third (39.5%), followed by Family/Friends (37.2%), Newspapers (18.6%), and Other (7.0%). As shown in the table, the data indicate that the students place increased importance on the University as a main information-source in 2015 compared to 2014. The prolonged GEC and the high level of economic instability and uncertainty in the period spanning the second half of 2014 and the first half of 2015 may very well have resulted in the students looking to the University as a source of information and knowledge that will allow them to better understand the GEC⁴. During this time, the teaching in both semesters incorporated the same discussion of the GFC and the impact of current economic events on Greek citizens, using macroeconomic tools of the course. Therefore, updating the teaching material in subsequent years positively contributes to the better positioning of macroeconomics as a source of information and knowledge.

Table 3 Students' Assessment of Their Level of Understanding the Reasons for the GEC

| Level of understanding | | Obs. 2014 | Obs. 2015 |
|------------------------------------|-------|-----------|-----------|
| Description | Value | | |
| Do not know anything | 1 | 0 | 0 |
| Know some basics | 2 | 35 | 12 |
| Have a good level of understanding | 3 | 63 | 24 |
| Know the reasons well enough | 4 | 20 | 6 |
| Know the reasons perfectly | 5 | 3 | 1 |
| Mean 2014 | 2.926 | | |
| Mean 2015 | 2.907 | | |
| St. dev. 2014 | 0.743 | | |
| St. dev. 2015 | 0.718 | | |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

Table 4 Students' Main Sources of Information about the GEC

| | 2014 | 2015 |
|----------------|-------|-------|
| Family/friends | 0.397 | 0.372 |
| University | 0.347 | 0.395 |
| TV news | 0.570 | 0.442 |
| Newspapers | 0.140 | 0.186 |
| Internet | 0.430 | 0.628 |
| Other | 0.008 | 0.070 |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

⁴ Unfortunately, the relative sizes of the 2014 and 2015 samples, coupled with the small differences in the sample ratios in Table 4, do not allow us to conduct a test for the differences in these sample ratios.

Table 5 presents the factors that most influenced the students' attitudes towards the GEC. Similarly, to the data presented in Table 4, the students in Table 5 are allowed to report more than one factor, and the figures presented in the table are in the form of ratios of the number of students reporting a specific factor to the total number of students in the sample. Family/Friends is by far the most influential factor, as 66.1% of the students in 2014 and 60.5% of the students in 2015 reported that Family/Friends influenced their attitudes towards the GEC. University ranks second, with a percentage of students as low as 21.5% in 2014 and 25.6% in 2015 reporting it as a factor that has affected their attitudes. Concerning the remaining factors, the Internet and TV News were equally influential in 2014 (19.0%), followed by Newspapers (2.5%), and Other (0.8%). In 2015, 23.3% of the students reported that the Internet had affected their attitudes towards the GEC, whereas the percentages for TV News, Newspapers, and Other are 16.3%, 4.7%, and 11.6%, respectively⁵.

Table 5 Factors that Influenced the Students' Attitudes towards the GEC

| | 2014 | 2015 |
|----------------|-------|-------|
| Family/friends | 0.661 | 0.605 |
| University | 0.215 | 0.256 |
| TV news | 0.190 | 0.163 |
| Newspapers | 0.025 | 0.047 |
| Internet | 0.190 | 0.233 |
| Other | 0.008 | 0.116 |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

The impact that the GEC has on the students' personal life is, by itself, another factor that affects their attitudes towards the GEC. Moreover, it could very well be expected that the higher the impact that the GEC has on the students' personal life, the higher their interest in the introductory macroeconomics course at the university and the higher their motivation to use the course to increasingly understand the multitude of ways in which the GEC affects their personal life and the Greek economy in general. As shown in Table 6, in 2014, 58 students (48% of the students in the sample) reported that the GEC had affected their life fairly, whereas 45 students (37% of the students in the sample) reported that the GEC had affected their lives more than fairly. The situation in 2015 is more or less the same, as 18 students (43% of the students in the 2015 sample) reported that the GEC had affected their life fairly, whereas 15 students (36% of the students in the 2015 sample) reported that the GEC had affected their lives more than fairly. On average, the GEC has affected the students' personal life rather fairly in both 2014 and 2015 (mean values 3.372 for 2014 and 3.310 for 2015), and the *t*-test we conducted for the difference in the sample means indicates that we cannot reject the null hypothesis that the sample means are equal ($t = 0.354$), implying that there is no change in the level of impact of the GEC on the students' personal life.

⁵ As was the case in Table 4, the relative sizes of the 2014 and 2015 samples, coupled with the small differences in the sample ratios in Table 5, do not allow us to conduct a test for the differences in these sample ratios.

Table 6 Students' Assessment of the Influence of the GEC on Their Personal Life

| Level of influence | | Obs. 2014 | Obs. 2015 |
|--------------------|-------|-----------|-----------|
| Description | Value | | |
| Not at all | 1 | 1 | 0 |
| Slightly | 2 | 17 | 9 |
| Fairly | 3 | 58 | 18 |
| A lot | 4 | 26 | 8 |
| Very much | 5 | 19 | 7 |
| Mean 2014 | 3.372 | | |
| Mean 2015 | 3.310 | | |
| St. dev. 2014 | 0.941 | | |
| St. dev. 2015 | 1.000 | | |

Notes: Number of observations in the 2014 (2015) sample: 121 (42).

Source: Authors' calculations.

Tables 7-10 provide a description of the students' beliefs about who is to blame for the GEC, the contribution of various players in the management of the latter, and how much each of the players involved in its management is to be trusted, along with the students' responses to several statements related to the crisis. As Table 7 shows, the majority of students believe that the Greek Political System is hugely responsible for the GEC (87 students, or 72% in 2014; 25 students, or 58% in 2015). On average, the students in the 2014 sample tend to believe that the Greek Political System is rather extremely responsible for the GEC (mean value 4.579), whereas those in the 2015 sample tend to believe that it is rather moderately responsible for the GEC (mean value 4.442). The *t*-test we conducted for the difference in the sample means, indicates that we cannot reject the null hypothesis that the sample means are equal ($t = 0.918$), which implies that there is no change in the beliefs of the average student between the years 2014 and 2015. Corruption in Greece also holds a high place in the level of responsibility it has concerning the GEC. Specifically, the majority of students believe that Corruption in Greece is extremely responsible for the GEC (88 students, or 73% in 2014; 34 students, or 79% in 2015). The average student in the 2014 and 2015 samples tends to believe that Corruption in Greece is rather extremely responsible for the GEC (mean value 4.554 for 2014 and 4.651 for 2015), and this belief does not appear to have changed from one year to the next ($t = -0.721$). Concerning the Greek Banks, the European Union (EU), the International Monetary Fund (IMF), and Each And Every One Of Us, the average student in the 2014 and 2015 samples tend to believe that each of these four players is rather moderately responsible for the GEC (Greek Banks: mean value 3.843 for 2014 and 3.953 for 2015; EU: mean value 3.760 for 2014 and 3.581 for 2015; IMF: mean value 3.851 for 2014 and 3.837 for 2015; Each And Every One Of Us: mean value 3.917 for 2014 and 3.930 for 2015), and this belief does not appear to have changed from one year to the next (Greek Banks: $t = -0.733$; EU: $t = 0.944$; IMF: $t = 0.068$; Each And Every One Of Us: $t = -0.090$). Finally, as far as the European Currency (Euro), Foreign Investors/Speculators, and Globalization are concerned, the average students in the 2014 and 2015 samples tend to believe that each of these three players is rather somewhat responsible for the GEC (Euro: mean value 3.140 for 2014 and 2.884 for 2015; Foreign Investors/Speculators: mean value 3.198 for 2014 and

3.326 for 2015; Globalization: mean value 3.107 for 2014 and 2.698 for 2015). This belief regarding the European Currency (Euro) and Foreign Investors/Speculators does not appear to have changed from one year to the next (Euro: $t = 1.181$; Foreign Investors/Speculators: $t = -0.659$). The same, however, does not hold for Globalization: the t -test we conducted for the difference in the sample means indicates that the null hypothesis of equal means is rejected ($t = 2.057$, 10% level of significance), which implies that the level of responsibility that the students attribute to Globalization has declined between 2014 and 2015.

Table 7 Students' Views about Who Is to Blame for the GEC

| Level of responsibility | | Greek political system | | Greek banks | | EU | | Euro | | IMF | |
|-------------------------|-------|------------------------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Description | Value | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Not all responsible | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 7 | 7 | 3 | 2 |
| Slightly responsible | 2 | 3 | 1 | 5 | 2 | 9 | 5 | 31 | 11 | 17 | 5 |
| Somewhat responsible | 3 | 8 | 1 | 35 | 10 | 37 | 11 | 38 | 9 | 21 | 6 |
| Moderately responsible | 4 | 22 | 15 | 51 | 19 | 41 | 16 | 28 | 12 | 34 | 15 |
| Extremely responsible | 5 | 87 | 25 | 29 | 12 | 32 | 9 | 17 | 4 | 46 | 15 |
| Mean 2014 | | 4.579 | | 3.843 | | 3.760 | | 3.140 | | 3.851 | |
| Mean 2015 | | 4.442 | | 3.953 | | 3.581 | | 2.884 | | 3.837 | |
| St. dev. 2014 | | 0.793 | | 0.866 | | 0.983 | | 1.128 | | 1.152 | |
| St. dev. 2015 | | 0.854 | | 0.844 | | 1.096 | | 1.258 | | 1.174 | |

| Level of responsibility | | Foreign investors/speculators | | Globalization | | Corruption in Greece | | Each and every one of us | |
|-------------------------|-------|-------------------------------|-----------|---------------|-----------|----------------------|-----------|--------------------------|-----------|
| Description | Value | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Not all responsible | 1 | 11 | 1 | 9 | 5 | 1 | 0 | 3 | 0 |
| Slightly responsible | 2 | 22 | 11 | 26 | 17 | 6 | 0 | 9 | 1 |
| Somewhat responsible | 3 | 35 | 9 | 45 | 10 | 6 | 6 | 25 | 9 |
| Moderately responsible | 4 | 38 | 17 | 25 | 8 | 20 | 3 | 42 | 25 |
| Extremely responsible | 5 | 15 | 5 | 16 | 3 | 88 | 34 | 42 | 8 |
| Mean 2014 | | 3.198 | | 3.107 | | 4.554 | | 3.917 | |
| Mean 2015 | | 3.326 | | 2.698 | | 4.651 | | 3.930 | |
| St. dev. 2014 | | 1.152 | | 1.117 | | 0.866 | | 1.038 | |
| St. dev. 2015 | | 1.063 | | 1.124 | | 0.720 | | 0.704 | |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

The GEC has been managed by the EU, the Greek Political System, the IMF, and the ECB. The students' beliefs about the contribution of the aforementioned four players are presented in Table 8. The Greek Political System and the IMF are the ones that the students believe to have performed the worst in managing the GEC. Specifically, the average student in the 2014 and 2015 samples reported the Greek Political System and the IMF as having a mostly negative contribution (Greek Political System: mean value 2.107 for 2014 and 2.163 for 2015; IMF: mean value 2.264 for 2014 and 2.070 for 2015), and this belief appears to have remained the same in both years (Greek Political System: $t = -0.348$; IMF: $t = 1.221$). Concerning the EU, the students in the 2014 sample tend to believe that its contribution to the management of the GEC is neither positive nor negative (mean value 2.686), whereas the students in the 2015 sample tend to believe that its contribution is mostly negative (mean value 2.488).

However, the t -test we conducted indicates that this difference in the sample means it is not statistically significant ($t = 1.249$), which implies that the students' belief regarding the contribution of the EU has not changed from one year to the next. Finally, in the case of the ECB, the average student in the 2014 and 2015 samples tends to believe that the ECB has neither a positive nor a negative contribution, and this belief appears to have remained persistent over time ($t = 0.400$).

Table 8 Students' Beliefs about the Contribution of Certain Players in the Management of the GEC

| Rate of contribution | Value | EU | | Greek political system | | IMF | | EU | |
|-------------------------------|-------|-----------|-----------|------------------------|-----------|-----------|-----------|-----------|-----------|
| | | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Very negative | 1 | 19 | 3 | 44 | 8 | 31 | 11 | 18 | 3 |
| Mostly negative | 2 | 36 | 21 | 38 | 23 | 47 | 20 | 39 | 18 |
| Neither positive nor negative | 3 | 36 | 14 | 25 | 9 | 29 | 10 | 41 | 17 |
| Mostly positive | 4 | 24 | 5 | 10 | 3 | 8 | 2 | 18 | 3 |
| Very positive | 5 | 6 | 0 | 4 | 0 | 6 | 0 | 5 | 1 |
| Mean 2014 | | 2.686 | | 2.107 | | 2.264 | | 2.612 | |
| Mean 2015 | | 2.488 | | 2.163 | | 2.070 | | 2.548 | |
| St. dev. 2014 | | 1.111 | | 1.094 | | 1.071 | | 1.044 | |
| St. dev. 2015 | | 0.798 | | 0.814 | | 0.828 | | 0.832 | |

Notes: Number of observations in the 2014 (2015) sample for EU, Greek political system, and IMF: 121 (43). Number of observations in the 2014 (2015) sample for ECB: 121 (42).

Source: Authors' calculations.

The Greek political system and the IMF are the ones that the students trust the least for the management of and exit from the GEC, as shown in Table 9. This is not surprising, given that the Greek Political System and the IMF are considered by the students to have a mostly negative contribution to the management of the GEC (Table 8). Specifically, the average student in the 2014 and 2015 samples tends to mostly not trust the Greek Political System and the IMF (Greek Political System: mean value 1.777 for 2014 and 2.279 for 2015; IMF: mean value 2.124 for 2014 and 1.977 for 2015). This belief does not appear to have changed from one year to the next for the IMF ($t = 0.869$), but this is not the case for the Greek Political System: the t -test we conducted for the difference in the sample means indicate that the null hypothesis of equal means is rejected ($t = -2.905$, 1% level of significance), which implies that the level of trust that the students put in the Greek Political System has increased between 2014 and 2015. Regarding the ECB, the average student in the 2014 sample tends to mostly not trust the ECB (mean value 2.463), whereas the one in the 2015 sample tends to neither distrust nor trust it (mean value 2.595). However, the t -test we conducted indicates that this difference in the sample means it is not statistically significant ($t = -0.679$), which implies that the students' level of trust in the ECB has not changed between 2014 and 2015. Finally, the average student in the 2014 and 2015 samples tends to neither distrust nor trust the EU (mean value 2.603 for 2014 and 2.500 for 2015), and this level of trust they put in the EU appears to have remained unchanged between 2014 and 2015 ($t = 0.556$).

Table 10 provides some insights into the students' views regarding certain issues related to the GEC. The students in the 2014 and 2015 samples tend to neither agree nor disagree with the statements that "The austerity measures are necessary for our national survival" (mean value 2.678 for 2014 and 2.581 for 2015), and "The government had no options but to introduce these measures" (mean value 2.174 for 2014

and 2.326 for 2015). The *t*-tests we conducted indicate the student's views have remained unchanged between 2014 and 2015, both concerning the necessity of the austerity measures ($t = 0.488$) and concerning the lack of options for the Greek government to act otherwise ($t = -0.887$). Concerning the statement that "The burden of all the measures is not equally distributed to citizens", the average student in the 2014 and 2015 samples tends to agree with the statement (mean value 4.331 for 2014 and 4.372 for 2015, $t = -0.279$). Moreover, the average student in the 2014 and 2015 samples tends to neither agree nor disagree with the statement that "The crisis can be seen as an opportunity for Greece to move forward" (mean value 2.843 for 2014 and 3.023 for 2015), and to disagree with the statement that "There is nothing anybody can do to solve Greece's economic Crisis" (mean value 1.893 for 2014 and 2.023 for 2015). The *t*-tests we conducted indicate the student's views have remained unchanged between 2014 and 2015, both concerning the former statement ($t = -0.904$) and concerning the latter ($t = -0.822$).

Table 9 Students' Level of Trust in the Players' Ability to Manage and End the GEC

| Level of trust | | EU | | Greek political system | | IMF | | ECB | |
|----------------------------|-------|-----------|-----------|------------------------|-----------|-----------|-----------|-----------|-----------|
| Description | Value | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Do not trust at all | 1 | 29 | 8 | 56 | 12 | 39 | 16 | 34 | 6 |
| Mostly do not trust | 2 | 21 | 12 | 42 | 12 | 41 | 15 | 18 | 14 |
| Neither distrust nor trust | 3 | 45 | 15 | 17 | 14 | 29 | 9 | 51 | 17 |
| Mostly trust | 4 | 21 | 7 | 6 | 5 | 11 | 3 | 15 | 1 |
| Trust a lot | 5 | 5 | 0 | 0 | 0 | 1 | 0 | 3 | 4 |
| Mean 2014 | | 2.603 | | 1.777 | | 2.124 | | 2.463 | |
| Mean 2015 | | 2.500 | | 2.279 | | 1.977 | | 2.595 | |
| St. dev. 2014 | | 1.151 | | 0.871 | | 0.966 | | 1.103 | |
| St. dev. 2015 | | 0.994 | | 1.008 | | 0.938 | | 1.083 | |

Notes: Number of observations in the 2014 (2015) sample for EU and ECB: 121 (42). Number of observations in the 2014 (2015) sample for Greek political system and IMF: 121 (43).

Source: Authors' calculations.

Table 10 Students' Views on Certain Issues Related to the GEC

| Level of agreement/disagreement | | The austerity measures are necessary for the national survival | | The burden of all measures is not equally distributed to citizens | | The government had no options but to introduce these measures | | The crisis can be seen as an opportunity for Greece to move forward | | There is nothing anybody can do to solve Greece's economic crisis | |
|---------------------------------|-------|--|-----------|---|-----------|---|-----------|---|-----------|---|-----------|
| Description | Value | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Strongly disagree | 1 | 15 | 8 | 4 | 1 | 38 | 8 | 17 | 4 | 51 | 10 |
| Disagree | 2 | 41 | 15 | 4 | 0 | 44 | 18 | 28 | 10 | 44 | 26 |
| Neither agree or disagree | 3 | 37 | 8 | 7 | 2 | 23 | 12 | 41 | 14 | 17 | 4 |
| Agree | 4 | 24 | 11 | 39 | 19 | 12 | 5 | 27 | 11 | 6 | 2 |
| Strongly agree | 5 | 4 | 1 | 67 | 21 | 4 | 0 | 8 | 4 | 3 | 1 |
| Mean 2014 | | 2.678 | | 4.331 | | 2.174 | | 2.843 | | 1.893 | |
| Mean 2015 | | 2.581 | | 4.372 | | 2.326 | | 3.023 | | 2.023 | |
| St. dev. 2014 | | 1.035 | | 0.969 | | 1.085 | | 1.126 | | 0.990 | |
| St. dev. 2015 | | 1.139 | | 0.787 | | 0.919 | | 1.123 | | 0.859 | |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

As far as Tables 11 and 12 are concerned, they explore the students' concerns regarding the duration of the GEC, as well as, their assessment of the previous, current, and future national and personal economic situations. Concerning the time it will take for Greece to exit the economic crisis as stated in Table 11, the average student in the 2014 and 2015 samples tends to believe it will take about ten years (mean value 3.207 for 2014 and 3.047 for 2015), and this belief does not appear to have changed from one year to the next ($t = 1.183$).

Table 11 Students' Assessment of the Duration of the Economic Crisis in Greece

| Duration | | Obs. 2014 | Obs. 2015 |
|---------------|-------|-----------|-----------|
| Description | Value | | |
| 1 year | 1 | 1 | 0 |
| 5 years | 2 | 22 | 7 |
| 10 years | 3 | 59 | 30 |
| 50 years | 4 | 29 | 3 |
| 100 years | 5 | 10 | 3 |
| Mean 2014 | 3.207 | | |
| Mean 2015 | 3.047 | | |
| St. dev. 2014 | 0.865 | | |
| St. dev. 2015 | 0.722 | | |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

Finally, as shown in Table 12, the average student in the 2014 and 2015 samples believes that the current state of the national economy is about the same as it was last year (mean value 2.678 for 2014 and 2.881 for 2015), and the same is the case for the students' economic situation (mean value 3.116 for 2014 and 2.860 for 2015). The t -tests we conducted cannot reject the null hypothesis of equal sample means, both in the case of the state of the national economy ($t = -1.143$) and in the case of the student's economic situation ($t = 1.637$). The students do not just assess that the current state of the national economy and their economic situation is currently about the same as it was last year, they also assess that these will keep on being about the same in the following year as well. Specifically, the average student in the 2014 and 2015 samples believes that the following year's state of the national economy will be about the same as it is currently (mean value 3.107 for 2014 and 3.163 for 2015, $t = -0.317$), and the same assessment pertains to the case of the students' economic situation (mean value 3.025 for 2014 and 3.209 for 2015, $t = -1.187$).

Table 13 explores the students' views – after having attended the introductory macroeconomics course at the University – concerning the implementation of several economic policy measures. As far as two of these economic policy measures is concerned, namely, the “Reduction in wages and increase in taxes” and the “Elimination of 13th-14th salaries” in the public sector, the average student in the 2014 and 2015 samples rather disagrees with both the former (mean value 1.769 for 2014 and 1.651 for 2015) and the latter (mean value 2.215 for 2014 and 2.000 for 2015), and there is an indication that the students' views have remained the same over time concerning both the former measure ($t = 0.857$) and the latter ($t = 1.210$). Moreover, concerning the economic policy measure about the “Reduction in pensions”, the average student in the 2014 and 2015 samples rather disagrees (mean value 1.917 for 2014 and 1.628

for 2015). However, contrary to the first two measures described previously, there is an indication that the students' level of disagreement with the reduction in pensions has slightly increased between 2014 and 2015. In particular, the *t*-test we have conducted indicates rejection of the null hypothesis of equal sample means in the case of the reduction in pensions ($t = 2.259$, 5% level of significance), implying that the students' disagreement with this economic policy measure has strengthened over time. Finally, the average student in the 2014 sample tends to neither agree nor disagree with the "Reduction in government expenditure" (mean value 2.669), but the average student in the 2015 sample tends to disagree with it (mean value 2.140). The *t*-test we conducted for the difference in sample means indicates rejection of the null hypothesis of equal means ($t = 2.496$, 5% level of significance), implying a change in the students' views over time.

Table 12 Students' Assessment of the Impact of the Crisis on the National Economy

| Rate of assessment | | Compared to last year, you believe the economic situation of the country is? | | What are your expectations for the economic situation of the country next year? Do you believe it will be? | | In the last year, your personal economic situation was? | | Do you believe that your personal economic situation next year will be? | |
|--------------------|-------|--|----|--|-----------|---|-----------|---|-----------|
| | | | | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Description | Value | | | | | | | | |
| Much worse | 1 | 18 | 4 | 13 | 4 | 6 | 4 | 10 | 2 |
| A bit worse | 2 | 29 | 10 | 13 | 4 | 15 | 7 | 22 | 4 |
| About the same | 3 | 50 | 16 | 47 | 17 | 63 | 24 | 49 | 21 |
| A bit better | 4 | 22 | 11 | 44 | 17 | 33 | 7 | 35 | 15 |
| Much better | 5 | 2 | 1 | 4 | 1 | 4 | 1 | 5 | 1 |
| Mean 2014 | | 2.678 | | 3.107 | | 3.116 | | 3.025 | |
| Mean 2015 | | 2.881 | | 3.163 | | 2.860 | | 3.209 | |
| St. dev. 2014 | | 0.993 | | 1.015 | | 0.848 | | 0.987 | |
| St. dev. 2015 | | 0.993 | | 0.974 | | 0.889 | | 0.833 | |

Notes: Number of observations in the 2014 (2015) sample for the statement "Compared to last year, you believe the economic situation of the country is": 121 (42). Number of observations in the 2014 (2015) sample for the remaining statements: 121 (43).

Source: Authors' calculations.

Table 13 Students' Agreement/Disagreement with Announced Measures for the Crisis after Their Having Attended the Introductory Macroeconomics Course at the University

| Level of agreement/disagreement | | Reduction in wages and an increase in taxes | | Reduction in pensions | | Elimination of 13-14 salaries | | Reduction in government expenditure | |
|---------------------------------|-------|---|-----------|-----------------------|-----------|-------------------------------|-----------|-------------------------------------|-----------|
| | | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Description | Value | | | | | | | | |
| Strongly disagree | 1 | 47 | 21 | 35 | 20 | 31 | 16 | 23 | 16 |
| Disagree | 2 | 58 | 18 | 68 | 20 | 49 | 16 | 34 | 11 |
| Neither agree nor disagree | 3 | 13 | 2 | 13 | 2 | 28 | 6 | 29 | 4 |
| Agree | 4 | 3 | 2 | 3 | 1 | 10 | 5 | 30 | 10 |
| Strongly agree | 5 | 0 | 0 | 2 | 0 | 3 | 0 | 5 | 0 |
| Mean 2014 | | 1.769 | | 1.917 | | 2.215 | | 2.669 | |
| Mean 2015 | | 1.651 | | 1.628 | | 2.000 | | 2.140 | |
| St. dev. 2014 | | 0.739 | | 0.802 | | 1.002 | | 1.165 | |
| St. dev. 2015 | | 0.783 | | 0.691 | | 1.000 | | 1.207 | |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors' calculations.

Table 14 explores the students' views – after having attended the introductory macroeconomics course at the University – concerning various statements about economic policy measures that could be introduced and the management of the GEC in general. Concerning a “Reduction in military expenditure” and a “Debt default” of the Greek sovereign debt, the average student in the 2014 and 2015 samples tends to neither agree nor disagree with the former (mean value 2.711 for 2014 and 3.171 for 2015) and disagree with the latter (mean value 1.959 for 2014 and 1.816 for 2015). The t -tests we have conducted indicate that the difference in sample means is not statistically significant, both in the case of a reduction in military expenditure ($t = -1.937$) and in the case of a debt default ($t = 0.926$). Also, the students in the 2014 and 2015 samples appear to neither agree nor disagree with a “Nationalization of banks” (mean value 3.140 for 2014 and 3.107 for 2015)⁶. As far as a “Reduction in public investments” is concerned, the average student in the 2014 and 2015 samples tends to disagree (mean value 2.306 for 2014 and 1.632 for 2015), and there is an indication that the student's disagreement with it has strengthened over time ($t = 3.969$, 1% level of significance). Moreover, the average student in the 2014 and 2015 samples tends to

Table 14 Students' Agreement/Disagreement with Various Statements after Their Having Attended the Introductory Macroeconomics Course at the University

| Level of agreement/disagreement | | Reduction in military expenditure | | Debt default | | Debt forgiveness | |
|---------------------------------|-------|-----------------------------------|-----------|--------------|-----------|------------------|-----------|
| Description | Value | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Strongly disagree | 1 | 17 | 4 | 40 | 13 | 2 | 0 |
| Disagree | 2 | 39 | 10 | 57 | 22 | 18 | 5 |
| Neither agree nor disagree | 3 | 35 | 0 | 15 | 0 | 37 | 0 |
| Agree | 4 | 22 | 18 | 7 | 3 | 39 | 17 |
| Strongly agree | 5 | 8 | 3 | 2 | 0 | 25 | 10 |
| Mean 2014 | | 2.711 | | 1.959 | | 3.554 | |
| Mean 2015 | | 3.171 | | 1.816 | | 4.000 | |
| St. dev. 2014 | | 1.121 | | 0.916 | | 1.032 | |
| St. dev. 2015 | | 1.272 | | 0.801 | | 0.984 | |

| Level of agreement/disagreement | | Reduction in public investments | | Nationalization of banks | | Taxing the church | | Reduction in corruption | |
|---------------------------------|-------|---------------------------------|-----------|--------------------------|-----------|-------------------|-----------|-------------------------|-----------|
| Description | Value | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 | Obs. 2014 | Obs. 2015 |
| Strongly disagree | 1 | 33 | 20 | 8 | 4 | 10 | 1 | 3 | 0 |
| Disagree | 2 | 41 | 15 | 18 | 7 | 11 | 3 | 4 | 0 |
| Neither agree nor disagree | 3 | 26 | 0 | 55 | 0 | 33 | 0 | 10 | 0 |
| Agree | 4 | 19 | 3 | 29 | 16 | 26 | 22 | 26 | 13 |
| Strongly agree | 5 | 2 | 0 | 11 | 1 | 41 | 14 | 78 | 30 |
| Mean 2014 | | 2.306 | | 3.140 | | 3.636 | | 4.421 | |
| Mean 2015 | | 1.632 | | 3.107 | | 4.125 | | 4.698 | |
| St. dev. 2014 | | 1.087 | | 1.003 | | 1.265 | | 0.955 | |
| St. dev. 2015 | | 0.852 | | 1.257 | | 0.939 | | 0.465 | |

Notes: Number of observations in the 2014 (2015) sample: 121 (35) for “Reduction in military expenditure”: 121 (38) for “Debt default”: 121 (32) for “Debt forgiveness”.

Source: Authors' calculations.

⁶ Unfortunately, in the case of the “Nationalization of banks”, the total number of observations in the 2015 sample (28 observations) is too small to allow a statistical test for the difference in the 2014 and 2015 sample means.

agree with the “Debt forgiveness” (mean value 3.554 for 2014 and 4.000 for 2015) and “Taxing the church” (mean value 3.636 for 2014 and 4.125 for 2015). The *t*-tests we have conducted for the difference in sample means to reject the null hypotheses of equal means, both in the case of “Debt forgiveness” ($t = -2.258$, 5% level of significance) and in the case of “Taxing the church” ($t = -2.602$, 5% level of significance), implying a strengthening of the students’ agreement with them over time. The majority of students in the 2014 sample (78 students, or 64%) tend to agree with a “Reduction in corruption” (mean value 4.421), whereas the majority of them in the 2015 sample (30 students, or 70%) tend to strongly agree (mean value 4.698). The *t*-test we have conducted for the difference in sample means indicates rejection of the null hypothesis of equal means ($t = -2.464$, 5% level of significance), implying that the students’ agreement with a reduction in corruption has strengthened over time.

Finally, concerning how the students assess the introductory macroeconomics course’s contribution in explaining the GEC (Table 15), the average student in the 2014 and 2015 samples evaluated the same course as mostly positive rating (mean value 3.967 for 2014 and 4.000 for 2015). This evaluation, however, has remained the same in 2014 and 2015 ($t = -0.276$), a finding that provides an incentive for further improvements in subsequent years in macroeconomics teaching.

Table 15 Students’ Assessment of the Contribution of the Introductory Macroeconomics Course in Explaining the GEC

| Rate of contribution | | Obs. 2014 | Obs. 2015 |
|-------------------------------|-------|-----------|-----------|
| Description | Value | | |
| Very negative | 1 | 0 | 0 |
| Mostly negative | 2 | 2 | 1 |
| Neither positive nor negative | 3 | 20 | 7 |
| Mostly positive | 4 | 79 | 26 |
| Very positive | 5 | 20 | 9 |
| Mean 2014 | 3.967 | | |
| Mean 2015 | 4.000 | | |
| St. dev. 2014 | 0.632 | | |
| St. dev. 2015 | 0.690 | | |

Notes: Number of observations in the 2014 (2015) sample: 121 (43).

Source: Authors’ calculations.

3. Concluding Remarks and Recommendations

This survey of the Introductory Macroeconomics course at Greek University, in which the teaching featured the application of macroeconomic tools to the GEC, is indicative of the students’ interest in explaining the crisis. The responses of two cohorts of students are referring to Spring 2014 and Spring 2015, the period that the GEC intensifies and provides a dynamic feature to our results.

Overall students believe that they have a good level of understanding of the factors underlying the GEC. As the crisis escalated, they place increased importance on the University as a main information and influential source on forming their attitude to the economic crisis; nevertheless, it is not the primary information source. Hence,

the crisis exposed gaps in the undergraduate curriculum and the importance of up-to-date class materials.

The economics students' groups surveyed disagree with the austerity measures imposed upon the Greek citizens; they blame for the crisis mostly the Greek Political System and the corruption followed by the Greek Banks, the EU, and the IMF. The Greek Political System and the IMF have performed the worst in managing the crisis and are the least trustful to lead the country in exiting the crisis, while the role of ECB is neither positive nor negative. Students realize that the burden is not equally distributed to all citizens. They assess the state of the national economy and personal situation to be stagnant to the same level for the current and following year and the crisis to last ten years. Finally, they disagree with the announced measures that target the shrinking of the disposable income.

Interestingly, students' responses to some point coincide with the facts of the crisis. Indeed, it is clear that Greek governments bear responsibility for the debt and the worsening of the country's position to the point of "Grexit". The responsibilities of the EU or the IMF regarding the crisis in the euro area and the mismanagement of the GEC should not be underestimated. The austerity policies generated increasing inequalities as the economy went into recession. But the surveyed students undervalued the impact of the ECB. The ECB's role in dealing with the GEC has been a critical one since it has acted as a creditor and not as a central banker, directly linked to the austerity agenda imposed on the Greek economy in return for financial assistance.

Students appreciate the course's contribution to being in the position to explain the crisis although there is space for improvements. The GFC is putting macroeconomics into a wider and real-world context, sparking the students' interest in the course. The role of students can be crucial from the side of demanding reform of the macroeconomics curriculum to be useful in addressing and solving an array of current economic problems. The severe financial crisis that the current generation of students in economics experienced brought to the surface their need for the macroeconomic theory to evolve to the extent of incorporating real-world developments. In this context, textbook writing and teaching should adjust to the new scenery to transmit the advances effectively to students. Then, the possibility of the useful application of their academic knowledge to real-life economic phenomena would be increased.

The paper wraps up with the recommendations for further research that can overcome the limitations of the study. Increasing the data using the same survey in subsequent years, will increase the data points and allow for more robust results with methodologies more adequate to identify causality in terms of the relationship under analysis: whether taking an Introductory Macroeconomics course with contents that incorporates to some extent the GFC, deepens the students' understanding of the impacts of the GEC. On reflection, given that one of the main goals of the paper is to assess the evolution of understanding the GFC using different cohorts of students, conducting the surveys in two consecutive years may not allow us to capture those changes, since they probably take longer time to manifest themselves. This is possibly the reason that in some cases there were no statistically significant differences in the results across the two years under analysis.

Generalizing the results of the study is restricted since the study refers to a limited and specific sample concerning only Greek students from only one university and only two consecutive years of data. The results in terms of the students' understanding of the GFC and its impacts can be very specific to a certain economy, and the Greek one, which was more severely hit by the crisis. This can influence the perception of students in terms of their understanding of the impacts of the crisis and how this is related to what they have learned from the Introductory Macroeconomic course they attended. Overall, the results obtained can be considered preliminary due to the limitations of the study; nevertheless, some strong conclusions are drawn that justify the assertive tone of the paper.

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