Teaching the Greek financial crisis in an introductory macroeconomics course: university students' perceptions

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Abstract: The same survey of a self-administered questionnaire was handed out to introductory macroeconomics students in Spring 2014 and Spring 2015 at the University of Macedonia in Greece, to determine students' perceptions of how including the Greek financial crisis (GFC) in the teaching of introductory macroeconomics benefits students. The methodology of the survey is quantitative in nature based on descriptive statistics and t-tests were carried out for each variable of interest. The research questions under examination are: 1) Did the incorporation of the GFC in the teaching of introductory macroeconomies influence university students' perceptions about the course?; 2) Did the evaluations of the course by the two cohorts of students change as the crisis intensifies in a statistically significant manner? The innovation of the study is determining students' perceptions of the value of incorporating the GFC in the teaching of macroeconomics and the statistical evaluation of responses of two cohorts of students as the crisis intensifies. Overall, students evaluated positively the incorporation of the GFC in their learning in the introductory macroeconomics course. From 2014 to 2015, the student level of understanding of the GFC incorporated in the teaching of introductory economics increases. Nevertheless, students are not interested in employment as economists.

Keywords: teaching economics; teaching introductory macroeconomics; Greek financial crisis; GFC; global financial crisis; teaching the global financial crisis.

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1   Introduction

The number of students enrolling in macroeconomics courses is increasing, however, it is acknowledged that problems exist with the structure of the course and changes should be initiated (Shiller, 2010). Students in the macroeconomics courses expect and deserve to learn more about the real-life economic phenomena and not about an 'illusion' that the economy is stable, and unemployment and recessions are examined as temporary aberrations caused by random external shocks [Harvey, (2018), p.83]. In addition, the intrinsic recurrent boom-and-bust dynamics of the world's economic system are neglected [Colander et al., (2009), p.251]. In contradistinction, students are interested in applying their academic knowledge to what happens to real world economic phenomena, beyond the limitations that both traditional and modern macroeconomic models place. This interest has become even stronger after the recent global financial crisis that revealed serious shortcomings in how the economy really works and is taught (Harvey, 2018). The current crisis is considered as the worst crisis that capitalism has faced since the Great Depression; nevertheless, it has not yet generated any significant change in the teaching and practice of macroeconomics (Azad, 2016). On the contrary, there are voices like Taylor (2011, p.393) arguing that the recent crisis does not give any reason to abandon the core empirical 'rational expectations/sticky price' model developed over the past 30 years. Meanwhile, it is argued that the teaching of macroeconomics has been too long tied to a benchmark frictionless theoretical framework provided by neoclassical

economics and its variants that prevents substantial macroeconomics course revision (Chable, 2012; Ötsch and Kapeller, 2010; Reis, 2018).

The purpose of this paper, using survey results, is to determine students' perceptions of the extent to which an introductory macroeconomics course contributes to the understanding of real-world economic issues, such as the Greek financial crisis (GFC). In consequence, the paper makes recommendations regarding the structural changes in the teaching of introductory macroeconomics produced by the survey results. In this context, a survey was conducted examining how Greek students assess the macroeconomic course taught. In particular, the students assess their rate of satisfaction with the course's ability to provide Greek students actual expertise in economic reasoning and judgment in relation to a major economic event that dominated the country since 2008, the GFC. 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' behaviour over time.

What is novel about this project, beyond determining students' perceptions of the value of incorporating the GFC in the teaching of macroeconomics by extending the content of the existing syllabus, 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 our knowledge, such an exercise of finding students' perceptions of the value of an introductory macroeconomics course during the GFC and comparing the evaluations of two cohorts of students as the financial crisis increases in awareness, appreciation and impact has not yet been attempted. Teachers of economics would benefit from these findings, as they will provide the reasoning to incorporate students' knowledge-needs in the syllabus of introductory macroeconomics courses in a static and dynamic sense, as the crisis intensifies.

The structure of the paper is as follows. Section 2 sets the stage of the teaching macroeconomics-economic realities nexus by reviewing the literature. Section 3 presents the data and results of the survey's questionnaire handed out to introductory macroeconomic students at the University of Macedonia in Greece in Spring 2014 and 2015. The last section concludes providing recommendations for any possible changes in macroeconomics curriculum being adjusted to the students' need to apply knowledge to real-life settings.

2 The teaching of macroeconomics: a historical and theoretical context

Academics and policymakers were involved with macroeconomic topics, such as inflation, unemployment, economic growth, the business cycle, and monetary and fiscal policy, but it was only after the outburst of a real-life economic crisis, the Great Depression that macroeconomics gained significance. The Great Depression created an actual need for a distinct field in economics to emerge. In consequence, in 1940s, the word 'macroeconomics' appears in the scholarly literature for the first time [Mankiw, (2006), p.30]. At the end of the Second World War, the Bretton Woods Conference boosted international macroeconomics as a field of study, along with the foundation of International Monetary Fund (IMF) to serve the international coordination

of macroeconomic policy [Adam and Vines, (2009), p.508]. Lawrence Klein, Franco Modigliani, Paul Samuelson, Robert Solow, and James Tobin are popular economists of this era along with the most distinguished of them John Maynard Keynes. 'The General Theory of Employment, Interest and Money' of John Maynard Keynes influenced both economic research and pedagogy and established macroeconomics as a basis for national macroeconomic policy making (Adam and Vines, 2009). John Hicks and Franco Modigliani interpreting Keynes theory built the IS-LM model suitable for the classroom teaching and widely used especially intermediate-level macroeconomics textbooks (Mankiw, 2006).

Keynesians established theories on the basis of real-world economic problems with the intention to apply these theories to the real economy (Mankiw, 2006). During 1960s, the Keynesian revolution faded, and neoclassical economics came in the forefront, launching large structural models for the macro economy [Fontana, (2009), p.3]. Econometricians at that time intrigued by macroeconomics models and in trying to make them realistic developed more complicated models. In the 1970s, the real business cycle theory was developed, associated mainly with the American economist, Robert Lucas, Jr., based on the assumptions of imperfect information, rational expectations and market clearing. During 1970s and 1980s, the large structural models have been called into question and replaced in 1990s by less complicated models, always retaining their neoclassical foundation (Fontana, 2009). In 1990s, the longest expansion of US's economy in history occurred, triggering the interest of students of economics towards long-run growth and expressing less interest to the business cycle theory (Mankiw, 2006). A dynamic synthesis between the pre-Keynesian and the Keynesian paradigm appeared, implying that classical theory is most appropriate in the long-run, while Keynesian theory in the short-run [Allsopp and Vines, (2000), p.4]. The conventional economics education has been based on a standard syllabus of macroeconomic theory, often supplemented by econometrics, and being dominated by orthodoxy. The prevailing analytic macroeconomic theory has been built on abstract, representative agent models and has depended on the assumptions of equilibrium (Holt et al., 2011). Usually, the syllabi integrated the 'neoclassical synthesis' as it has been modified in the light of the 'new classical' challenge to Keynesianism (Stilwell, 2012).

The financial crisis has damaged the image of the field; macroeconomists and policy makers have been accused of not seeing the crisis looming. At the same time, the teaching of macroeconomics did not prove innocent. Professors of economics ought to have served their duty and revealed the ultimate reasons for the devastating effects of this recent real-life event, undistracted and unbiased by powerful lobbies and interest groups. Besides, their general professional context has been always to provide a better understanding of economic and financial activities both within their country's borders and at the global level (Rossi, 2012). To this line, the 'Appeal of Teachers and Researchers' in 2011, signed by more than 400 teachers worldwide, aimed at reminding to professors, lecturers and researchers, that they have been assigned with the task of serving the society through their search for a better understanding of reality [Rossi, (2012), p.236]. The current generation of students prefers to follow real-time events and be connected to the modern world, instead of being occupied with models which provide ambiguous results and limited explanations of what is happening in the real economic environment (Strasser and Wolfe, 2014). Especially, those students who want to follow a professional career whose undergraduate studies require meeting the market's needs. Hence, they are targeting through their studies to the accomplishment of the

maximisation of their monetary benefits, meaning the benefits that begin with their employment after their graduation and depend on the conditions of the market [Pseiridis et al., (2018), p.270].

Reis (2018) valuates the impact of the global financial crisis to four uses of macroeconomics (research, policy, forecasting, and teaching) in order, from those uses that require less to those that need increasing revision. The author concludes that the main criticisms of the macroeconomics field are about how it is taught and used in policy discussions rather than in research. Macroeconomic policies are related to the success of the macroeconomic performance of a country and as such trigger off the attention of politicians, policy planners, researchers, academics, students, and journalists. The macroeconomic research developed provides a comprehensible context of the economy, its functions, its reactions to specific policies and demand and supply shocks (Snowdon and Vane, 2005). Research in macroeconomics is a field that the majority of people in the interdisciplinary press and audience are ignorant and indifferent [Reis, (2018), p.148].

The mainstream thought has dominated the last 30 years as it has been promoted by the high in rank universities and has remained unchanged even during the global financial crisis, proving its dogmatic character. Thus, the teaching of macroeconomics globally, due to its over-reliance on a neoclassical framework, avoided to embrace the latest advances which have taken place in the modern macroeconomics. The economy is so complicated that the simple analytical models specified in a set of analytically solvable equations cannot embrace many of the contemporary issues that economists want to address. From 1990s onwards, macroeconomists have created alternatives to the assumptions of full risk-sharing, full information, flexible prices, or lump-sum taxes. In accordance, separate, tractable, simple, analytical models combined in a benchmark model can be used successfully in an introductory macroeconomics course (Reis, 2018). The undergraduate curriculum is crucial in qualifying future graduates, proceeding on postgraduate studies or a professional career (Chable, 2012). Initiatives for changes in the content of curricula, by rationalising content towards 'core' concepts or by reforming in favor of more non-mainstream theories were unsuccessful. Economics textbooks that define the curriculum should be changed to the extent of including greater pluralism, more interdisciplinarity, or increased incorporation of recent advances in economic thought but unfortunately, this is not the case and it is not at all directly to happen [Thornton, (2018), pp.7–8].

In fact, the content left intact, and only the teaching process, practice and modes of teaching in macroeconomics improved [Mearman et al., (2014), p.121]. Even after the global financial crisis, there is no substantial effort of reconsideration and reconstruction of the economics curriculum taught in most universities (Stilwell, 2012). The need for change exists and it is evident in the case of the introductory economics course at Harvard University, in which the instructor is Gregory Mankiw, the author of the standard macroeconomics textbook used worldwide. Students decided to protest against the predilection inherent in this course and walkout on 2 November 2011 [Stilwell, (2012), p.149].

The research project that was conducted by Mearman et al. (2014) aimed to develop a picture of students' perceptions of economics, and to identify the importance of grounding economics teaching in real-world phenomena. Even though the data covered the years 2007–2008, thus, the impact of the crisis was not evident, the results suggest that economics curricula had to be updated. The update to economics curricula should stress useful, relevant and realistic material without the detachment of the theory. This

process creates greater room in the curriculum for non-standard theories, such as Post Keynesianism, Institutionalism and Marxism, that can provide diagnoses of the economic crisis (Mearman et al., 2014). Blinder (2015) insists on the importance of Keynesian economics in pedagogy but argues that economics should not be mixed up with politics, if we want any improvements in pedagogy. In particular, he gives the example of 'Keynesianism' that should be taught to students avoiding the misconceptions provided by both conservatism and liberalism (Blinder, 2015).

Greece does not depart from the aforementioned framework of teaching introductory macroeconomics. Unfortunately, we were not able to find any research literature-information about the teaching of macroeconomics in Greece. However, anecdotal evidence suggests that the teaching of introductory macroeconomics in Greek universities follows an abstract and theoretical way, using provisional and incomplete macroeconomics tools and inadequate textbooks (mostly Greek translations of popular English written economics textbooks) that do not incorporate in a substantial way, as outlined above, the global financial crisis. In addition, the teaching of introductory macroeconomic in Greek universities restricts pluralism and does not provide opportunities to students to carry on their real-life experiences into the classroom before and even during the global financial crisis.

On reflection, Greece's small economy cultivated a sovereign debt and fiscal crisis against a backdrop of distinct and persistent pathologies due to the idiosyncrasies of the domestic political and economic environment and the overall unique culture. In brief, a few of the pathologies of the Greek economy were: malfunctioning domestic markets; inflation close to 2% above the Eurozone; increases in nominal wages overtaking productivity; growing fiscal deficits and excessive debt to GDP ratio; prolonged macroeconomic imbalances; shocking levels of corruption (the size of the Greek underground economy is estimated to be almost one third of the GNP; the incidence of irregular payments in Greece place the country 86th out of 133 states internationally) and waste; negligible support for R&D; stagnating tax revenue (uncollected tax revenue amounted to 30% or 3.4% of GDP in 2006) and credibility problem of macroeconomic policy management (Featherstone, 2011). The lack of the necessary fiscal consolidation during the time of high growth rates was matched with the continuous false reporting of statistical data. In mid-October, the newly elected government announced the budget deficit for 2009 was estimated to be 12.7% of GDP, while the previous government was arguing that deficit would not be higher than 6.5% of GDP (Kouretas and Vlamis, 2010). All this weakened Greece's international credibility. Stated simply, increased public expenditure, widening budget deficits, declining external competitiveness and enduring current account deficits ('twin deficits') led to dramatic increase in borrowing requirements, high levels of accumulated public debt and overall deteriorating fiscal stance of the Greek economy. Definitively, the EU statistics agency, Eurostat, determined that the Greek budget deficit for 2009 climbed to 15.4% of GDP (Kouretas and Vlamis, 2010). The level of Central Government Debt by end of 2009 amounted to 298.5 billion euros (Kouretas and Vlamis, 2010). Clearly, the budget deficit and sovereign debt were unsustainable. As a result, credit agencies downgraded Greece and shut the door to the international credit and bond markets. In May 2010, Greece accepted bailout package of 110 billion euros from the EU and the IMF to prevent default. On March 14, 2012, the Eurozone finance ministers approved funds for a Second Economic Adjustment Program for Greece. The Eurozone member states and the IMF committed the undisbursed amounts of the first program plus an additional €130 billion for the years 2012–2014. In

much the same way, on August 19, 2015, the European Commission provided further financial support up to €86 billion over three years (2015–2018) accompanied by a third economic adjustment program.

The survey results that follow aim to contribute to the aforementioned literature by finding out the student perspective about the inclusion of the analysis of the GFC in an introductory macroeconomics course. The survey endeavours to determine whether the understanding of students in the course benefits by incorporating in the teaching the new economic reality that they have experienced since 2008. The time period is crucial, as the two surveys cover the years 2014–2015, at the peak of the GFC with profound consequences and generating to young people frustration about the future.

3 Survey of introductory macroeconomic students in Spring 2014 and Spring 2015

3.1 Methodology

The methodology is quantitative in nature, based on the responses of a self-administered questionnaire to students at the University of Macedonia in Greece in Spring 2014 and Spring 2015. 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 student cohorts' perceptions and evaluations, as the crisis intensifies from one year to the next. The research questions under examination are:

1 Did the incorporation of the GFC in the teaching of introductory macroeconomies influence university students' perceptions about the course?

2 Did the evaluations of the two cohorts of students as the crisis intensifies change in a statistically significant manner?

The hypotheses developed are that the incorporation of the GFC in the teaching of introductory macroeconomies influences positively the perceptions of student about the course and as the crisis intensifies the positive evaluation of the course increases from one year to the next.

Regarding the ethics of the study, all associated research efforts were inspired by the five general principles of the American Psychological Association (APA) ethical considerations of beneficence and non-maleficence, fidelity and responsibility, integrity, justice, and respect for people's rights and dignity. The ethics of the study were based on strict adherence to the ethical standards professed by the APA in that any research should protect the participants' rights. Participants were asked for their consent by the researchers after explaining: the free choice to participate without being coerced or unfairly pressurised; the right of participants to voluntarily withdraw from the study at any time; the central purpose of the study and the procedures to be used in data collection; the protection of the confidentiality of the respondents and the right to privacy and anonymity and in no way their individual responses will be linked to them as persons; and any known risks associated with participation in the study. The sources of data for this study will be protected by maintaining confidentiality. The data was

collected only for the sole purpose of academic research and no harm was inflicted to the participants during and from the results of the study, directly or indirectly. Findings are presented in a complete and honest manner without perversions or falsification. Hence, the researchers believe that they considered all the required legal and ethical issues to ensure the quality and integrity of the study.

3.2   Socio-demographic data

The same survey of a self-administered questionnaire was handed out to introductory macroeconomics students in Spring 2014 and Spring 2015 at the University of Macedonia in Greece, to determine how including the GFC in the teaching of introductory macroeconomics benefits students. By surveying two different cohorts of introductory macroeconomics students, we can assess the effectiveness of macroeconomics teaching as the financial crisis increases in awareness, appreciation and impact. The teaching incorporated discussion of the GFC and the influence of current economic events on Greek citizens using macroeconomic tools taught in class. Utilising a five-point Likert-scale, the independent variables created a matrix for comparative evaluation.

Table 1   Socio-demographic characteristics

	Obs. 2014	*Obs. 2015*
Age group		
18–20	107	37
21–23	11	3
24–26	1	0
≥ 27	2	3
Year of university studies		
1st	107	40
2nd	6	2
3rd	2	0
4th	0	0
5th	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

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

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, which explains its small participation. While keeping the survey anonymous, a set of questions aimed at extracting information about respondents (age, year of study, employment, city of original residence, attendance) was included in the survey.

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; 41 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 80% of the lectures of the introductory macroeconomics course. In order to check whether the difference in the two sample means provides evidence of a change in the students' behaviour 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 macroeconomics 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		

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

3.3 Survey results

A natural starting point for our survey is the exploration of the students' prior knowledge of macroeconomics. The students' assessment of their own level of knowledge of macroeconomics before attending the introductory macroeconomics course at the university is presented in Table 3. Almost half of the students in the 2014 sample

(58 students, or 48%) and the majority of those in the 2015 sample (26 students, or 60%) reported having some basic knowledge of macroeconomics. The t-test we conducted cannot reject the null hypothesis of equal sample means (mean value 1.851 for 2014 and 1.860 for 2015, t = –0.065), implying that the students' assessment of their knowledge of macroeconomics prior to the start of the relevant course has not changed between 2014 and 2015 and evaluations between the two cohorts of students can be meaningful.

Table 3   Students' assessment of their level of knowledge of macroeconomics before attending the introductory macroeconomics course

Level of knowledge		Obs. 2014	Obs. 2015
Description	Value		
Do not know anything	1	43	13
Know some basics	2	58	26
Have a good level of knowledge	3	15	2
Know macroeconomics very well	4	5	1
Know macroeconomics perfectly	5	0	1
Mean 2014	1.851		
Mean 2015	1.860		
St. dev. 2014	0.792		
St. dev. 2015	1.804		

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

Table 4 describes the general personal benefits that the students gain from studying macroeconomics in the introductory course. The majority of students in the 2014 sample reported that attending the lectures of the introductory macroeconomics course makes it easier to successfully completing the exam of a university course, and more interesting by allowing them to better understand the news and newspapers, and enabling them to explain economics facts to family/friends. Meanwhile, almost half the students in the 2015 sample reported the same benefits. When it comes to the examination of a possible change in the students' personal benefits over time, in the case of the students' goal to successfully pass the exam, 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 (mean value 0.620 for 2014 and 0.488 for 2015, t = 1.478). In the case of being able to explain facts to family/friends, however, the relevant t-test indicates rejection of the null hypothesis of equal means (mean value 0.645 for 2014 and 0.488 for 2015; t = 1.763, 10% level of significance), implying that the introductory macroeconomics course was less beneficial for the students in 2015 in enabling them to explain facts to family/friends. Moreover, the majority of students in the 2014 and 2015 samples reported that the specific course has the benefit of allowing them to understand news and newspapers better (mean values 0.653 for 2014 and 0.581 for 2015), and the t-test for the difference in sample means indicates that there is no difference in how much the students in the 2014 and 2015 samples benefited (t = 0.816). In addition, the average student in the 2014 and 2015 samples reported that the introductory macroeconomics course provides them with knowledge that is rather not useful for their future professional life (mean values 0.471 for 2014 and 0.326 for 2015); the relevant t-test indicates rejection of the null hypothesis of equal means (t = 1.702, 10% level of significance), implying a decline in

the level of usefulness of the macroeconomics course for the future professional life between 2014 and 2015. During the crisis, the transformation of the labour market in Greece to one with high unemployment rates and low wages also affected university graduates. University graduates could hardly find employment in accordance to their studies and qualifications in the Greek labour market [Theodoropoulos et al., (2014), p.231]. In fact, the university graduates experienced even higher unemployment compared with the basic and secondary education graduates due to mismatch of skills and qualifications with those demanded in the Greek labour market (Theodoropoulos et al., 2014). Greece has not succeeded in being placed in an advanced position in the global value chains for producing innovative products and services, resulting in the low demand from the private sector for university graduates [Labrianidis and Vogiatzis, (2013a), p.474]. Under the threat of unemployment and low wages, Greek graduates consider that the ideal workplaces with perks and benefits and prospects for career development and ensuring them a high quality of life exists only abroad; graduates chose to migrate, mostly to EU countries. From 2010 onwards, almost 400,000 Greeks, in their '20s and '30s, have emigrated of which more than two-thirds are university graduates, mostly holding postgraduate degrees (Hope, 2018). Finally, the majority of students in the 2014 and 2015 samples reported that there are no benefits in studying macroeconomics other than those described above (mean values 0.017 for 2014 and 0.116 for 2015). However, the t-test for the difference in sample means indicates that there is a change between 2014 and 2015, with the students in the 2015 sample finding the introductory macroeconomics course to be comparatively more beneficial to them in aspects other than those explored above (t = –1.963, 10% level of significance).

Table 4   Students' personal benefits from the introductory macroeconomics course

Benefits obtained		Pass the exam		Understand news and newspapers		Explain economic facts to family and friends		Apply the knowledge to professional life		Other.	
Description	Value	Obs. 2014	Obs. 2015	Obs. 2014	Obs. 2015	Obs. 2014	Obs. 2015	Obs. 2014	Obs. 2015	Obs. 2014	Obs. 2015
Yes	1	75	21	79	25	78	21	57	14	2	5
No	0	46	22	42	18	43	22	64	29	119	38
Mean 2014		0.620		0.653		0.645		0.471		0.017	
Mean 2015		0.488		0.581		0.488		0.326		0.116	
St. dev. 2014		0.487		0.478		0.481		0.501		0.128	
St. dev. 2015		0.506		0.499		0.506		0.474		0.324	

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

Tables 5 and 6 describe the students' assessment of the introductory macroeconomics course, with particular emphasis to its ability in providing actual expertise in economic thought and judgment in relation to a current real-life economic event, the GFC. By extending the content of the existing syllabus and incorporating news and newspapers, and personal experiences, students' perceptions were formed about the value of incorporating the GFC in the teaching of macroeconomics. The quantity and quality of knowledge gain was ultimately assessed by successfully completing the course with

gradable learning tasks an essay, a mid-semester test and a final exam. Specifically, the average student in the 2014 and 2015 samples believes to have learned rather a lot about the GFC since the start of the specific course (Table 5: mean value 3.661 for 2014 and 3.884 for 2015), and to have achieved a rather good level of understanding of the current state of the GFC (Table 6: mean value 3.083 for 2014 and 3.333 for 2015). The t-tests we conducted for the difference in sample means indicate that the students' belief about how much they learned about the GFC has remained unchanged between 2014 and 2015 ($t = -1.587$), but this is not the case with regard to their level of understanding of the current state of the GFC, as there is indication that the latter has increased from one year to the next ($t = -2.118$, 5% level of significance).

Table 5   Students' assessment of how much they have learned about the GFC during the introductory macroeconomics course

How much learned		Obs. 2014	Obs. 2015
Description	*Value*		
Nothing	1	1	1
A little bit	2	6	1
Somewhat	3	40	7
A lot	4	60	27
Very much	5	14	7
Mean 2014	3.661		
Mean 2015	3.884		
St. dev. 2014	0.781		
St. dev. 2015	0.793		

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

Table 6   Students' assessment of their level of understanding the current state of GFC after the introductory macroeconomics course

Level of understanding		Obs. 2014	Obs. 2015
Description	*Value*		
Do not know anything	1	0	0
Know some basics	2	23	3
Have good level	3	66	23
Know it well enough	4	31	15
Know it perfectly well	5	1	1
Mean 2014	3.083		
Mean 2015	3.333		
St. dev. 2014	0.690		
St. dev. 2015	0.650		

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

With regard to the importance of learning macroeconomics for understanding the GFC (Table 7), and the usefulness of the specific macroeconomics course at the university (Table 8), the average student in the 2014 and 2015 samples believes that learning

macroeconomics is rather mostly important (mean value 4.314 for 2014 and 4.279 for 2015) and that the specific university course is rather mostly useful (mean value 4.405 for 2014 and 4.452 for 2015). The t-tests we conducted for the difference in sample means indicate that we cannot reject the null hypothesis of equal means, both in the case of the importance of macroeconomics (t = 0.287) and in the case of the usefulness of the specific macroeconomics course (t = –0.365). In other words, the students' beliefs about the importance of learning macroeconomics in general and the usefulness of the specific macroeconomics course have remained unchanged over time. Finally, with regard to how satisfied the students are with the introductory macroeconomics course's ability to explain the GFC (Table 9), the average student in the 2014 and 2015 samples gave it a mostly positive rating (mean value 3.967 for 2014 and 4.000 for 2015), and there is indication that this level of satisfaction has remained the same in 2014 and 2015 (t = –0.276).

Table 7 Students' perspective of the importance of learning introductory macroeconomics for the understanding of the GFC

Level of importance		Obs. 2014	Obs. 2015
Description	Value		
Not important at all	1	0	1
Not important so much	2	2	0
Neither important nor unimportant	3	6	0
Mostly important	4	65	27
Very important	5	48	15
Mean 2014	4.314		
Mean 2015	4.279		
St. dev. 2014	0.646		
St. dev. 2015	0.701		

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

Table 8 Students' perspective about how useful the introductory macroeconomics course is for understanding the GFC

Rate of usefulness		Obs. 2014	Obs. 2015
Description	Value		
Not useful at all	1	0	1
Not useful so much	2	0	0
Neither useless nor useful	3	5	1
Mostly useful	4	62	17
Very useful	5	54	23
Mean 2014	4.405		
Mean 2015	4.452		
St. dev. 2014	0.571		
St. dev. 2015	0.772		

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

Table 9   Students' level of satisfaction from the introductory macroeconomics course in studying the GFC

Students' rating of the course		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		

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

Based on the survey results, it is established that the attendance level and the prior knowledge of macroeconomics of the two cohorts of students do not differ in a statically significant way, thus making the pursued comparisons meaningful. Nevertheless, as the crisis intensifies from one year to the next, the students in the 2015 sample believe the introductory macroeconomics course to be comparatively less beneficial in enabling them to explain economic facts to family/friends and in providing them with knowledge necessary for their future professional life, but comparatively more beneficial in aspects 'other' than those explored in the survey. Moreover, the students' level of understanding of the current state of the GFC appears to have increased from one year to the next. The latter finding does not necessarily come at odds with the finding that, over time, the students believe the macroeconomics course to be comparatively less beneficial in enabling them to explain economic facts to family/friends; the course gave special attention to the GFC and, hence, the students may feel more confident in understanding and explaining the GFC, but less so in the case of other real-life economic phenomena.

4   Concluding remarks and recommendations

The survey used a self-administered questionnaire to record the perceptions of students for the GFC as developed during their introductory macroeconomic course. Given that the university does not impose compulsory attendance of the lectures to successfully complete the course, the high rate of attendance, reflects the appreciation of students to the course.

Shiller (2010, p.408), as mentioned in the introductory section, has argued about the rise in enrolment in macroeconomics despite the problems that the field confronts and changes should be initiated. The incorporation of the GFC in the teaching of introductory macroeconomics satisfies in part the approach suggested by Shiller. Most of the surveyed students prior to the course had only some basic knowledge of macroeconomics. Concurrently, the popularity of macroeconomic policies due to their relation to country's macroeconomic performance acts as a stimulus to students for finding out more on this field. Reis (2018, p.141) argues that "among all fields of economics, macroeconomics

seems to be one of the ones that attracts the most attention from the popular media", but macroeconomics news processing in the media requires attention. Economics is often mathematical and complex, which might lead to distorted perceptions and information processing, if journalists work under time pressures, or without sufficient knowledge in economic analysis [Garz, (2014), p.501]. Greek students are interested in reading the headlines to understand the economic news and to be able to identify the cognitive limitations of journalists or vested interests that might serve. Thus, understanding the macroeconomics as presented in the media is of high importance to students, as revealed in our survey results.

The positive evaluation of introductory macroeconomics by students regarding the upgrading of their knowledge of the GFC after completing a course incorporating the teaching of a real-life economic phenomenon is consistent with Harvey's (2018, p.83) argument that students enter in the classroom expecting to learn the operation of the modern economy in which they live. The GFC, formed a new economic reality with devastating effects to the economy and to students' future. Therefore, students' satisfaction of their level of understanding of this unprecedented economic event, highlights the importance of grounding economics teaching in real world economic phenomena (Mearman et al., 2014). Unfortunately, we were unable to identify any local literature/research about the issue to make meaningful comparisons in the Greek context.

The survey to introductory macroeconomics students determining students' perceptions of the value of incorporating the GFC in the teaching of macroeconomics held out in Spring 2014 and Spring 2015 at the University of Macedonia in Greece, produces some interesting results. The teaching of introductory macroeconomics featured the application of macroeconomic tools taught in class to the GFC. The goal of the survey was twofold: firstly, to determine students' perceptions of the effectiveness of teaching the causes and the impact of the crisis in rather a static sense. Secondly, to compare the responses of two cohorts of students (Spring 2014 and Spring 2015) as the crisis intensifies, providing a dynamic feature to our recommendations.

Overall, students evaluated positively the incorporation of the GFC in their learning in the introductory macroeconomics course. As usually, to successfully pass the exam is a top priority for students, however, they were also able to better understand news and newspapers regarding the crisis, and their knowledge about the GFC increased. Students highlighted the importance of learning macroeconomics in understanding the crisis, found the specific university course mostly useful, and students were satisfied with the macroeconomics course's ability to explain the GFC. These student perceptions do not significantly differ statistically from one year to the next.

However, there are aspects of the student cohorts' perceptions and evaluations change as the crisis intensifies from one year to the next. It appears that as the crisis intensifies, and the students are increasingly experiencing the negative consequences of crisis, their interest in learning about the crisis increases and, at the same time, we speculate that students develop a rather pessimistic view about the future. The negative consequences of crisis not only create negative projections about future employment in general, but in particular as an economist. Students studying economics are increasingly not interested working as economists. While this perception is consistent with our survey responses, we supplement the argument that as the crisis intensifies students are mostly losing interest working as economists.

An economist in Greece can be self-employed or employed in the public sector, financial sector, international organisations (EU, IMF, World Bank), economic and social

research bodies, business and accounting departments, consulting and investment companies, education sector, shipping and tourism [Alexakis, (2013), p.37]. Since an economist can serve the societies in crisis to overcome both economic and social problems for achieving the well-being maximisation of societies, one would expect that there would be high demand for this profession during the GFC. In particular, the structural changes that the Greek economy is called upon to make for constructing a sustainable and robust economic model would affect positively the prospects of the economics profession. However, the empirical findings of the survey conducted by the Chamber of Commerce of Greece in collaboration with the University of Piraeus in 2013, demonstrated that when negative expectations for county's GDP exist, the employment of economists is declining [Alexakis, (2013), p.140]. During the crisis Greek GDP was reduced by a quarter, recording the largest contraction of an OECD country over the post-War period (Angouri and Wodak, 2014). In 2014, at the pick of the GFC, the reduction of employment in the professional, scientific and technical categories according to Hellenic Statistical Authority classification was by 35% [ELSTAT, (2019), p.3]. Although Greece's GDP for the year 2018 records an increase of 1.9% and government estimates further increase in 2019, the employment in the same categories decreased by 7.5% in the first quarter of 2019 comparing with the corresponding quarter of 2018 [ELSTAT, (2019), p.2]. The fact is that the Greek labour market considers the role of an economist in the tertiary sector of the economy as complementary and not as fundamental, may provide reasoning to aforementioned outcome [Alexakis, (2013), p.141].

Overall, as students find less beneficial in explaining facts to family/friends and working as an economist, the 'other' benefits increase as the crisis intensifies. We are unable to speculate what are these 'other' benefits that students perceive regarding the teaching of the GFC within an introductory macroeconomics course. In addition, as the crisis intensifies from one year to the next, student level of understanding of the GFC incorporated in the teaching of introductory economics increases, implying that students increase their effort in learning about the GFC.

What are the consequences of our survey findings in restructuring the introductory macroeconomics course? Students' interest and learning about the crisis increases as the crisis intensifies, which teachers of economics can exploit in increasing both the student numbers in studying economics and the active participation of students during the course. By restructuring the introductory macroeconomics course with emphasis to the global financial crisis (in our case the GFC) we will be catering to students' knowledge-needs and interest, which will hopefully increase student numbers and active participation.

There is one caveat though; these same students we determined are mostly not interested in future employment as economists and as such the restructuring of the syllabus must keep this aspect in mind. Students studying introductory macroeconomics with interest in the global financial crisis are not looking forward to a vigorous mathematical-econometric economic analysis as economists rather to an eclectic economic analysis as a social scientist. Consistent with our findings, there are 'other' benefits to students associated with studying the global financial crisis that we will attempt to speculate what they are.

The speculation of the 'other' is laborious since it reflects the very personal deepest needs and aspirations for individual development of the surveyed students that was not revealed. Unfortunately, we were not able to discover any national literature findings that could probably provide with some justifiable conclusions about this very interesting

issue. However, the multiple professional prospects of the university's graduates could provide some plausible explanations. Greeks graduates are less satisfied with the quality of life and the situation of their country. Highly educated and skilled women and men from Greece have been seeking to move from the student life to professional life amidst the economic recession and austerity policies, collapsing labour market with increasing unemployment rates and limited professional opportunities [Bartolini et al., (2017), p.652]. The low competitiveness of the Greek economy is related to its inability to reap the benefits of the availability of highly educated personnel that exist in national labour market (brain-waste), wasting the returns on state's investment in human capital [Labrianidis and Vogiatzis, (2013b), p.528]. The graduates in Greece realising that the prospects for the desired professional career are limited, they attempt to estimate the opportunity cost of emigration. Since this is a life-time choice, students acknowledge the significance of studying the GFC to improve their ability to predict the international impact of the crisis and reducing the risk of making the wrong decision about staying or leaving their country of origin. In the case of emigrating, the studying the global financial crisis, assists in making a rational choice regarding their new destination where economic and personal development aspirations can be better fulfilled. Even though the student group surveyed did not have not as an employment priority the profession as economists, the deeper understanding of the global financial crisis is responding to the demands of the new economic era. An era in which the importance of knowledge and learning is recognized as vital to the upgrading of human resources. Highly educated individuals are required in the international labour market to contribute to the process of developing and diffusing knowledge and innovation, producing economic development and progress [Labrianidis and Vogiatzis, (2013a), p.472]. Since Greek graduates' motivation is to succeed abroad both in terms of job satisfaction and social status, they are interested in upgrading their knowledge of real-time economic events such as the global financial crisis and placing themselves as competitive candidates in global workplaces.

Overall, due to this telling contribution, the 'other' benefits to students associated with studying the GFC and the global financial crisis, appears a weakness of the study due to the fact that the researchers did not provide the respondents with more possible answers; it is a restriction of the present paper which can be tackled in future research.

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