
How introductory macroeconomics should be taught after the global financial crisis: data from Greek university students

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Abstract: The aim of this paper is to review a range of suggestions made in the literature to improve economics pedagogy following the recent global financial crisis. In addition, we scrutinise responses to a survey of macroeconomics students from the University of Macedonia to determine issues in teaching economics and what the responses imply about how pedagogy may be improved. Both the literature and the survey analysis suggest the importance of teaching economics more relevant and responsive to real-world economic phenomena. However, different ways of accomplishing this objective are suggested by the two sources. The analysis of the Greek student survey also suggests the importance of addressing the issue of non-authoritative versus authoritative sources of information.

Keywords: economic crisis; macroeconomics; teaching economics; Greece; pluralism.

Reference to this paper should be made as follows: Marangos, J. and Ioakimidis, M. (2019) 'How introductory macroeconomics should be taught after the global financial crisis: data from Greek university students', *Int. J. Pluralism and Economics Education*, Vol. 10, No. 2, pp.155–170.

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1 Introduction

The Global Financial Crisis (GFC) that began in 2007 was an unwelcome surprise to the teaching economists, aside to the professional economists, political leaders and general citizenry. Economists should have been able to predict at least the broad outlines of the unfolding GFC and suggest policies to reduce its socio-economic impact. Instead, economists did not predict and had little to offer in dealing the GFC (Pastoret, 2012). At the same time, even if professional economists had been able to foresee the GFC, they apparently would have been unable to help prevent the crisis. These negative evaluations of the discipline of economics have important implications for economics pedagogy.

The GFC revealed the “fracture” within the discipline of economics [Figart, (2010), p.237], underlining the deficiencies in the education of economists (Passaris, 2011). Essentially, the inability of economists to predict and mitigate the consequences of the GFC is a call to rethink the teaching of economics. The goal is to avoid in the future what Colander et al. (2009, p.264) claimed that the economics profession “failed in its duty to society.” Thus, the research question arises: How should the teaching of economics, especially introductory macroeconomics, be restructured considering the GFC?

The purpose of the paper is to determine how to revise the teaching of introductory macroeconomics based on the results of a recent survey administered to introductory macroeconomics students at the University of Macedonia in Greece, one of the countries hardest hit by the GFC. To our knowledge, such an exercise of incorporating in an introductory macroeconomics syllabus, survey results by university students regarding the GFC has not yet been attempted. The focus of the survey is a real-word economic phenomenon, that is, the Greek financial crisis. Economics professors would gain and benefit from this survey in addressing real-world economic issues. These findings will provide the substance for the creation of an introductory macroeconomic syllabus based on the knowledge gaps students have regarding the GFC by “offering some general guidance, prompting questions to ask and suggesting batteries of possibilities to look for and lines of inquiry that may be fruitful” [Thornton, (2016), p.248].

The structure of the paper is as follows: Section 2 reviews the literature to improve teaching economics, especially introductory macroeconomics, as a result of the GFC. Section 3 presents and scrutinises the responses to a recent survey administered to introductory macroeconomics students at the University of Macedonia in Greece in signifying enhancements in teaching economics. Section 4 compares the literature review with the Greek students’ responses implying how macroeconomics should be taught

based on the knowledge gaps students have regarding the GFC. Finally, Section 5, concludes by providing suggestions and recommendations for the teaching of introductory macroeconomics after the GFC.

2 Improving teaching of economics after the GFC

A number of studies state that economics programs and professors need to reconsider their curriculums (Blinder, 2010; Friedman, 2010). One of the main criticisms has been that economics teaching has become too reliant on the single basic theoretical conception provided by neoclassical economics and its variants (Chable, 2012; Ötsch and Kapeller, 2010). Neoclassical economics attempts to understand real-world economic phenomena by adopting concepts and principles based on perfect rationality and optimising behaviour. However, empirical research has revealed that real-world economic phenomena are full of exceptions to such concepts and principles; consequently neoclassical theoretical conceptions of economics are inadequate (Lux and Westerhoff, 2009). Current introductory courses are often deemed insufficient as they do not succeed in preparing students for everyday economic realities. This is due to the focus on a single approach to conceptualising and dealing with economic problems, an approach which does not account for “the multi-dimensional, multi-faceted nature of economic reality” [Ghosh and Wolcott, (2014), p.230].

Chable (2012) provides further insight into the relevance of teaching neoclassical economics by arguing that concepts, principles and idealised problems of neoclassical economics amount to a medieval scholasticism that has been present in university economics programs. Over-reliance on formalised mathematical models is endemic to macroeconomics classes; however, though these models may help in predicting events in the classroom, they do not adequately forecast economic events in the real world. Neoclassical models do not account for a range of socio-economic variables. As a result, institutions of higher education have not been preparing students to make judgments on practical matters based on real-world issues. Instead, they have restricted students into formal reasoning based on models that are inadequate for dealing with real-world economic phenomena.

The questioning of how modern economics is taught has come from students of economics as well, sceptical about how well the discipline is able to explain economic realities (Figart, 2010). Many students feel that their learning, especially in macroeconomics, has provided little enlightenment about the economic crisis and its causes, including how the crisis may affect them personally (Shiller, 2010). Helping to mitigate this dissatisfaction, would result in students understanding the conceptual difficulties of being able to deal with real-world economic phenomena, while maintaining their interest in economics (Figart, 2010; Shiller, 2010). However, students are hoping for a teaching curriculum that will make economics more attuned to the world outside the classroom.

Numerous suggestions have been made for improving teaching economics in universities and colleges in response to the plentiful criticisms spurred by the GFC. Many of the recommendations are positioned into four sets of suggestions, though the suggestions may overlap somewhat and the fourth constitutes a kind of catch-all. With no pretence of exhaustive coverage, we examine these suggestions.

A number of recommendations respond directly to the complaint that there has been too much reliance on teaching neoclassical theory and its models. A pluralistic curriculum should be devised to reflect different main theoretical approaches to explaining economic phenomena, a so-called contending perspectives approach (Barone 2011). One claimed benefit of a more diverse curriculum is its ability to show students that what they are being taught is relevant to real-world issues (Resnick and Wolff, 2011). In addition, a pluralistic approach better excites economics students about the content. For example, teaching economic theories that both extol and oppose capitalism can effectively spur student interest in economics (Resnick and Wolff, 2011). Further, incorporating different worldviews can help hone students' critical skills as they evaluate different conceptual and theoretical approaches (Figart, 2010).

What is the aim of teaching economics in university courses? It is assumed that economics is taught in order to be more relevant to the world. To have more relevant real-world economics curriculum, non-neoclassical (heterodox) professors argue that economic professors need to adopt a pluralistic approach. On the one hand, if most professors see their role as training neoclassical economists to operate technical economic models in public policy, as econometricians in finance departments, or in large banks or consultancy companies, a pluralistic approach is not required. "Thus, pluralism is anathema, maintaining instead a resolute, monistic approach in which only methodological individualism is held to define economics. In this monistic intellectual environment, pluralism in economics cannot exist by definition" [Courvisanos, (2016), p.303]. On the other hand, if students want a critical thinking liberal education to understand real world economics better, then a pluralistic economic course would be more relevant and appropriate; such courses are not taught by neoclassical economics professors.

Ötsch and Kapeller (2010) expound on the reasons to take a contending perspectives approach by pointing out that economics is unlike physical sciences; it is not possible to discover general laws pertinent to all economic phenomena. As a social science, economics is subject to the idiosyncrasies of particular time and place, where general laws cannot be applied. Moreover, because of the manifold nature of the type of problems dealt by economics, a variety of perspectives are needed, employing a range of different approaches, both theoretical and empirical (Ötsch and Kapeller, 2010).

A second set of suggestions for improving economics pedagogy consists of revising the traditional quantitatively focused and model-heavy nature of economic courses to include more historical and qualitative ideas to broaden the context within which economics is taught. These recommendations can be viewed as a move toward pluralism but different from that discussed above. Shiller (2010), a rare critical neoclassical economist, advises professors to ensure that the curriculum includes regular reference to the history of economic thought so that students may understand the historical reasons for ideas conveyed and appreciate how inconclusive competing views may be. Passaris (2011) also argues for the importance of students understanding economic history and the history of economic thought and urges professors to place contemporary economic events into historical context. Passaris (2011) also maintains that the quantitative rigor that may sometimes be inappropriate for accounting for real-world economic events should be tempered by qualitative approaches that can more realistically and truthfully capture economic phenomena.

A third group of suggestions introduces specific characteristics of the economic environment to make what is learned in the classroom more pertinent to the

contemporary world. Rochon (2012) argues that actions of central banks during the GFC departed from conventional treatments of monetary policy; thus, it is clear that revisions must be made in the theory of money taught to students. For Friedman (2010), ideas to incorporate the real-world relevancy of economics instruction include: we live in a monetary economy, with credit determining aggregate demand; irrationality in financial markets and the uneven impact of economic events that do not follow textbook economics. Blinder (2010) suggests seven new topics related to the financial crisis that instructors should consider teaching: Risk premiums in interest rates, asset-market bubbles, securitisation, leverage, insolvency and illiquidity, systemic risk and too big to fail and moral hazard. However, he also emphasises that economics courses are already overloaded with information. Therefore, professors must make difficult choices regarding how much (if any) time to expend on new aspects regarding the theory of money and financial markets that increase the complexity economics class offerings; nevertheless, they are important for explaining the GFC.

A fourth group of suggestions stands alone from the other three. Garnett and Mearman's (2011) claim that given the complexity and uncertainty of economic matters, it is important to teach students to become flexible in their thinking. Baer (2012) finds fault in the vagueness and ambiguity in economics course offerings and suggests that a more precise use of language is needed in teaching economics. Gray and Miller (2011) told that economics textbooks should be revised in the light of the GFC. In particular, substantial coverage of the GFC should be added to texts, including its potential causes and policy responses.

3 What do students want to learn? A survey of Greek economics students

The results of a survey of university macroeconomics students about the economic crisis in Greece provide an opportunity to learn how students view the crisis, which can be used for teaching economics. The course was assigned to John Marangos with a predetermined textbook; and as such, there was little flexibility regarding the structure of the syllabus. Nevertheless, I tried to incorporate GFC issues and the impact of current economic events to the Greek people using macroeconomic tools. The questionnaire was distributed in hard copy during the last class.

As seen in Table 1, a total of 121 students (102 females and 19 males) from the University of Macedonia in Greece completed the survey. Since the percentage of male students is insignificant to the total, no gender-based comparison of findings is meaningful. Ages ranged from 18 to more than 27, though the majority (107) were 18–20 years old. A total of 107 were in the first year of their studies. Six students were in the second, the same percentage in the fifth year of studies; and two students were in the third year. None of the participating students were in the fourth year. Students were also asked to state their current employment status. The majority (112) were full-time students. Eight students were part-time employees with less than 30 hours work per week and only one student was a full-time employee with more than 30 hours work per week. In the question 'How would you describe the place where you grew up and lived' 75 students reported Thessaloniki (the second largest city of Greece and the base of the survey). Only two students were living in Athens (the capital) and four students reported that they grown and lived in some other big city. Twenty-two students had grown up in a

small city, while 18 students selected a country village. Importantly, regarding attendance, 78 students reported attending the macroeconomics classes between 80 to 100% of the time, while 26 reported attending 60 to 80% of the time. The demographic data is presented in Table 1.

Table 1 Demographics

<i>Questions</i>		<i>Percentage in parenthesis</i>
1 Please indicate your gender:	Total	121 (100.0)
	Female	102 (84.3%)
	Male	19 (15.7%)
2 Which age group do you belong to?	18–20	107 (88.4%)
	21–23	11 (9.1%)
	24–26	1 (0.8%)
	27 and more	2 (1.7%)
3 The year of course you are in:	First	107 (88.4%)
	Second	6 (5.0%)
	Third	2 (1.7%)
	Fourth	0 (0.0%)
	Fifth	6 (5.0%)
4 What is your current employment status?	Student	112 (92.6%)
	Part-time employment (< 30 hours per week)	8 (6.6%)
	Full-time employment (> 30 hours per week)	1 (0.8%)
5 What is the place where you grew up and lived?	Athens	2 (1.7%)
	Thessaloniki	75 (62.0%)
	Other big city	4 (3.3%)
	A small city	22 (18.2%)
	A country village	18 (14.9%)
6 How often during the semester were you on the course of macroeconomics?	0%–20%	2 (1.7%)
	20%–40%	5 (4.1%)
	40%–60%	10 (8.3%)
	60%–80%	26 (21.5%)
	80%–100%	78 (64.5%)

Note: Sample size: 120.

Source: Authors' data

Student responses are grouped into two sets: the first, according to the sources of GFC information and student perceptions about the GFC; while the second refers to the identifying responsibility of various economic actors regarding the GFC and the trust assigned to various economic actors in managing the GFC. For each group, we will indicate what the students' responses revealed and what they suggested about improvements required in teaching economics.

3.1 Students' responses about the GFC: sources of information and perceptions

Students were asked to report on:

- a their level of understanding of the GFC
- b their main sources of information about the GFC
- c whether they read any additional relevant information
- d what mostly influenced their attitude/perception toward the GFC.

The majority of students exhibited substantial confidence in their understanding of the reasons for the GFC in Greece. This was indicated by 86 students reporting having a good to perfect understanding, with all remaining (35) students having at least a basic understanding. More specifically, as presented in Table 2, three students stated that they have a perfect understanding, while 20 students stated that they know the reasons enough and 63 stated that they have a good level of knowledge. Thirty-five students considered their knowledge to be basic, while none of the participants stated that they know nothing about the reasons of the economic crisis in Greece.

When asked their main sources of information about the GFC only 42 students stated that the university was a main source. The most preponderant information source was television news (69 students); followed by the internet (52 students); family and friends (48); and newspapers (17). These results are somewhat troubling because television news and the internet often deal with newsworthy matters in a cursory and superficial manner. Furthermore, the combination of family and friends is also a questionable main information source. Rather than incorporating a high degree of valid information and reasoned argument, the opinions of family and friends about the crisis may often reflect substantially subjective filter and second-hand information and may include biases that are unobservable and unquestioned.

Further evidence of the students' relative lack of reliance on what would normally be considered the most accurate and reliable information sources about the Greek economic crisis were found in their responses when asked whether they read any additional information about the GFC. Forty students (almost one-third of the sample) indicated that they did not. Of those who read additional information, the most reported source by 58 students was online newspapers and blogs, while 21 read newspapers and news magazines. Only six students reported reading economics and finance newspapers or journals and only one indicated reading any economics-focused books. Again, the main sources for additional information were not the most authoritative, as the great majority of the students reported not having accessed relatively authoritative sources as economic newspapers, journals and books that might have afforded them a more in-depth understanding of the crisis.

Considered together, the responses to the two questions asking for the main information sources for the economic crisis indicate that for most students, the university courses and classes played a relatively small role as an information source about the GFC. This helps explain why, for most students, the responses indicated that the university studies also played a relatively small role in developing their perception regarding the GFC. When asked to report who or what had the most influence on their perception toward the GFC, 80 students responded family and friends. Though the university was reported by 26 students as a main determinant of their perception to the

GFC, television news and the internet were cited almost as much, with 23 responses respectively.

Table 2 Questions about the economic crisis in Greece (I)

<i>Questions</i>		<i>Percentage in parenthesis</i>	
1	How can you describe your level of understanding of reasons of the economic crisis in Greece?	Do not know anything	0 (0.0%)
		Know some basics	35 (28.9%)
		Have good level	63 (52.1%)
		Know them well enough	20 (16.5%)
		Know them perfectly	3 (2.5%)
2	What are your main sources of information about the economic crisis in Greece? (Multiple response question)	Family/friends	48
		University	42
		TV news	69
		Newspapers	17
		The internet	52
		Other	1
3	Do you read additional information/literature about the economic crisis in Greece? (Multiple response question)	Yes, newspapers and news magazines	21
		Yes, economics and finance newspapers and journals	6
		Yes, newspapers/blogs published online	58
		Yes, economics focused books	1
		No, I do not	40
4	Who or what influenced the most on your attitude to the economic crisis in Greece? (Multiple response question)	Family/friends	80
		University	26
		TV news	23
		Newspapers	3
		The internet	23
		Other	1
5	How did the economic crisis in Greece influence on you personally?	Not at all	1 (0.8%)
		Slightly	17 (14.0%)
		Fairly	58 (47.9%)
		A lot	26 (21.5%)
		Very much	19 (15.7%)

Note: Sample size: 120.

Source: Authors' data

Given these results, it is apparent that although the surveyed students were studying macroeconomics, most did not consider what they learned at the university to be a main source for their understanding of the GFC and the economic crisis in Greece. Furthermore, more than three-quarters of students did not view their university classes as providing a basis for their attitudes toward the crisis. It is doubtful that the results were because of lack of attendance at their macroeconomics classes, as their responses

indicated that most attended at least 80% of the time. A second possible explanation for the results was a degree of apathy among the students, with many simply not being very curious about how class learning might help explain aspects of the crisis. However, this too seems doubtful since 103 students reported that the crisis had affected them from a fair amount to very much. Thus, it is probable that the crisis was of personal interest to most students. More specifically, 19 stated that the economic crisis affected them very much; while 26 stated that they have been affected a lot. The majority of the sample (58 students) stated that the economic crisis in Greece influenced them fairly, while 17 students stated a slight influence on them personally. Only one student reported not at all influenced by the GFC.

This leaves the reason for the detachment between learning in macroeconomics classes and the real-world economic drama: that they found inadequate information in their classes to help them understand the GFC. The theory and content of the Greek students' university macroeconomics classes may have been viewed as being of little service in explaining the real-world economic crisis as it unfolded. If there were potential connections with the crisis, which could have been made in their economics classes, it seems likely that they were not actually made or were made poorly.

The responses to these survey questions indicate that there is a need for improvement in the economics curriculum. We must make what is learned in economics classes more relevant to students' lives by showing how it helps explain real-world economic events. This conclusion is broadly in agreement with the views discussed in the literature review section. However, it cannot be concluded from the survey results alone; what is most needed to make economics classes more relevant, suggested by the literature review, is a multiple-perspectives approach, broadening the curriculum to include more historical or qualitative approaches and including particular topics as being especially relevant to new economic issues. It can be concluded that more effort must be made to review carefully the content of economics classes and ensure that what is being taught is sufficiently connected to actual economic phenomena. It is incumbent on economics instructors to strive to ensure that students are becoming aware of how the concepts and principles being taught are useful in explaining current real-world economic phenomena that affect their lives. It is likely that in many cases, this will require overhauling class content focusing not just on critical rigor, but also demonstrating relevance.

A second need for improvement, also strongly suggested by the survey results, is focused on sources of information regarding perceptions for the GFC. Here, there is a double-sided need. First, it may be necessary to educate economics students on the intellectual dangers of relying too heavily on television, the internet, or friends and family for forming an economic opinion, given the results of the survey. Traditionally, educating students about the relative reliability and validity of information sources in general is left to speech, rhetoric, or logic courses. However, the explosion of today's information sources and modalities has led to an increasing plethora of voices, many of them non-authoritative, on virtually every subject, including economics. It is too easy for students to never gain perspective on those voices, as most likely with many of the Greek students surveyed. Thus, it seems wise for the economics professor to offer at least a class period to teach the vital importance of being selective in the voices one listens to in trying to understand economic phenomena. Consequently, there is a need to schedule time for encouraging economics students to become familiar with and make use of expert sources of information and commentary, especially pertaining to the GFC. Going further

and creating assignments requiring students to access periodicals, journals and books with reliable information could provide students with 'hands-on' experience.

3.2 *Students' responses about the GFC: responsibility and trust*

A second group of survey questions that are of special interest asked students to report their view about:

- a the various formal institutional structures responsible for the GFC
- b how these structures were managing the crisis; and whether they trusted the formal institutional structures assigned in managing the GFC.

Several patterns were evident in these responses. As data are presented in Table 3, in the question 'How positive or negative would you say the contribution of the following has been in managing the economic crisis in Greece?', 55 students believed that the contribution of the European Union (EU) was mostly negative or very negative; 30 believed that its contribution was mostly to very positive; and 36 believed its contribution had been neither positive nor negative. In particular 19 students stated that the contribution of the EU in managing the economic crisis was very negative; while 36 characterised the contribution mostly negative and 24 believed it was a positive contribution and six a very positive contribution.

Concerning the Greek political system and its contribution to the economic crisis, 44 students believed that it played a very negative part, while 38 students stated that it had a mostly negative part. Ten students recognised a mostly positive contribution and four a very positive contribution; 25 students acknowledged neither a positive nor negative role. The International Monetary Fund (IMF) had a very negative contribution to the Greek economic crisis according to 31 students. Mostly negative was the contribution of the IMF according to 47 students. On the contrary only eight and six students respectively, found the IMF's contribution to be mostly positive and very positive. Twenty-nine students found the IMF's contribution to be either positive or negative to the management of the economic crisis in Greece.

Finally, students were asked to evaluate the contribution of the European Central Bank (ECB) in the management of the Greek economic crisis: 18 students characterised its contribution very negative, while 18 students found its role as mostly positive. Thirty-nine students recognised a mostly negative contribution of the ECB, while only five students found its role to be very positive. Forty-one students selected a neither positive nor negative role for the ECB.

A second pattern characterising the students' responses was an underlying pessimism. This was evidenced that for all the formal institutional structures named – the Greek political system, Greek banks, the EU, Germany and the IMF – most students considered the formal institutional structures to be moderately to extremely responsible for the economic crisis. More specifically in the question "Who is to blame for the economic crisis in Greece? How responsible for the economic crisis in Greece would you say each of the following is?" Only one student found the Greek political system and Greek banks not at all responsible; two students that the EU is not at all responsible according; and Germany, not at all responsible, ten students; while three students found the IMF not at all responsible.

Data in Table 3 show that only three students characterised the Greek political system slightly responsible; while five students found the Greek banks to be slightly blamed, with nine finding the EU to be slightly blamed. Germany was also found to be slightly responsible by 12 students, with the IMF by 17 students. Somewhat or rather responsible was the Greek political system by eight students; Greek banks by 35 students; and the EU by 37 students; Germany by 29 students; and the IMF by 21 students. Twenty-two students believed that the Greek political system is moderately responsible, with 87 students blaming it as extremely responsible. Greek banks were found to be moderately responsible by 51 students and extremely responsible by 29 students. Forty-one students considered the EU moderately responsible, while 32 found it extremely responsible. Responses for Germany followed the same pattern with 36 students believing it moderately responsible and 34 students finding it extremely responsible. Finally, 34 students found the IMF to be moderately responsible and 46 students found it to be extremely responsible.

Pessimism was also reflected in asking students how positive or negative they felt about how well various formal institutional structures had managed the crisis. For all of the formal institutional structures named, no less than 55 students and as many as 82 students, indicated that they were mostly to very negative.

A third pattern of responses was that a large percentage of students offered no clear opinion. For example, more than one-third (41) were neither positive nor negative about the contribution of the ECB to managing the economic crisis; and 51 students indicated that they did not trust the ECB to manage the crisis. Data presented in Table 3 show that in response to the question asking students how much they trusted the ECB to manage the financial crisis to an eventual exit, 34 students stated that they do not trust it at all and 18 said that they mostly do not trust it; while five students mostly trust the ECB; while only three students trust it a lot.

This failure to take a stand was also evidenced by responses to other survey questions. For example, 37 students neither agreed nor disagreed that austerity measures were necessary for national survival; and 41 neither agreed nor disagreed that the crisis could be an opportunity for Greece to move forward. Forty-one students disagreed that the austerity measures are necessary for national survival, while 15 strongly disagreed. On the contrary, 24 students agreed, with four strongly agreeing. That the economic crisis can be an opportunity for Greece to move forward: 27 students agreed and 8 students strongly agreed. Twenty-eight students disagreed about seeing the economic crisis as opportunity for Greece, with 17 students strongly disagreeing.

We view these patterns in the students' responses as indicative of problems in teaching economics. The wide range of responses to some items suggests that students were influenced by many different narratives about the crisis and its causes. Thus, it seems unlikely that they received a consistent narrative from their classes that could have enabled them to sort through various opinions about the crisis and come to view it from a single rational standpoint. This was indeed suggested by the many students who did not report the university as a main information source for understanding the crisis. Instead, many were held hostage to the varying and often probably conflicting commentaries from television, the internet and friends and family. In brief, many students apparently had no authoritative critical framework with which to evaluate what was happening in the crisis.

Table 3 Questions about the economic crisis in Greece (II)

Questions	Very negative	Mostly negative	Neither positive nor negative	Mostly positive	Very positive	
1 How positive or negative would you say the contribution of the following has been in managing the economic crisis in Greece?	The European Union	19 (15.7%)	36 (29.8%)	24 (19.8%)	6 (5.0%)	
	Greek political system	44 (36.4%)	38 (31.4%)	10 (8.3%)	4 (3.3%)	
	International Monetary Fund	31 (25.6%)	47 (38.8%)	8 (6.6%)	6 (5.0%)	
	European Central Bank	18 (14.9%)	39 (32.2%)	18 (14.9%)	5 (4.1%)	
2 Who is to blame for the economic crisis in Greece? How responsible for the economic crisis in Greece would you say each of the following is?	<i>Not at all responsible</i>		<i>Slightly responsible</i>	<i>Moderately responsible</i>	<i>Extremely responsible</i>	
	Greek political system	1 (0.8%)	3 (2.5%)	8 (6.6%)	22 (18.2%)	87 (71.9%)
	Greek banks	1 (0.8%)	5 (4.1%)	35 (28.9%)	51 (42.1%)	29 (24.0%)
	European Union	2 (1.7%)	9 (7.4%)	37 (30.6%)	41 (33.9%)	32 (26.4%)
	Germany	10 (8.3%)	12 (9.9%)	29 (24.0%)	36 (29.8%)	34 (28.1%)
	International Monetary Fund	3 (2.5%)	17 (14.0%)	21 (17.4%)	34 (28.1%)	46 (38.0%)
3 For the management of, and the exit from, the economic crisis in Greece, how much do you trust:	<i>Do not trust at all</i>		<i>Mostly do not trust</i>	<i>Mostly trust</i>	<i>Trust a lot</i>	
	European Central Bank	34 (28.1%)	18 (14.9%)	51 (42.1%)	15 (12.4%)	3 (2.5%)
	Greek political system	56 (46.3%)	42 (34.7%)	17 (14.0%)	6 (5.0%)	0 (0.0%)
	International Monetary Fund	39 (32.2%)	41 (33.9%)	29 (24.0%)	11 (9.1%)	1 (0.8%)
	The European Union	29 (24.0%)	21 (17.4%)	45 (37.2%)	21 (17.4%)	5 (4.1%)
	Troika	68 (56.2%)	31 (25.6%)	14 (11.6%)	7 (5.8%)	1 (0.8%)
4 To what extent do you agree or disagree with each of them?	<i>Strongly disagree</i>		<i>Disagree</i>	<i>Agree</i>	<i>Strongly agree</i>	
	The austerity measures are necessary for our national survival.	15 (12.4%)	41 (33.9%)	37 (30.6%)	24 (19.8%)	4 (3.3%)
The crisis can be seen as an opportunity for Greece to move forward.	17 (14.0%)	28 (23.1%)	41 (33.9%)	27 (22.3%)	8 (6.6%)	

Note: Sample size: 120.

Source: Authors' data

This implication is also suggested by most students blaming all formal institutional structures responsible. This is further implied by the students' lack of commitment to take a clear stand, positive or negative, on many responses. Both the wholesale negativity and the high lack of commitment suggest a dearth of critical thinking about the crisis among many students. Critical thinkers about economic issues are likely to make distinctions between the relative values and responsibilities of different formal institutional structures.

These considerations again suggest the importance of teaching economics to find ways to connect what is taught with real-world economic phenomena. The Greek students need to be taught the different roles of formal institutional structures in relation to the crisis in order to sharpen their ability to critically evaluate them. This suggests that economics students need to be taught the distinctions between the roles played by the various economic institutions that determine economic policies and phenomena that affect them. This, combined with theory, would help provide a framework that students could use to critically evaluate the roles of these institutions in determining economic realities. At the same time, professors could provide exercises and discussions related to real-world events that help sharpen students' critical skills.

4 Improving the teaching of introductory macroeconomics after the GFC: literature review versus Greek students' survey responses

The brief literature review and the analysis of responses to the Greek macroeconomics student survey each provide suggestions for improving economics pedagogy in institutions of higher education. The common identified improvement for both is to make teaching economics more relevant to real-world economic events. Four sets of recommendations, based on the literature review for improving teaching economics following the GFC, have been made. Interestingly, the recommendations that arise from the survey differ from those we found in the literature. Table 4 compares the recommendations.

In this setting, the GFC should predictably cause not only a change in the teaching content of economics but also a rethinking in the focus of economics textbooks, as students and economic reality demands this adjustment. The GFC provides vast opportunities for textbook writers to excite students about economics. Economic crisis always has impacted textbook writing. For example, the 1970s oil crisis transformed economic theory from demand-side to supply-side, based predominantly on monetarism undermining Keynesianism that was also reflected in textbooks; the Keynesian cross model gradually gave way to the AS-AD model [Madsen, (2013), p.198]. Indeed, some textbooks reject Keynesian analysis all together. Then again, "I think it is pretty hard to explain most governments' responses to the crisis and recession without a healthy dose of Keynes" [Blinder, (2010), p.386]. The approach taken by Blinder (2010, p.385) 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...what went wrong" according to Blinder (2010, p.390). Consequently, it appears that the GFC does not require the development of a whole 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), pp.204, 206, 209]. Madsen (2013, p.213) analysed 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, p.212) concludes that all 12 textbooks remain, in various degrees, inadequate in incorporating the GFC with an effective pedagogical focus, as does the overall teaching of introductory macroeconomics. The survey results of this paper provide necessary information to economic textbook publishers and to textbook authors to heighten awareness on expanding GFC coverage in the next textbook edition.

Table 4 Improving the teaching of introductory macroeconomics after the GFC: literature review versus Greek students' survey results

<i>Literature Review</i>	<i>Greek students' survey</i>
Making teaching economics more relevant to real-world economic phenomena.	
<ul style="list-style-type: none"> • Establish a contending perspectives curriculum by expanding course material beyond the traditional focus on neoclassical theory and its models by including alternative theoretical approaches to economic phenomena. • Expand the curriculum beyond quantitative, model-driven approaches to include economic history, the history of economic thought and more qualitative approaches in order to increase the ability of economics classes to account for real world events. • Introduce new concepts and principles into the economics curriculum regarding the theory of money and financial markets that GFC has shown important for explaining today's economic realities. • Increasing the flexibility in students' economic thinking and sharpening up the language used in economics classes. 	<ul style="list-style-type: none"> • Teach students the dangers of relying on non-authoritative sources (television, the internet, or friends and family) for interpretations of economic events. • Introduce students to authoritative sources and encourage their use by assignments requiring students to access periodicals, journals and books with reliable information. • Provide a better critical standpoint by explaining the crucial roles of formal institutional structures that determine economic realities. • Teach students to think critically about economic phenomena.

Can the real-world be appropriately combined with neoclassical theory? In fact, it can be argued that given the inadequacy of the theoretical structure of neoclassical economics, it would be impossible (except superficially) to have competing views included. Howard (2016) demonstrates that neoclassical economics is highly resilient to non-neoclassical challenges not only in teaching economics, but also in policy as the short-lived stimulus was followed by austerity in addressing the crisis. In addition, neoclassical economics has a vested interest in not engaging in pluralism. Nevertheless, "the restructuring of the economic discipline along pluralistic lines requires the mainstream practitioners to come on board" (Stilwell, 2016). Economics pluralism means observing economic phenomena from multiple and diverse methodological perspectives; consequently, economic pluralism includes neoclassical economics along with other major schools of economic thought (Courvisanos, 2016).

5 Conclusions

Many suggestions for improving teaching economics have been made in this paper, arising from the review of literature and most importantly discovered by our analysis of a Greek economics student survey. What both sources clearly find is that economics as taught must become – and must be seen by students as becoming – related to actual economic events and other economic phenomena that occur in today's world. Several suggestions for doing so are listed in Table 4.

Concluding, we will concentrate on two of the recommendations – one from the literature and one from the survey analysis – that we believe are required for the improvement of teaching economics and particularly introductory macroeconomics. From the literature, we derive the recommendation to revise the curriculum to include important concepts, principles and processes that the economic crisis has clearly demonstrated are at work in today's world. Which of these should be added and how to insert them into the current curriculum is a matter of debate. But it seems clear that it must be done if what is taught in classes is to be relevant to today's world.

The other suggestion arises from our survey responses. This recommendation is to emphasise to economics students the crucial difference between authoritative sources that possess actual expertise in economic thought and judgment and non-authoritative sources that together amount for the cacophony of voices that often only confuse. In a world in which information and attendant commentary is increasing at prodigious rates, we feel that economics professors must view themselves as necessary arbiters. Professors should teach their students how to opt out of the cacophony by becoming familiar with, respecting and accessing resources that can help provide clarity in the difficult yet fascinating and inestimably valuable discipline of economics.

Further research suggests following the students as they advance in upper level economics courses. It would be interesting to see if the authoritative sources improved as they advanced through higher level economics.

Acknowledgements

We thank Olena Yehorova for the excellent research assistance provided. We are also appreciative of the reviewers' comments and the editor's constructive advice.

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