

Research Reports

Adolescents' and Young Adults' Naïve Understandings of the Economic Crisis

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Abstract

Over the last decade, Financial Literacy (FL) and interventions aimed at improving it, that is Financial Education (FE), have been the focus of increased attention from economists, governments, and international organizations such as the world Bank and OECD, but much less by scholars in the fields of Learning and Instruction. We examined open-ended written answers on the causes of the economic crisis that started in 2007-2008, as given by 381 Italian secondary school and university students, and 268 Swiss Italian-speaking secondary school students. Most Italian students mentioned internal political causes (i.e., corrupt politicians or inefficiency of the government), whereas Swiss students mentioned banks more often. International factors were rarely mentioned by either group, and explanations were generally very poor, listing a few causes without making connections between them. These findings indicate the need for economics education aimed at making people more knowledgeable of the workings of the economic system and the effects of financial systems on the real economy.

Keywords: Financial Literacy, lay explanations, student's conceptions, economic crisis, secondary school, university students, Financial Education

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Since the beginning of the twenty-first century there has been an upsurge of interest in the fields of Financial Literacy (FL), recently defined by the Organization for Economics Co-operation and Development (OECD, 2016, p. 85) as the “knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life” and Financial Education (FE), intended as interventions aimed at fostering FL.

A further burgeoning took place after the financial and economic crisis began in 2007-2008. The number of studies on FL have increased (see Atkinson & Messy, 2012; Lusardi & Mitchell, 2014; OECD, 2014), as have the interventions of FE promoted by international and national public organizations (e.g. Australian Securities

and Investments Commission, 2003; OECD, 2005; U.S. Department of the Treasury, Office of Financial Education, 2006; World Bank, see Carpena, Cole, Shapiro, & Zia, 2015). There are also financial firms (e.g., VISA, 2015) and private organisations and networks that have been dedicated to economic education for several decades (e.g., Junior Achievement, <https://www.juniorachievement.org>) or which have been established in the last few years with the mission of enhancing the financial capabilities of children and youth (e.g., Children & Youth Finance, <http://www.childfinanceinternational.org>).

Schools are becoming increasingly involved in FE: at least twenty-one countries have implemented FE programmes in schools (Russia Trust Fund, 2013), and in some states (e.g., UK, USA, see Pang, 2010) various aspects have been incorporated as a statutory part of the National Curriculum. However, the education and learning sciences community seems to be scarcely aware of, or interested in, this issue. With few exceptions (e.g., Davies, 2015; Marchetti, Castelli, Massaro, & Valle, 2016; Pang, 2010), all papers on this topic have been published in economics, business, or financial journals.

Concern for the level of FL and initiatives aimed at its improvement have been stimulated by the conviction that a “lack of financial literacy was one of the factors contributing to ill-informed financial decisions and that these decisions could, in turn, have tremendous negative spill-over” (OECD, 2013) and that higher levels of financial literacy will improve economic growth and help to reduce poverty in all economies (OECD, 2005, p. 35). The lack of FL has recently been testified by the results of the PISA 2012 survey of 15-year-olds from 13 participating OECD countries, which showed that “only one in ten students, on average [...] can analyze complex financial products and solve non-routine financial problems. They show an understanding of the wider financial landscape, such as the implication of income-tax brackets and can explain the financial advantages of different types of investments” (OECD, 2014, p. 34).

In addition of the definition of FL proposed by OECD (2016) presented above, there are other numerous and various implicit and explicit definitions. An examination of how financial knowledge is operationalized in questionnaires measuring FL shows that it falls into four categories: budgeting, saving, borrowing and investing, which comprise an understanding of money, interest, and risk (Remund, 2010).

Several scholars have criticized FE, and the underlying concept of FL, highlighting its limitations or challenging its premises. According to some authors (see, for instance, Bernanke 2006; Lusardi & Mitchell, 2014) many FE interventions have been successful in terms of both increased financial understanding and its effects on financial outcomes. However, according to a recent meta-analysis of the relationship between FE or FL, and financial behaviours, “financial education as studied to date has serious limitations that have been masked by the apparently larger effects in correlational studies.” (Fernandes, Lynch, & Netemeyer, 2014). Lauren Willis (2008) has examined the knowledge and skills necessary for making sensible financial decisions, concluding that they are too complex to be provided by a FE program. Those programs are therefore likely to have the adverse consequence of increasing consumers' self-confidence and over-optimism about financial risks. According to Willis (see also Williams, 2007) FE appears to be an alternative to regulatory interventions on financial markets. Rather than empowering consumers, as its proponents claim, this policy makes them responsible for the consequences of their financial choices, leaving financial firms free to sell risky or even toxic financial products.

Other authors stress that FE is based on too narrow a view of what FL means - a view focused only on the knowledge and skills needed for consumers of financial products, disregarding those necessary for citizens to

participate in the financial and economic policies of their country, as the electorate or as persons more deeply committed to political activities. The strongest criticisms are delivered by those who “view FE as responding to the interests of the states and firms in expanding consumer markets for financial products, and as facilitating a shift from the state to the individual of responsibility for personal economic security.” (Williams, 2007, p. 227; in the same vein see Arthur, 2012).

Focusing on citizens instead of consumers widens the scope of the definitions FL and FE. These definitions should include an understanding of the behaviour of financial systems and the role of banks or governments in their operations (e.g.: Davies, 2015), leading to FE being seen as part of an integrative concept of economic education (Arthur, 2012; Mittelstaedt, Lutz, & Wiepcke 2013; Remmele & Seeber, 2012). For instance, Mittelstaedt et al. (2013) propose that the history of financial crises, the social and political consequences, and the different measures taken by governments to face them, should be included in the secondary school social science curriculum, integrated with other disciplines (such as civic education, mathematics, history).

Planning and delivering effective teaching of these topics requires a wide knowledge base about learners' conceptions, as is the case in other school subjects (see Vosniadou, 2013, for reviews of students' conceptions of traditional school subjects and how they affect learning), but there is a dearth of research in students' conceptions of economics and, more generally, society (see Berti, 2005; Lundholm & Davies, 2013; Webley, 2005, for reviews). Surveys of FL are numerous and broad (see World Bank, 2013 for a review), but they have examined a limited range of topics, mainly regarding financial services and products, rather than the workings of the financial system or its components. A few studies on children's understanding of banking were conducted before the deregulation of banks in the last decade of 20th century, which brought about radical changes in the structure and operation of banks (see Stiglitz, 2010 for USA; Gual, 1999 for European countries). These studies have shown that several adolescents do not understand how a profit can be realized through the difference between loan and deposit interest (see Berti & Monaci, 1998; Webley, 2005 for reviews). This suggests that the more complex operations permitted by deregulation are far beyond what ordinary people can envisage.

The only studies that, although indirectly, have investigated ordinary people's conceptions of the operations of the financial system are those that have examined lay perceptions or explanations of the 2007-2008 crisis. They are rather heterogeneous studies, conducted independently of each other and involving adults in diverse countries such as France, the USA, Russia, Germany, Israel, and sub-Saharan Africa (Leiser, Bourgeois-Girone, & Benita, 2010), Ireland (O'Connor, 2012), and France (Roland-Lévi, Pappalardo Boumelki, & Guillet, 2010). Only Aprea (2015; Aprea & Sappa, 2014) examined secondary school students (from Germany). A broad on-line research, promoted by the Association of European Economic Education (AEEE), addressed to 17-19 year old European students (from Italy, Austria, Germany, Ireland, France and UK) is still continuing (<http://www.economiceducation.eu/research/student-survey-on-the-economic-crises>), although some results collected in 2012 have been summarized by Weber (2013).

Although an account of the crisis is beyond the scope of the present paper, before examining the results of the above studies, we will provide a brief outline of the economists' explanations. These explanations refer to a complex sequence of actions, involving different actors, such as political authorities, financial enterprises, banks, firms, and ordinary people. The events and processes resulting in the 2007-2008 financial crisis were legislative acts (such as the laws deregulating financial institutions); the creation of new financial products (e.g., mortgage securitizations and their bundling in *Collateralized Debt Obligations*; *Credit Default Swaps*); increased

interest rates; the inability of homeowners to meet mortgage payments; the repossession and selling off of houses by lenders, resulting in slashed prices and foreclosures; the collapse of banks holding “toxic” products, or state intervention to save them; the fall of stock markets around the world. The impoverishment of people who lost their houses, and the reduced credit available to businesses and families, caused the crisis to spread to other economic sectors, through a vicious cycle of reduced consumption and the collapse of production and employment (see [Baily, Litan, & Johnson 2008](#); [Stiglitz, 2010](#); [Weber, 2013](#)).

With the exception of [Aprea's](#) studies, conducted using semi-structured interviews, investigations into lay perceptions or explanations of the 2007-2008 crisis asked participants to mark on a Likert-scale their degree of agreement with statements describing possible causes of the crisis - such as, for instance, capitalism, the stupidity of decision-makers ([Leiser et al., 2010](#)); self-serving motives of politicians, the greed of individual bankers, self-interested actions by the general population ([O'Connor, 2012](#)); the globalization of production and import, actions by the national government (AEEE, ongoing) - or their attitudes about the crisis ([Roland-Lévi, Pappalardo Boumelki, & Guillet, 2010](#)). Factor analyses highlighted different and heterogeneous factors. Some factors referred to individual characteristics of economic actors, including the immorality of economic players and stupidity of decision makers ([Leiser et al., 2010](#)) and materialistic culture, extravagant life styles of ordinary people ([O'Connor, 2012](#)). Others factors referred to impersonal, structural processes, such as economic trends beyond anyone's control, dependence on the economies of other countries ([O'Connor, 2012](#)), capitalism, globalization, and the complexity of the economy ([Leiser et al., 2010](#)). Although these data give a glimpse into how people perceive the crisis, they do not reveal what explanations came spontaneously to their minds, nor whether and how they interweave different causes in complex explanations.

[Aprea \(2015\)](#), who tapped spontaneous explanations, scored the answers in terms of their elaborateness, that is whether or not a certain component of the crisis (i.e., onset, causes, progression, impact), was mentioned, and in what detail. Elaborateness turned out to be generally low. Although most participants mentioned subprime crises as the origin of the financial crisis, “only about 35% mentioned spill-over effects to the banks, and only six students could explain the interbank transfer mechanism. Potentially detrimental features of innovative financial products, such as the securitization of accounts, were only stated in three cases, and more systemic reasons such as deregulation, over-leveraging, incorrect pricing of risk, or inherent instabilities of financial capitalism were not mentioned at all.” ([Aprea, 2015](#), p. 18).

These results suggest that open-ended questions can give a different glimpse of lay people's explanations of the crisis by highlighting which factors they represent and how, and which factors are missing or misinterpreted. On these grounds, we aimed to enrich the picture of students' spontaneous explanations of the crisis starting in 2007-2008 with a study conducted using open-ended questions, involving a large group of participants, and comparing students from different countries (Italian vs Swiss), with and without economic education. For this reason, we asked students to write their answers to broad open-ended questions. In order to draw a detailed picture of students' views, we first identified and described the types of causes mentioned, then we examined whether and how they were connected. This study was exploratory and did not test specific hypotheses. However, given the results of the reviewed studies above, the complexity of the financial system and the sequence of events resulting in the crisis, we expected to find very superficial answers from the participants without economic education. That is, we expected answers to mention the events closest to everyday experience (for instance, increased unemployment, the inefficiency of the political system), without linking them

to more remote events (such as laws deregulating financial institutions), and the operations of the international financial system.

Method

Participants

As Table 1 shows, the study involved a total of 649 secondary school (grades 10th and 12th) and university students, 381 Italians (from Milan, Padua, Rome, Florence, L'Aquila) and 268 Swiss (from Lugano, in the Italian speaking region of Switzerland). Females accounted for 49.8% of the sample. The mean age of secondary school students was 17.61 years ($SD = 1.710$) and the mean age of university students was 20.16 years ($SD = 2.689$). The majority of Italian students ($N = 222$, 58.27%) attended secondary schools. More than half ($N = 141$, 63.5%) were enrolled in a school specialized in business and economics, called "Administration, Finance and Marketing", the others in a Liceo Scientifico, where economics is not taught. Among the university students ($N = 159$, 41.73%) about one third ($N = 56$, 35%) were attending a Bachelor of Economics course, whereas the others were studying for a Bachelor of Education or Humanities.

Table 1

Sample Description

Education	Italian students ($N = 381$)								Swiss students ($N = 268$)			
	Secondary school ($N = 222$)				University ($N = 159$)				Secondary school			
	Male		Female		Male		Female		Male		Female	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
With economic education	74	52,5	67	47,5	35	62,5	21	37,5	49	31	108	69
Without economic education	44	54	37	46	20	19	83	81	104	94	7	6

The majority of Swiss students ($N = 157$, 59%) attended a Cantonal School of Commerce that provides a solid general education, in particular in business, administration, economics and law. The rest of the Swiss participants ($N = 111$, 41%) were recruited from a School of Arts and Crafts, where we specifically selected the following professional profiles: mechanical, computer, chemical and electrical. Although in the whole sample there was more or less the same proportion of male and female students, this was not the case in the subgroups. For this reason, gender comparisons were not made.

Questionnaire

Students were given a two pages questionnaire. At the top they had to indicate their school level, gender and age. The first question for the Italians was: 1) "You know that Italy is going through a severe economic crisis. What do you think are the causes of this crisis?". The rest of the page was left for writing the answer. This question was slightly different for the Swiss participants, as Switzerland was not undergoing a financial and economic crisis directly, but was indirectly affected by the Eurozone crisis. Therefore, the first question was worded in the following way: "You may know that various European nations, and in part also Switzerland, are

going through a severe economic crisis. What do you think the causes of this crisis are?” The second page contained two questions, each followed by about half a page for the answer: 2) “What could the government do to cope with the crisis?” (in the Swiss version the questions referred to “the Swiss Government and other European Governments”; 3) “Do you feel that this crisis has had any effects on your daily life? If yes, in what way?” The current paper presents only the answers to Questions 1 and 3.

All students completed the questionnaire in the classroom, and had about 45 minutes to perform this task. The data were collected between March and June 2013, a little after the early national election in Italy (which took place at the end of February) and a hot electoral campaign, and during the formation of the new government (settled on April 28th), or some weeks later.

Scoring

There were two levels of scoring. The first consisted in classifying the answers in a coding scheme constructed inductively by two coders who examined a sample of 100 questionnaires in order to identify categories of perceived causes (Question 1) and personal impact (Question 2). Although we had expectations about students' answers, a bottom-up procedure seemed to ensure a better fit of coding categories to students' answers than a top-down procedure. The coders read the answers independently and underlined words or sentences that seemed to express distinct concepts, and listed a first set of possible categories. They then compared and discussed the categories proposed, decided which could be merged or split, and prepared a scoring manual with the name and description of categories. The second level of scoring involved only Question 1, and was carried out on the answers indicating two or more causes. Whether these causes were only listed or were linked to one another was analysed, and the number of linked causes counted. A judge scored all the questionnaires. A second judge scored a sample of 100 questionnaires. Inter-coder agreement ranged from $k = 0.72$ to $k = 1$, which, according to Fleiss's (1981) guidelines (k over 0.75 as excellent), is to be considered as reliable.

The causes of the crisis were coded in the following categories (the numbers in brackets are the percentage of participants in the total sample – both Italian and Swiss – who gave responses in the various categories, in descending order).

- *Inefficiency and responsibility of the government or politicians* (53.7%). Answers refer to corruption or inefficiency and incompetence (or both). E.g.: “Bad government, too much egoism in the management of financial resources”; “Politicians are corrupt and incompetent”.
- *Reduced purchasing power* (23.1%). Answers refer to the drop in consumption due to poverty or the increased cost of living, or inflation.
- *Banks* (18.6%). Answers range from mentioning banks or speculation only, to blaming banks for lending money excessively, to describing the collapse of Lehman Brothers.
- *Unemployment or wage cuts* (18.2%). This category also includes answers referring to bankruptcy in business.
- *International factors* (15.9%). Answers refer to USA, “international causes”, multinational corporations.
- *Tax fraud /evasion* (12.9%): Answers refer to tax evasion by common tax-payers as well as undeclared work by employers.

- *Over-taxation* (12.7%). Answers refer generically to excessive, or too many, taxes, or to specific taxes for citizens or companies (e.g. “the government are putting so much tax on work”).
- *Public overspending* (11.9%). Answers refer to the Government's excessive expenditure generally, or to specific expenses such as the salaries of PM being too high, chauffeur services, personal privileges (i.e. free passes for highways / rail / sea / air), financing political parties, and the cost of Public Services.
- *Public debt* (9.5%). This includes answers which simply mention the public debt and those regarding it as a cause of increased taxes.
- *Inadequate behaviour of consumers, businesses* (9.3%). This category refers to behaviour in terms of reduced consumption because of exaggerated fears on the part of consumers, misguided investments by citizens and/or businesses and companies, and the reduced flexibility and adaptability of citizens in the new situation.
- *European Union and Euro* (8.9%). The European Union and the Euro are simply mentioned, or their negative impact is attributed to increased prices.
- *Social causes* (8.7%). This refers to causes involving people in general or criminal groups, such as egoism, criminality, corruption, a decline in moral values. E.g.: “People are egoistical and give in to, or seek out the Mafia for help. Corruption is everywhere, not only in the political system”.
- *Globalization* (7.3%). This includes answers mentioning the words “globalization”, or “delocalization”, or referring to international competition and its consequences on salaries and business.
- *Immigrants* (4.9%). Reference is made to “foreigners”, “immigrants”, “non-EU citizens” and, in Switzerland, cross-border workers.
- *Increased economic inequality* (4%). E.g.: “Now the poor are getting poorer, and the rich are getting richer”.
- *Private debt* (2.4%). This refers to the increased debt of citizens or companies and businesses.
- *Don't know* (3%). This includes answering “Don't know” and not answering at all.

In addition, a variety of other factors were mentioned by less than 2% of participants. Among them there were the increased spread, overproduction, inefficiency of the school system, depletion of raw materials, the older retirement age, the collapse of capitalism, and the failure of liberalism. These factors were scored as *Others* (23.3%).

If a factor was identified in a subject's answer, it was scored 1, otherwise 0. Each factor was coded only once for each subject, even if it occurred more than once in his or her answer. For instance, if an answer mentioned MPs' privileges and high salaries, and the cost of the political system, it was scored 1 in the category *Public overspending*.

The answers regarding the impact of the crisis on personal life were coded (as 1 or 0) with respect to the following categories:

- *Effects on self and family* (53%), such as having to cut expenses for leisure activity (cinema, restaurants, holidays, music) and even necessary goods.

- *Social effect* (33.6%), perceived directly, or known through the media, such as factories or hospitals having to close, people losing their jobs or barely able to make ends meet.
- *Concern for future work* (12.7%), expressed in personal terms (e.g.: “Without this crisis, I certainly would find a job”) or as a member of a cohort (“There are hardly any opportunities for us young people to find decent jobs”).
- *Concern for one’s own future* (10.5%), expressed in generic terms, without mentioning a job (e.g.: “This crisis affects the way I look at the future”).
- *Emotional effects* (5.9%), such as anxiety, fear, anger, guilt (regarding spending), felt personally, or perceived in family members or other people.

Results

We begin with the results of the first level coding of answers of the Italian sample (which comprises secondary school and university students); we then present the results of the Swiss sample and compare them with those of the Italian secondary school students. Lastly, we describe the second level of coding (identification of links between the causes mentioned) in the whole sample.

Italian Sample

To provide explanations for the current crisis (Question 1) students should be aware that there was, in fact, a crisis. This awareness was testified by the answer to Questions 2, regarding the perceived effect of the crisis.

As [Table 2](#) shows, the great majority of Italian students stated that the crisis affected their everyday lives and most described changes occurring in their personal and family consumption. A minority also mentioned concerns for their future, in general terms, or with respect to their future employment. Differences emerged between secondary school and university students. Secondary school students, who turned out to be more affected by the crisis, represented a wider range of socio-economic status. In the years 2010 to 2015, only about 60% of students graduating from secondary school entered university ([Italian National Institute of Statistics, n.d.](#)) and university in Italy is usually attended by the middle and upper middle classes, and even more so in the last ten years (“[La ‘nuova classe operaia’](#)”, 2015).

Table 2

Consequences of the crisis perceived by Italian students (percentages)

Category	Secondary		Total %	$\chi^2(1)$	p
	School (N = 222)	University (N = 159)			
The crisis affected my daily life	87.7	75.2	82.0	10.1	.001
Changes in personal and family life	72.0	41.8	57.6	32.2	<.001
Changes in other people's lives	36.6	26.1	31.5	4.3	.037
Experience or perception of emotional distress	11.4	3.6	7.6	7.3	.007
Uncertainty about one's future job	13.1	13.3	13.2	NS	
General concern about one's future	13.1	12.1	12.6	NS	

Table 3 shows the overall percentage of Italian participants who mentioned different causes of the crisis, ordered for increasing frequency, and highlights the causes in which significant between-group differences emerged. It can be seen that most participants attributed the crisis to causes related to the political system (inefficiency and responsibility of the government or politicians, public debt, public overspending, high taxes) or mentioned aspects of the crisis affecting people, and which are likely to be perceived directly, or known through talks and the media (reduced purchasing power, unemployment or wage cuts, increased economic inequality, increase in private debt) or mentioned causes referring to inappropriate behaviour on the part of some people (tax evasion, inadequate behaviour by consumers or businesses, social causes such as criminality and a decline in moral values). Causes related to the financial system and international processes were rarely mentioned.

Table 3

Causes of the Economic Crisis Mentioned by Italian Students. Percentage of Answers in the Italian Sample and Significant Between Group Differences

Category	Secondary		Total %	$\chi^2(1)$	p
	School (N = 222)	University (N = 159)			
Inefficiency and responsibility of government or politicians	75.2	70.3	73.1	NS	
Reduced purchasing power	27.5	13.9	21.7	10.2	.001
Unemployment or wage cuts	23.0	14.5	19.4	4.3	.038
Tax increases	23.4	14.5	19.1	6.2	.013
Tax fraud /evasion	20.7	15.2	18.3	NS	
Public overspending	20.3	13.4	17.3	NS	
Social causes	14.9	13.3	14.2	NS	
Banks	10.8	16.4	13.2	NS	
International factors	12.2	11.5	11.9	NS	
Public debt	14.4	8.5	11.9	NS	
Inadequate behaviour of consumers or businesses	5.4	19.4	11.4	18.2	<.001
Globalization of production	3.6	11.5	7.0	9.2	.003
European Union or Euro	5.4	3.0	4.4	NS	
Increased economic inequality	2.7	3.0	2.8	NS	
Immigrants	1.8	2.3	2.3	NS	
Private debt	0.5	1.8	1.0	NS	

Secondary school students mentioned aspects of the crisis affecting everyday life more often than university students possibly because the first group had a more heterogeneous socio-economic status than the second (as suggested by the answers described above about the personal impact of the crisis). On the other hand, they mentioned globalization and inadequate behaviour of consumers or businesses less often. University students' higher awareness of these factors might result from their higher education, as well as from their being the only part of the sample who vote, which might result in a greater interest in economic and political questions. Unexpectedly, there were very few differences between those who did, and did not, study economics.

Whereas there were no significant differences in the perception of the consequences of the crisis between those who studied and those did not studied economics, some differences emerged in the explanations of the crisis. Those who studied economics mentioned less often Globalization of production (3.5% vs 10.8%, $\chi^2(1,$

$N = 381$) = 7.8, $p = .005$), Inadequate behaviour of consumers of business (8.0% vs 15.0%, $\chi^2(1, N = 381) = 4.9$, $p = .027$), and Increased economic inequality (1.0 vs. 4.8, $\chi^2(1, N = 381) = 5.2$, $p = .023$).

The most salient aspect of the above data is the high frequency of political causes being mentioned. There are two ways this can be explained, one more general, the other focused on the Italian situation: 1) Political causes (often intended as dishonest or inadequate behaviour by politicians) are personal, and represent “sequential processes”, more easily understood than the functioning of financial markets, which are instances of “emergent processes” which cannot be conceived without explicit instruction (Chi, Roscoe, Slotta, Roy, & Chase, 2012), the high level of perceived corruption in Italy and the recurrent difficulties of the Italian political system (Transparency International, 2015). These features were particularly salient in the news and in political debate when the data were collected (a few months before or after the elections). A comparison with the answers of the Swiss students helped to weigh up these two explanations.

Swiss Sample

Table 4 shows that a high (although lower than Italian) percentage of Swiss students perceived the personal and family impact of the crisis. As in the Italian group, no significant difference emerged between participants who did, and did not, study economics.

Table 4

Consequences of the Crisis Perceived by Swiss Students (Percentages)

Category	Swiss ($N = 268$)	Italians ($N = 222$)	$\chi^2(1)$	p
The crisis affected my daily life	63.1	87.7	38.0	<.001
Changes in personal and family life	43.6	72.0	29.0	<.001
Changes in other people's lives	37.8	36.6	NS	
Experience or perception of emotional distress	1.7	11.4	13.1	<.001
Uncertainty about one's future job	11.6	13.1	NS	
General concern about one's future	6.4	13.1	4.5	.035

Table 5 shows that the frequency with which different causes of the crisis were mentioned by Swiss students follows a different order compared with Italian students. The cause cited most often was the banks, which ranked ninth in the Italian sample. In addition, Swiss students mentioned more often international causes, such as the Euro and the European Union, globalization and immigration (which was largely represented by cross-border workers in the area where the students live). On the other hand, they mentioned political causes less often (although *Inefficiency and responsibility of government or politicians* ranked second). The great relevance of political causes for Italian students appears, therefore, to reflect the Italian situation.

Table 5

Percentage of Answers in the Swiss Sample and Italian Secondary School

Category	Swiss (N = 268)	Italians (N = 222)	$\chi^2(1)$	p
Banks	26.5	10.8	19	<.001
Inefficiency and responsibility of government or politicians	25.7	75.2	119	<.001
Reduced purchasing power	25.0	27.5	NS	
International factors	21.0	12.2	7.6	.006
Unemployment or wage cuts	16.5	23.0	NS	
European Union or Euro	15.3	5.4	12.3	.001
Immigration	8.6	2.6	5.5	.006
Globalization	7.8	3.6	3.9	.048
Inadequate behaviour of consumers or businesses	6.3	5.4	NS	
Public debt	6.0	14.4	9.8	.002
Increased economic inequalities	5.6	2.7	NS	
Private debt	4.5	0.5	7.6	.006
Public overspending	4.1	20.3	31.3	<.001
Increased taxes	3.4	23.4	44.9	<.001
Tax fraud /evasion	2.6	20.7	41.3	<.001
Social causes	0.7	14.9	36.5	<.001

Complexity of the Explanations

Until now we have considered only the individual causes mentioned in participants' explanations of the crisis, extracting them from the whole answer. In order to evaluate the complexity of the explanations for the crisis, and to put the individual causes back into the original context, we first computed the number of causes mentioned (including those coded as *Others*), and then examined if, and how, the causes were linked to one another.

Of the total sample of Italian and Swiss students, 3% did not mention any cause; 23.5% mentioned only one cause, 31% mentioned two causes, 21% mentioned three causes, and 21% four or more causes. In sum, most students (58%) mentioned 2 causes or less, giving explanations with a very low complexity.

The criterion we used to identify a link between two or more causes was rather loose, such as describing a specific causal mechanism or the occurrence of adverbs such as *therefore*, *thus*, *hence* (in Italian, *quindi*, *perciò*, *così*), or verbs such as *to affect* (*influire*), *to prevent* (*impedire*), *to drag* (*trascinare*), even when no specific mechanisms were described. Expressions that might be regarded as synonymous, e.g., *drop in purchases* (*diminuzione degli acquisti*) and *market paralysis* (*blocco del mercato*), *drop in employment* (*diminuzione del lavoro*) and *unemployment* (*disoccupazione*) have been considered as referring to distinct causes, when connected with the above adverbs. For instance, by applying this criterion we have identified a chain of three causes in the sentence "The state that does not work as well as before (Cause 1), which has also affected the area of employment, and has brought about a reduction in jobs (Cause 2) and therefore also employment (Cause 3)". A few students answered with diagrams. In this case we considered the arrows as causal links.

In counting how many causes were linked, we only considered the causes actually linked together. For instance, if an explanation contained five causes, and four of them were linked in pairs, but there were no links between the pairs, the explanation was scored as linking two causes.

These loose criteria notwithstanding, most participants (72% of those who mentioned two or more causes, that is 53% of the whole sample) listed only the causes, without linking them in any way, as in this excerpt: "The world is risking a serious economic crisis. I think that this arises from three big problems: the state debt, the slowing down of economic growth, and the crisis of the government". Of the other students, 16% (that is, 11.5% of the whole sample) linked only two causes together, as in the sentence "macro-economic causes, such as the collapse of the New York Stock Exchange, that pulled down with it all the securities and stocks in the international market". Only 12% (9% of the whole sample) described more complex causal relations, as in the following excerpts: "Excessive state debt and excessive public expenditure. This has brought about a series of cuts and an increase in taxes on business. This has brought the world of work to a standstill and has restricted recruitment". Other examples are presented in the [Appendix](#).

We selected the answers mentioning 2 or more causes which referred to the American origin of the crisis, to analyse if and how students explained how it affected Italy (or, for the Swiss students, European countries). We found only 12 answers fitting this criterion (5 from Swiss students). In five of them, the American crisis was only mentioned, but not connected to the Italian or European crisis. Five stated that the crisis "spread to" or "impacted on" other countries, without explaining how this happened. Only two answers mentioned specific financial mechanisms. According to one, the fall of the NY stock market "dragged with it all the shares and securities of the international market". According to the other, the crisis affected the whole world because other countries had taken on American mortgages (see the last excerpt in the [Appendix](#)).

Discussion

Most participants in the present study stated that they were affected by the crisis and described its impact. Italian secondary students were affected more than university students, and Swiss students more than Italian probably due to differences in economic status. The Swiss GDP per capita is among the highest in the world (see [Central Intelligence Agency, 2017](#)). The crisis students were asked to explain was therefore familiar and significant. Both Italian and Swiss students mentioned the more visible effects of the crisis, such as the fall in employment and wages, but they reported different causes with different frequencies, possibly mirroring the different ways in which their countries were affected by the crisis and the issues which were more prominent in the media and public debate. Political causes were mentioned more often by Italian students, and banks, euro and international factors by Swiss students. This difference mirrors the different impact of the crisis in the two countries, and the perceived high relevance of inefficiency and corruption in Italy's political system ([Transparency International, 2015](#)). It might also be affected by the different wording of the questions for the two samples. The crisis was presented to Italian students as affecting their own country, and to Swiss students it was presented as affecting "various European nations, and in part also Switzerland". However, similar findings emerged in the data collected in 2012 in the on-going research conducted by Association of Economics Education in Europe - AEEE: "Italians (mostly students in economic courses) blamed the action of their own government, but also tax evasion and the growing gap between the rich and poor" ([Weber, 2013](#), p. 6).

Other causes, mentioned by both Italian and Swiss students (but more often by Italian students) were the European Union or Euro, Immigration, Globalization, and the inadequate behaviour of consumers and businessmen. Nobody mentioned laws deregulating the financial sector, which laid the ground for the speculation at the origins of the crisis, and very few mentioned the American subprime crisis. Thus, on the whole, students showed a very poor knowledge of the international factors and the sequence of events which led to the financial crisis and its spread to other economic sectors and the whole world.

Another relevant findings in the present study were those regarding the complexity of the explanations. The average number of causes mentioned was about 2, certainly too few to account for a sequence of events that involved actors and actions (such as those outlined in the Introduction) that the majority of participants (sometimes all of them) did not appear to know.

What most participants mentioned among the causes (closing businesses, unemployment, reduced purchase power) were, instead, the effects of this sequence, that they may have experienced personally or through the media (in Italy, people were struck by the numerous suicides of entrepreneurs facing bankruptcy, see [Sironi, 2013](#)). Upstream events, involving operations of the financial system, the laws that allowed them, and their effects on the real economy, seem to be generally unknown by most participants, as shown by [Aprea \(2015\)](#). This does not come as a surprise. How financial systems operate cannot be perceived directly, but can only be known through information provided by books, the media and expert explanations. The news of national and international economic events as delivered daily by television and newspapers can only be understood if related to an economic framework, that only explicit teaching can provide.

These results point to some topics that FE should address, similar to those suggested by [Davies \(2015\)](#), for example, how the political system affects the financial system and more generally the economy, through regulation and deregulation of financial and economic activities, and more direct actions; the transformation taking place in banks, financial operations, and the numerous forms of market malpractice that can take place.

The present paper adds to the limited literature on people's understanding of financial crises by showing spontaneous explanations that complement those tapped through forced choice questionnaires. On the whole, these explanations appear very poor, with little or no knowledge of the operation of financial institutions and their links with the real economy.

This study, despite offering some interesting and quite new evidences about adolescents' and young adults' naïve understandings of the economic crisis, presents some methodological issues that need to be carefully evaluated for the interpretation of the results. First of all, the participants were not representative of their respective populations. Furthermore, the task of giving written answers might have fostered short shallow explanations. In particular, the request to describe the causes of the crisis might have suggested writing a simple list, rather than clarifying the connections between the causes identified. Future research should explore this aspect by using in-depth interviews able to grasp the argumentative structure of the responses, and then have a deeper qualitative analysis of the collected narratives. Also, the use of differently worded written questions could help to discover whether, and how, students can connect different causes and explain how they operate. For instance, "How did the crash of one country's stock exchange spread to other countries?" "How does a financial crisis spread to the real economy?" A more detailed picture of students understanding of the financial systems is a necessary step for planning a FE aimed a promoting and understanding not only financial products, but also the financial sector and government finances.

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Appendix: Excerpts of Answers' With Causal Chains of Different Lengths

Only One Cause-Effect Link

The age of retirement is too high, and this does not allow young people to get a job. The crisis of the government we are experiencing means that we do not inspire confidence and stability in other countries.

Emerging countries compete with Europe by producing commodities at a cheaper prize.

More and more people are unemployed also because there are many cross-border workers that firms take on for lower wages.

I think that among the main causes of the serious economic crisis that is affecting Italy is bad political organization that is reflected particularly in the financial situation. As a consequence of the up-and-down exchange rates, the European economy also goes up and down. I think the cause is the too many debts (public debt is very high). As a consequence there are all the taxes we have to pay, and pensions are halved.

Link Between Two Causes (Chained or Concurrent)

(After talking about tax evasion) there is capital that has not been declared to the state, and thus has made a few people richer, but has also brought about an imbalance in the state revenue, causing higher taxes for people with low or average wages.

Our crisis started at the end of the 1980s. European and extra-European trade began to decline perhaps, leading some businesses to start dismissing workers. Families become poor and spend less, so the crisis is fuelled because there is no revenue (circle).

The crisis began with the shift from the Lira to the Euro. Prices began to increase, people stopped buying, and the market stalled, firms began to close and many people become unemployed.

References to American Crisis

I think the causes started in America. The speculative bubble of 2001, and then something more in 2008. Although America is very far away, it affected Europe.

The subprime crisis in USA; this crisis also had a strong impact on Europe

The banks lent money to people who needed help. Some of them could not pay back the loans, putting the banks in difficulty. At this point, the banks took their assets (houses), but the price of houses fell.

These mortgages were given to people with insecure income, and so there was the possibility that they could not pay back their debts to the banks. When house prices began to fall, banks increased interest rates, and many people lost everything. The problem was also that other Countries had taken on these mortgages (and thus the crisis affected all the world).

A financial meltdown of American banks then caused a meltdown of European Banks, which then led to a world financial crisis

The high debt of a nation (the Netherlands, I think), which borrowed money from the USA but never gave it back, caused a crisis on the USA stock exchange. The crisis spread around the world, because financially, I think, all nations are connected.

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