University of Piraeus

SPOUDAI
Journal of Economics and Business
Σπουδαί
http://spoudai.unipi.gr

Philanthropic Entrepreneurship: Private Donations and Knowledge Support in Greece

Claire Economidou

Departments of Economics, University of Piraeus,
Karaoli & Dimitriou St. 80, 185 34 Piraeus, Greece
Email: economidou@unipi.gr

Abstract

The present paper aims to explore the role of philanthropic private donations to knowledge creation in Greek universities and research institutions. Based on survey data and balance sheets of 260 mostly private foundations that finance educational and research activities in Greece, this paper consists the first systematic approach to assessing the impact of Greek philanthropy on fostering human capital development and knowledge creation in Greece. Our analysis shows that private donations are becoming an increasingly important source of revenue. Philanthropy has not substituted for government funding but rather acted as a complement of financing academic research that is too experimental, or too uncertain and therefore shunned by government funding. In an era of stagnant government funding and tight university budgets –mainly due to the "Greek crisis"– for science programs, large donors are stepping in to help. On average, 15 to 20 million euros -through fellowships and grants- every year and for the last five years are channelled into supporting research and human capital development within Greece as well as into financing the mobility of talented Greek students and academic personnel across EU educational and research institutions.

Keywords: Philanthropic Entrepreneurship, Donations, Knowledge, Institutions, Growth
JEL Classification: L26; O30

1. Introduction

Andrew Cargnegie once said, "It is more difficult to give money away intelligently than to earn it in the first place." Philanthropy, for many, is simply a matter of giving to charities from which people feel the most tug. Although well-intended, *ad hoc* philanthropic actions are often not enough to make a real difference. Worse, they can even have negative (unintended) consequences on the social issues they aim to fix.

Philanthropy is more than giving back or simply having a cursory understanding of the social issues one wants to support; it is rather mindset similar to starting a new business –a viable plan needs to be created for tangible impact on a chosen issue or on target beneficiaries (Alto, 2013). The premise of this approach is to distinguish between intended impact, which is personal, vis-à-vis issues that can be objectively studied and addressed.

Philanthropic actions play a vital role to the alleviation or resolution of many social problems (Ghaus-Pasha, 2005) or preservation of social values (for instance, protection of nature, support of culture, care of people with special needs, support of human capital, development

of local societies), which the government does not have the capacity to solve or preserve and the private beneficiaries or willingness to pay is low.

There are various areas where social entrepreneurship has been developed and contributed so far (Roberts and Woods, 2005): (i) in healthcare, where social enterprises and cooperatives for elderly people and groups with special health problems have been founded; (ii) in social welfare, where social groceries and social pharmacies providing food, clothes, and medicines to needy, poor, unemployed among others; (iii) in culture, where several museums, libraries, cultural centers, along with consulting firms for the preservation of cultural heritage are developed; (iv) in environment and green development with forest protection operations, habitat management and development firms, ecotourism and outdoor activities, friendly energy generation business, rural/cottage/agritourist cooperatives, waste management business, bio-ecological products business among others; (v) in capital collection and management: cooperatives and "ethical" banks (eg. BancaEtica in Padova, Italy for the funding of cultural and environmental programs, and social solidarity programs), housing associations and popular-based companies for local development; and last but not least (vi) in education, where many nonprofit companies provide resources for research and studies, local newspapers, magazines and books or conduct training and specialization courses.

Examples of philanthropic activities can been found all over Europe. About 14 million people –5.9% of total employment or 6.7% of paid employment– are occupied in such activities (Triantafyllopoulou, 2012). In Greece philanthropic activity is not negligible and its role has become even more important since the global financial crisis hit the country. The employment in the social entrepreneurial activities is about 1.8% of total employment and 2.9% of the paid total employment in Greece (Zikou et al., 2012), while the contribution of philanthropy to the Greek GDP is 0.7% (2015) –still small, compared to other countries (for instance, 7.9% in the U.K.), but it is growing over time.

In this task, we aim to explore the role of philanthropic private donations to knowledge creation in Greek universities and research institutions. Historically, such philanthropic actions in Greece are recorded as early as the beginning of the 4th B.C. century, when the first higher educational institutions had been established[1]. A surge, however, took place mid of 19th century, when Greece became an independent country (1830), and was in need of educational (schools, universities) and cultural (theaters, museums) institutions as well as hospitals. For instance, John Dovolis (1769-1850), left all his property to the Greek government to finance the National and Kapodistrian University of Athens –the first university of Greece established in 1837 and the second largest nowadays in the country in terms of faculty members and students. Similarly, the first, the largest and the most prestigious technical university in Greece, the National Technical University of Athens (established in 1837) was founded by the Greek state along with the endowments of three donors (national benefactors), Michael Tositsa (1787-1856), Nikolaos Stournaras (1806-1853), and George Averoff (1818-1899) –all three were merchants.

The example set by a good number of Greek philanthropists mid of 19th century strengthened and continued in the 20th century. A rich list of "National Benefactors", entrepreneurs themselves in trade and maritime industry –the vast majority were initially poor and originated from poor regions in Greece– have developed a strong "philanthropic culture" of reinvesting part of their profits in doing social good and particularly in supporting human

[1]It was around 387 B.C. in Athens that Plato established his philosophical school, the "Academia". At first, the Academy was financed by Plato's financial resources and through various donations; in contrast to the Sophists who taught for a fee.

capital in Greece (Yannitsiotis, 2007).

Philanthropy, as opposed to charitable donations to the poor and needy, is designed to augment knowledge in either existing or new organizations (Acs and Dana, 2001). It is in this context that philanthropy may have an impact on growth –by contributing to the accumulation of knowledge (America, 1995; Sachs, 2000) that can serve as a basis for domestic or international entrepreneurship.

We have surveyed 260, mostly private, foundations that finance educational and research activities in Greece for the period 2013-2014 having the following questions on mind: (i) what is the total amount (in euros) of their assets?, (ii) the amount (in euros) and number of scholarships/ fellowships/ awards/ grands they donated to universities and research institutions?, (iii) how many scholarships/fellowships/awards/grands are given to Greeks to study in Greece vs. to Greeks to study abroad and iv) the criteria they used for select the candidates for their funds allocation. Overall, more than 15 million euros channelled into fostering and developing human capital and research during these years where budget constraints both at the university and government were tight.

The remainder of this report is structured as follows. Section 2 discusses the growth-enhancing effects of philanthropic entrepreneurship. Section 3 focuses specifically on Greek private foundations and their donations to the higher education. Section 4 presents the data, the methodology and results. Finally, Section 5 concludes.

2. Philanthropic Entrepreneurship and Knowledge Creation

Entrepreneurial philanthropy, as opposed to charitable donations to the poor and needy, is designed to augment knowledge in either existing or new organizations (Acs and Dana, 2001).

According to Acs and Braunerhjelm (2004), philanthropy can generate knowledge accumulation in various ways. First, philanthropic donations contribute to the amount of resources available for research (Barro and Sala-i-Martin, 1998).

Second, government grants may be channelled to more risk-averse projects than donations of wealthy individuals. Government grants are usually restricted by different regulations forcing a major part of funding to go into mainstream areas of research; private donations, in contrast, are more likely to fund riskier, experimental, uncertain projects and a greater variety of knowledge-creating activities (Pfeffer and Salancik, 1978; Letts et al., 1997).

Third, a donation from wealthy entrepreneurs could also influence the culture and attitudes of knowledge producing entity. While government funded projects have been restrictive, philanthropically funded knowledge-creating projects are usually open to all, including international scholars. The latter can result in increased entrepreneurship, knowledge and generation of wealth both domestically and internationally.

These three channels, however, are not sufficient by themselves. The economy also needs agents that can exploit the knowledge created such as the entrepreneurs. The growth-enhancing effects of entrepreneurial philanthropy could be generated via a cycle of linked activities, where successful entrepreneurs donate to knowledge-creating entities, which are exploited by entrepreneurs, leading to the creation of new fortunes that can again be invested in knowledge creating entities and so forth.

This combination of philanthropy and entrepreneurship has been an important driver of long run growth in the US (Acs and Yeung, 1999 a, b).

Closing up, the entrepreneurship-philanthropy nexus may have also implications for

internationalization. For example, countries that have a rich tradition of philanthropy and large knowledge base, create more intangible assets and enable entrepreneurs to expand internationally. Small countries with large knowledge base could take advantage of a larger international and market by becoming more internationally oriented. The "key", to rip off the benefits of globalization, is a strong relationship between knowledge created at universities and international entrepreneurship.

3. Private Donations to Education and Research Institutions

This section presents the structure, depth and the contribution of Greek philanthropic activity to Greek universities and research centres. Before embarking in exploring the role of philanthropy in shaping the higher educational landscape in Greece, we provide some basic information about the tertiary education system and research centres in Greece.

3.1 Higher Education in Greece

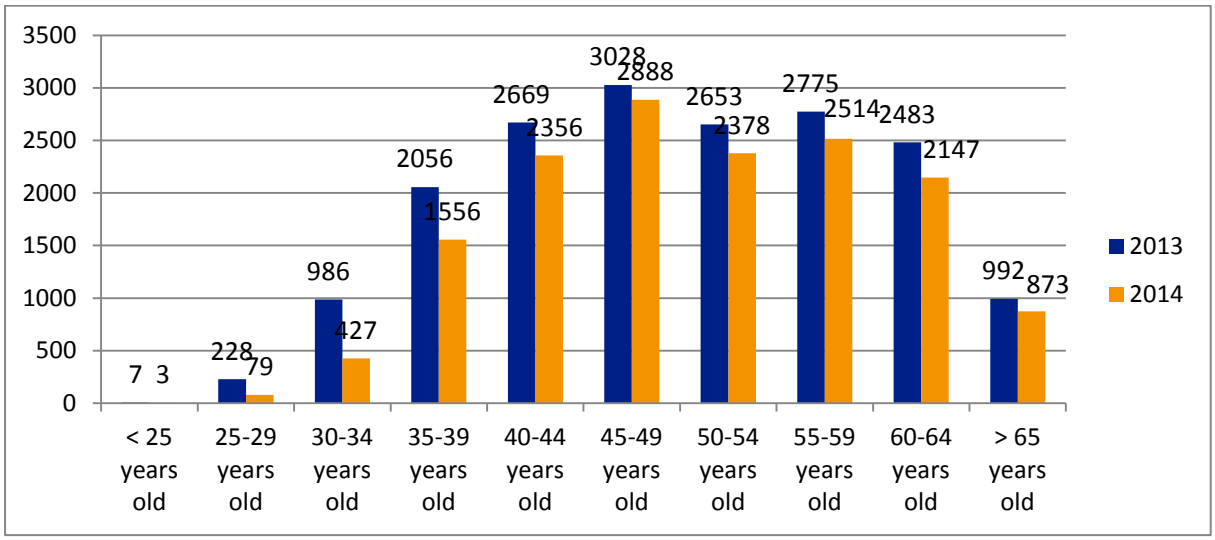
There are 22 public state-accredited universities in Greece. The duration of the undergraduate degree programs for most disciplines is four years (full-time). Programs in engineering, dentistry, pharmacology, agronomics, and forestry, along with some programs in fine arts have duration of 5 years. Medicine is the only discipline with duration of 6 years. Among the Greek universities, the Aristotle University of Thessaloniki is the largest university in Greece in terms of faculty, departments and students (hosting more than 65,000 students) and one of the largest in southeast Europe, followed by National and Kapodistrian University of Athens, whereas the Harokopio University at Athens and the University of Peloponnese are the smallest. Table A.1, in the Appendix, column 1, lists the Greek universities.
There are also 14 technological educational institutes established in 1983. They currently offer 4-year (full-time) undergraduate degree programs and since 2008 are also allowed to run their own postgraduate programs that lead to a Master's Degree. These technological institutions are also presented in Table A.1 in the Appendix, column 2.

According to the Constitution of Greece, "education at university level shall be provided exclusively by institutions which are fully self-governed public law legal entities". This prohibits private institutions for post-secondary education –colloquially known as colleges– from operating as independent universities in Greece. However, it does not prohibit colleges from collaborating with foreign universities to offer undergraduate and postgraduate programmes. The vast majority of these (25 in total) colleges are offering programmes of study under franchise or validation agreements with foreign universities, primarily from the UK, leading to degrees which are awarded directly by the foreign affiliates.[2] The colleges that are operating in Greece are presented in Table A.1 in the Appendix, column 3.
Finally, there are 40 state-run research institutes in Greece (with more than 88 different departments in total), all of which are listed in column 4 of Table A.1 in the Appendix.

To get an indication of the size of Greek universities based on the number of academic staff and employees, Figure 1 below clusters the academic personnel of the country for the years 2013 and 2014 by their age groups.

[2] The monitoring of those agreements as well as of additional provisions for the operation of colleges is carried out by the Ministry of Education (Law 3696/2008, 3848/2010) as well as by the respective educational authorities of the countries in which the universities are based. Effective May 2010, with the integration into Greek law of EC Directive 2005/36[4] on the mutual recognition of qualifications, holders of academic degrees by universities in the European Union, including those obtained through studies at a college in Greece, have their professional rights fully recognised.

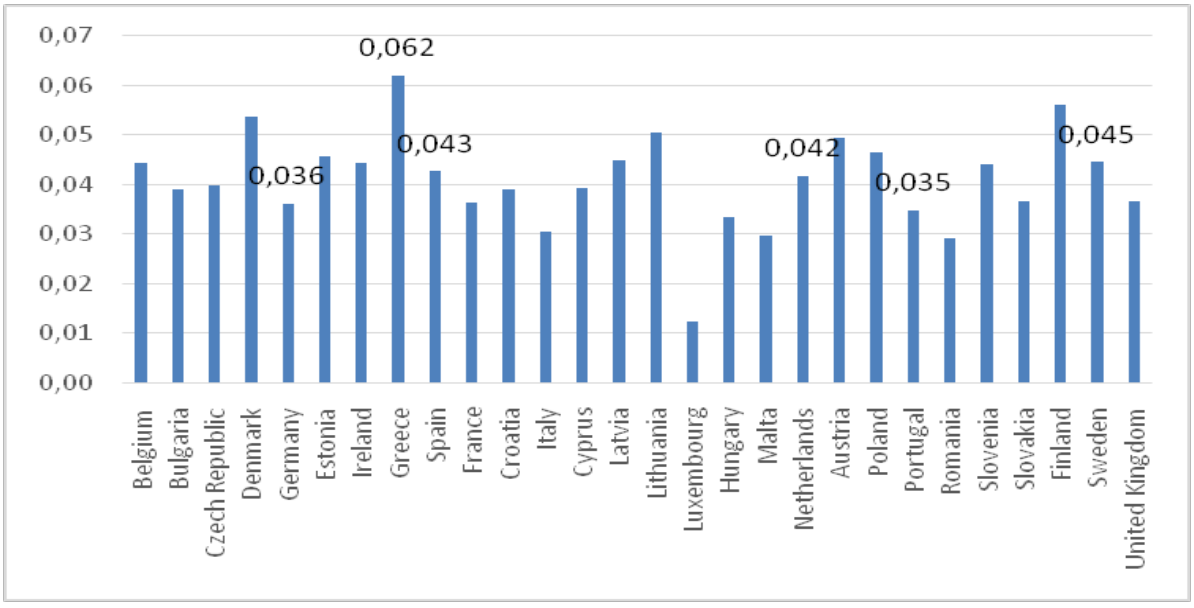
Figure 1: Academic staff in tertiary education grouped by age



For the year 2013, the faculty members in tertiary education in Greece were 17,877 while in 2014 this number dropped to 15,221. This decrease was mainly due to the non-renewal of non-tenured contracts and faculty retirement combined with a zero-hiring policy of new personnel. The age group of 45-49 is the dominant class followed by the 55-59 class, while the academic and teaching personnel below 34 years of age constitutes the smallest group. This is due to the heavy regulation and time delays in hiring new faculty members at the Greek university. As all universities in Greece are public, the government is strongly involved in the process of hiring (new) faculty members. The university board proposes the desired number of new faculty members and the government (Ministry of Education), given the number of academic personnel that are about to retire in each faculty and budget constraints, approves (or not) the proposal.

Next, Figure 2 displays the number of students enrolled in Greek universities for the years 2013 and 2014 in comparison to other European countries.

Figure 2: Student Enrolment (per population) in European Universities (2013-2014)



As one can see, in per capita terms, Greece ranks first followed by Scandinavian countries (Finland, Denmark, Sweden) with more than 600,000 students enrolled for each of the years 2013 and 2014. Greek student enrolment (per capita) outperforms countries such as Portugal and Netherlands, which have population close to that of Greece. The high student enrolment is deeply rooted to the Greek tradition that a large mass of the population should be entitled to study. This, however, puts pressure to the government to funding the higher education and often comes at a cost of education quality.

We continue by providing additional important aspects of the academic (university) landscape in Greece. Table 1 shows the population of students in the EU28 with tertiary education for the years 2013-2014 and the allocation of students across different levels of tertiary education: Bachelor's (B.A. and B.Sc.), Master's (M.A. and M.Sc.) and Doctoral (Ph.D.) programmes. For the year 2013, more than 650,000 students enrolled in tertiary education in Greece and in 2014 this number mount to 677,000. Greece's ranking, in terms of students'/population ratio is above the EU28 mean. More specifically, Greece is second in the EU ranking after Germany and above Netherlands, Spain and Portugal.

Table 1:
Allocation of Students Enrolled in Tertiary Education by Country (thousands, 2013)

	Tertiary total			Short-cycle tertiary			Bachelor's or equivalent			Master's or equivalent			Doctoral or equivalent		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
EU-28 (1)	19 632.3	8 969.1	10 663.2	1 475.4	688.2	787.3	11 913.5	5 541.8	6 371.6	5 507.4	2 344.6	3 162.7	736.0	394.5	341.5
Belgium	488.5	216.3	272.2	24.1	9.2	15.0	364.2	160.2	204.0	85.6	39.0	46.5	14.6	8.0	6.6
Bulgaria	284.0	129.1	154.9	–	–	–	195.6	91.9	103.8	83.0	34.6	48.4	5.4	2.6	2.7
Czech Republic	427.4	182.0	245.4	1.0	0.4	0.6	267.7	115.3	152.4	133.5	52.2	81.3	25.2	14.2	11.0
Denmark	291.1	125.5	165.7	31.7	16.2	15.5	182.3	75.3	107.0	67.5	29.1	38.4	9.6	4.8	4.8
Germany	2 780.0	1 469.9	1 310.1	0.5	0.1	0.4	1 635.9	913.3	722.6	930.4	429.7	500.6	213.2	126.8	86.4
Estonia	64.8	26.9	37.9	–	–	–	44.8	19.5	25.3	17.0	6.2	10.8	3.0	1.3	1.8
Ireland	199.4	98.8	100.6	41.6	24.4	17.3	121.2	56.9	64.3	28.4	13.4	15.0	8.2	4.1	4.1
Greece	659.3	337.7	321.6	–	–	–	588.2	305.4	282.8	48.1	20.2	27.9	23.0	12.1	10.9
Spain	1 969.4	914.8	1 054.6	346.4	174.5	171.9	1 085.0	497.5	587.5	514.4	230.5	283.8	23.7	12.3	11.4
France	2 338.1	1 062.6	1 275.6	504.9	251.6	253.3	931.7	387.2	544.6	832.0	387.1	444.9	69.5	36.7	32.8
Croatia (2)	164.6	71.7	92.9	:	:	:	102.8	48.2	54.6	58.2	21.9	36.3	3.6	1.7	2.0
Italy	1 872.7	804.1	1 068.5	2.5	1.9	0.6	1 108.3	497.2	611.1	727.0	288.1	438.9	34.9	16.9	18.0
Cyprus	32.0	14.3	17.7	3.3	1.4	1.9	20.0	9.5	10.5	7.9	3.0	4.9	0.8	0.4	0.5
Latvia	94.5	38.7	55.7	17.3	7.0	10.3	63.3	26.4	36.9	11.3	4.2	7.1	2.5	1.1	1.4
Lithuania	159.7	66.4	93.2	–	–	–	124.5	54.4	70.1	32.5	10.9	21.6	2.7	1.1	1.6
Luxembourg	6.6	3.2	3.4	0.3	0.1	0.2	3.4	1.7	1.7	2.4	1.2	1.2	0.5	0.3	0.2
Hungary	359.0	160.9	198.1	37.0	13.5	23.5	237.6	110.7	127.0	77.0	32.9	44.1	7.3	3.8	3.6
Malta	12.6	5.6	7.0	2.5	1.1	1.3	6.9	3.0	3.9	3.1	1.4	1.7	0.1	0.0	0.0
Netherlands	674.8	327.1	347.7	5.3	3.0	2.3	558.5	272.7	285.7	97.3	44.5	52.9	13.6	6.9	6.8
Austria	422.8	196.8	225.9	76.8	35.6	41.2	180.2	84.5	95.7	140.1	63.2	76.9	25.7	13.6	12.1
Poland	1 902.7	764.6	1 138.1	10.9	2.0	8.9	1 266.5	542.7	723.8	583.0	200.0	383.0	42.3	19.8	22.5
Portugal	371.0	173.7	197.3	–	–	–	231.5	107.5	124.1	120.0	57.2	62.8	19.5	9.1	10.4
Romania	618.2	284.9	333.2	–	–	–	409.6	199.1	210.5	187.2	75.0	112.2	21.4	10.8	10.5
Slovenia	97.7	41.5	56.2	13.4	7.6	5.8	54.9	23.0	31.9	25.8	9.2	16.6	3.6	1.7	1.9
Slovakia	209.5	84.5	125.0	2.9	0.9	1.9	120.8	49.7	71.1	74.9	28.2	46.7	11.0	5.7	5.2
Finland	309.0	143.1	165.9	0.1	0.1	0.0	228.3	109.1	119.2	60.1	24.1	36.0	20.6	9.9	10.7
Sweden	436.6	176.0	260.6	26.0	13.1	12.9	253.0	93.2	159.8	136.1	58.6	77.4	21.5	11.0	10.5
United Kingdom	2 386.2	1 048.0	1 338.2	326.8	124.5	202.3	1 526.7	686.7	840.0	423.6	178.9	244.7	109.1	58.0	51.1
Iceland	19.1	7.2	11.9	0.5	0.2	0.2	13.8	5.4	8.4	4.4	1.4	3.0	0.5	0.2	0.3
Liechtenstein	0.8	0.6	0.3	–	–	–	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.0
Norway	255.4	105.2	150.2	9.8	7.3	2.5	181.9	69.8	112.2	56.3	24.5	31.8	7.4	3.6	3.8
Switzerland	279.8	141.3	138.5	10.8	4.5	6.3	186.3	94.7	91.7	60.0	29.6	30.4	22.7	12.5	10.2
FYR of Macedonia	60.7	27.6	33.1	–	–	–	56.9	25.9	31.0	3.6	1.6	2.0	0.2	0.1	0.1
Turkey	4 975.7	2 706.9	2 268.8	1 527.7	827.8	699.9	3 052.7	1 657.5	1 395.2	314.8	176.0	138.8	80.5	45.6	34.8

(1) Short-cycle tertiary education: excluding Croatia. Bachelor's or equivalent: includes short-cycle tertiary education for Croatia.
(2) Bachelor's or equivalent: includes short-cycle tertiary education.
Source: Eurostat (online data code: educ_uoe_enrt01)

Further, and with respect to students' allocation across different levels of tertiary education, Greece ranks 6th in the EU28 when it comes to Bachelor's degrees (3rd among, for instance, Germany, Spain, Portugal and Netherlands), 20th in the EU28 when it comes to Master's degrees (last compared to Germany, Spain, Portugal and Netherlands), and 9th in the EU28 to

Doctoral (Ph.D.) degrees (3rd among Germany, Spain, Portugal and Netherlands).

If one takes into account only the female student enrolment in tertiary education levels, Greece ranks 9th in the EU28; particularly, 8th in bachelor's degrees, 19th in master's degrees and 7th in doctoral degrees.

Across the EU28, one third (32.7 %) of all students in tertiary education in 2013 studied social sciences, business or law in 2013. The second most common field was engineering, manufacturing and construction-related studies which accounted for 15.7 % of all tertiary education students, followed by the field of health and welfare, with 13.2 % student participation. As Table 2 shows, in Greece the most common field of education was "Social sciences, business and law"; the second was "Engineering, manufacturing and construction" and the third "Science, mathematics and computing". More specifically, with respect to the fields of "Science, mathematics and computing" and "Engineering, manufacturing and construction" (columns 4 and 5 of Table 2) Greece ranks 9th and 10th in the EU28, respectively, in terms of number of graduates.

Table 2: Number of Tertiary Education Graduates by Science Field (thousands, 2013)

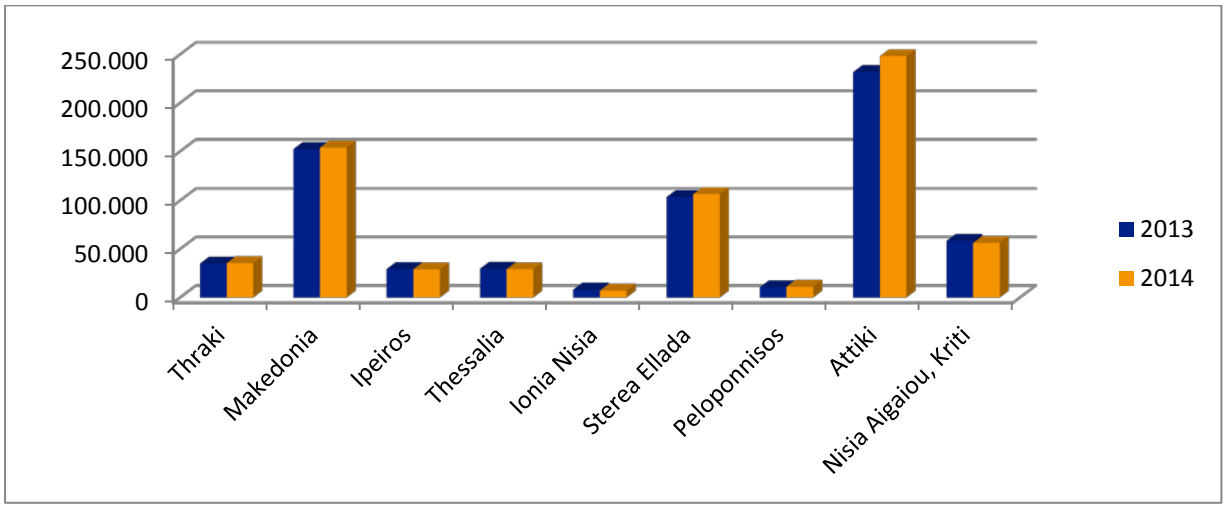
	Education	Humanities and arts	Social sciences, business and law	Science, mathematics and computing	Engineering, manufacturing and construction	Health and welfare	Services	Agriculture and veterinary	Unknown
EU-28 (')	*348.0*	*482.9*	*1 414.9*	*435.6*	*607.4*	*595.8*	*172.3*	*69.4*	*30.9*
Belgium	10.2	12.0	33.8	5.6	12.8	25.8	2.1	2.5	3.2
Bulgaria	4.7	4.4	33.8	3.4	10.0	4.3	5.0	1.0	0.0
Czech Republic	11.6	8.4	35.9	10.4	12.8	10.3	5.4	3.8	1.3
Denmark	4.6	8.1	23.3	5.5	8.0	14.0	2.0	0.9	0.0
Germany	52.9	62.7	142.2	71.8	99.5	38.5	17.5	10.0	0.6
Estonia	0.9	1.4	3.3	1.2	1.5	1.4	0.9	0.2	0.0
Ireland	4.9	7.3	17.2	6.1	6.7	8.6	3.6	0.7	6.3
Greece	6.9	7.7	20.5	8.1	12.2	5.6	1.8	3.4	0.1
Spain	55.9	38.0	113.7	36.4	65.3	60.0	32.1	5.6	0.0
France	19.8	69.1	312.8	69.6	110.6	113.4	27.3	10.6	0.3
Croatia	1.6	3.7	15.1	2.9	5.3	3.2	3.4	1.5	0.0
Italy	16.3	57.9	116.6	28.0	57.2	56.4	10.3	7.4	11.7
Cyprus	0.8	0.5	2.9	0.5	0.7	0.5	0.3	0.0	0.0
Latvia	1.6	1.8	8.6	1.3	2.6	3.9	1.6	0.2	0.0
Lithuania	4.3	3.0	16.9	2.1	6.6	4.5	1.2	0.7	0.1
Luxembourg	0.4	0.1	0.8	0.2	0.1	0.1	0.0	0.0	0.0
Hungary	10.0	6.6	31.4	4.7	8.1	5.6	5.9	1.5	0.0
Malta	0.3	0.5	1.5	0.6	0.4	0.4	0.1	0.0	0.0
Netherlands	16.1	12.3	54.3	8.5	11.3	25.9	7.0	1.9	1.0
Austria	9.3	9.1	28.2	7.7	16.1	5.7	7.9	1.3	0.1
Poland	.	.	.	.	.	.	.	.	3.7
Portugal	8.6	8.6	29.3	7.5	17.3	16.3	5.9	1.4	0.0
Romania	4.5	14.0	73.4	9.1	34.8	25.1	7.7	3.6	0.0
Slovenia	1.8	1.9	6.7	1.8	3.1	1.5	1.4	0.6	0.0
Slovakia	9.2	4.9	22.4	5.2	9.2	13.2	4.7	1.2	0.0
Finland	3.3	7.0	12.9	3.8	10.9	10.7	3.1	1.1	0.0
Sweden	9.6	4.4	20.8	5.6	13.1	16.6	2.0	0.7	0.0
United Kingdom	78.2	127.6	236.7	128.2	71.2	124.3	12.1	7.4	6.3
Liechtenstein	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0
Norway	7.4	4.4	11.3	3.3	5.6	9.6	2.8	0.3	0.1
Switzerland	8.2	6.9	29.9	6.7	11.4	10.7	6.2	1.4	0.5
FYR of Macedonia	0.7	1.5	4.8	1.2	1.2	1.0	0.8	0.3	0.0

(') Excluding Poland, except for unknown.
Source: Eurostat (online data code: educ_uoe_grad02)

The vast majority of the students (and academic personnel alike) are Greeks. With a few exceptions of M.A. (M.Sc.) and Ph.D. programmes, where the working language is English and foreign students and academic personnel can participate, all undergraduate programmes are taught in Greek. The regional distribution of Greek students, who attend Greek

universities, is shown is Figure 3.

Figure 3: Students Enrolment in Tertiary Education in Greece by (NUTS2) Region



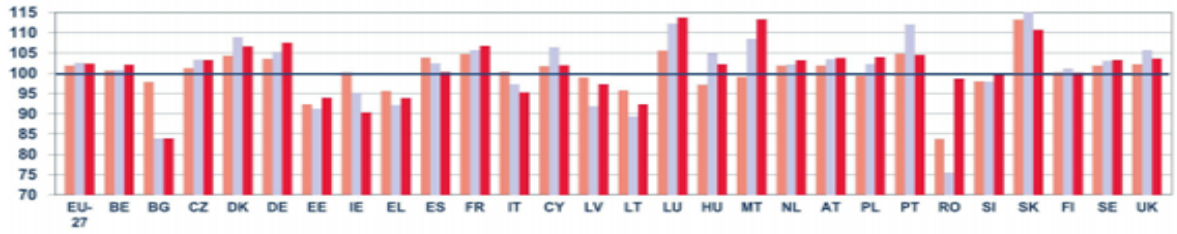
The vast majority of them come from the prefecture of Attiki (capital is Athens), where almost half of the Greek population resides, followed by the regions of Sterea Ellada (neighbouring region from the west to Attiki) and Macedonia region (Central-North of Greece). The participation of Aegean islands and Kriti is also significant (as some islands, including Kriti, host a number or tertiary institutions).

When it comes to students' mobility, about 5.8% of the country's total student body participates in exchange programmes, with most students choosing British (36.1%) and German (15%) universities. A recent report, however, by the Organization for Economic Cooperation and Development (OECD) showed a significant drop in that rate. According to an OECD study titled "Education at a Glance," 22,000 Greek students were studying abroad in 2012, compared to 33,500 in 2011 and 34,200 in the year before –an indication that the economic crisis has also restricted the mobility of Greek students abroad. The report also suggested Greece has yet to find a formula for attracting more foreign students to its higher education institutions as 78.7% of the country's foreign (mainly exchange) students come from the neighbouring countries and only 20.7% from the OECD countries.

3.2 The funding of Greek Universities

Greek universities have always been heavily dependent on governmental financing. Generally, the public sector funds education either by bearing directly the current and capital expenses of educational institutions or by supporting students and their families with scholarships and public loans as well as by transferring public subsidies for educational activities to private firms or non-profit organisations. Both types of transactions together are reported as total public expenditure on education. Below, Figure 4 shows the trends in total public spending on education for the period 2008-2011.

Figure 4: Trends in Total Public Spending on Education in Europe, 2008-2011

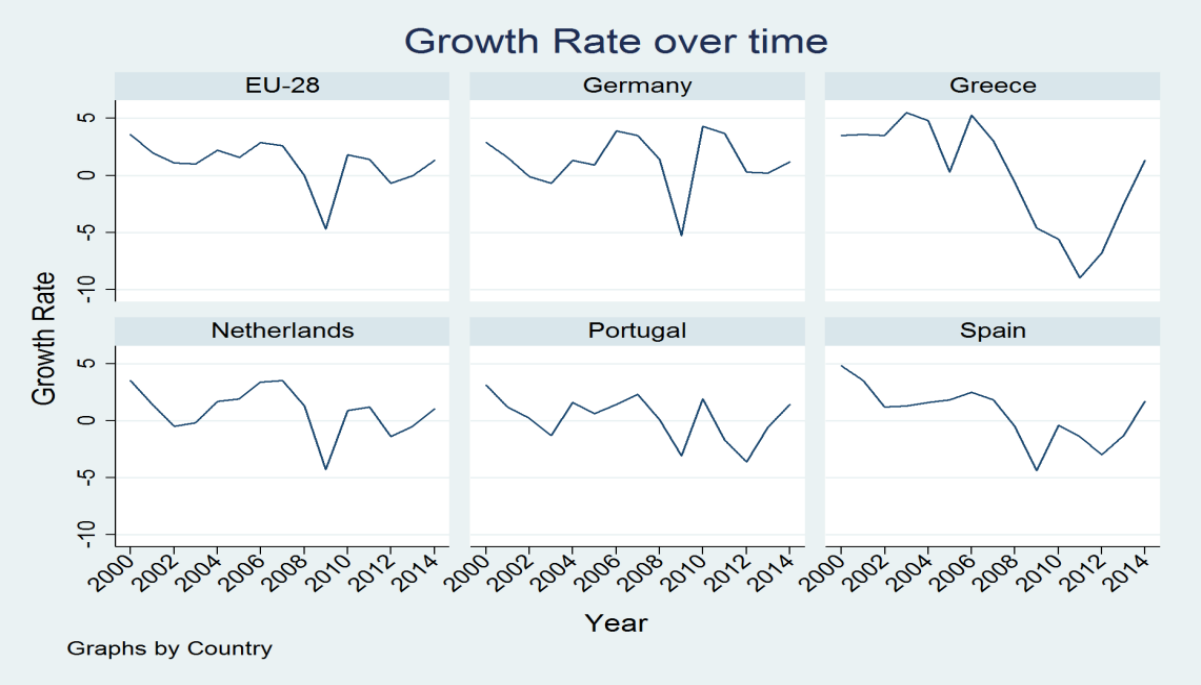


	EU-27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV
2009	101.9	100.7	97.8	101.3	104.3	103.5	92.4	100.2	95.6	103.8	104.7	:	100.3	101.7	98.9
2010	102.6	100.8	84.0	103.3	108.9	105.3	91.2	95.2	92.2	102.4	105.7	:	97.3	106.4	91.8
2011	102.4	102.1	83.9	103.3	106.6	107.5	93.9	90.3	93.9	100.3	106.8	:	95.3	102.0	97.3
		LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK
2009		95.7	105.6	97.2	99.1	101.9	101.8	99.4	104.8	83.8	98.0	113.2	100.2	101.9	102.3
2010		89.4	112.3	104.9	108.5	102.2	103.4	102.3	112.0	75.5	97.9	120.2	101.2	103.1	105.7
2011		92.4	113.7	102.3	113.3	103.2	103.7	103.9	104.5	98.7	99.8	110.7	100.1	103.3	103.6

Source: Eurostat, National accounts statistics and COFOG (data extracted 14 March 2013).

Note: Two-letter abbreviations stand for: BE for Belgium, BG for Bulgaria, CZ for Check Republic, DE for Denmark, EE for Estonia, IE for Ireland, EL for Greece, ES for Spain, FR for France, HR for Croatia, IT for Italy, CY for Cyprus, LV for Latvia, LT for Lithuania, LU for Luxemburg, HU for Hungary, MT for Malta, NL for the Netherlands, AT for Austria, PL for Poland, PT for Portugal, RO for Romania, SI for Slovenia, SK for Slovakia, FI for Finland, SE for Sweden, UK for United Kingdom.

Figure 5: Trends in GDP Growth, 2000-2014

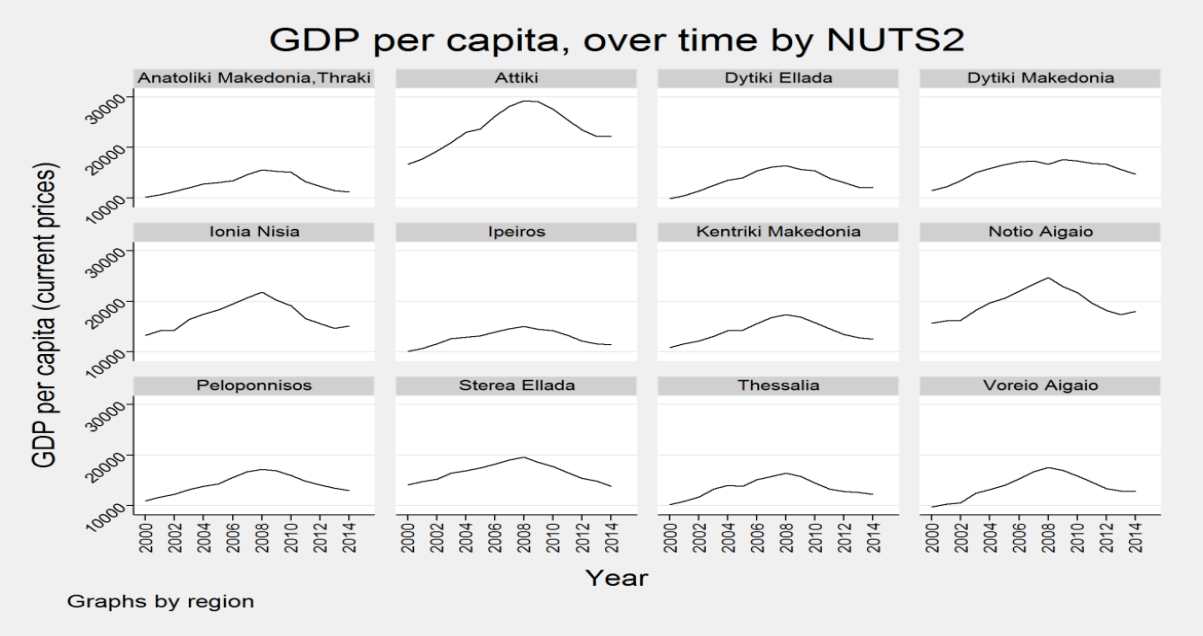


Source: Eurostat

As one can see from Figure 4 above, public spending in Greece is below the EU mean (standardized to 101.9 for the year 2009) by approximately 6% to 8%. Its share is smaller for instance than Spain, Portugal and Netherlands. This declining trend is due to the 2007 financial crisis, as Figure 5 (country level) and Figure 6 (Greek regions) show where Greek GDP slumped by about 40%. In addition, austerity measures imposed after the 2010 bailout

halved public funding for higher education in real terms between 2009 and 2014.

Figure 6: Trends in regional (NUTS2) GDP Growth in Greece, 2000-2014



Source: Eurostat

Figure 7 depicts below the total (private and public) financial support of students as percentage of GDP (column 1) as well as the public spending on higher education as percentage of GDP (column 2) in the EU. As one can see, Greece ranks at the bottom of the 16 of counties with Greek students to have the least access to financing their studies.

Figure 7: Financial support per student on higher education in the EU countries

Source: OECD

The weakness to publicly finance the development of highly educated human capital has redressed by a rich club of entrepreneurs, mostly from the maritime industry, who developed over time a strong “philanthropic culture” and via their own private foundations aimed to

serve social good and mainly human capital.

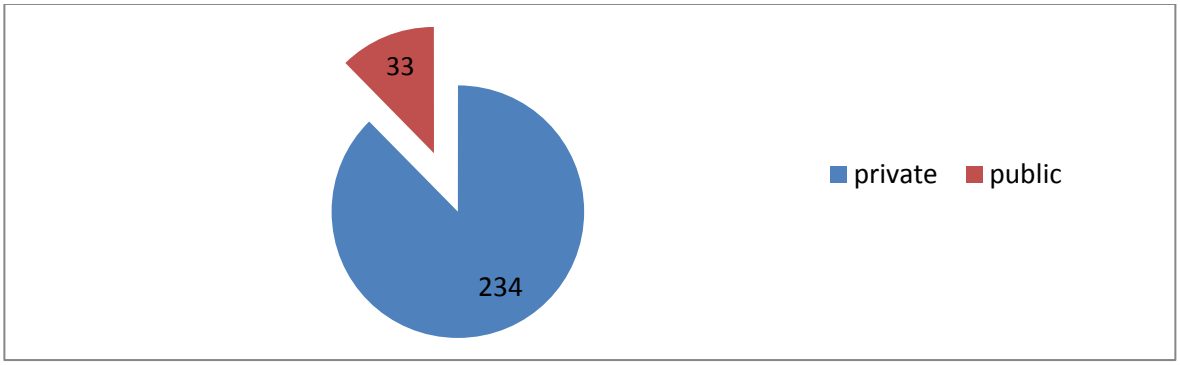
4. Data and Methodology

The main units of philanthropic donations to Greek universities and research centres are private foundations of well-established and successful Greek entrepreneurs.

We conducted a web-based research in order to report all philanthropic foundations, which offer donations in terms of scholarships/fellowships for higher studies in Greece or abroad and grants for scientific research. The list of the institutions is pretty exhaustive as we consulted the Ministry of Education, where all Foundations, which finance education in various forms, are registered.

We developed a database of 260 philanthropic foundations: private, which is the vast majority, and public that exist in Greece and donate funds to universities and research institutions for the years 2013 and 2014; for these years the maximum available information was available for all foundations. As Figure 8 below depicts, only the 12% of them are considered to be public foundations, while the rest are private initiatives.

Figure 8: Type of Philanthropic Foundations in Greece



Source: Author's data

Based on their websites, when available, or via phone-calls we gather information about (i) the amount (in euros) of funding they provide and its allocation to scholarships and grants, (ii) the specific criteria they apply to select the successful applicants, (iii) the total amount of their endowments, and finally, (iv) quality characteristics of these foundations.

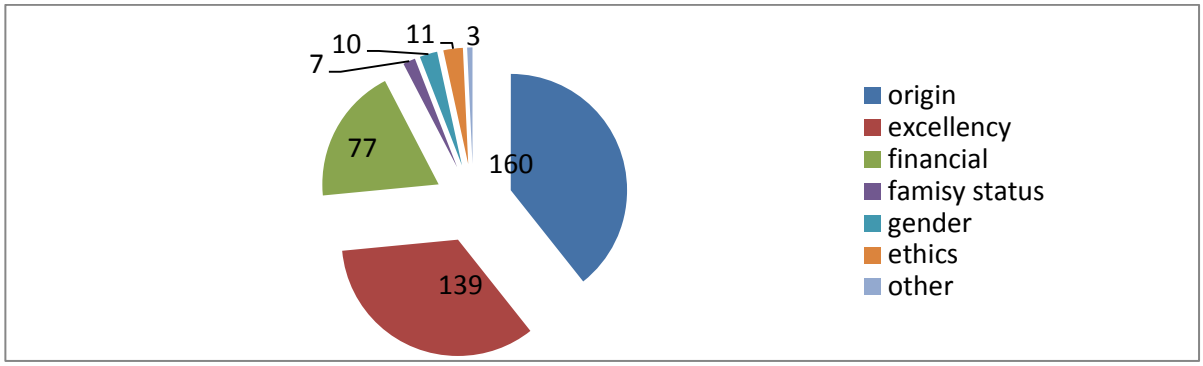
For the monetary figures, in particular, we relied on published balance sheets. This task, however, proved to be quite difficult, as the vast majority of private foundations have chosen to be based outside Greece, so there is no obligation to publish their balance sheets. In this case, we had to conduct interviews via telephone.[3]

The value of total assets of the 260 foundations in Greece is about 320 billion euros and the value of donations is up to 20 million euros (2014). Despite the harshness of the economic crisis, the assets of the foundations have remained unaltered.

To provide financial support, donating foundations –private or public– rely on several criteria in selecting well-deserved recipients. Table A.2 in the Appendix analytically reports the criteria while Figure 9, below, provides fund allocation based on such criteria.

[3] A detailed list of these institutions as well as their financial characteristics and funds allocation can be provided upon request.

Figure 9: Selection Criteria of Foundations for Scholarships and Grants

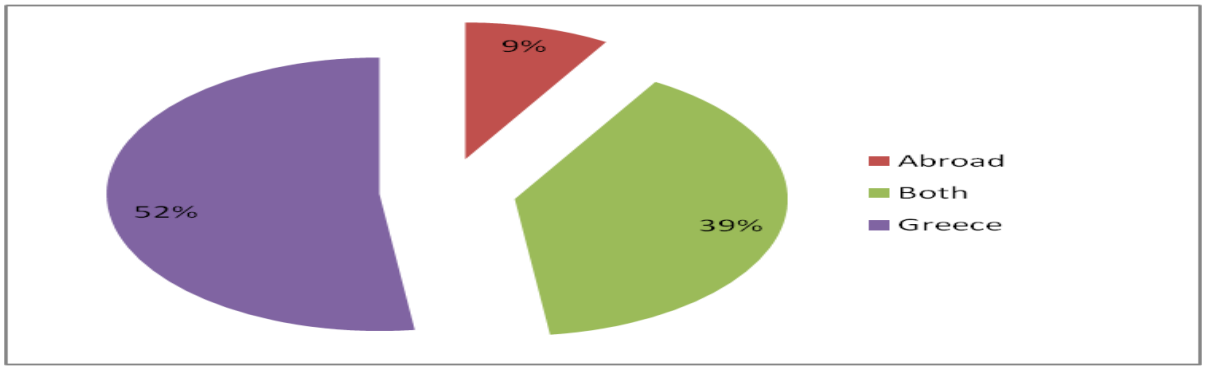


Source: Author's data

More specifically, the allocation of donations (mainly scholarships) is primarily influenced by the academic/research performance, the origin of the candidate (to support economic development of a specific region, which is usually the region of origin of the foundation's owner) and financial status of the candidate.

To support the academic development and growth, more than half of the donations are destined to students who pursue their studies in Greece, as Figure 10 below shows.

Figure 10: Destination of Scholarships and Grants



Source: Author's data

In total and for the year 2014, four million euros were donated for research (25% of total donations) mostly in technological and medical fields, while 16 million (75% of total donations) allocated to various scholarships.

5. Results and Discussion

In a period of uncertainty and decreasing government funding of tertiary education, science programs and medical research in Greece due to financial crisis, large donors step in to help. But philanthropists in Greece are doing far more than just filling in gaps in government funding; they actually support the development of human capital by "smoothing out" the harshness of the university and research institutions budget cuts due to the crisis and at the very least keep academic personnel in their posts. Severe wage cuts and university budget cuts could have led many more scientists and students to leaving the country for better research and studying conditions. Although there is no exact information on the number of

faculty members who left Greek universities or research institutions and migrate abroad – most of them usually get a three-year unpaid leave before permanently quitting their posts - private funds channelled to higher education and research during the years of the crisis aimed at alleviating and sooth-out he brain-drain effect.

The financial crisis had also a toll in the innovation performance of the country. Table 3 below presents some innovation indices of the Greek economy for the year 2014. All measures are weighted by GDP or population (per capita) to allow comparisons with other EU countries.

Table 3: Innovation Performance in Greece, 2014 (compared to four EU countries)

		EU28	GREECE	PORTUGAL	SPAIN	GERMANY	NETHERLANDS
R&D as share of GDP		2.03	0.81	1.33	1.26	2.83	1.96
R&D, higher education		0.47	0.31	0.58	0.35	0.49	0.64
Researchers per capita		0.0035	0.0027	0.0037	0.0026	0.0044	0.0045
Grants by NGOs/voluntary			0.7	6.9	0.3	1,500.5	557.1
Patents applications (EPO)		56,561	116	126	1,512	21,350	3,453
	per capita	0.0136	0.0014	0.0013	0.0045	0.0248	0.0186
Trademarks applications (EUTM)		82614	782	1279	8769	19938	3977
	per capita	0.0199	0.0095	0.0134	0.0263	0.0232	0.0215
Private donations	Total		20 million				
	per capita		€1.35				
	as % GDP		0.06				

Note: Definitions of the terms are provided in Table A.3 in the Appendix.

Greece appears to be an underperformer when it comes to innovation inputs, R&D and Researchers, as it ranks lower than the EU average and some benchmark countries. It also performs poorly in terms of grants from non-governmental organizations (NGO) and other kindred agents. When it comes to the innovation output (patent applications) and to the extent that trademarks capture entrepreneurial/commercial activity or product and service variety, Greece performs slightly better compared to the input side of the innovation but still below the EU average and compared to countries of about equal size (e.g., Portugal). Finally, the 20 million donations from Greek philanthropists correspond to 1.35 euros per inhabitant in Greece and contribute 0.06% of the Greek GDP (2014). As we lack information on donations to higher education and research in other EU countries, we are unable to compare Greece with other EU peers.

Institutional differences across countries and universities make it difficult to compare university performances across the EU in terms of innovation and commercialization of academic knowledge. For example, the Greek system gives the individual –not the

university– the proprietary rights to research results, even though research is funded by the universities –this is also the case in many EU universities (e.g. Sweden); this is not, however, the case in the US, where universities have the proprietary rights to developing commercial opportunities based on academic research (Bayh-Dole Act, 1989).

To our knowledge, the work of Acs and Braunerhjelm (2004) is a systematic attempt in this respect that compares (some) Swedish and US universities; Swedish and US universities are embedded in different traditions and exposed to different financial systems and opportunities. Table 4 compares some philanthropic characteristics (indices) across the US, Sweden and Greece.

Table 4: Foundations, Endowments and Donations in the US (2002), Sweden (2000) and Greece (2014)

	Year	Foundations	Endowments	Donations	Donations/ Endowments	Population
Sweden*	2000	14,000	24 billion dollars	700 million dollars	0.03	8,861,426
US**	2002	60,000	450 billion dollars	24 billion dollars	0.05	288,368,698
Greece	2014	260	320 million euros	20 million euros	0.06	10,926,807

Source: Acs and Braunerhjelm (2004)
Note: (*), (**) Acs and Braunerhjelm (2004) figures

As one can see from Table 4 the philanthropic activity in terms of foundations and value of donations is far greater in the US and Sweden than in Greece (per capita). However, if one considers the donation to endowment ratio across countries, then the difference across them is not that great.

In general, Greek universities are very different from their US or Swedish peers. US –and to a lesser extent Swedish– universities have strong relationships with the commercial sector, which exerts a variety of influences including the university's founding history and the role played by philanthropists in setting the course for the university. In contrast, Greek universities have little connection with the commercial sector and benefits from philanthropic contributions are mainly restricted to donations for studies and doing research. The link between the academic and commercial sectors has often been neglected in European countries or it is not strongly encouraged; however, this feature has distinguished the US from Europe and explained the long run dominance of the US economy.

Particularly in Greece, philanthropy is not necessarily combined with entrepreneurship activity and the cycle where successful entrepreneurs donate to knowledge creating entities, which is eventually exploited by entrepreneurs, leading to the creation of new fortunes that can again be invested in knowledge creating entities is rather inactive.

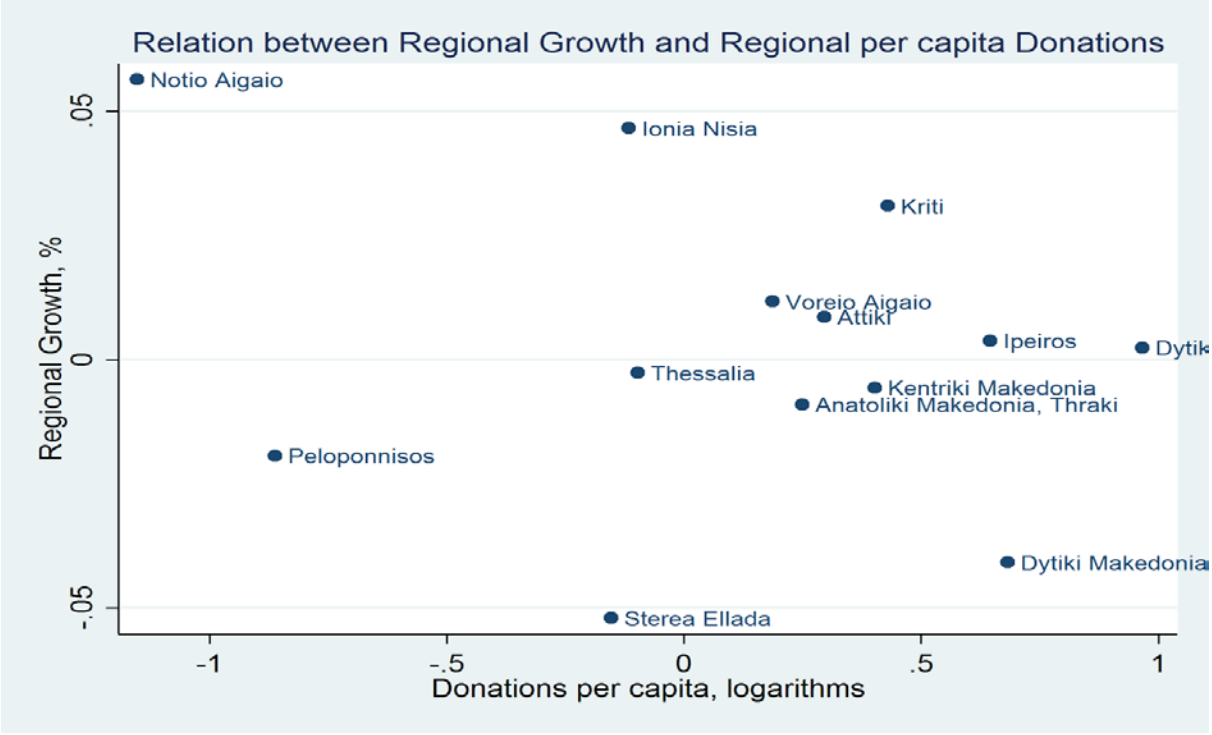
Philanthropic donations in Greece, however, have been an important vehicle of sustaining the development of human capital and research. The amount of donations to higher education and research *ex post* crisis did not change drastically compared to the amount *ex ante*. From the interviews we have conducted, it was apparent that Greek philanthropist highly value and prioritize higher education; since 2010 a portion of the philanthropic activities of the private Greek foundations turned into supporting the poor and the needy – given the adverse economic conditions in Greece - instead of being channelled to further increase the quality of

university research.

To release however the potentials of philanthropy, Greek universities should undergo some structural changes, adopt strategies to further invite philanthropic donations and link the latter with domestic (and international) entrepreneurship. Only in this way the university-created knowledge can be disseminated into the economy, can increase the technological basis of the country and provide the basis for the international development of a firm and the long run growth of the economy.

At this point and as an exercise, we would also like to gauge the importance of philanthropy for economic growth. To trace whether there is any association between the two we plot, based on regional data, the regional GDP growth against regional donations (in per capita terms). Figure 11 below depicts this association.

Figure 11: Regional growth and regional per capita donations in Greek regions, 2013-2014



Source: Author's data

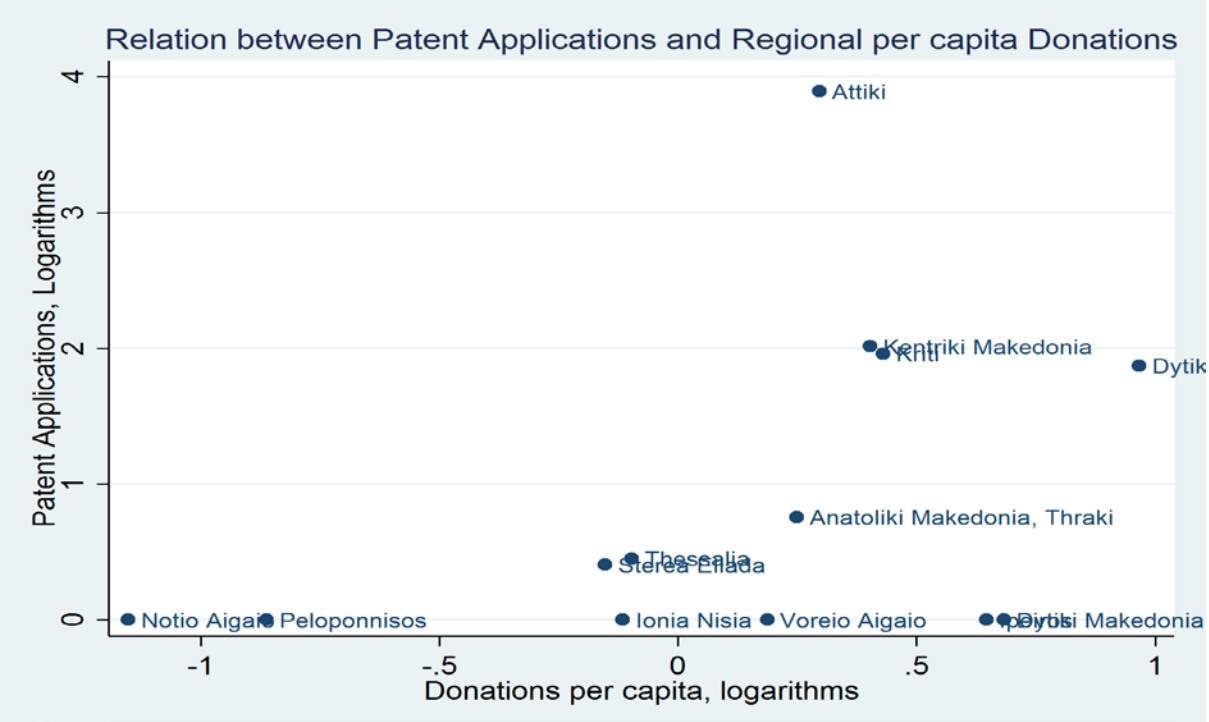
This graph hardly answers the question of whether philanthropy contributes to economic growth. A positive relationship can be discerned by these two variables, but this is far from proving that such relationship exists. It certainly suggests that further investigation is worthwhile.

As an exercise, we could also have explored the relationship between private donations and development of patent applications (to the EPO), but as we mentioned earlier the Greek system gives the individual –not the university– the proprietary rights to research results, even though when research is funded by the universities; therefore, it is difficult to trace the effect of private donations on academic technology transfer to the market and eventually technological knowledge diffusion in Greece. However, here, we make an effort and in the Figure 12 we plot the (log) of patent applications per region to the EPO against the (log) of per capita donations per region. In any case, we do not claim causation but rather association.

As one can see, the region with high donations per capita and high patent applications is

Attiki (capital is Athens), which fosters the most and the best universities and research institutions in Greece. Higher donations per person are attracted by the regions of Kriti (island), Kentriki Makedonia (North of Greece) and Ditiki Sterea (Central of Greece) but these regions do not over-perform Attiki region in terms of patent applications. This is because Attiki has more universities and research institutions and also more economic activity compared to the rest of the regions. As we mentioned above the Greek system gives the individual –and not the university– the proprietary rights to research results; even though when research is funded by the universities. Therefore, we really do not know how many of these patent applications are filed by universities or by the industry. On the other side of the scale, the regions of Notio Aigaio and Peloponnisos are lagging behind as they get the least donations per citizen and report the smallest number of patent applications.

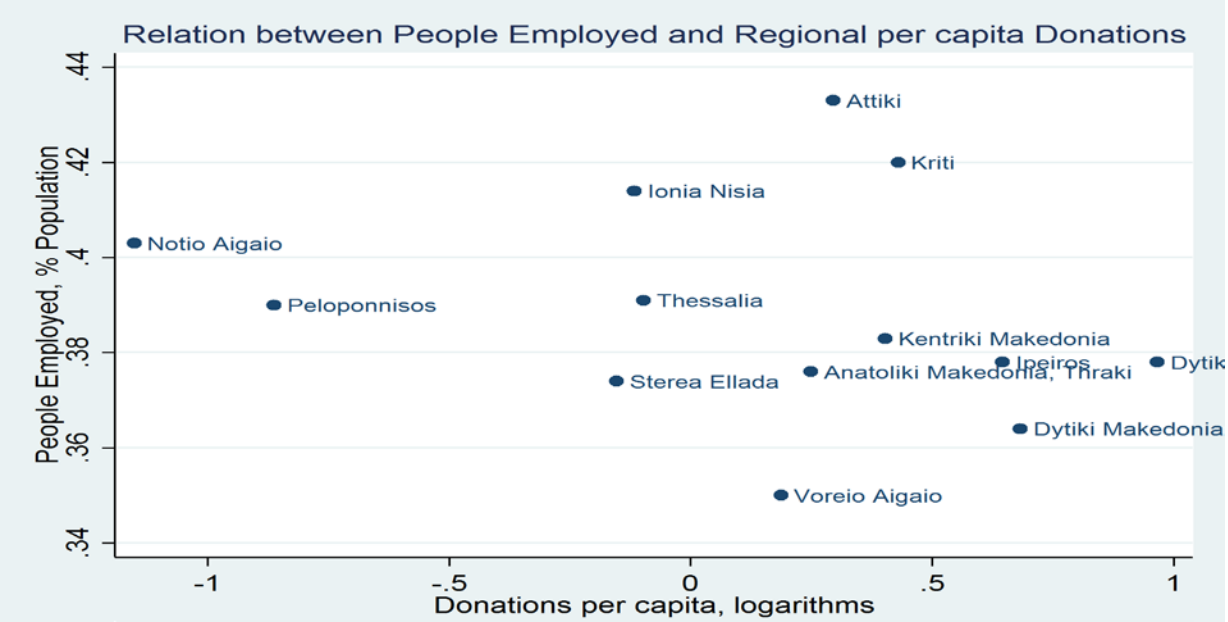
Figure 12: Regional patent applications and regional per capita donations in Greek regions, 2013-2014



Source: Author's data

Finally, one could also investigate whether there is some association of private donations on entrepreneurial activity –the latter is usually proxied by the number of self-employed workers. As we lack regional data on self-employment we rely on regional total employment. Figure 13, below, plots this relationship.

Figure 13: Relationship between private donations and regional employment in Greece, 2013-2014



Source: Author's data

Preliminary results (mostly correlations) show some positive but statistically weak association. The "leader" regions are again the same: Attiki, Kriti and Ditiki Sterea and the "laggards" are again Notio Aigaio and Peloponnisos.

Overall, more detailed data and for longer time span would shed more light on the role of (private) donations channelled to universities and research centres in Greece in producing (and diffusing) new knowledge and enhancing economic growth.

6. Conclusion

Philanthropic donations to higher education have always been of utmost importance as they are designed to augment knowledge in organizations. The increased knowledge opportunities created could be exploited by entrepreneurs, both domestic and internationally leading therefore to increased economic growth.

Judging from the experience of Greek universities, private donations are becoming an increasingly important source of revenue as the funding flow from the private foundations did not decrease over time and during the crisis, while the government support fell sharply. Philanthropy in Greece has not substituted, however, for public funding, but rather it complemented other means of financing academic research. It has also "smoothed out" sudden drops in financing research due to sharp budget cuts at universities during the financial crisis in Greece. Through fellowships and grants, it has facilitated the mobility and allocation of talented people across Greek and EU educational and research institutions. Most important, it has allowed academic staff in Greece to pursue their research in Greece and deterred, to certain extent, the flows of highly-skilled research personnel abroad.

Even though this case study has suggested that philanthropy has been important in fostering knowledge in Greek universities, this university-created knowledge did not transform into global entrepreneurial activities in terms of increased production, employment and economic growth. A number of structural changes must take place in Greek as well as in other

European– universities. Greek universities are characterized by less commercialized R&D, weak links to the commercial sector, absence of offices of technology transfer (OTT) and consequently licensing earnings as the Greek university system is rooted traditionally in dependence on tax-financed and homogenous university structure. In contrast, a university system based on competition and variety, with an emphasis on philanthropy, promoting knowledge creation would generate more domestic and international growth. European universities must co-ordinate and develop strategies to manage and encourage philanthropy. As philanthropic financing is relatively new for most European universities the awkwardness in handling it may hamper a potentially important source of revenue. Entrepreneurs and incumbents alike should formulate germane policies to encourage further exploitation of university-based knowledge.

Closing up, small countries that have a strong and rich tradition of philanthropy and a reasonably good knowledge base, as Greece has, need to be more internationally oriented to take advantage of a larger international market. In such countries the relationship between universities and international entrepreneurship should be strengthened to create a more diverse knowledge base leading to a richer technological society. Greece's small domestic market makes international entrepreneurship even more important for the country's global positioning and long run growth.

Appendix

Table A 1: Tertiary Education, Institutions and Research Centers in Greece

UNIVERSITIES (PUBLIC)	HIGHER TECHNOLOGICAL INSTITUTIONS (PUBLIC)	COLLEGES (PRIVATE)	RESEARCH CENTERS (PUBLIC)
Agricultural University of Athens	Piraeus University of Applied Sciences	American College of Greece	"Athena" Research and Innovation Centre in ICT and Knowledge Technologies
Aristotle University of Thessaloniki	Alexander T.E.I. of Thessaloniki	Mediterranean College	Hellenic Institute for Occupational Health and Safety
Athens School of Fine Arts	School of Pedagogical and Technological Education	Institution of Counselling & Psychological Studies	National Engineering Research Institute of Greece
Athens University of Economics and Business			National Hellenic Research Foundation - Athens
Democritus University of Thrace	T.E.I. of Central Greece	British Hellenic College	Hellenic Institute of International & Foreign Law
Harokopio University	T.E.I. of Central Macedonia	New York College	Academy of Athens
Hellenic Open University		City Unity College	Hellenic Centre for Marine Research
International Hellenic University	T.E.I. of the Ionian Islands	Athens GSM College	Hellenic Pasteur Institute – Athens
			Institute of Biomedical Technology
Ionian University	T.E.I. of Western Greece	Hellenic American Education Centre	Institute of Geology and Mineral Exploration
National and Kapodistrian University of Athens			Institute of International Relations
	T.E.I. of Western Macedonia	Aegean Omiros College	Foundation for Research & Technology - Hellas
National Technical University of Athens	T.E.I. of Eastern Macedonia and Thrace	René Descartes College	National Centre for Scientific Research "Demokritos" – Athens
Technical University of Crete		Greek Bible College	Space Internetworking Centre
	T.E.I. of Athens		Centre for Research and Technology Hellas
Panteion University of Social and	T.E.I. of Crete	Athenian College	Institute for International Economic Relations
	T.E.I. of Epirus	The European	Mediterranean Agronomic

Political Sciences		College for Tourism Studies	Institute of Chania
	T.E.I. of Peloponnese		National Centre for Social Research
University of the Aegean	T.E.I. of Thessaly		National Observatory of Athens
University of Crete		American Farm School	Telecommunication Systems Institute
University of Ioannina			National Agricultural Research Foundation
University of Macedonia		CITY College	University Research Institute of Social Insurance, Health & Assistance
University of Patras		Attico College	
University of Peloponnese		AKMI Metropolitan	Computer Technology Institute and Press "Diophantus"
University of Piraeus		British College of Law and Economics	Alexander Fleming Biomedical Sciences Research Centre
University of Thessaly			Centre for European Constitutional Law
University of Western Macedonia		DEI College	Centre for the Greek Language
		Institution d'Études Francophones	Centre of Planning and Economic Research
			Centre for Renewable Energy Sources
			Centre for Technological Research of Crete
		Athens GSM College	Centre of International & European Economic Law
		American College of Thessaloniki	Centre for Plasma Physics and Lasers, T.E.I. of Crete
		College of Professional Journalism Studies	Education Research Centre
			Eugenides Foundation
			Exports' Research and Studies Institute
			Institute of Optics and Vision
		AAS College Applied Arts	Foundation for Economic and Industrial Research
		iCon College	Hellenic Geological Institute
			National School of Public Health
			Research Centre for Equal Opportunities
			Society for Social and Economic Studies

Table A.2: Definition of Variables and Sources

Variable	Definition	Source
Regional growth	The percentage change of gross regional product	Eurostat (Statistical Office of the European Communities)
R&D as %GDP	The total expenditure on R&D carried out by all resident companies, research institutes, university and government laboratories, etc., in a country. It includes R&D funded from abroad, but excludes domestic funds for R&D performed outside the domestic economy.	Eurostat (Statistical Office of the European Communities)
R&D, higher education	R&D expenditure in the higher education sector, where the higher education sector in the context of R&D statistics includes: • All universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. • It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions.	Eurostat (Statistical Office of the European Communities)
Researchers	Number of researchers in engineering and medical science	Eurostat (Statistical Office of the European Communities)
Patents applications	A request pending at a patent office for the grant of a patent for the invention described and claimed by that application. The term is also used to refer to the process of applying for a patent, or to the patent specification itself (i.e. the content of the document filed with a view to initiating the process of applying for a patent.	EPO (European Patent Office)
Trademarks applications	A recognizable sign, design, or expression which identifies products or services of a particular source from those of others, although trademarks used to identify services are usually called service marks.	EUTM (EU Trade Marks)
Donations	Amount of money donated by philanthropic foundations	Own survey data
Endowments	Total assets of philanthropic foundations	Own survey data

Table A.3: Names of Greek regions

	NUTS2 classification	Commonly known
1	Thraki	Thraki
2	Makedonia	Macedonia
3	Ipeiros	Ipiros
4	Thessalia	Thessaly
5	Ionia Nisia	Ionian Islands
6	Sterea Ellada	Central Greece
7	Peloponnisos	Peloponnesus
8	Attiki	Attica
9	Nisia Aigaiou	Aegean Islands
10	Kriti	Crete

Acknowledgments

I am indebted to Sofia Xesfingi for excellent research assistance and to Alexandra Kechrinioti for her comments. I would also like to thank Dimitris Karamanis, Mark Sanders, Miguel Amaral and Lazlo Szerb as well as participants at the FIRES conference (Utrecht, Netherlands, Oct. 4-6, 2016) for useful insights. The paper received financial support from the grant *H2020 EURO-2-2014-649378-FIRES*. The usual disclaim applies.

References

Acs, Z. and Braunerhjelm, P., 2004. "The Entrepreneurship-Philanthropy Nexus: Implication for Internationalization", Discussion Papers on Entrepreneurship. Growth and Public Policy, No. 2304.

Acs, Z. and Dana, L., 2001. "Two Views of Wealth Creation". Small Business Economics, 16(2), 63-74.

Acs, Z. and Phillips, R., 2002. "Entrepreneurship and Philanthropy in American Capitalism". Small Business Economics, 19(3), 189-204.

Acs, Z. and Yeung, B., 1999a. "Entrepreneurial Discovery and the Global Economy". Global Focus, 11(3), 63-71.

Acs, Z. and Yeung, B., 1999b. Small and Medium Sized Enterprises in the Global Economy. Ann Arbor, The University of Michigan Press.

Aghion, P., Bertola, G., Hellwig, M., Pisani-Ferry, J., Rosati, D., Vinãls, J. and Wallace, H., 2003. "An Agenda For A Growing Europe. Making the EU Economic System Deliver", Report of an Independent High-Level Study Group established on the initiative of the President of the European Commission.

Alto, P., 2013. "Entrepreneurial Philanthropy, Stanford Social Innovation Review (available online at https://ssir.org/articles/entry/entrepreneurial_philanthropy).

America, R., 1995. Philanthropy and Economic Development. Westport, Greenwood Press.

Barro, R. J. and Sala-i-Martin, X., 1998. Economic Growth. Cambridge MA, MIT Press.

Clarke, J., Huliaras, A. and Sotiropoulos, D. A., 2016. Austerity and the Third Sector in Greece: Civil Society at the European Frontline. Routledge.

Ghaus-Pasha, A., 2005. "Role of civil society organizations in governance", 6th global forum on reinventing government towards participatory and transparent governance.

Letts, C.W., Ryan, W. and Grossman, A., 1997. "Virtuous capital: What foundations can learn from venture capitalists". Harvard Business Review, 97, 36-41.

Pfeffer, J. and Salancik, G. R., 1978. The external control of organizations: A resource dependence perspective. New York, Harper and Row.

Roberts, D. and Woods, C., 2005. Changing the world on a shoestring: The concept of social entrepreneurship. University of Auckland Business Review, 7(1), 45-51.

Rosenberg, N., 2003. "America's University/Industry Interfaces 1945-2000", mimeo. Stanford University.

Sachs, J., 2000. "Sachs on Globalisation—A new map of the world". The Economist, 355, 81-83.

Triantafyllopoulou, A., 2012. "Social Entrepreneurship – Social Enterprises: European Experience and the Greek Case". Review of European Studies, 4(1), 115-124.

Yannitsiotis, Y., 2007. Social History in Greece: New Perspectives L'Histoire sociale en Grèce: Nouvelles Retrospectives Sozialgeschichte in Griechenland. Neue Perspectiven. East Central Europe, 34(1), 101-130.

Zikou, E., Gatzioufa, P. and Sarri, A., 2012. "Social entrepreneurship in times of economic austerity: a sparkle of light for the economies in crisis?". Scientific Bulletin – Economic Sciences, 11(1), 53-65.