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# Private education in Greece

***Ioannis Cholezas****

## 1. Introduction

The important role of education in social and economic development is well recognised worldwide. Education services are typically provided by schools and involve the award of degrees to certify knowledge and skills acquired. Over the past decades there have been systematic efforts to classify as forms of education all knowledge, skills and experiences a person accumulates during his/her lifetime, irrespective of the ways they were acquired; that is usually referred to as lifelong learning. Education should not be confused with the Greek "paideia". "Paideia" is the result of a process that involves both the narrow familial and the wider social environment, but it is also the outcome of an internal, personal process. Education, on the contrary, is provided by specific organisations, either public or private, and it can be either formal or non-formal.

This article focuses on private formal education, which is provided within organised structures, i.e., schools, and under a well-defined framework, which includes certain curricula, books, selected courses, teaching in classrooms, etc., and leads to a certificate in the form of a degree. Attending private schools is less common in Greece compared to other European countries (OECD, 2012); therefore this article wishes to inform interested readers regarding the legislative framework for private education, to discuss the most popular arguments in favour of private education, to present empirical evidence regarding the characteristics of households that prefer private education over public and to explore how the industry evolved during the times of the depression in terms of the number of schools, students and teaching staff.

## 2. The legislative framework for private education

Article 16 (§4) of the Greek constitution provides for free-of-charge education services for all Greek citizens. The provision of education services is a key state mission and it aims at educating Greeks morally, mentally, vocationally and physically, to develop their national and religious consciousness and to mould them into free and responsible citizens (§2). Although it is clearly stated in the constitution (§5) that only state owned and operated institutions can provide tertiary education services (state entities of public law - NPDD), the operation of privately owned schools of primary and secondary education is provided for (§8). It is also clearly stated that such schools will operate under the supervision of the Ministry of Education, Research and Religious Affairs (MoE). In practice, one could distinguish between two types of privately owned education institutions: the first one involves typical education and includes privately owned primary and secondary education schools (both lower and upper), and the second involves non-typical education and includes privately owned foreign language schools, cram schools (i.e., private support classes) and post-secondary non-tertiary education institutions (IEK), which usually address vocational education needs. This article focuses on the first type of institutions.

Law 682/1977 is the core legal document for the establishment and operation of privately owned primary and secondary education schools.[1] It states that privately owned schools operate under the same rules and restrictions as public schools. Therefore, the degrees awarded are equivalent to those awarded by public schools. The rationale behind state supervision of private schools relies on the assumption that education is a public good[2] and as such its output affects the entire society. Moreover, private school graduates compete with public school graduates for jobs, and employers often take seriously into account the academic record of the candidate. In other words, private

* Senior Research Fellow, Centre of Planning and Economic Research (KEPE).

– Opinions or value judgments expressed in this article are the author's own and do not necessarily reflect those of the Centre of Planning and Economic Research.

1. Foreign schools are not included in the group of private schools discussed in this article, since they operate under the supervision of the states they come from. In foreign schools that come from EU member-states, Greek students can apply and attend also, ever since the terms and conditions of their operation were equalised to those of private schools. A more thorough presentation of their legal framework can be found in Papaevangelou (2015).

2. The reader can find an interesting discussion regarding the character of education as a public good in Anomaly (2018).

**TABLE 1 Number of private schools and annual tuition fees (in € ), 2017-2018**

| | No. of schools | Average tuition fees | Maximum tuition fees | Minimum tuition fees* |
|---|---|---|---|---|
| Kindergartens in Attica | 220 | 4,250 | 8,100 | 700 |
| Kindergartens outside Attica | 196 | 3,000 | 5,500 | 1,000 |
| Primary schools in Attica | 83 | 4,800 | 11,363 | 700 |
| Primary schools outside Attica | 48 | 4,116 | 7,000 | 2,000 |
| Lower secondary schools in Attica | 54 | 5,600 | 9,783 | 700 |
| Lower secondary schools outside Attica | 37 | 4,900 | 7,500 | 2,500 |

*Source:* Ministry of Economy and Development, General Secretariat for Trade and Consumer Protection.

* The minimum tuition fees of € 700 involve the Armenian Red Cross in Attica. The second cheapest school charges at least twice as much.

schools are not just businesses. Rather, they involve a strong social footprint instead. As a result, the legislative framework for private schools involves all aspects of school life and education services provided, ranging from time schedule, syllabus and extracurricular activities to building and space requirements, owners' and teachers' qualifications, and monitoring labour relations between school owners and teachers. Some of the provisions have changed over the years with ministerial decisions or articles of laws regarding specific points of interest. Law 4415/2016[3] is the most recent and crucial intervention of the past years regarding the operation of private schools. With respect to their supervision, Law 4452/2017 (article 15) re-established the Independent Directorate for Private Education[4] which operates separate departments for private school personnel, foreign schools, cram schools and foreign language schools.[5]

In this context, strictly private schools[6] have to follow the same syllabus as public schools, but they are allowed to offer extra subjects (including foreign languages) and other education activities after completion of the typical school hours.[7] In such a case, they are obliged to report extra subjects and activities to the MoE (more specifically, to the respective supervisory body, i.e., the Regional Board of Education), along with the number of students and teachers involved. With respect to hiring procedures, private school teachers should have the same qualifications as public school teachers, a prerequisite that holds also for extracurricular activities.

Last but not least, private schools are self-funded in the sense that students pay tuition fees and there is no state subsidy or tax redemption for students or their parents[8] as is the case in other countries (IOBE, 2013). The General Secretariat for Trade and Consumer Protection of the Ministry of Economy and Development publishes annually a list of private schools and their tuition fees.[9] The list involves kindergartens, primary schools and lower secondary

3. The FEK is available at <https://www.esos.gr/sites/default/files/articles-legacy/nomos_4415_2016.pdf>.

4. This is a long-standing request for OIELE. See <https://www.oiele.gr/megali-mera-gia-tin-idiotiki-ekpedefsi-epanasistinete-avtotelis-diefthinsi-idiotikis-ekpedefsis-sto-ipourgio-pedias-afximenes-epoptikes-armodiotites/>.

5. <https://www.esos.gr/arthra/50116/xekina-simera-ti-leitoyrgia-tis-i-aytotelis-dieythynsi-idiotikis-ekpaideysis>.

6. Foreign schools which are subsidized by the states they come from are excluded.

7. The same is true for special types of public schools, such as music and arts schools.

8. On the contrary, tuitions in private schools are considered as proof of income by the tax services and can be taxed separately. This is most unpleasant, but otherwise necessary, in order to fight extensive tax evasion in Greece. See <https://www.newsbeast.gr/financial/arthro/3505092/ti-ischii-me-ta-tekmiria-gia-ta-idiotika-scholia-ke-to-voithitiko-prosopiko>.

9. The list is available at <http://gge.gov.gr/?page_id=3715>.

schools only.[10] Table 1 above summarizes some of the reported results. Almost two thirds of all private schools are located in Attica, which is expected considering that half of Greece's population resides in Attica. Moreover, the cost of private education is also higher in Attica, which is not surprising given the substantially higher income of the region compared to the national average. Interestingly, there is a considerable gap between maximum and minimum tuition fees, which is probably justified by the fact that some schools address population groups with specific characteristics. Admission rules can be school specific since sometimes there are specific requirements, such as a certain ethnic origin. Furthermore, some private schools rely on entry examinations for the admission of their students. Apart from the tuition fees, some private schools also charge extra money for extracurricular activities and transportation services, if required. Some secondary education private schools offer full or partial scholarships to students with exceptional academic skills verified through tests.[11]

Since private schools are not funded by the state, they have to rely on their own revenues to finance their operation; therefore they rely on an adequate demand for their services, just like any other business. It comes as no surprise then that, irrespective of the level of education involved, private schools are concentrated in big cities and densely populated areas. There were only two private schools in primary and secondary education in the South Aegean islands, three in the Ionian Islands and none in Western Macedonia (Kanellopoulos, 2011). The same report argues that there is a big cost associated with entering the market of private education services; there are narrow profit margins, probably due to the nature of the business and institutional restrictions,[12] while recurring investments are necessary to remain attractive. Moreover, a strong brand name is very important to win parents' trust and attract students, since it accommodates safety and trust. All these elements taken together suggest that it is not an easy task for a firm to enter the market of private education services in Greece, at least as far as typical education is concerned.

Given the economic and social importance of education, it is interesting to explore the developments in private education in Greece during the depression, at least in quantitative terms. In this framework, the demand for private education services is expected to decline due to the reduction in the disposable income of households. On the other hand, concerns expressed by many regarding the deterioration of public education services, reflected in lower state funding, teacher vacancies, increased number of temporary teachers paid by the hour and facing worse terms of employment compared to permanent teachers and frequent strikes by teachers in response to one-sided institutional reforms, may force households, which can afford it, to resort to private education services.

## 3. Discussion of the arguments in favour of private education

A series of arguments in favour of private education are put forward in the relevant literature (Sakellariou, 2016). The most widely featured is that private schools have, on average, better education results compared to public schools.[13] Although a lot can be said about that, PISA results for 2015 show that, on average, students in private schools perform better than students in public schools in OECD countries. However, once the socio-economic background of the students is taken into account, the ranking is reversed, so that students in public schools perform better than their counterparts in private schools.[14] The same is true for Greece. According to the 2015 results, private school students outperformed public school students in sci-

10. The Ministerial Decision MD91354/2017 published in FEK 2983B/30.8.2017 abolished, allegedly because the European Commission demanded it, the obligation of school owners to report their tuition fees to the ministry. That means the list will not be updated for the next school year and, thus, a source of information for interested parents will be lost. However, private schools, both formal and non-formal, are obliged to display on their premises the cost of tuition fees along with other related costs.

11. Every school has its own admission tests. Candidates are usually tested in Greek language and mathematics. Some schools offer scholarships to students with special academic, music or athletic skills. A quick search of the internet sites of well known private schools can verify these claims.

12. There used to be administratively set tuition fees for the first grade in every separate level of education and annual increases had to conform to certain boundaries. However, that was abolished in 2013. (see <http://www.kathimerini.gr/478119/article/oikonomia/ellhnikh-oikonomia/eley8era-ta-didaktra-sta-idiwtika-sxoleia>).

13. See for instance <https://www.huffingtonpost.gr/2016/12/09/eidiseis-koinonia-oi-mathites-ton-ellinikon-idiotikon-sxoleion-einai-duo-xronia-mprosta-ekpliktikes-epidoseis-ston-diagonismo-pisa_n_13529382.html> or IOBE (2013).

14. <https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf>

ence by one of the widest margins amongst OECD countries that participated in the PISA test (-68 PISA score,[15] ranking 52/58). However, once the socio-economic status of the student and the school (based on ESCS[16]) was taken under consideration, public school students actually outperformed their counterparts in private schools (37 PISA score, ranking 9/58).[17] The same result is confirmed by the 2009 results, thus it can hardly be considered a coincidence.[18]

Thus, private school students seem to possess certain attributes that distinguish them from their counterparts in public schools. The effect of the socio-economic status on students' achievement has been widely documented, and research has shed light on specific mechanisms linking economic, social and cultural assets in the familial context to students' education outcomes (e.g., Bianchi et al., 2004; Feinstein, Duchworth and Sabates, 2008; Jager and Breen, 2016). For instance, students whose parents have higher levels of education and more prestigious and better-paid jobs typically benefit from a wider range of financial (e.g., private tutoring, computers, books), cultural (e.g., extended vocabulary, time in active parenting) and social (e.g., role models and networks) resources that make it easier for them to perform better in school, compared to peers who come from families with lower levels of education or that are affected by chronic unemployment, low-paid jobs or poverty (OECD, 2015). Evidence reported in Tsakloglou and Antoninis (1999), Antoninis and Tsakloglou (2001) and Koutsampelas and Tsakloglou (2015) also shows that the overwhelming majority of private school students in Greece come from households that belong at the top quintile and, particularly, the top decile of the income distribution. These are also the households with an educational background substantially higher than the national average.[19]

Moreover, the student population is more heterogeneous in public schools. Additionally, heterogeneity has been reinforced in the past few years with immigrant and refugee flows increasing and the children of immigrants entering the formal education system. Despite the implementation of support classes for non-Greeks, the operation of Intercultural Schools and the establishment of special Reception Structures for the Education of Refugees (DYEP), there is still considerable heterogeneity within school classes. On top of that, restrictions and controls imposed by the MoE on public schools make them less desirable for parents, especially when they can afford a private school.

An important advantage of private education is that parents get to choose the school of their children and the special characteristics they want it to have. For example, they may wish their children to focus more on learning a foreign language, such as German or French, or to put more effort on sports. In addition, parents can always change their mind and choose another school for the following year. This is not an option for children attending public schools, since they must attend the school nearest to their home. Another argument often cited in Greece in favour of private schools involves the pursuance of teachers' labour rights and student union activities; it is not unusual for public schools to remain closed for a number of days during the school year, because teachers are on strike or because of secondary education occupations of school premises by students ("sit ins"). When such actions are prolonged, they can disrupt the education process and cause problems to employed parents who have no one to attend to their children when they are away. On the other hand, such practices are rare in private schools. It should be noted, though, that these phenomena were more common before the depression. Nevertheless, it is still an appealing argument to many parents.

Additional arguments, irrespective of the level of education, refer to a stricter and better organised daily environment in private schools, which is hard to find in public schools. Moreover, in Greece, public school teachers have a permanent job contract and practically no assessment takes place, while private school teachers are continuously evaluated and have an open-ended contract that can be terminated under specific requirements and procedures. That is believed to force the latter to perform better. Last but not least, parents are often under the impression that they can more easily influence what is happening in private, rather than public, schools.

There are also arguments that seem to depend on the level of education. For example, parents of primary school children may prefer private schools because

15. A minus sign shows that public schools perform worse than private ones. A positive sign shows the opposite. Tests involve only performance in science.

16. ESCS is an index of economic, social and cultural status used by PISA.

17. <http://gpseducation.oecd.org/CountryProfile?primaryCountry=GRC&treshold=10&topic=PI>

18. <https://www.oecd.org/pisa/pisaproducts/pisainfocus/48482894.pdf>

19. For a short discussion see Tsakloglou and Cholezas (2005).

they offer lots of additional services. Almost all private primary schools offer an extensive extra curriculum including sports, art classes, music classes, support classes, foreign language classes, homework classes, etc. Hence, when children return home from school, they are able to spend their time on other activities, play or spend time with their parents. On the other hand, a considerable number of public schools cannot offer extended school hours, despite the fact that the law provides for the right to operate as an all-day school. In practice, there has to be a minimum number of children in order to operate all-day classes, which is not always easy to ensure. Moreover, teacher vacancies often prevent the operation of all-day classes. In several cases, public schools lack adequate infrastructure, too; for example, they may not be equipped with a kitchen and/or a proper dining room. They certainly do not have support staff to attend such activities.

Another argument which is important for younger children in particular is the option to drive children to and from school, commonly offered by private schools at an extra cost, which relieves parents, who work and/or cannot drive their children to school, from a very specific daily task, even if it involves a public school nearby.

It would be interesting to compare the success rate of students from private schools with those of public schools in Pan-Hellenic exams for accessing tertiary education institutes, but the data necessary for carrying out such an exercise are not readily available. Nevertheless, it should be noted that such an attempt could also be misleading, since many private school students are set to leave the country right after graduation and study abroad. Therefore, they minimise their efforts or do not even sit for the Pan-Hellenic exams at all and prefer to focus on International Baccalaureate (IB) instead. Moreover, as already discussed, a number of factors should be considered that affect students' chances to access tertiary education, such as various attributes of the family and the parents.

## 4. Education spending in Greece

Despite the fact that education is provided by the state free of charge in Greece, there is a demand for private education services. This is easily understood given the operation of private schools, the demand for which depends primarily on household income. Table 2 presents the distribution of education spending based on household income classified in eight income brackets. The data come from the annual Household Budget Survey (EOP) conducted by ELSTAT. Note that spending does not involve private school spending inclusively. A large share involves private support classes which are supplementary to formal schooling, i.e., 'frontistiria' or cram schools, including those that prepare students for Pan-Hellenic exams and access to tertiary education.

The first observation is that households with higher incomes spend more on private education. In 2016 households with more than € 3,501 monthly income spent € 27.29 on primary education which is approximately ten times more than the national average. In that same year, households with monthly incomes lower than € 750 spent almost nothing on primary education. The difference between top income households and the national average is wider at the lower levels of education. That could be a sign that those households value initial education more or a sign that bottom income households value it less. For example, richer households spent 3.1 times more money compared to the national average in pre-school and primary education in 2008, 4.3 times more in 2012 and 8.2 times more in 2016. Moreover, the amount spent increased from € 27.87 in 2008 to € 42.45 in 2016. It is interesting that the difference between richer households and the national average has widened since 2008 for all levels of education. That means that there is an escalating inequity in accessing private education services which could lead –through widening deviations in terms of opportunities and job prospects– to a widening income inequality in the future. [20]

Overall, education spending is an almost stable share of overall household expenditure, close to 3% on average (see Table 3). That share ranges from 1.6% for households at the bottom end of the income distribution to 4.4% for households at the top end of the income distribution in 2016. Only the share for richer households increased during the depression, i.e., during period 2008-2016. Moreover, all households, irrespective of their position on the income distribution, direct the largest share of education spending to other education services, such as cram schools, private tutoring, foreign language schools, dance schools, computer schools, etc., that is on non-formal education. According to Table 3, those expenses account for 70% of total

20. Comparisons should be treated with caution, since they do not take into account demographics, such as the household's composition. However, Tsakloglou (2011) studies shadow education services in depth and concludes that private spending is closely linked to the household's income, especially as far as private tutoring is concerned. For a wider review of relevant findings, see Bray (2011).

**TABLE 2 Household expenditure on private education services by monthly income class**

| Income bracket (in € ): | All (average) | <750 | 751-1,100 | 1,101-1,450 | 1,451-1,800 | 1,801-2,200 | 2,201-2,800 | 2,801-3,500 | >3,501 |
|---|---|---|---|---|---|---|---|---|---|
| **Education level** | | | | | **2008** | | | | |
| Preschool* | 3.74 | 0.09 | 0.58 | 0.26 | 1.97 | 2.33 | 3.73 | 6.21 | 8.11 |
| Primary | 5.34 | 0.00 | 0.01 | 0.10 | 0.10 | 0.47 | 3.75 | 2.50 | 19.76 |
| Secondary** | 5.98 | 0.00 | 0.09 | 0.10 | 0.40 | 0.32 | 0.90 | 4.16 | 23.44 |
| Post-secondary*** | 2.83 | 0.46 | 0.92 | 0.43 | 0.89 | 1.48 | 3.81 | 6.00 | 4.77 |
| Tertiary | 2.36 | 0.00 | 0.00 | 0.00 | 0.87 | 0.25 | 5.96 | 3.04 | 4.49 |
| Other education services**** | 44.57 | 2.94 | 7.02 | 14.74 | 25.14 | 32.97 | 47.07 | 51.73 | 97.36 |
| Total | 64.82 | 3.49 | 8.62 | 15.63 | 29.37 | 37.82 | 65.22 | 73.64 | 157.93 |
| | | | | | **2012** | | | | |
| Preschool* | 4.47 | 2.17 | 0.26 | 0.91 | 0.42 | 2.20 | 2.65 | 10.36 | 20.87 |
| Primary | 4.28 | 1.85 | 0.05 | 3.90 | 0.07 | 3.72 | 1.38 | 9.08 | 16.87 |
| Secondary** | 4.00 | 0.50 | 0.17 | 0.24 | 1.39 | 0.54 | 3.04 | 0.92 | 25.89 |
| Post-secondary*** | 3.11 | 8.05 | 1.66 | 0.92 | 5.59 | 1.41 | 1.91 | 5.90 | 1.76 |
| Tertiary | 3.33 | 2.69 | 0.20 | 1.05 | 0.32 | 4.14 | 4.70 | 11.10 | 6.40 |
| Other education services**** | 38.14 | 14.26 | 10.74 | 15.09 | 23.28 | 41.40 | 44.45 | 75.75 | 103.70 |
| Total | 57.33 | 29.52 | 13.08 | 22.11 | 31.07 | 53.41 | 58.13 | 113.11 | 175.49 |
| | | | | | **2016** | | | | |
| Preschool* | 2.37 | 0.66 | 0.18 | 0.49 | 0.63 | 2.18 | 3.70 | 6.93 | 15.16 |
| Primary | 2.81 | 0.51 | 0.54 | 0.10 | 0.56 | 0.77 | 0.54 | 11.07 | 27.29 |
| Secondary** | 3.01 | 0.08 | 0.78 | 1.20 | 2.41 | 2.28 | 1.96 | 9.28 | 20.02 |
| Post-secondary*** | 2.62 | 2.92 | 1.36 | 2.74 | 0.79 | 1.54 | 5.08 | 5.19 | 4.10 |
| Tertiary | 3.87 | 1.18 | 0.52 | 1.60 | 2.14 | 4.80 | 10.97 | 7.09 | 11.94 |
| Other education services**** | 30.42 | 8.57 | 11.78 | 17.04 | 28.95 | 31.83 | 56.35 | 64.53 | 90.93 |
| Total | 45.10 | 13.92 | 15.16 | 23.17 | 35.48 | 43.40 | 78.60 | 104.09 | 169.44 |

*Source:* Household Budget Survey, ELSTAT, author's calculations.

* It involves day-care centres and kindergartens. ** It includes both lower and upper secondary education. The latter consists of general and vocational education. *** It involves public and private IEK. **** It involves spending on cram schools, foreign language schools, computer schools, etc.

**TABLE 3 Share of expenditure on private education services by monthly income class (%)**

| Income bracket (in €): | All (average) | <750 | 751-1,100 | 1,101-1,450 | 1,451-1,800 | 1,801-2,200 | 2,201-2,800 | 2,801-3,500 | >3,501 |
|---|---|---|---|---|---|---|---|---|---|
| **Education level** | | | | | **2008** | | | | |
| Preschool* | 5.8 | 2.6 | 6.7 | 1.7 | 6.7 | 6.2 | 5.7 | 8.4 | 5.1 |
| Primary | 8.2 | 0.0 | 0.1 | 0.6 | 0.3 | 1.2 | 5.7 | 3.4 | 12.5 |
| Secondary** | 9.2 | 0.0 | 1.0 | 0.6 | 1.4 | 0.8 | 1.4 | 5.6 | 14.8 |
| Post-secondary*** | 4.4 | 13.2 | 10.7 | 2.8 | 3.0 | 3.9 | 5.8 | 8.1 | 3.0 |
| Tertiary | 3.6 | 0.0 | 0.0 | 0.0 | 3.0 | 0.7 | 9.1 | 4.1 | 2.8 |
| Other education services**** | 68.8 | 84.2 | 81.4 | 94.3 | 85.6 | 87.2 | 72.2 | 70.2 | 61.6 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| % of total expenditure | 2.5 | 0.4 | 0.8 | 1 | 1.7 | 1.8 | 2.6 | 2.4 | 3.5 |
| | | | | | **2012** | | | | |
| Preschool* | 7.8 | 7.4 | 2.0 | 4.1 | 1.4 | 4.1 | 4.6 | 9.2 | 11.9 |
| Primary | 7.5 | 6.3 | 0.4 | 17.6 | 0.2 | 7.0 | 2.4 | 8.0 | 9.6 |
| Secondary** | 7.0 | 1.7 | 1.3 | 1.1 | 4.5 | 1.0 | 5.2 | 0.8 | 14.8 |
| Post-secondary*** | 5.4 | 27.3 | 12.7 | 4.2 | 18.0 | 2.6 | 3.3 | 5.2 | 1.0 |
| Tertiary | 5.8 | 9.1 | 1.5 | 4.7 | 1.0 | 7.8 | 8.1 | 9.8 | 3.6 |
| Other education services**** | 66.5 | 48.3 | 82.1 | 68.2 | 74.9 | 77.5 | 76.5 | 67.0 | 59.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| % of total expenditure | 2.9 | 2.8 | 1.1 | 1.5 | 1.8 | 2.7 | 2.5 | 3.9 | 4.4 |
| | | | | | **2016** | | | | |
| Preschool* | 5.3 | 4.7 | 1.2 | 2.1 | 1.8 | 5.0 | 4.7 | 6.7 | 8.9 |
| Primary | 6.2 | 3.7 | 3.6 | 0.4 | 1.6 | 1.8 | 0.7 | 10.6 | 16.1 |
| Secondary** | 6.7 | 0.6 | 5.1 | 5.2 | 6.8 | 5.3 | 2.5 | 8.9 | 11.8 |
| Post-secondary*** | 5.8 | 21.0 | 9.0 | 11.8 | 2.2 | 3.5 | 6.5 | 5.0 | 2.4 |
| Tertiary | 8.6 | 8.5 | 3.4 | 6.9 | 6.0 | 11.1 | 14.0 | 6.8 | 7.0 |
| Other education services**** | 67.5 | 61.6 | 77.7 | 73.5 | 81.6 | 73.3 | 71.7 | 62.0 | 53.7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| % of total expenditure | 2.6 | 1.6 | 1.4 | 1.7 | 2.1 | 2.2 | 3.3 | 3.5 | 4.4 |

*Source:* Household Budget Survey, ELSTAT, author's calculations.

* It involves day-care centres and kindergartens. ** It includes both lower and upper secondary education. The latter consists of general and vocational education. *** It involves public and private IEK. **** It involves spending on cram schools, foreign language schools, computer schools, etc.

education spending. Households at the bottom end of the income distribution bear the biggest burden reflected on the largest share of spending for other education services.[21] For instance, in 2016 households with monthly incomes lower than € 750 directed 61.6% of their education spending towards other education services; the respective share for households with monthly incomes bigger than € 3,501 was 53.7%. The biggest share is reported for households that belong in the income brackets € 1,451-€ 1,800 (2016), € 751-€ 1,100 (2012) and € 1,101-€ 1,450 (2008). That may be an indirect sign that the public education system cannot support its students effectively, so that parents are forced to resort to non-formal education services. The closer students get to Pan-Hellenic exams, the stronger the need for non-formal education services is expected to get, due to the increased competition for a post in public tertiary education institutes.

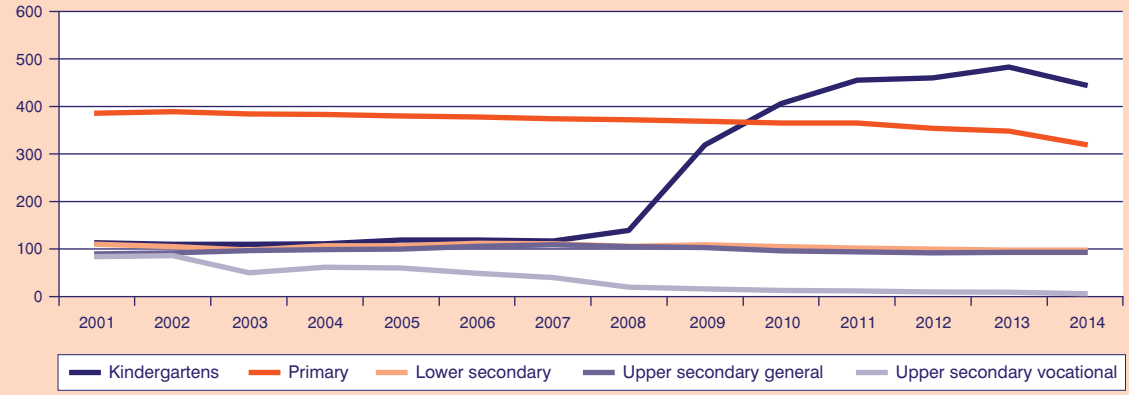
## 5. The evolution of private education during the depression

This section explores the evolution of private education during the depression in terms of private schools, number of teaching staff and number of students. Moreover, it utilises an index which has often been the centre of public discourse over the past few years, especially in comparison with other countries, and used as a measure of the quality of the education system.

Graph 1 presents the evolution of the number of private schools during period 2001-2014. With the exception of kindergartens, the number of private schools decreased, but without any sign of acceleration during the depression. There was an important decrease in private vocational upper secondary schools (EPAL), which were practically extinct by 2014.[22] According to available data, only six private EPALs were still operating in 2014, when in 2002 there were 86 such schools. That decrease does not bear the slightest resemblance to that of public EPALs. Despite the fact that their number has decreased since 2010, in 2014 it was nevertheless similar to that in 2010 (571 vs. 584). The significantly divergent course of EPALs based on the ownership regime caused the share of private schools to decline from 12.6% in 2001 to 1% in 2014. That decline partly reflects the ever decreasing importance attached to vocational education in Greece that is hopefully changing.

Another inconsistency involves the evolution of the number of public and private kindergartens. While the number of private kindergartens increased, the number of public kindergartens decreased considerably. For instance, compared to 2001, there were 350 fewer public and 332 more private kindergartens. As a result, the share of private kindergartens increased to 7.9% of total

**GRAPH 1**
**Number of private schools**




*Source:* ELSTAT, author's calculations.

21. Perhaps that is because lower income households usually cannot afford private schools; so they pay for cram schools, foreign languages schools, etc. to improve their children's prospects.

22. The decrease in the number of private upper secondary vocational schools (EPAL) is very big and should be treated with caution, since there may be causes not captured by the data.

kindergartens in 2014. A plausible explanation is that the big increase in the number of private kindergartens was caused by the implementation of Law 3518/2006, which provided for the mandatory enrolment in kindergarten of 5-year-old children, despite the fact that public kindergarten infrastructure could not accommodate such an increase in the number of students.[23]

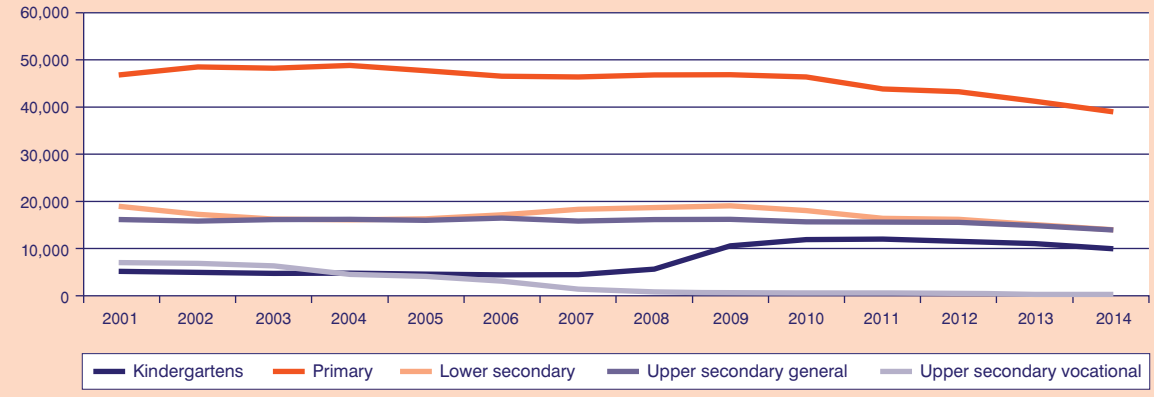
The share of private general upper secondary schools (GEL) has been almost stable throughout the years and is similar to that of private kindergartens, i.e., approximately 7%. The share of private primary schools has been approximately 6.9%, although it decreased over the last three years under investigation due to the fastest decrease in the number of public primary schools. It should be noted that there were 1,395 fewer public primary schools in 2014 and 66 fewer private primary schools compared to 2001. Moreover, the decrease in the number of private schools has been much more pronounced amongst primary schools compared to the rest of the education levels, with the exception of EPAL.

The overall picture is one of a decreasing number of both public and private schools over time. There are two possible forces that may be responsible for that. The first, and probably the strongest one, is the decrease in the number of students, which is discussed next, including the movement of the population to urban centres. The second one is the increase of the school size, which intensified during the depression following efforts to merge schools situated mostly in rural areas. Public upper secondary general schools were the only exception to the rule, but it is likely that they substituted for the reduction in EPALs (2.2% reduction of public EPALs vs. 1.2% increase in public GELs), since they appeal to students of the same age.

The number of students (Graph 2) attending private schools is the second criterion that can be used to explore the evolution of private education. Most private school students attend primary schools, which is in accordance with the bigger number of private schools discussed earlier. In 2004, the number of those students had reached a maximum of approximately 49,000 and represented 7.5% of the total number of students in primary schools. Undoubtedly, the share of students attending private schools is bigger in primary education, since 7.1% of the total number of students attended private schools during period 2001-2014; the respective share in upper secondary general schools was 6.6% and in lower secondary 5.1%.

The number of students attending private schools has been decreasing irrespective of the level of education, with the exception of kindergartens. The biggest percent decreases in period 2001-2014 were reported for EPAL and lower secondary schools (25.8%), followed by primary schools (16.6%) and upper secondary general schools (13.5%). Compared to the decrease in the number of students attending public schools,[24]

**GRAPH 2**
**Number of students in private schools**




*Source:* ELSTAT, author's calculations.

23. The law was implemented for the first time during the school year 2007-2008, when the first increase of students was recorded. Private schools probably needed time to absorb the increased demand for education services, i.e., to increase the available posts through, e.g., expanding or overhauling buildings.

24. See Table A.2 in the Appendix.

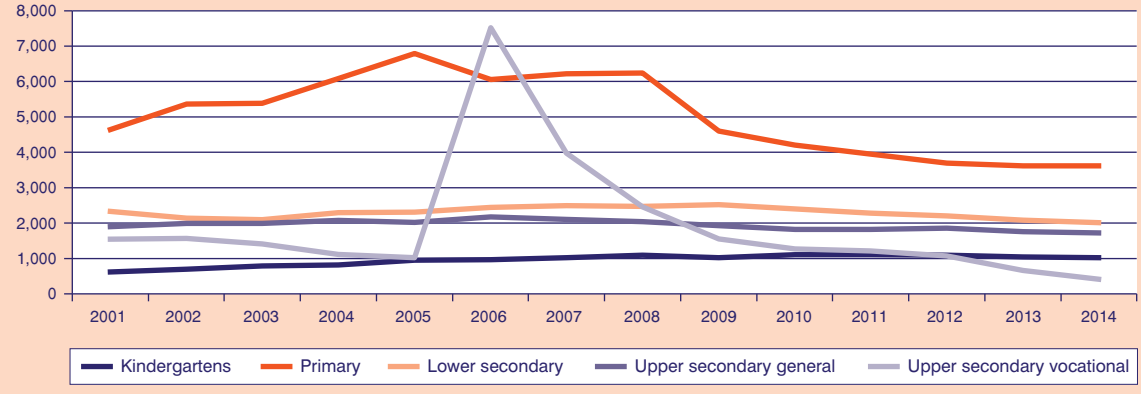
it becomes obvious that private schools are facing the biggest decreases, since the reduction in the number of students is multiple times bigger. In particular, although there used to be variation in the number of students attending private schools even before the depression, it seems that the decreases during the depression were stronger and more consistent. Thus, the number of students had been steadily decreasing in private primary schools, lower secondary and upper secondary general schools since 2010. Therefore, it is difficult to reject the possibility that the decrease in the number of students attending private schools is due to the economic difficulties households were facing during the depression.

The change in the number of students attending private kindergartens is interesting. Until 2006 the number of students had been declining, in 2007 it stabilised and in the following two years it increased rapidly, i.e., in 2008-2009. These big changes (26% in 2008, 87.3% in 2009) cannot but be attributed to the change in the institutional framework regarding the mandatory enrolment of 5-year-old children in kindergartens, which led to the increase of private kindergartens contrary to the general declining trend already discussed. Despite the temporary increase, since 2012 the number of students attending private kindergartens has been decreasing; in 2014 the annual rate of change reached 10%. During the entire period under study, the number of students attending kindergartens increased, admittedly because of the institutional changes, but the increase was faster for students attending private kindergartens, probably due to the inability of public kindergartens to respond to increased demand. Nevertheless, it seems that the situation had been normalising since 2012 and the demand for private kindergartens has been decreasing following developments in other education levels.

The number of teaching staff increased in kindergartens and primary schools over the period 2001-2014 and decreased in all the other education levels (see Graph 3). In contrast, the number of teachers increased only in private kindergartens, which is probably related to the increase in the number of private kindergartens and the number of students attending due to the institutional changes already discussed. Unsurprisingly, the biggest share of teachers employed in private schools during period 2001-2014 is registered in primary schools (10.1%), kindergartens (7.5%) and upper secondary general schools (7%), all of which complies with evidence so far. The evolution of their number is interesting. In particular, because of the different changes that occurred, in 2014 the share of teachers in private schools was almost the same between kindergartens and primary schools. That convergence came about from the increase in the number of teachers in private kindergartens (65.9%) and the reduction in the respective number in private primary schools (22.1%).

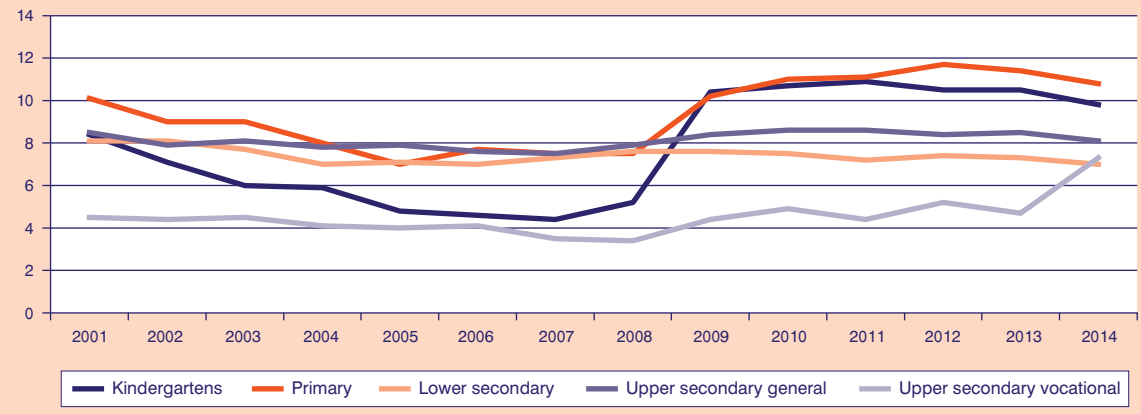
Just like the case for students, the number of teachers employed in private schools exhibited systematic declines, especially during the depression. Even in private kindergartens, where the number of teachers had been increasing since 2008, recently all annual changes had a negative sign, which means that the sector has been contracting. The picture is similar for the rest of the education levels. Only upper secondary general schools seem to diverge from the norm; the number

**GRAPH 3**
**Number of teachers in private schools**




*Source:* ELSTAT, author's calculations.

**GRAPH 4**
**Student/teacher ratio**




*Source:* ELSTAT, author's calculations.

of teachers in 2011 and 2012 was almost stable. Nevertheless, that is not enough to reverse the general downward trend. Indeed, it seems that the number of teachers in upper secondary general schools started decreasing already in 2007.

Changes in the number of teachers and students are expected to impact the student/teacher ratio in various ways. Typically, the critique in the case of Greece is that this ratio is too low and should be increased for reasons of economic efficiency (OECD, 2011). That claim, although quite simplistic at first sight, since it seems to ignore the peculiarities of the Greek case,[25] such as the morphology of the terrain, the existence of many remote islands and mountainous areas, and other practical matters also, such as the small size of schools and the need for investments in school infrastructure, cannot be *a priori* rejected. Table A.5 in the Appendix shows that the difference between Greece and the European average stands, despite reforms implemented during the depression to push for mergers of schools, increases in the teaching load, etc. It is also interesting that the student/teacher ratio is smaller in private schools than public ones,[26] while changes over time are negative in public kindergartens, primary schools and lower secondary schools, contrary to what would be expected as a result of the reforms.

In this framework, the increase in the student/teacher ratio observed in private kindergartens and primary schools (see Graph 4) can be viewed as the outcome of efforts to improve economic efficiency during the depression. The fact that the trend had been reversed in 2011 in private kindergartens and in 2012 in private primary schools may involve adjustments and should be more thoroughly investigated to provide a clear explanation. On the other hand, in private lower secondary and upper secondary general schools there seems to be a fluctuation of the ratio, but without any serious deviation from the value of 7-8 students per teacher. It could be that the greater fluctuation observed in kindergartens were driven by the institutional changes already discussed that caused the ratio to float.

## 6. Conclusions

Private formal education, kindergarten, primary and secondary, which is the focus of this article, is supervised by the Ministry of Education, Research and Religious Affairs, despite the fact that it involves private businesses. The main argument is that private schools have a strong social footprint because they provide the public good of education; therefore, state supervision and control is necessary. It is deemed necessary for private schools to operate under the same rules and restrictions with public schools, in order for their degrees to be equivalent to those awarded by public schools. To fund their operations, private schools collect tuition fees, while there is no provision for tax redemption of the fees, as it is the case in other coun-

25. In a recent study, OECD takes note of the reasons why such a small student/teacher ratio is observed in Greece (OECD, 2018).

26. That could result from registering the support staff in private schools as teaching staff for some unknown reason or by mistake.

tries. Tuition fees between schools can differ substantially, contrary to their geographic distribution, since they are concentrated in big cities. This is a rational behaviour indeed, given that private schools are, after all, firms.

The arguments in favour of private education usually involve support services, such as the provision of extra curricular activities and the transport of students to and from school, but can also address more key issues, such as the quality of services offered, the uninterrupted provision of those services, etc. Some of those arguments are not easy to support because of the differences between students attending public and private schools, but others are hard to reject. The second group of arguments seems to provide parents, who can afford to send their children to a private school, with strong motives and it could be used as a grounds for dialogue regarding the upgrade of public school services. The large share of household expenditures being directed towards education services other than private schools is a sign of the inefficiency of public schools, either true or perceived. As such, it should give rise to social dialogue, since it often widens the inequity of opportunities between students due to the different economic and social background of their parents.

Last but not least, private schools have been facing the consequences of the depression, which are reflected in the decrease in the number of schools, students and teachers. Kindergartens seem to be the exception to the rule. The most plausible explanation seems to involve institutional changes regarding the mandatory enrolment of five-year-old students in kindergartens and, at the same time, the inability of public kindergartens to respond effectively to the increased demand for education services. Moreover, the impact of an aging population on the number of students and the demand for education services, either public or private, should not be ignored.

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# Appendix

## TABLE A.1 Number of schools by level of education and ownership regime

| | Kindergartens | | | Primary schools | | | Lower secondary | | | Upper secondary general (GEL) | | | Upper secondary vocational (EPAL) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. |
| 2001 | 5,624 | 113 | 2.0 | 6,094 | 386 | 6.3 | 1,870 | 110 | 5.9 | 1,289 | 90 | 7.0 | 668 | 84 | 12.6 |
| 2002 | 5,628 | 110 | 2.0 | 5,989 | 389 | 6.5 | 1,867 | 105 | 5.6 | 1,238 | 92 | 7.4 | 677 | 86 | 12.7 |
| 2003 | 5,670 | 110 | 1.9 | 5,925 | 384 | 6.5 | 1,819 | 98 | 5.4 | 1,268 | 97 | 7.6 | 684 | 50 | 7.3 |
| 2004 | 5,646 | 111 | 2.0 | 5,854 | 383 | 6.5 | 1,918 | 107 | 5.6 | 1,290 | 99 | 7.7 | 663 | 62 | 9.4 |
| 2005 | 5,676 | 119 | 2.1 | 5,778 | 380 | 6.6 | 1,920 | 107 | 5.6 | 1,312 | 100 | 7.6 | 664 | 60 | 9.0 |
| 2006 | 5,672 | 119 | 2.1 | 5,675 | 378 | 6.7 | 1,946 | 112 | 5.8 | 1,352 | 106 | 7.8 | 654 | 49 | 7.5 |
| 2007 | 5,693 | 117 | 2.1 | 5,594 | 374 | 6.7 | 1,958 | 111 | 5.7 | 1,361 | 109 | 8.0 | 643 | 40 | 6.2 |
| 2008 | 5,768 | 139 | 2.4 | 5,546 | 372 | 6.7 | 1,957 | 106 | 5.4 | 1,369 | 105 | 7.7 | 623 | 20 | 3.2 |
| 2009 | 5,979 | 319 | 5.3 | 5,496 | 369 | 6.7 | 1,968 | 109 | 5.5 | 1,367 | 103 | 7.5 | 640 | 16 | 2.5 |
| 2010 | 6,064 | 406 | 6.7 | 5,440 | 365 | 6.7 | 1,965 | 105 | 5.3 | 1,361 | 96 | 7.1 | 643 | 13 | 2.0 |
| 2011 | 6,027 | 455 | 7.5 | 5,356 | 365 | 6.8 | 1,928 | 102 | 5.3 | 1,338 | 94 | 7.0 | 622 | 12 | 1.9 |
| 2012 | 5,861 | 460 | 7.8 | 4,746 | 354 | 7.5 | 1,829 | 100 | 5.5 | 1,320 | 92 | 7.0 | 626 | 10 | 1.6 |
| 2013 | 5,792 | 483 | 8.3 | 4,698 | 348 | 7.4 | 1,827 | 98 | 5.4 | 1,318 | 93 | 7.1 | 627 | 9 | 1.4 |
| 2014 | 5,606 | 445 | 7.9 | 4,633 | 320 | 6.9 | 1,794 | 98 | 5.5 | 1,306 | 93 | 7.1 | 577 | 6 | 1.0 |

*Source:* ELSTAT, author's calculations.

## TABLE A.2 Number of students by level of education and ownership regime

| | Kindergartens | | | Primary schools | | | Lower secondary | | | Upper secondary general (GEL) | | | Upper secondary vocational (EPAL) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. |
| 2001 | 145,513 | 5,173 | 3.6 | 639,932 | 46,838 | 7.3 | 348,758 | 18,916 | 5.4 | 241,214 | 16,157 | 6.7 | 157,392 | 7,008 | 4.5 |
| 2002 | 144,653 | 4,942 | 3.4 | 646,331 | 48,484 | 7.5 | 336,150 | 17,253 | 5.1 | 230,165 | 15,804 | 6.9 | 160,451 | 6,885 | 4.3 |
| 2003 | 142,305 | 4,733 | 3.3 | 648,487 | 48,233 | 7.4 | 321,869 | 16,233 | 5.0 | 228,747 | 16,119 | 7.0 | 153,311 | 6,333 | 4.1 |
| 2004 | 141,008 | 4,786 | 3.4 | 654,780 | 48,819 | 7.5 | 323,333 | 16,115 | 5.0 | 233,723 | 16,193 | 6.9 | 145,020 | 4,528 | 3.1 |
| 2005 | 142,369 | 4,599 | 3.2 | 647,543 | 47,700 | 7.4 | 327,578 | 16,290 | 5.0 | 235,097 | 15,963 | 6.8 | 134,623 | 4,089 | 3.0 |
| 2006 | 143,637 | 4,438 | 3.1 | 643,200 | 46,548 | 7.2 | 334,235 | 17,144 | 5.1 | 238,975 | 16,456 | 6.9 | 124,141 | 3,095 | 2.5 |
| 2007 | 143,716 | 4,490 | 3.1 | 639,961 | 46,378 | 7.2 | 343,765 | 18,303 | 5.3 | 232,926 | 15,825 | 6.8 | 110,622 | 1,394 | 1.3 |
| 2008 | 150,079 | 5,658 | 3.8 | 637,309 | 46,818 | 7.3 | 341,107 | 18,716 | 5.5 | 239,532 | 16,125 | 6.7 | 108,729 | 825 | 0.8 |
| 2009 | 158,290 | 10,598 | 6.7 | 637,476 | 46,836 | 7.3 | 341,315 | 19,073 | 5.6 | 241,726 | 16,219 | 6.7 | 108,010 | 686 | 0.6 |
| 2010 | 159,502 | 11,896 | 7.5 | 635,935 | 46,357 | 7.3 | 336,938 | 18,063 | 5.4 | 247,441 | 15,675 | 6.3 | 110,771 | 623 | 0.6 |
| 2011 | 166,233 | 12,016 | 7.2 | 634,048 | 43,845 | 6.9 | 332,005 | 16,399 | 4.9 | 247,209 | 15,627 | 6.3 | 113,658 | 534 | 0.5 |
| 2012 | 165,931 | 11,535 | 7.0 | 633,291 | 43,221 | 6.8 | 324,402 | 16,217 | 5.0 | 247,717 | 15,572 | 6.3 | 121,806 | 553 | 0.5 |
| 2013 | 166,576 | 11,035 | 6.6 | 630,043 | 41,211 | 6.5 | 319,950 | 15,087 | 4.7 | 245,892 | 14,894 | 6.1 | 123,881 | 309 | 0.2 |
| 2014 | 160,994 | 9,975 | 6.2 | 625,165 | 39,054 | 6.2 | 310,389 | 14,042 | 4.5 | 241,905 | 13,972 | 5.8 | 112,869 | 298 | 0.3 |

*Source:* ELSTAT, author's calculations.

## TABLE A.3 Number of teachers by level of education and ownership regime

| | Kindergartens | | | Primary schools | | | Lower secondary | | | Upper secondary general (GEL) | | | Upper secondary vocational (EPAL) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. | All | Priv. | % Priv. |
| 2001 | 10,085 | 616 | 6.1 | 45,349 | 4,643 | 10.2 | 39,667 | 2,327 | 5.9 | 25,381 | 1,897 | 7.5 | 21,514 | 1,546 | 7.2 |
| 2002 | 10,682 | 697 | 6.5 | 47,267 | 5,366 | 11.4 | 40,892 | 2,135 | 5.2 | 25,409 | 1,989 | 7.8 | 23,529 | 1,569 | 6.7 |
| 2003 | 11,246 | 786 | 7.0 | 48,395 | 5,385 | 11.1 | 40,987 | 2,095 | 5.1 | 25,598 | 1,993 | 7.8 | 22,702 | 1,411 | 6.2 |
| 2004 | 11,543 | 814 | 7.1 | 50,379 | 6,086 | 12.1 | 43,924 | 2,297 | 5.2 | 26,503 | 2,075 | 7.8 | 23,092 | 1,112 | 4.8 |
| 2005 | 12,012 | 952 | 7.9 | 51,941 | 6,793 | 13.1 | 45,805 | 2,309 | 5.0 | 28,034 | 2,020 | 7.2 | 22,433 | 1,018 | 4.5 |
| 2006 | 12,334 | 962 | 7.8 | 51,308 | 6,059 | 11.8 | 46,923 | 2,446 | 5.2 | 30,271 | 2,172 | 7.2 | 22,124 | 7,520 | 3.4 |
| 2007 | 12,717 | 1,024 | 8.1 | 51,960 | 6,219 | 12.0 | 49,101 | 2,495 | 5.1 | 29,131 | 2,103 | 7.2 | 20,845 | 3,980 | 1.9 |
| 2008 | 13,242 | 1,092 | 8.2 | 51,734 | 6,241 | 12.1 | 50,200 | 2,473 | 4.9 | 30,124 | 2,036 | 6.8 | 20,149 | 2,460 | 1.2 |
| 2009 | 13,652 | 1,019 | 7.5 | 50,956 | 4,598 | 9.0 | 51,858 | 2,523 | 4.9 | 30,683 | 1,927 | 6.3 | 20,706 | 1,550 | 0.7 |
| 2010 | 13,931 | 1,108 | 8.0 | 51,170 | 4,200 | 8.2 | 52,605 | 2,397 | 4.6 | 31,018 | 1,821 | 5.9 | 22,143 | 1,270 | 0.6 |
| 2011 | 13,986 | 1,106 | 7.9 | 50,474 | 3,948 | 7.8 | 49,039 | 2,277 | 4.6 | 29,837 | 1,822 | 6.1 | 19,814 | 1,210 | 0.6 |
| 2012 | 14,018 | 1,094 | 7.8 | 49,545 | 3,692 | 7.5 | 45,273 | 2,202 | 4.9 | 27,672 | 1,855 | 6.7 | 19,194 | 1,070 | 0.6 |
| 2013 | 13,853 | 1,046 | 7.6 | 49,617 | 3,614 | 7.3 | 42,665 | 2,080 | 4.9 | 27,327 | 1,760 | 6.4 | 18,378 | 660 | 0.4 |
| 2014 | 13,526 | 1,022 | 7.6 | 48,466 | 3,615 | 7.5 | 38,655 | 2,010 | 5.2 | 24,345 | 1,720 | 7.1 | 15,659 | 410 | 0.3 |

*Source:* ELSTAT, author's calculations.

## TABLE A.4 Student/teacher ratio by level of education and ownership regime

| | Kindergartens | | Primary schools | | Lower secondary | | Upper secondary general (GEL) | | Upper secondary vocational (EPAL) | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Public | Private | Public | Private | Public | Private | Public | Private | Public | Private |
| 2001 | 14.8 | 8.4 | 14.6 | 10.1 | 8.8 | 8.1 | 9.6 | 8.5 | 7.5 | 4.5 |
| 2002 | 14.0 | 7.1 | 14.3 | 9.0 | 8.2 | 8.1 | 9.2 | 7.9 | 7.0 | 4.4 |
| 2003 | 13.2 | 6.0 | 14.0 | 9.0 | 7.9 | 7.7 | 9.0 | 8.1 | 6.9 | 4.5 |
| 2004 | 12.7 | 5.9 | 13.7 | 8.0 | 7.4 | 7.0 | 8.9 | 7.8 | 6.4 | 4.1 |
| 2005 | 12.5 | 4.8 | 13.3 | 7.0 | 7.2 | 7.1 | 8.4 | 7.9 | 6.1 | 4.0 |
| 2006 | 12.2 | 4.6 | 13.2 | 7.7 | 7.1 | 7.0 | 7.9 | 7.6 | 5.7 | 4.1 |
| 2007 | 11.9 | 4.4 | 13.0 | 7.5 | 7.0 | 7.3 | 8.0 | 7.5 | 5.3 | 3.5 |
| 2008 | 11.9 | 5.2 | 13.0 | 7.5 | 6.8 | 7.6 | 8.0 | 7.9 | 5.4 | 3.4 |
| 2009 | 11.7 | 10.4 | 12.7 | 10.2 | 6.5 | 7.6 | 7.8 | 8.4 | 5.2 | 4.4 |
| 2010 | 11.5 | 10.7 | 12.6 | 11.0 | 6.4 | 7.5 | 7.9 | 8.6 | 5.0 | 4.9 |
| 2011 | 12.0 | 10.9 | 12.7 | 11.1 | 6.7 | 7.2 | 8.3 | 8.6 | 5.7 | 4.4 |
| 2012 | 11.9 | 10.5 | 12.9 | 11.7 | 7.2 | 7.4 | 9.0 | 8.4 | 6.4 | 5.2 |
| 2013 | 12.1 | 10.5 | 12.8 | 11.4 | 7.5 | 7.3 | 9.0 | 8.5 | 6.7 | 4.7 |
| 2014 | 12.1 | 9.8 | 13.1 | 10.8 | 8.1 | 7.0 | 10.1 | 8.1 | 7.2 | 7.3 |

*Source:* ELSTAT, author's calculations.

## TABLE A.5 Student/teacher ratio by level of education

| | | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| Preschool education | EU | 13.8 | 13.7 | - | 14.3 |
| Preschool education | Greece | 11.9 | 11.8 | 10.9 | 10.7 |
| Primary (Dimotiko) | EU | 15.0 | 14.8 | 15.1 | 14.4 |
| Primary (Dimotiko) | Greece | 9.5 | 9.4 | 9.6 | 9.3 |
| Lower secondary (Gymnasium) | EU | 12.2 | 12.5 | 12.6 | 12.3 |
| Lower secondary (Gymnasium) | Greece | 7.3 | 7.8 | 8.1 | 7.7 |
| Upper secondary general (GEL) | EU | 11.9 | 12.7 | - | 12.5 |
| Upper secondary general (GEL) | Greece | 9.0 | - | 10.1 | 10.1 |
| Upper secondary vocational (EPAL) | EU | 13.2 | 12.6 | 13.4 | 11.6 |
| Upper secondary vocational (EPAL) | Greece | 6.7 | 6.8 | 7.3 | 7.2 |

*Source:* EUROSTAT.