



## **THE IMPLICIT BIAS AGAINST PRIVATE UNIVERSITIES AND COLLEGES IN TAIWAN REGARDING THE DISTRIBUTION OF EDUCATION BUDGET**

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### **ABSTRACT**

Education is a long-term human capital investment as mentioned in one of the most popular economics textbooks [3]. In Taiwan, there are 158 public and private universities and colleges (U&C), but its birth rate is only 8.55 per 1,000 of a population reported in CIA Factbook [1]. From 2008 to 2015, the total students in all levels of schools from kindergarten to graduate institute declined from 5,165,817 to 4,504,331 persons. Within short nine (9) years, there were 66,186 vacancies in the educational system, making recruitment of student more difficult every year. Such kind of situation is even worse in the U&C, so that professors in private U&C have to change their status from educators to salespersons. Under such a severe condition, the fairness of education budget allocation should be scrutinized. All citizen sharing equal right in education is the fundamental law of human right, so that the Ministry of Education (MOE) in Taiwan should have an obligation to allot equally all the education budget to each student.

In this paper, the education budget is adjusted according to consumer price index (CPI) because education is an item in the consumer “basket” [3]. From 2008 to 2016 each student in all levels of public school was allocated 191.32 (unit =1,000 NT) of education budget while their counterpart was allocated only 115.52 (unit=1,000 NT). It is 1.66 times the difference on average. For the universities and colleges, the unfairness is even obvious. The education budget allocated to public U&C from 2012 to 2015 was on average of NT\$ 610.7 billion, but to private U&C only on average of NT\$ 202.13 billion. Furthermore, the number of students in private U&C was 907,640 on average from 2012 to 2015, but in public U&C only 435,749 on average. In higher education, the number of students in the private U&C students was 2.08 times that of their public counterparts. The education budget for each public U&C student from 2012 to 2015 was 481.44 (unit=1,000 NT) on average while only 76.51 (unit=1,000 NT) per private U&C student. In other words, the education budget for each public U&C student was 6.3 times that of each private U&C student. The MOE in Taiwan only gave an average value in its archive, but the mean value would be biased by the extreme numbers as mentioned in a famous statistics textbook [6]. Numbers talk! All private school students receive lower subsidy in comparison

with their public counterparts, and this situation is even worse for the students in private universities and colleges. Shouldn't MOE in Taiwan pay more attention to this implicit bias?

**Key Words:** Implicit Bias, Consumer Price Index (CPI), Gross National Product (GNP)

## **1. Introduction**

May is one of the most miserable months in a year for people in Taiwan. For all families with income, pay tax; for students, attend unified entrance examination, and for private universities and colleges (U&C) professors, recruit new students. Totally 158[2,4,5] public and private universities and colleges (U&C) exist in Taiwan, but the birth rate of Formosa is one of the lowest among the world. The crude birth rate in year 2014 is only 8.55 per 1,000 of a population as reported in CIA Factbook [1]. The high density of universities and colleges (U&C) but low birth rate makes the problem of excessive supply of educational institutes even more severe year by year. To survive in such a competing "red-sea market", from May to July professors in private universities and colleges (U&C) have to change role from educators to be salespersons to recruit new students from all places wherever high schools and vocational schools are available, even as far as in the South Asian nations.

The public universities and colleges (U&C) enjoy lower tuition fee and better facilities than the private institutions due to long-term subsidies from the government. The Ministry of Education (MOE) in Taiwan allocates much more subsidies to the public universities and colleges (U&C) than the private ones. Such a long-term subsidy widened the gap between public U&C from the private ones. From principles of economics, high price always reduces quantity demanded [3]. High tuition fee of private U&C deters students, making recruitment difficult. The education budget distribution to all levels of schools from kindergarten to graduate institute is discussed in this paper. The education budget for all levels of public and private schools is evaluated generally first, and then focused on universities and colleges (U&C). How much difference in budget allotments to each public and private U&C student is also discussed in detail.

## **2. Education Budget for All Levels of Schools and Its Allotment to Public and Private Schools**

Each citizen in the country has to be treated equally is the basic human right given by the Constitution of the Republic of China (R.O.C.). Education budget, a partly share of taxes levied from the people of a country, should also be given fairly to the students in public and private schools.

### **2.1 Number of Students and Education Budget Allotment**

In this section, the number of students, education budget, and the allotment of education budget to public and private schools are discussed. The total number of students in all levels of school from kindergarten to graduate institute is plotted in Figure 1. The detailed data are shown in Table A1 of Appendix A.

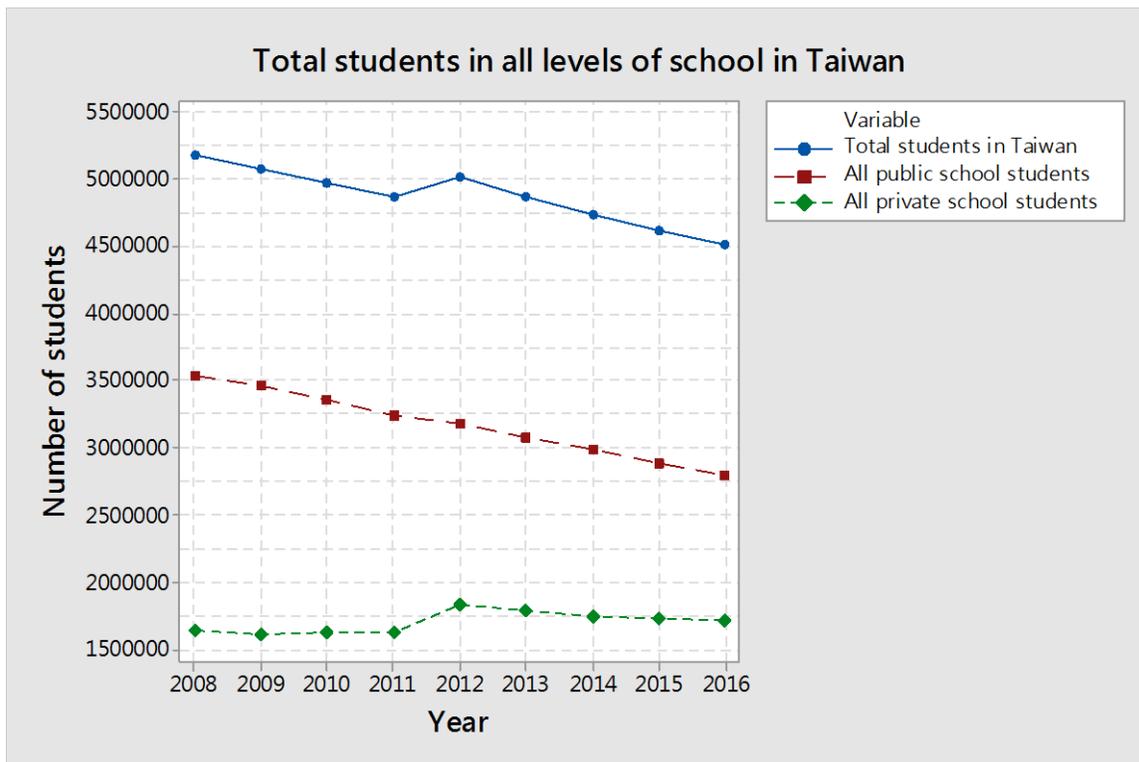


Figure 1: Total number of Taiwanese students and their distribution in public and private schools

From the above figure, it is found that the number of students in Taiwan is declined tremendously from 2008 (5,165,817 students) to 2016 (4,504,331 students). Just within nine (9) years, the total number of students reduced 661,486. The low birth rate influenced all the levels of schools from kindergarten to graduate institute. The most obvious reduction of number of students was in public schools, which declined continually from 3,533,108 in 2008 to 2,785,751 in 2016 (reduced 747,357). However, the number of students in private schools increased slightly from 1,632,709 to 1,718,580 (increased 85,871). The extension of compulsory education from nine to twelve years from year 2019 may worsen the situation. Parents send their children to private elementary and junior high schools, hoping to let them get better education there. However, on the side of higher education, the situation is completely different. Public universities get much more subsidies in all aspects, making them much more attractive to those advanced students.

## 2.2 Education Budget and Its Distribution to Every Student

The total education budget (in million NT) from 2008 to 2016, the adjustment of it by the consumer price index (CPI), its percentage share of GNP, and its allotment to each public and private school students were discussed in this subsection. The detailed data are in Table A2 of Appendix A.

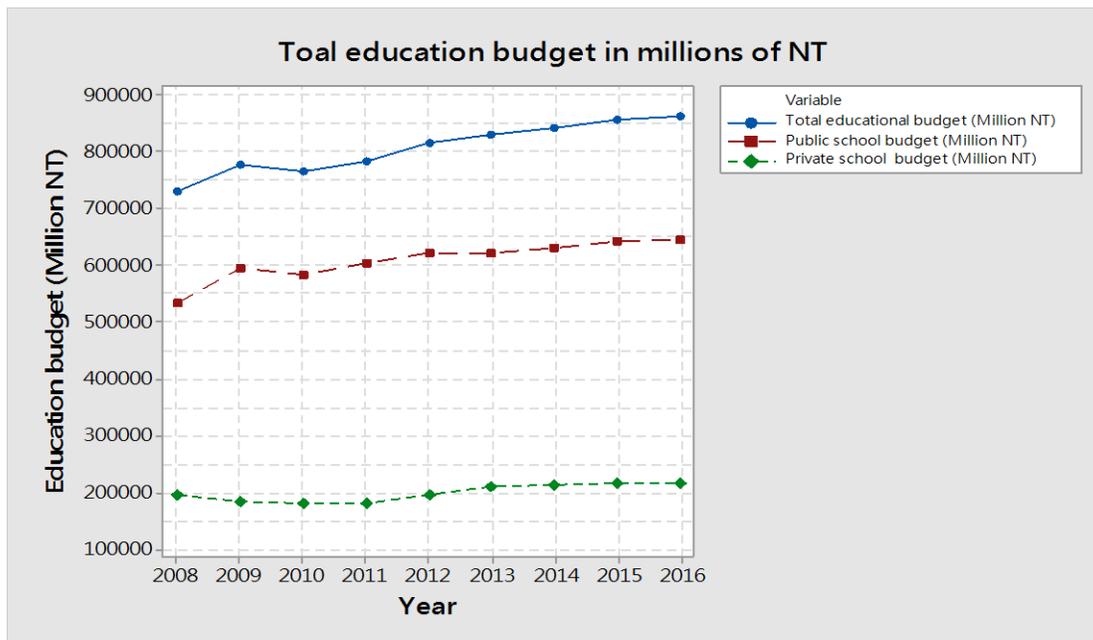


Figure 2: Education budget of total, public and private school in millions of NT (not adjusted by CPI)

The above figure shows that the total education budget increased from 2008 (NT\$ 730,759.9 million) to 2016 (NT\$ 863,315.8 million). The total budget increase was NT\$ 132,555.88 million. Public schools got the lion’s share of 84.5% of it (NT\$ 111,964.42 million), but private schools only got the leftover 15.5% (NT\$ 20,591.46 million). Because education is in the “basket” of consumer goods and services [3], the education budget is adjusted by the consumer price index (CPI) as follows:

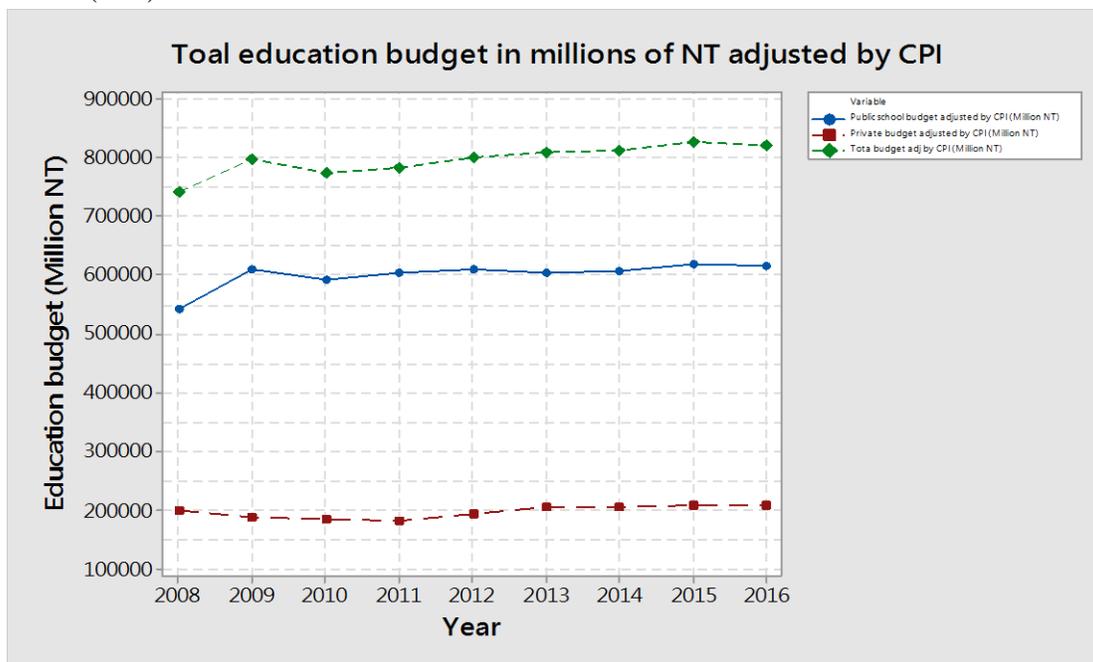


Figure 3: Total education budget from 2008 to 2016 in millions of NT adjusted by consumer price index (CPI)

The above figure shows that the education budget does not increase obviously because the inflation swallows the nominal increment of the budget. The total education budget after adjustment by CPI was NT\$ 741,812.91 million in 2008, and was NT\$ 821,423.19 million in 2016, respectively. The increase was only NT\$ 79,610.29 million rather than NT\$ 132,555.82 million- the increasing value before CPI adjustment. In that increased NT\$ 79,610.29 million, public schools were allocated NT\$ 72,521.27 million while private schools only allotted NT\$ 7,089.02 million.

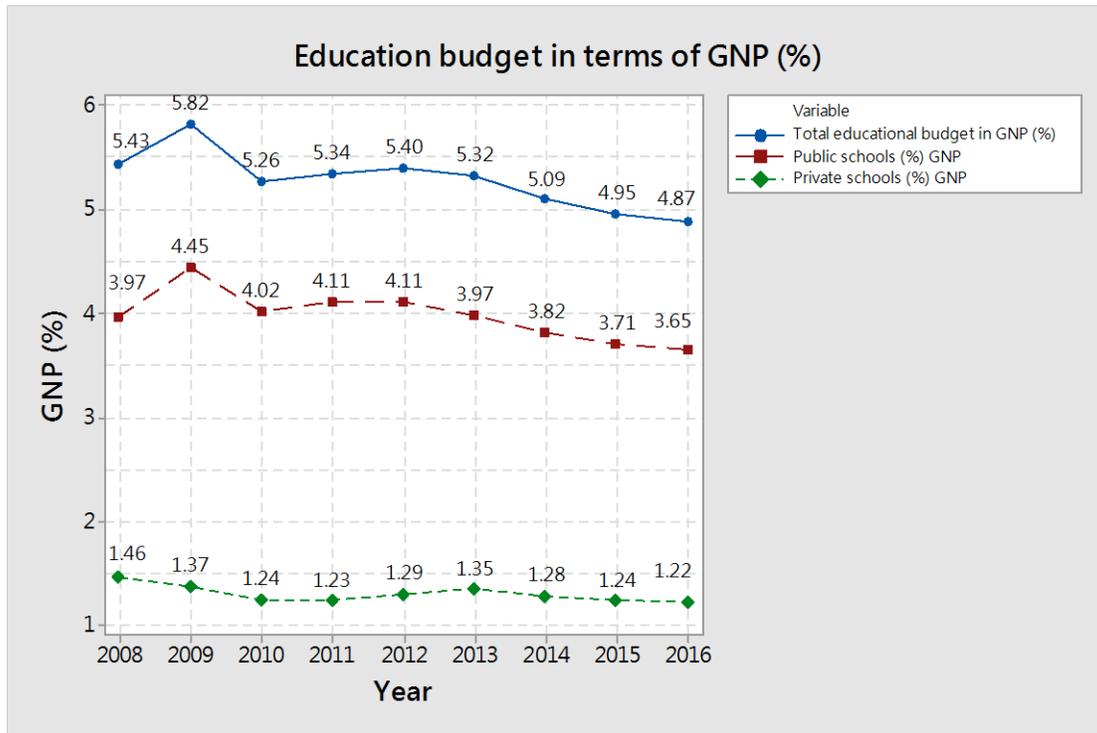


Figure 4: Education budget for all levels public and private schools in terms of gross national product (GNP)

The education budget from 2008 to 2016 was an average of 5.28 percentage of gross national product (GNP). Public schools and private schools were allocated 3.98% and 1.30% of GNP, respectively. The budget for public schools was 3.06 times that of private schools.

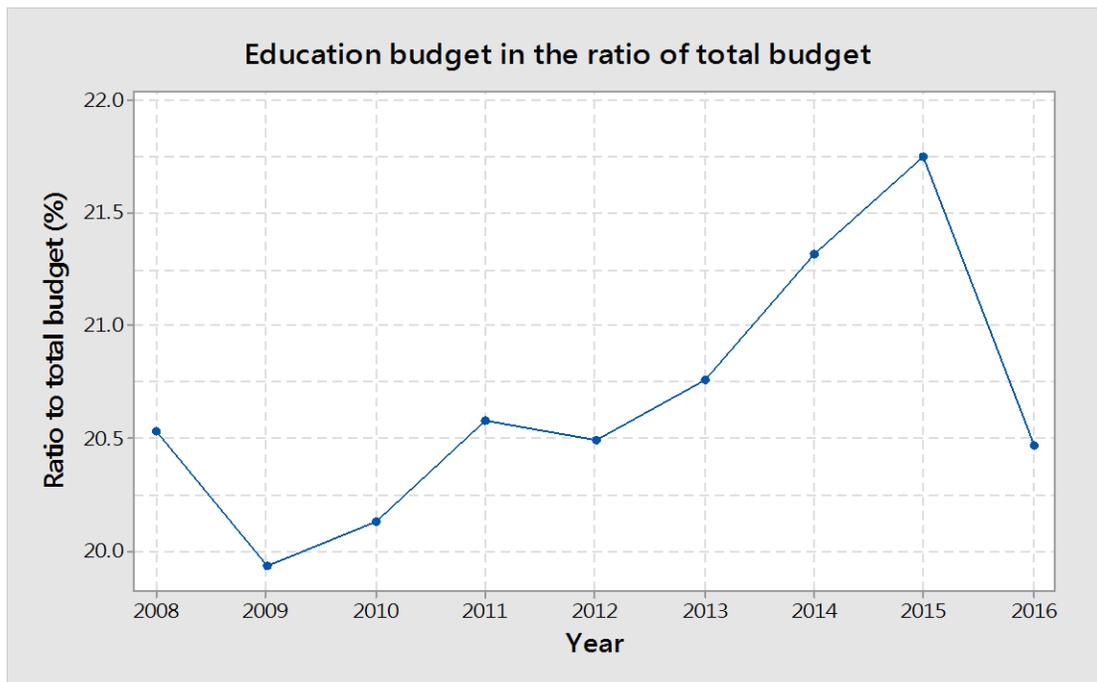


Figure 5: The education budget in percentage (%) ratio of total budget

The above figure shows that the average education budget was 20.66% of the total government budget. It is a huge amount of money. How to fairly distribute it to each student should be taken into consideration carefully. A righteous government has an obligation to treat its citizens equally whether a student belongs to public or private schools.

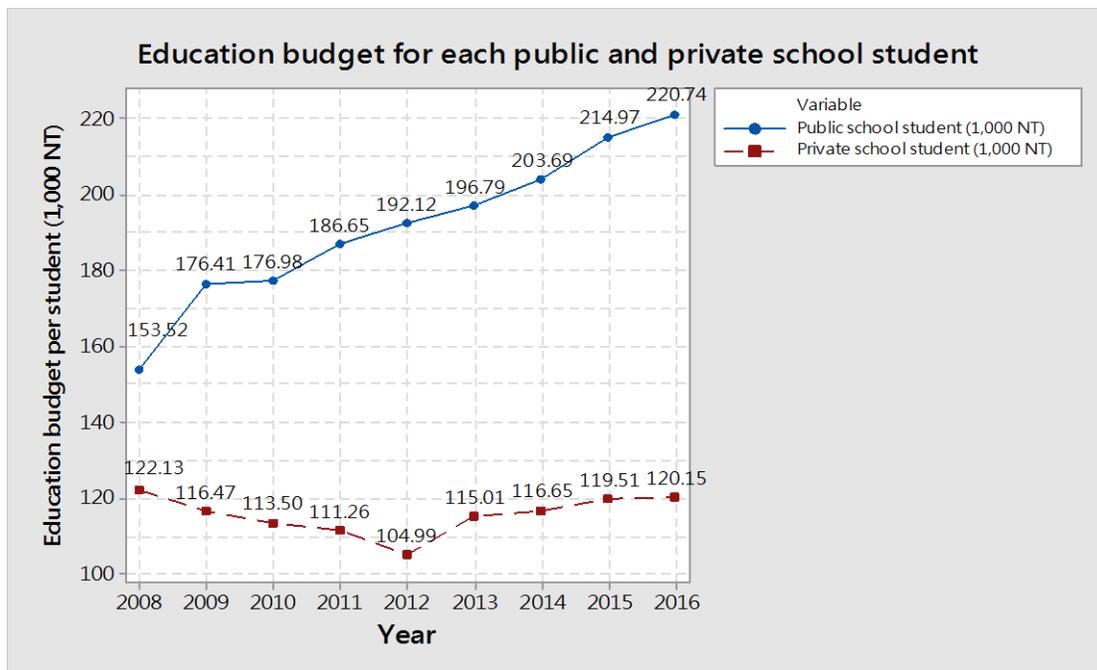


Figure 6: Education budget (unit=1,000 NT) per student in public and private schools (adjusted by CPI)

The above figure shows that the education budget for each student in public and private schools differs more and more widely with the increase of time. In 2008, each public school student was allotted 153.5 (unit=1,000 NT), and the budget increased continually to 220.7 (unit=1,000 NT) in 2016. For each private school student, the education budget was 122.1 (unit=1,000 NT) in 2008, but decreased to 120.2 (unit=1,000 NT) in 2016. From 2008 to 2016, the education budget allocation to each public school student was 1.66 times that of their private school counterpart. Note that the aforementioned budget data have been adjusted by CPI to eliminate the inflation.

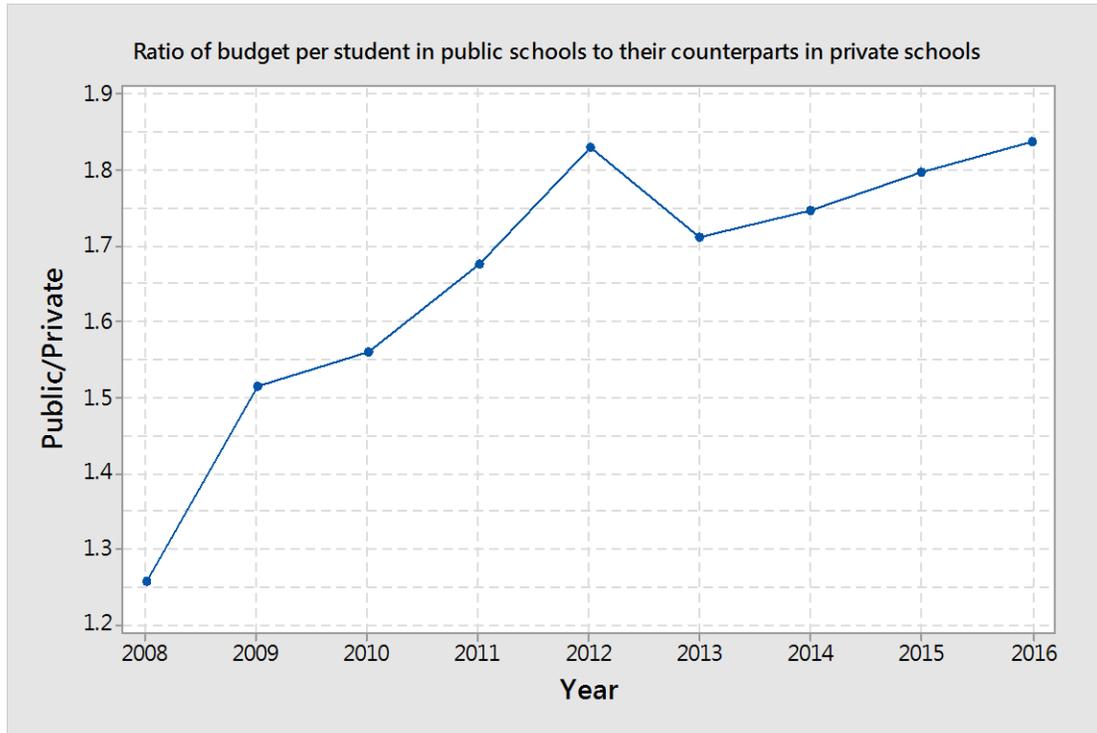


Figure7: The ratio of budget allocation per student in public schools to their counterparts in private schools

The above figure shows that the ratio of the education budget for each public school student to each private school one increased from 2008 (1.26 times) to 2016 (1.84 times), with the average value of 1.66 times.

### 2.3 Education Budget and Its Distribution to Each University and College (U&C) Student

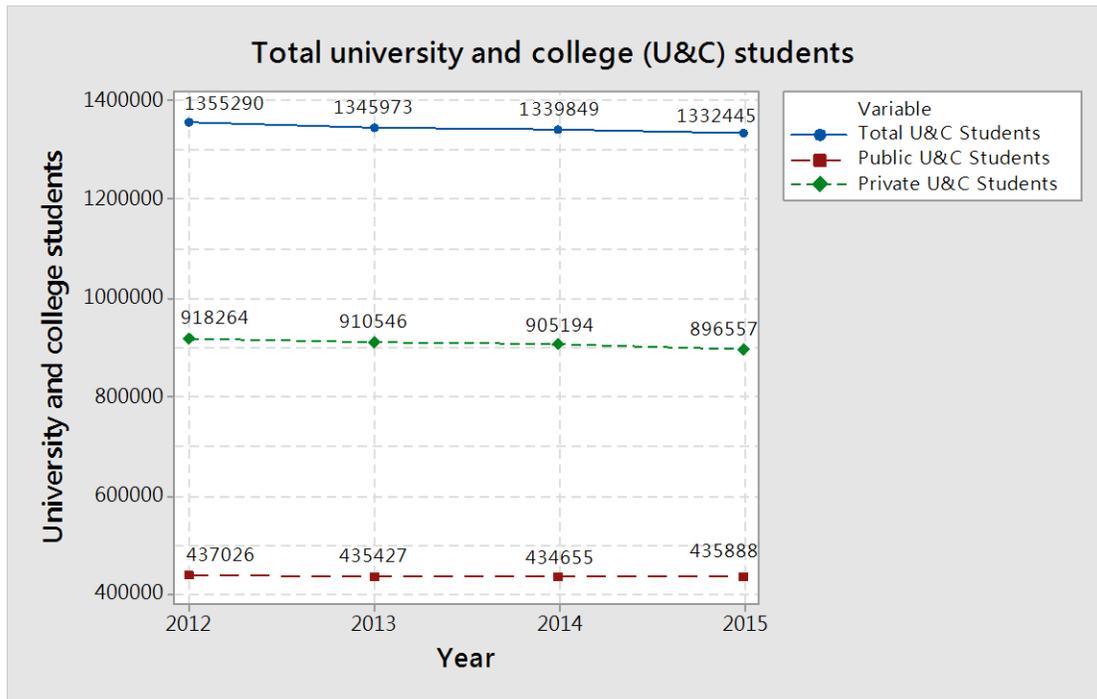


Figure 8: Public and private university and college (U&C) students from 2012 to 2015

The above figure obviously shows that private university and college (U&C) students are much more than public ones from 2012 to 2015. Averagely speaking, private U&C had 907,640 students and public U&C had 435,749 students. The number of students in private U&C was 2.08 times that of their public counterparts.

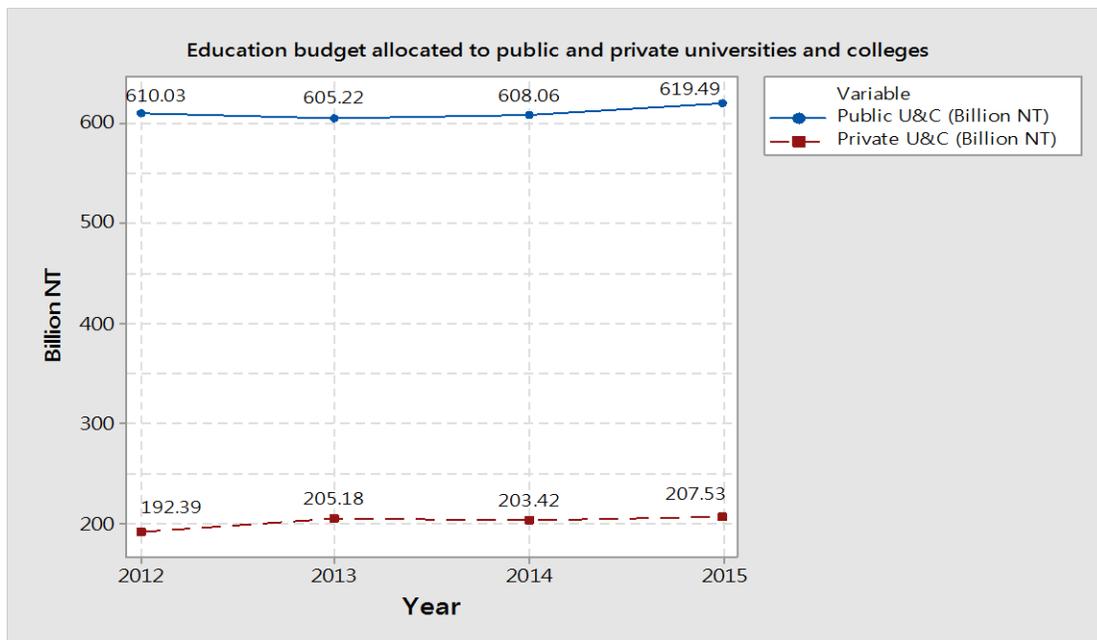


Figure 9: Education budget allocated to public and private universities and colleges (U&C) in billions of NT

The data of the above figure were obtained from the Ministry of Education (MOE) archive. Since only data covering from 2012 to 2015 were available, that's why they were used for analysis in this paper. The education budget for universities and colleges (U&C) accounted for 34.35% of the total education budget (MOE). Each year public U&C was allocated on average of NT\$ 610.7 billion from the MOE while private U&C only got an average of NT\$ 202.1 billion. More precisely, the education budget of public U&C is 3.02 times that of private U&C.

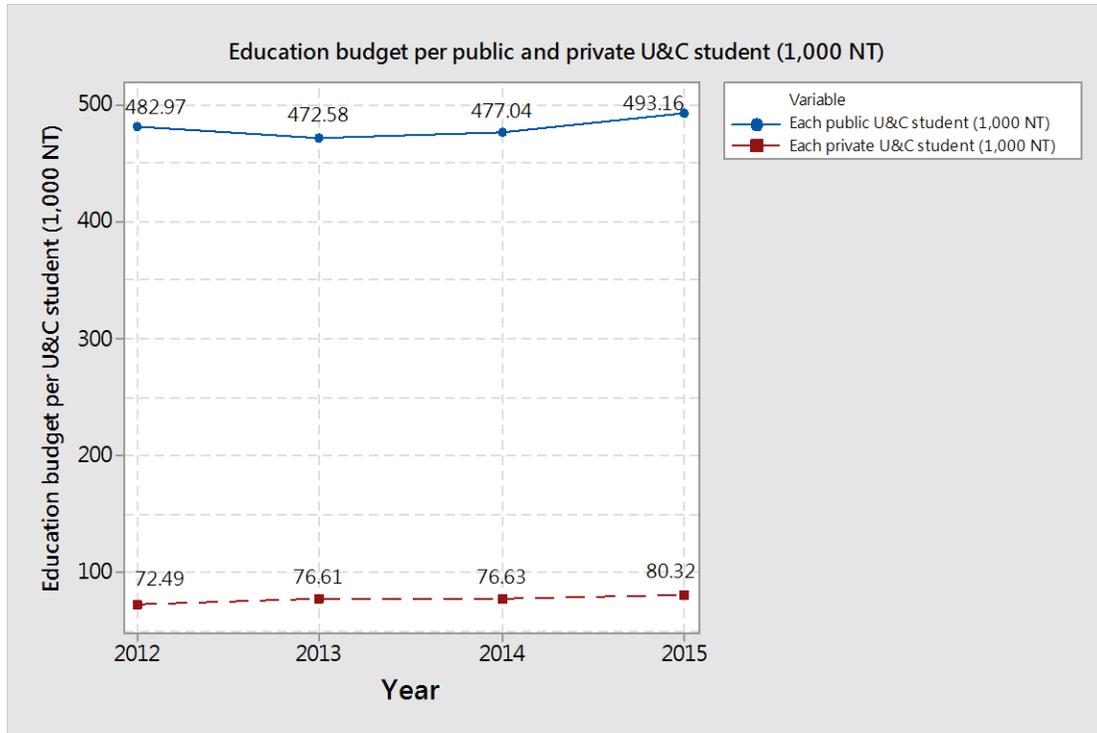


Figure 10: Education budget per public and private U&C student (unit=1,000 NT)

Averagely speaking, the above figure shows that the education budget for each public U&C student was 481.44 (unit=1,000 NT) per year, but only 76.51 (unit=1,000 NT) for each private U&C student. There were an average 6.3 times the difference between these two groups of universities and colleges. For equally levied tax payers, such a huge gap of education budget subsidy is definitely improper and unrighteous.

### 3 Conclusions

Based on the discussion in the previous sections, the following conclusions can be obtained:

- (1) The total number of all levels of students in Taiwan declined from 2008 (5,165,817 students) to 2016 (4,504,331 students). Just within nine (9) years, the total number of students reduced 661,486.
- (2) Since the education tuition is in the consumer “basket”, the education budget is adjusted by the consumer price index (CPI) with 2011 as a base year. After adjustment, the total education budget increased for all students was only NT\$ 79,610.29 million from 2008 to 2016. If not adjusted by CPI, the increased of education budget was NT\$ 132,555.88 million.

The inflation swallowed its difference, which was NT\$ 52,945.6 million.

- (3) The education budget from 2008 to 2016 was on average of 5.28 percentage of gross national product (GNP). Public schools and private schools got the share of 3.98% and 1.30% of GNP, respectively.
- (4) From 2008 to 2016, the education budget allotted to each public school student was 1.66 times of their private school counterpart.
- (5) From 2012 to 2015, private universities and colleges (U&C) had 907,640 students and public U&C had 435,749 students. Private U&C had 2.08 times students than that of their public counterparts.
- (6) From 2012 to 2015, subsidy from MOE every year to public U&C was on average NT\$ 629.38 billion while only NT\$ 208.38 billion was allocated to private U&C. More precisely, education budget for public U&C is 3.02 times that of private U&C.
- (7) Each public U&C student obtained 481.44 (unit=1,000 NT) subsidy from 2012 to 2015. However, each private U&C student only got 76.51 (unit=1,000 NT). The difference between these two groups of universities and colleges is on average 6.3 times. The MOE only published the average value of education budget share per U&C student. That is misleading readers, especially legislators. Indeed, each private U&C student only obtained humbly 0.16 (1/6.3) of their public counterpart.

#### 4. References

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## Appendix A

Table A1: Total Students from Kindergarten to Graduate Institute in Taiwan and Their Budget Shares from 2008 to 2016

Year	Total Students	Public School Students	Private School Students	Total Education budget (Billion NT)	Education budget Shared GNP (%)	Public Schools Shared GNP (%)	Private School Shared GNP (%)	Education Budget in Ratio of Total Budget (%)
2008	5165817	3533108	1632709	730.76	5.43	3.97	1.46	20.53
2009	5065962	3451538	1614424	778.26	5.82	4.45	1.37	19.93
2010	4965690	3348164	1617526	765.28	5.26	4.02	1.24	20.13
2011	4860022	3233880	1626142	784.52	5.34	4.11	1.23	20.58
2012	5007275	3175170	1832105	817.86	5.40	4.11	1.29	20.49
2013	4859558	3075612	1783946	832.63	5.32	3.97	1.35	20.76
2014	4729465	2985206	1744259	843.74	5.09	3.82	1.28	21.32
2015	4616078	2884826	1731252	857.24	4.95	3.71	1.24	21.75
2016	4504331	2785751	1718580	863.32	4.87	3.65	1.22	20.47
Average	4863800	3163695	1700105	808.18	5.28	3.98	1.30	20.66

Table A2: Education budget Adjusted by the Consumer Price Index (CPI)

Year	CPI	Total budget adjusted by CPI (Million NT)	Public school budget adjusted by CPI (Million NT)	Private school budget adjusted by CPI (Million NT)	Education budget per public school student (1000 NT, Adj. by CPI)	Education budget per private school student (1000NT, Adj. by CPI)	Public/Private
2008	98.51	741812.91	542406.15	199406.76	153.52	122.13	1.26
2009	97.66	796909.81	608874.09	188035.71	176.41	116.47	1.51
2010	98.6	776149.24	592564.46	183584.78	176.98	113.50	1.56
2011	100	784518.07	603588.56	180929.50	186.65	111.26	1.68
2012	101.93	802371.02	610016.58	192354.44	192.12	104.99	1.83
2013	102.74	810427.76	605249.85	205177.90	196.79	115.01	1.71
2014	103.97	811527.07	608052.30	203474.77	203.69	116.65	1.75
2015	103.65	827056.18	620148.87	206907.31	214.97	119.51	1.80
2016	105.1	821423.19	614927.41	206495.78	220.74	120.15	1.84
Average	101.4	796910.6	600647.59	196263.00	191.32	115.52	1.66

Table A3: Total University and College (U&C) Students and Shares of Education budget

Year	Total U&C Students	Public U&C Students	Private U&C Students	Total Education budget (Billion NT)	Total Public Education budget (Billion NT)	Total Private Education budget (Billion NT)	Education Budget Shared by U&C (%)
2012	1355290	437026	918264	817.9	621.8	196.1	34.6
2013	1345973	435427	910546	832.6	621.8	210.8	34.0
2014	1339849	434655	905194	843.7	632.2	211.5	34.1
2015	1332445	435888	896557	857.2	642.1	215.1	34.7
Average	1343389	435749	907640	837.9	629.5	208.4	34.4

Table A4: Education budget Shared by Each Public and Private University and College (U&C) Student Adjusted by Consumer Price Index (CPI) with Base Year 2011

Year	CPI	Public U&C Shared (Billion NT) Adj. by CPI	Private U&C Shared (Billion NT) Adj. by CPI	Each Public U&C Student Shared(Adj. by CPI) (1,000NT)	Each Private U&C Student Shared (Adj. by CPI) (1,000NT)	Public/Private
2012	101.93	610.03	192.39	482.97	72.49	6.66
2013	102.74	605.22	205.18	472.58	76.61	6.17
2014	103.97	608.06	203.42	477.04	76.63	6.23
2015	103.65	619.49	207.53	493.16	80.32	6.14
Average		610.70	202.13	481.44	76.51	6.30

Note:

1. U&C means universities and colleges
2. 1 USD = NT\$ 30.63 (New Taiwan Dollars) (July 22, 2017)