

A Comparative Study of the Funding Resources for Public and Private Universities in the United States

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Received 15 June 2019; accepted 17 September 2019

Published online 26 November 2019

Abstract

Top universities in the United States have several hundred years of history and have accumulated rich experience in raising school funds. This article first briefly introduces the funding resources available for these universities, followed by comparison of the funding for both public and private universities in the United States from five aspects: government funding, research grants, tuitions, donations, and other resources. Finally, based on the successful practices and experiences of American universities on funding, several suggestions are made to improve the funding mechanism of China's first-class universities, providing references for the construction of "double first-class" universities in China. Adequate funding is a must for building a world-class university. We need to establish and improve the funding mechanisms and apply business measures to school-running to ensure the sustainable and healthy development of the university in competition. Meanwhile, universities should improve their internal management and make overall plans for a more efficient use of the fund.

Key words: Universities in the U. S.; School funding; Comparative study; Inspiration

Zhang, X. W. (2019). A Comparative Study of the Funding Resources for Public and Private Universities in the United States. *Canadian Social Science*, 15(11), 38-43. Available from: <http://www.cscanada.net/index.php/css/article/view/11396>
DOI: <http://dx.doi.org/10.3968/11396>

Both the quantity and the quality of the universities in the U. S. are high. One of the important reasons that enable them to have a wide range of majors, strong faculty, and high level of scientific research is the diversified sources of school funding, leading to strong finance. Such advantages ensure the universities to "build nests and attract phoenixes" by giving better financial offers to attract scholars and outstanding students from all over the world. This further allows the universities to achieve high-quality development and become world-class universities. It can be seen that funding is an important foundation for the survival and development of universities. Studying the funding resources for both public and private universities in the U. S. is of great significance for Chinese universities to broaden their sources of funding, improve their funding mechanism, and promote the construction of "double first-class" universities.

1. INTRODUCTION ON THE FUNDING RESOURCES OF UNIVERSITIES IN THE U. S.

There are more than 3,600 universities in the United States with a total of 14.4 million college students (including 440,000 international students) and 833,000 faculties. Twenty-two percent of the world college students attend universities in the U. S., indicating that higher education in the U. S. is well developed. Except for a few military schools such as the West Point Military Academy, which clearly belong to the federal government, universities in the U. S. mainly exist in two forms: public or private. Public universities are ran by the local governments (i.e. state governments). Government funding, donations from the society, and personal donations are the main sources of funding for universities in the U. S. Among them, the funding sources of public universities are approximately equally divided between government funding and

donations from the society and individuals. However, in recent years, as the government continues to reduce the budget for higher education, the proportion of social and individual donations is gradually increasing. On the other hand, more than 80% of private university funding comes from social and personal donations. The funding for universities in the U. S. is mainly comes from government funding, research grants, student tuitions, donations, and others (Bai, 2002).

2. COMPARISON ON THE FUNDING RESOURCES BETWEEN PUBLIC AND PRIVATE UNIVERSITIES IN THE U. S.

2.1 Government Funding

There are few universities in the United States that are directly controlled by the federal government, and it is difficult to say what obligations are imposed on public universities. However, the federal government provides funding for universities and their scientific research in the form of foundations and project contracts. After the Second World War, the US federal and local governments increased funding for private universities. The National Defense Education Act of 1958 and the Higher Education Act (HEA) of 1965 clearly defined the long-term funding provided by the federal and state governments to public and private universities. US legislation states that all universities, private or public, shall be treated equally when comes to funding (Cui, 2013). Together with the “principle of superior quality”, the US encourages fair competition among universities. It resulted that a few well-known universities with long history and strong research owned most of the funding. And private universities receive more federal funding than public universities through equal competition.

The states have authority over education in the United States; thus, the state government is responsible to support all universities under its jurisdiction, with more funding toward the private universities. Because the United States is a highly autonomous in education, the level of funding varies from state to state based on their financial status, tax policies, and education regulations, and the amount of funding received by schools varies widely, as well. In order to improve the quality and efficiency of the universities, some states have adopted some reform measures to introduce competition mechanisms that include private universities. Public universities can no long take the “excellent” educational funding as granted. For example, South Carolina passed a legislation in 1996 which serves as a landmark: It established a performance-based funding allocation policy for public universities, which directly links the efficiency and effectiveness of university education with the amount of funding allocated by the state government. Now, most states in the United

States have adopted a performance-based funding allocation policy that is similar to South Carolina (Wu & Zeng, 2003).

2.2 Research Grants

Research grants has become one of the main sources of funding for universities in the US. Fighting for research grant is an important feature of universities, especially the top ones. Both public and private universities are actively seeking all kinds of research grant because it is the most important funding resource for research. Top universities in the United States have a lot of scientific research grant, and some accounted for 1/3 of the total funding of the school. For example, statistics on the research grants received by top research universities in the United States in 2014 showed that the total revenue Harvard University received was \$ 4.4 billion, of which \$ 820 million came from research grants (18.6% of revenue); the total revenue of Stanford was \$ 4.5 billion, of which \$ 1.27 billion came from research grant (28.2% of total revenue); the total revenue of UC Berkeley was \$ 2.3 billion, of which \$ 710 million came from research grants (30.9% of total revenue); the total revenue of MIT was \$ 2.9 billion, of which \$ 1.5 billion was research funding (51.7% of total revenue) (Li, 2015).

Part of the research grants received by universities in the US are federal government projects, part for them are state government research funding, and the rest comes from corporate and foundations. In 2015, the total funding for research and development for universities in the US has reached \$ 65.024 billion, of which \$ 36.815 billion came from the federal government (56.62% of the total funding)¹, indicating that the research funding from the federal government is the main source for it. Although the federal government has provided more than half of the scientific research grants for universities, its share has been decreasing every year from the peak of 73% in 1966. The proportion of research grants from the industry, foundations and universities themselves has increased accordingly, especially after the US Federal Government promulgated the “Bayh-Dole Act” in 1980 and the “Economic Recovery Tax Act” in 1981, the industry investment in university research funding has significantly increased. From 1980 to 1995, research grants from industry increased from \$ 510 million to \$ 1.551 billion, with a growth rate of 203.8%, which is the highest among all kinds of research funding that universities received. The proportion of university research grants in the total revenue also increased from 2.6% in 1970 to about 7% in 1999. This shows that in order to seek external technical support and technology transfer, more and more companies are funding universities to engage in applied

¹ *The top American research universities*. (Annual Reports, 2017) [EB/OL]. (2018-11-01) [2019-08-21] <https://mup.umass.edu/content/measuring-university-performance>

research projects, and research funding from industry is playing an increasingly important role in the research funding for universities in the US.

2.3 Tuitions

Tuition is the main source of revenue for universities. In the United States, regardless of whether it is a public or private university, students are required to pay for school, so tuition naturally becomes a major funding resource. According to statistics, the average tuition fee for a public college student in the United States in 2016-2017 was \$ 7,666, with an increase of \$ 119 from the previous year (\$ 7,547); the average tuition for a private non-profit college student was \$ 21,881, which was \$ 9 higher than the average tuition for the previous year (US \$ 21,872); the average tuition for private college student was US \$ 16,474, with an increase of US \$ 159 compared with the previous year (US \$ 16,315).²

Table 1
Average Tuition for a Full-Time College Student in the US

Types of school	2015 - 2016	2016 - 2017
Public university	\$7,547	\$7,666
Private non-profit university	\$21,872	\$21,881
Private university	\$16,315	\$16,474

Tuitions are set by each university in the US. When formulating tuition fees, they mainly consider two factors: First, they must pay attention to maintaining attractiveness to outstanding students. In order to attract outstanding students, schools must consider the amount of tuition according to the comprehensive conditions of the school's strength and reputation and need to consider the tuitions of universities of the same level. The second is the costs of education. Generally, the undergraduate tuition constitutes 1/3 of the education costs.

College tuition has increased significantly in the US. According to a survey of tuition and financial assistance by the board of directors of universities in the US, tuition fees for private institutions rose by an average of 5.5% in 2001, and tuition fees for public institutions increased by an average of 7.7% (almost three times of the inflation rate). For the first time since 1996, tuition fees in public institutions have risen more than private institutions. According to statistics, the proportion of tuition of the total revenue of the University of California, Berkeley has increased from 17.5% in 2006 to 30.6% in 2014. In general, the proportion of tuition in American universities is increasing. The average tuition and fees for full-time students in public universities in the United States in 2016-2017 increased by 25% compared with 5 years ago. The average tuition and fees for private non-profit universities in 2016-2017 increased by 7% compared

with 5 years ago. The average tuition and fees per student for private universities in 2016-2017 decreased by 4% compared with 5 years ago³. From the statistics, the increase in tuition and fees of public universities in the United States is significantly higher than that of private universities. The main reasons for the increase in tuition fees are: in recent years, the US government funding for colleges and universities has been decreasing and become less than donations and other income; states have reduced funding for higher education (for example, in 2002-2003, there was an average of 4% reduction in state funding for higher education); increasing in education costs; universities continue to increase the amount of scholarships for students (the scholarships provided by universities in the 2002-2003 academic year has accounted for 20% of all the scholarships). These have prompted universities (regardless of public and private) to continuously increase tuition fees. Because public universities, like private universities, are responsible to fill the financial gaps themselves, many universities have to increase tuition to ease the tight budget situation.

2.4 Donations

Asking for donations under all kinds of names is an important way for universities in the US to raise funds. Donations and fundraising account for a large proportion of the university funding. It is a long-standing practice in the US for universities to receive strong financial support such as donations and fundraising. Especially in top private universities, this is very common. For example, Harvard and Yale were founded and developed through private donations. Now revenue of Harvard University comes mainly from tuition, research grants and fundraising; each accounts for approximately 1/3 of the total revenue. Millionaires John Hopkins and Clark founded Johns Hopkins University and Clark University; Rockefeller founded the University of Chicago and so on. The establishment of the Rockefeller Foundation in 1913 made the funding of education by private companies and industrial giants more institutionalized, which greatly promoted the development of American higher education. According to statistics, at the beginning of the 20th century, the total amount donated by individuals, alumni associations, businesses, and religious groups reached \$ 5 billion, accounting for about 7% of the regular revenue of public colleges and universities and about 14% for private universities. Especially after the 1980s, the target amount of fundraising in American universities has been increasing, and the efforts put in by universities have increased, as well, and it has become a focus of university construction, development, and competitiveness.

The American public donations to education are very generous. It includes donations from alumni, private

² *The Condition of Education*, 2019 [EB/OL]. (2019-05-01) [2019-08-21] <https://nces.ed.gov/>

³ *The Condition of Education*, 2019 [EB/OL]. (2019-05-01) [2019-08-21] <https://nces.ed.gov/>

parties, companies, foundations, religious groups, charitable groups, etc. “According to the latest report released by the Council of Aid to Education (CAE) in 2015, U.S. colleges and universities received a total of \$ 37.45 billion in donations from companies, foundations, alumni, social groups, and charities in 2014 fiscal year alone.” (Luo, 2015) In order to successfully implement huge fundraising plans, many universities in the United States generally have development offices and large fundraising teams, formulate financing strategies, and organize fundraising activities. Many universities also regularly send donation letters to alumni, make a list of people or companies that may make donations, encourage professors and employees across the school to establish and strengthen contacts with the outside, hold lunches together, and invite interested parties to do intentional work. They establish a broad and practical solicitation network, expand the source of donations, and open up the foundation for donations. In addition, US tax policy has played an important role in encouraging and guiding donations to universities.

Many universities in the United States consider alumni donations as an important indicator of school rank. Alumni are an important resource for universities to receive outside donations. In particular, many of the top universities in the United States are private schools that value financial independence, intend to operate with little government funding and more with alumni donations. Alumni of universities play an important role in donations. For example, Yale University established the Alumni Association as early as 1827, and the Alumni Building was built in 1853. The alumni organization is spread all over the country. Alumni donations have been increasing every year. The 300-year-old university has survived on alumni donations. In 2013, Yale University received a \$ 250 million donation from an old alumnus who graduated in 1954, making it the largest single alumni donation in the school’s history. In 2018, Yale University alumni Edward Beth donated \$ 160 million to his alma mater for the renovation of the Yale Peabody Museum of Natural History. At Princeton University, an annual alumni donation began to come in in 1941. In the first year, 17% of the alumni donated. By 1957, the number of donations had exceeded 70%. According to data from the annual survey report of US News, Princeton University has the highest alumni donation rate among all 1,374 universities in 2013-2014 and 2014-2015. Thanks to the generous donations of alumni and external organizations, Princeton University has become one of the four wealthiest universities in the United States, laying a solid financial foundation for the outstanding performance of Princeton.

2.5 Others

Other income mainly includes investment income, general operating income, sales income, and other income derived from land, forests, buildings, and ships.

Investment income is an important funding resource for universities. In the United States, regardless of whether they are public or private universities, they are not only universities but also enterprises. They are often involved in investment and stock business while running schools. Some top universities have huge amounts of property and funds. In the university’s annual report, the financial income of the college is described first, followed by teaching and research. According to statistics, the scale of funds of some top universities in the United States has increased significantly. In 1998, the funds of Harvard University, University of Texas, and Yale University were \$ 13 billion, US \$ 7.7 billion, and US \$ 6.7 billion, respectively; by 2018, the funds of Harvard University, University of Texas, and Yale University had reached \$ 38.3 billion, US \$ 30.9 billion, \$ 29.4 billion, respectively. Some universities in the United States have long been active in the domestic and international stock markets and are big buyers in the stock market or financial market. Many schools have set up asset management companies, entrusting professionals to manage the huge amounts of school funds, and some universities also allow business school students to practice trading. For example, Harvard Management Company manages the largest foundation in the world, the Harvard Foundation. According to data analysis by the NACUBO-TIAA Study of Endorsement, the average return on investment of American university endowment funds in 2018 was 8.2%.⁴ This indicates that investment income is also an important funding resource for universities in the US.

In addition, general operating income mainly includes operating hotels, restaurants, university-run hospitals, and experimental sites. This is very common for universities in the US, and some have created considerable economic benefits. Sales revenue and service items mainly including teaching software, audio tapes, and video tapes; university pressed textbooks; and some daily necessities. Universities have launched sales service programs, and their income generally accounts for about 10% of the school’s total revenue. For other income, many universities in the United States have huge real estate, such as land, forests, buildings, ships, etc. The income from external services of these is also considerable. Harvard University has 380 acres of land, several forests, and more than 40 buildings. Stanford University has 8,800 acres of ranch donated by its founder, Stanford. In addition to collecting a large amount of rents each year, the world-famous “Silicon Valley” science city emerged on this land in the 1990s, bringing great wealth to the school.

⁴ *The Wealthiest Universities in the United States* [EB/OL]. (2019-07-14) [2019-08-21] http://www.sohu.com/a/326855050_187034

3. REFERENCES AND INSPIRATIONS: IMPROVING THE FUNDING MECHANISM OF CHINA'S FIRST-CLASS UNIVERSITIES

The successful practices and experiences of the funding resources for universities in the US are of great significance for broadening the funding resources, improving the mechanisms, and advancing the construction of “double first-class” universities in China. At present, with the fast-paced social and economic development of China and the increasing demand for higher education by the people, the scale of higher education in our country is rapidly expanding, and the nation is continuously increasing its investment in construction of “double first-class” universities.

3.1 Adequate Funding Is a Must for Building a World-Class University

Funding for public universities in the United States is equally divided between funding from the government and donations from the society and individuals. However, in recent years, as the government continues to reduce the budget for higher education, the proportion of social and individual donations is gradually increasing. And more than 80% of private university funding comes from social and private donations. As mentioned earlier, according to statistics for 2014, the total revenue of Harvard University was \$4.4 billion, \$4.5 billion for Stanford University, \$2.3 billion for UC Berkeley, and \$2.9 billion for MIT. Evidences have shown that adequate funding is a must for the development of universities in the US, which is also the key to the survival and development of colleges. Currently, with an increasing government funding for “double first-class” colleges and universities, colleges and universities should attach great importance to fundraising and take actions, increase their publicity, and expand funding resources so that fundraising becomes more and more common and acceptable.

3.2 Finding Multiple Funding Resources

The funding source of a university cannot be completely dependent on funding from the government. It should look for more funding resources. The US approach is worthy of our attention. First, colleges and universities must give play to their enthusiasm and initiative and to find more funding resources. This includes discussing the establishment of university foundations, studying the allocation of education costs, strengthening contacts with alumni, and actively hold fundraising activities. Second, the government should formulate corresponding fundraising policies, and guide and support them. Including the establishment and improvement of incentive mechanisms and policies for social donation and funding, increasing investment in research grants, the issuance of national debt and educational lotteries, the collection of

education taxes, and a well-established financial system including education foundation, research foundation, assistantship, and scholarship. The third is to complete the alumni information database, promote alumni donation, and establish a fund management system. Universities shall encourage all forces inside and outside the school, make every effort to get in touch with every alumnus, and enhance alumni's sense of belonging. They need to improve the fundraising mechanism and the management system of donation, enhance the ability of universities in fundraising, and broaden the funding resources. The fourth is to continue to improve the mechanism for government, school, and society to jointly build universities, and form a “diversified investment and joint support” construction plan. In the 2018 Notice issued by the Ministry of Education, the Ministry of Finance, and the National Development and Reform Commission on Guiding Opinions on Accelerating the “Double First-Class” Construction of Colleges and Universities stated that “Colleges and universities must establish a multi-funding mechanism to co-ordinate independent funds used by universities in accordance with the regulations and jointly support the construction of ‘double first-class’ universities. We shall improve the co-construction mechanism that combines government, society, and universities together, and form a configuration of diversified investment and joint support. “ Fifth, universities shall launch as many social services as possible and seek social support. The gathering of experts and scholars from colleges and universities can give full play to the advantages of intellectual resources, strengthen cooperation with enterprises, provide academic and research services, cooperate with enterprises on patents and technical research, and actively promote the transformation of scientific and technological achievements to serve the economic and social development of China.

3.3 Apply a Business Measures to Ensure That the University Continues to Develop and Stay “Healthy” in the Competition

For a country, higher education is not an isolated part. It is the epitome of the entire country's politics, economy, culture, etc. It reflects the country's historical and cultural traditions and highlights the country's international competitiveness. To manage a university well, we must actively learn from other people's strengths and use it for our own advantages. As mentioned earlier, universities in the US received a total of \$ 37.45 billion in donations from companies, foundations, alumni, social groups, and others in 2014 fiscal year. In order to successfully implement huge fundraising plans, many universities in the United States have established specialized fundraising institutions, formulated financing strategies, and organized fundraising activities. In the context of construction of “double first-class” universities, in order to achieve the sustainable and healthy development of

the university, it is necessary to have a strong sense of management, to apply the concept of management in dealing with the relationship between the university and the external environment, and to seek development in the fierce competition. "Under the competitive situation in the development of higher education, whoever knows how to run a university and can use scientific methods to achieve scientific management, will be able to seek development and even rapid development in the competition" (Wu, 2009). Today, university managers need to think about the development of the university from an operational perspective, strengthen the top-level design, optimize and improve the governance structure, handle the relationship between the university and society, expand fundraising channels, etc., and use fundraising as a mean for school development. The top priority is to improve the management level of the university and ensure the sustainable and healthy development of the university in the fierce competition.

Looking at the history of higher education development in the United States, it is clear that because university presidents have become more and more important in the process of university construction and development, people's expectation became higher and higher. After experiencing principals who take academy as the main orientation and principals who take management and coordination ability as the main orientation, people and university operations themselves are leaning toward a president with flexible economic minds, strong business consciousness, and good social skills. This external expectation for university presidents has become increasingly apparent as the federal government's funding for universities decreased, and the pressure on school operations increased. This is also fully reflected in the role of the president in positioning himself. At the China-Foreign University Presidents Forum held in Beijing in July 2002, Stanford President Gerhard Casper said, "University presidents need to play nine roles: the president, the chief executive officer, the school council member, a fundraiser, an educator, a scholar, a public figure, a social worker, and an entertainment partner." Gerhard Casper told us that he spends a third of his time on fundraising. In order to ensure the normal operation and development of universities, fundraising has become one the role requirements of university presidents.

3.4 Universities Need to Strengthen Internal Management and Improve the Efficiency of the Utility of Funds

In recent years, the state and local governments have invested heavily in financial support for the construction of "double first-class" universities, which is beneficial

for the development of universities. However, compared with universities in the US, colleges and universities in China have not only a relatively simple funding channel (mainly relying on government financial allocations and social donations), but also a relatively low efficiency in their use of funds. Data show that in the past 20 years, the proportion of university staff expenditures was about 33% to 35%, which is only 50% of the international average (Yuan, et al., 2016). In view of this, on the one hand, we must strengthen internal management. "Schools should publish detailed annual financial revenues and expenditures and make them public. The government and society should monitor and evaluate the use of school funds as one of the important bases for subsequent investment." (Li, 2015) To maximize the utility of funds, we need to bring the limited funds into full use and effectively achieve the purpose of seeking profits from management. On the other hand, it is necessary to allocate resources scientifically to ensure a reasonable amount for expenditures. The situation of each university is different, and the school's functions and stage of development are also different. Therefore, the funding structure is a dynamic adjustment process, which involves not only the adjustment of the proportion of expenditure, but also the change of expenditure items. In short, colleges and universities must strive to increase the input-output ratio in order to improve the efficiency of the utility of school funding and the rank of colleges and universities in China.

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