

## Diversity of Resources in Shanghai Jiaotong University

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### ABSTRACT

Shanghai Jiaotong University(SJTU) is a national key higher education institutions jointly sponsored by central and local governments. Its resources could be categorized in four streams: governmental funds, income from services for enterprise, cooperation and mutual development with local community, and tuition fees. The followings could be found by comparing the incomes of SJTU in 2000 and 2005 that the total incomes has a significant increase, incomes of research has an increase higher than teaching, fundamental research and research for national and local development shows more significant trends and increase of tuition is mainly contributed by non-governmental directly sponsored education. Due to a dual system of management within one institution have arisen the issues of teaching and research quality control, management and responsibility shared by institutional and school levels and management of intelligent properties. The trends of relevant issues are discussed.

### FULL PAPER

The followings are commonly recognized in China. Historical reformation and development took place for higher education in China since 1998. The size of higher education has been significantly expanded. Meanwhile the issues existing in higher education have been exposed. One of the issues that have to be solved is the shortage of funds. In the new period of reformation and open Chinese economy has keeping a significant high increasing trend while the funds for education including higher education have not showed a same trend.

In the other hand the mission of higher education includes two aspects: education and knowledge innovation. Diversity trends of resources for higher education are not only the response to the shortage but also results of the mission.

This paper describes the above trends taking SJTU as a case.

## 1. INTRUDUCTION OF SJTU

SJTU was founded in 1896 and is one of the oldest universities in China. It is now one of the first “211”and”985” project supported institutions. The institution has 2800 academic staff among them are 15 fellows of Chinese Science Academy and 20 fellows of Chinese Engg. Academy. There are total 38,000 full-time students including 18,000 undergraduate students and 18,100 postgraduate students and 2,000 international students. It takes the third position in research income and the first in patent application in China’s higher education institutions(HEIs). SJTU has a strong links with Michigan University, have opened the first overseas graduate school in China’s HEIs in Singapore. SJTU established more than 50 high standard labs with famous companies like INTEL, IBM.

## 2. TYPE OF RESOURCES

Taking into account the sponsoring system and regional characteristics of SJTU the total incomes could be categorized in four streams: government funding, service for enterprises, liaison with local community and finally tuition fees.

(1) Government funding. There are two ways to categorize the funds.

A. According to the usage. The government funds could be divided into two sorts: normal funds and special funds. The former includes education funds and capital construction funds. These are funded based on student numbers and approved construction plans. The later is based on special projects. The main projects in latest ten years are “211” and “985”, the national project for China’s higher education development.

B. According to the way of gaining funds and government funding

departments. Different than education and special project funds research funds are gained through competition. Various government departments e.g. reformation and development committee, science and technology committee and etc. are funding HEIs for research and development. It has to be mentioned here that there is a jointly sponsoring mechanism in China since 1990s. The central and provincial governments or State council departments jointly support a number of HEIs.

(2) Service for enterprises. The two ways for HEIs to serve enterprises are: contract research and training employees. From point of views of income the former is the main. In China the contract research projects sometime are also called as “research” on more commonly as “lateral research” in comparison to “vertical research” which are sponsored by research council or governmental departments.

(3) Liaison with local community. There is a special liaison form in Shanghai: cooperation of three: university, science park and district government. For SJTU the other two are Zizhu science park and Minhang district government. The main campus of SJTU locates in Minhang district. The park locates just opposite the campus and has the land of 400 hectares. The Minhang district is one of the ten districts in Shanghai Municipality. The most significant result of cooperation is the SJTU campus project. This project expanded the campus from 150 to 333 hectares. The three partners all contributed the project.

(4) Tuition fees. Government funds HEIs based on student number but with two restricts: student numbers and student category. More incomes of SJTU come from the students out of the restricts. SJTUs recruit students in its Continuing education school, Net work education school and International education school. SJTU can also gains extra tuitions through recruiting MBA and M.Eggn. students.

Apart from the above four income streams SJTU has gained significant supports from its alumni. The donation from its alumni is \$ 63.6 million in the period of 1978-2005, the donation is mainly for buildings. The donation from alumni however, is usually not included in the statistics of

SJTU income.

### 3. SJTU INCOMES AND CHANGE TRENDS

#### (1) Incomes in 2005

Table 1 Income of SJTU in 2005

|    | INCOME        | RMB(10,000) | %       |
|----|---------------|-------------|---------|
| 1  | Education     | 142,198.70  | 44.43%  |
| 2  | -planned      | -76,309.96  | -53.66% |
| 3  | -special      | -11,210.70  |         |
| 4  | -outside plan | -65,888.75  | -46.34% |
| 5  | Research      | 99,798.95   | 31.18%  |
| 6  | -grants       | -44,289.09  | -44.29% |
| 7  | -contracts    | -55,509.87  | -55.71% |
| 8  | Funds others  | 48,554.54   | 15.17%  |
| 9  | Other income  | 29,477.85   | 9.2%    |
| 10 | Total         | 320,030.04  | 100%    |

Source: The Financial Office of SJTU

#### (2) Comparison of income of 2005 to 2000

Table 2 Comparison of income of SJTU in 2005 and 2000

|   |               | 2000<br>(RMB10,000) | 2005<br>(RMB10,000) | %      |
|---|---------------|---------------------|---------------------|--------|
| 1 | Total         | 148,260.50          | 320,030.04          | +116%  |
| 2 | Education     | 107,336.44          | 142,198.70          | +32%   |
| 3 | -planned      | -88,880.20          | -76,309.96          | -16.4% |
| 4 | -outside plan | -18,456.24          | -66,888.75          | +262%  |
| 5 | Research      | 22,933.25           | 99,798.95           | +335%  |
| 6 | -grants       | -6,604.75           | -44,289.09          | +571%  |
| 7 | -contracts    | -16,328.49          | -55,509.87          | +240%  |

Source: The Financial Office of SJTU

#### 4. RELEVANT MANAGEMENT ISSUES

As other Chinese HEIs SJTU in general has the difficulty of resource shortage. Recruitment students by own resources and taking “lateral research” projects did release the difficulty meanwhile brought some management issues due to different mechanisms adopted in a single institution.

##### (1) Education quality control

Continuing education school and Net work education school can recruit students. But these two schools recruit students with a standard which is in general a little bit lower than the main part of the students. They have their own administrative systems. They run programs and are allowed to award degrees for a percentage of graduates. The quality standards should be a relevant issue.

##### (2) Research quality

In general quality of “vertical research” is higher than “lateral”, but the latter sometime can give staff higher personal money benefits. The institution wish staff take more “vertical research” meanwhile some staff have different willingness.

##### (3) Management system.

SJTU now promotes a management system in that schools take a main responsibility for their teaching and research quality and financial duties. The resource diversity trends may play an uncertain role to the system. If a school has too high interests in training courses, “lateral research” projects its academic standard may get down after years.

##### (4) Management of intelligent properties of institution

Some cooperative partners wish use university’s name to promote their business, many companies wish to show their names in campus. In some cases it could be hardly put all under control.

#### 5. Views on the future

(1) Higher education in China will keep on development. China’s national policy is to develop the country relying on science and education. In addition Chinese tradition is giving their children education as more as possible.

(2) Higher education in China will continuously rely on government funds. One of the main missions of higher education is educating people. Research, specially fundamental research needs significantly high investment but could not produce quick returns. All of these needs public funds supports.

(3) High education needs government supports but HEIs can not solely rely on government. With research capacity and quality continuously improving HEIs and its staff can gain more supports by own efforts

(4) Variety of income is a trend but a dual tuition system in a single school is not a sustainable way. Relevant management issues should be studied and properly solved.