

# *Construction and Analysis of College Financial Budget Assessment Index System under Informatization Background*

Quan Zong

Shandong Women's University, Shandong, 250001, China  
1031809217@qq.com

**Keywords:** informatization, college financial management, budget management, assessment index system.

**Abstract:** Financial management is the basic block of college management system, and budget management is a core component of financial management. College financial budget manage, to some degree, determines the construction and developing potential of the college. The level of college financial budgeting abilities needs to be evaluated based on a certain standard of assessment. In the increasingly competitive market of education, colleges need to keep improving their financial budgeting abilities to make them to survive in new and developing situations. This paper cut in from the perspective of college financial budget management, constructed a financial budge assessment index system and provided theoretic and practical basis for college financial management.

## 1. Overview of Chinese College Financial Budget Management

College financial budget is present through the entire progress of college financial management. In usual, financial budget includes budget making, budget approval, budget execution, budget adjustment, examination and analysis of budget executing result, etc. In China, colleges are non-profitably social institutional organizations; their major financial income sources are fiscal subsidies, institutional incomes, upper-level organization subsidies, turning in from affiliated organizations, operational incomes and other incomes. In terms of colleges' social properties and non-profitable features, their financial budgets are under unified leaderships and concentrated management modes. For colleges in a large size, financial budgets are usually under unified leaderships and stratified management, in which unified budgeting, accounting and management are conducted on the entire college levels. Daily operations of colleges are not for profit, therefore their financial budgets display multiple features such as comprehensiveness, efficiency-directed and authority.

In China, financial budget management of normal public colleges are usually divided into different categories based on different criteria, first of which is to divide financial budget management into income budgets and expenditure budgets based on contents; the second is to divide it into college-level budgets and other level budes based on coverage. College financial budgeting employs a variety of budget making methods, including increment budgeting, zero-base

budgeting, dual budgeting, departmental budgeting and program budgeting. Field investigations and literature reviews of Chinese college financial budget management and assessment system indicate that current Chinese college financial budgeting process have vulnerable spots to be studied and managed, such as the weak binding of budget execution, unimproved budget management system and institution, large randomness of budgeting, lack of investigations before making budget, lack of effective assessment and evaluation of budgeting results, etc.

## **2. Analysis of College Financial Budget Management Status**

Take our institute as an illustration, it is a comprehensive university mainly providing undergraduate programs and underscoring balanced development of multiple subjects. The university has two districts, ten academic colleges or departments, 27 undergraduate majors and 22 specialized subjects, in addition of 749 faculty members including 632 teachers, 57 professors and 172 associate professors. Its financial incomes are most from education fund allocation, research fund allocation, educational income, research income, other fund allocation and other operational income. Its expenditures are mainly in institutional expense, teaching expense, research expense, administrative expense, personnel appropriation expense, public appropriation expense, operational expense, self-raised construction expense, etc.

Our institute adopts principle's responsibility system under the leading of college communist committee as the financial budget management method. College is responsible for approval of budget and uniformly manages financial rules and institutions. Currently used financial budget making process includes: making working plan of next year—>making departmental budget—>turning in income-expenditure budget plan of next year—>examined by college communist committee—> assigning to all levels of departments and colleges to execute. In terms of the basic situations in the present, we established the general principle of “spending no more than incoming, keeping income and expenditure in balance”, and made financial budget plan of the next year in the prerequisite of determining total incomes. With this principle, to improve the financial budget management capacity of our institute and further to facilitate the healthy and sustainable development of our college, it is necessary to establish a financial budget assessment system to conduct evaluations and restraints.

## **3. Performance Budgeting Mode within College Financial Management**

College development takes an objective, and similarly college financial budget manage also takes an objective. Considering the development status of our institute, this paper constructed a performance budgeting management mode, using objective management as a guidance and project management and departmental budget as a foundation. Departmental budget is department-directed and is in refined budgeting method, whereas project budget emphasizes on the accurate estimation of operational cost. Strict control is conducted upon the implementation process, and standardized assessment is carried out on the budgets.

Combined with the fundamental process of financial budget management, performance budgeting generally contains three steps:

- 1) In a macro-college level, administrations establish an overall objective of college development, then assign it to all levels of departments; then under the overall objective and strategy, all levels of departments sett up working plans and annual objectives for the next 3-5 years, and refine them to match the college level development strategies.

- 2) College financial department, according to long-term goals established by those departments, establishes performance budgeting framework, then makes a comprehensive system of departmental performance budget based on plans of each department. In the process of making departmental

performance budgeting system, makers should highlight the “cost-efficiency” analysis of the projects and guarantee effective allocation of funds, then finally generate departmental performance budgets.

3) College financial department conducts ending-year assessment of execution of financial performance budget, comprehensively analyzes the financial budget execution situation of the entire year in college and department levels, concludes the difficulties, problems, gain and loss during the budget execution progress, then conducts performance appraisal for each project, relates with the situations of budget execution of each department to make college final report and turns in for college communist committee to make reward and punishment decisions.

Zero-base budgeting mode is usually utilized by Chinese colleges to make budget in performance budgeting mode.

Firstly, within the framework of zero-based budgeting, administrations conduct re-accounting of all departments of the colleges, account their budgets and expenses then employ the results as assessment criteria, ratify cost and outcome of each projects, then based on the rank of outcome of each project determine the grades of prioritized budgeting, and combine or abolish projects that have low outcomes or are not necessary to keep.

After that, administrations utilize the joint principle of objective, efficiency and effectiveness to optimize budgeting process, then construct a zero-based budgeting method under performance budgeting mode and make it to be an important reference for budget making of the next year.

## 4. The Establishment a College Performance Budget Assessment Index System

### 4.1 College Performance Budget Assessment System and Index Selection

The first step of establishing a college performance budget assessment system is to select indexed of assessment. These indexes are usually determined with index point and experts’ weight coefficient method. In terms of the realistic situations of financial budget management in our institute, the financial performance budget assessment index system is built upon the basic principle of Delphi method and utilizes expert survey weight method, then adopts mathematical statistics to check and correct survey data. The concrete process includes following steps: selecting experts—> assessment progress—> selecting an operation—> weighted average processing. In this technique, computing formula of weighted average method is:

$$\bar{x} = \frac{\sum x_i f_i}{\sum f_i}$$

In the formula,  $\bar{x}$  stands for weighting co-efficient,  $x_i$  stands for the weighing co-efficient given by an experts,  $f_i$  stands for the co-efficient present in a weighting process.

Experts selected in paper includes five from other institutes and 35 in our institute. These experts have titles of 16 professor/associate professor, 4 college administrative faculties, 12 department faculties and 8 division faculties.

Considering opinions of these experts, this paper, in its performance budget assessment index system, conducts appraisals from dimension of input and output. Input mainly includes faculty investment, fixed estate investment, teaching apparatus investment and circulation fund investment for normal operation of the college. Output mainly includes research outcome, teaching outcome and student working outcome. Framework of performance budget assessment index system of our college is determined to be: assessment objective, assessment sub-system, assessment project and assessment index, in which the assessment index item adopts measurable indexes.

## 4.2 Measurement of College Budget Input Indexes and Weighting of Output Indexes

Within in the performance budget assessment index system established in this paper, inputs of different level departments in our institute could be classified into three categories: human resources investment, fixed asset investment and fluid asset investment. Measured values of human resources investment could be estimated to be investment amount as the sum of teachers' per capital salary and bonuses. Fixed asset investment includes two forms: teaching apparatus investment and public owned housing depreciation investment; fixed asset is computed as total value times depreciation rate, in which depreciation rate is accounted to be: 1.5% of annual public owned housing depreciation and 10% of annual teaching apparatus depreciation. Considering the difference of apparatus in different departments, model makers set up a fixed asset investment regulation co-efficient  $h$ , in which humanity and social science departments have  $h$  values of 1, and natural science and engineering department have the value of 2. In this way, total investment in the college level is represented as:

$$I_i = Y_1 + Y_2 + n \times S + C \times \Delta \times h$$

In the formula,  $Y_1$  stands for educational fund allocation;  $Y_2$  stands for research fund allocation;  $n$  stands for total number of personnels in a department;  $S$  stands for the average salary;  $C$  stands for the total fixed asset value in the end of a year;  $\Delta$  stands for fixed asset depreciation rate;  $h$  stands for the regulation co-efficient of fixed asset investment.

Table 1. Output Index Weighting Assignment Scores of Financial Performance Budget Assessment Index System

	Index	Weighting Co-efficient
Teaching Outcome	Number of In-campus Students	7
	Proportion of Undergraduate Student	8
	Proportion of Students in Specialized Subjects	7
	Outstanding Teaching Outcome Reward	9
	Number of Provincial Level Key Research Lab	7
	Teacher to Student Ratio	7
Sum		45
Research Outcome	National Outcome Reward	7
	Horizontal Received Research Lab	6
	Vertical Received Research Lab	5
	Number of Published Paper and Works	5
	Number of Paper achieved in SCI, EI	7
Sum		30
Student Working Outcome	Graduates Employment Rate	9
	College Level 4 and 6 English Proficiency Test Passing Rate	6
	Computer Proficiency Exam Passing Rate	5
	Students' Award Obtaining Status	5
Sum		25
Total		100

Measurement of output indexes is more complicated. It takes expert estimation method to conduct measurement shifting via a weighting co-efficient. Output indexes are divided into three categories: teaching output, research output and student working output. Indexes involved in these categories do not explicit quantitative values, therefore need to undergo standard quantification treatments. After expert survey assignment and weighting treatment, output index weighting assignment scores of the financial performance budget assessment index system of our institute are shown in the table 1.

### 4.3 Cases of College Departmental Performance Budget Assessment

The first step is to conduct assessment of each departmental performance in our college. The assessment is carried out as the input to output ratio. Computing formula of input-output performance assessment within colleges is indicated as:

$$E_i = O_i / I_i \quad (i=1,2,\dots,n) ;$$

$$O_i = W_j \times O_{ij} \quad (i=1,2,\dots,n, j=1,2,\dots,n) ;$$

In the formula,  $E_i$  stands for performance index of unit  $i$  in the year. In this measurement assessment process, larger  $E_i$  represents better performance of unit  $i$ , and a higher quality of budget execution.  $O_i$  stands for the output of unit  $i$  of a college department in a year. Within a certain range of budget, a higher  $O_i$  indicates a higher budgeting efficiency and a higher quality of budget execution.  $O_{ij}$  stands for the output score of unit  $i$  of project  $j$ ;  $W_j$  stands for the weighting co-efficient of project  $j$ .

Take the financial budget management of a department of our institute in 2015 as an example. Performance budget assessment index systems is utilized to conduct assessment and data is appropriately processed according to relevant requirement. The computing progress is expressed as:

Step one, utilizing formula  $I_i = Y_1 + Y_2 + n \times S + C \times \Delta \times h$  to compute its input index scores, then obtaining:

$$I = 1100 + 78 + 100 \times 5.8 + 120 \times 1 = 1878 \text{ (10,000 RMB);}$$

Step two, employing data in 2014 as the base value 100 to compute output index value of the department. Changing magnitude of an index compared to that in last year is expressed in percent numbers, which gives the value of an index in 2015 = value of the index in 2014  $\times a\%$ . Conducting calculating in combination of data in Table 1, then obtaining the total output weighing co-efficient score in 2015 to be 102.61.

Step three, adopting formula  $E_i = O_i / I_i$  to figure out the performance index of the department as:

$$E_i = 102.61 / 1878 = 0.055$$

Step four, on the basis of above algorithm, computing performance index values of the 10 departments or divisions in our institute, then ranking the results based on their values, finally obtaining the rank of performance of each departments or divisions in our college, after that establishing rewarding and punishing mechanisms accordingly to achieve a realistic optimal allocation of funds.

### References

- [1] Guobin Liu, Jingyan Ji, *Construction of a BSC and KPI Based College Performance Budget Assessment System [J]. Friends of Accounting*, 2015.8.  
 [2] Lihui Zhou, *Study of Chinese College Performance Budget Management[D]. Beijing Jiaotong University*, 2014.6.

- [3] Jinna Song, *Construction of a Performance Budget-Directed College Financial Performance Assessment Index System*. [J]. *Commercial Accounting*. 2015.22
- [4] Jin Huang, *Overview of the Construction of College Budget Performance Assessment Index System*. [J]. *Journal of Fuzhou University (Philosophy and Social Sciences)*, 2016.5.
- [5] Limeng Liu, *Overview of the Construction of College Financial Budget Performance Assessment System* [J]. *Modern National Enterprise Study*. 2015.2
- [6] Jingzhu Sha, *Prioritized Performance Objective Based College Performance Budget Reform* [J]. *Finance and Accounting*. 2016.22