

## Study on Evaluation Index System for the Comprehensive Quality of Secondary Financial Management in Chinese Universities

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**Abstract:** With the deepening of the sub-financial management of colleges and universities, establishing a scientific evaluation system for the sub-financial management is not only a core part of management, but also an important symbol to measure the secondary of budget management and objective management. This paper establishes a two-level index system, which is the performance of budget funding, tuition collection, scientific research funds and financial management. The secondary index is the 21 evaluation index layer which reflects four aspects of the secondary sector performance. This paper classifies and compares the financial management performance of the secondary department of the college by means of quantitative indices, qualitative indices, single indices and multivariate indices.

**Keywords:** Universities, secondary financial management, performance evaluation

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### I. INTRODUCTION

The central committee of the political deliberated a policy document (2010), which states: "Establish a performance evaluation system for use of funds and strengthen the use of the evaluation of major projects. Strengthen the management of state-owned assets in schools."

The ministry of finance defined the fiscal expenditure performance evaluation (2011) as: "use scientific and reasonable performance evaluation indices, as well as evaluation standard and evaluation method to evaluate the efficiency of fiscal expenditure".

The policy documents indicate that our country is paying more attention to the education funds management and the fiscal expenditure performance evaluation. The expansion and the increase of college enrollment complicate financial activities in colleges, the traditional financial system can't adapt to the colleges' development. At the same time, the amount of the fund is increasing year by year, in order to ensure the standardization of the goods and strengthen the secondary sectors' economic responsibility, a sub-financial management system management is necessary and a complete set of quantitative index system is needed. Using the performance of budget, the tuition collection, the scientific research and the financial management performance as the first-level indicators and structure a 21 indices layer to reflect the performance of the secondary department, so as to

realize the quantitative management and evaluation of the secondary financial in colleges.

### II. THE RESEARCH STATUS OF THE PERFORMANCE EVALUATION OF SECONDARY FINANCIAL MANAGEMENT

Zhang Juan (2017) uses the budget target and control standards as the basis and makes the general financial targets with non-financial targets an organic combination so as to measure the budget management dynamically. Fan Ruiyun (2017) elaborates the significance and application strategy of comprehensive budget in university financial management. Wang Fengxu (2014), Li Yacui (2016), Tang Jing (2017) believe that there are many deficiencies in the financial management performance evaluation system of colleges in China. Chu Guizhong (2013), Tong Xiaoling (2016), Lian Qiang (2016), Zhang Juan (2017) set up a performance evaluation system from different dimensions to study secondary financial management of colleges. He Xiaohong (2013), Lu Haiqing (2016), Yao Dandan (2016), Ji Hao, Lu Zhengyan (2016) make Suggestions on the improvement of financial management in colleges and universities.

These studies all stays at a theoretical level, articles that combined with the actual analysis and put forward solution are not very common. Therefore, this paper will establish the evaluation index system of secondary financial quality and combine quantitative analysis with theoretical analysis to

further study the secondary financial management system of colleges and universities.

### III. THE NECESSITY OF THE SECONDARY FINANCIAL MANAGEMENT SYSTEM

In recent years, China's higher education business has been developed rapidly, if we continue to implement the unified management model of the past, we need to increase the level of management and personnel, resulting in a bloated and redundant staff. In order to realize structural optimization and benefit, colleges must decentralize their rights, so that the secondary school departments can take the initiative and allocate the teaching resources. At the same time, the implementation of secondary financial management of colleges is the requirement for talents to form the characteristics of schools. Under the unified management system of the school, the high

school officials are often unable to understand the information of their subordinate institutions because of the asymmetry of information. Therefore, they can't establish an advantage discipline. The implementation of secondary financial management, fully exerting the enthusiasm and initiative of secondary colleges, which turns out to be a requirement for universities to form their own characteristics.

### IV. THE ESTABLISHMENT OF EVALUATION SYSTEM OF SECONDARY FINANCIAL PERFORMANCE

The specific assessment of university financial management includes budget funds, tuition fee collection, scientific research funds and the financial management performance. The meaning and calculation formula of each index are as follows:

Table 1. The performance indicators of budgetary funds.

Secondary index project	Formula	Meaning	Index attribute
Budget completion rate	Budget expenditure/budget revenue for that year	Refers to the completion of budgetary funds during the budget implementation.	concentration index
Budget adjustment rate	The budgeted additional adjustment/ Revenue from the budget	This indicator reflects the department's planning status	Reverse index
the total amount that per faculty gets	Total income/the number of staff (annual average)	Explain the total cost of each faculty member	Positive index
the total amount of earmarks that the teaching staff gets	Total amount of earmarks/ the number of staff (annual average)	The index reflects the level of preparation and financing of each sub-sector project	Positive index
per capita training fee of Teaching staff	Total amount of training expenses/ the number of staff (annual average)	To reflect the training of staff in various departments	Positive index
The amount of revenue generated is the proportion of total funds	Total revenue total revenue/total income of the year	Reflect the degree of dependence of the secondary sector on the budget of the college and the ability of the secondary sector to raise funds and the level of effort.	Positive index
Annual growth rate of total funds	(income from the current year - income from the previous year)/income from the previous year	Reflect the growth of the secondary sector	Positive index
Annual growth rate of income generation	(income from revenue generated in the year - income from revenue generated from the previous year)/revenue generated from the previous year	Reflect the level of effort and status of the secondary sector in generating revenue	Positive index
Cost of purchase of raw equipment	Total cost of equipment purchase/ the number of student (annual average)	Reflect the equipment input of secondary colleges	Positive index
Book purchase fee for all books	Total amount/the number of students (annual average)	Reflect the equipment input of secondary colleges	Positive index

Table 2. Performance indicators for tuition collection.

Secondary index project	Formula	Meaning	Index attribute
Fee collection rate	The actual amount of tuition and accommodation/ the total amount that should be paid	Reflect the degree and status of the secondary colleges' efforts in tuition payment	Positive index
The cumulative delinquent rate of tuition	Cumulative total amount of overdue tuition and accommodation fee/ tuition fee and accommodation fee that shall be paid	It is suggested that the degree and status of tuition fee of secondary college students in college	Reverse index

the ratio of student loan to tuition income	The amount of student loan that actually went to the account that year /the amount of the tuition and accommodation	Reflect the level of effort and status of the secondary school in the struggle for student funding	Positive index
The grant amount of financial aid that has been obtained	The total amount of grant grant/ the total number of students at the end of the year	Reflects the level of secondary schools in financing outstanding poor students	Positive index

Table 3. Performance indicators of scientific research funds.

Secondary index project	Formula	Meaning	Index attribute
Annual growth rate of scientific research	(The total amount of scientific research funding - the total amount of scientific research funded last year)/the total amount of scientific research funded last year	It reflects the growth of annual research funds in the secondary sector	Positive index
per capita scientific research fund of Teaching staff	Total amount of research funding/staff number (annual average)	Reflect the ability and scale of scientific research in the secondary sector	Positive index

Table 4. Financial management performance indicators.

Secondary index project	Formula	Meaning	Index attribute
ratio of Public expenditure structure	Public expenditure/total expenditure/the average ratio of the whole institution last year	Reflect the rationality of unit expenditure structure	Positive index
Annual growth rate of expenditure	(Total expenditure for the year - total expenditure on the previous year) / total expenditure of the previous year	Reflect the level of the secondary sector expansion	Positive index
Ratio of total expenditure to total expenditure	Total income/total expenditure of the year	Reflect the annual balance or deficit of the secondary sector	Positive index
rate of device update	Equipment purchase expenditure/public expenditure	Measure the extent of the secondary sector's long-term construction	Positive index
The expenditure of "three public funds" accounts for the share of public expenditure	"Three public" funds expenditure/public expenditure	Reflect the efforts of the secondary sector in controlling the expenditure of "three public funds"	Reverse index

V. WEIGHT ASSIGNMENT OF EVALUATION INDEX AND COMPREHENSIVE SCORING CALCULATION

A. Weight Assignment of Evaluation Index

In the process of building college financial performance evaluation system, the influence degree of the core factors and indicators are different. Therefore, the weights of each index need to be assigned. This paper uses the analytic hierarchy process and Delphi method of evaluation index weight assignment method to analyze.

The Delphi method is used for consultation and collection and experts in university financial budget research are involved. Based on the evaluation results of the relative importance of the indexes, the evaluation values are analyzed and the matrix A is obtained. Calculate the A matrix, find the maximum characteristic root, and get the corresponding eigenvector:  $W = [W_1, W_2, \dots, W_n]^T$ . Determine the consistency and complete the consistency index.  $CI = \frac{\lambda_{max} - n}{n - 1}$ ,  $\lambda_{max}$  is the maximum eigenvalue.

When  $CI = 0$ , A matrix meets the consistency requirement. When  $CI$  is non-zero, the consistency of

A matrix is poor, and the greater the value of  $CI$ , the less the consistency of A matrix is realized. In practical application,  $CI$  means absolute consistency,  $CR$  means relative consistency,  $CR = \frac{CI}{RI} < 0.10$ ,  $RI$  represents random consistency index, when  $CR$  meets the requirements,  $W = [W_1, W_2, \dots, W_n]^T$  is weight, if the value of  $CR$  are not within scope, you need to reset A matrix, do the calculation, until the condition is satisfied.

B. Comprehensive Scoring Calculation

Firstly, calculate the score of the indicators that after the base year,  $X_{it}$  represents the score of index  $i$  in the year of  $t$ . Next, calculate the score of each secondary index according to the weight. In the end, calculate the comprehensive score by using the simple arithmetic mean method, which is to add the scores of each criterion layer to the overall score.

VI. CONCLUSIONS AND SUGGESTIONS

The present research situation and the necessity of implementing sub-financial management of colleges are analyzed theoretically in this paper and the index system of two levels are built, which includes the

performance of budget, tuition collection, scientific research and the level of financial management, the 21 indexes layer reflect the performance of the secondary department from four aspects. The study find that the construction of university financial performance evaluation index system of the secondary is not yet mature and need to be revised. To this end, this paper makes the following comments in combination with the research content:

#### A. Strengthen Internal Control Awareness

A complete financial management system can guarantee the smooth progress of financial management of secondary colleges. College leaders at all levels should take the lead to strengthen the consciousness of the internal control, follow the principle of feasibility and consider its own specific conditions so as to formulate conforms to the development of the college financial management system.

#### B. Improve the Organizational Structure of Secondary Financial Management

The relevant principals of the college should implement the post responsibility system. The dean, as the first person in charge of the work of the college, is responsible for the authenticity and effectiveness of the financial management of the college, and the vice-presidents shall be responsible for their financial management. Other managers should also be responsible for their respective tasks; At the same time, disclose financial management information to enhance the effectiveness of supervisory function.

#### C. Clarify the Relationship of Property Rights

The secondary school departments should register their own assets accumulated in the school activities. According to different accounting subjects, the classification of the fixed assets of the secondary school departments shall be registered and the depreciation rate of various fixed assets shall be calculated according to relevant regulations. At the same time, pay more attention to the control of the assets of the secondary department and supervision in order to promote the stable operation of the system for the sub-financial management of colleges and universities.

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